

THE PROMISE OF RENEWABLE ENERGY

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The world today is entering a new energy era marked by concern over energy security, climate change, and access by the poor to modern energy services.

Energy security is becoming a central priority for all nations concerned with promoting healthy economic growth and maintaining internal as well as external stability. But energy security is more than just the assurance of future oil sources. It includes diversification of energy sources, increasing domestic supply to meet future demand, and strengthening efforts to reduce demand.

On the other hand, climate change is a serious and long-term challenge—one that is global in its causes, potential effects, and possible solutions. The impacts of climate change are already occurring and future damages are a certainty. Globally, climate change is emerging as the most difficult energy-environment linkage. The production and use of energy contribute more than any other human activity to the buildup of greenhouse gases in the atmosphere and future energy trends will determine how quickly those levels continue to rise and by how much.

In its report “Energy and Sustainable Development”, the International Energy Agency (IEA) said: “No matter how we define sustainable development, current systems of energy supply and use are clearly not sustainable in economic, environmental, or social terms.” In the absence of new policies by governments and international financial institutions, the world’s energy needs will be almost 60% higher in 2030 than they are now. And as you might have guessed, CO₂ emissions will also increase at about the same rate.

Continuing along the current path of energy development is not only incompatible with sustainable development objectives but also means that the world’s vulnerability to supply disruptions will increase with the expansion of international trade and competition. The continued steep rise in oil prices reflects the emerging concern about meeting the fast growing global demand for energy and the risks of dependency on fossil fuels which currently supply around 80% of global energy needs.

In 1931, Thomas Edison met with Henry Ford, who had invented the gasoline powered car, and told him: “I’d put my money on the sun and solar energy. What a source of power!” He continued to say: “I hope we don’t have to wait until oil runs out before we

tackle that.” Seventy-five years later, investment in new renewable energy capacity was \$55 billion in 2006 and is projected to be around \$66 billion in 2007. It has taken longer than Edison expected, but the transition from old energy to new energy is underway. The recent influx of capital, however, needs to be multiplied many times in order to attain RE potential and significantly scale-up the share of RE in the total energy supply.

As capital pours into RE investment, the most powerful driving force for the growth of renewables is simple economics. Clean energy technology costs in general are falling as the costs of fossil fuel energy are increasing. And one of the great advantages of renewables is price stability-- capital expenditure is made up front and amortized and there are no costs for fuel.

In 2002, world leaders gathering in Johannesburg for the World Summit on Sustainable Development (WSSD) agreed to substantially increase with a sense of urgency the global share of renewable energy sources in the total energy supply. This was in recognition of the fact that the substantial expansion of renewable energy is a win-win proposition for developed and developing countries alike: (1) it provides opportunities for poverty eradication and for satisfying the energy needs in rural and remote regions; (2) it helps generate employment and local economic development opportunities; (3) it helps curb global warming and contributes to the protection of human health caused by air pollution; and (4) it enhances energy security through reliance on domestic energy sources such as biomass, hydro, wind, solar, and geothermal.

To build upon the results and agreements reached in Johannesburg, the German Government invited governments, international organizations, civil society, and the private sector to meet in Bonn, in June 2004, in the International Conference for Renewable Energies (Renewables 2004). I had the honor of serving as the “Facilitator” of the conference.

Renewables 2004 adopted three key outcomes: a Political Declaration, an International Action Program, and a set of Policy Recommendations for Renewable Energies.

The Political Declaration, which was adopted unanimously by high-level government representatives from 154 countries, including 121 ministers, contains shared political goals for an increased role for renewable energies and reflects a joint vision of a sustainable energy future which provides better access to energy as well as increased energy efficiency.

The Political Declaration reaffirmed governments’ commitment to achieving the U.N. Millennium Development goals, in particular the goals to halve the proportion of people living in extreme poverty by 2015. Reaching these goals will require significantly expanded access to clean 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. Governments also recognized the need for additional research and development with emphasis on

“affordability and cost reduction, on innovative business and financing models and on consumer friendly cost-recovery models.”

The second and perhaps most tangible outcome of the Bonn Conference is the International Action Program (IAP). Conference participants, including governments, international organizations, corporations, and other stakeholders, contributed to the Action Program with 194 voluntary actions, targets, and commitments which would mobilize billions of dollars in investments for generating energy from wind, solar, biomass, hydro and geothermal sources.

Germany made a special contribution toward the setting up of a special “facility” for renewable energy and energy efficiency with 500 million Euros which would provide low-interest loans for investments in developing countries. China, on the other hand, committed to increasing the share of renewable energy in its total supply to 10% by 2010.

