

CLEAN ENERGY AND THE GLOBAL FINANCIAL CRISIS

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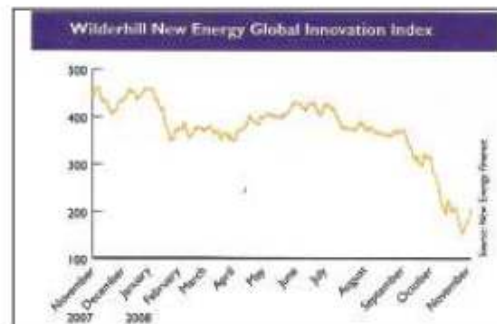
In a globalised world where trade and finance are woven in an intricate web, each and every sector of the economy is vulnerable to the impacts of a global financial crisis. This includes the clean energy sector which has been hit by the current financial meltdown broadly in the following ways:

- The credit crunch has adversely affected lending to clean energy projects, resulting in a decline in investments in both generation and manufacturing sectors.
- Stocks of many alternative energy manufacturing companies have crashed resulting in adverse gearing or leverage ratios, consequently impacting their expansion or acquisition plans.
- The carbon trading market or the Clean Development Mechanism (CDM) under the Kyoto Protocol has taken a hit. This means an additional revenue stream of clean energy projects has become less attractive, thereby dwindling investors' interest.
- The recession and slackening of demand for oil and the resultant steep fall in prices of crude oil, coal and gas have slackened or at least "put off" the investment boom in the clean energy sector.
- Short-term objectives of 'bail-outs' and saving jobs may result in relegating long-term environmental goals and regulations to low-priority.

This analysis focuses on two major renewable energy sectors viz. wind and solar. At the global level, the recent spate of bankruptcies and bank failures have reduced the number of financial institutions investing in wind power. The tightening of credit has made it increasingly difficult or costly for wind project developers to obtain financing, even from Indian banks, who have been less affected as compared to their global counterparts. Both in India and abroad, there have been many instances of cancellation of big orders for wind turbines. The credit crisis, the economic downturn and their impact on the balance sheet have reduced the number of companies having the tax base necessary to absorb the accelerated depreciation benefits offered to wind in India. Despite the recent trend towards IPP mode development in wind power investments in India, majority of the investors (about 70%) are still captive consumers with large appetites for absorbing energy and depreciation. The annual wind power market in India is expected to dip to around 1200 MW during the financial year 2008–09, from a high of 1800 MW last year. Even in countries like the United States, the downturn has diminished corporate ability to absorb federal tax incentives for wind.

For the solar sector, an adverse mix of tight credit and falling prices of solar systems will make business difficult for small companies with weak cash flows and high debt. Several of them are likely to be gobbled up by stronger

rivals, as the financial crisis raises borrowing costs and causes solar module prices to fall. Such a shake-out may however bring about a consolidation in the industry. The overall impact of this in the medium and long-term will be positive, though many small players would have fallen by the wayside in the short-term. An analysis by Credit Suisse said that about ten percent of the companies may fall victim to the crisis, most of them in Asia. However, some American solar companies like Evergreen, SunPower, and JA Solar who had financial transactions with Lehman Brothers saw their earnings erode considerably. Following the low price of crude oil, coal and gas after the recession set in, the competitiveness of currently expensive solar technologies would again be called into question. So the demand for solar systems could weaken in the short-term. But the 'fundamentals' of the sector remain strong and there is no cause for any long-term worry.



Source: Environmental Finance, November 2008

Where the share prices of R.E. companies in India are concerned, the share prices of wind power giant Suzlon Energy Ltd initially took a major hit and subsequently witnessed a

gradual recovery. In the

United States, Evergreen Solar had entered into a 'capped call' arrangement with Lehman Brothers. The bank held around 30 million shares in Evergreen as part of this share lending agreement and had paid just under \$40 million. The collapse of Lehman resulted in Evergreen's shares plunging from \$9.43 to \$4.39 on 29 August 2008. Sunpower and JA Solar were caught in a similar position as they had lent 2.9 million and 6.56 million shares respectively to Lehman. J.A. Solar's Nasdaq listed stocks slid to its lowest level in over a year—\$8.90 per share. In Europe, the Nex-Wilderhill share index of clean energy companies crashed more than 50% from 26 September to 27 October 2008, while Nasdaq fell 31% over the same period.

The question is not simply one of decline in share values or earnings. Rather, it is how these above mentioned alternative energy companies, along with many others in the sector, will be impacted in the immediate future as they seek fresh funds to fuel further growth. Capital has become either more difficult to raise, more expensive to secure, or both. Just to give

an example, the day Lehman announced its bankruptcy, the London Interbank Offered Rate (LIBOR), the most widely used benchmark for short-term interest rates, more than doubled to 6.43 percent for overnight borrowing in U.S. dollars. Even though the rate recovered to previous levels by late September 2008, the overall cost of capital remained high. This also means that some companies would find it impossible to raise capital both for financing production expansions and actual generation projects.

