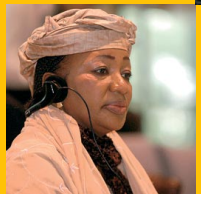
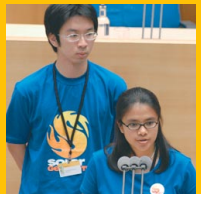
Internationale Konferenz
für Erneuerbare Energien, Bonn
International Conference
for Renewable Energies, Bonn

Conference Report

Outcomes & Documentation – Political Declaration / International Action Programme / Policy Recommendations for Renewable Energies





renewables 2004 – International Conference for Renewable Energies
1–4 June 2004, Bonn, Germany






List of Abbreviations

AfDB	African Development Bank Group
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
BP	British Petrol
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CILSS	Permanent Inter-State Committee on Drought Control in the Sahel
CSD	Commission on Sustainable Development
CSR	Corporate Social Responsibility
DANIDA	Danish International Development Agency
DOS	Department of State
ECA	Export Credit Agencies
EIB	European Investment Bank
ESCo	energy service company
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GEF	Global Environment Facility
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
IAEA	International Atomic Energy Agency
IAP	International Action Programme
ICLEI	International Council for Local Environmental Initiatives
IEA	International Energy Agency
IFI	international finance institutions
IIIEE	International Institute of Industrial Environmental Economics
IPP	independent power producer
ISES	International Solar Energy Society
IUCN	International Union for Conservation of Nature and Natural Resources
JI	joint implementation
JICA	Japan International Cooperation Agency
MERCOSUR	Mercado Común del Sur
NAFTA	North American Free Trade Agreement
NGO	non-governmental organisation
NORAD	Norwegian Agency for Development Cooperation
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
PoI	(Johannesburg) Plan of Implementation
PPP	public-private partnership
R&D	research and development
REEEP	Renewable Energy and Efficiency Partnership
Sida	Swedish International Development Cooperation Agency
SME	small and medium enterprises
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNECLAC	United Nations Economic Commission for Latin America and the Caribbean
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNESCWA	United Nations Economic and Social Commission for Western Asia
UNF	United Nations Foundation
UNFCCC	United Nations Framework Convention on Climate Change
UNFIP	United Nations Fund for International Partnership
UNIDO	United Nations Industrial Development Organization
US	United States
USAID	United States Agency for International Development
WEC	World Energy Council
WEHAB	water, energy, health, agriculture, biodiversity
WHO	World Health Organization
WMO	World Meteorological Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWEA	World Wind Energy Association
WWF	World Wide Fund For Nature

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Shell renewables

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Conference Report

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Introduction

Between 1 and 4 June 2004, Bonn played host to guests from all over the world. 3,600 participants followed the German Government's invitation to attend the International Conference for Renewable Energies – *renewables 2004* in order to address the two central issues: How can the proportion of renewable energies used in industrialised and developing countries be substantially increased? How can the markets for renewable energies be better developed?

The outcome of these discussions is that the course is now set for promoting the faster expansion of renewable energies. The statement issued in the Political Declaration – that in the long term renewable energies will become a most important and widely available source of energy – signals a worldwide turning point, according to the international press. A total of 720 media representatives reported live from the conference venue, the International Congress Centre (Internationales Kongresszentrum Bundeshaus Bonn, IKBB).

The intergovernmental conference was attended by delegations from 154 countries, including 121 ministers responsible for energy, the environment and development, alongside many representatives from the United Nations and other international organisations, non-governmental organisations, civil society, the private sector and other stakeholder groups. The conference programme was rounded off by around 60 side events, an exhibition covering 600 square metres of floor space and a series of parallel events including the International Parliamentary Forum, the Science Forum, Local Renewables and the Business Forum Renewables.

renewables 2004 was announced by Germany's Federal Chancellor Gerhard Schröder at the World Summit for Sustainable Development, which took place in September 2002 in Johannesburg. The Federal Ministry for Economic Cooperation and Development (BMZ) and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) convened the conference, while the preparations were coordinated by the Conference Secretariat, which was provided by the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ).

This brochure contains the three outcomes of the Bonn conference: the Political Declaration, a summary of the International Action Programme and the Policy Recommendations for Renewable Energies. The original, full-length version of the International Action Programme is available on the CD-ROM that is attached to this final brochure. The CD-ROM also contains all other information relating to the conference, from the preparation process and conference programme right up to all available speeches and presentations, as well as a list of participants. In addition, several photos in printable format have been added that may be used free of charge provided the relevant source is stated.

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Introductory Statement

by Heidemarie Wieczorek-Zeul

Heidemarie Wieczorek-Zeul

renewables 2004 has put energy issues at the centre of the political agenda for this new millennium. It was high time. We, the international community, are aiming to halve the proportion of people living in extreme poverty by the year 2015. That means: making primary schooling accessible for all children, boys and girls alike, reducing child mortality by two thirds, halving the proportion of people without access to safe water, and improving the lives of at least 100 million slum dwellers.

All this needs one thing: access to energy. Developing countries need to expand energy services massively if they are to reach these goals, and they need international co-operation for that. In this way, the poor could gain direct access to modern energy services in their households for cooking and lighting and could use it for productive activities that generate an income. With additional energy, they could build and operate the schools in which all boys and girls will receive basic education; they could run the hospitals which will help reduce child mortality; they could pump and convey the water to those who are presently denied access.

renewables 2004 picked up these issues and showed: With the best technology and with adequate financial resources, we can master this challenge of creating a sustainable energy future for the whole world.

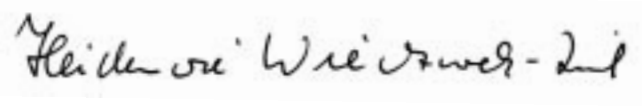
The conference outcomes are documented here: the political declaration, the International Action Programme, and the Policy Recommendations. They document the success of the conference.

The Political Declaration embodies a new consensus: that renewable energies are the energies of the future. Energy efficiency, too, is of key importance. The declaration reaffirms the Millennium Development Goal to halve poverty by 2015. Efficient, affordable and clean energy technologies have to be made available to the poor. With a raised contribution of renewables to the energy supply – hand in hand with improved energy efficiency – 1 billion people can gain access to modern energy services by 2015.

The International Action Programme consists of almost 200 voluntary commitments and actions. They are a new and unprecedented proof of the international community's commitment to renewable energies. As one of the German contributions to this programme, Chancellor Schröder committed additional assistance funds which will lead to investment in sustainable energy of 500 million euros over the next five years.

The Policy Recommendations for Renewable Energies are an exemplary menu of strategies for decision-makers in public and private institutions.

Now we are building a solid follow-up arrangement so that the vision we developed at the conference will become reality. *renewables 2004* has been a remarkable event. Governments and other stakeholders joined in an unprecedented political commitment to sustainable energy. I would like to thank all of the conference participants who came to Bonn and contributed to the success of the conference.



Heidemarie Wieczorek-Zeul, Federal Minister for Economic Cooperation and Development

Introductory Statement

by Jürgen Trittin

Jürgen Trittin

Renewable energies offer affordable access to energy, generate employment and facilitate energy security as well as technological development. They are indispensable in any sustainable energy policy geared towards avoiding greenhouse gas emissions and combating climate change.

The International Conference for Renewable Energies *renewables 2004* has been a big step forward in the global expansion of renewable energies. More than 3000 participants – delegates from 154 countries and representatives from international organisations, the private sector, non-governmental organisations and other stakeholders – came together in Bonn to discuss the role of renewable energies in a sustainable energy system. They shared, in the Political Declaration, the vision "that renewable energies, combined with increased energy efficiency, will become a most important and widely available source of energy and will offer new opportunities for cooperation among all countries". What is more: Almost 200 pledges for concrete action testify to their commitment to make this vision come true.

Among the voluntary pledges compiled in the most important conference outcome, the International Action Programme, are ambitious national targets for the expansion of renewable energy by more than 20 countries, financial commitments by governments and financing institutions, commitments in the area of research and development as well as initiatives for an increased cooperation with developing countries in the field of renewable energy. The implementation of the International Action Programme will save more than 1.2 billion tonnes of CO_2 per year by 2015. Also by 2015, it will have provided about one billion extra people with access to modern energy.

The success of *renewables 2004* was based on its new approach of building a bridge between multilateralism, bilateral cooperation and a more unilateral approach. In contrast to many previous international meetings, *renewables 2004* did not aim to achieve uniform commitments for all countries. Instead, the outcome of *renewables 2004* combines voluntary actions with Policy Recommendations and a Declaration containing a review clause. While participants could decide freely on their own input to the International Action Programme, they accepted that measurable steps should be reported to the UN Commission on Sustainable Development and that the progress should be reviewed. All the key players and stakeholders could be integrated into this new approach. They will play an important role in paving the way towards a sustainable energy future.

In the follow-up of the conference, our task remains to ensure that the conference outcomes are put into practice worldwide. This will be the true success of *renewables 2004* in our fight against climate change and for affordable and sustainable access to energy worldwide.

Jürgen Trittin, Federal Minister for the Environment, Nature Conservation and Nuclear Safety

Political Declaration

The Political Declaration is one of the three key outcomes of the International Conference for Renewable Energies, Bonn 2004. It was discussed and adopted by ministers and government representatives from 154 countries gathered in Bonn, Germany, 1-4 June 2004.

A large number of governments, international organisations, and stakeholders provided inputs to this document. The Political Declaration contains shared political goals for an increased role of renewable energies and reflects a joint vision of a sustainable energy future that provides better and more equitable access to energy through renewable energies as well as increased energy efficiency.

1. Ministers and Government Representatives from 154 countries gathered in Bonn, Germany, June 1-4, 2004, for the International Conference for Renewable Energies[1], acknowledge that renewable energies, combined with enhanced energy efficiency, can significantly contribute to sustainable development, to providing access to energy, especially for the poor, to mitigating greenhouse gas emissions, reducing harmful air pollutants, thereby creating new economic opportunities, and enhancing energy security through cooperation and collaboration.

2. Ministers and Government Representatives agree to build upon the results and agreements reached at the Earth Summit in Rio de Janeiro (1992), the Millennium Declaration and the Millennium Development Goals (2000), and the World Summit for Sustainable Development (2002). They reaffirm their commitment to substantially increase with a sense of urgency the global share of renewable energy in the total energy supply. They share the vision that renewable energies, combined with increased energy efficiency, will become a most important and widely available source of energy and will offer new opportunities for cooperation among all countries.

3. Ministers and Government Representatives also reaffirm their commitment to achieving the United Nations' Millennium Development Goals, in particular the goals to halve the proportion of people living in extreme poverty and to achieve environmental sustainability by 2015. Reaching these goals will require significantly expanded access to energy in developing countries. It is estimated that up to 1 billion people can be given access to energy services from renewable sources, provided that market development and financing arrangements can be enhanced as intended through the Conference's "International Action Programme".

4. Recognising the diversity of circumstances among regions and countries as well as their common but differentiated responsibilities and respective capabilities, Ministers and Government Representatives underline the need for coherent regulatory and policy frameworks that support the development of thriving markets for renewable energy technologies and recognise the important role of the private sector. This includes removing barriers and allowing for fair compe-

[1] In the context of renewables 2004, renewable energy sources and technologies include: solar energy, wind energy, hydropower, biomass energy including biofuels, and geothermal energy.

tition in energy markets and taking into account the concept of internalising external costs for all energy sources. Such frameworks are essential to realising the potentials for renewable energy technologies in an effective and efficient manner, to creating favourable conditions for public and private investments in renewable energies, and to extend modern energy services to populations currently without access. Ministers and Government Representatives take note of countries who have adopted, and others who will adopt, targets for enhancing the share of renewables in their national energy mix and also take note with appreciation of the "Policy Recommendations for Renewable Energies", which provide a menu of options to decision-makers.

5. Ministers and Government Representatives view enhanced international cooperation for capacity building and technology transfer, effective institutional arrangements at all levels, corporate responsibility, microfinance, public-private partnerships, and advanced policies by Export Credit Agencies as crucial to expanding finance for renewable energies. Financial incentives and higher shares of ODA as catalytic funding should also be considered. International Financial Institutions, including the World Bank and the Regional Development Banks, should significantly expand their investments in renewables and energy efficiency and should establish clear objectives for renewable energies in their portfolios.

6. Ministers and Government Representatives support the strengthening of human and institutional capacities for renewable energies. This includes:
(a) building capacity for policy analysis and technology assessment and strengthening educational efforts, gender mainstreaming and the role of women;
(b) raising awareness of government decision-makers and financiers of the benefits of renewable energies;
(c) promoting consumer demand for renewable energy technologies; (d) supporting development of marketing, maintenance, and other service capacities; and (e) strengthening regional and international collaboration and stakeholder participation, including women's groups, to facilitate access to, and sharing of, relevant information and good practice.

