



WCRE

World Council for Renewable Energy

Civilization at the Turning Point: A Breakthrough for Renewable Energy

The World Renewable Energy Agenda

World Council for Renewable Energy

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Executive Summary

At the turning point

World civilisation is at the turning point. Faced with an accelerating compound crisis of the globally established atomic/fossil energy system, an immediate breakthrough for Renewable Energies is inevitable. No more time can be wasted. Further postponement would be irresponsible and further excuses are unacceptable. Escalating oil prices indicate the depletion of fossil resources and the urgent need to replace the current mix of fossil transport fuels. The outcome of the elections in India indicates that the large majority of people who live in the rural areas of developing countries no longer accept their state of increasing poverty. This situation is largely the result of a lack of access to commercial energy. The ongoing climate change is causing an increase in flood and drought catastrophes. These catastrophes are an indication of the disastrous consequences of our society's continuous use of fossil energy. Widespread power grid failures and blackouts in the westernized world demonstrate the limitations of atomic and fossil power production. The atomic catastrophe in Chernobyl, and the continually escalating dangers of atomic weapon proliferation, testify that the use of atomic technology is not a viable option for the future.

Renewable Energy technology presents the best alternative and prospect for our global future. The potential to substitute atomic and fossil energy with Renewable Energy has already been practically proven. For instance:

- Germany has installed 16.000 MW of new renewable electric power capacities over the course of one decade. Reaching a capacity over and above the traditional large hydro power. The German Renewable Energy Act gave most of the incentives to new development. The installed Renewable Energy capacity for 2003 was 3000 MW.
- Brazil provides a practical example of rapid substitution of bio-fuels for oil in cars. In Sweden entire public transport systems are run off of bio-fuels.
- Some towns in China demonstrated how to mobilize solar thermal collectors on a large scale.
- Austria currently uses more pellets made from Biomass than oil and natural gas for the heating of buildings.

A total substitution of atomic and fossil energy is necessary and possible

An increasing number of cities and regions have created and implemented plans for covering all their energy needs with Renewable Energy. Scientific scenarios for the replacement of atomic and fossil energy on a national scale have been available since the 70s: for the USA and France (collaborated in 1978), for Europe (1981), for Sweden (1985), for the European Union (1999), for Germany (2002) and for Japan (2002). The White Paper of the International Solar Energy Society "Transitioning to a Renewable Energy Future" shows the various technological options for the achievement of comprehensive Renewable Energy strategies. A total replacement of atomic and fossil energy by Renewable Energy is necessary and possible. This could be realized until the year 2050, if a dynamic process can be initiated as it is described in this World Renewable Energy Agenda.

Atomic and fossil energy prices will inevitably increase due to the exhaustion of natural resources as well as the additional costs from environmental damages. Renewable Energy prices will continue to drop due to the increase in mass production and improvement of technology. Renewable Energy, with the exception of biomass, has most of its costs based in technology, as there are no fuel costs for wind, solar or hydro resources, the energy system is more cost effective overall.

No more lip-service

Numerous science and technology conferences on Renewable Energy were organized in the last decades. The conferences indicate that Renewable Energy has been investigated and developed more for market introduction than was ever the case for atomic and fossil energy. However, due to an ongoing underestimation of the actual potential of Renewable Energy as well as their numerous benefits, there has been a large gap between recognition and implementation. The shift to Renewable Energy has been misunderstood as an economic burden and not as a comprehensive prospect with diverse political and economic benefits.

Time is overdue

- to set aside the multiple mental and structural barriers against Renewable Energy,
- to create Grand Renewable Energy Strategies in every country and
- to launch common international actions.

The time is overdue to promote a comprehensive Renewable Energy program with at least the same political power as atomic energies which were supported by strong policies in former decades. In contrast to the impressive scientific and technological conferences held by the global Renewable Energy community, the increasing number of official policy conferences result primarily in lip service. Instead of preparing for action many of the conferences themselves became a substitute for action, the only practical decision being that of a follow-up conference.