The price of carbon allowances in the EU Emissions Trading Scheme (ETS) which is the world's largest carbon market plunged 17% in October 2008. This decline was triggered by fears of a deep recession in Europe which led investors to conclude that no growth means lower emissions and lower carbon prices. Some big emitters have already announced production cuts. Eg. Corus and Arcelor Mittal who are Europe's biggest steel makers have cut production. The cement sector which is another big emitter has also cut production because of slowdown in construction. For the power sector which accounts for 70% of EU Emissions Trading Scheme, two-thirds of the power is generated for the housing and service sectors. Since these sectors have been hit, power consumption has been affected.

Historically, carbon prices have been linked to oil prices. Higher oil prices have meant higher carbon prices and vice versa. So the decline in crude oil prices has also resulted in reduction of carbon prices. But if the oil prices stay low for a longer period, it will lead to an increase in emissions as it removes the financial incentive to develop low-carbon energy projects. So it is not only the EU Allowances (EUA) under the ETS which have been affected.

The global financial crisis has also resulted in lack of funding for emissions reduction projects under the Clean Development Mechanism of the Kyoto Protocol. Prices for secondary Certified Emission Reductions (CERs) which are carbon credits issued for emission reduction projects in developing countries have traded at very low prices since the first indicators of the recession began to seep in during 2008. The combination of tighter credit conditions and lower profit margins due to lower secondary CER prices

threaten CDM project development. This crisis also points to the deficiencies of trading mechanisms as a way of emissions reduction. The real way to solve the climate crisis

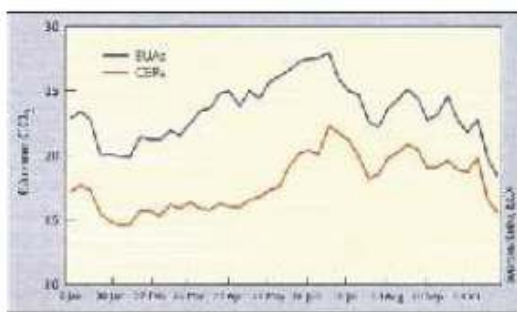
should be absolute emissions reduction by the developed world, instead of just trading pollution.

If the recession is going to last for a longer period like two to four years, corporations are likely to emphasise 'bail-outs' at the cost of long-term environmental goals, regulations and policies. They are likely to lobby for delays to or exemptions from environmental regulations. Governments might buckle down under voter's pressure to save jobs rather than formulate regulations to protect the environment. Similarly, regulatory measures like Renewable Portfolio Standard designed to promote generation and consumption of green power may be under pressure for relaxation of norms. Also, when financial institutions and corporations try to cut the flab to survive the meltdown, the axe is more likely to fall on the 'non-profit' jobs handled by sustainability experts within these organisations. These are real dangers that policy makers should guard against. Comparisons with the great crash of 1929 are unfair because then environmental policies did not exist in any significant way, except for issues like water treatment. Carbon footprints were not a matter of major concern then.

Beyond these adverse impacts, the fundamentals of the clean energy sector are strong. In the long-term, the sector will grow and outpace the conventional economy. Even now, in countries like China, the wind power market seems set to beat the blues. China is bullish on wind power and the current annual market of 4 GW to 5 GW is expected to grow to 10 GW a year by 2011. The manufacturing capacity within China is expected to be 19 GW by 2010. Observers predict that China is on track to become the single largest market for wind power in the world by 2011. The Global Wind Energy Council predicts that the country will have more than 200 GW (2 lakh megawatts!) of wind power projects installed by 2020. Chinese industry leaders like Sinovel's Han Junliang feel that the global credit crunch could actually help speed up the healthy consolidation of the Chinese industry, boosting competitiveness.

Despite the temporary slump, makers of wind turbines and solar systems still have long waiting lists for their wares. The price of silicon, the chief component of photovoltaic cells is falling. Cheaper steel and copper should help reduce the cost of making wind turbines. In addition, favourable policy environment and political commitment continue to grow in most countries, largely influenced by climate change concerns. The International Energy Agency, an OECD outfit, who has so far looked askance at renewables, has started speaking in its favour, although it continues to underrate the potential of wind power. The favourable policy environment created by the European Commission is here to stay. French President Nicholas Sarkozy who is currently the EU President, has made it clear that financial challenges cannot act as an excuse for not addressing the climate change issue. The new U.S. President Barack Obama has been an ardent believer in energy independence via the renewable route. In fact, he wants to create 5 million

December 2008 EUA and CER Prices



Source: Environmental Finance, November 2008

new jobs, largely through the building of a green economy. Obama is greeted by the renewable energy industry with great hope.