7. Ministers and Government Representatives emphasise the need for additional targeted research and development, especially by developed countries, including indigenous research and technology development in developing countries and economies in transition. Emphasis should be on affordability and cost reduction, on innovative business and financing models and on cost-effective, consumer-friendly cost-recovery models, recognising that different renewable technologies offer different opportunities and face different constraints.

8. Ministers and Government Representatives commit to work toward these objectives, individually and jointly, by undertaking the actions they have submitted for inclusion in the "International Action Programme" and through other voluntary measures. They agree that these measurable steps should be reported to the UN Commission on Sustainable Development (CSD) and that progress should be reviewed as foreseen in the Johannesburg Plan of Implementation. An appropriate arrangement for follow-up should be identified in a future meeting in preparation for CSD 14/15.

9. Ministers and Government Representatives agree to work within a "global policy network" together with representatives from parliaments, local and regional authorities, academia, the private sector, international institutions, international industry associations, consumers, civil society, women's groups, and relevant partnerships worldwide. This informal network should take into account the work already being undertaken by existing partnerships and should promote a comprehensive and open exchange of diverse perspectives, lessons, and experiences in the development and application of renewable energies.

10. Finally, Ministers and Government Representatives are committed to achieving tangible progress, as well as substantive follow-up, at CSD 14/15 and therefore resolve to continue the high-level political dialogue begun in Bonn.

11. The Ministers expressed their compliments to the Government of Germany and the German people for organising the Conference and for the opportunity it represented to stress the importance for advancing in the implementation of the commitments of Johannesburg on renewable energies to reach sustainable development worldwide.

International Action Programme

The "Call for Actions and Commitments" for the International Action Programme (IAP), put forward by the Federal German Government, has been answered by numerous participants worldwide. Voluntary actions and commitments from all over the globe have been accepted for incorporation into the IAP. All submitting parties express a strong willingness to promote renewable energies.

On the following pages you will find the List of Actions and Commitments sorted by leading actors. Section A compiles actions and commitments by governments, Section B those made by the United Nations and other international organisations, including international financial institutions, and Section C compiles actions and commitments by stakeholders from civil society, the private sector and other stakeholder groups.

The official document in its complete version, with 197 actions and commitments put forward by contributors by 4 June 2004, is available on the CD ROM that forms part of this brochure.

As one of the key outcomes of the International Conference for Renewable Energies, held 1-4 June 2004, in Bonn, this International Action Programme (IAP) consists of concrete actions and commitments by governments and other actors. The participating ministers and governments have welcomed this document in their Political Declaration, thus underlining the close connection between the International Action Programme as a portfolio of actions and the other conference outcomes.

Governments, the United Nations, other international organisations including international financial institutions and stakeholders from civil society, the private sector and other stakeholder groups have contributed to the International Action Programme. All actions and commitments included are of a voluntary nature and are the result of a bottom-up approach. They reflect specific national and regional conditions, capacities of actors, specific sectoral objectives and overall development targets of the contributors.

This document compiles 197 actions and commitments put forward by contributors by 4 June 2004.

List of Actions and Commitments sorted by Leading Actors

Section A: Actions and Commitments by Governments

Leading Actor(s)	Participating Actor(s)	Title
Afghanistan / **Ministry of Water and Power; France** / **Ministry of Foreign Affairs; Germany** / **Federal Ministry for Economic Cooperation and Development**	Fonds Français pour l'Environnement Mondial, Agence de l'Environnement et de la Maîtrise de l'Energie, Groupe Energies Renouvelables, Environnement et Solidarité, KfW Bankengruppe, GTZ	Afghan-French-German Energy Initiative
Governments of Algeria, Egypt, Germany, Israel, Italy, Jordan, Morocco and Spain	KfW Bankengruppe, UNEP, GEF, UNESCWA, IEA SolarPACES Implementing Agreement, European Solar Thermal Industry Association, US Solar Energy Industry Association, New Energy of Algeria, New and Renewable Energy Authority of Egypt, Office National d'Electricité of Morocco	GMI – Global Market Initiative for Concentrating Solar Power
Arab Republic of Egypt / **Ministry of Energy and Electricity, Germany** / **Ministry of Economic Cooperation and Development**	National Renewable Energy Agency, Arab Republic of Egypt; KfW Bankengruppe	Study for the Development of a New Wind Park Project at the Red Sea Coast
Arab Republic of Egypt / **Ministry of Electricity and Energy; New and Renewable Energy Authority**	GEF, World Bank, UNDP, UNEP, EU, KfW Bankengruppe, DANIDA, Japan Bank for International Cooperartion, EIB, private investors	Meeting 14% of Egyptian Electricity Demand with Renewables in 2020
Argentina / **Government of Argentina; Subsecretaría de Energía Eléctrica**	none	Promotion of Renewable Energies in Argentina with the Aim of Achieving 8% of Power Consumption from Renewable Energies
Australia / **Government of Australia**	Australian industry and other stakeholders	Australian Energy White Paper: Securing Australia's Energy Future
Australia / **Government of Australia**	Australian electricity generators and retailers	Mandatory Renewable Energy Target
Australia / **Government of Australia**	Governments of APEC member economies	Fostering Regional Energy Cooperation in the Asia Pacific Economic Cooperation: Energy for Sustainable Development

Leading Actor(s)	Participating Actor(s)	Title
Australia / **Government of Australia; Global Sustainable Energy Solutions Pty Ltd.**	APEC member economies	APEC 21st Century Renewable Energy Initiative: Development and Implementation of a System for Accrediting Renewable Energy Training
Austria / **Ministry of Agriculture, Forestry, Environment and Water Management**	Austrian Government	klima:aktiv Action Programme for Active Climate Protection
Austria / **Austrian Development Agency**	Austrian Government, ministries and institutions of partner countries	Additional Bilateral Actions of the Austrian Development Agency in the Field of Renewable Energy
Austria / **Federal Ministry of Transport, Innovation and Technology**	Austrian Organisation for Environmental Technologies , Trust Consult GmbH Business Consultancy, The Austrian Energy Agency	Austrian Programme on Technologies for Sustainable Development
Belgium / **Federal Government and regional governments**	none	Establishment of a Combined System of Green Certificates with a Guaranteed Minimum Price
Belgium / **Strategic Platform "Clean Car Technologies"**/ **Federal Government jointly with regional governments**	Federal and regional governments, automotive industry, equipment, ICT, robotic industries, fuel industries, refineries, industrial federations, academic and research institutions, financing operators, incubators and innovative clusters, consumer associations and civil society	"Clean Car Technologies" Programme
Benin / **Ministry of Mining, Energy and Hydropower**	Islamic Development Bank, Siemens Group, Iso-Photon Group	Improving Living Conditions for Rural Communities by Means of Electrification
Benin / **Ministry of Mining, Energy and Hydropower**	International Development Association, World Bank	Project for the Provision of Energy Services
Botswana / **Department of Energy**	Botswana Government, DANIDA, GEF	Promotion of Renewable Energy and Energy Efficiency in the Building Sector
Brazil / **Government of Brazil**	Ministry of Mines and Energy, Agência Nacional de Energia Eléctrica, state-owned and private companies, other partnerships	Brazil's Hydropower Programme

Leading Actor(s)	Participating Actor(s)	Title
Brazil / **Government of Brazil**	Ministry of Mines and Energy, Centrais Elétricas Brasileiras, state and private companies, other partnerships	Alternative Sources of Energy Incentive Programme – PROINFA
Brazil / **Government of Brazil**	Ministry of Mines and Energy, Centrais Elétricas Brasileiras, state and private distribution utilities, state and municipal governments, local organisations	Light for All Programme – "Luz para Todos"
Brazil / **Government of Brazil**	State and private companies, universities, financial institutions in Brazil and in partner countries	Green Fuel Production
Canada / **Department of Natural Resources**	Provincial and territorial electric utilities, independent power producers, stakeholders, governments, industry associations and other partners	1) Wind Power Production Incentive 2) Renewable Energy Deployment Initiative
Canada / **Department of Natural Resources**	Industry, research & institutes	Research & Development in Bioenergy and Hydroelectric Energy
Canada / **Department of Natural Resources**	Industry, research & institutes	Green Power Initiative
Canada / **Department of Natural Resources**	Industry, research & institutes	Capacity Building through the 1) Clean Energy Decision Support Centre and the 2) Climate Change Technology Promotion Officers
Caribbean Community Secretariat	Caribbean Renewable Energy Development Programme, GTZ, European Delegation in Guyana, CARIFORUM Secretariat	CARICOM Regional Energy Initiative
China / **Energy Bureau of National Development & Reform Commission**	National People's Congress, related government agencies, related enterprises, Centre for Renewable Energy Development of Energy Research Institute, China Renewable Energy Industrial Association and others	Formulating a Renewable Energy Law for China
China / **Energy Bureau of National Development & Reform Commission**	Related government agencies, related enterprises, Centre for Renewable Energy Development of the Energy Research Institute, China Renewable Energy Industrial Association	Formulating National Renewable Energy Development Strategy and Plan

Leading Actor(s)	Participating Actor(s)	Title
CILSS - Permanent Inter-State Committee on Drought Control in the Sahel	CILSS member states, West African Economic and Monetary Union, inter-African Network of NGOs to combat desertification, Promotion de l'électrification rurale et de l'approvisionnement durable en combustibles domestiques, WHO	Sahel Project to Promote Renewable Energies
Republic of Congo / **Ministry of Mines, Energy and Water Resources**	Agence Congolaise d'Electrification Rurale	Support Project for the Formulation of a National Strategy for Rural Electrification
Cyprus / **Ministry of Commerce, Industry and Tourism**	Management Committee of the Special Fund for the Promotion of Renewable Energy Sources and Energy Conservation, Cyprus Institute of Energy	Cyprus Grant Scheme under the Law for the Promotion of Renewable Energy Sources and the Encouragement of Energy Conservation
Cyprus / **Ministry of Commerce, Industry and Tourism**	Management committee of the Special Fund for the Promotion of Renewable Energy Sources and Energy Conservation, Cyprus Institute of Energy	Cyprus Action Plan for the Promotion of Renewable Energy Sources, 2002 – 2010
Czech Republic / **Ministry of Industry and Trade; Ministry of Environment**	State Environmental Fund, Czech Energy Agency, Ministry of Agriculture	Renewable Energy Plan for the Czech Republic
Denmark / **Ministry for Economics and Business; Ministry for the Environment; Germany** / **Ministry for the Environment, Nature Conservation and Nuclear Safety**	none	Danish-German Cooperation in Research of Offshore Wind Energy Utilisation
Denmark / **Danish Energy Authority**	Danish Government, regional and local authorities, public and private operators	Increase in Large Wind Turbine Deployment in Denmark
Dominican Republic / **Comisión Nacional de Energía; Secretaria de Estado de Industria y Comercio**	Private sector; international cooperation agencies, GTZ, USAID	Renewable Energy for Sustainable Development in the Dominican Republic
Eritrea / **Ministry of Energy and Mines**	Department of Energy, Energy Research and Training Center, local governments and NGOs	Dissemination of Improved Traditional Stoves
Ethiopian Rural Energy Development & Promotion Centre and Rural Electrification Secretariat Director	Phase 1: Ethiopian Electricity Agency, NGOs, ministries of Education, Health and Water and key stakeholders Phase 2: Government, private sector, EEA, REF and key stakeholders Phase 3: Secretariat of the Rural Electrification Fund	Renewable Energy Development Programme

Leading Actor(s)	Participating Actor(s)	Title
EU / **European Commission**	EU member states, developing country governments, regional organisations, private sector, civil society	EU Energy Initiative for Poverty Eradication and Sustainable Development
EU / **European Commission**	none	A Long-Term Strategy for Renewable Energy Sources – Targets Beyond 2010
EU / **European Commission** / **JREC Secretariat**	European Commission and other governments, business, international financial institutions	Global Renewable Energy Fund of Funds
EU / **European Commission** / **JREC Secretariat; International Energy Agency**	The members of the Johannesburg Renewable Energy Coalition	The JREC Renewable Energy Policies and Measures Database
EU / **Council of the European Union**	The 25 EU member states	Common Approach on Renewable Energy in the EU
Finland / **Ministry for Foreign Affairs, Central American System**	Central American System for Integration, Central American Commission on Environment and Development, Finnish and Central American private-sector companies and institutions	Energy and Environment Partnership with Central America
Finland / **Ministry of Trade and Industry**	Other countries, European Commission, international organisations	International Workshop: Promotion of Energy Efficiency and Renewables by Energy Auditing
France / **Agence Française de Développement**	Durban Municipality and Prototype Carbon Fund	Use of Biogas for Production of Electricity in South Africa
France / **Ministry of Economy, Finance and Industry – Direction Générale de l'Energie et des Matières Premières**	French Government and electricity regulator	Call for Tenders for Renewable Electricity Plants: Onshore and Offshore Wind Farms, Biomass & Biogas
France / **Ministry of Economy, Finance and Industry**	Other ministries	The New French Energy Law: Targets and Measures for Renewable Energy Development

