Indian Mining Exchange

7th August 2011

Article One

http://www.moneycontrol.com/news/cnbc-tv18-comments/coal-india-to-focuscsr-to-meet-growth-targets_572812.html

Coal India to focus on CSR to meet growth targets
Aug 03, 2011

India's biggest coal producer Coal India (CIL) is unable to achieve the targeted growth and is unhappy about the same, reports Amrita Panja of CNBC-TV18.

According to NC Jha Chairman, Coal India, "Zero growth last year and the not so impressive growth this year points out to the fact that something more needs to be done in terms of environment, corporate social responsibility (CSR) and our initiatives of work."

Impediments to growth

The company is facing problems regarding acquisition of land with areas marked as no go zones.

Delay in environmental clearances have cost the company 16 million tonne of coal in FY11. It will be tough for Coal India to meet its FY12 production target of 452 million tonne.

Jha further added, "We need land on a continuous basis as a raw material. So, the basic thrust is to get land. How do we get land unless we win the confidence of people in the coal bearing area for that certain initiatives need to be taken such that people give us land, like CSR, environment responsibilities"

The company has set aside 5% of its retained profit for CSR activities. On the operational front, it also plans to use foreign technology for greater access to coal.

TK Lahiri, chairman and managing director (CMD), Bharat Coking Coal, said, "BCCL and CIL board have been able to finalise two high capacity mines both of Chinese technology. One is of 2MT a year production for 10 years and another is a 4.5 MT a year production for 10 years."

Balancing environmental responsibilities and interest of stakeholders is a tightrope walk for Coal India, which constitutes 80% of the country's coal supply. With a wide gap in demand and supply, initiatives on sustenance seem the only way out.

Article Two

http://www.scientificamerican.com/article.cfm?id=un-panel-suspends-offsets-new-coal-fired-plants

U.N. Panel Calls for Offsets to New Coal-Fired Plants to Be Suspended

By Nathanial Gronewold and ClimateWire | July 11, 2011 |

Carbon credits to projects in India and China that emit enormous quantities of greenhouse gases could be denied immediately

UNITED NATIONS -- They are the carbon offsetting projects most hated by environmentalists, but there may now be an opportunity to put an end to them.

Currently, there are five coal-fired power plants registered as emission reduction projects under the Clean Development Mechanism (CDM), an international offsetting program run by an arm of the United Nations. Pressure from developing nation governments led to their inclusion in the program, as supporters claim the newer supercritical coal plants avoid carbon dioxide emissions by preventing dirtier plants from being built instead.

But issuing carbon offset credits to projects that emit enormous quantities of greenhouse gases into the atmosphere has attracted near universal opposition from environmental organizations, which call the practice absurd.

Most groups have called for an end to crediting coal plants with fighting global warming. Those voices of opposition may finally get their wish, at least temporarily.

A CDM advisory panel that reviews the methodologies behind various offsetting schemes last week recommended that the coal plant offsets be suspended immediately. The Executive Board of the CDM will take up that recommendation during a meeting under way this week.

The panel argues that the current rules as written let supercritical coal plant developers' claim avoided emissions by comparing their projects to power plant technology that's now a decade old. As supercritical technology becomes more mainstream and power generators normally improve on the efficiency of even their oldest plants over the course of operations, the loophole allows plants requesting CDM credits to exaggerate the calculated emissions avoided by millions of tons of CO_2-equivalent gases, the panel warns.

A vote in favor of the panel's recommendation by the board won't kill the projects completely -- the panel also recommends revising the methodology to account for the annual efficiency improvements expected in the coal energy industry. The suspension is designed to provide time for a more thorough review and revision.

But activists are hoping for at least a temporary suspension to prevent the first CDM credits for registered coal plant facilities from being issued in the first place.

"Given that the average capacity of the registered projects and those in the validation pipeline are in the range of 2,000-3,000 [megawatts], resulting in a large amount of emission reductions per project activity, extra caution should be given to ensure that the baseline emissions are estimated in a transparent and conservative manner," the panel says in its recommendation to the Executive Board.

The methodology panel says the coal-fired plant projects should be suspended to allow time "to revise the procedure to identify the most likely baseline scenario."

Indian and Chinese plants at risk

The plants at risk of being denied carbon credits include four in India and one in China built with the assistance of the United Kingdom. Indian coal plants under the CDM received financial backing from the World Bank, sparking an outcry against that organization by groups that argue that the bank's support for the coal industry is inconsistent with its other efforts to tackle climate change.