A call for industrial, national and regional Grand Strategies for Renewable Energy

Half a century ago, grand strategies were initiated for the promotion of Atomic Energy in order to enter the post-fossil era. Now is the time for an equally strong commitment to Renewable Energy. Governments should no longer wait for a global consensus. In order to fill their responsibility to the people they are called to determine their own strategies in the common interest of the people. Pioneer governments, organizations, and companies will stimulate others thereby creating a new technological and industrial revolution. At the same time a new agricultural revolution based on the extension of food production to biomass production will be spurred. Biomass for energy and renewable raw materials will be produced whilst simultaneously safeguarding water resources. These aspirations combine to compose the main challenge of the 21st century.

Basic Considerations

In order to overcome the deep discrepancies between the global needs for Renewable Energy on the one hand and the insufficient business-as-usual attitude on the other, the World Council for Renewable Energy presents the World Renewable Energy Agenda at the Second World Renewable Energy Forum, by submitting the following basic considerations:

- to governments and to the parliaments, and
- all Renewable Energy supporters around the globe.

1. Change the current energy paradigm

The world society is at the defining moment of the change of the energy-paradigm from atomic/fossil energy to Renewable Energy. All policies should terminate the public promotion of atomic and fossil energy. Renewable Energy and energy efficiency promotion require top priority. 500 billion dollars are spent annually for conventional energy investments. The shift to renewable energy requires a change in the investment flows to Renewable Energy, under the auspice of legal frameworks tailored to accommodate them. New energy strategies must be focused on comprehensive national and global product calculations. These calculations show that the atomic and fossil system is already more expensive on a macro economic basis than an economy based on Renewable Energy is. The additional expense of fossil and atomic systems create an insurmountable social and environment burden of debt for generations to come. The political goal is to transform these benefits into microeconomic incentives for Renewable Energy investments.

2. Security policy is Renewable Energy policy

Our dependency on exhaustible fossil and uranium resources leads to the vulnerability of societies. Moreover, it is impossible to overcome the water crisis and resulting conflicts without shifting to Renewable Energies. The atomic and fossil energy system is the main water consumer in many countries. An in depth look at international security requires the transfer of military expenditures for the safeguarding of fossil and atomic fuels and processing to the promotion of Renewable Energy. The conversion of military expenditure to Renewable Energy is the main focus of a new security policy. This is the fundamental idea of the Green Cross movement.

3. Overcoming poverty with Renewable Energy

Promoting Renewable Energy is the most important step to fighting poverty. Developing countries are economically overloaded by the introduction of power lines in rural areas as well as by the import of fossil energy products based on world market prices. Only local Renewable Energy can overcome the problem of energy imports consuming increasing shares of wealth in developing countries. Only Renewable Energy can stop the marginalization of rural areas in the world and the desperate living conditions of people in overcrowded cities. The unique opportunity to achieve this is to provide electricity to decentralized rural areas as well as mobilizing the production of biomass in agriculture and agro-forestry.

4. Overcoming the double standard of energy market dogmas

A “leveling of the playing field” with nuclear and fossil energy is required that ensures market privileges for Renewable Energy in order to compensate for the long-term advantages which atomic and fossil energies have enjoyed by:

- public research, development, subsidies, development credits, and insurance and tax privileges totaling an amount in the trillions of dollars
- global agreements for tax free fossil air and sea-transport fuels,
- unpaid environment damages,
- protected regional an electric power markets,
- trade privileges and publicly financed infrastructures,
- international institutions aimed at atomic technology transfer and fossil energy.

These privileges established the myth of a superior competitiveness of atomic and fossil energy; Leading to the overall underestimation of Renewable Energy resources and blockades against them. This unfair double standard leaves the introduction of Renewable Energy to the market.

5. Initiating a new industrial and agricultural revolution

Promoting Renewable Energy creates new industrial jobs and revitalizes the agricultural economy. There is a large variety of new industrial incentives given to Renewable Energy technologies and their mass production. The incentive covers the entire building industry including small and medium size enterprises (“solar architecture”), the automobile-industry (new generation of solar fueled motors), the entire field of electric and electronic, machinery and chemical industries (Renewable Energy conversion and applications, PV cell and glass materials, information technologies), the steel industry (windmill towers), the shipbuilding industry (energy self-sufficient ships). Extending agricultural yield to energy and industrial raw material will revitalize the sector.

