



# The Indian CDM Subsidizing and Legitimizing Corporate Pollution

## **AN OVERVIEW OF CDM IN INDIA WITH CASE STUDIES FROM VARIOUS SECTORS**

NFFPFW

(National Forum of Forest People and Forest Workers)

with NESPON

and DISHA

(Society for Direct Initiative for Social and Health Action)

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**The Indian Clean Development Mechanism:  
Subsidizing and Legitimizing Corporate Pollution**

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DISHA (Society for Direct Initiative for Social and Health Action)

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Thanks to all the friends and colleagues.

# **Indian CDM: subsidizing and legitimizing Corporate pollution**

## **An Overview of CDM in India with Case Studies from various sectors**

### **EXECUTIVE SUMMARY**

Ever since the unique mitigation strategy of carbon trading was conceptualized in the Kyoto Protocol, India seems to have been one of the busiest countries to put the concept into action. By the end of June, 2011, India had 645 CDM projects registered with the UNFCCC, 261 of which had already been issued 93834 kCERs. At that point of time, India accounted for 1603 CDM projects (it has since gone up to 1914, as of 8<sup>th</sup> November 2011<sub>1</sub>), including the registered and CER-issued ones, with 922 at validation, and another 36 at various stages of registration. Taken together, the projects claim to reduce a whopping 444293 million tonnes of CO<sub>2</sub> equivalent by 2012 (meaning that the same amount of tradable CERs will be credited to the projects, if UNFCCC registers them all). The corresponding figures for 2020 are 1516432 ktCO<sub>2</sub> meaning that, taken together, the projects will reduce about 1520 million tonnes of Green House Gases.

With such eloquent figures on the board, one likes to know a little about the reality of this emission-reduction. Even the most cursory of looks at the Indian CDM scenario sees not much other than good and solid corporate profiteering. The global economic recession and the resultant lull in the carbon market worldwide could not diminish the Indian market's slow-to-take-off but unbridled enthusiasm for Carbon Credits.

Looking at India's CDM scenario in terms of corporate participation, we find that the energy efficiency sector, including HFC, is generating the maximum CERs. Big corporations such as Tata, ITC, Reliance, Ambuja, Birla, Bajaj, GFL, HFL, NFIL, and many others, who ritually emit millions of tonnes of carbon dioxide into the biosphere earn handsome returns in the name of 'clean development mechanism'. The current market price of a ton of CO<sub>2</sub> reduced and sold in form of CERs in the global market is anywhere between 6 and 10 Euros, even in this 'bearish' situation, whereas the most optimists of carbon consultants would not have given more than 5 dollars in 2005!

The corporate hegemony over Indian CDM seems to be no less than absolute. Profits not only from large industries hosting energy-efficiency projects, but also relatively low-key and 'sustainable' renewable-energy projects in the biomass and wind sectors went to the corporate sector up to 16th May 2011, corporations collared about 90 percent of the country total of

8108 kCERs issued to biomass projects, and they also own most of the CDM wind projects in India.

Some of the profit figures for companies engaged in the carbon trade are astounding. Till early 2008, the Jindal group made 11-billion rupees (and perhaps more) from selling supposedly 'reduced emissions' (1.3-million CERs) at their steel plant in Karnataka. The Tata Motors sold 163,784 CERs from clean wind projects at 15.7 euros/CER in 2007. Tatas' sponge iron projects in Orissa are set to yield 31,762 CERs every year. Reliance publicly boasts of its CDM Kitty—with seven registered projects with an annual CER-potential of 88,448 (till 2007 December), four more CDM projects under validation with an annual total of 149,533 CERs, and seven more potential CDM projects to generate about 4 lakh CERs per year. In 2007/08 alone, the GFCL group's earning from carbon money was thrice its total corporate profits(after tax).

The disturbing fact is that the PDDs(project-design documents, which the top consultants like Price-Waterhouse Coopers and Ernst &Young prepare on a turnkey basis for the project-holders, against a fat fee) these companies submit to the UNFCCC are full of half-truths and lies. Most of the CDM projects from which ground-level community reactions are available are found to be as polluting as any other industrial project, besides exhibiting barefaced violations over the mandatory social commitments.

The main problem with these projects' claims of reducing GHG Emissions is that there is no credible way to verify these claims. Dirty and utterly ineligible projects routinely sail through, without bothering to clean up their acts. Though the projects are 'validated' by overseas 'agencies' like DNV, who certify that the projects validated by them are 'in effect' reducing emissions, there is no monitoring of the validating agencies themselves, many of whom have been accused of half-done and highly manipulative jobs. For instance, the CDM Executive Board suspended DNV in 2008 November, saying that their audit process was questionable.

Though there is a proviso in the CDM mechanism that the projects must result in all-round sustainable development and benefit communities where those are located, the CDM projects in India barefacedly violate the sustainability criteria. Because the Indian government doesn't have any regulatory mechanism to enforce compliance, this practice goes on unchecked.



**PART 1**

# **CDM in India : An Overview**

## Clean Development Mechanism in India: A Country Overview

### Introduction

Rapid increase in atmospheric concentration of CO<sub>2</sub> and other greenhouse gases (CH<sub>4</sub>, N<sub>2</sub>O, NO\*) since about 1850 has raised numerous questions of global significance. For over 200 years, industries of the world have been transferring fossil carbon from underground deposits of coal, gas and oil to a more potent and rapidly active circulating carbon dump in the entire biosphere including the air, oceans, soil and the vegetation<sub>2</sub>

Approximately 6.0 Pg (6x10<sup>8</sup> tones) of carbon per year are released into the atmosphere due to fossil fuel combustion, cement manufacturing and deforestation<sub>3</sub>. Thus, the concentration of CO<sub>2</sub> in the atmosphere has increased from pre-industrial levels of 280 ppm to the current level approaching 360 ppm<sub>4</sub>. This elevated level of CO<sub>2</sub> will have profound and obvious effects on global vegetation pattern and climate alike, so much so that climate zones may shift northward. It will also affect the species-specific growth and physiology of plants directly and consequently alter plant community structure and ecosystem function—thus leading to total ecosystem chaos.

It has been estimated that if all the fossil fuel (equivalent to 3084 terra watts) is burnt by the year 2050, then CO<sub>2</sub> alone will lead to 20K increase with a concentration of 535 ppmv<sub>5</sub>. Burning of petrol alone releases a huge quantity of oxides of carbon into atmosphere. For every liter of petrol consumed, automobile exhausts release nearly 320 Kg of oxides of carbon and 2-8 Kg of oxides of Nitrogen (N)<sub>6</sub>, besides various other air pollutants into atmosphere. Amount of green house gases (GHG) released into the atmosphere seem to increase at an alarming rate when considered in terms of total mass rather than concentration or rate of changes. According to Rao and Chakravarty, 1992, nearly 260 Giga tons of Carbon, 3.8 Giga tons of CH<sub>4</sub>, 1.031 Giga tons of N<sub>2</sub>O and 10million tons of CFCs will be added in the next 50-60 years<sub>7</sub>.

If this trend goes on, and every year around six additional billion tons of carbon gets released into the atmosphere, then a time will come when earth would probably become inhabitable. It is the turn for the community of nations—especially developed countries who have been largely responsible for more than 60% of total greenhouse gases added to the biosphere in last hundred years—to take initiatives to reduce their carbon emissions.

The inter-governmental efforts which culminated in the Kyoto Protocol and a pledge to reduce GHGs in a time-bound manner therefore raised hopes. But the post-Kyoto developments sadly belied those hopes, as instead of initiating definitive emission-cutting measures the protocol became an ‘environmental’ excuse for rich nations and their polluting, GHG-emitting Corporations to start a quixotic and absurd trade in the World’s climate, mainly its carbon-absorbing capacity. They discovered able allies/partners in the nouveau rich of the developing countries, who sensed a windfall and jumped into the bandwagon, ignoring the harsh fact that developing countries emitting insignificant amount of GHG are more vulnerable to climate change. It has been estimated that, in terms of per capita, India emitted 1.19 tones of CO<sub>2</sub> equivalent, compared to Japan’s 8.8 tones and US’s 19.8 tons in the same year<sub>8</sub>.

Continued extraction/use of fossil fuel and changes in land cover and land use increases carbon dioxide, methane and nitrous oxide content of the atmosphere. Conversion of natural ecosystems to agricultural

/plantation ecosystems disturbs global ecological balance, disrupts the carbon (C) cycle, depletes soil and biotic C pools, and leads to emission of C (as CO<sub>2</sub> and CH<sub>4</sub>) and N (as N<sub>2</sub>O and NO\*) into the atmosphere. These radiatively-active (greenhouse) gases (CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O) influence global climate and ultimately cause global warming.

For years now, the issue of climate change has been a subject of international debate. Ironically, instead of the developed nations responsible for climate change, developing countries like India suffer the most from it. Climate change disproportionately impacts developing countries and the poor persons in all countries. In the tropics and subtropics, where rain-fed agriculture dominates, yields are likely to decrease because of their reliance on natural factors and lack of complementary inputs and institutional support systems. Water resources in developing countries are already stressed and unsustainably managed, and is likely to come under great pressure due to climate change.

The very real danger of climate change, however, failed to draw any adequate and appropriate responses from the world's governments. Knowing full well that that the biggest threat humanity has ever faced cannot be tackled without adapting drastic, radical measures to reduce GHG gas emission at source, the governments decided to indulge in endless jargons, and at the end, play into the hands of the profit-hungry corporations of the world. An environmental challenge, and a natural disaster of the greatest magnitude, turned into an economic opportunity for the rich and powerful of the world, and the absurd trade in GHG replaced the real and tangible measures that could have proved effective to actually combat climate change.

This trade in world's climate provided an illusory and false sense of security not only to the governments but also to the ever-growing strata of global consumers. Carbon Trade is the formulae with which governments, corporations and consumers of the era of globalization keep climate change at bay, and go about their businesses-as-usual. No physical or actual reduction of GHGs responsible for global warming takes place, and no consumer consume less. Yet, if we have to believe the Carbon traders, the trade is 'working', and we have the situation in control. Emissions are going down.

It is the worst lie ever told.

The Clean Development Mechanism (CDM), instead of ensuring real and measurable GHG emission reduction, has become an important part of the global carbon market that grew rapidly once the Kyoto Protocol came into force. Instead of promoting sustainable development in developing countries or resulting in actual emission reduction, during the last few years the CDM aroused only a worldwide interest in carbon investment; the 'mechanism', instead of providing incentives for a low-carbon and equitable growth trajectory in the industrially aspirant developing economies of the world, has become an instrument of the global carbon market as many said it was bound to be. Despite a current slump in the global market, in India CDM projects are still going strong in the sense that the number of projects seem to be increasing.

Before entering into the CDM scenario in India, we look briefly at the phenomena of carbon trading and the global spread of CDM.

### **Carbon Trading**

The UNFCCC, which was adopted in 1992 and came into force in 1994, established an international framework to address the global climate change, mainly through stabilization of GHG (Green House Gas) concentrations in the earth's atmosphere. In 1997, at Kyoto the world's industrialized countries had agreed in principle to cut their emissions of heat trapping (greenhouse) gases by about 5 per cent from 1990 levels, by implementing any of three mechanisms, i.e. Joint Implementation(JI), Clean Development Mechanism (CDM) and Emission Trading(*See Annexe 1 at the end of this chapter for details*). The agreement became

popularly known as the Kyoto Protocol. The protocol provided the context and a sufficiently legitimized institutional framework for setting up a global market in carbon credits.

The clean development mechanism is one of the ‘flexible arrangements’ under the Kyoto protocol, supporting the implementation of so-called sustainable and environment friendly technologies in developing countries.

**The World CDM Scenario**

As on 16<sup>th</sup> May 2011, with 6147 CDM projects in various parts of the world, a total of 3034 projects have been registered with the UNFCCC (Fig.1). Taken together, all these projects (6147) are meant to reduce 2756999 and 9067564 thousand tons of CO<sub>2</sub> by the end of 2012 and 2020 respectively (provided UNFCCC registers them all). The registered projects have already been issued a total of 605098 kCERs (Fig.2).

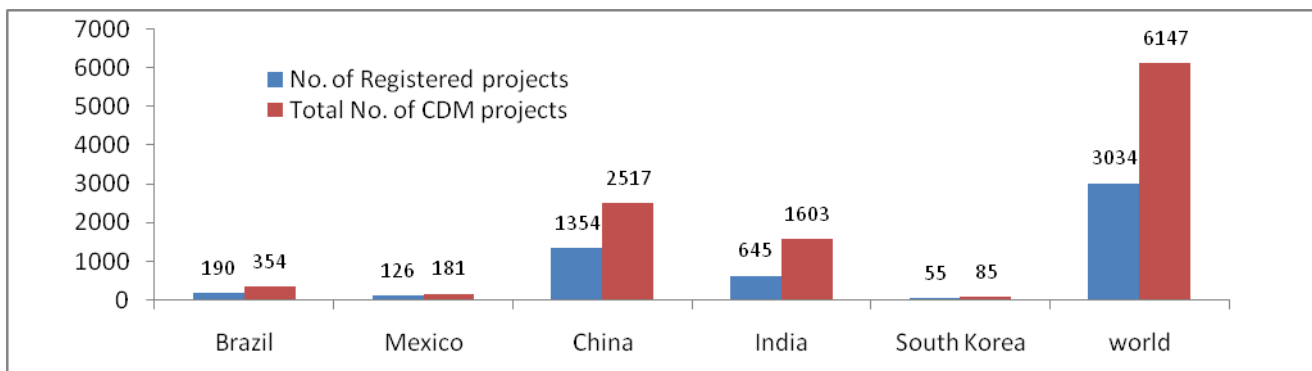


Fig. 1 Enumeration of CDM projects from few of the developing countries, and the global scenario (as on 16<sup>th</sup> May 2011) (Source: UNFCCC)

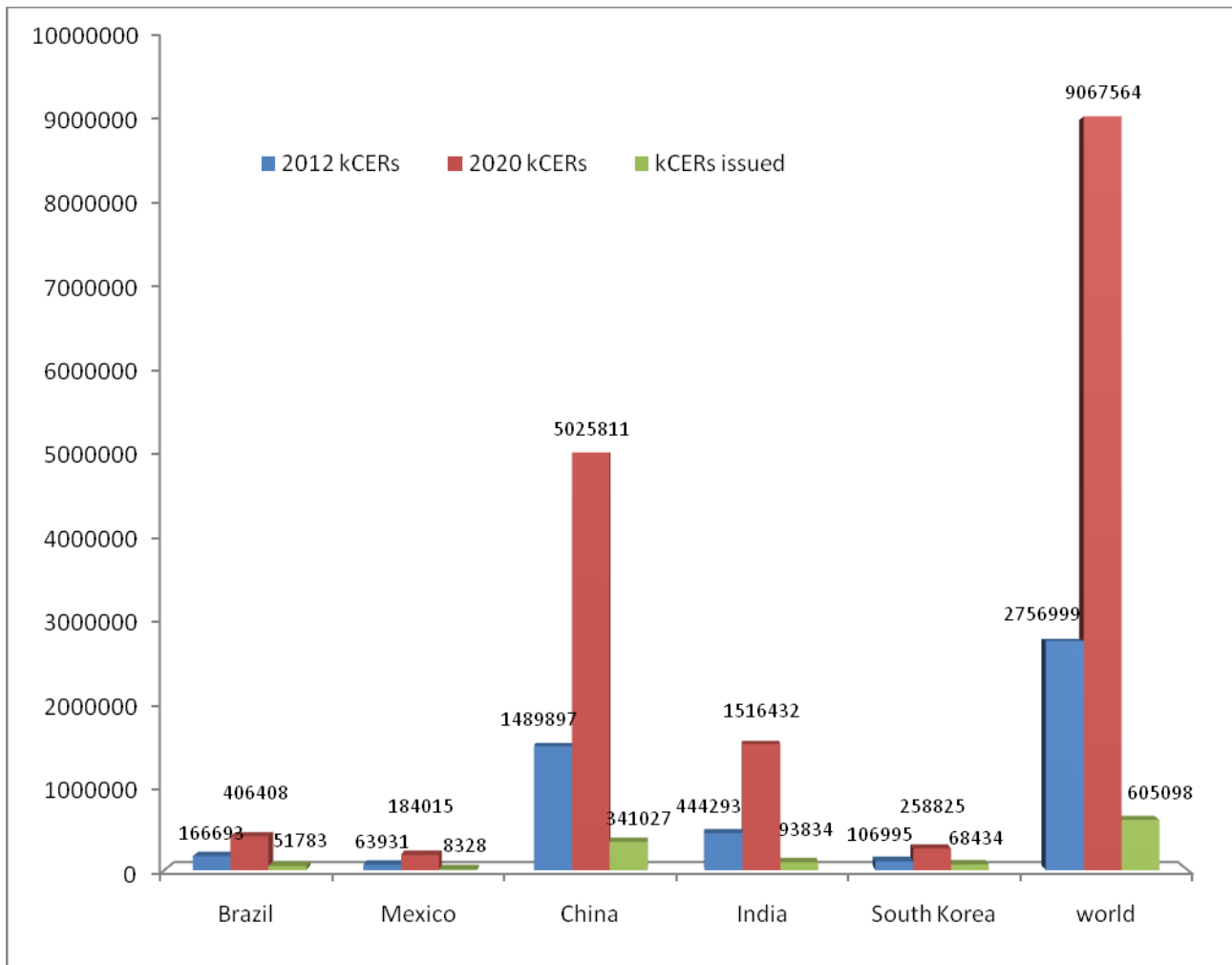


Fig.2 Emission reduction claimed up to year 2012 and 2020 by developing countries and from the world (as on 16<sup>th</sup> May 2011) (Source: UNFCCC)

[2012 kCO<sub>2</sub> -1000 tons of CO<sub>2</sub> equivalent up to year 2012; 2020 kCO<sub>2</sub> -1000 tons of CO<sub>2</sub> equivalent up to the year 2020; kCERs- Total reduction recognized by officially sellable Certified Emission Reduction (CER) issued by UNFCCC in 1000 tons of CO<sub>2</sub> equivalent]

Among the countries in the Asia Pacific, China expects to earn the maximum number of CERs by the end of 2020, apparently reducing 5025811 thousand tons of CO<sub>2</sub> from its 2517 projects (Fig.2). India stands second in the row with a total of 1603 projects, and claims to reduce 1516432 kCO<sub>2</sub> by the end 2020.