One coal project, led by the giant Indian conglomerate Tata, was rejected by the CDM, but nonprofit watchdogs say that application is being resubmitted. Another project in India is currently being reviewed by the CDM secretariat in Bonn, Germany.

The CDM awards successfully registered projects Certified Emission Reductions (CERs), credits that can be sold to governments or into the European Union's carbon cap-and-trade program.

"None of the projects registered under ACM0013 has so far received CERs," said CDM office spokesman David Abbass. ACM0013 is the title of the methodology governing coal projects.

Abbass did not indicate when CER issuances to the registered projects would commence. But a vote by the Executive Board in favor of the methodology panel's recommendation would immediately freeze all outstanding issuance requests and put on hold applications by new coal plants requesting admission to the CDM.

The European nonprofit CDM Watch estimates that allowing plants to measure their emissions levels against older coal-fired power generating technology lets developers exaggerate their greenhouse gas savings by 25 to 50 per cent above where they actually are.

CDM Watch and others have been fighting to get coal plants out of the international offsetting scheme for years, but political support from China and India for keeping them in has so far prevented their removal.

"The projects perpetuate the burning of coal, the world's most carbon intensive fossil fuel," CDM Watch says in a note commenting on the methodology panel's recommendation. "The

financial support of coal projects fundamentally undermines the CDM's climate mitigation goals."

Justin Guay, an associate with the International Climate Program at the Sierra Club, said it would be ideal for the Executive Board to toss out the methodology entirely when they review the panel's recommendation during their 62nd meeting in Marrakesh, Morocco, this week. But he and others hope that a suspension of the methodology will at least begin to shed more light on the problems inherent in supporting such projects with offset credits.

"There are issues aside from the very concept of having coal in the CDM that basically exposes how faulty this methodology is," Guay said. "They use default emissions factors for various types of coals, they have to use various efficiency rates and things like that, and slight tweaks in those has huge impacts when you're talking about hundreds of millions of credits."

Article Three

http://valentemike.blogspot.com/2011/03/no-nuclear-no-coal-now-what.html

March 17, 2011

No Nuclear? No Coal? Now What?

I had the pleasure of meeting Stanford Professor Mark Jacobson during his visit to Ivey Business School a couple of weeks ago. Mark argues that there is no reason why we can't power all our energy needs with renewable sources. Ranked in order of most sustainable, he suggests the following:

1. Wind
2. Concentrated solar power
3. Geothermal
4. Tidal Power
5. Photovoltaic
6. Wave Power
7. Hydro
8. Nuclear – this would drop to the bottom when considering the potential for nuclear fallout which is happening right now.

Coal using Carbon Capture and Storage (CCS) – carbon capture does not capture the carbon used to transport the coal and extract it out of the ground – which represents a large percentage of where coal related CO_2 comes from In a debate on Ted.com Mark goes up

against one of the fathers of the environmental movement, Stewart Brand, who argues for nuclear energy as our solution to climate change. Although Brand puts forward some good arguments, Mark comes back with some impressive statistics that counters many of Brand's claims. I asked Mark about the growing number of environmentalists and climatologists advocating nuclear power as the best approach to replace coal. He finds it frustrating when these scientists put forth opinions that are not based on their area of expertise. In Brand's argument he says that those who know the most about nuclear are least worried. But then he puts up James Hansen as an example of a person who is not worried about nuclear. Climatologists are not experts in energy and neither are environmentalists. James Hansen is an Earth and Environmental Scientist and Andrew Weaver is a climatologist – both of whom advocate for nuclear – perhaps until recent events in Japan. Listening to some of the experts on nuclear these last few days, I would say they're worried!

With the growing distaste towards nuclear energy, Mark's assertions are likely to gain popularity. Mark is the first to accurately map out global wind and solar energy creating capacity. He published these findings in the Energy & Environmental Science Journal* where he reports that global wind capacity can generate up to 1700 terawatts of electricity while solar capacity can generate up to 6500 terawatts of electricity. On land, these sources of energy can generate up to 70-170 TW of electricity (excluding Antarctica) and 340 TW respectively. Today's population demands 12.5 TW of electricity with an estimated 16.9 TW by 2030 – a small percentage next to what is possible.

So what's the problem?