6. Renewable Energy: the short-term alternative

Since decentralized Renewable Energy options do not require extraction or mining technologies, international transport infrastructures, long construction time for power plants, or cross-country transmission lines, they can be more easily and quickly introduced and decentralized than atomic and fossil energy. A Renewable Energy system consists of many modules each module capable of working independently from others. The installation of a wind power or PV-Module takes just few days. Every village in the world could have an immediate power supply or could implement the production of transport fuels from biomass. Renewable Energy makes it possible to tailor energy investments to actual energy needs in a flexible way, while avoiding overcapacities. Renewable energy can be introduced extremely quickly to meet the energy demands of the people. Renewable Energy can serve as a short-term alternative as soon as there is manual capacity for its applications and adequate financing opportunities.

7. Energy independence for all nations and regions

Energy independence is in everyone’s best existential interest, and with Renewable Energy it is possible for all. Energy independence would stabilize national and regional economies as well as reinforcing peacekeeping efforts. Releasing countries from incalculable economic risks caused by the increasing fossil energy prices. Renewable Energy makes national economies more stable and leads to more equality within the world economy because of the rationalization of yielded resources.

Actions and Strategies for effective promotion of Renewable Energy

Based on these basic recommendations, the World Renewable Energy Agenda appeals to all political institutions on, local up to international levels, to launch Renewable Energy strategies and give them top priority.

For the local level we present the guidelines for “Solar Habitat in Cities and Villages”;

For the national levels we recommend:

- to follow the example of the German Renewable Energy Act for the transition of electric power to Renewable Energy,
- tax free rules for bio-fuels for transport vehicles,
- Renewable Energy construction obligations for buildings,
- incentives for farmers to extend their production to biomass for energy and industrial raw materials,
- a shift in the contemporary energy subsidies to the direct promotion of Renewable Energy.
- a broad public initiative for an increase in manual capacity in the fields of education and job training, mainly for architects, engineers, farmers and craftsmen.

On the international level we call for common actions with considerations beyond the Kyoto-Protocol’s meager obligations:

1. The establishment of an International Renewable Energy Agency (IRENA)

Renewable Energy needs an international home. The International Renewable Energy Agency (IRENA) must act as an independent organization, endorsed by member countries, based on a voluntary will to join it. As a consensus of all governments for the establishment of IRENA is not currently possible within the framework of the UN, it should be established by an initiative of countries, open to the future membership of every further country that wishes to join. The main task of IRENA should be consulting of governments, governmental agencies, organizations and NGOs for Renewable Energy programs. Furthermore IRENA should promote human capacity buildings, the creation of a global information pool, the elaboration and awarding of technical norms and standards, as was described at the EUROSOLAR conference “Promoting international transfer of Renewable Energy” in June 2001 in Berlin. The IRENA is not proposed as a centralized administration, but as center of policy excellence, giving impulses for decentralized networking activities.

As there is no comparable international organization for Renewable Energy IRENA will overcome institutional bias in international relation sectors where international agencies for atomic energy and fossil energy security operate. We welcome the program of the governing coalition in Germany suggesting the initiative for an IRENA, backed by a resolution of the German parliament. One option for the implementation of IRENA is an alliance of some governments for the initiation. Another option could be an initiation by UNESCO, based on its mandate by the United Nations General Assembly for the World Solar Programme.

2. A Renewable Energy Proliferation Protocol be added to the Nuclear Non-Proliferation Treaty

We call for a supplementary protocol to the Nuclear Non-Proliferation Treaty (NPT), which could be passed at the Review Conference in 2005. This protocol should allow the signatory states to fulfill their obligations, stated in Art. IV, by supplying technical aid for Renewable Energy instead of for atomic energy. This protocol would be an additional step toward avoiding nuclear proliferation and would be a strong incentive for focusing future energy strategies on Renewable Energy.

3. An international university for renewable resources

A scientific think tank is necessary for the anchoring of renewable resources and their technologies. Therefore, we call for the establishing of renewable energy faculties in universities and academies. To highlight this initiative we propose the establishment of an international university for renewable resources, mainly for postgraduate education.