Leading Actor(s)	Participating Actor(s)	Title
France / **Agence Française de Développement; Ministry of Economy, Finance and Industry – Direction des Relations Economiques Extérieures; Agence de l'Environnement et de la Maîtrise de l'Energie**	(1) ONE, French GEF (2) World Bank (3) Electricité de France, Fondation énergies pour le monde	Rural Electrification in (1) Morocco, (2) Philippines and (3) Mali and South Africa
France / **ADEME, Ministry of Economy, Finance and Industry, Ministry of Ecology and Sustainable Development**	Multi-stakeholder partnership	Information Campaign on Renewable Energies and Energy Efficiency
France / **Ministry of Economy, Finance and Industry; Germany** / **Federal Ministry for the Environment, Nature Conservation and Nuclear Safety**	Industry, research institutes	French-German Growth Initiative Project on Wind Energy
France / **French Global Environment Facility**	French Government, international organisations, NGOs, private and / or public companies from developed and developing countries	French Global Environment Facility
The Gambia / **Energy Division**	Department of State for Fisheries, Natural Resources and the Environment, DOS for local government, local governments, DOS for Finance and Economic Affairs, DOS for Agriculture, National Water and Electricity Company, National Environment Agency, Department of Water Resources, Department of Forestry, Gambia Renewable Energy Centre, Department of Community Development, Multi-Sectoral Utilities Regulatory Agency, Civil Society and Women's Bureau	Renewable Energy Action Plan and Implementation
Germany / **Federal Ministry for Economic Cooperation and Development**	KfW Bankengruppe, E+Co and local partners	Public-Private Partnership for Sustainable Energy in Sub-Saharan Africa
Germany / **Federal Ministry for Economic Cooperation and Development** / **KfW Bankengruppe**	State-owned and partly state-controlled institutions and banks in developing countries, private enterprises and project developers	Special Facility for Renewable Energies and Energy Efficiency
Germany / **Federal Ministry for Economic Cooperation and Development; Armenia** / **Central Bank of Armenia, Ministry of Energy of Armenia**	Armenian private entrepreneurs, commercial banks	Armenia – Programme for the Promotion of Renewable Energies

Leading Actor(s)	Participating Actor(s)	Title
Germany / **Federal Ministry for Economic Cooperation and Development; ICLEI – Local Governments for Sustainability**	GTZ, ICLEI member local governments in several countries	Local Renewables Model Communities Network
Germany / **Federal Ministry for Economic Cooperation and Development; Inter-American Development Bank**	KfW Bankengruppe, GTZ, UNECLAC, Latin American Energy Organisation and existing networks in the region	IDB – BMZ Strategic Partnership
Germany / **Federal Ministry for Economic Cooperation and Development; Association of Southeast Asian Nations**	Organisations, institutions and companies from Germany and ASEAN	ASEAN – German Mini Hydro Programme
Germany / **Federal Ministry for Economic Cooperation and Development**	UNEP, GEF, partner countries, Bundesanstalt für Geowissenschaften und Rohstoffe, KfW Bankengruppe	Geothermal Energy Initiative
Germany / **Federal Ministry for the Environment, Nature Conservation and Nuclear Safety**	none	Implementation of the Strategy of the German Government on the Use of Offshore Wind Energy
Germany / **Federal Ministry for the Environment, Nature Conservation and Nuclear Safety**	Governments of Germany and Spain	International Feed-in Cooperation
Germany / **Federal Ministry for the Environment, Nature Conservation and Nuclear Safety; Brazil** / **Ministry of Mines and Energy, Ministry of Environment**	none	Memorandum of Understanding between Brazil and Germany on Sustainable Renewable Energy
Germany / **Government of Germany**	none	Renewable Energy Sources Act (EEG)
Germany / **KfW Bankengruppe**	none	KfW Carbon Fund
Guatemala / **Ministerio de Energía y Recursos Naturales; United Nations Economic Commission for Latin America and the Caribbean**	Central American Energy Ministers or Energy Commissions, UNECLAC Mexican Office	(A) Information Center for the Development of Renewable Energy Sources in Central American Countries (B) Design of a Programme to Develop a Market for the Efficient Use of Fuelwood

Leading Actor(s)	Participating Actor(s)	Title
Guatemala / **Ministerio de Energía y Recursos Naturales**	Energy ministers or commissions of the six Central American countries, National Directions and Regional Commission for Hydro Resources, Central American Electricity Council, UNECLAC Mexican Office	Integral Water-Basin Resource Management for Greater Renewable Energy Use
Iceland / **Ministry of Industry and Commerce; UN University Geothermal Training Programme**	UN University, governments of cooperating countries, development agencies	Human Capacity Building in Geothermal Energy in Developing Countries
Iran / **Ministry of Energy**	Related government agencies, related enterprises including the private sector, Renewable Energy Organisation of Iran	Developing National Renewable Energy Masterplan
Italy / **Italian Ministry for the Environment and Territory**	Regional and local authorities, public and private actors	Italian National Programmes on Renewables
Italy / **Government of Italy; Ministry for the Environment and Territory; Ministry for Productive Activities; Gestore della Rete di Trasmissione Nazionale SpA; Gestore del Mercato Elettrico SpA**	Electricity producers, regional and local authorities, public and private sectors, other governments	Italian Policy for a Renewable Energy Market
Italy / **Italian Ministry for the Environment and Territory**	(1) Tsinghua University, Politecnico di Milano, MCA Mario Cucinella Architects, China Architecture Design & Research Group, (2) Ente Parco Dolomiti Bellunesi, (3) Municipality of Specchia	Italian Pilot Projects on Renewable Energy and Energy Efficiency
Italy / **Italian Ministry for the Environment and Territory**	Ministry for Industry and Energy of Tunisia, Tunisian National Agency for Renewable Energies, New & Renewable Energy Authority of Egypt, Centre for Renewable Energy Development of Morocco, Ministry for Resources and Infrastructure of Malta, Ministry of Water and Environment of Yemen, French Agence de l'Environnement et de la Maitrise de l'Energie, IEA, International Solar Energy Society Italy, Mediterranean Association of the National Agencies for Energy Conservation, Observatoire Méditerranéen de l'Energie, Regional Environmental Centre for Central and Eastern Europe, UNEP, World Bank	Italian Renewable Energy Initiatives: Mediterranean Renewable Energy Programme
Japan / **Government of Japan, Ministry of Economy, Trade and Industry**	none	Introduction of Renewable Portfolio Standard Law

Leading Actor(s)	Participating Actor(s)	Title
Jordan / **Ministry of Energy and Mineral Resources**	National Energy Research Center, Electricity Regulatory Commission, related government agencies, World Bank, GEF, UNDP, UNEP, CDM, EU, EIB, DANIDA, private-sector investors	Accelerating the Development of Renewable Energy in Jordan
Kenya / **Ministry of Energy**	Renewables NGOs, government ministries, small and medium-scale industries, academia, independent research organisations, parastatals, rural energy NGOs, national electricity utilities, parliamentary committees/bodies, donor organisations, interested bilateral partners	Promoting Low-Cost Renewable Energy Options that Target the Poor in Kenya
Mexico / **Secretariat of Energy**	Energy Regulatory Commission, Federal Electricity Commission, Electricity Research Institute, National Bank for Public Works and Services, legislative branch, multilateral funding agencies, private-sector investors, local governments, NGOs	Mexico Renewable Energy Initiative
Morocco / **Ministry for Energy and Mines**	none	Renewable Energies Action Plan for Morocco
The Netherlands / **Ministry of Spatial Planning, Housing and the Environment; Ministry of Economic Affairs; Ministry of Foreign Affairs**	World Bank, UNDP, World Business Council for Sustainable Development, governments, international institutions, business representatives and non-governmental groups	Support of International RE Processes through Dedicated Events: (1) Conference on Energy for Development (2) Workshop on Offshore Wind Energy Potential
The Netherlands / **Netherlands Development Organisation**	Government agencies, national and international NGOs, private companies, universities, research institutes, financing institutions in Nepal, Vietnam and Laos, KfW Bankengruppe, Netherlands Directorate General for International Cooperation	Domestic Biogas: Capturing the Market in Asia
New Zealand / **Ministry of Economic Development and Asia-Pacific Economic Cooperation, Experts Group on New and Renewable Energy Technologies**	APEC Energy Working Group, New Zealand Ministry of Economic Development, APEC member governments, Evolution Technologies Ltd.	APEC-CPI – the Global New and Renewable Energy Technologies Forum and Marketplace
New Zealand / **Ministry for the Environment; Climate Change Office**	Ministry for Economic Development, Treasury, Energy Efficiency and Conservation Authority	Projects to Reduce Emissions
Nigeria / **Federal Ministry of Water Resources**	Energy Commission of Nigeria, UNID	Hydronet – Sustainable Water Resources Management in Nigeria

Leading Actor(s)	Participating Actor(s)	Title
Norway / **Ministry of Foreign Affairs**	Norwegian governmental institutions and governments of developing countries	Institutional Cooperation with Developing Countries
Norway / **Ministry of Petroleum and Energy**	Government, local authorities, industry	Strengthening of the Norwegian Renewable Energy Policy
Norway / **Norway Water Resources and Energy Directorate**	Government, university research units, energy industry	1) Small Hydropower Development and 2) Increased Power from Existing Hydropower Schemes
Norway / **Ministry of Foreign Affairs; Norwegian Society for the Conservation of Nature**	National NGOs, schools, educational authorities, energy experts, GEF	School Programme for Application of Resources and Energy
Pakistan / **Alternative Energy Development Board – Government of Pakistan**	Public-private sector	Pakistan Renewable Energy Initiatives
Peru / **National Environmental Council** / **National Environmental Fund**	Ministry of Energy and Mines, Ministry of Agriculture, National Science and Technology Council, Ministry of Foreign Affairs, NGOs	Promotion of Renewable Energy Development in Peru
Philippines / **Department of Energy**	Department of Environment and Natural Resources, legislative branch, local government units, National Transmission Corporation, electric cooperatives and distribution utilities, donor agencies, funding institutions, private-sector investors	Doubling the Generating Capacity from Renewable Energy Sources by 2013
Renewable Energy and Energy Efficiency Partnership	Governments: UK, Austria, US, Italy, Ireland, Netherlands, Spain, Ghana, South Africa, the Philippines, Sri Lanka, Indonesia, Germany and Brazil. Businesses, NGOs and international organisations including: BP, Shell, Chinese Renewable Energy Industry Association, WWF International, European Commission, UNIDO, UNEP	Renewable Energy and Energy Efficiency Partnership – REEEP
Senegal / **Ministry of Energy and Mines**	Relevant government agencies, private sector, civil society, local stakeholders	National Strategy for Renewable Energy Development for Poverty Alleviation
Sierra Leone / **Government of Sierra Leone, Ministry of Energy and Power**	National Power Authority	Government of Sierra Leone – UNDP Initiative

Leading Actor(s)	Participating Actor(s)	Title
Slovenia / **Ministry of the Environment, Spatial Planning and Energy**	Slovenian Government, local authorities, Agency for Efficient Use of Energy and Renewables, public and private actors	Increasing the Share of Renewables and Improving Efficiency of Energy Use in Slovenia
South Africa / **Department of Minerals and Energy**	Key government departments, DANIDA, Eskom, GEF, National Electricity Regulator, Central Energy Fund, Development Bank of Southern Africa, World Bank, Association of Commercial Building Owners, ESCos, South African Qualifications Authority, energy sector, Education and Training Authority, educational institutions, appliance labelling industry, consumer groups, EU, USAID	The White Paper, the Energy Efficiency and the Appliance Labelling Programme
South Africa / **1) National Electricity Regulator, 2) Department of Science and Technology**	1) Energy utilities, Central Energy Fund, other energy stakeholders and the donor community, 2) research bodies	1) Regulatory Framework for Renewable Energy 2) Research and Development on Renewable Energy
South Africa / **Department of Minerals and Energy**	Development Bank of Southern Africa, UNDP, Central Energy Fund, Eskom, National Electricity Regulator, public/private sector, World Bank, GEF and donor community	South African Wind Energy Programme
Spain / **Spanish Government**	Ministry of Industry, Tourism and Trade, Institute for the Diversification and Saving of Energy, Ministry of the Environment, other ministries, public authorities and civil society	Spanish Policy for the Support of Renewable Energy Sources
Sweden / **Swedish Energy Agency; Swedish Environmental Protection Agency; Swedish National Forestry Board**	Public-sector actors in Eastern Europe and Swedish public-sector actors, private industry	Supporting Energy Sector Reform in Eastern Europe
Switzerland / **Swiss Federal Office of Energy**	Swiss Federal Government, cantonal governments, industry associations and networks	"Swiss Energy" Programme
Switzerland / **Swiss Federal Office of Energy**	Swiss Federal Government, academia, research institutes and industry	Swiss R&D Funding for Renewables
Switzerland / **Swiss Federal Office of Energy**	Swiss Federal Government, ministries of Economics, Foreign Affairs and the federal offices of energy and environment	Promotion of Renewables in Development Aid
Switzerland / **Swiss Federal Office of Energy**	Swiss Federal Government, cantonal governments, power industry	Promoting Market Penetration of Renewables and Renewable Transport Fuels