Many CDM Projects are going on worldwide, and more than hundreds of new projects are being added to the list each month. In the CDM pipeline, there are already 2921 not yet registered projects, the majority of which are renewable energy projects like hydro (1622) biomass (744), and wind (1359). There are also 812 energy efficiency (industry) projects and 329 landfill (waste to power) projects. (Fig.3).

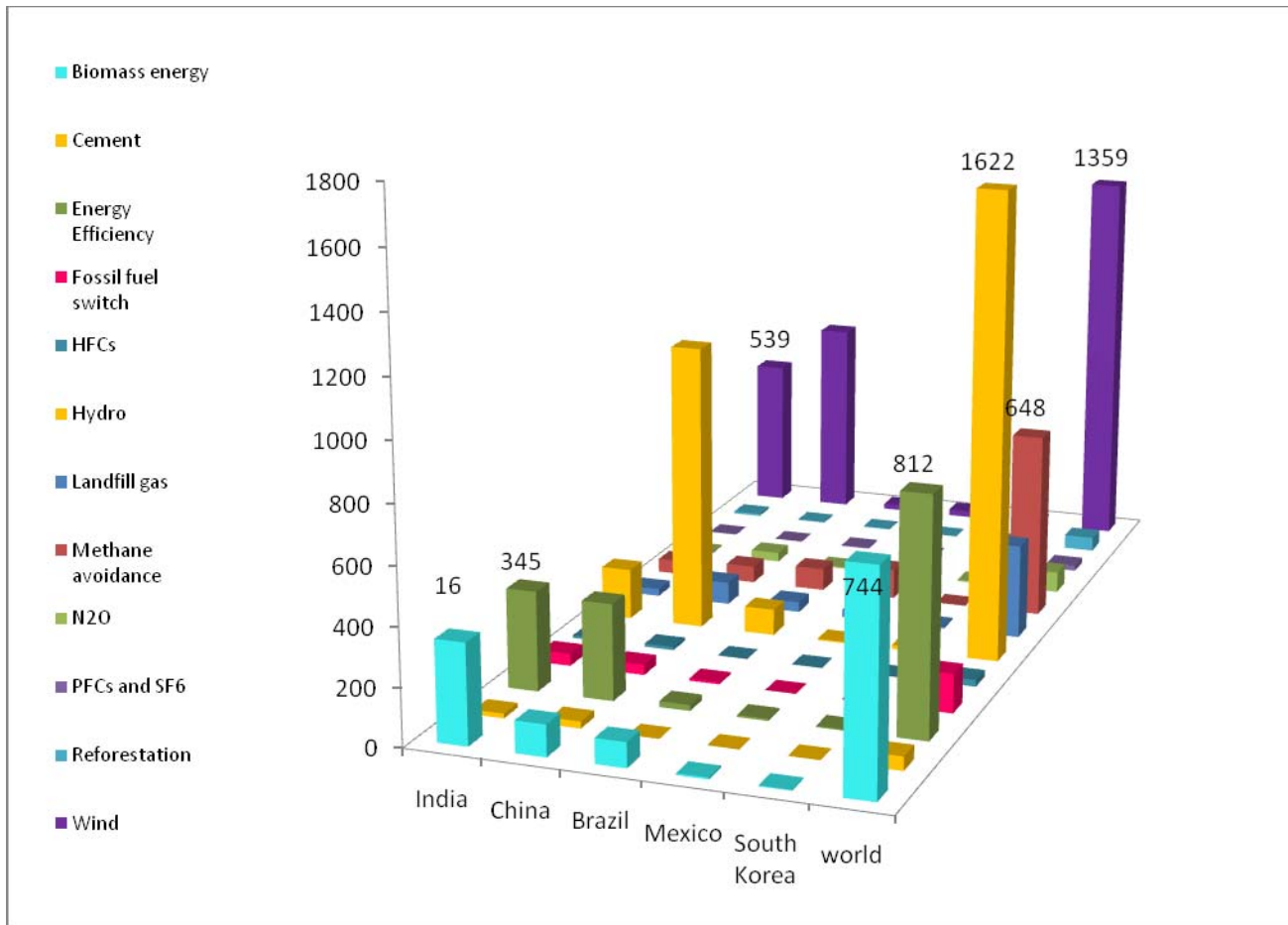


Fig. 3 Number of CDM projects from different sectors, world (as on 16<sup>th</sup> May, 2011). (Source: <[www.cdmpipeline.org](http://www.cdmpipeline.org)>)

## THE COUNTRY SCENARIO: INDIA

Ever since the mitigation strategy of carbon trading was conceptualized in the Kyoto Protocol, India seems to have been one of the busiest countries to put the concept into action. India signed the Kyoto protocol on 26<sup>th</sup> August 2002.

**Table 1: Overview of CDM projects in India (as on 16<sup>TH</sup> May 2011)**

Project status (including bilateral ones)	Number of projects	KCERs/annual	KCERs (2012)	*kCERs issued
Validation	922	98224	182563	
Registered	645	50423	258286	93834
Registration request	36	958	3444	
<b>Total</b>	<b>1603</b>	<b>149604</b>	<b>444293</b> (It will be 1516432 kCERs at 2020)	<b>93834</b> (from 261 registered projects)

\* Certified Emission Reduction issued so far. (Source: UNFCCC, 16<sup>th</sup> May 2011)

By the end of May, 2011, India had 645 CDM projects registered with the UNFCCC, 261 of which had already been issued a total of 93834 kCERs. At that point of time, India had 1603 CDM projects, including the registered and CER-issued ones, with 922 at validation, and another 36 at various stages of registration (Table.1 & Fig.4). Taken together, the projects claim to reduce a whopping 444293 ktCO<sub>2</sub> by 2012. The corresponding figures for 2020 are 1516432 ktCO<sub>2</sub>, meaning that the projects will reduce about 1520 million tonnes of Green House Gases.



Fig.4 CDM Projects in India, status-wise  
 [2012 kCO<sub>2</sub> -1000 tons of CO<sub>2</sub> equivalent upto year 2012; kCERs-Total reduction recognized in officially sellable Certified Emission Reduction (CER) issued by UNFCCC in 1000 tons of CO<sub>2</sub> equivalent]( as on 16<sup>th</sup> May, 2011).

### State-wise distribution

Tamil Nadu comes first in terms of number with 262 CDM projects. At 10135 kCERs per year, the state is expected to generate 37371 kCERs by 2012 and 102478 kCERs by 2020. The state now has 85 registered projects, and 29 of them have been issued a total of 8567 kCERs. Tamil Nadu has the country's maximum number of wind projects—177, of which 49 are registered—with 5113k issued CERs and a potential to generate 54197 kCERs by 2020. Five of its seventeen registered biomass projects have been issued a total of 727 kCERs.

With 231 CDM projects, Maharashtra comes second in the country in terms of number (Fig. 5). Out of these 231, 104 are wind energy projects. Maharashtra, with the maximum number of registered projects in the country (91 across sectors) have already been issued 2246 kCERs, of which 980kCERs are from wind and 360 kCERs from hydro, while 308 kCERs come from cement and 213 kCERs from biomass. Maharashtra with its 91 registered projects will generate 123290 kCERs by 2020.

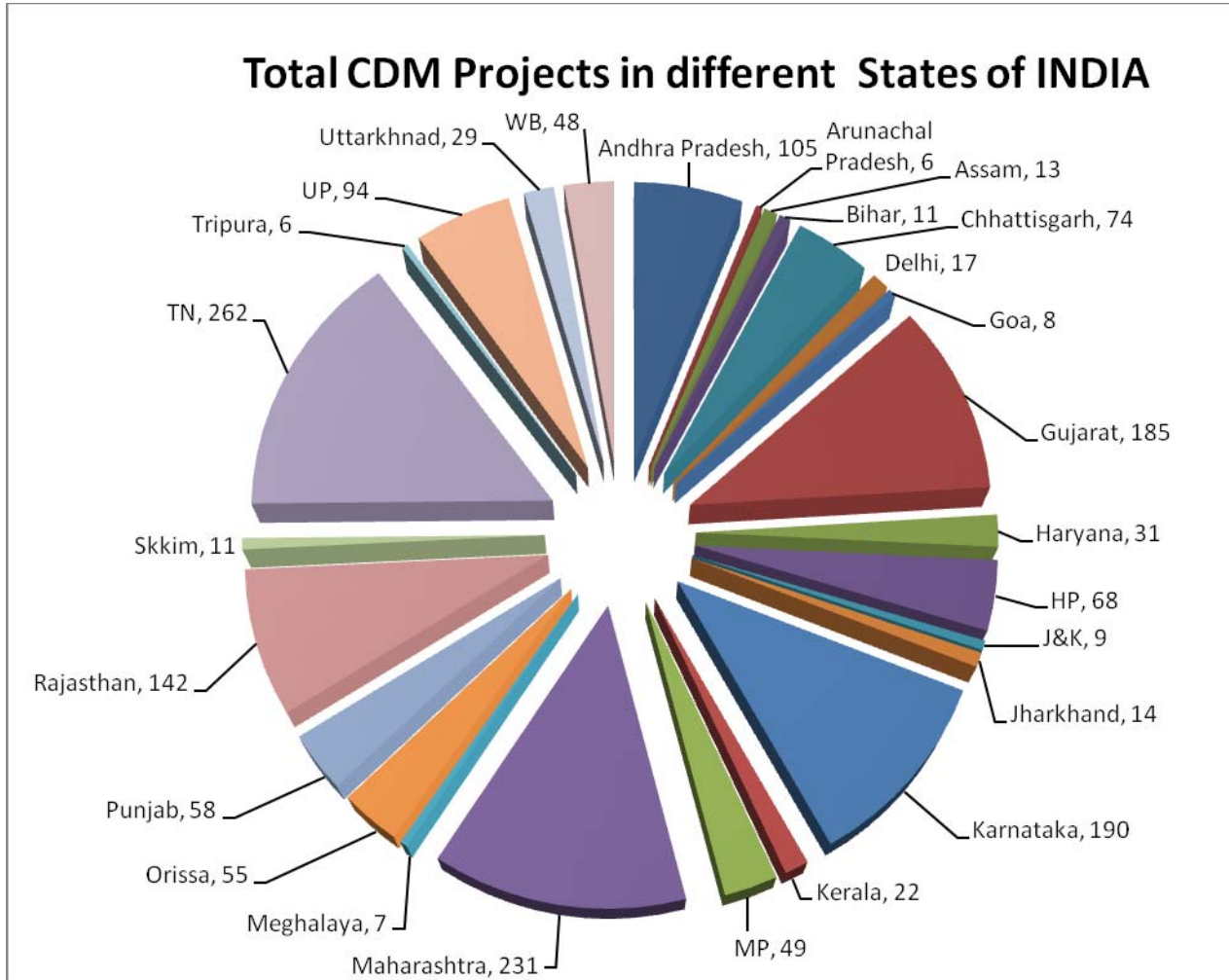


Fig. 5 Total number of CDM projects in different states of India(as on 16<sup>th</sup> May 2011)

Karnataka stands third with 190 CDM projects. This state expects to generate 120748 kCERs by 2020. It has altogether 80 registered projects (Fig.6) and has been issued 11376 kCERs up to 16<sup>th</sup> May,2011. While its EE(energy efficiency) sector has contributed maximum, with 7619 kCERs, wind and biomass received 1556 kCERs and 932kCERs respectively. Out of the India total of 173, Karnataka holds 22 registered hydro projects, with 1120 issued kCERs .

Gujarat (185)– tops the list in terms of CERs issued (41532 kCERs) and is also expected to generate the maximum quantity of CERs by 2020 (270941kCERs). This is because of its two HFC projects which have already been issued 38146 kCERs and are expected to yield a total of 61952 kCERs by 2012. Out of the total 185 CDM projects in Gujarat, the EE projects account for 51 and fossil-fuel switch projects for 19.



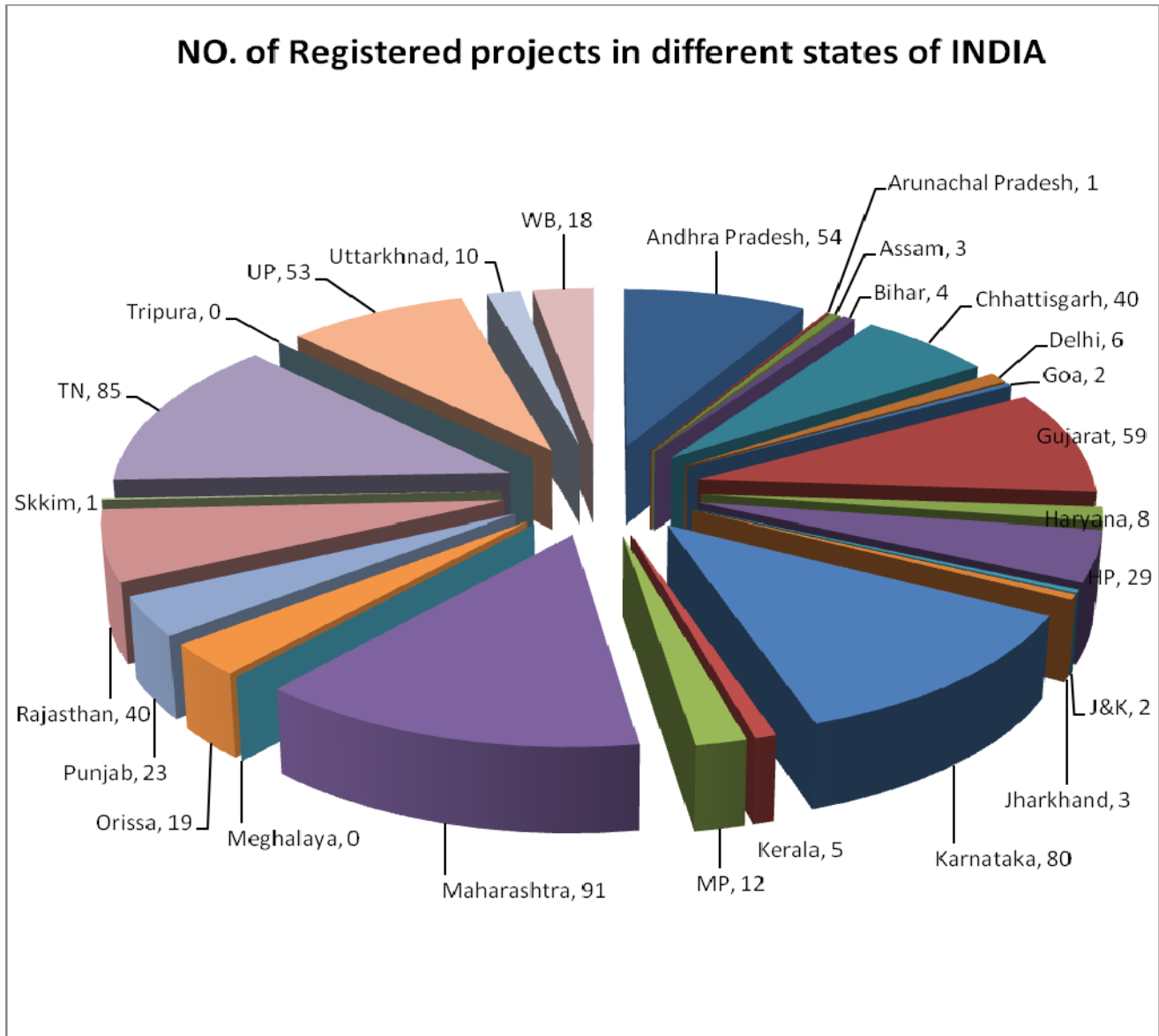


Fig.6 Total number of registered CDM projects in different states of India(as on 16<sup>th</sup> May 2011)

Rajasthan with its 142 CDM projects stands second in ‘issued’ certified emission reductions (18792 kCERs from its 18 registered projects--total registered projects 40) and is expected to be issued another 90871 kCERs by 2020. Here also, just a single HFC project accounts for 17380 kCERs. In Rajasthan, more than 60% of the CDM projects are wind energy projects; out of which eight have been issued a total of 466 kCERs (Fig.7).

Of the hydro projects, Himachal Pradesh host 57 and Karnataka 40. More than 80% of CDM projects in Himachal Pradesh are hydro. The highest number of biomass projects in India is in Uttar Pradesh, 54. Andhra Pradesh possess 28 registered biomass projects, out of which 22 have already been issued 3159 kCERs. Karnataka, with 26 biomass projects is expected to generate 12129kCERs by 2020.

In West Bengal, of the 48 approved projects, 11 registered ones have been issued a total 730 kCERs. There are 28 EE projects, expected to generate 25216 kCERs by 2020. These have been issued 590 kCERs in total up to 16<sup>th</sup> May 2011.