The policy directions indicated by the new President of the United States has kindled hope for revival of the clean energy sector. After Obama's remarkable victory on 4 November 2008, the heads of industry associations representing solar, wind, geothermal and hydropower sectors held a press conference to put forth their wish list. These include:

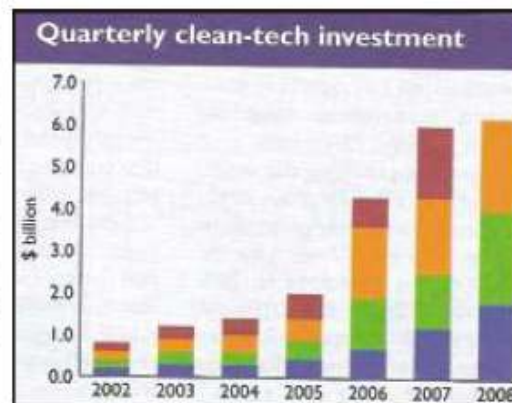
- Some fundamental changes to federal renewable energy tax incentives.
- \$30 billion to finance renewable energy projects in 2009.
- A national Renewable Portfolio Standard.
- A major renewable energy transmission initiative.
- Caps on greenhouse gas emissions.
- An executive order to hugely expand the federal government's purchase of renewable power.

The R.E. industry associations are hoping that some of their proposals can be passed into law during the first 100 days of the Obama administration. Some of the above needs are more immediate than others. The top priority relates to federal tax incentives. In early October 2008, the U.S. Congress under the Bush Administration had introduced an eight-year 30 percent Investment Tax Credit (ITC) for the solar industry, as part of the \$700 billion financial rescue package. This move was expected to unlock the vast potential of the U.S. solar energy market. But the banking crisis and the related collapse of the tax equity market have to a great extent undermined the effectiveness of this long-term policy.

The financial crisis has also eroded the profitability and thereby the tax appetite of corporate investors in wind power, resulting in an inability to absorb the Production Tax Credit (PTC) given for investment in wind power. In fact, the new U.S. government is discussing the possibility of a number of new legislative initiatives to tide over this problem. In this context, a shift towards a direct Generation Based Incentive (GBI) without linking the support mechanism to the tax liability of the investor would be the most appropriate move. In India, the GBI scheme initiated by MNRE in June 2008 should be enlarged by removing the cap to unleash the full potential of this sector. In short, the real futuristic sectors like clean energy should not be left to the mercy of the global financial web, but innovative solutions should be found for their growth.

Other indicators that are bucking the trend are that of venture capital investments and sustainable and responsible investments. The Cleantech Group based in San Francisco has, in a recent press release, pointed out

that venture capitalists invested \$6.6 billion in clean-tech firms in the first three quarters of 2008. This has exceeded the \$6 billion invested in the sector in the whole of 2007.



Source: Cleantech Group

In the third quarter of 2008 only, venture capitalists invested \$2.6 billion in 158 companies across North America, Europe, China and India. This was a 37% increase on clean-tech investment during the same period last year, and a 17% increase on the second quarter of 2008. Similarly, the Paris based European Sustainable Investment Forum (Eurosif) has released figures indicating sustained increase in sustainable and responsible investment (SRI) or ethical investment. Eurosif estimates the broad SRI market at €2.2 trillion in 2007, up from €928 billion a year earlier. Growth in Europe was driven primarily by increasing demand from institutional investors for responsible investment. Besides, they also see it as a tenet of good risk management in an era of predicted business risks associated with climate change. This is an area where Indian bourses have yet to focus on. I have earlier written in this column on the need for greening of our stock markets.

The global meltdown is an indicator of unsustainability of the current economic model. But this was not the only crisis witnessed in 2008. There were three crises running parallel that year: the financial crisis, the fuel crisis and the food crisis. These three crises require us to urgently review the economic model we inherited from the 20th century. The food crisis tells us that 'greenwashing'—an unreal green solution created by corporate greed to produce biofuels from food products—is no real solution to the environmental crisis. Same is the case with short-term 'bail-outs' using large amounts of taxpayers' money, even though it is now required to get out of the mess. The fuel crisis and the projected 'peaking of fossil fuels' signals the engineering of a transition to real clean energy on a war-footing. If we meet these challenges and plan a transition to real sustainability, we will not only preserve our planet's environment but also create sustainable jobs for half a billion young people who will join the workforce in the next decade. Steering the economy on to a sustainable path is not just an environmental dream. It is about hard economics and real choices for future survival!