Leading Actor(s)	Participating Actor(s)	Title
Tunisia / **National Renewable Energies Agency**	Government, private sector and international financial institutions	Incentives to the Private Sector to Invest in Developing Countries: Wind Energy
Turkey / **Ministry of Energy and Natural Resources**	Energy Market Regulatory Authority	Enactment of the Laws for (1) Utilisation of Renewable Energy Sources for the Purpose of Generating Electricity and (2)Geothermal Resources and Spring Waters
Turkey / **Industrial Development Bank of Turkey, Turkish Development Bank**	Ministry of Energy and Natural Resources, World Bank, Undersecretary of Treasury, Turkish Development Bank, Industrial Development Bank of Turkey, private investors	Renewable Energy Project under the support of the World Bank to supply credit to investors
Uganda / **Government of Uganda; Sweden** / **Swedish International Development Cooperation Agency**	World Bank	Supporting the Development of Institutional Capacity to Manage Rural Electrification in Africa
Uganda / **Ministry of Energy and Mineral Development**	Rural Electrification Agency, Uganda; ministries for Agriculture, Health, Education, Water, Telecommunication, Uganda, World Bank, AfDB, Energy Advisory Project/GTZ, Sida, NORAD, UNDP, JICA, private sector, Private Sector Foundation, local governments	Support of Renewable Energy Development in Uganda
United Kingdom / **Department of Environment, Food and Rural Affairs**	Central and local government, industry, business and commerce, individual consumers	Energy Efficiency: The UK Government's Plan for Action
United Kingdom / **Department of Trade and Industry**	Government, industry and other interested parties	Extension of the Profile of the Renewables Obligation from 2010/11 to 2015/16
United Kingdom / **Department of Trade and Industry**	Government administrations in Northern Ireland and Great Britain, energy regulation organisations, electricity suppliers in Great Britain and Northern Ireland, renewable generating stations	Renewable Obligation Certificates
United Kingdom / **Department of Trade and Industry**	Central and local government and regional funding organisations and industry	European Marine Energy Test Center
United Kingdom / **Department of Trade and Industry**	Departments of Environment and Transport, Crown Estate, Office For Gas and Electricity Markets	Round 2 Offshore Wind Farm Development in the UK

Leading Actor(s)	Participating Actor(s)	Title
United States of America / **Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy; U.S. Department of Agriculture**	National laboratories, universities, private sector, and other institutions	Advancing the Integrated Biorefinery
United States of America / **Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy; Sandia National Laboratory**	Other national laboratories, industry, universities, and other research institutions	Geothermal Electricity Market Cost Target
United States of America / **Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy; National Renewable Energy Laboratory**	Other national laboratories, industry, universities, and other research institutions	Solar Photovoltaic Electricity Market Cost Target
United States of America / **Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy; National Renewable Energy Laboratory**	Other national laboratories, industry, universities, and other research institutions	Wind Electricity Market Cost Target
United States of America / **The United States Federal Government**	Investor-owned utilities and other taxable entities generating renewable electricity	Renewable Energy Production Tax Credit
Vietnam / **Ministry of Industry**	Vietnamese Government	Developing Renewable Energy Policies and Promoting Electricity Supply to Remote Off-Grid Areas
Yemen / **Ministry of Electricity and Public Electricity Corporation; Ministry of Water and Environment and Environmental Protection Authority**	GEF, World Bank, USAID, UNDP, UNESCO, UNEP, UNIDO, GTZ, Government of Japan, private sector, NGOs, local councils and communities	Promotion and Expansion of Renewable Energies in Yemen

Section B: Actions and Commitments by the United Nations and other International Organisations, including International Financial Institutions

Leading Actor(s)	Participating Actor(s)	Title
African Development Bank / Sustainable Development and Poverty Reduction Unit	Regional member countries	ADB FINESSE Africa Programme
Association of Southeast Asian Nations; European Union	Organisations, institutions and companies from EU and ASEAN	EC – ASEAN Energy Facility (EAEF)
Basel Convention Secretariat – UNEP	UNFCCC, municipalities, donor parties, donor agencies	Global Partnership on Biowaste to Biofuels
European Bank for Reconstruction and Development	Private-sector investors and renewable energy project developers	EBRD Action Plan for Renewable Energy
European Investment Bank	Member states, partner countries, public and private business and financial sectors, European Commission	Renewable Energy Lending Objectives
European Investment Bank	Member states, partner countries, public and private business and financial sectors, European Commission	Promotion of the EU Environmental Technologies Action Plan
European Investment Bank	Member states, partner countries, public and private business and financial sectors, European Commission, other international financial institutions	European Investment Bank Climate Change Initiatives
Food and Agricultural Organization of the United Nations	UN Energy Unit, IEA, governments, research institutions, private sector	International Cooperation on Bioenergy
Global Environment Facility	GEF and its partners and member country governments	Data and Structured Analysis on Renewable Energy Markets, Policies and Use in Developing Countries
Global Environment Facility	International organisations	Finance for Developing of Markets for Renewable Energy in Developing Countries
Global Environment Facility	International organisations, NGOs	Consultation Forum on Renewable Energy
International Energy Agency	Governments of Denmark, France, Germany, Ireland, Italy, Norway and the European Commission	Establishment of a New IEA Implementing Agreement for Renewable Energy Technology Deployment

Leading Actor(s)	Participating Actor(s)	Title
South Pacific Regional Environment Programme, Global Environment Facility, United Nations Development Programme	Regional intergovernmental organisations in the Pacific, Greenpeace, WWF, NGOs, financial institutions, power utilities and private-sector institutions in the Pacific	Pacific Islands Greenhouse Gas Abatement through Renewable Energy Programme
United Nations Convention to Combat Desertification	Agence Nationale des Energies Renouvables, NGO Environnement et Développement du Tiers Monde, public and private institutions and NGOs	Combating Desertification in Africa
United Nations Economic and Social Commission for Western Asia	13 member countries from UNESCWA region	Disseminating Renewable Energy for Poverty Alleviation in ESCWA Member Countries
United Nations Economic Commission for Africa / Sustainable Development Division	African Development Bank, Development Bank of Southern Africa, Bank of West African Development, other African development financial institutions, other international development partners, UNEP, African Economic Communities	African Rural Energy Development Facility
United Nations Economic Commission for Latin America and the Caribbean; General Secretariat of the Andean Community	UNECLAC, General Secretariat of the Andean Community	Andean Programme for Energisation through Renewables
United Nations Economic Commission for Europe	UNF/UNFIP, French GEF, Norwegian Government, Italian Government, US EPA, US DOE, UNEP, UNDP GEF, the Regional Network for the Efficient Use of Energy and Water Resources	Energy Efficiency 21 Project Financing Mechanism
United Nations Educational Scientific and Cultural Organisation Programme on Renewable Energy; Forschungsverbund Sonnenenergie	National and international institutions, especially universities, research centres and specialised institutions concerned with the information, communication and cooperation of science, technology and human resources development for renewable energy	Open University for Renewable Energies
United Nations Environmental Programme and Intermediate Technology Development Group	Governments, NGOs, private sector, Regional Center for Remote Sensing and Mapping Nairobi, networks	Small Hydro Resource Development – Decentralised Power Supplies for Poverty Reduction
World Bank Group	World Bank Group client countries	World Bank Group – Renewable Energy and Energy Efficiency Scale-Up

Section C: Actions and Commitments by Stakeholders from Civil Society, the Private Sector and other Stakeholder Groups

Leading Actor(s)	Participating Actor(s)	Title
Action pour un Développement Equitable, Intégré et Durable	Ministries concerned, local authorities, development organisations, local trades people, Evangelischer Entwicklungsdienst, Germany, NC-IUCN Netherlands	Promotion of Renewable Energies in Cameroon and Central Africa
African Energy Policy Research Network / Foundation for Wood-stove Dissemination; Heinrich Böll Foundation Regional Office for East Africa	NGOs, government ministries, SMEs, academia, independent research organisations, regulatory agencies, community-based development organisation, rural energy NGOs, national electricity utilities, rural-based NGOs, parliamentary committees/bodies, donor organisations	The Role of Small and Medium-Scale Thermal and Mechanical Renewables and Other Energy Options in Poverty Alleviation in Africa
African Support Group	African governments and those of the North, regional and international institutions, civil society and private sector	Bio-diesel Initiative: Substitution of Oil Products in Transportation and Household Fuels
African Union of Producers, Transporters and Distributors of Electric Power	The power utilities of: Tunisia, Algeria, Angola, Zambia, South Africa, Lesotho, Mozambique, Zimbabwe, Malawi, Togo, Benin, Côte d'Ivoire, Senegal, Gambia, Ghana, Burkina-Faso, Nigeria, Niger, Cameroon, Chad, Gabon, Equatorial Guinea, CAR, Congo, DR Congo, Tanzania, Burundi, Rwanda, Uganda	Pilot Programme on African Cross-Border Villages Electrification by Means of Hydroelectric Power
Basel Agency for Sustainable Energy	Sustainable Energy Finance Initiative – UNEP Energy Unit, UNEP Finance Initiative, financial institutions including commercial banks, investment banks, multilateral development banks, and private investors	Transaction Support Facility
Center of Environmental and Development Studies of Cameroon at Maroua	Ministry of Environment and Forestry, Department of Economy and Rural Development, Agricultural University of Gembloux, Belgium, Institut für Solare Energieversorgungstechnik, Germany	Promotion of Renewable Energies in Northern Cameroon
Center for Appropriate Technology, Cameroon	Government of Cameroon, GTZ, local councils and schools	Improve Livelihood and Environmental Quality in Cameroon through the Use of Renewable Energy Technologies
Cities of Freiburg im Breisgau, Bremen, Bonn, Aachen; City of Pune, City of Pimpri-Chinchwad, City of Buchara	none	Local Renewables

Leading Actor(s)	Participating Actor(s)	Title
City of Bonn, International Affairs Department, Germany	Emilie Heyermann School, Germany, City of Bukhara Secondary School No. 4, Uzbekistan	SPICE: Schools Partnership to Improve the Conservation of Energy
City of Bremen, Germany	The Senator for Construction, Environment and Transport, regional and international partners	Promoting Offshore Wind-Energy Development and Regions
City of Cape Town, South Africa	The Darling Independent Power Producer, international and national financing and funding agencies, locally based marketing agencies, voluntary subscribers for renewable energy, solar heater manufacturers, city stakeholders	10% Target for Renewable Energy by the Year 2020; 10% of Households to Have Solar Water Heaters by 2010
City of Munich, Germany	NGOs, chambers and local institutions, German Federal Ministry for Environment, Nature Conservation and Nuclear Safety, Umweltbundesamt, Öko-Institut, Wuppertal-Institut, Deutscher Städtetag; Climate Alliance, Energie-Cités, Eurocities, Energy and Climate Task Force	Renewable Energy Sources and Rational Use of Energy
Clean Energy Group	The states of California, Connecticut, Massachusetts, Minnesota, New Jersey, Oregon, Pennsylvania and Wisconsin and other interested states and regional actors, foundations, clean energy financiers	Clean Energy Group and Clean Energy States Alliances; Clean Technology Implementation Network
Climate Alliance – Klima-Bündnis – Alianza del Clima e.V.; Climate Alliance of European Cities with Indigenous Rainforest Peoples	European local governments and local stakeholders, national coordinators and focal points of the Climate Alliance	Climate Alliance's Renewable Energy Programme to Mitigate Climate Change
Confederation of European Paper Industries	National confederations and their members	CEPI's Declaration of Intent on Renewable Energy Sources
Deutscher Naturschutzring e.V.; Bundesverband Windenergie e.V.	none	Basic Standards for the Establishment of Wind Energy
EC Baltic Renewable Energy Centre	National government, regional governments, local sustainable energy actors	National Renewable Energy Strategies in 25 EU Countries
E+Co Europe	Governments, NGOs, public and private companies and financing institutions, charitable foundations, bilateral and multilateral organisations, specialised programmes	Support Small and Medium Clean Energy Enterprises