4. A Renewable Energy priority in public and private finance

The WCRE calls on national and international development banks to start portfolios for financing Renewable Energy and energy efficiency offering zero-interest-rate and low-interest-rate grants. This financing initiative must include an unprecedented level of cooperation between government financial agencies and private sector financial firms. The initiative should be achieved by the adoption of the new proposal for Global Development Bonds (GDBs) by all OECD countries. Also referring to and underlining the “Extractive Industries Report” for the World Bank we call for full concentration on Renewable Energy and energy efficiency in international development banks’ programs (World Bank, the African, Latin American, Asian Development Bank) with respect to the decentralized and local character of Renewable Energy. Energy portfolios for fossil energies should be cancelled. Exclusions from the full concentration of energy portfolios on Renewable Energy and energy efficiency should only be made, if it is for the use of domestic fossil energy potentials for domestic energy supply.

5. Providing guidelines for effective implementation of sustainable project

To ensure the cost efficiency of public funding and the sustainability of investment projects, we propose the independent auditing of project execution organizations. We present together with Grameen-Shakti guidelines for these organizations. Project execution organizations should ensure that at least 75% to 85% of project investments are directed to the technical project and to maintenance.

6. A fixed and increasing quota for Renewable Energy in developing aid budgets of industrial countries

We propose that industrialized countries secure in their developing aid allowances a fixed and increasing contribution for the promotion of Renewable Energy. This contribution should be around 5% of the development aid budget and should increase by 2% annually for the next ten years.

7. Global industrial norms and standards

In order to enable rapid development, it is necessary to introduce international industrial norms and standards. The norms would provide a compatibility of different technical components as well as facilitating the trade of Renewable Energy technologies. The WCRE appeals to the UN to advance the

standardization of norms within the ISO with special attention and participation of experts from all continents.

8. Complete emission measurements for the Clean Development Mechanism and emission trading of the Kyoto Protocol

So long as no comprehensive analysis of the energy flow of fossil/nuclear energy carriers and their losses and emissions exist, the clean development mechanism and emission trade will continue biased actions against Renewable Energy. As quantified emission reductions are measured only by the efficiency of power stations or engines, they permit rewards for emission reductions even when primary energy usage is increased due to longer transport distances. The actual ecological advantage of Renewable Energies is undervalued within this limited calculation.

The WCRE calls on the governments to permit only those Clean Development Mechanisms which are based on a complete calculation of energy carriers emissions.

9. Suspension of trade barriers for Renewable Energy technologies and efficiency technologies

The unjust situation wherein international trade with fossil primary energies is subject to fewer limitations than the trade with Renewable Energy technologies and energy efficiency technologies must be corrected. This leads to the one-sided liberalization of world trade which in turn intensifies the global environmental crisis. The WCRE requests the World Trade Organization to generally eliminate tariffs from Renewable Energy technologies and harmonize trade barriers.

10. Integrated strategies for UN-Organizations

The mobilization of Renewable Energies does not only refer to the private sector of the energy industry. The economic and ecological advantages of Renewable Energy result in particular from concepts for resource planning, agriculture, forest maintenance, economy, construction, city planning, prevention of health damages, measures to fight desertification, population planning and for the protection of biodiversity.

Therefore, the WCRE calls upon the United Nations and their organizations to integrate the promotion of Renewable Energies into the implementation of their original tasks as UNEP already does with its environmental programs:

- at the FAO, in the promotion of food and agriculture;
- at the UNESCO in programs for education and science;
- at the UNIDO in programs for industrial development;
- at the UNDP in its development projects;
- at the WHO in programs for health.

The production and use of Renewable Energies can make an indispensable contribution to the prevention of desertification and to the protection of forests by realizing the transition to agro-forestry instead of further forest clearing.

Renewable Energy – a definition

Renewable Energy includes solar, wind, hydro, oceanic, geothermal, biomass, and other sources of energy that are derived from “sun energy”, and are thus renewed indefinitely as a course of nature. Forms of useable energy include electricity, hydrogen, fuels, thermal energy and mechanical force.

More broadly speaking, Renewable Energy is derived from non-fossil and non-nuclear sources in ways that can be replenished, are sustainable and have no harmful side effects. The ability of an energy source to be renewed also implies that its harvesting, conversion and use occur in a sustainable manner, i.e. avoiding negative impacts on the viability and rights of local communities and natural ecosystems.

The explanatory long version of the Memorandum is available at www.wcre.org.