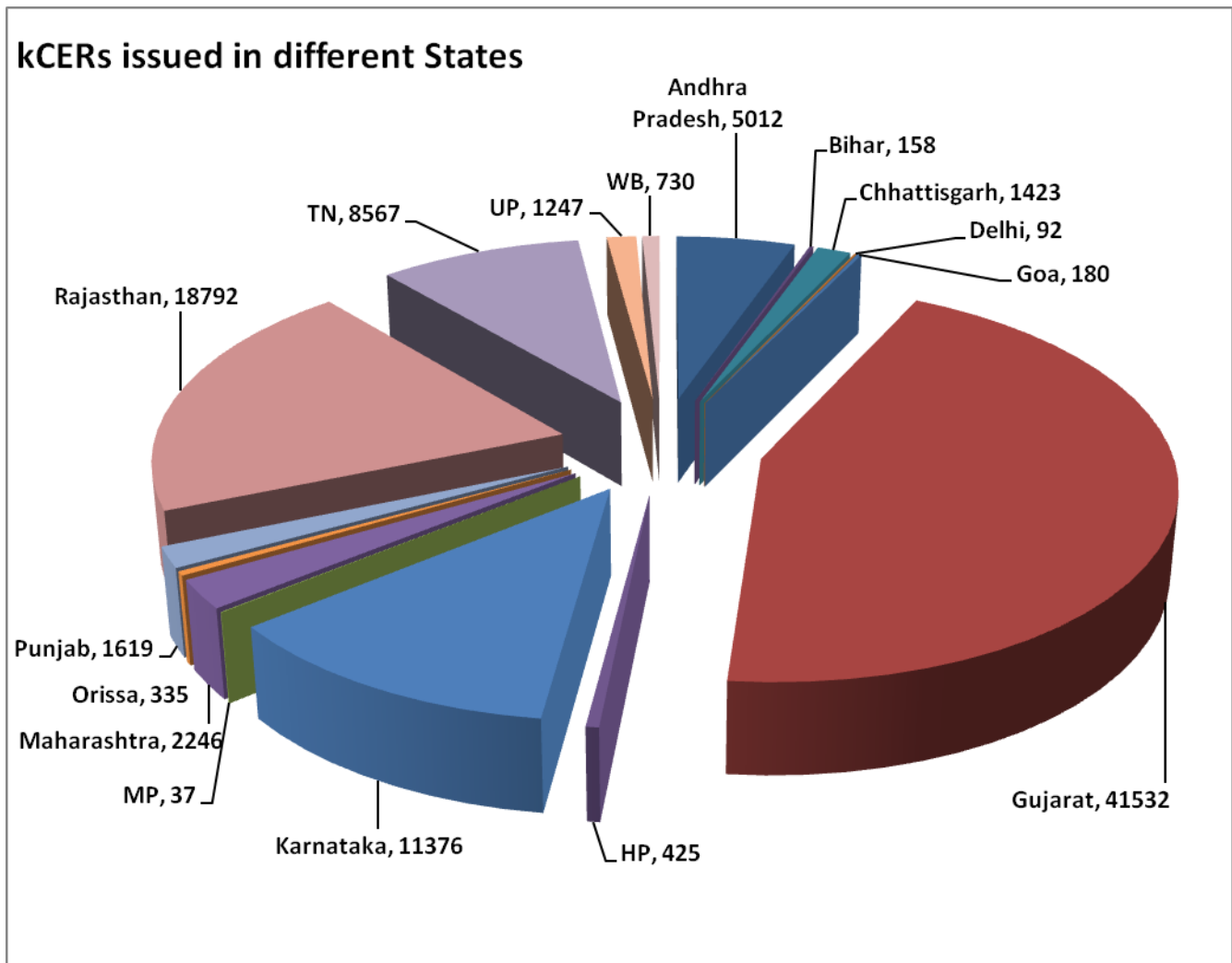


Fig.7 Issuance statistics (in kCERs) across different states in India(as on 16<sup>th</sup> May,2011)

Sikkim, a small Himalayan state, has only 11 CDM projects (all hydroelectricity projects), only one of which has been registered so far. But these 11 projects are expected to generate a total 85148 kCERs by 2020, promising to elevate Sikkim to the 8<sup>th</sup> position in the country in terms of credit issuance by 2020.

Thus, out of 28 states, only the north eastern states of Manipur, Mizoram & Nagaland remain non participants in the CDM race until now.

**Table 2: CDM in India status and state wise(as on 16<sup>th</sup> May 2011)**

<b>States</b>	<b>Total CDM projects</b>	<b>Registered Projects</b>	<b>kCERs issued</b>
Andhra Pradesh	105	54	5012
Arunachal Pradesh	6	1	0
Assam	13	3	0
Bihar	11	4	158
Chhattisgarh	74	40	1423
Delhi	17	6	92
Goa	8	2	180
Gujarat	185	59	41532
Haryana	31	8	0
HP	68	29	425
J&K	9	2	0
Jharkhand	14	3	0
Karnataka	190	80	11376
Kerala	22	5	0
MP	49	12	37
Maharashtra	231	91	2246
Meghalaya	7	0	0
Orissa	55	19	335
Punjab	58	23	1619
Rajasthan	142	40	18792
Skkim	11	1	0
TN	262	85	8567
Tripura	6	0	0
UP	94	53	1247
Uttarkhnad	29	10	0
WB	48	18	730

**Wise Distribution**

Most CDM projects in India come under four sectors— wind (539), energy efficiency (346), biomass (345), and hydro (178). Other major sectors include fossil-fuel switch (42), biogas (49), cement (16), landfill gas (25), and HFC (9).

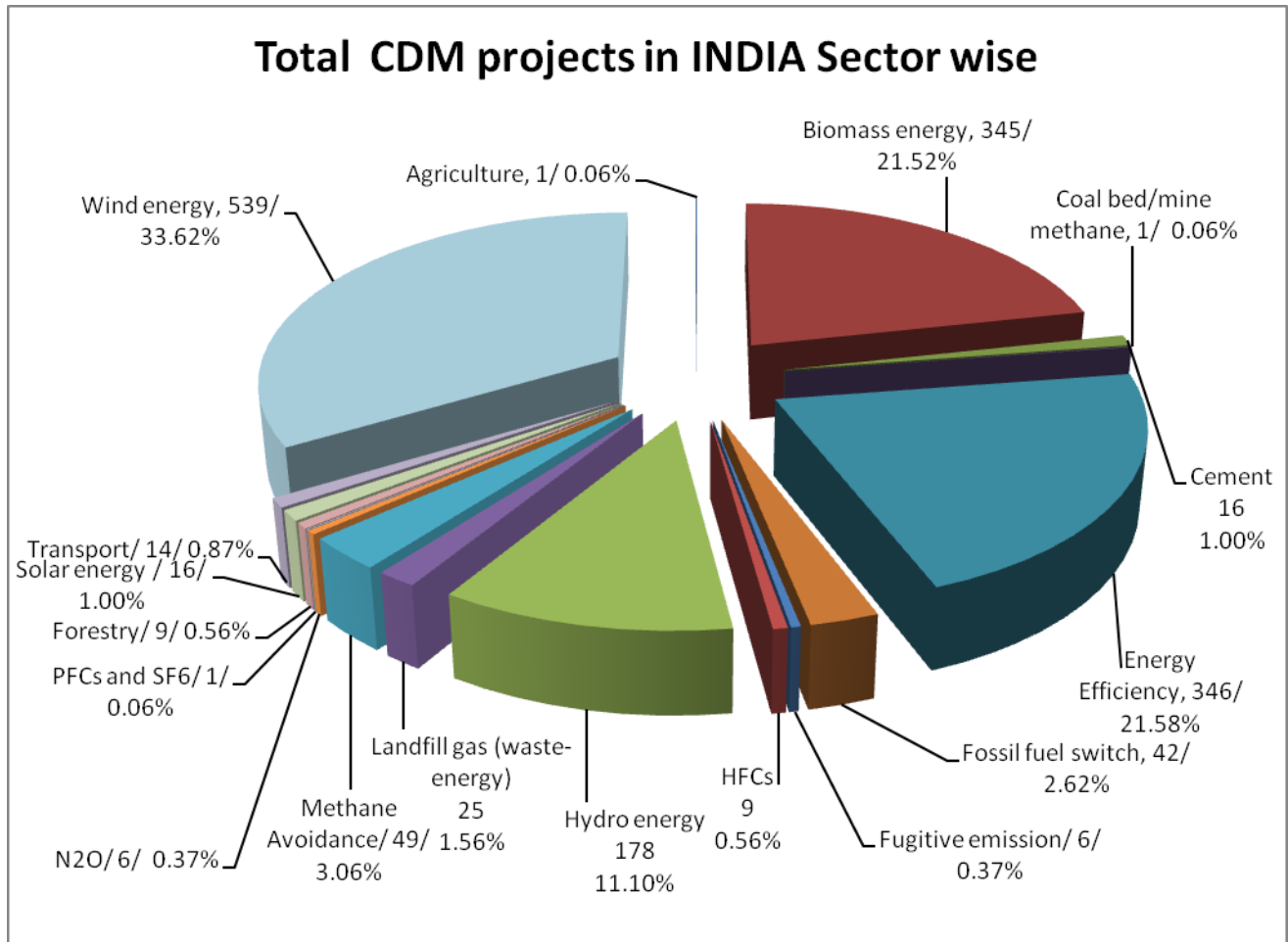


Fig.8 Number of CDM projects from different sectors in India (as on 16<sup>th</sup> May, 2011) (Source: <[www.cdmpipeline.org](http://www.cdmpipeline.org)>)

It can be seen that the EE (Energy Efficiency) projects are expected to earn the maximum number of CERs by the end of 2012, with an abatement target of 90084 thousand tons of CO<sub>2</sub>, roughly 20% of all claimed reduction from India (Fig.9). The HFC Projects come next, with a total of 78,240 ktCO<sub>2</sub> (18 % of total reduction), from just 9 projects. Though the number of biomass projects (345) increased significantly over the years, they are expected to reduce about 57143 ktCO<sub>2</sub> within 2012 (13 %) (Table.3).

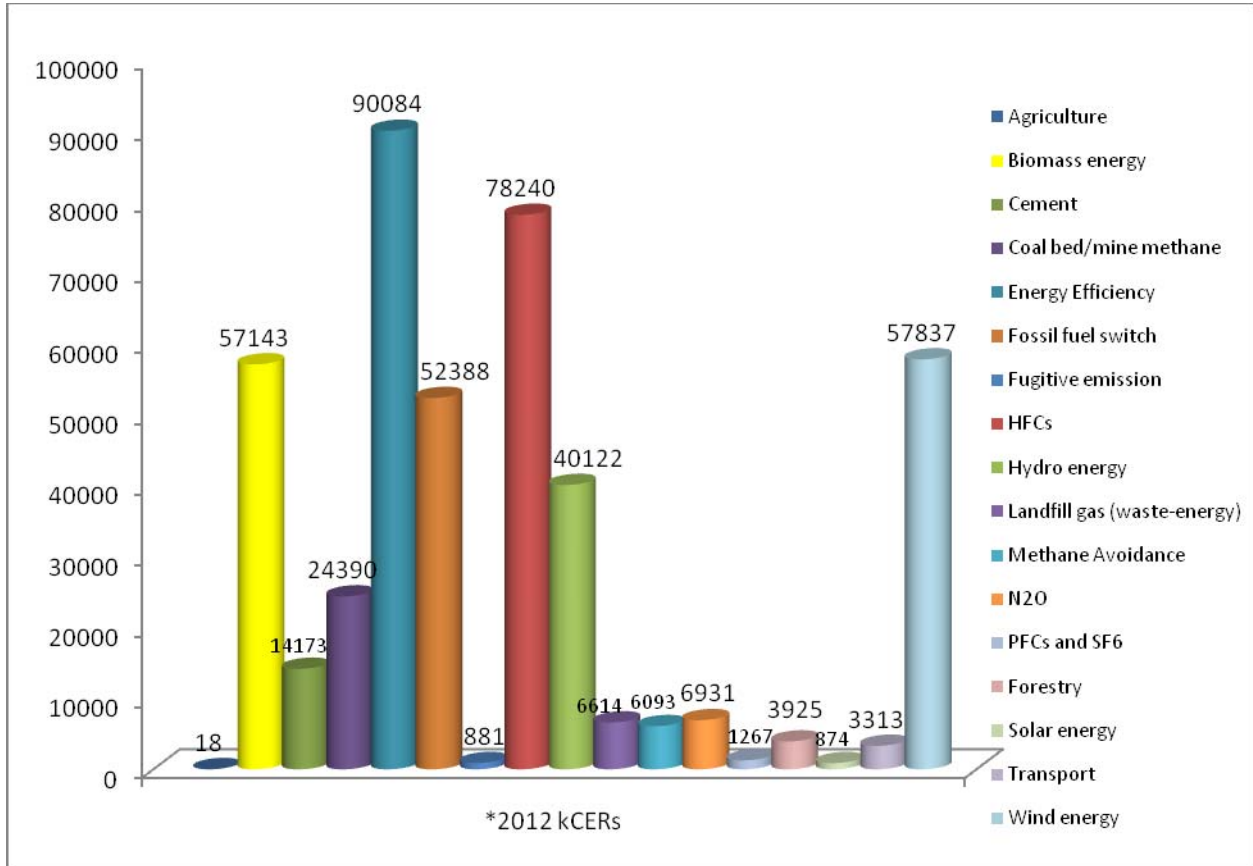


Fig. 9 Carbon dioxide equivalent reductions from different sectors in India (as on 16<sup>th</sup> May, 2011). (Source: <[www.cdmpipeline.org](http://www.cdmpipeline.org)>)  
 [Values represented as: Sector / 2012 kCO<sub>2</sub> (1000 tons of CO<sub>2</sub> equivalent reduced up to year 2012)/ proportionate sector-wise share with respect to the total claimed reduction from all sectors]

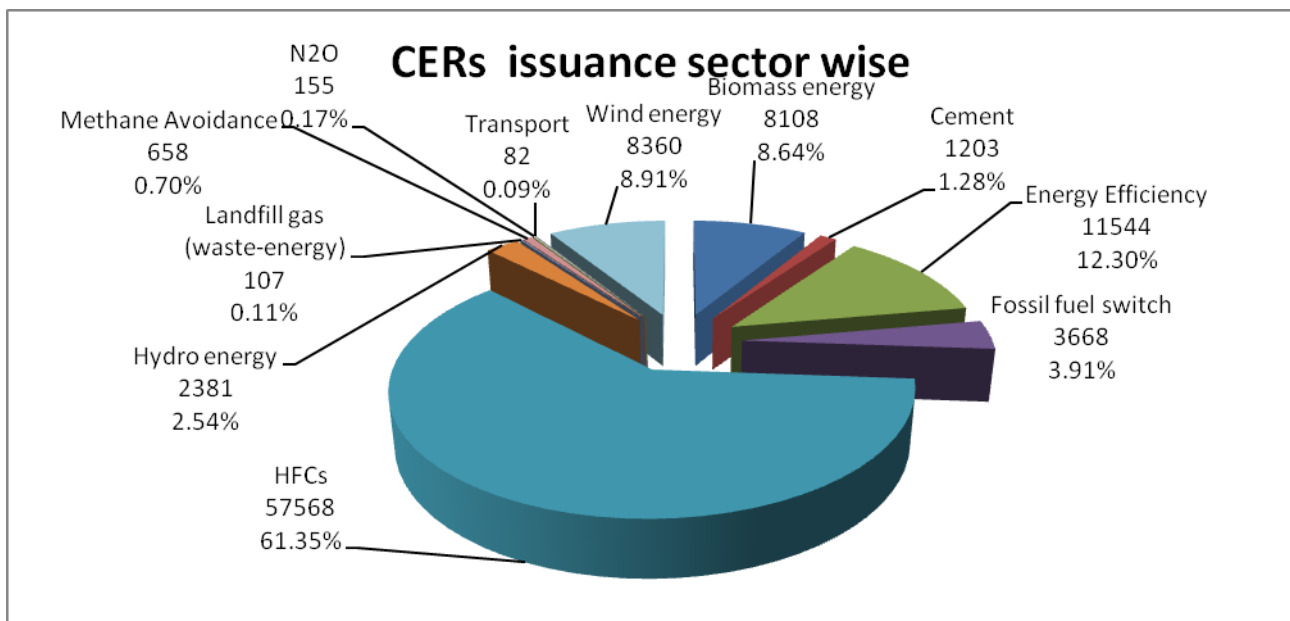


Fig. 10. Pie chart showing issued kCERs from registered projects in different sectors in India

The HFC projects occupy the largest percentage of issued CERs: about 61.35% (57568 kCERs), followed by Energy Efficiency( 12.3%), Wind energy (8.91%) and Biomass (fig.10).

**Table 3: Sector-wise emission reductions by 2012(as on 16<sup>th</sup> May 2011)**

Sector	Total CDM projects	Registered Projects	*2012 kCERs	kCERs issued	
Agriculture	1	0	18	0	
Biomass energy	345	177	57143	8108	
Cement	16	13	14173	1203	
Coal bed/mine methane	1	0	24390	0	
EE (energy efficiency)	Energy distribution	4	0	437	0
	EE households	46	15	3107	0
	EE industry	93	50	11251	965
	EE own generation	136	58	52898	10332
	EE service	18	2	688	6
	EE supply side	49	13	21701	241
	Total	346	138	90084	11544
Fossil fuel switch	42	10	52388	3668	
Fugitive emission	6	3	881	0	
HFCs	9	8	78240	57568	
Hydro energy	178	77	40122	2381	
Landfill gas (waste-energy)	25	13	6614	107	
Methane Avoidance	49	14	6093	658	
N2O	6	5	6931	155	
PFCs and SF6	1	1	1267	0	
Forestry	9	3	3925	0	
Solar energy	16	5	874	0	
Transport	14	2	3313	82	
Wind energy	539	176	57837	8360	
Total	1603	645	444293	93834	

\* Annual reduction claimed in CO<sub>2</sub> equivalence up to 2012 (Source: <[www.cdmpipeline.org](http://www.cdmpipeline.org)>)

## COPORATE PRESENCE IN VARIOUS CDM SECTORS IN INDIA

Clean Development Mechanism has come as a boon for Indian Companies, who are literally ‘making money from thin air’. All the big names in the corporate kingdom have jumped into the fray, Reliance, Tatas, Birlas, Ambuja, ITC—disproving earlier apprehensions that market uncertainty and complex procedural nature of CDM would put off big companies.