Leading Actor(s)	Participating Actor(s)	Title
Elsam Kraft A/S, Denmark	The Royal Veterinary and Agricultural University, Denmark, Risoe National Laboratory, Denmark, Sicco K/S, Denmark, Agrol Biotechnologies Ltd., UK, Energia Hidroelectrica de Navarra S.A., Spain	Integrated Biomass Utilisation System
ENERCON	none	Wind Power and Drinking Water to the Developing World
ENERGIA – The International Network on Gender and Sustainable Energy	LIFE e.V. – Women develop eco-techniques, Germany, The Pacific Energy and Gender Network, Intermediary Technology Development, Group, GEWNet, Centre for Rural Technology, Nepal, GRATIS, Ghana	Mainstreaming Gender into Energy Policy, Planning, and Programmes at the International, National, Regional and Local Level
Environmental Investment Partners, Poland PP Investments, as fund manager		Central European Renewable Energy Fund
European Renewable Energy Council	European Wind Energy Association, European Photovoltaic Industry Association, European Renewable Energy Centres Agency, European Biomass Industry Association, European Small Hydropower Association, European Solar Thermal Industry Federation, various partners in South America	South American Renewable Energy Council
Eskom, South Africa	Eskom, South African Government, CSIR	South African Renewable Resource Database and Electrification Planning Tool
Eskom, South Africa	1) + 2) none 3) Development Bank of Southern Africa, Stirling Energy Systems 4) University of Fort Hare and the Melani Community in the Eastern Cape Province	1) Concentrating Solar Power Feasibility Study 2) Eskom Klipheuwel Wind Demonstration Facility 3) Solar Dish/Stirling Demonstration Project 4) Biomass Gasification Demonstration Project
European Business Council for Sustainable Energy (e5)	Local and national governments of the 25 EU countries and emerging markets, renewable energy investors, consultants in management, business administration, marketing and sales, public relations, and sustainable energy/information technology, financial and legal advisors, sustainable energy, technology, and entrepreneurial/SME associations	e5 Sustainable Energy Accelerator

Leading Actor(s)	Participating Actor(s)	Title
European Business Council for Sustainable Energy, UK Business Council for Sustainable Energy, US Business Council for Sustainable Energy, Australian Business Council for Sustainable Energy	European Climate Forum	Initiative to Promote Investment Security for Renewable Energy
Experimental University Ezequiel zamora of the Occidental Plains, Venezuela's Bolivarian Women Association Rigoberta Menchú	Global Education and International Cooperation Group at the Technical University Berlin, National Institute for Rural Development	Renewables Energy in Indigenous Regions and Other Isolated Communities
Federation of German Consumer Organisations; Verbraucherzentrale Bundesverband	8 European consumer organisations, about 20 European schools, German Federal Ministry for Environment, Nature Conservation and Nuclear Safety	Yomag.net – European E-zine by and for Young Consumers
Fraunhofer Institute for Solar Energy Systems ISE, Germany	International institutions involved in renewable energy research and development or monitoring	International Science Panel on Renewable Energy
GNESD Secretariat	Members constituted of 20 Centres of excellence located in Africa, Asia, Latin America, EU and US, UNEP, governments, intergovernmental organisations and other partners	Assessment of Priority Options for RETs Contribution to Poverty Alleviation in Selected Sub-regions.
Institute for Research in Sustainable Energy and Development	M&E Consulting Engineers, Nairobi, Kenya; Ministry of Energy, Kenya Sugar Board, Sugar Factories, Sugar Farmers	Promotion of Efficient Industrial Biomass Cogeneration for Electricity Production
International Solar Energy Society / German Section Deutsche Gesellschaft für Sonnenenergie e.V.	ISES from: Austria, Belgium, Bulgaria, Cyprus, Europe, Finland, France, Greece, Israel, Italy, The Netherlands, Slovenia. Solar Energy Societies from: Czech Republic, Spain, Denmark, Hungary, Norway, Poland, Romania, Portugal, UK. Solar Energy Association of Sweden, Austria Solar, Arbeitsgemeinschaft Erneuerbare Energie, Technologie Transfer Zentrum Bremerhaven, Deutsches Institut für Gütesicherung und Kennzeichnung e.V., 40 SME and corporate partners, 12 financial and insurance companies	Quality Assurance Standards and Guidelines for Solar Technology
International Energy Initiative	Stakeholders, including private-sector decision-makers, national policymakers, decision-makers at multilateral development agencies	Implementing Fuels for Clean Cooking in Developing Countries

Leading Actor(s)	Participating Actor(s)	Title
International team for capacity building in the promotion of sustainable development, Technical University of Berlin, Investigation and formation network on sustainable development, University of Sancti Spiritus	Several Cuban universities, NGO CUBASOLAR, local governments of the selected communities, institutions linked to the development of renewable energy in participating countries such as Germany, Cuba, Nicaragua, Haiti and Venezuela	Network South-South-North for the Formation of Promoters of the Renewable Energies of Poor Communities in the Countries of the Third World
JEA – The Ecological Youth of Angola	Ministries for Youth Affairs and National Youth Councils of Angola, Cape Verde, Guinea Bissau, Mozambique, Sao Tome and Principe, TINIGUENA, Friends of Nature Association, LINK, Clean Environment for Islands, UNDP Capacity 2015 Initiative, UNEP TUNZA Youth Advisory Council, UNESCO Youth Unit, IUCN Commission on Education and Communication, SADC Regional EE Programme, Environmental Education Association of Southern Africa, Angolan Business Council for Sustainable Development, ChevronTexaco Angola Office	World Youth Partnership for Communication, Education and Public Awareness on Renewable Energies
Latin American Parliament; Sustainable Chile Programme, Sustainable South Cone Programme	none	Parliamentary / NGOs Call for Action and Commitments of the Latin American Parliament
North Rhine-Westphalia, Germany	Industry, SMEs, research and development institutions, universities, local authorities, communities	Renewable Energy and Energy Efficiency Programmes of North Rhine-Westphalia
North South Initiative e.V., SUDERETA	Government of Tanzania, Ministry of Energy and Minerals, North South Initiative, Sustainable Development through Renewable Energies in Tanzania, Tanzania Traditional Energy Development Organisation, Savings and Credit Co-operative Union League of Tanzania, Bagani	Control Desertification and Improve Livelihood in Sub-Saharan Countries through the Promotion of Vegetable Oil as Prime Source of Energy
OAO "Derevoob-tabotchik", OOO Enteks, Russia, Ec Bio-energie Heidelberg GmbH, Germany	Ministry of Energy, Russia, Russian Parliament; German Ministry of Economics and Labour, German Energy Agency	Cogeneration Plant with Bio-pellet Production
renergys GmbH, SES Ltda.	Bioenergy Ltda., Eólica Tecnología EPF Ltda.	Wind Farms in North East Brazil

Leading Actor(s)	Participating Actor(s)	Title
Renewable Energy & International Law Project, Renewable Energy and Energy Efficiency Partnership, Baker & McKenzie's Global Clean Energy & Climate Change Practice, and Yale University's Center for Environmental Law and Policy	Partners: NAFTA Commission on Environmental Cooperation, IEA, Sustainable Energy Authority, Victoria, Aus., UNEP, European Wind Energy Association, EU Directorates General, IUCN – World Conservation Union, University College, London; Advisors: US Department of Energy, UN, European Renewable Energy Council, US EPA, Federal Ministry for the Environment, Germany, National Renewable Energy Lab, US, Natural Resources Defence Council, Environmental Finance, Organisation of American States, University of Dundee, American Council on Renewable Energy, Kuhbier Law Firm, Brussels, Adelphi Research, Berlin, George Washington University, D.C, Climate Change Capital, UK	Promoting Renewable Energy through International Law
Russian Geothermal Energy Society	JC Nauka, JSC Geotherm, administration of Krasnodar Kraj, administration of Stavropol Kraj, municipal heat-supply companies, Geothermal Association of Germany, international financial institutions	Public-Private Partnership for Utilisation of Geothermal Resources in the Russian Federation
Siemens AG Afghanistan Branch	Government, private investors, NGOs	Awareness of the Government and Private Investors of the Use of RE in Afghanistan
Solsuisse GIE, Timbuktu, Mali; ecos, Basel, Switzerland	Paix et Progrès, Timbuktu; Sundance, Timbuktu; Ministère des Mines, de l'Energie et de l'Eau AMADER, Mali; Wirz Solar GmbH, Switzerland	Good Energies for Development in Mali: PPP to Develop Solar Energy and Solar Water Pumping
Tanzania Traditional Energy Development and Environment Organisation	East African Energy Technology Development Network, regional energy NGO, Kenya, Uganda and Tanzania; Tanzania Solar Energy Association, energy ministries from Kenya, Uganda and Tanzania	Integrated Renewable Energy Services for Poverty Reduction and Environmental Conservation Initiative for the East African Region
Trans-Mediterranean Renewable Energy Cooperation	Trans-Mediterranean member countries	Large Scale Solar Thermal Power and Desalination as a Joint Development Effort by North Africa, the Middle East and Europe
Triodos International Fund Management BV	Funders: bilaterals, multilaterals, foundations, private sector	Triodos Renewable Energy for Development Fund
Region of Tuscany, Italy	Italian Ministry of Environment	Italian Center for Geothermal Energy Promotion and Development

Leading Actor(s)	Participating Actor(s)	Title
Unst Partnership Ltd., United Kingdom	Local governments, local enterprise companies, community development agencies, further education institutions, Local Renewable Energy Partnerships	Community Hydrogen Opportunities in Clean Energy Solutions Programme
Volkswagen AG, DaimlerChrysler AG, Germany	none	Biomass-Based SunDiesel
Walloon Government, Belgium	Regional, provincial, local authorities	Public Procurement of Certified Green Energy
World Energy Council / Senegalese and Egyptian National Committees	WEC's national members representing local utilities, industries, institutions, and government agencies in Egypt and Senegal; WEC's member companies, overseas development agencies and industry ministries in the donor countries, WEC Secretariat	World Energy Council's Centres of Excellence for Sustainable Energy in Egypt and Senegal
World Energy Council Renewable Energy Committee	WEC national member committees countries, energy industry representatives, government representatives from: Egypt, Senegal, Slovenia, Turkey and Venezuela, international organisations: World Renewable Energy Network and International Hydropower Association	WEC Handbook on Renewable Energy Projects
World Wide Fund for Nature	Austin Energy, USA; Burlington Electric Department, USA; EWS-Schönau GmbH, Germany; Naturstrom AG, Germany; NaturPur Energie AG, Germany; NaturEnergie AG, Germany; Sacramento Municipal Utility District, USA; Stadtwerke Heidelberg AG, Germany	WWF Power Switch! Campaign – from Coal to Clean – Pioneers' Commitments on Renewable Energies
World Wind Energy Association	WWEA member organisations, national governments, World Bank and UNEP, developers, financiers, local communities, environmental NGOs and further stakeholders	Setting Up Sustainability Guidelines for the Improved Development of Wind Energy Projects

Policy Recommendations for Renewable Energies

The document "Policy Recommendations for Renewable Energies" is one of the key outcomes of the International Conference for Renewable Energies, held on 1 – 4 June 2004, in Bonn, Germany. The document is based on the current understandings on policies and decision-making designed to promote renewable energies. It is based on experiences and lessons learnt from policies, programmes, projects and other initiatives in the public and private sectors worldwide.

The diversity of challenges, resource opportunities, as well as financing and market conditions among and within regions and countries implies that different approaches are required. Thus, these non-binding recommendations provide decision-makers with a menu of policy options based on available experience and knowledge.

Contents

List of acronyms

APEC	Asia Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CSD	Commission on Sustainable Development
CSR	Corporate Social Responsibility
ECA	Export Credit Agencies
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GEF	Global Environment Facility
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
IAEA	International Atomic Energy Agency
IEA	International Energy Agency
IFI	International Finance Institutions
IIIEE	International Institute of Industrial Environmental Economics
IPP	Independent Power Producer
JI	Joint Implementation
MERCOSUR	Mercado Común del Sur
NAFTA	North American Free Trade Agreement
NGO	Non-governmental organisation
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
PoI	(Johannesburg) Plan of Implementation
PPP	Public Private Partnership
R&D	research and development
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
WEHAB	water, energy, health, agriculture, biodiversity
WHO	World Health Organization
WMO	World Meteorological Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization

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1. Policy Background

The development and diffusion of renewable energy resources and technologies will help realise important economic, environmental and social objectives in the early decades of the 21st century. Renewable energies are a critical element for achieving sustainable development.