Mark tells me that wherever he goes to present his work, he receives a typical set of questions from the audience. The first is the issue of availability. How can we assure a stable supply of energy when the wind doesn't always blow and the sun doesn't always shine? Mark asserts that the energy solution requires a combination of energy sources that work in unison depending on what energy is available. In a pilot test in California over a two year period, Mark found that based on a stable supply of geothermal energy, available wind and solar energy, and hydro-electricity, the population in the experiment would not have to resort to natural gas sitting in reserve. His experiment ultimately trumps those who would argue that renewable energy is an unreliable source of energy. Mark calls this "load-matching" whereby the source of energy remains flexible so that energy utilities can draw on the source most available at a given point in time. Hydro-electricity is particularly useful as a backup because it allows for quick on and off if and when solar and wind are not available.

What about the ecological footprint and negative health effects of wind turbines? This is another popular question and was the source of resistance to an off-shore wind project in Ontario. In a presentation I attended here at UWO, a medical doctor from Doctors without Borders presented results of a study that showed no significant health effects originating from wind turbines. In fact, compared with coal and the potential fallout from nuclear, wind

turbines are essentially benign. Mark too reamed off a number of studies suggesting no health effects. With respect to bird wildlife, he spoke of an interesting study showing that birds are in fact worse off from the indirect effect of coal than any direct effect of turbine blades. Finally, there's the ecological footprint of the wind turbine itself. James Lovelock, another environmentalist and self-declared energy expert, is a nuclear supporter because of the impact wind turbines have on ecosystem health. But Mark says that this is a myth when you consider the fact that the base of the wind turbine is quite small and that turbines need to be a minimum distance from one another, leaving huge plots of undisturbed land. If we were to power the entire US vehicle fleet on wind energy, we would need 1-3 square kilometers of land for the bases of the turbines (larger once you consider the natural land between the turbine poles).

The final question he typically receives is related to the prohibitive costs and time of construction associated with renewable energy. He is alarmed that the Ontario government's feed in tariff awarded individuals and organizations $0.11 for each kw of energy generated from wind and $0.41 from solar. He argues that wind should cost between $0.03 and $0.05 per kw hour whereas coal costs between $0.12 and $0.14 once you include health costs ($0.07 to $0.09 if you don't). What about transmission of wind and solar power? This cost is included in the calculation. Wind and solar are two of the quickest in terms of construction.

Mark then goes so far as to advise what the global energy mix should be based on his findings. He says that wind should power 50% of global energy needs (6-8 TW of electricity), which means that we need 3.8 million wind turbines. Concentrated solar power should represent 20% of our power which would require 49,000 concentrated solar power plants (300 MW per plant). Photovoltaic comes in at 14% with 14,000 solar PV plants at 300 MW each. The rest is geothermal, hydro, tidal and wave power with relatively small proportions of the energy mix.

So what's going on here? Why aren't we moving in this direction? In asking him this very question, he says that this is where his work ends. He's not a social scientist but knows that there are some very powerful players who would be quite upset if we moved away from coal, oil and nuclear energy. It's estimated that existing energy companies receive 8-10 times in subsidies as renewable energy companies and spend 8-10 times more in political lobbying than their renewable counterparts**. I was saddened to hear a Professor in Anthropology in Japan talking about the attack on democracy as he describes how the interests of a few powerful actors pushed forward nuclear energy policy in the country in the past.

Although Mark's study is the first of its kind, we're likely going to see more of the same. This study is perhaps a starting point in refuting those who claim that renewable energy is too unreliable, costly, unproven, and not pragmatic. It may also show that resistance has more

to do with protecting a group of elite interests who have a lot to lose from changing the status quo than it does with science or physics.

* Source: Jacobson (2009). Review of solutions to global warming, air pollution and energy security. Energy and Environmental Science. 2: 148-171

**Nick Parker, CEO of CleanTech. Presentation at the Ivey School of Business: Steering the Storm. March 9th, 2011.

Article Four

http://www.popularmechanics.com/science/energy/coal-oil-gas/4339171

The Myth of Clean Coal: Analysis

Will coal become the clean, green fuel of the future? Not so fast.

July 14, 2011

American Electric Power announced it would table plans to build a carbon capture and sequestration project at its Mountaineer Plant in West Virginia, which is mentioned in this article.

Coal is pretty amazing stuff. A single fist-size lump of bituminous coal contains about 12,000 Btu--enough energy to power a 75-watt bulb for two days. It's relatively easy to dig out of the ground and dirt-cheap: about one-sixth the cost of oil or natural gas per Btu. Most of the modern industrial world we see around us was built with coal power.

