

# **NEEDED: A RENEWABLE ENERGY LAW FOR INDIA**

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The world economy has still not overcome the recession triggered by the collapse of some financial institutions in the U.S.A. in 2008. Many countries in Europe are still reeling under the impact of the recession. Intellectuals around the world are increasingly seeing repeated recessions as symptoms of the unsustainability of the current economic model. Consequently there have been numerous calls for a “Green New Deal” to ride out of the recession and move towards sustainable economic growth. The U.N. Secretary General Ban Ki Moon issued a call titled ‘Let’s Go Green! The United Nations Environment Programme commissioned a study on the subject and came up with a plan of action for the G-20 countries.

Substantial percentages of the stimulus packages in many countries, especially South Korea, China and Japan were aimed at a transition to sustainability. Some countries like Greece and Portugal recently enacted renewable energy laws to catalyze the green energy sector for continued growth and employment generation. China which had enacted such a law in 2006 is emerging as a leader in clean energy development. It is by now recognized that a Renewable Energy Law is a potent legal instrument in effecting a transition to clean energy. It is also well known that sustainable energy is the basic foundation on which sustainable development will have to be built. India is heavily dependant on imported fossil fuels to meet its energy needs. Many scientific studies have shown that production of fossil fuels like oil, gas and coal will peak in the near future. The result would be supply and price volatility and ultimate depletion of the these fossil fuels. So India needs to seek energy autonomy or energy independence by developing sustainable sources of energy on a war footing.

## **Towards Energy Autonomy**

**Oil:** Energy security is conventionally understood in terms of the risks of fuel supply disruption and fuel price volatility. Global oil production is expected to ‘peak’ in the near future and then availability and price would both become a problem. It is predicted by experts that if only India and China continue to grow at current rates, the demand for oil will rise by 6% per year. To meet this demand, world output will have to increase by 43% or more by 2010 and beyond. India today meets 75% of its oil requirements through imports. Our domestic proven oil reserves at the end of 2006 was 5700 million barrels (0.5% of world reserves) and the production is 294.36 million barrels per year. The reserves/production ratio is of 19 years only! As per Government of India (GoI) projections, by 2031-

2032, India will have to import about 3 billion barrels per year. Because of the earlier mentioned peaking of oil production this quantity of oil may not be available for import.

**Coal:** Coal has a similar story, but may be available for a longer period of time. India has extractable reserves of 52.24 billion tonnes. Annual production now is about 500 million tonnes and the rate of growth of production is going to be very big. The Gol predicts complete depletion of domestic coal in 40 years. The key factor is not depletion but peaking of production which is expected by 2015 in India. A recent study predicts global peaking of production of coal by 2025. As per Gol figures, we will have to import 609 million tonnes of coal by 2031, which now seems an under-estimate. Judging by recent developments, large scale import of coal would also become increasingly difficult.

**Natural Gas:** The known reserves of natural gas in India is now around 1.08 trillion cubic metres, only i.e. 0.6% of world reserves. The reserves/production ratio for our domestic natural gas is 33 years. Import of liquefied natural gas is very costly and we are unable to get any long-term contracts. Even world natural gas production will peak in the next 10 to 15 years.

**Nuclear Power:** Our uranium reserves (50,000 tonnes of proven recoverable reserves for power production) would be adequate only for meeting the requirements of 10,000 MW of nuclear power capacity for about 30 years. As of now, we have about 4500 MW installed capacity of nuclear power. The 'Vision 2020' for nuclear power envisages addition of 20,000 MW by the year 2020. New uranium mining sites in the north-east are facing stiff resistance from local people. It is true that India has vast reserves of thorium, but thorium-based reactors are not yet proven. Also, due to the problems of nuclear waste disposal, and with the threat of Chernobyl type accidents looming large, nuclear power is not a preferred option in the world. Countries like Germany plan to decommission all their nuclear plants by 2025 and replace them with renewable sources of energy. Recent attempts to kick start the nuclear sector in India following the nuclear deal with the United States, are yet to translate into ground-level results.

**Hydro Power:** Theoretically speaking, India has a huge hydro power potential estimated at 1,50,000 MW, of which only about 33,000 MW has been channelised so far. But hydro projects are facing serious resistance from environmentalists and have displaced lakhs of people all over the country. With environmental destruction, the run-off in rivers is decreasing year-by-year. It is true that our neighbouring countries like Bhutan and Nepal have enough surplus, unharnessed hydro potential and they can sell this power to us, once harnessed. In a post fossil-fuel era, hydro power is extremely important for base-load management. It will compliment renewables in the grid system.