The World Summit on Sustainable Development (WSSD) 2002 agreed on a comprehensive agenda on energy for sustainable development. Guided by the overarching objectives of sustainable development and poverty alleviation, governments agreed to improve access to "reliable, affordable, economically viable, socially acceptable and environmentally sound energy services and resources", to increase the use of renewable energies, to enhance energy efficiency, and to provide cleaner liquid and gaseous fuels.

The *renewables 2004* conference is part of the international response to these challenges. It is in the context of a broad and comprehensive agenda that policy recommendations are being offered to address the crucial element of renewable energies.

The benefits provided by renewables will differ among and within countries, depending on the local situation, options, and concerns. Among the benefits that can flow from increased use of renewable energy are: enhanced security of energy supply, reduced threat of climate change, stimulation of economic growth, jobs creation (often in rural areas), higher incomes, poverty reduction, improved social equity, and protection of the environment at all levels. Renewables can also improve access to energy services by providing reliable and affordable energy supply for people in rural and urban areas. Increased utilisation of renewable energy should be seen as a means to such ends, not as an objective per se.

With these benefits in mind, Member States of the United Nations agreed at the WSSD: "With a sense of urgency, substantially (to) increase the global share of renewable energy sources with the objective of increasing its contribution to total energy supply".

Renewable energy flows are very large in comparison with commercial energy demand. Renewable energy can be increasingly important for providing many key energy services such as lighting, heating, cooling, safer and healthier cooking, mechanical power, transport, and communication. Technologies exist to tap the renewable energy flows at costs that are often competitive with conventional energy sources if the evaluation includes external costs and benefits, and subsidies to conventional energies are eliminated.

As developing countries work to expand and modernise their energy systems, and industrialised countries work to replace their ageing systems and meet rising demand, societies face a unique opportunity over the next few decades to increase investments in renewable energies. Over the next 30 years, global investments in energy-supply infrastructure are projected to be $16 trillion. The opportunity is to orient a large and increasing share of these investments towards renewable energy, in order to advance the transition to a global energy system for sustainable development. On the other hand, if these investments continue as business as usual, mostly in conventional energy, societies will be further locked into an energy system that is incompatible with sustainable development and that further increases the risks of climate change.

Due to effective renewables policies enacted in a few countries, global growth rates for some renewable energy technologies have exceeded 20 percent per year over the past decade. Such strong growth has rapidly driven down costs through learning, economies of scale, and technology improvements. These advances will be sustained and expanded only if the policies that underpin those growth rates are continued and adopted in many more countries. In fact, increasing the use of renewable energies is largely an issue of policy.

2. Policy Priorities for Renewable Energy

To adopt the policy changes and mobilise the capital that is required to achieve the full potential of renewable energies, decision-makers – in government, as well as the private sector, and civil society as a whole – must undertake the necessary actions to incorporate the goals of sustainable development into their policies. Three main priority areas for renewable energy policies are discussed below:

I. establishing policies for renewable energy markets;
II. expanding financing options; and
III. developing the capacity required.

These priority areas reflect the discussions at the International Conference for Renewable Energies. The challenges in these areas are described in Sections 2.1 through 2.3, and the actor-oriented policy options are provided in Sections 3 through 5.

2.1 Establishing Policies for Renewable Energy Markets

A sustainable future can be achieved only if markets function effectively and efficiently. Thus, sound economic principles and policies are important. In the long term, it is essential to establish a level playing field in the energy market, free of subsidies, and to internalise external costs.

There are two major conditions that bias current markets against renewables:

I. subsidies to conventional energies and
II. lack of accounting for external costs in market conditions, especially prices.

Globally, subsidies for conventional energies – estimated to exceed $200 billion annually – make it significantly more difficult for renewable energy to achieve higher market shares and attain the necessary economies of scale. External costs – including health, safety, security, and environmental – are typically much larger for conventional energies than for renewable energies, and the limited accounting of these costs in the market place works strongly against renewables. At the same time, renewables provide benefits that are not reflected in energy policies and market conditions, including increased employment, reduced import dependence, and reduced burdens on foreign exchange. The market place should be corrected to reflect the full costs and benefits of all energy options, a process often referred to as "levelling the playing field".

In addition to levelling the playing field, a favourable climate for renewables is needed to overcome high initial costs and additional market distortions (such as lack of information, higher risk perception) and to mainstream renewables in the market place. While a few nations have started to address this, most countries still lack the enabling policy framework required to advance renewable energies. Clear overall goals and targets for advancing the use of renewable energy help to create an environment that is conducive for long-term investments and to provide planning certainty for industrial stakeholders and consumers. Clear rules, roles and responsibilities must be defined at every stage in the supply chain that affects renewable energy to ensure that individual and institutional consumers receive the full benefit and improved level of services that renewable energy can provide. No single policy instrument is appropriate for every application, energy carrier, branch or sub-sector, or socio-political situation. Therefore, an appropriate and effective mix of policy instruments becomes essential. This is particularly crucial for new market entrants – such as many renewable energy technologies – to achieve the anticipated technology improvements and cost reductions that are possible via mass production and learning.

Institutional obstacles and existing policies can severely limit opportunities for investment in both grid-connected and off-grid renewable energy technologies. For example, in many countries renewable energy development is subject to an institutional and legal patchwork, with many different and often contradictory laws, regulations, policies and administrative procedures.

Recent experience suggests that the need for effective and comprehensive regulations increases with restructuring, liberalisation and privatisation in the energy sector. Such regulations are particularly important to cushion economically vulnerable populations and to safeguard the environment from the negative impacts of market transformations.

The way in which energy is produced and used affects almost every sector of the economy and should

be considered in all policy areas. New and coherent policies should be adopted in the relevant sectors. For example, building codes and standards could be designed to promote the integration of renewable energy in building designs and planning processes. Modern production and use of bioenergy would benefit from being incorporated into policies relating to land-use planning, agriculture, forestry, and waste treatment. The type and amount of fuels used for transportation – the fastest growing energy demand sector – can be strongly influenced by fuel policies, technology standards and urban planning. Policies that promote renewables also encourage industrial development and innovation, which in turn can accelerate renewable energy technology development and transfer.

Policies and regulations that support equal access for women to energy services, education, technology, and financial instruments are important for enabling them to make informed choices about energy.

Governance issues, including respect for property rights and contract enforcement, are also critical, in parallel with transparent and enforced national and international anti-corruption policies and regulations.

2.2 Expanding Financing Options for Renewable Energy

All renewable energies, with the exception of biomass, have zero fuel costs and low operating costs. At the same time, they do have relatively high up-front capital needs, so finance-related risks and barriers hinder renewable energy investments.

In level markets, the financial sector and private investments would be expected to provide the necessary finance for renewables. Special policies are needed to overcome the initial costs in the early stage of a technology. In addition, government polices are also required to ensure that many other factors are taken into account in competitive markets, such as the projected costs of climate change, the costs of fuel imports and fuel price volatility, and other environmental, social, economic and security impacts of various technology options. Full cost accounting for projects would incorporate such factors on a life-cycle basis, which would improve the attractiveness of investing in renewable energy projects.

In general, new technologies tend to be more expensive than mature technologies that have benefited from many years of learning, technology advancements and economies of scale. Thus, it is important to enact policies to reduce the costs of renewable energy through increasing cumulative investments in renewable energy technologies as well as investments in research and development (R&D).

The cost of generation and distribution (if needed) of renewable energy varies widely. Some mature technologies can already compete with fossil-fuel options; however, they all face problems such as high transaction costs and restricted access to capital. Innovative financing and contracting schemes can be instrumental in overcoming these barriers.

Various mechanisms exist to significantly reduce investor uncertainties and enable investors to recover higher incremental costs through (slightly) higher customer prices. The additional costs associated with renewable energy may be distributed among all or parts of the customer base. Such mechanisms include feed-in tariffs (pricing systems) and renewable portfolio standards (quota systems), which have already been enacted in many industrial[1] and some developing[2] countries.

In developing countries, in addition to domestic capital and some foreign direct investments, specialised funds – such as the Global Environment Facility (GEF) – encourage further investments in renewable technologies by covering the incremental costs of such projects. Certified Emission Reductions (CERs), which have derived from the Clean Development Mechanism (CDM), are another option for attracting international capital flows to developing countries.

Implementation of small-scale renewable energy projects – whether electricity, biogas or heat – requires specialised financial tools, vehicles and measures targeted to the specific project conditions. Several options, including dedicated funds, bundling of investments with services, and customer-based investments, have proved effective and deserve further promotion.

Emerging evidence in developing countries suggests that micro-credit linked to micro-enterprises, particularly those owned and operated by women, can have considerable success in both promoting renewable energy use and meeting poverty reduction goals. Consumer financing mechanisms to enhance consumers' ability to pay for renewable-generated energy services have been instrumental in many situations.

[1] For example Denmark, Germany, Spain, Sweden, and the United Kingdom.

[2] For example Argentina, Brazil, China, Costa Rica, and Thailand.

This calls for a more inclusive strategy that moves beyond the financing of stand-alone energy supply and towards integrated supply- and demand-side financing. Similar strategies to include renewables in non-energy sectors – such as water supply, sanitation, health, education and communication – can significantly enhance energy access. Overall, financing strategies for renewables should address the financing needs of both suppliers/vendors and different categories of end-user consumers in a balanced manner.

The introduction of modern renewable energies[3] in rural areas – where people rely largely on the traditional use of biomass and have limited purchasing power – should be linked to policies that promote rural development. Renewable energy can play an important role in rural income-generation activities that require process heat (e.g. low temperature water-heating for clothes-dying) and cooling (e.g. refrigerators for food preservation and storage of medicines/vaccines in health facilities). Here, national and international efforts are needed to create renewable energy markets where individual households, small businesses, and communities can play a role in local financing.

2.3 Developing Capacities for Increased Use of Renewable Energies

In order to increase the use of renewables, strengthened capacity is particularly important in three main areas:

I. development of a well-trained workforce to manufacture, install, operate and maintain technology, business, and regulatory systems,
II. design of a coherent and functioning institutional framework, and
III. provision of available, appropriate, and affordable technologies.

Capacity development in all three areas is essential for the creation of viable renewable energy markets, and should be viewed in a broad sense.

Indigenous know-how and experiences, mainly in the case of dispersed rural populations in developing countries, should be carefully evaluated and incorporated into educational efforts, R&D, and technology transfer.

It is essential to increase public awareness of the benefits and applicability of renewables as a means to achieve sustainable development goals, including social and economic betterment through improved access to energy services.

Research and development (R&D) for advancing the renewable energy technologies, business models, and policies are necessary for determining the optimal applications for renewables in market environments and need to be significantly strengthened. Past development of demonstration projects through private and public cooperation has proved an effective means to move forward from R&D. The efficient cooperation of public and private research institutions and private businesses for both R&D and technology transfer is essential and can lead to significant progress.

R&D is also needed to address the social dimension of renewable energy. For instance, numerous cases of innovation and successful renewable energy projects involving women, entrepreneurs and end-users are available across the developing world. An important part of capacity development for renewable energy market transformations is to identify and disseminate specific "best practices," while furthering R&D to replicate and scale-up such experiences.

Given the necessity to advance energy for sustainable development in order to reach the Millennium Development Goals, an increasing share of Official Development Assistance should be allocated to development of capacity to address issues related to energy for sustainable development.

[3] Particularly biomass converted to modern energy carriers such as biogas, other fuels or electricity.

3. The Role of National Governments

National governments and parliaments are responsible for the formulation of policies that support effective and efficient markets in general.

The objectives and principles for the development of renewables discussed above present a number of challenges. These challenges differ among and within countries depending on local conditions, options and concerns. Similarly, the approaches preferred will vary. In most situations in industrialised countries, in economies in transition, and in developing countries, the elements below are important in order to increase the role of renewables:

Develop an overall energy policy that emphasises renewable energy and fulfils sustainability objectives: Promotion of renewable energy and the need to meet sustainable development objectives should be incorporated into each country's general energy framework, based on national renewable energy resource evaluations. The desire to advance renewable energies also needs to be reflected in the policies of many other sectors, including transportation, healthcare, agriculture, construction, and education. This needs to be done in broad co-operation and stakeholder participation.

Formulate clear goals and targets for renewables: Governments should formulate clear targets (incl. target dates), strategies, and implementation plans based on national renewable energy resource evaluations in all relevant sectors, and based on analysis of how increased use of renewables could help fulfil national sustainable development objectives.