Corporate presence in the Indian CDM becomes more pervasive and visible each day, both in terms of market share and number of projects (Table-4). More than 98% of CERs issued so far went to the corporate sector; the largest recipients being the HFC companies: GFL (29739 ), SRF Ltd(17380), NFIL(8407), Chemplast (1613) and HFL (429). This accounts for 61.35 % (57568 kCERs) of the total kCERs issued to India.

Only two big CDM projects (by SRF, Rajasthan and GFL, Gujrat—both blue chip companies) together collar more than 90 percent of the Indian CDM Market, going by recorded sales and number of issued CER. This is understandable because both projects are HFC-incineration projects, with little or no methodological problems, and with tremendous CER generation potential.

After HFC, Energy Efficiency projects constitute the second highest contributing segment in issued-CERs category, comprising 20% of the total kCER issued. Two big waste gas heat projects entitled, “*Generation of Electricity through combustion of waste gases from Blast furnace and Corex units at JPL unit 1 at Torangallu in Karnataka*” and “*Use of waste gas use for electricity generation at JSW Energy Limited*”, together contributed 7347 kCERs. There are many others contributing big corporations in this sector: for instance ITC (298 kCERs), Rain CII Carbon (India) Limited (376 kCERs), Electrosteel Castings Limited (271 kCERs), Shri Bajrang Power and Ispat Ltd (226 kCERs), Aditya Birla (261 kCERs ) and Reliance (184 kCERs).

Biomass is the third highest CER-receiving sector in the country: projects in this sector have been issued 8108 kCERs (8.72%), up to May 16<sup>th</sup>, 2011. In this so-called ‘small scale’ sector too, 90% of the issued CERs went to the corporate.

Total kCERs issued to the wind sector stood at 8360(8.91%) on 16<sup>th</sup> May, 2011. *Enercon* has maximum numbers of wind projects in the country (18) and has been issued 430 kCERs (5.14 %) for its three registered projects (Fig.11).

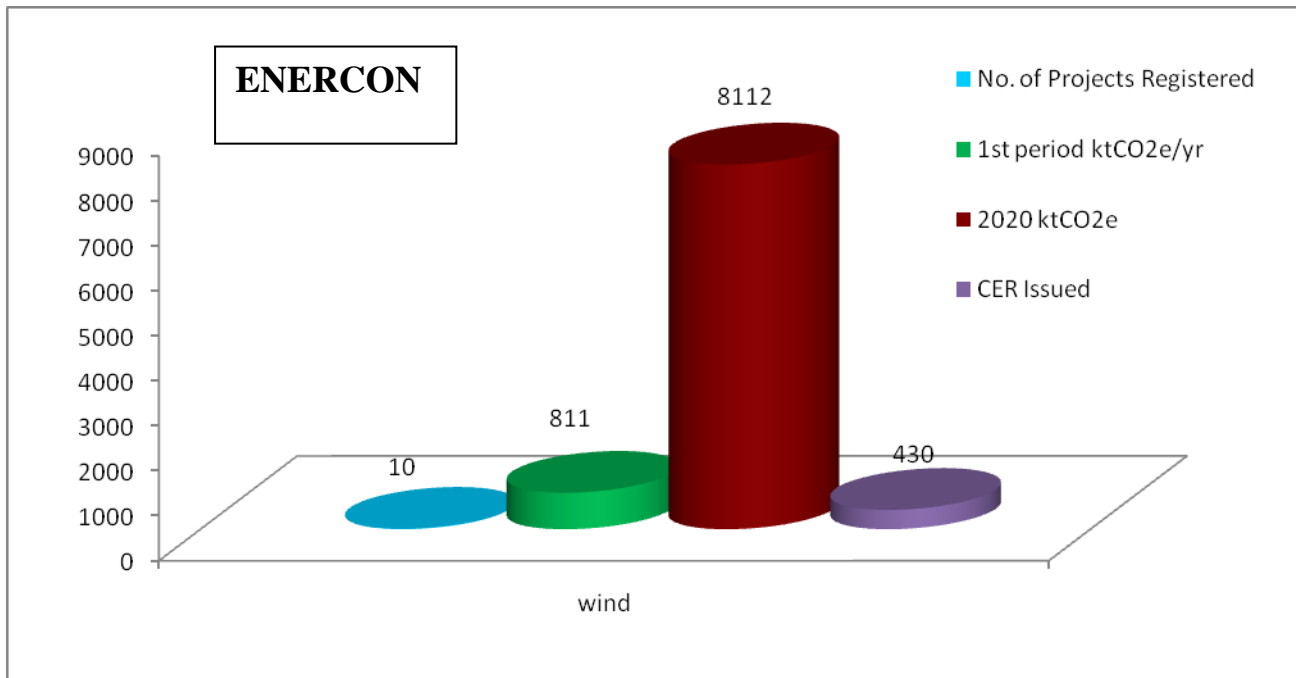


Fig.11 Enercon showing 10 registered wind projects, maximum in the country.

The Tamil Nadu Spinning Mills Association (TASMA) from its one project titled, “*Bundled Wind power project in Tamilnadu, India co-ordinated by the TamilNadu Spinning Mills Association (TASMA)*”, got 4233 kCERs, 50.63% of the sector total. In terms of total kCERs issuance to the country, TASMA earned 4.51% from its one wind project.

Among the other companies, MSPL has been issued 540 kCERs in total and the Nuziveedu Seeds Limited 492, while Enercon for its three wind projects received 430. Ashok Leyland got 311 kCERs from its one project. The TATA group, for its one project in Satara & Supa (Maharashtra, a TATA Motors project), has been issued 222 kCERs (4.45% of the country total).

The Cement and Landfill Gas sectors are also 100% dominated by the big corporations. Out of total 1203k CERs issued to the cement sector, Shree Cement alone has been issued 450 kCERs, comprising 27.22 % of the total sectoral issuance. Other contributors in this sector are Orient (20.38 %), Aditya Birla (8 %), Mysore Cements (7.91%), Binani, Lafarge (6.21 %) and Birla (6.07%). In the Landfill Gas (Waste-to-Energy) sector, four companies have been issued a total of 106 CERs. Shriram Energy grabbed the highest, about 89 kCERs.

The Biogas sector has generated a total 658 kCERs (0.7% of the country total). This sector has so far contributed the least. Of the sector total, *Sagar Industries Distilleries Pvt. Ltd. (SIDPL) Methane extraction and Power generation project* has contributed 32.37%. This is the only sector where the Public Sector Units contributed maximum, compared to other sectors: about 31.91% with 210 kCERs issued, till 16<sup>th</sup> May, 2011

**Table 4: Overview of CDM projects in India: CORPORATE versus PSU/GOVT.(as on 16<sup>TH</sup> May 2011)**

	No. of Registered Projects	kt CO2 Annually	kt CO2 (2012)	kt CO2 (2020)	kCERs issued
CORPORATE	632	49645	252284	510249	93544
PSU/GOVT.	13	778	6002	7866	290
<b>TOTAL</b>	<b>645</b>	<b>50423</b>	<b>258286</b>	<b>518115</b>	<b>93834</b>



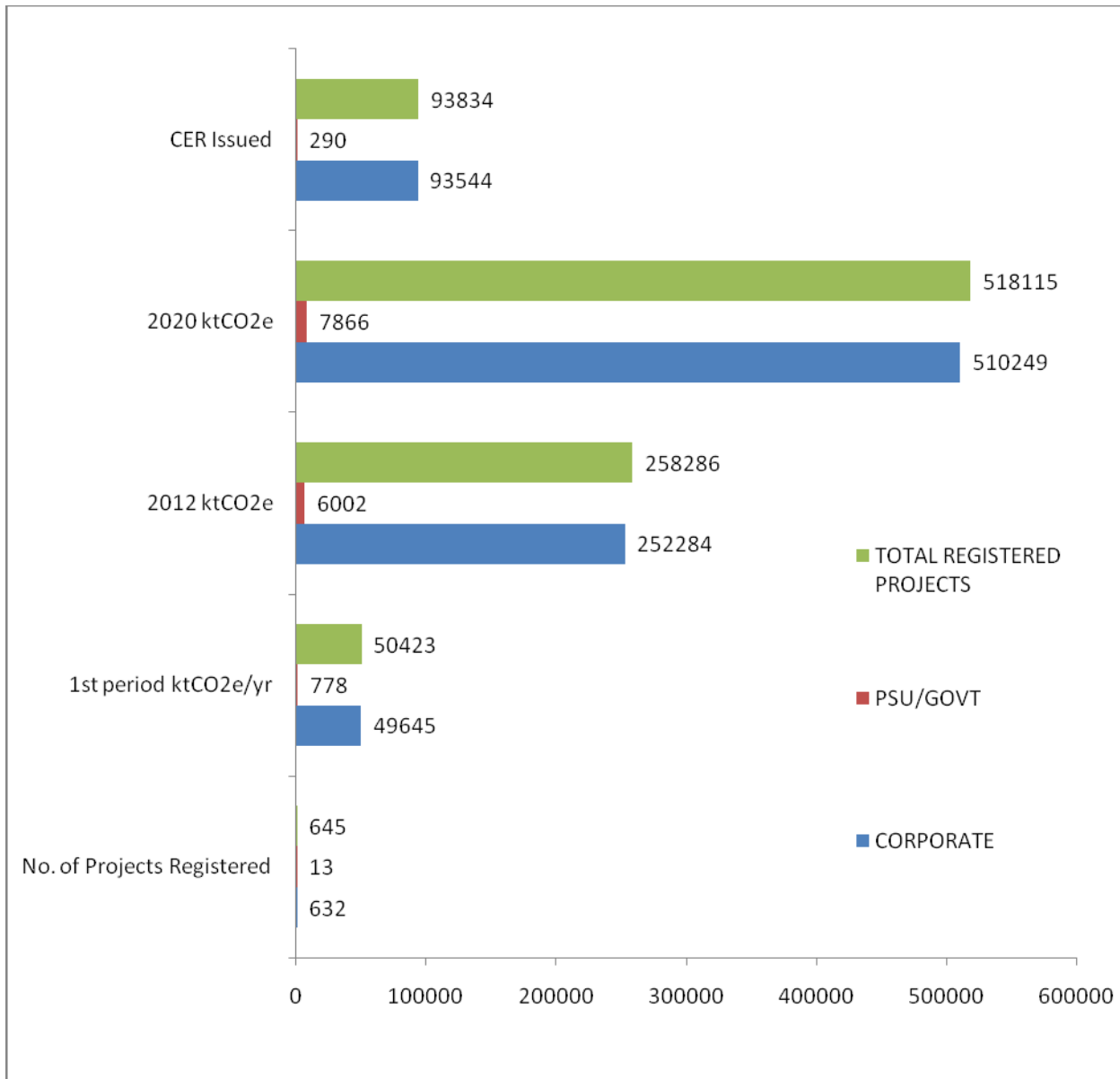


Fig.12 CDM Projects in India, Corporate/ PSU/Govt(Public Sector Unit contributed only 0.31 % (290 k CERs) to the total kCER issued (93834) from INDIA.

[2012 kCO<sub>2</sub> -1000 tons of CO<sub>2</sub> equivalent upto year 2012; kCERs-Total reduction issued by officially sellable Certified Emission Reduction (CER) issued by UNFCCC in 1000 tons of CO<sub>2</sub> equivalent]( as on 16<sup>th</sup> May, 2011). (Source: <[www.cdmpipeline.org](http://www.cdmpipeline.org)>).

What is surprising is that typical small-scale projects in Renewable /Energy Efficiency sectors are being set up by large corporations. A typical example of this is the paper and pulp operation of ITC in Bhadrachalam in Andhra Pradesh, where six separate small-scale CDM projects are coming up inside the same factory! Bundled hydro and wind projects—and biomass—are also industry favourites because of relatively less risky registration procedure.

## **CDM BY BIG INDIAN CORPORATIONS:A PROFILE**

### 1. JINDAL

The Jindal group is a US \$ 15 billion conglomerate a leading steel producer, with interests spanning across the spectrum, from mining iron ore, to manufacturing value-added steel products.

The core team of the Group comprises the four sons of the founder.; Prithviraj Jindal led Jindal SAW Limited ; Sajjan Jindal has promoted the JSW Group of Companies ; Ratan Jindal leads Jindal Stainless Ltd.; Naveen Jindal is at the helm of affairs at Jindal Steel & Power Ltd.]

**Table 5: Registered CDM projects by the Jindal group of companies(as on 16<sup>th</sup> May,2011)**

JINDAL	No. of Projects Registered	1st period ktCO2e/yr	2020 ktCO2e	CER Issued
ENERGY EFFICIENCY [JSW, JSPL, JPL, JSL (2 projects)]	5	2112	21118	7436
WIND (JAL)	1	15	147	8
<b>TOTAL</b>	<b>6</b>	<b>2126</b>	<b>21265</b>	<b>7444</b>

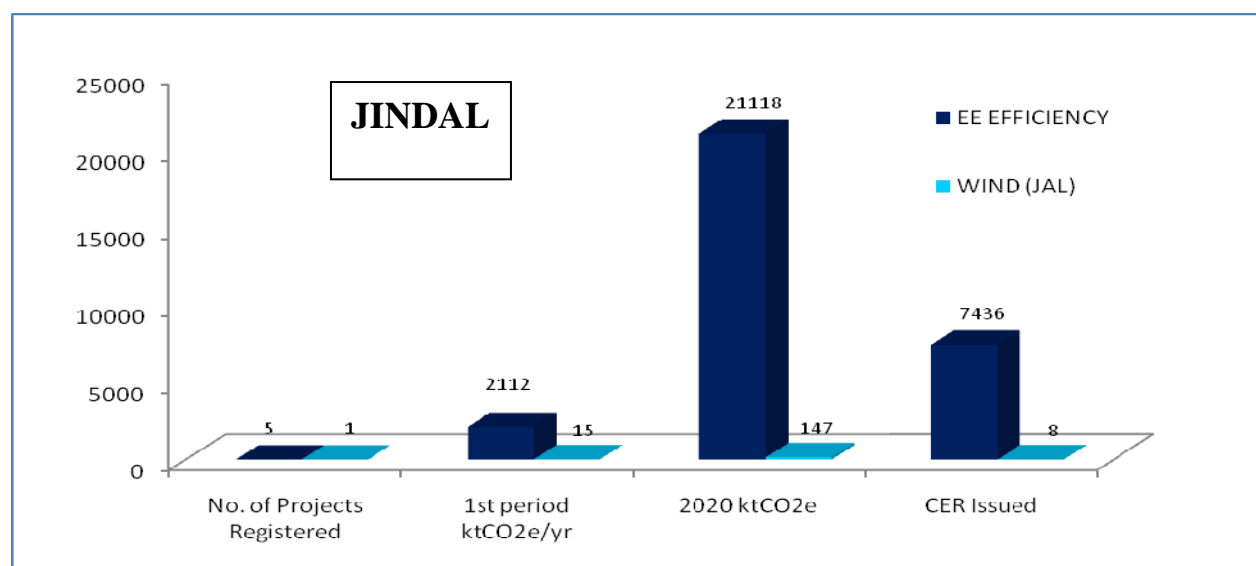


Fig. 13 CDM projects at Jindal

Two big CDM projects of JINDAL: 1) Use of waste gas use for electricity generation at JSW Energy Limited – Registered on 12-Jan-07- issued 4058 and 2) Generation of Electricity through combustion of waste gases from Blast furnace and Corex units at JSW Steel Limited (in JPL unit 1), at Torangallu in Karnataka, India- Registered on 12-Jan-07- issued 3289.

**2. ADITYA BIRLA GROUP**

The Aditya Birla Group, India's first multinational corporation operates in 27 countries – Australia, Bahrain, Bangladesh, Brazil, Canada, China, Egypt, France, Germany, Hungary, India, Indonesia, Italy, Korea, Laos, Luxembourg, Malaysia, Myanmar, Philippines, Singapore, Sri Lanka, Switzerland, Thailand, UAE, UK, USA and Vietnam.