Renewables offer a direct means of dealing with these concerns of energy autonomy. First of all, they are foreign exchange neutral. They are dependent on our own natural resources. They will never become extinct. The issues relating to their integration, high initial costs and investments required can easily be tackled through innovative legislative, policy, and financial mechanisms. Renewable energy is the fastest growing economic sector in the world today.

### **The Investment Boom in Renewables**

Investment transactions in the renewable energy sector in 2009 crossed \$162 billion, according to a recent study by the UNEP. This is four times that of the investment in 2004. The sectoral break-up of some major R.E. technologies is as follows : \$ 67 billion in wind power, \$ 24 billion in solar energy \$ 11 billion in biomass and waste-to-energy, \$ 7 billion in biofuels and \$ 4 billion in small hydro. Renewables beat the recession in response to a number of global challenges and concerns, including climate change, increasing energy demand and energy security. The investment community recognizes the importance of the sector and the opportunities for value creation it presents. Consumers and companies are supporting the roll-out of a new energy infrastructure and a change in individual and corporate behaviour. Most importantly, governments and policy makers across the world are introducing legislation and support mechanisms to accelerate the development of the sector.

Currently India has an installed capacity of 16500 MW of renewable grid connected power. The R.E. power production potential in India can easily be scaled up to at least 6,00,000 MW in the future through multifarious sources and new energy technologies. India also has considerable potential for production of biofuels. Other potential investment destinations include a whole host of downstream production facilities, components development for renewable power technologies, manufacture of silicon cells and films for solar panels, co-gen applications in industries, solar thermal devices, etc. Together, the investment potential in the R.E. sector could be as high as Rs. 1,00,00,000 crores! The sector is also employment intensive and could generate millions of jobs.

### **Beyond the Electricity Act 2003**

Legislative and government initiatives, policies and laws have been the main engines driving new technology transitions since the beginning of the 20th century. These are all the more important in the development of new forms of energy and energy markets. There have been certain recent, major legislations aimed at reforming the energy sector, viz: The Energy Conservation Act, 2001 and The

Electricity Act, 2003. These two laws have been welcome steps in the right direction. They have also started showing results. However, they have not been successful in adequately addressing a quiet transition under way in the energy sector, which is going to phenomenally transform the way we produce and consume energy in the next few decades. You got it right! I am talking of the transition to a clean and green energy economy.

Sections 61 (h) and 86(1)(e) are the only real, clear developmental provisions relating to renewables in the Electricity Act (CA), 2003. They are enabling provisions and not mandatory. Hence, the enforcement has not been effective enough. The drafting of this Act started many years before its adoption. The geometrical progress in renewable technology development and its adoption worldwide is a recent phenomenon. The major crisis in the conventional energy sector, the volatile price increase of fossil fuels and the resultant energy insecurity is of recent origin (what The Economist of London called as 'the mighty cost of petrol addiction'). Renewables are the future of the energy sector and this future necessity needs to be addressed through a new law. Planning an energy transition requires decades, and hence the urgent need for a comprehensive law on renewables.

Secondly, EA, 2003, speaks only of generation, transmission and distribution of electricity. The proposed new renewable energy law goes much beyond electricity, and holistically addresses energy production from renewables, even extending to transport fuels or biofuels; it will not be another electricity law. We are talking of a comprehensive legislation for development of all types of renewable energy technologies. A great amount of detailing of the technological, developmental, legal, policy and institutional framework is required, and that is the aim of the new law. To accelerate the development of a large variety of renewable technologies, such detailing is absolutely necessary. But the provisions in EA, 2003, are absolutely insufficient to drive a technology transition, a market transformation, a transition from input dependence to self sufficiency, a transition to an environmentally benign and sustainable way of producing and conserving energy.

### **An R.E. Law for India**

The World Institute of Sustainable energy (WISE), Pune has done extensive documentation on the subject and has been studying legislation relevant to renewable energy as enacted by a number of countries like UK, Germany, Austria, The Czech Republic, Denmark, Australia, The Peoples Republic of China and the United States of America. Besides, all 15 European Commission countries have legal and policy frameworks for promotion of renewables in the form of ordinances, decrees, etc. Many countries have sector-wise laws and ordinances for compulsory purchase of renewable power,

promotion of specific technologies like biomass, wind power, geothermal energy, etc. All these countries have general Electricity Acts/Energy Acts and yet they have decided to enact separate legislation for promotion of renewables.