Establish transparent market conditions that encourage investment: Market transparency is essential to ensure participation of the private sector and for successful markets in general. National markets, which are always framed by government policies, need transparent and clear price and/or tariff structures that reflect full costs through the entire costs of production. Further, because a high degree of stability and predictability is prerequisite for any business involvement, it is important to assess and, if necessary, modify the existing market framework to ensure maximum stability and certainty. All subsidies relevant to energy should be continually monitored and publicised.

- *Establish a level playing field:* The market place is biased against renewables as a result of long-standing subsidies to conventional energies and a lack of signals in the market place to incorporate external costs. These biases should be overcome through economic or regulatory means. Governments agreed at WSSD to review the situation and take appropriate corrective action through subsidy reductions or the provision of balancing subsidies to renewable energy. In addition, governments should examine and revise licensing procedures and import regulations to ensure that they are not biased against renewables, and should address the current lack of adequate technology standards. Such policies generally reflect the needs of the conventional energy system based on large-scale power plants, and monopolised grids, and thus often act as barriers to the greater development and use of renewable energy.
- *Address the high cost of new renewable energy technologies:* Temporary and gradually declining subsidies for renewables are essential to develop markets for these new technologies. Policy options include tax credits, grants or rebates, and long-term low-interest loans, combined with renewable electricity pricing or quota systems. In general, performance-based subsidies are preferable as they reward the desired outcome – production of energy from renewables to enhance sustainable development. However, investment-based subsidies can be more appropriate where technologies are still maturing and costs are high, and should be tied to technology standards. Subsidies should follow pre-established rules that are clear and transparent to all parties, and provide strong incentives for cost minimisation.
- *Create temporary incentives:* Pricing and quota systems are the two main types of regulatory policies available to promote renewable energies in the market place. Under pricing laws, governments oblige electricity utilities to guarantee renewable energy producers fixed, minimum prices over a certain time period, often with declining tariffs to reflect expected cost reductions. With quota systems, governments set political targets – typically by mandating a minimum share of capacity or generation to come from renewables – and let the market determine prices through certificate markets and/or bidding systems. Quota systems can

be used off-grid as well – for example, for the introduction of biofuels. The costs of both systems may be covered by additional charges to electricity consumers or by taxpayers. To date, for on-grid electricity, pricing systems have proved highly successful in driving market growth and attracting finance. The experience with quota systems is more limited; however, early signs show that these systems are proving effective.

Integrate renewable energy issues into non-energy sector policies and cross-sector issues: Policies enacted in a range of sectors affect national and international energy systems. Thus, in order to implement coherent and effective policies, it is necessary to integrate renewable energy-related issues into non-energy sector policies and cross-sector issues. The most important policy areas for mainstreaming renewables are agriculture/ forestry, transport, economic development, poverty alleviation, education, urban and land use planning (including solar architecture), and infrastructure development.

Increase public awareness of the potentials, costs, and benefits of renewables: Governments can support this through public awareness campaigns, formal education programs, and other measures.

Promote the development of human capacity for renewable energy development: Governments should revise educational agendas and redirect professional training to incorporate renewables. In both the production and consumption of energy, a shift towards a sustainable system requires targeted action directed at professionals and consumers. Educators in a wide range of disciplines in schools and colleges need enhanced knowledge of the cross-linkages between renewables and their particular subjects, ranging from healthcare, poverty alleviation and education, to architecture and construction. Higher academic and professional training institutions have key roles to play in bringing renewables into the mainstream by supplying appropriately skilled professionals through re-tailored, or new, teaching programmes. Dedicated staff and professionals are needed to develop policies and programmes, plan projects, finance, regulate, manage, install and maintain future renewable energy systems. Equally important, knowledgeable operators, including women, are needed to acquire, operate and maintain decentralised systems at the household and community levels. Chambers of Crafts and Commerce, and local renewable energy promotion agencies should become strongly involved in training people in related businesses.

Develop enabling institutions: Strong public institutions at the national level are essential to set priorities, plan, and establish policy and regulatory agendas to encourage renewable energy markets. Joint policy-making and priority setting between energy ministries and rural development, health, education, water, environmental, and other ministries helps to advance the case for renewables. National agencies, including centres of excellence and research institutions, are needed to carry out country-specific research, data collection and analysis (including gender disaggregation), training, education, and to provide technical support to respective ministries.

Additional Policy Options

Use government's power to set the agenda and guide the work of international organisations: The United Nations system, development banks, and regional organisations should all become strong actors in advancing the use of renewable energy for sustainable development. Efforts and instruments to foster the use of renewable energies should include safeguards against market distortions, especially export subsidies and import duties.

Utilise the Kyoto Protocol mechanisms: The Protocol's mechanisms offer significant opportunities for advancing renewables. In the case of joint implementation (JI) and the Clean Development Mechanism (CDM), renewable energy projects would also support the development objectives of participating countries.

Strengthen global cooperation on renewable energies: The WSSD agreements need to be monitored in the broader context of advancement towards sustainable development and fulfilment of the Millennium Development Goals. The CSD process should place clear emphasis on the promotion of renewable energies. A regular exchange of information regarding programming experience, target setting and evaluations between different countries would support rapid progress and reduce the risk of mistakes.

Strengthen regional cooperation in the field of renewable energy: Experience proves that regional institutions and organisations (e.g. EU, the United Nations

Regional Commissions, ASEAN, MERCOSUR) can provide important political leadership. They can show a common way forward and create economies of scope and scale by integrating markets for renewable energy technologies and related services, and facilitating technology transfer. National governments need to act as the main drivers of such developments.

Secure grid access for renewables: Power system regulations should guarantee grid access for renewable electricity under transparent conditions. Governments have the role of providing favourable conditions through the use of policies like pricing laws with feed-in tariffs or quota/green certificate markets. The cost of these systems may be distributed over electricity customers rather than taxpayers. Where politically feasible, higher rates paid by electricity consumers can also help to generate a revenue stream to support investment subsidies for the poor who lack access to energy services altogether. Governments need to enact transparent and efficient procedures for obtaining the permits necessary for grid access, as such procedures are important for investors.

Support renewable energy technologies for heating and cooling purposes: Heating and cooling are often neglected in energy policies, but they represent a large share of energy consumption in most countries. Increased use of renewable energies in buildings offers significant economic potential. Appropriate regulations such as building codes and energy-related standards can re-enforce financial support measures to accelerate the integration of renewable energy technologies in the construction sector.

There is also a need for comprehensive policies and measures that address heating and cooling services in existing buildings – in private houses (e.g. passive solar space heating and solar water heating), in the government and service sectors, and in industry as well. Renewable energy can play an equally important role in rural income-generation activities that require process heating (e.g. low temperature water-heating for clothes-dying) and cooling (e.g. refrigerators for food preservation and storage of medicines/vaccines in health facilities).

Policy Options Related Primarily to Industrialised Countries and Economies in Transition

Increase funding for renewable energy R&D: IEA member governments allocate only 8 percent of their energy research and development funding to renewable energies. Here governments have an opportunity to strengthen renewable energies by reversing the ratio of funds allocated for renewables versus those provided for conventional energy R&D. Demonstration projects in cooperation with the private sector should be encouraged as well.

Focus bilateral and multilateral development assistance (ODA) on catalytic funding of renewable energy programmes: Capacity building and catalytic financial leverage to extend energy services from renewable energy sources are key priorities. They should be provided in parallel with the creation and extension of micro-finance schemes that target consumers and small-scale businesses. Governments must take care to encourage, rather than undermine, the development of markets through the use of such subsidies, particularly with regard to renewable energy technology exports to developing countries. Public-private partnerships are a successful means for developing such markets and should be further expanded.

Promote renewables through Export Credit Agencies (ECA): The public promotion of exports through the provision of credits or guarantees by ECAs can help mobilise private financing for renewables. ECAs should become more active in building industry awareness about renewable energy investment opportunities. Specifically, it is essential to establish standardised and simplified procedures for small-scale projects so as to reduce transaction costs. It is also essential to encourage long-term contract durations for renewables (e.g. at least 15 years) and more flexible modalities (e.g. flexibility in repayment terms; liberal treatment of local costs – for example, a higher share than currently allowed under the OECD Arrangement) to adjust to the variety of renewable energy projects.

Utilise the power of public procurement: In most countries, the national government is the largest single energy consumer and should use its position to advance renewables by creating guaranteed demand for renewable energy and technologies over a given period of time. Large-scale and long-term government purchases of renewable energy and technologies would help pro-

vide stability and certainty in the marketplace, attract investors, set an example, and increase awareness about renewable energy, while also reducing perceived risks for investors.

Policy options related primarily to developing countries

Provide access to cleaner cooking fuels: Biomass resources can be used through modern conversion technologies to provide cleaner and higher value-added fuels to support both cooking and industrial processes. The impact of implementing improved biomass technologies and biofuels is particularly important for women. Such technologies and fuels can reduce the negative social and health impacts of cooking, and can expand the economic opportunities in women's heat-intensive micro-enterprises.

Provide access to electricity: The electrification of rural areas in industrialised countries was made possible through government support and cross-subsidies among electricity customers. Similar approaches deserve consideration in developing countries, where rural electrification remains a major challenge. Some recent models for grid extension and for installation of decentralised renewable power projects are based on public-private partnership approaches. Promising approaches are emerging that support rural entrepreneurs with a range of services – including training, marketing, feasibility studies, business planning, management, financing, and linkages to banks and community organisations – as means to expand access to energy services with renewable energy.

Make use of new financing tools: To attract private-sector capital to renewable projects, governments should extend public-private partnerships, and develop and use micro-credit schemes. They should also encourage the creation of financial tools targeted to third-party and customer financing for off-grid renewables, and support insurance schemes for all renewable energy investments. In addition, access to and use of funds for renewable energies through carbon financing should be strengthened. Micro-credit lending can also be an effective tool for supporting investors in establishing renewable energy and service delivery systems, and can expand consumer access to both grid and non-grid connected renewable electricity.

4. The Role of Intergovernmental Organisations

Intergovernmental organisations can recommend policies to national governments and can provide support for renewables on a regional and global scale. In general, their functions should be to focus multilateral policies and activities to significantly strengthen the role of renewable energy and to enhance cooperation among all players, including the private sector. Such a focus must promote those renewable energy options that best fulfil the needs of the end-users in a cost-effective, socio-economically equitable, and environmentally sustainable manner.

The United Nations system should define clear responsibilities for work on renewables: Various United Nations bodies, including FAO, IAEA, UNDP, UNDESA, UNEP, UNESCO, UNFCCC, UNIDO, WHO, and WMO, deal with renewables by offering advice and developing capacity. Here, the pooling of information and financial support must be better coordinated. Further, the UN Resident Coordinator system should specifically address the role of renewable energy in meeting development objectives in all sectors that receive UN system support at the country level.

The WTO rules should promote renewables: This refers to international trade in renewable energy as instruments for sustainable development – for example, bioenergy/biofuels, renewable energy technologies, and trade in green certificates among those electricity markets where significant targets have been set to expand the use of renewables. Governments, the WTO, and regional organisations like NAFTA, EU, and ASEAN should proceed rapidly to reduce trade barriers for renewable energy technologies as well as electricity and fuels from renewable sources. However, recognising that a key motivation for developing and industrialised countries to expand the use of renewable energy technologies is to reduce their import dependence (primarily fossil fuels), the removal of barriers to renewable energy should be accompanied by concrete measures for rapid technology transfer so as to reduce dependence on foreign technology. Negotiations on a multilateral energy subsidisation agreement could also help to level the playing field.

Include funding to renewables projects in development cooperation programmes: Renewables should receive funding through programmes that address poverty alleviation, rural development, education, healthcare, agriculture, water supply, sanitation, transport, and construction (passive solar heating and cooling, etc.).

Increase leverage for renewables investment through international finance institution (IFI) lending: IFIs like the World Bank and the regional development banks should encourage renewable energy investments in developing countries and in economies in transition. IFIs should strengthen their expertise and continue expanding their investments in renewables.

- Establish clear objectives for renewable energy: Given the huge investment needs and the leverage of IFI policies, IFIs should establish clear objectives and assign renewables a more prominent role in their strategies and portfolios, thereby sending strong signals to the private-sector. Grants and loans for renewables leveraged through IFI investments would attract private-sector financing, for example in PPP schemes. IFIs should also include renewables in existing programmes to alleviate poverty, targeting the rural poor in particular. In addition, IFIs should give more attention to the potential role and scope of micro-credits needs.
- Provide dedicated funds to increase investment in renewable energy: Funds with stable and adequate allocations should be established in the World Bank and Regional Development Banks to support renewable energy investments in developing countries and in economies in transition, and also to foster technological development, thereby contributing to the reduction of costs associated with renewables in these countries.
- *Apply full cost accounting for IFI lending:* The evaluation of energy projects to be financed by IFIs should incorporate factors such as the projected costs of climate change and other environmental, social, economic and security impacts of various technology options, on a life-cycle basis.