But coal has issues. Each lump can contain large amounts of sooty particulates, sulfur and nitrogen compounds (which cause acid rain), and traces of mercury and other toxic metals. Although coal-fired power plants are cleaner than they used to be, they are still bad news for the environment and human health. A recent study concluded that coal emissions contribute to 10,000 premature deaths in the United States each year. And coal is by far the largest single source of greenhouse gases in the U.S. So it is no surprise that coal has long been the primary target of proposals to cut air pollution and carbon-dioxide emissions.

Until now. Just in time to skirt the various plans to cap or tax CO_2, coal is getting rebranded. The new buzzword is "clean coal"--and it's being portrayed as the high-tech, low-emissions fuel of the future. Senators John Kerry, D-Mass., and Lindsey Graham, R-S.C., recently wrote a New York Times op-ed piece calling for the United States to become the "Saudi Arabia of clean coal." U.S. energy secretary Steven Chu has called on his counterparts around the world to promote the "widespread affordable deployment" of clean-coal technology. A current climate bill in the U.S. Senate proposes a complex regime of taxes and subsidies intended to cut America's greenhouse gas emissions by 20 per cent by 2020. But the bill effectively gives the coal industry a pass on cutting emissions until "sufficient commercial-scale" clean-coal technology has been deployed. Why try to reduce our dependence on coal

today, the reasoning seems to be, when fabulous, guilt-free clean coal is just around the corner?

There's just one problem with this scenario: Coal will never be clean. It is possible to make coal emissions cleaner. In fact, we've come a long way since the '70s in finding ways to reduce sulfur--dioxide and nitrogen-oxide emissions, and more progress can be made. But the nut of the clean-coal sales pitch is that we can also bottle up the CO_2 produced when coal is burned, most likely by burying it deep in the earth. That may be possible in theory, but it's devilishly difficult in practice.

Carbon dioxide is not some minor byproduct of coal combustion. Remember your high school chemistry: When coal burns, oxygen from the air combines with the carbon in the coal in an exothermic (heat-releasing) reaction. Because of the addition of oxygen, the resulting CO_2 weighs more than the carbon alone--which means that each pound of coal produces about 2.5 pounds of CO_2. Keeping that CO_2 out of the atmosphere requires a process known as carbon capture and sequestration (CCS). It works by forcing the exhaust from a power plant through a liquid solvent that absorbs the carbon dioxide. Later, the solvent is heated to liberate the gas, much the way a bottle of soda releases its dissolved CO_2 when opened. The CO_2 is then compressed to about 100 times normal atmospheric pressure and sent away for storage.

So far, so good. But CCS has two major hurdles. First, it consumes energy--a lot of it. While estimates vary, a coal-fired power plant would have to burn roughly 25 per cent more coal to handle carbon sequestration while producing the same amount of electricity. That would mean a vast expansion in mining, transportation costs and byproducts such as fly ash.

But that's the easy part. The harder challenge would be transporting and burying all of this high-pressure CO_2. American Electric Power recently began a CCS project at its Mountaineer Plant in West Virginia. The operation captures a few hundred tons of CO_2 a day. That's a start--but a typical 500-megawatt power plant produces about 10,000 tons daily.

Collectively, America's coal-fired power plants generate 1.5 billion tons per year. Capturing that would mean filling 30 million barrels with liquid CO_2 every single day--about one and a half times the volume of crude oil the country consumes. It took roughly a century to build the infrastructure we use to distribute petroleum products. Could we build an even bigger CCS infrastructure of pumps, pipelines and wells quickly enough to hit the ambitious targets the climate bill envisions? Serious plans to engineer--much less finance--such a vast project aren't even on the table.

Here's a final problem: We don't know if the gas will stay buried. We could easily spend hundreds of billions injecting CO_2 into the earth only to have it start leaking out again in a few decades. None of this means that CCS is impossible to achieve. But it is a dangerous gamble to assume that it will become technically and economically feasible any time soon.

At the moment, the Senate's climate bill is on the back burner. And many Americans remain dubious about both the causes and the appropriate solutions for global warming. (Recent revelations that several climate scientists apparently tried to squelch legitimate debate certainly don't inspire confidence.) But concern over greenhouse gas emissions will continue, and the pressure to regulate them is growing. Wouldn't it be a shame if we created a policy that burdens American consumers with higher energy prices and yet does virtually nothing to reduce our CO_2 emissions? By embracing the clean-coal myth, that lose-lose scenario may be exactly what we stand to achieve.

Sadly, although it might make little economic or scientific sense, the political logic behind clean coal is overwhelming. Coal is mined in some politically potent states--Illinois, Montana, West Virginia, Wyoming--and the coal industry spends millions on lobbying. The end result of the debate is all too likely to resemble Congress's corn-based ethanol mandates: legislation that employs appealing buzzwords to justify subsidies to a politically favored constituency--while actually worsening the problem it seeks to solve.