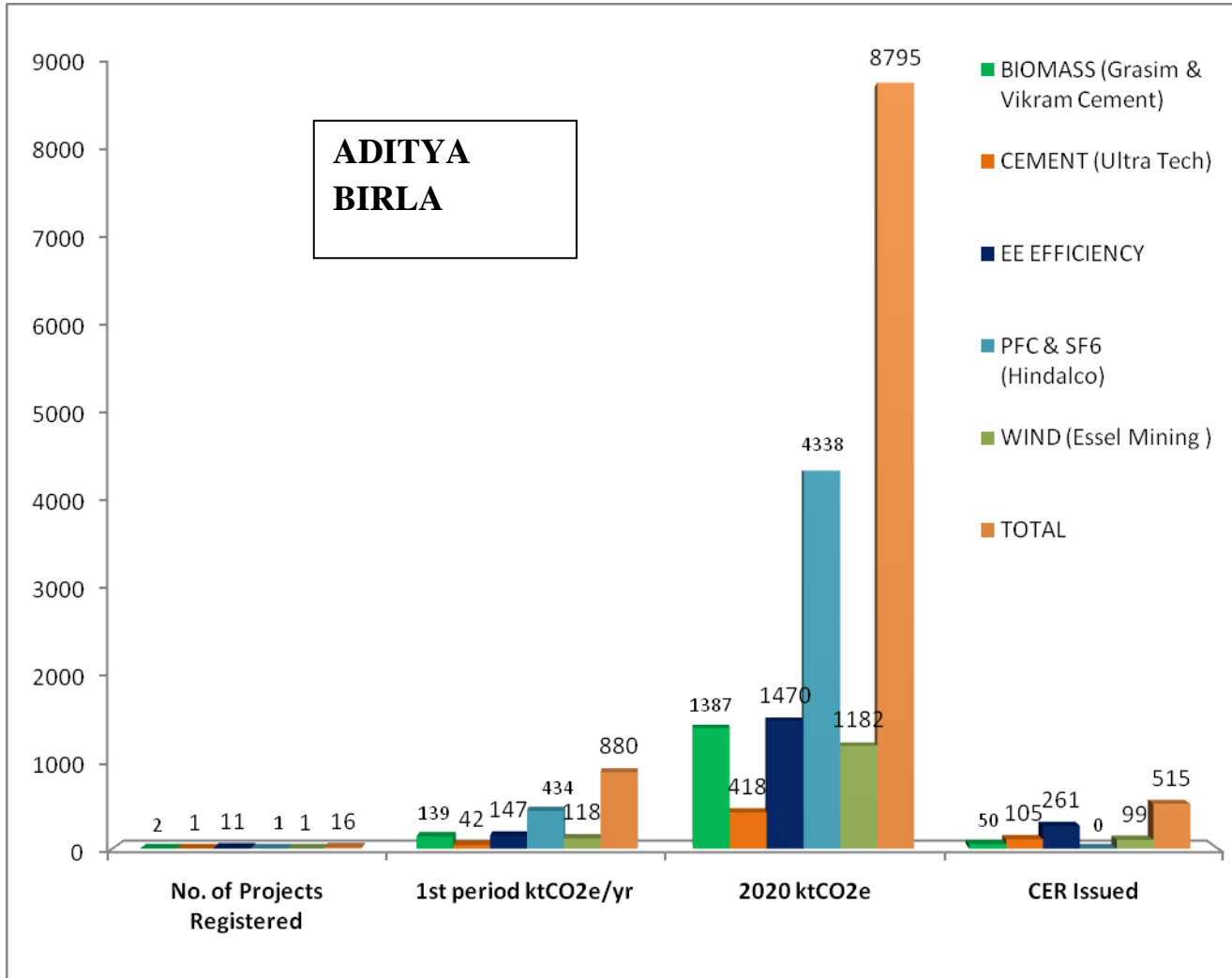


Fig. 14 CDM projects at Aditya Birla

Today, the Group's footprint extends to 27 countries and its revenues are US\$ 30 billion. Some of the flagship companies (more than 42) : Aditya Birla Nuvo, Grasim Industries Ltd., Hindalco, Ultra Tech Cement, Aditya Birla, Samruddhi Cement, Novelis Inc, Aditya Birla, Essel Minings Ltd.

Ultra Tech Cement, one of the subsidiaries the Aditya Birla group has 2 CDM projects in the Energy efficiency sector. The project titled, "Optimum utilization of clinker by production of Pozzolana Cement at UltraTech Cement Ltd. (UTCL), Andhra Pradesh, registered on 28<sup>th</sup> July, 2006 has been issued 198 kCERs and the other one called, "4.0 MW Power Plant Using Clinker Cooling Gas Waste Heat", received 34kCERs.

*Essel Mining & Industries Ltd*, another Aditya Birla **company** has 1 wind project, with reduction claim of 1182 thousand tons of CO<sub>2</sub> by 2020, has already been issued 99 kCERs. *Grasim* got 50 kCERs from its biomass project.

**Table 6: Registered CDM projects by the Aditya Birla group of companies(as on 16<sup>th</sup> May,2011)**

<b>ADITYA BIRLA</b>	<b>No. of Projects Registered</b>	<b>1st period ktCO<sub>2</sub>e/yr</b>	<b>2012 ktCO<sub>2</sub>e</b>	<b>2020 ktCO<sub>2</sub>e</b>	<b>CER Issued</b>
BIOMASS (Grasim & Vikram Cement)	2	139	746	1387	50
CEMENT (Ultra Tech)	1	42	418	418	105
ENERGY EFFICIENCY (from 6 Flagship companies )	11	147	1075	1470	261
PFC & SF <sub>6</sub> (Hindalco)	1	434	1267	4338	0
WIND (Essel Mining )	1	118	581	1182	99
<b>TOTAL</b>	<b>16</b>	<b>880</b>	<b>4087</b>	<b>8795</b>	<b>516</b>

### 3. TATA

The Tata group is one of India's oldest, largest business conglomerates. It operates on six continents and employs 350,000 people. The Tata group's 27 publicly listed enterprises have a combined market capitalisation of some \$60 billion, among the highest among Indian business houses, and a shareholder base of 3.2 million.

**Table 7: Registered CDM projects by the Tata group of companies(as on 16<sup>th</sup> May,2011)**

<b>TATA</b>	<b>No. of Projects Registered</b>	<b>1st period ktCO<sub>2</sub>e/yr</b>	<b>2020 ktCO<sub>2</sub></b>	<b>kCER Issued</b>
EE EFFICIENCY	4	75	749	16
METHANE AVOIDANCE	1	7	72	29
WIND	2	115	1155	222
<b>TOTAL</b>	<b>7</b>	<b>197</b>	<b>1976</b>	<b>267</b>

The TATA group, for its one project in Satara & Supa (Maharashtra, a TATA Motors project), has been issued 222 kCERs (4.45%). Another wind project by TATA, "50.4 MW Tata Wind Farm - in Maharashtra" is expected to reduce 830 ktCO<sub>2</sub> within 2020.

Apart from the wind projects, an Iron & Steel sector project of TATA Steel Ltd., called, "Top Gas Pressure Recovery based Power Generation from 'G' Blast Furnace", is expected to reduce 608 ktCO<sub>2</sub> within 2020.

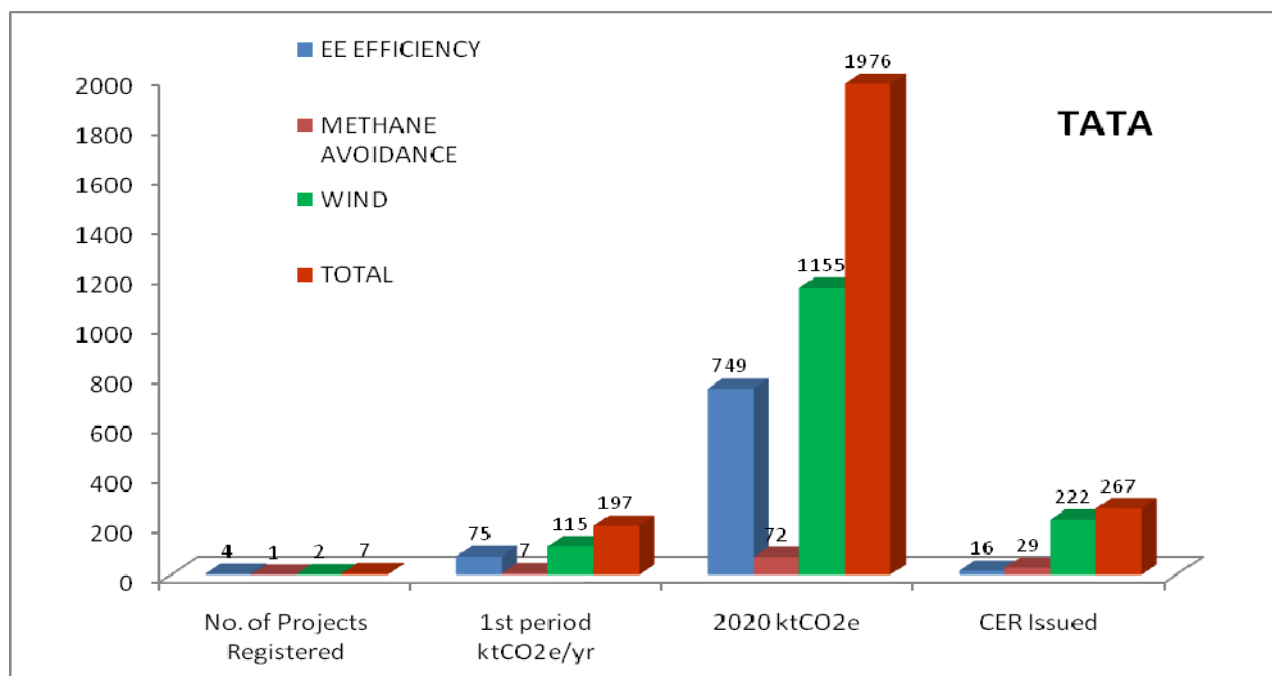


Fig. 15 CDM projects at TATA

#### 4. ITC

ITC is one of India's foremost private sector companies with a market capitalisation of over US \$ 33 billion and a turnover of US \$ 7 billion. ITC ranks among India's '10 Most Valuable (Company) Brands', in a study conducted by Brand Finance and published by the Economic Times. ITC's Agri-Business is one of India's largest exporters of agricultural products. ITC is one of the country's biggest foreign exchange earners (US \$ 3.2 billion in the last decade).

ITC has a diversified presence in Cigarettes, Hotels, Paperboards & Specialty Papers, Packaging, Agri-Business, Packaged Foods & Confectionery, Information Technology, Branded Apparel, Personal Care, Stationery, Safety Matches and other FMCG products. ITC employs over 24,000 people at more than 60 locations across India. ITC employs over 24,000 people at more than 60 locations across India.

**Table 8: Registered CDM projects by the ITC group of companies(as on 16<sup>th</sup> May, 2011)**

ITC	No. of Projects Registered	1st period ktCO2e/yr	2012 ktCO2	2020 ktCO2	CER Issued
BIOMASS	1	43	432	432	0
EE EFFICIENCY	6	112	968	1115	298
REFORESTATION	1	58	438	1128	0
WIND	1	36	112	401	0
<b>TOTAL</b>	<b>9</b>	<b>249</b>	<b>1949</b>	<b>3075</b>	<b>298</b>

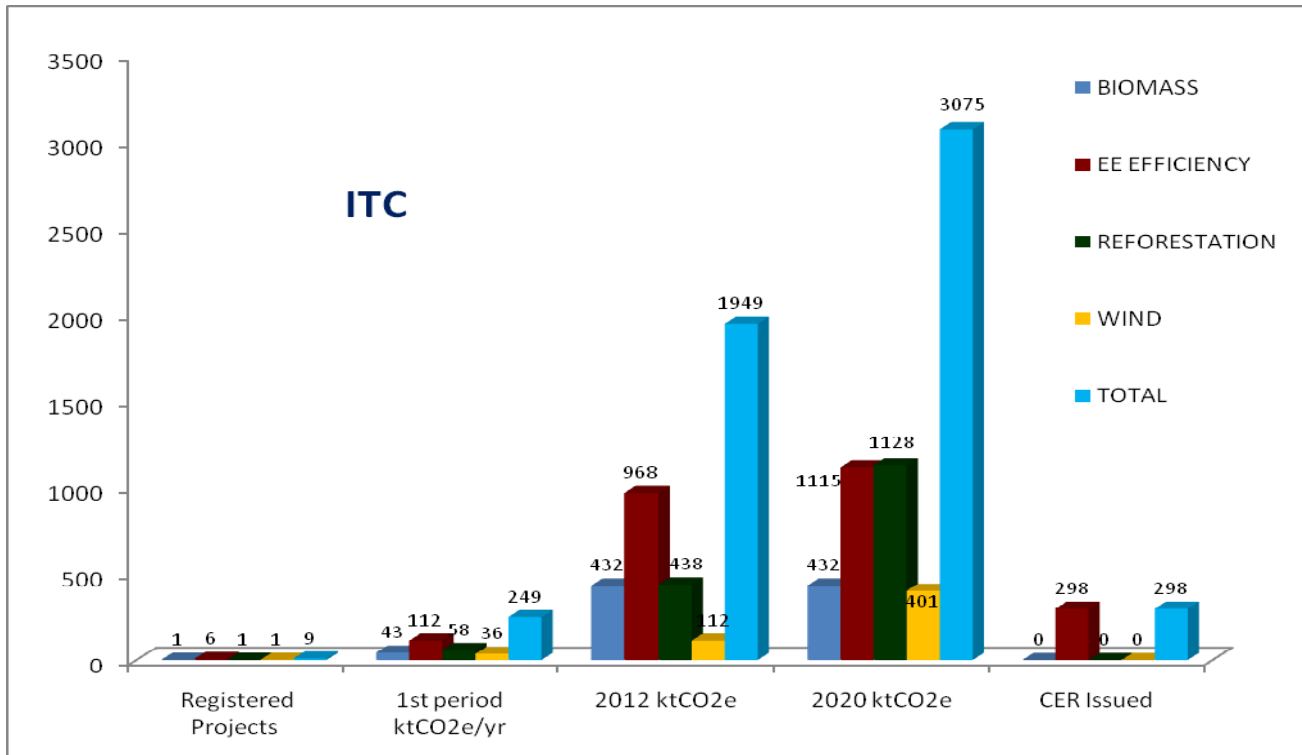


Fig. 16: CDM projects at ITC

## 5. RELIANCE

The Reliance Group is the India's largest private sector enterprise, with businesses in the energy and materials value chain. Group's annual revenues are in excess of US \$ 58 billion. The flagship company, RIL, is the largest private sector company in India. Since its public offering in 1977, the company has expanded rapidly and integrated backwards into other industry sectors, most notably the production of petrochemicals and the refining of crude oil.

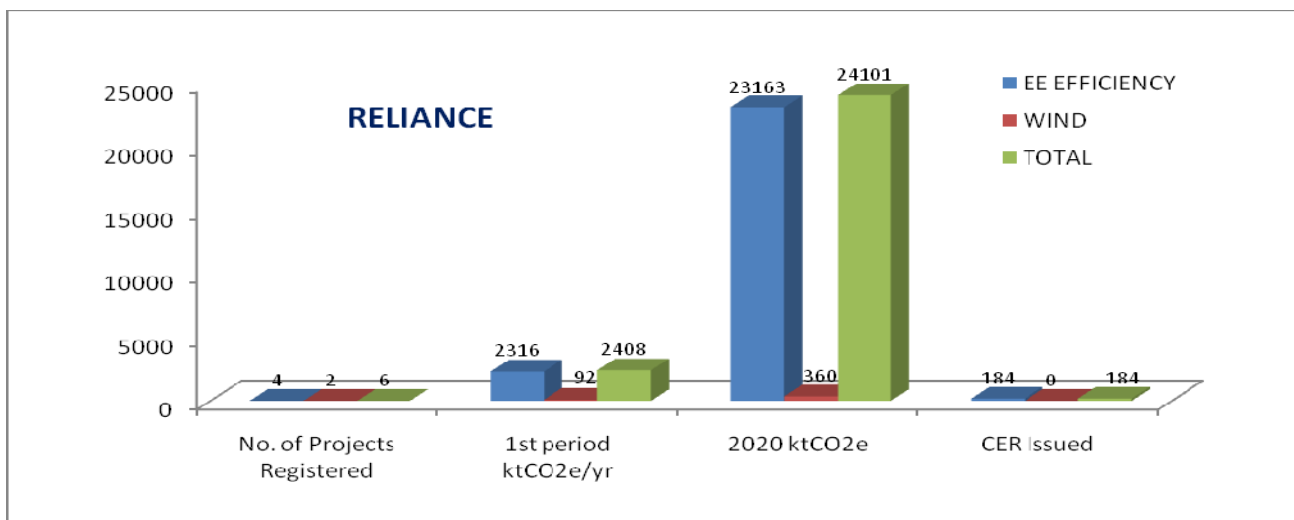


Fig. 17: CDM projects at Reliance - Reliance has altogether six registered projects, 4 energy efficiency projects and 2 wind projects. One of its higher efficiency coal power project runs under its flagship company Sasan Power Ltd, and is expected to generate 22459 kt Co2 by 2020. Reliance has been so far issued 184 for its 2 EE projects.

**Table 8: Registered CDM projects by the Reliance group of companies(as on 16<sup>th</sup> May,2011)**

RELIANCE	No. of Projects Registered	1st period ktCO2e/yr	2020 ktCO2e	CER Issued
EE EFFICIENCY	4	2316	23163	184
WIND	2	92	360	0
<b>TOTAL</b>	<b>6</b>	<b>2408</b>	<b>24101</b>	<b>184</b>

## 6. GFL

Gujarat Fluorochemicals Limited (GFL) is a part of the \$2 billion INOX Group of Companies. GFL has a market capitalization close to US \$ 1 Billion , Gross Fixed Assets of US \$ 225 million, Net Worth of US \$ 250 million, and strong cash profits in excess of US \$ 100 Million per annum. GFL is India's largest and most competitive producer of Refrigerant HCFC22. Around 95% of GFL's refrigerant production is exported to more than 75 countries across the globe. Domestically, GFL is the preferred supplier of refrigerants to all the major OEMs in the air-conditioning and refrigeration sector. Internationally, GFL has a strong distribution network in more than 50 countries across the globe.