Increase transparency of and reporting on renewable energy activities: IFIs and ECAs should fully disclose information regarding their financing, lending, insurance, and other relevant policies and contributions for renewable energy, as well as the role of PPP schemes. This would provide strong incentives for others to follow.

Strengthen the Global Environment Facility's portfolio: The GEF has a strong portfolio of renewable energy projects that should be further strengthened and expanded to include the modernisation of biomass, cooking in rural areas, grid access, and off-grid renewables for rural electrification.

Emphasise leadership role of regional organisations: The European Union, ASEAN, APEC, the United Nations Regional Commissions, MERCOSUR, IEA, and others should continue and expand their efforts to implement renewables projects, and to create supportive schemes among countries. Regional development funds should favour projects that promote and develop infrastructure for renewables, and that produce and use renewable energies – including a small number of large-scale demonstration projects – in order to provide strategic leverage for the transformation of energy systems.

Strengthen and enhance the cooperation for renewable energy development: International bodies and regional organisations should strengthen and enhance cooperation through, inter alia, policy and technology research and development (e.g. on rural electrification and modern biomass); technology transfer (North-South, South-South etc.), including public procurement of key technologies; and education, awareness raising, and professional training, including Masters and Ph.D. programmes on energy for sustainable development.

Strengthen institutional arrangements at the international level: Institutional capacity is needed to address key functions for promoting renewable energies, including:

- advocacy for renewables in general, as an instrument for sustainable development,
- coordination of monitoring and reporting on renewable energy developments by country, region, resource/technology, and policy experiences,
- provision of services such as advising, capacity building, pooling of information, analysis and coordination,
- establishment of common standards; and networking in coordination with other stakeholders, especially the private sector and women's networks.

5. The Role of Local Authorities, Private Sector, Civil Society and Other Stakeholders

5.1 Local Authorities

Although national governments will determine national legal frameworks, the implementation of renewable energies takes place at the local level. In light of the options and possibilities of local efforts, governments participating in Rio 1992 put special emphasis on the Local Agenda 21.

Establish local building codes: The formulation of appropriate building regulations and codes can help to accelerate the uptake of renewable energy in buildings. Those codes can be used for the promotion of various types of renewable energies based on local conditions (e.g. passive heating/cooling, solar thermal energy on the roofs of buildings, or district heating systems in which at least a portion of the fuel is biogas). Local authorities should develop their own strategies, taking into account full life-cycle costs (including externalities), and communicate their experiences to others.

Strengthen stakeholder involvement in licensing, and prioritise siting: Local planning and licensing authorities should foster stakeholder and community involvement in renewable energy projects, thereby reducing conflicts and difficulties concerning permission procedures, and reducing licensing duration. Developers of renewable energy projects should engage in active consultation and discussion with local communities at an early stage in the planning process. Local renewable energy zoning and siting plans should be developed as they would provide greater certainty for potential investors, and guide developers to areas where projects are more likely to be permitted.

Increase awareness and capacities: In the field of awareness and capacity building, local authorities play a crucial role as they are very close to the general public, institutions and enterprises. Public campaigns can support the enabling environment for investments in renewable energies and can clarify renewables' societal, environmental and economic benefits, as well as their benefits for local business. Joint efforts like public-private partnerships help to create markets for renewable energy and to build the necessary capacities. Furthermore, the creation of local centres of competence and independent advisory institutions can often provide the seeds for broader market development. There are several other opportunities to achieve similar goals that depend largely on local conditions – therefore, each local authority needs to formulate and implement its own approach.

Utilise the power of public procurement: Local authorities often have the power to create market demand for renewable energy through various local policies and measures. One option is to procure renewable energies through comprehensive purchases of, for example, renewable electricity and thermal collectors.

Establish public-private investment funds: On the local level, governments should establish public and private investment funds for renewables that directly benefit local people and businesses. A combination of such funds for PPP schemes should be considered as well.

Address energy issues in other areas of local action: Although situations can vary significantly from one community to the next, there are always possibilities for influencing local energy developments, e.g. through local utilities, transport enterprises, waste policies, water and sanitation, or agriculture and forestry. Development plans should adopt policies that are designed to promote and encourage, rather than restrict, the use of renewable energy resources. The energy nexus should be seen in a broader sense.

5.2 Business and Private Sector

As governments recognise and address the challenges of developing effective policies that create and support market development for renewables, the private sector – from small local entrepreneurs to multinational corporations – will have to respond, in turn, by participating in schemes to increase renewable energy investments, and by increasing market demand for renewable energies. Business leaders have a responsibility to the local, national and global communities, and an increasing number of corporations and firms are acting pro-actively to meet that challenge. Two elements are important for the whole sector:

Incorporate corporate social responsibility (CSR) into business: The business community should help accelerate market introduction of renewable energy under the broader principle of CSR. For the private sector in general, CSR should become a core principle of business, with special emphasis on transparent reporting mechanisms with regard to social and environmental issues. The share of renewables in energy generation and/or consumption should be included in such reporting, as proposed by the Global Reporting Initiative.

Facilitate intra-firm technology transfer in renewable energy solutions: Multinational corporations, private or semi-private utilities, and internationally cooperating small and medium-sized enterprises are important vehicles for international technology transfer, and should consider enhancing their activities for the transfer of renewables-related knowledge and skills to other actors as an element of their CSR agenda. In this context, trade unions should play an important role in such activities as well. Renewable energy technology transfer needs to be recognised not only as a challenge, but also as an opportunity for market development.

Specifically with regard to renewables, private sector policies are of special importance in three sectors:

I. energy producers and traders (e.g. energy companies, utilities),
II. finance and insurance (e.g. banks, rating firms), and
III. energy customers/consumers.

Energy producer/traders, and manufacturers

Pursue the development of renewables: All energy suppliers, including but not limited to the oil and gas industries, should follow examples of international industry leaders to actively pursue the development of renewables as a part of their investment and marketing schemes. Companies already involved in renewable energy should shift more investments from exploration and production of conventional fuels to renewables. Those that have not yet entered the renewables market should consider doing so. "Downstream" firms in the refinery and retail business of transport fuels should begin blending their products with biomass fuels.

Commit publicly to "green" energy: Electricity and gas utilities, as well as independent power producers (IPP), have begun to commit to generating and/or purchasing "green power" from renewables, with some concentrating on new markets where customers request certified renewable products. In addition, some district heating companies (e.g. in Scandinavia) have increased the share of biomass in their products, and similar developments have begun for green biogas – sold through distribution networks and as a transport fuel. These pioneers demonstrate that renewable energy can be marketed successfully, and that renewable power offers growing business opportunities. The use of renewables also provides companies with more diversified portfolios, reducing their risk in the event of fuel price fluctuations, and avoiding potential future taxes or regulations associated with conventional energy and/or greenhouse gas emissions. All utility companies should consider making a commitment to generating and purchasing energy with renewable sources.

Join forces to help create incentives for renewables: Renewable technology manufacturers should work together to promote renewable energy in general, through increased marketing efforts, and to encourage strong and consistent government policies to advance renewables through market creation.

Invest in renewable energy as a key industry strategy: Energy suppliers should recognise the economic benefits of advancing renewable energy. As markets develop around the world, those that are in the forefront of investing in and developing these technologies will be in strong positions to reap the economic rewards of a rapidly growing sector.

Finance and insurance

Treat renewable energy investments fairly: Insurance companies should provide coverage for renewable energy projects at fair and competitive rates, recognising the risks of conventional energy, including the rising costs that many insurers will face as impacts of global climate change become more pervasive.

Provide finance for renewable energy investments: Banks should consider working with governments to provide low-interest, guaranteed loans for renewable energy projects. Low-cost capital is essential for addressing the barrier of high up-front capital costs, and availability of reasonable financing can increase investment in renewable energy considerably, helping to realise economies of scale while encouraging local investments in related infrastructure and training.

Offer risk-hedging financing tools for investments in renewables: Insurers and banks should develop and offer specialised instruments to minimise the various financial risks associated with investments in renewables, e.g. through bundling and aggregation of projects among technologies, regions, and countries. Cooperation with IFIs and ECAs could help to initiate/advance the application of such tools.

Pay increased attention to special conditions in developing countries: Particularly in developing countries, it would be helpful to establish flexible repayment

schemes – for example, tying payments to borrowers' income streams. Micro-finance is important for enabling local communities to invest in renewable energy technologies, e.g. to modernise the use of biomass, and generate higher incomes.

Commercial and industrial energy consumers

Recognise the range of benefits of using and marketing "green" energy: In general, businesses seek low energy costs, and the benefits associated with purchasing green energy are not fully recognised. However, some firms – particularly those working in tourism, services, and retail – have become pioneers, actively purchasing renewable energy to meet their own needs, and marketing renewables to their customers. Such actions both improve customer relations and increase the competitiveness of green power. Many businesses have also installed their own renewable energy systems – atop commercial buildings, for example – to meet their energy needs. More businesses should consider this option as well.

5.3 Civil Society

Use the power of consumers to develop and expand markets: private consumers have great power in the marketplace, and could be encouraged to send signals in terms of preferences for energy from renewables. In order to encourage consumers to demand renewable instead of conventional energy, it is necessary to provide them with relevant information that is neutral and, where possible, free of commercial interests – for example, via labels and advice about best-practice examples for renewable energy technologies. This requires creating institutional structures for consumer information and advice.

Strengthen civil society's role in decision-making on sustainable energy solutions: The transition to renewables also requires greater involvement of general civil society in decision-making regarding future energy systems. Civil society group – from professional groups to unions and scientific organisations – have a wide variety of roles to play and skills to offer in the areas of policy formulation and project development and ownership.

Make use of the potential of non-governmental organisations (NGO): NGOs can fulfil the key function of providing information to particular stakeholder groups, can raise awareness and stimulate public debate, and can act as political pressure groups. Especially in developing countries, NGOs are often key to implementing renewable energy systems; because they have such a strong presence on the ground, the role of NGOs in disseminating, installing and maintaining decentralised renewable energies should be strengthened. In addition, experience in other sectors shows that NGOs can be important intermediaries in the establishment of micro-credit schemes for rural consumers in developing countries. Their potential in this regard should also be harnessed to find financial solutions that can satisfy the energy needs of rural energy consumers.

Increase awareness through the mass media: The mass media can be important players in communicating the benefits of renewables to the public and, thereby, raising general awareness and acceptance. Some examples of popular but educative TV and radio programmes about sustainable energy issues already exist, in both developing and industrialised countries. These efforts should be increased and expanded into more markets and across more geographic areas, and using more communications channels. Media channels can be powerful and effective vehicles for increasing awareness of renewables, provided that the technologies they promote are consistent with women's practical (household), productive (income-generation), and strategic (social empowerment) needs.

5.4 Research and Education

Universities and other research institutions have key roles to play in advancing renewables research and education.

Focus curricula on new challenges: Curricula in all areas of study need to be reviewed with respect to energy for sustainable development issues. Masters and Ph.D. programmes are needed to bring forward the skilled people needed for the design, construction, and operation of renewable energy systems. These programmes must cover technology, business, and policy issues.

Strengthen renewable energy research: Research to support renewable energy development is needed in natural science, engineering, economics, health, law, social sciences, and other areas. Efforts are justified to foster multi-disciplinary programmes.

Members of the International Steering Committee

Preparatory Committees

An International Steering Committee (ISC) was formed to advise the conveners regarding themes, structure and outcomes of the conference. The ISC was made up of a balanced selection of about 50 members chosen by region and function (leaders and decision-makers from governments, international organisations, civil society and the private sector). It was chaired by Michael Hofmann (BMZ) and Rainer Hinrichs-Rahlwes (BMU). Members were individually invited "ad personam" by the German Government to represent important stakeholders, giving due consideration to relevant political and professional groups. With the ISC, an international network of important personalities with high expertise and interest in political and thematic aspects of renewable energies has been formed.

The National Advisory Committee was the conference forum for German actors in the field of renewable energies and development cooperation. The expertise and experience of the 45 members of the Bundestag (German Parliament) and representatives of the German federal states, associations, the private sector, academic and scientific institutions, and non-governmental organisations were integrated into the preparation process.

The Organising Committee

The conference preparations were coordinated by an Organising Committee. The Committee members were the German Federal Ministry for Economic Cooperation and Development (BMZ), the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), the German Federal Foreign Office (AA), the City of Bonn and the Conference Secretariat. The Chairpersons of the Organising Committee were Norbert Gorißen (BMU) and Manfred Konukiewitz (BMZ).

Members of the Organising Committee

The Conference Secretariat

The Conference Secretariat organised the preparation of the conference on behalf of the conveners. It was provided by the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ).

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