The focus on mythical clean coal is particularly frustrating because practical, cost-effective alternatives do exist--and I don't mean just wind and solar power. Natural gas is plentiful in the U.S., and gas-fired power plants produce only about half as much CO_2 as coal. Not only that, but once it's ready, the CCS technology envisioned for coal plants would be even more effective if used with natural gas. Tiny gas-fired cogeneration plants in individual homes could also help. Because these mini electrical generating systems use their waste heat to drive the homes' climate control systems, they avoid the huge energy losses involved in making power at distant facilities. This technology exists today. Nuclear power is another proven, low-CO_2-emitting option--and despite public fears, U.S. nuclear plants have been paragons of safety compared to the harm done by coal-fired plants.

The cleanest energy option of all is also the closest at hand: conservation. As clean-energy guru Amory Lovins has shown, it is almost always - cheaper to save energy than to mine or drill for it. And there are still massive efficiencies to be found almost everywhere energy is used. Boosting incentives for insulation, next-gen LED lights and ultra-efficient smart appliances could do more than carbon sequestration to reduce CO_2 emissions in the coming decades.

Let's be clear. We should continue research into making coal cleaner--that fuel will be a vital part of our energy mix for decades. But let's not allow clean-coal myths to divert us from real-world energy alternatives that work today.

Article Five

http://www.reuters.com/article/2011/02/16/us-usa-coal-study-idUSTRE71F4X820110216

Coal's hidden costs top $345 billion in U.S.: study

(Reuters) - The United States' reliance on coal to generate almost half of its electricity, costs the economy about $345 billion a year in hidden expenses not borne by miners or utilities,

including health problems in mining communities and pollution around power plants, a study found.

Those costs would effectively triple the price of electricity produced by coal-fired plants, which are prevalent in part due to their low cost of operation, the study led by a Harvard University researcher found.

"This is not borne by the coal industry, this is borne by us, in our taxes," said Paul Epstein, a Harvard Medical School instructor and the associate director of its Center for Health and the Global Environment, the study's lead author.

"The public cost is far greater than the cost of the coal itself. The impacts of this industry go way beyond just lighting our lights."

Coal-fired plants currently supply about 45 per cent of the nation's electricity, according to U.S. Energy Department data. Accounting for all the ancillary costs associated with burning coal would add about 18 cents per kilowatt hour to the cost of electricity from coal-fired plants, shifting it from one of the cheapest sources of electricity to one of the most expensive.

In the year that ended in November, the average retail price of electricity in the United States was about 10 cents per kilowatt hour, according to the Energy Department.

Advocates of coal power have argued that it is among the cheapest of fuel sources available in the United States, allowing for lower-cost power than that provided by the developing wind and solar industries.

"The Epstein article ignores the substantial benefits of coal in maintaining lower energy prices for American families and businesses," said Lisa Camooso Miller, a spokeswoman for the American Coalition for Clean Coal Electricity, an industry group. "Lower energy prices are linked to a higher standard of living and better health."

HEALTH, ENVIRONMENTAL FACTORS

The estimate of hidden costs takes into account a variety of side-effects of coal production and use. Among them are the cost of treading elevated rates of cancer and other illnesses in coal-mining areas, environmental damage and lost tourism opportunities in coal regions where mountaintop removal is practiced and climate change resulting from elevated emissions of carbon dioxide from burning the coal.

Coal releases more carbon dioxide when burned than does natural gas or oil.

The $345 billion annual cost figure was the study's best estimate of the costs associated with burning coal. The study said the costs could be as low as $175 billion or as high as $523 billion.

"This is effectively a subsidy borne by asthmatic children and rain-polluted lakes and the climate is another way of looking at it," said Kert Davies, research director with the environmental activist group Greenpeace. "It's a tax by the industry on us that we are not seeing in our bills but we are bearing the costs."

The estimates came in the paper "Full cost accounting for the life cycle of coal," to be published in the Annals of the New York Academy of Sciences. Epstein discussed his findings on the Arctic Sunrise, a 164-foot-long (50 meter long) icebreaker operated by Greenpeace, and moored in Boston Harbor.

Leading users of coal in the United States include utilities American Electric Power Co Inc and Duke Energy Corp. The top producers include miners Arch Coal Inc, Consol Energy Inc, Peabody Energy Corp and Alpha Natural Resources.

(Reporting by Scott Malone, editing by Maureen Bavdek) _____