**Table 9: Registered CDM projects by GFL(as on 16<sup>th</sup> May,2011)**

Title (Registered CDM)	Owner	Location	Type	ktCO2e/a nually	kCERs issued
GHG emission reduction by thermal oxidation of HFC 23 in Gujarat	Gujarat Fluorochemicals Ltd.	Gujarat	HFCs	3393	29739
Wind power project by GFL in Gudhepanchani	Gujarat Fluorochemicals Ltd.	Maharashtra	Wind	52	53
<b>Total</b>				<b>3445</b>	<b>29792</b>

GFL's CDM project was the first in the world to seek registration by the CDM Executive Board.

## 7. SRF

Shri Ram Fibres established its first plant in Manali near Chennai in 1973. With an initial annual capacity of 2000 tonnes of nylon cords, the plant started operations in 1974. Shri Ram Fibres, one of the first companies in India to start manufacturing nylon tyre cords. Over the years, the company expanded its product line in technical textiles and also diversified into other businesses like Chemicals, Packaging Films and Engineering Plastics. Over the last four years the company has made investments of around Rs. 1250 crore mainly in augmenting and upgrading production facilities in different businesses.

**Table 10: Registered CDM projects by SRF (as on 16<sup>th</sup> May,2011)**

<b>Title (Registered CDM)</b>	<b>Owner</b>	<b>Location</b>	<b>Type</b>	<b>ktCO<sub>2</sub>e/ anually</b>	<b>kCERs issued</b>
13.95 MW grid connected wind electricity generation by SRF Limited	SRF Limited	Tamil Nadu	Wind	35	35
GHG emission reduction by thermal oxidation of HFC 23 at refrigerant (HCFC-22) manufacturing facility of SRF Ltd	SRF Ltd	Rajasthan	HFCs	3834	17380
<b>Total</b>				<b>3869</b>	<b>17415</b>



## **INDIAN CDM: Emission reduction, or business expansion?**

With the Kyoto Protocol turning emission reduction—arguably the most important responsibility on humankind today—into profitable ‘business’, corporations could not have asked for more. Looking at India’s CDM scenario in terms of corporate participation, we find that the energy sector, including HFC, is generating the maximum CERs. The unfortunate fact is that big corporations such as Tata, ITC, Reliance, Ambuja, Birla, Bajaj, GFL, HFL, NFIL, and many others, who keep on emitting millions of tons of carbon dioxide into the biosphere are earning handsome returns in the name of ‘clean development mechanism’. The current market price of a ton of CO<sub>2</sub> reduced and sold in form of CERs in the global market is between 13 and 14 euros<sup>9</sup>, whereas the most optimists of carbon consultants would not have given more than 5 dollars in 2005! While this is still quite low when compared with the 2008 boom price of 24 Euros/CER, it is evident that Indian corporations continue to reap huge benefits from carbon business, despite a global market slump that has been continuing since 2009<sup>10</sup>.

Some of the profit figures for companies engaged in the carbon trade are astounding. Till early 2008, the Jindal group made 11-billion rupees (and perhaps more) from selling supposedly ‘reduced emissions’ (1.3-million CERs) at their steel plant in Karnataka<sup>11</sup>. Since then it sold more<sup>12</sup>. The Tata Motors sold 163,784 CERs from clean wind projects at 15.7 Euros/CER in 2007<sup>13</sup>. Tatas’ sponge iron projects in Orissa are set to yield 31,762 CERs every year. Three separate CDM projects by Essar steel in their Hazira Plant will yield no less than a staggering 40 million Euros in ten years from a 2009 pre-sale to a Danish utility company called Nordjysk Elhandel A/S<sup>14</sup>. In 2006/07 alone, the GFL’s earnings from carbon money were about twice its total sales turnover in the pre-CER issuance scenario<sup>15</sup>. Moreover, the company’s stocks went up considerably once the credit issuance started in 2007<sup>16</sup>. The trend continues and the GFL stocks went immediately high as late as August 2011, as soon as a fresh round of issuance took place<sup>17</sup>. Another HFC major, SRF of Rajasthan, which stands to gain an obscene 300 Million Pounds from British oil companies like Shell also benefited from the favourable response of the market towards CER issuances<sup>18</sup>. Among the other major companies, Reliance is now claiming that they will earn a minimum of Rupees 3,100 Crores by selling CERs coming from their ultra-mega coal power projects at Sasan (already registered with UNFCCC) and Krishnapatnam<sup>19</sup>.

The point is not why they are earning so much. The disturbing fact is that PDDs submitted by Indian CDM projects are full of half-truths and lies: claiming something, doing something else, and, in the end, showing yet another picture about what they have achieved (as has been documented in the case studies in this report). Most of the CDM projects this study covered are as polluting as industrial projects go, and without exception they all display the same barefaced disregard for the mandatory sustainability requirements. How is it possible to pass off these projects as clean ones?

There seems to be no regulatory authority to look after CDM projects in India. Though there is a statutory Designated National Authority (DNE) in form of a National CDM Authority (NCDMA), and its website dutifully lists the eligibility criteria for a CDM project, projects once submitted to the body are seldom or never refused approval on eligibility grounds. The CDM authority does not conduct field inspections to verify whether a project asking for CDM approval at all fulfils the eligibility criteria. Projects are accorded approval solely on basis of paperwork they submit; it is taken for granted that a project applying for CDM status is automatically clean and sustainable; no matter if it fouls up the atmosphere and local people’s lives with fly ash and smoke, displaces people and their traditional livelihoods through mostly illegal land grab and ritually breaks every little promise of employment and area development made to the communities.

With India’s unprecedented thrust on industrialization during the past two decades, big companies are increasingly setting up new plants, thus increasing their turnover. And while doing so they are adding

greenhouse gases to the atmosphere like never before. The irony is that they are also making bucketful of money simply by putting a so-called clean development tag to some of their dirtiest projects.

The Indian Government, its Ministry of Environment and Forests(MoEF) routinely boasts of its CDM kitty, and points to carbon trading not only as a foreign money earning option but a way to mitigate the country's domestic emissions as well! "This is the potential foreign direct investment (FDI) that India stands to earn from carbon credits. In fact, 10 per cent of India's annual greenhouse gas (GHG) emissions can be neutralised because of this," said Jairam Ramesh in December 2009, the then Environment Minister of the country<sup>20</sup>. He also boasted of the 28,000 Crore windfall that the country stands to gain from the CDM projects. It did not matter that a country hosting CDM projects cannot claim to neutralize domestic emissions under CDM because the Green House Gas supposedly neutralized by the projects 'offset' emissions elsewhere in Annex 1 countries. In India ministerspeak replaces statutes and rules; "India may be the second-largest country in terms of the number of CDM projects (after China) but is the best in terms of implementing them", Ramesh claimed further.

### **CERs and the Carbon Market**

All Clean Development Mechanism or CDM projects need to get themselves registered with the CDM Executive Board of the UNFCCC. Registration does not however mean that the projects can go the market immediately and sell their CERs. A project can only sell its CERs "officially" when UNFCCC issues those. Such officially issued CERs fetch the maximum price in the carbon market, because it is assumed that the "delivery" is guaranteed, or, in other words, the projects are really, beyond-any-doubt, reducing emissions. Projects without UNFCCC issuance certificates(and even without registration) can still go the unregulated offset market, and sell VERs or Verified Emission Reductions(**or Voluntary Carbon Units or VCU: See Annexure for a partial list of Indian projects in the voluntary market**), which means the validating agency has certified that such projects are promoting "clean development". This does not get the same price as a UNFCCC-issued CER. UNFCCC-issued CERs from projects with Designated Official Entities(DOE) and/or internationally reputed handlers are known as "secondary CERs" in the market, while CERs from a registered project but without such intermediaries are known as primary CERs. Depending on the ability of the broker—and the nature of the marketplace—a VER can get anything between 5 to 10 Euros. In comparison, while sCERs(secondary CERs) fetched as high as 26 Euros per unit (the price peaked in July 2008), the last one-year average stands at around 12<sup>21</sup>. The price and demand of pCERs(primary CERs) are less in comparison, and usually uncertain<sup>22</sup>.

Unless there is a prior and direct Emission Reduction Purchase Agreement (ERPA) with a particular brokerage concern, consultant or a carbon finance company, both secondary and primary CERs are usually sold through various climate/carbon exchanges in Europe and America, though of late Asian exchanges have come up, one of them in India. The end buyer for Indian CERs is usually untraceable, and the exchanges give only bulk sales figures, and that too, not always. The buyers which one can usually see consists of mainly brokerage concerns and carbon funds, who purchase credits in bulk, and sell it to companies in "developed" Annex 1 countries who have a commitment to reduce emissions. Similarly, unless and until a project declares its CER revenues, there is no "public" way to know how much money a particular project makes, and whether the figures the project- proponent company sometimes gives in their Red Herring prospectus and Annual Reports are at all correct.

Most Indian projects are unilateral, which means they do not have a specific buyer lined up at the time of registration. Though this apparently increases marketing risk, the arrangement seems to suit most Indian Companies, who are in this game simply for more money. Being tied with no specific buyers gives them good bargaining opportunities, and further, to indulge in speculation. Indian projects have been repeatedly reported to hoard CERs for better prices!<sup>23</sup> This tendency of hoarding of course is not confined to unilateral projects. Going by the fact that most of the Indian projects to which CERs have been issued so far are bilateral (which

means it declared an “other party” from Annex I countries at the time of registration), it is evident that all Indian Projects, small and big, unilateral and bilateral, are out for a kill!

**Table-11: Unilateral and Bilateral CDM projects in India(as on 16<sup>th</sup> May,2011)**

INDIA	Number of projects	*** kCERs issued
Unilateral	1173	1980
Bilateral	431	91854
<b>Total</b>	<b>1603</b>	<b>93834</b>

One thing has to be said, though. UNFCCC’s CDM EB has so far been consistently niggardly in issuing CERs to unilateral projects. Indian unilateral projects have only been issued a paltry 1980 kCERs(up to 16<sup>th</sup> May, 2011), whereas the bilateral projects got 91854 kCERs! Many of the bilateral projects( especially the HFCs) have been issued many times, whereas only one unilateral project (0112: Nagda Hills Wind Energy Project) was issued twice, rest only once. Does it happen because the UNFCCC considers such projects to be cleaner? Does the “other party” involvement in the bilateral project influences and makes the issuance process faster ? Why the discrimination when both unilateral and bilateral projects show a characteristic disregard for the declared principles and guidelines of CDM?

The lure of easy money has led to a muster of vultures in the Carbon Market; all kinds of speculators, consultants, self-professed carbon gurus and now the Hedge Funds and Private Equity funds have set up their own shops in India. Futures trading in CERs/VERs seem to be picking up<sup>24</sup>, which means that CDM projects are entering into secure deals with traders who now carry the project’s risk burden (the greatest risk is its being rejected by CDM EB, which seldom happens) in lieu of the larger share of the sales profits. It is quite possible that we will see increased financing of new CDM projects by both hedge and private equity players, and given the essentially unregulated, shady and non-transparent nature of their operations, such projects will continue to be dirtier and more fraudulent. Already a major part of the issued credits from Indian projects are being purchased by new carbon finance companies, private equities, and banks. A look at the credit buyer section in the UNEP CDM Pipeline confirms the presence of big names in the field: Meryyl Lynch, BNP-Paribas, ABN-AMRO, and so on. CDM is a big money game, and big players have arrived.

**Table 12: CREDIT BUYERS IN THE INDIAN CDM MARKET**

(sourced from [www.cdmpipeline.com](http://www.cdmpipeline.com))

Top 20 buyers	No. of Projects
EcoSecurities	292
Tricorona Carbon Asset Management Sweden	189
EDF Trading	156
Vitol	146
RWE	129
Carbon Resource Management	126
Mitsubishi	106
AgCert	97

CAMCO	89
Bunge Emissions Group	87
Noble Carbon	81
Danish Ministry of Climate & Energy	74
Kommunalkredit	74
MGM Carbon Portfolio	66
Trading Emissions	66
Agrienergy	64
ENEL	63
KfW	62
Marubeni	58
Cargill International	56

### **THE CDM FRAUD**

Fraud? Yes, one must clearly use the word, talking about carbon trading in general, and Indian CDM projects in particular. The main problem with these projects' tall—and immensely profitable—claims of reducing GHG Emissions is that there is no credible and definite way to verify these claims. The validating agency is an organisation paid by the project, and it gets paid to prove that the project is doing what it is claiming to do, and not otherwise. Though it ritually invites comments on projects it validates, such comments are as a rule ignored. The result is that dirty and utterly ineligible projects sail through, and make money, without bothering to clean up their acts. The biggest instance of this is the Waste Heat-based energy projects, mostly located in various sponge iron plants. These projects are legally required to operate Electro-Static Precipitators or ESPs, to ensure that the smoke emitted by the plants remain reasonably clean. Because an ESP is an expensive machine to run, the plants mostly do not operate it(see case studies). Because the ESP remain inoperative most of the time, the waste heat project, which is technically dependant on continuous running of the machine, does not work. That the ESPs do not run is known to everybody, the State Pollution Control Boards, the villagers near the plants, the workers. Yet, the Indian Government approves these projects' CDM claims, the Validator validates, and the UNFCCC registers and issues CERs. Quality-wise, there is no difference between VERs and CERs from such a project; the pollution caused by it continues all the same. UNFCCC certification means a few more wads of paper from the validating agency, and the occasional methodological explanations offered by the project proponent. Contrary to popular belief, such papers, however well-written and convincing, prove nothing, least of all, the emission-reduction claims.

Instances of irregularities and fraud are not confined to sponge iron companies; they cut across sectors. Several large thermal power plants in India have applied for CDM status of late and two of those are already registered with UNFCCC (the Tiroda Plant by the Adani group, and the Sasan Plant by the Reliance) despite complaints of large-scale land grab and rampant pollution at the project sites in Maharashtra and Madhya Pradesh(see case studies).

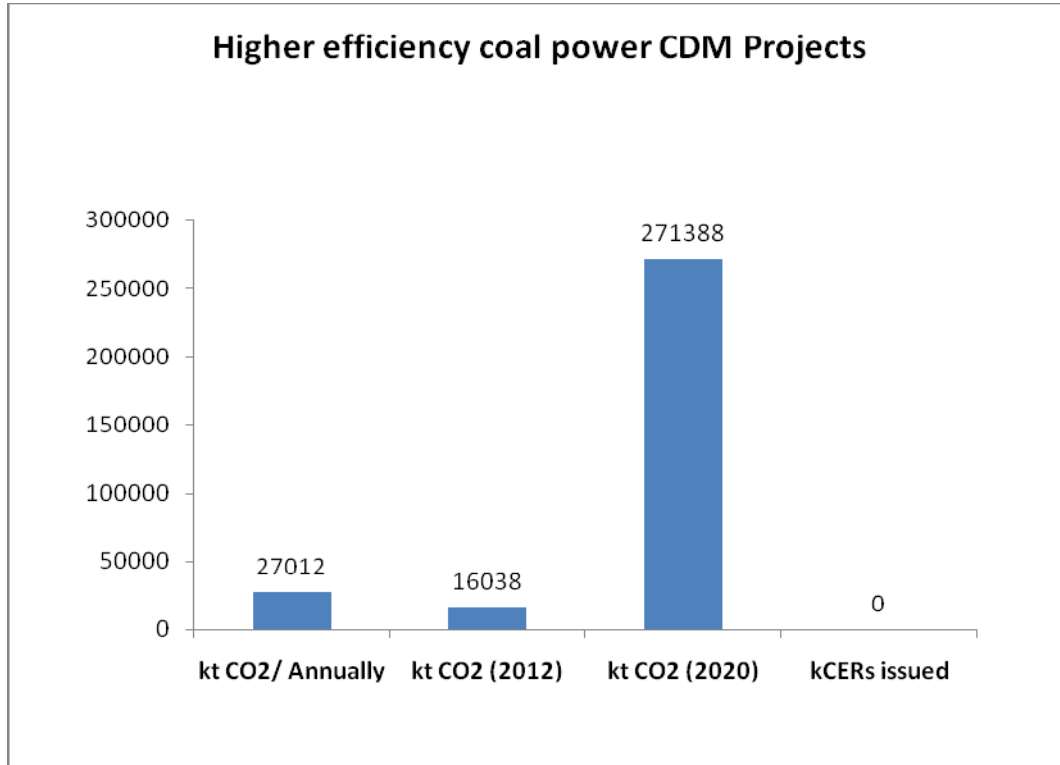


Fig-18 High efficiency coal power projects in India

Irrespective of sectors, all CDM projects we could study so far display a surprising uniformity in community level impacts: they pollute (large and small industrial projects including the so-called ‘clean’ biomass power projects), displace (‘renewable’ and ‘green’ wind power and large and small hydro, large industrial projects) and destroy or enclose commons (forests, agricultural fields, pastures). Not a single project was found to yield any discernible benefits for the local economy, society and environment. CDM projects generated no new jobs apart from a few temporary posts of security guards here and there, and all tall talks of corporate social responsibility etc disappeared once a project got going.

The case studies included in this study will therefore may often sound repetitive. The monotony of illegal exploitation of both resources and people is not broken by the usual ‘success story’; and each narrative seems to be the re-run of another. In a way, these narratives follow the largely cut-and-paste sustainability claims in the PDDs, but only in an inverse way.