Last year, REN21, itself one of the Major outcomes of Bonn, issued a report on the implementation of the IAP which showed that 79% of the Commitments were being implemented with 15% already completed.

One year after Bonn, China hosted a follow up conference, the Beijing International Renewable Energy Conference (BIREC) with participation by ministers and high-level government representatives from 78 countries as well as international institutions, private sector and NGOs. Like in Bonn, I had the honor of serving as BIREC’s Facilitator.

BIREC continued the momentum that was begun in Bonn to follow up on the agreement in Johannesburg to increase the share of renewable energy. The emphasis of BIREC was on the needs of developing countries, most of them have not benefited from the expansion in the development and use of renewable energy. The political declaration called upon governments to adopt policies that remove barriers, level the playing field, and establish clear objectives and targets in order to attract private sector investments and enhance the pace of expansion of renewable energy. It also recognized the need for significant financial resources, both public and private, for investment in renewable energy and committed to creating a positive investment climate to attract private capital.

As reported recently by REN 21, the potential of RE technologies is huge. The focus of the report, which was released at the Gleneagles Dialogue meeting in Berlin, is the 20 large economies represented at that meeting, which consume 80 percent of the world’s primary energy and produce a similar share of global greenhouse gas emissions.

One of the report’s key findings is that the overall technical potential of RE is several times the current total energy demand. This is particularly true for electricity generation. Solar photovoltaic (PV) can be harnessed almost everywhere and its potential alone is many times higher than estimated global electricity consumption. Concentrating solar power (CSP), onshore wind, ocean energy and biomass also have large potential, each on the order of magnitude of future electricity consumption. Hydropower, geothermal, and offshore wind on the other hand are more site specific.

The potential market share or deployment potential of RET in each of the large economies was assessed based on technical potential and prospective cost as well as potential structural constraints and policy support.

In the case of electric power markets, for example, renewable energy could, by 2050, contribute at least half of all electricity generation in each of the large economies and in some cases, could contribute about 90 percent. In the medium-term--2030, wind energy may achieve a considerable share in addition to hydropower which could reach its full potential during this period. Renewable energy can also meet a high proportion of incremental energy need in the short-and medium-term when combined with energy efficiency to reduce demand.

The high potential of RET represents great opportunities to countries not only for attaining higher energy security and fostering innovation and employment, but also for addressing climate change. In addition, in the large economies which still have a significant portion of the population without access to modern energy services, RE can be a cost-effective way to bring sustainable development and eradicate poverty in remote areas as compared to grid extensions.

At present, almost all of the 20 countries included in this assessment have national policies for renewable energy but only a few have policies in place for creating the framework conditions, incentives, and R&D needed for attaining RE's full potentials. The reality is that investment in RE remains policy rather than purely commercially driven. In that regard, it is extremely disappointing that RE portfolio standards do not feature prominently in the energy bill before Congress.

Earlier this year, the international RE community welcomed the announcement by the State Department that the US Government will host WIREC in March of 2008. WIREC provides a great opportunity to continue the international momentum created by Bonn and Beijing to follow up on Johannesburg's agreement to substantially increase, with a sense of urgency, the global share of RE.

We need to move beyond incremental gains and pursue strategies for scaling up the development and adoption of RE. We know that the three major drivers for scaling up are policy, technology, and finance. Policy includes actions that enhance research and development and technological innovation, support market adoption of RE technologies, and encourage private investment.

With regard to technology, I would emphasize the need for significant public and private investment in R&D to increase the efficiency and reduce the cost of RE technologies. And with regard to finance, I mentioned earlier the need to multiply several times the level of current investment in new RE capacity. However, there are policy and institutional barriers that hamper large scale private investment, especially in developing countries. Since public funding sources, for example the multi-lateral development banks and the GEF, are too small for the scale of needed investment, the role of these

institutions should be mostly in assisting developing countries in setting appropriate framework conditions for private investment, as well as buying down risk and providing guarantees.

Finally, climate change and the outcome of the COP next month in Bali can provide a significant impetus for large scale deployment of RE as a key component of any climate change mitigation strategy. WIREC's proposed "pledge and review" that was described earlier could be an important step in that direction. As a prelude to a comprehensive agreement post-2012, long-term policies as well as measurable targets could be adopted by all countries to scale up the use of RE and to promote greater efficiency in energy production and use. Pledges could be organized with regard to their benefit to CO2 emissions reduction.

Let me close by recounting the three major energy challenges that I began my remarks with, i.e. energy security, energy access, and climate change. I believe that in RE we have the knowledge, the technology, and the finance to address all three—if we can muster the political will.