To complement its in-house expertise in renewables with that in jurisprudence, WISE sought the help of the National Law School of India University in Bangalore, particularly of CEERA, the law school's Centre for Environmental Law, Education, Research and Advocacy, to prepare a model legislation for India, way back in 2005. We have received support of international legal experts through The Renewable Energy & International Law Project (REIL) of REEEP (Renewable Energy and Energy Efficiency Partnership), Vienna. The Model Law was first presented in a seminar held in New Delhi on 25 August 2005. Thereafter, a Working Group chaired by Dr Pramod Deo, then Chairman, Maharashtra Electricity Regulatory Commission (MERC) was constituted to pursue its advocacy. The Working Group took many initiatives to promote this idea. Many seminars were held in different parts of India for the purpose of promoting advocacy of the law, and to pursue it to its logical conclusion, viz. adoption by the Indian Parliament. On 30th August 2007, a delegation led by Dr. Pramod Deo, Chairman, Maharashtra Electricity Regulatory Commission and this writer visited Delhi and submitted the Model Renewable Energy Law to the then Minister for New and Renewable Energy, Govt. of India Shri Vilas Muttemwar. The Minister promised to process the same for Parliament's approval. During the 2007 winter session of the Parliament, the National Citizen's Working Group co-ordinated by WISE, approached 300 selected Parliamentarians for supporting the R.E. Law initiative. Many of them replied saying that they were looking into the matter.

Our advocacy effort found success in 2008, when the government of India took the decision to have an R.E. Law for India. In pursuant to this decision the Ministry of New and Renewable Energy (MNRE) was asked to prepare a draft. The MNRE, then constituted a Technical Committee (of which this writer was appointed as a Lead Member) to formulate the draft. To begin with WISE's draft was selected as the first draft. One meeting of the Technical Committee took place and some plan of action was decided. However, thereafter the MNRE seems to have decided not to vigorously pursue the matter.

## **Time for an R.E. Law**

Ideally, the time is now ripe for India to have an R.E. Law. Some of the major recent developments in the areas of legislative policy, regulatory and institutional transformation are listed below:

- Sections 3, 4, 61 (h) and 86 (1) (e) of Electricity Act, 2003 promoting development of renewable sources of power.
- Tariff for R.E. declared in many states, by the State Electricity Regulatory Commissions.
- Renewable Purchase Specifications (RPS) for R.E. in many states.
- CERC R.E. Tariff Notification 2009.
- Renewable Energy Certificates (REC) framework in Place-2010.
- Scheduling norms for wind and solar under Indian Electricity Grid Code (IEGC) from 2010.
- Rs.5000 crore provision by 13th Finance Commission for incentivizing states doing well in R.E. power generation
- A National Clean Energy Fund announced in Budget 2010. It will mop up Rs. 67500 crores upto 2022, for development of renewables.
- The National Action Plan on Climate Change (NAPCC) announced in 2008, which stipulates 15% of all power consumed in the country to be from R.E.
- National Solar Mission Announced in 2009 – Major initiative for solar energy development including 20000 MW grid connected solar power by 2022.
- Generation Based Incentives (GBI) for Wind Power
- Incentives for solar photovoltaic manufacturing under semiconductor policy.

- Planning Commission sets up Expert Group on strategy for Low Carbon Economy-Jan 2010.
- Increasing number of States announcing comprehensive R.E. policies.
- Many prominent corporates moving into R.E. manufacturing and power generation.

Many of the above initiatives will gain teeth, if they are supported by legal empowerment. The target of 15% by 2020 set by the NAPCC requires that we will have to add close to 90000 MW of renewable power (Wind, Solar, Biomass and Small Hydro combined) by 2020, over and above the 16817 MW installed as of March 2010. Even if we take a flat average, this would mean that for the next ten years, we have to add 9000 MW of R.E. power every year. This is a monumental task for which our human resource sector, our banking and financial sector, our manufacturing sector, our electric utilities and other institutions are not yet prepared. All-round activities will have to be launched on a war footing to achieve this national target. Legal empowerment through an R.E. law will go a long way in facilitating this much desired gradual transition to a sustainable energy system.

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