## REFERENCES and END NOTES

All data on CDM projects, unless otherwise specified, were taken from an assortment of ‘official’ sites: [www.cdmindia.nic.in](http://www.cdmindia.nic.in) (site by the MoEF,GoI for state and sector-wise information on Indian Projects, though not very organized), [www.unfccc.org](http://www.unfccc.org) (by far the most organized of the sites, though specific project-related information may take a lot of searching), [www.cdmpipeline.org](http://www.cdmpipeline.org) (the main source of CDM data, constantly updated). So far as Indian projects are concerned, the data in [cdmpipeline](http://www.cdmpipeline.org) often are at variance with [cdmindia.nic.in](http://www.cdmindia.nic.in)

All general information on Indian corporations, unless otherwise specified, were taken from the company websites like: <http://www.ril.com>/[www.tatamotors.com](http://www.tatamotors.com)/[www.jsw.in](http://www.jsw.in)/<http://www.bajajelectricals.com/t.group.aspx>/<http://www.gujaratambuja.com/index1.html>/<http://www.jindal.com>/<http://www.itcportal.com>/[http://www.itcportal.com/sets/itc\\_frameset.htm](http://www.itcportal.com/sets/itc_frameset.htm)/<http://www.srf.com>/<http://www.gfl.co.in>/<http://www.adityabirla.com>/<http://www.mpbirla.com/>

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23. <http://www.mydigitalfc.com/news/companies-hold-carbon-credits-prices-fall-533>, and also State & Trends, 2008 and also CDM & JI Monitor, 2 May 2007: [www.pointcarbon.com](http://www.pointcarbon.com)

24. <http://www.eib.org/about/press/2009/2009-096-post-2012-carbon-credit-fund.htm> and see also <http://www.redd-monitor.org/2011/11/04/if-carbon-markets-boom-who-will-benefit-meet-the-trillion-dollar-club/>. Both the European Investment Bank and International Finance Corporation have created dedicated post-2012 credit buying funds, expecting the moribund carbon market to sit up once the domestic emissions trading in California and India start.

## **ANNEXE 1**

### **United Nations Framework Convention Climate Change (UNFCCC) and CARBON TRADING**

The United Nations Framework Convention Climate Change (UNFCCC) was adopted at the Rio Earth Summit about twelve years ago to overcome this problem. This convention sets to address climate change. It establishes an objective, principles and commitments for different groups of countries, and set of institutions to enable governments to monitor the conventions implementation and continue their talks on how best to tackle the problem.

*The main objective of the convention (UNFCCC) is to achieve stabilization of atmospheric concentrations of greenhouse gases at levels that would prevent dangerous anthropogenic interference with the climate system.*

The framework convention divides countries into two main groups:

Annex- I Countries- 41 industrialized countries. It includes the members of the organization for Co-operation and Development (OECD) in 1992 and Countries with Economics in Transition (EITS), including the Russian Federation the Baltic States and Several Central and Eastern European States.

Annex- II Countries- Consist of 24 countries and also includes some of the OECD members of Annex-I countries.

All other countries not listed in the convention's Annexes are mostly developing countries, and known as Non-Annex- I Countries. There are almost 145 countries included in this group.

Kyoto Protocol which supplements the convention entered into force on 16<sup>th</sup> Feb, 2005. Only countries that are already parties to the conventions can accept, approve or accede to the protocol, and thereby become parties to it. All the countries in convention (Annex-I & Annex-II) are subject to an important set of general commitments. They are:

They must prepare and regularly update national change mitigation and adaptation programmes, including measures to address sources of GHG emissions and to protect the carbon reservoirs.

Must promote development, application and transfer of climate-friendly technologies and practices, as well as sustainable management of carbon sinks.

Make preparations to adapt to climate change, participate in climate change mitigation programmes, and promote education, training and public awareness relating to climate change.

This protocol strictly suggests that all Annex-I countries must reduce at least 5.2% of its greenhouse gas emissions from 1990 levels by 2008-2012. Fig. 6 shows the list of Greenhouse gases and their global warming potentials.



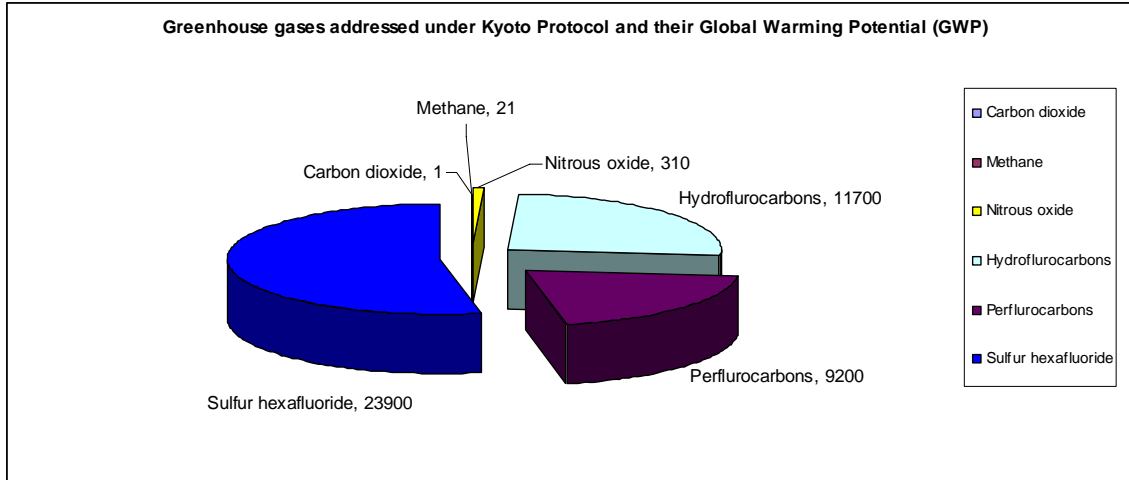


Fig :1

This protocol introduced three mechanisms for the Annex-I countries to cut down their green house gas emissions:

**Joint Implementation (JI)**-This allows Annex-I Countries to implement projects that reduce emissions, or increase removals by sinks, in the territories of other Annex-I Countries. Emission Reduction Units (ERU) generated by such projects can be used by investing Annex- I Parties to help meet their emission targets.

There are two possible procedures for carrying out JI:

**Track one-** It applies when host party fully meets all the eligibility requirements related to the Protocol's methodological and reporting obligations. Host party may apply its own procedures, issue ERUs and transfer them to the investing Party.

**Track Two-** It applies if the host Party is unable to meet all the eligibility requirements, then the amount of ERUs generated by a project must be verified under a procedure supervised by the *10- member Article 6 Supervisory Committee*.

**Clean development Mechanism (CDM):** This mechanism allows Annex- I Parties to implement clean projects that will reduce emission in the territories of Developing Countries (non Annex-I Countries). The Certified Emission reductions (CERs) that result from these projects will help Annex- I Parties to meet their emission targets and help non Annex- I Parties to achieve sustainable development. To qualify for credits a project activity must demonstrate that GHG emissions were reduced against the baseline scenario (GHG emission under normal condition).

CDM project activities can be broadly classified into two main areas:

*GHG Emission Reduction*

*Sequestration*

These are again subdivided on the basis of project size to; *Normal Size Projects* and *Small*

**Emission trading (EI)** - It suggests Annex-I Parties can acquire Assigned Amount Units (AAUs) from other Annex-I Parties to meet their emission targets. This enables Parties to utilize lower cost opportunities to curb

emissions or increase removals, irrespective of where those opportunities exist. Annex - I Parties may also acquire CERs, ERUs, or RMUs (Removal Units from sink activities) from other Annex - I Parties.

**Clean Development Mechanism**

Various projects eligible under CDM are:

<i>Renewable Energy Projects</i>	Biomass; Geothermal; geothermal/Hot dry rocks; Hydro; Solar; Tidal; Wind; Wave
<i>Energy Efficiency Projects</i>	Altering power station to reduce distribution losses; Modifying processes at the demand side to reduce the amount of electricity required
<i>Power Projects</i>	Fuel Switching, Capturing land-fill methane gas to generate electricity
<i>Transport Projects</i>	Implementation of cleaner engine technologies; Fuel cell and battery vehicles upgrading existing fleets; Traffic flow controls; Mass transit substitution for private transport
<i>Forestry Projects</i>	Afforestation or Deforestation
<i>Other Projects</i>	Geological sequestration; Geological sequestration for enhanced oil recovery; Land-fill methane recovery

The purpose and process of CDM is defined in Article 12 of the Kyoto Protocol. In order to participate in the CDM, a country must be party to the Kyoto Protocol. Following aspects should be considered while designing CDM project activity (according to UNFCCC):

Social well being: The CDM project activity should lead to alleviation of poverty by generating additional employment, removal of social disparities and contribution to provision of basic amenities to people leading to improvement in quality of life of people.

Economic well being: The CDM project activity should bring in additional investment consistent with the needs of the people.

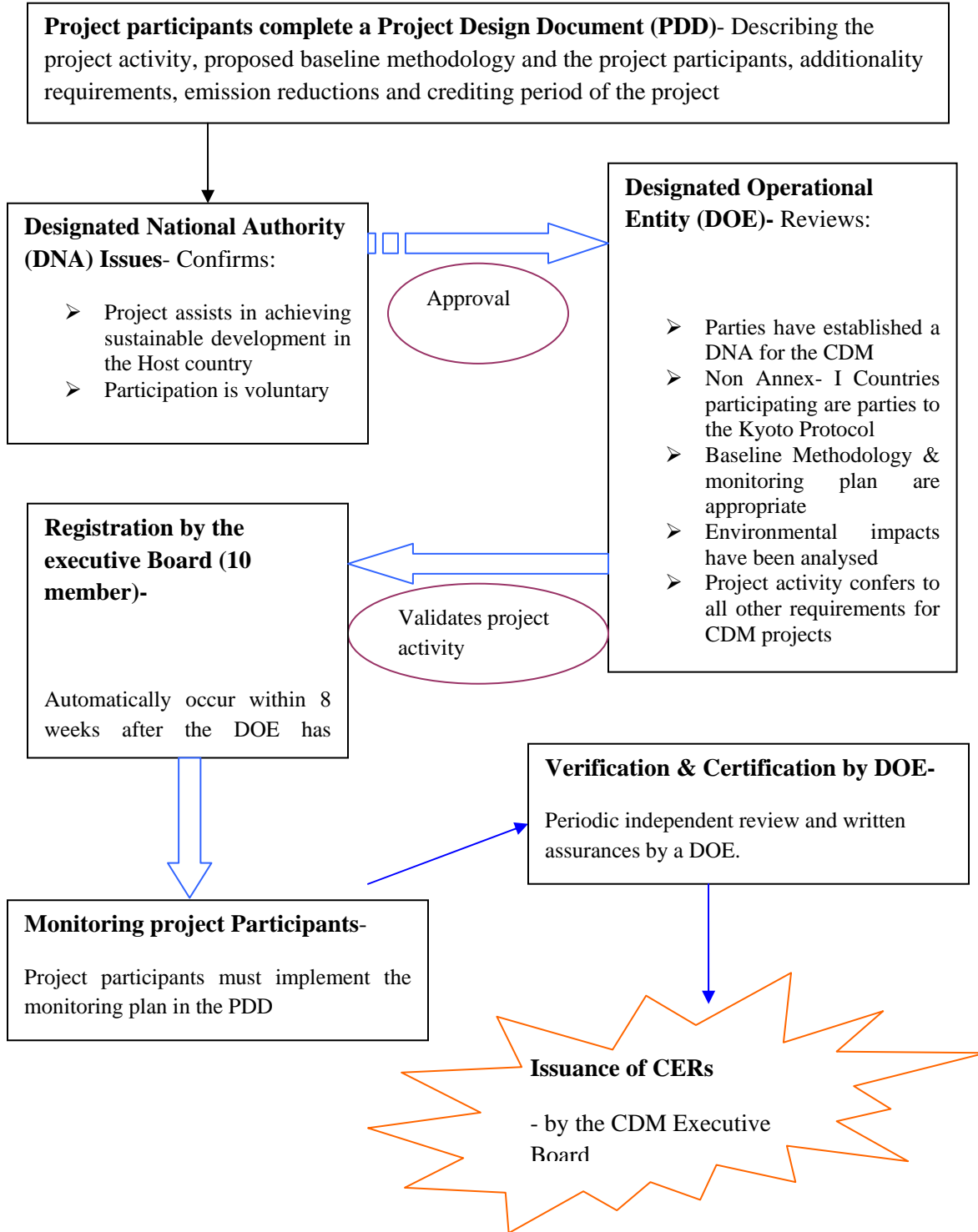
Environmental well being: This should include a discussion of impact of the project activity on resource sustainability and resource degradation, if any, due to proposed activity; bio-diversity friendliness; impact on human health; reduction of levels of pollution in general;

Technological well being: The CDM project activity should lead to transfer of environmentally safe and sound technologies with a priority to the renewable sector or energy efficiency projects that are comparable to best practices in order to assist in up gradation of technological base.

The CDM has its own specific modalities and complex procedures which were adopted in COP-7 in Marrakech. This procedure includes validation, registration, monitoring, reporting, verification and certification of CDM projects and their emission reduction targets. The CDM would be administered through different principle bodies; The Conference of Parties serving as the Meeting of the Parties (COP/MOP), the CDM Executive Board (EB) and Designated Operational Entity (DOEs). During the COP-8 hosted in New Delhi, the EB has adopted separate procedures and modalities for small scale projects to reduce transaction

costs and make such projects comparatively more viable. At the same time the Countries participating in CDM must designate a National Authority for the CDM (DNA). The CDM project cycle mentioned below shows the different steps for validation of a CDM project.

**CDM PROJECT CYCLE**



**PART 2**

# **Glimpses of 'Clean Development'**

**Field Reports from  
CDM projects in India**

## **Glimpses of ‘Clean Development’: Field Reports from CDM projects in India**

### **Introduction**

This report includes field results from 34 separate CDM (clean development mechanism) projects in India. While most of the research was done between 2009 and 2011; the work started much earlier in 2006 and continued intermittently up to 2008, some results from which period have been included here for a greater degree of sectoral coverage and perspectives.

CDM projects are being implemented in almost all the Indian states. This report includes only a few; though selected randomly, they do provide an insight into a range of issues and problems common to the CDM process in general, and the sorry state of environmental regulations in India in particular. The report covers several major sectors (Industrial: energy efficiency, power generation, and supercritical coal; Renewable Energy: hydro, biomass, and wind; and LULUCF: forestry); and also a few big projects (in terms of total carbon credits generated) owned by large private corporations. The CDM projects covered in the report are presented sector-wise; and within sectors, state-wise. The report includes both large-scale and small CDMs, projects that have been registered with the UNFCCC and formally issued credits and projects which are still ‘at validation’. It might also contain one or two that has been rejected by the CDM EB as well on methodology or additionality grounds; to us it didn’t matter much because a host-country-approved and ‘validated’ project is free to sell its wares to the non-Kyoto voluntary market<sup>1</sup>, and we were more interested to see the community-level impacts of the projects.

The case studies in this report follow a simple format: we first see what the PDD( the Project Design Document which the project developers have to submit to the UNFCCC) has to say on the project and mainly the claims on sustainability (the four well-beings: social, economic, technological and environmental), and then present community-level responses from the area where the project is located. Because these studies essentially focus on community perspectives; technical discussions on ‘additionality’ or methodologies have been avoided as far as possible, though in some cases relevant information has been provided.

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<sup>11</sup> Two Wind Energy CDM projects in Maharashtra by the Bajaj Auto went immediately to the Chicago Climate Exchange after being rejected by the UNFCCC CDM Executive Board. See <http://www.carbon-financeonline.com/index.cfm?section=lead&action=view&id=11339&return=search>

## Case 1: Industrial CDM projects

### A. ORISSA

#### **a. Waste-heat-recovery-based captive power plant: Bhushan Power and Steel Ltd, Thelkoloji, Rengali tehsil, Sambalpur district**

##### **What the PDD says**

###### *The project*

Bhushan Power and Steel Ltd (BPSL) established its steel plant in Thelkoloji village in Sambalpur district in 2003 after acquiring huge patch of agriculture and forest land. BPSL produces 0.6-million tonnes of 'value-added steel' annually. The plant has implemented a waste-heat-recovery (WHR) captive power project in two phases: a 40-MW unit in July 2005; and a 60-MW unit in May 2006. In 2007, the company got the CDM clearance from the Government of India for this power project. The main characteristic of this component – as claimed by the company – is reduction of black carbon emission to the atmosphere and thereby contributing to clean energy.

During the 10-year crediting period (2009–2019), the project will earn 3,334,810 CERs in total, 333,481 annually.

###### *Sustainable development*

The project activity generates electricity from the waste flue gas and thereby reduces GHG emissions. Electricity generated by the WHR power plant displaces equivalent amount of electricity that would have been generated by the coal, coal washery rejects, coal-char-based captive power plant. The purpose of the project activity is to generate power through WHR in order to meet the partial in-house requirements of BPSL. In exigency cases, power from the state grid is also imported... If there is surplus power available after meeting the captive requirements of the steel plant, the same would be exported to the Orissa State Grid.

The project activity has contributed to 'Sustainable Development of India' by generating power using waste heat gases from the process. By generating clean power, BPSL has replaced power generation from polluting processes, enabled reduction in carbon-dioxide emissions, and saved the conventional fuel. The project imparts direct positive impact by improvement of quality of life of local people by providing inflow of funds, additional employment, technological and managerial capacity building, etc. The location of the project in a rural setting contributes towards poverty alleviation by generating both direct and indirect employment.

The project's initial investment is to the tune of 501.2-million rupee in addition to the envisaged continuous inflow of funds considering CDM revenues. The project will also earn additional revenue for the local and central government.

##### **Report from the field**

The region where BPSL is located in Sambalpur district used to be a vast green expanse of primary forests, fertile farm land, and grazing fields. This is also the region that has the distinction of being the first-ever 'officially recorded' (1936) community forest in the state, which has inspired many other community forest groups to come up in many other places. Today, BPSL, along with other industrial projects such as the Hirakud Dam, Hindalco coal mines, the IB Thermal Power Plant, Vedanta Aluminium Smelter, and dozens of sponge-iron units, has not only eaten up most of the forests but also turned green into an industrial graveyard. Around the BSPL plant, a live cauliflower looks like a

mound of cow dung, meticulously and deceptively placed on the ground: so much for the claims of the PDD to ensure a clean environment as part of the project's sustainable development impacts.

Manbodh Biswal, a local villager who had been jailed for fighting against illegal acquisition of forest land – their sole economic base – in the region, puts the crisis in perspective, “They come and chop off our head, and then talk about some miserable monetary compensation, saying that this is enough to keep the rest of the body alive for a lifetime!”

In fact, acquiring land for setting up industrial units has not been really tough for private companies as the ‘welfare state’ provides welcome and much-needed support in terrorizing and forcing people to leave their lands. Those who lost land and forest to BSPL share their nightmarish experience of how they were forced to leave their fertile lands and rich forests. People now live amidst smoke and dust the plant chimneys emit. The entire area is covered with thick coal dust. Water sources, farm lands, animals, and households—the pollution spares nothing. People living in Jamindar Pada and Gond Pada in Thelkoloji village remember the good old days when they could get everything they needed from their forests and farmland. Now that they have to go to the market for every little thing, survival has become extremely difficult. Looking at the Bhushan factory, a woman says, “All the promises that the company made to people while grabbing our lands seem to have turned into that thick black fume coming from the chimneys, and vanished into the sky.”

Among the 70 families in Jamindar Pada / Gond Pada, members of only 7 or 8 managed to get jobs in the factory and that too contractual work: 12 hours of slogging for mere 100 rupees or even less. To add to the misery, the payments are erratic.

There is absolute lawlessness in the area as Bhushan dumps the fly ash wherever it wants—in the middle of the state highway, and sometimes even on large agricultural fields, ruining the crops.

People in the area say that after a long-drawn protest by them, the chimneys of the company now do not emit black smoke during the day; but do it after sunset, as the *babus* (bureaucrats) would never come at night to inspect. During our visits to the area, we noticed that too—it was clear throughout the day and the moment it started getting dark, the chimneys started to belch thick black smoke.

Among thousands of families affected by the project, only 165 were ‘officially’ rehabilitated and the rehabilitation colony lacks even basic services. The houses are not fit for human beings; however, several families reside in those as there is other choice. It may sound macabre, but there is a school near the rehabilitation colony on a large patch of land that is used for defecation by people. A resident of the resettlement colony says, “You can see how we are treated by the company; our children can’t even have a clean place to study; the stink’s so bad...” As we were talking to people, we saw a water tanker taking rounds and filling the pots kept outside the houses. People said that it was the only source for water in the colony, and the water tanker comes at will.

An elder (who pleaded anonymity) of the widely respected Lapanga Prajarakshit (community-protected) Jungle Committee says: “What tremendous collective efforts and care had gone into protecting the village forests here, for decades! But who can now live in this place anymore...Not only have we lost large areas of forests to the factories springing up all around, the environment also is totally destroyed... even the social environment stinks! Living here is going to be even tougher in future.” Another member, a middle-aged man who also pleaded anonymity, says: “Our elders had sown the seeds of prosperity for us by keeping the forests, and my generation reaped the harvest. But what is our next generation going to do? What will they live on? We still have about 300 hectares of forests. But suddenly, after Bhushan came, the trees in our forests are being felled every day and taken out. We fight, but they come with armed goons. We don’t know how to tackle the problem. The elders had protected this forest for over 100 years by contributing food grain set aside from family rations and also by giving voluntary labour. Earlier, 80% of the village forest and farmlands was lost to the Hirakud Dam; now the company eyes the remaining 20%!” An elderly member of the Ghichamunda village forest committee, near the Bhushan plant, says: “We have been protecting more

than 800 hectares of village forests for decades. But the Bhushan steel plant (and the Vedanta smelter) is wreaking havoc. They dump ash in our forests; Bhushan has in fact taken away the grazing fields and lands from the adivasis in addition to a large government area that they now use as an ash pond. Severe pollution turned leaves in the trees black, and trees stopped growing. These days we avoid the old village road to the town because it is so full of dust. We practically have no road now. They are constructing new roads inside the forest only to do more ash-dumping. All the petty agents and contractors enjoy patronage of Bhushan: the moment one tries to raise one's voice, a bundle of currency notes is pushed into his mouth, to choke his throat. If that does not work, they threaten you for life. A terrible time has descended on us. But we will keep up the fight. We have given our sweat and blood for our forest, our goddess!"

## **b. Reduction in GHG emission from primary aluminium smelter: Hindalco Industries Ltd, Hiraikud, Sambalpur**

### **What the PDD says**

#### *The project*

Hindalco Industries Ltd, a flagship company of the Aditya Birla Group, is one of India's large producers of primary aluminium with facilities located across the country. Hindalco smelters are located at Hiraikud, Orissa, with a captive power plant (coal-based) and coal mines.

The primary aim of the CDM project is to reduce the PFC [Perfluorocarbon gases, both Perfluoromethane (CF<sub>4</sub>) and Perfluoroethane (C<sub>2</sub>F<sub>6</sub>)] emissions, which occur during anode effect at the smelters. The project activity includes "conversion" of the existing HSS technology (maximum line current of 62 kA) to Point Fed Prebake (PFPB) technology and operating at a line current of 85kA. Improvement in electrical energy efficiency will lead to reduction in specific electricity energy consumption and hence reduction of equivalent carbon-dioxide emission from the sources of power generation.

The crediting period for the project commenced in April 2009 and will end in March 2019. With an annual abatement of 433,789 tonnes of CO<sub>2</sub>e, the project is expected to earn a total of 4,337,890 CERs .

#### *Sustainable development*

Contribution to employment and development objectives of Government of India and Orissa, by enabling sustainable performance of the plant and also through multiplier effects of additional investment in the project activity and/or improvement in production efficiency

Contribution towards mitigating the electricity supply deficit in the eastern region of the country by improving energy efficiency

Increment of income security of vulnerable sections of the society through redistribution benefits on account of the economic activities associated with the project

Contribution towards additional value creation for the shareholders through change in technology and improvement of production capacity without increase in raw material consumption

Contribution towards creating skilled labours by providing on-job training to the smelter operators in the latest technology improvements



## **Report from the field**

The aluminium smelter of the Hindalco Industries Ltd – a flagship company of the Aditya Birla Group – claims to be contributing to the employment and development objectives of the government, mitigating electricity supply deficit, increasing the employment and income security of the vulnerable sections, and so on.

The reality however is different. The plant is situated in Hirakud, known for an ‘nationalist’ symbol of progress – the Hirakud Dam – which submerged more than 75,000 hectares of dense forests, grazing lands, and farm lands, displacing more than 180,000 people dependent on the local ecosystems for their survival. The exploitation of natural resources did not end there—the continuous influx of industrial units ensures that it continues unabated. Hindalco Smelter – the first real beneficiary of the Hirakud– came up soon after the dam came into being, eyeing the abundant water and energy that it promised to supply. The plant was built on huge patches of fertile agricultural land and forests.

People living in and around the smelter have largely untold stories of misery and helplessness. Already once displaced by the Dam, they not only lost – for the second time – their farm land and forests to the smelter, but also witnessed the ecosystem being choked by industrial filth. People resisted the forcible takeover of forests and land; but had to face attacks and threats from police and company goons—as the elders reminisce even today.

Thick smoke and effluents from the plant make it a veritable hell for people residing near it. The day we visited the villages next to the smelter, the villagers were in mourning: about 10 acres of fully grown paddy had been burnt to cinders the previous night due to emission of toxic fumes from the smelter. While some men and women shouted for justice standing by the burnt fields, some others wept. Nathu, a local activist, told us, “Such damage has become routine here, and there is absolutely nowhere these villagers can go to for justice. On top of that, the only water stream that the villagers depend on has also been polluted with effluents from the plant. The company does whatever it wishes and the administration is just a spectator.” Whatever crops remained unaffected by the fume carried a thick layer of dust and pollution, we saw.

At the Naradihi village near the Hindalco plant of the Birla group, a middle-aged woman burst into tears: ‘Tell us how we’ll survive? The ash and the effluents from the plant make our lives a living hell. On top of it, the crops either are ruined or refuse to grow. When we try to talk to the company, the security guards throw us out. Where will we go now?’ ...‘We have been displaced once by the Hirakud Dam. Now it seems we will have to move once again’, said another. The villagers took us near the plant to show how the paddy had become brick-red from the pollution. ‘Will the company compensate the loss? Will they admit that they are playing with our lives and wrecking them?’ demanded a local youth. Like the other questions the irate and harassed villagers asked, we had no answer to this, too.

A few kilometres from this ‘development’ site, Hindalco runs a coal mine that causes yet more pollution, and threatens hundreds of families with displacement.

Sustained attempts by people in the Hindalco area to contact company officials for compensation have been greeted with loud, at times violent, rejection at the plant entrance. Ironically enough, the people already twice displaced do not fall within the category of PAP (project-affected people) and hence cannot claim compensation; according to the law! Tall tales made by the company in the PDD about income generation for the local community and sustainable development were, of course, found to be utterly false.

### **c. GHG emission reduction through technology renovation: TATA Refractories Ltd Belpahar, Jharsuguda district**

#### **What the PDD says**

##### *The project*

The project participant, Tata Refractories Ltd (TRL), is a part of the Tata Group of Companies that operates in diverse business segments across India. TRL established its refractory facility in 1958 at Belpahar in Orissa and is presently the leading producer of refractories in the country.

The project activity involves replacement of the three units of gas ring kilns (GRKs) with a single unit of tunnel kiln of design capacity 2100 tonnes/month. The tunnel kiln, which will also operate on the same fuel, that is, producer gas, requires lower cycle time (7.5 days/cycle); entails better combustion efficiency; and, hence, has lower STEC of approximately 2270 kCal/kg of saleable bricks produced. The implementation of project activity would thus reduce producer gas consumption, which, in turn, would lead to lower coal consumption for firing silica bricks.

The increase in energy efficiency will result in corresponding reduction in fuel, especially coal combustion, leading to reduction in GHG emissions. The project has a 10-year crediting period (January 2009 – December 2018), and will earn 404,870 credits, 40,487 annually.

##### *Sustainable development*

*Socio-economic well-being:* The project activity helps in indirect employment generation in design, construction, and operation and maintenance of the equipment. It also helps in developing the knowledge and skill levels of the employees. Further, the project activity creates business opportunity for local stakeholders such as consultants, suppliers, and contractors.

*Environmental well-being:* With the implementation of the project activity, there is a direct reduction in emissions of GHGs, thus contributing to the mitigation of global warming. The project also leads to conservation of non-renewable resources (such as coal). Due to reduction in release of air-borne suspended particulate matter (SPM) and pollutants (such as oxides of sulphur and nitrogen) in ambient air, the working environment has improved. Further, there will be a reduction in solid-waste generation due to lesser amount of ash generated at the coal gasification unit.

*Technological well-being:* The replacement of GRKs with tunnel kiln will lead to implementation of cleaner technology for silica brick-firing. The successful implementation of the project may encourage other refractory brick manufacturers in the country to replicate this technology.

#### **Report from the field**

On our way to the village Jamkani near Belpahar, the site of the Tata group's 50-year old plant – the Tata Refractories Ltd – we saw Ratan Tata beaming at the poor world below from a large more-than-life-size hoarding. Not impressed or overpowered by the show, the villagers here seemed to be terribly angry. Beyond the village limits rose the high wall of the plant, and stacks of chimneys. The villagers took us to the wall to show how effluents from the plant are discharged through a drain passing through the wall, and directly into the villagers' fields. 'It is so toxic that it ruined our only pond,' said they. We saw the pond too, and people bathing in the stinking black water. 'What will they do? We all know that bathing in the pond means skin ailments and other diseases. But, that pond is all the water we have!' said the villagers.

‘We do not have any safe drinking water because of the company. The soil is full of fluoride, and there are many victims of fluorosis at Jamkani. But what does the company care?’ shouted a young man. ‘The village simply doesn’t exist for the Tata,’ said another, ‘The factory has ruined our fields, water, and lives.’ ‘There is no justice in this world’, said an old man, ‘All of us, after being displaced by the Hirakud Dam, came here and made this jungle habitable. When the Tata came and asked for land, we gave it to them willingly because we thought that a factory here would mean employment for the villagers. Initially, they employed some of us. But not anymore! The company has forgotten us, and also all the promises it gave while setting up the plant.’

Just as the company doesn’t know anything about what happens beyond its tall walls, the local people have no idea about what is being manufactured behind the walls and nor any knowledge about CDM. The situation even gets surreal: the temple of the village deity is now almost buried in the muck coming from a mine nearby. The mine feeds the Tata refractory.

## B. ANDHRA PRADESH

### **a. Installation of waste-heat-recovery systems to generate electricity: India Cements Ltd, Wadapally, Vishnupuram, Nalgonda district**

#### **What the PDD says**

##### *The project*

The project activity, owned by the India Cements Ltd, involves installation of waste-heat-recovery (WHR) systems to generate electricity at their Vishnupuram cement plant. The plant is located in the state of Andhra Pradesh and has an annual capacity of 2.25-million tonnes of cement production. The India Cements Ltd is operating in the sector for over six decades, and is the third largest cement group in India with a capacity of 8.8-million tonnes of cement production. The Vishnupuram cement plant has two kilns—one of 1750 tonnes per day and another of 4500 tonnes per day. Waste heat recovery will take place using gases from the larger kiln. The project has been partly funded by the New Energy Industrial Development Organization (NEDO) of the Government of Japan and was envisaged as a ‘model project’ for WHR in the Indian cement industry.

The project will generate 514,940 CERs over a crediting period of 10 years.

##### *Sustainable development*

The project activity will promote sustainable development mainly through reduction in GHG emissions and other gases that are generated in the operation of grid-based power plants. In the southern region, over 70% of electricity generation is accounted for by coal. The operation of coal-based power plants not only gives rise to GHGs but also oxides of nitrogen and sulphur.

The disposal of ash from grid-based power plants is always a problem, especially given the high percentage of ash in Indian coal. The operation of the WHR power plant will result in reduction in these gases and also ash and, therefore, provides a positive contribution to sustainable development.

An additional benefit that has also resulted from the installation of the project activity is an increase in direct employment at the plant. Eleven employees are directly associated with the project activity with a number of these positions being of technical nature—engineers and mechanics.

The provision of employment and moreover technical skills is an important step in the development of the economy and provides much-needed rural employment.

### **Report from the field**

The local sarpanch at Wadapally village, B Bhaskar Rao, informed that the polluting dust (fly ash) from the plant causes serious health problems for the villagers. The company tried to 'mitigate' this problem by starting plantations on roadsides, but with plants like *Jatropha* that did nothing to lessen the pollution. In spite of repeated complaints by the villagers, the company was not willing to talk environment to the locals.

Desperate for justice, the villagers organized public meetings on the persisting environmental problem and appealed even to the National Human Rights Commission. The company then promised to reduce the pollution, but only ended up in extending their useless plantation activities.

Villagers are much worried about some kind of acid being used in the cement production, which they can smell in the air and clearly relate to the increasing health problems in the area. In the rainy season, the villagers said, this dry acid gets mixed in water and flows into the village ponds and tanks.

In the name of sustainable development, the company runs an English-medium school only for the children of its employees. The village children cannot even afford such education for which they have to shell out at least 300 rupees per month. The sarpanch lamented that the company runs a hospital, again for the factory employees in its colony premises, though some minor services can also be accessed by the villagers. There is, however, no facility for pregnancy care and child-birth.

Out of a population of over 10,000 in the area, the plant has employed only 50 people. Showing scant regard to sustainable development issues, the company never bothered to consult the local people on any of its activities, thus proving that the so-called development it claims to have undertaken is plainly a hoax. People here have never heard of carbon trading or CDM. They feel that the company is very powerful and, hence, they do not try to protest too much.

### **b. Methane recovery and power generation in distillery plant: GMR Industries Ltd, Sankili, Regidi Mandal, Srikakulam district**

#### **What the PDD says**

##### *The Project*

This project activity is based at the 40-KLPD-capacity distillery unit of the integrated sugar complex of GMR Industries Ltd (GIDL - Sugar Division) at Sankili village, Srikakulam District in Andhra Pradesh. The distillery has implemented ISO-9001:2000 system. The raw material to the distillery is molasses from the sugar plant. The major products from the distillery are rectified spirit (RS), extra-neutral alcohol (ENA), and ethanol. The plant is supposed to have zero pollution discharge.

The levels of biochemical oxygen demand (BOD) and chemical oxygen demand (COD) of the spent-wash generated from the distillery are as high as 55,000–60,000 mg/l and 130,000–150,000 mg/l, respectively. As per norms of the state and central pollution control boards, the limit of BOD of the spent-wash for disposal in surface water is 30 mg/l and for disposal on land is 100 mg/l. In open lagoon system – which distilleries normally adopt to address the issue – methane, a potent GHG, is generated due to the anaerobic conditions, which escapes into atmosphere and there is no control or capturing involved. This project activity at GMR Industries Ltd entails treatment of this high BOD/COD spent-wash anaerobically in a closed digester and captures the methane generated in a

controlled manner. The methane captured is combusted in a boiler for steam generation and further to generate power through a turbo-generator. The project activity also includes combustion of other GHG-neutral biomass residue fuels such as rice-husk to supplement biogas fuel in the boiler.

The crediting period for the project is 7 years (2006–2013). The project will earn a total of 313,103 CERs in those 7 years, the annual average being 44,729

#### *Sustainable development*

The project is designed to help conserve natural resources such as fossil fuels in power generation, which adds on to the national energy security.

The project activity would also provide the impetus to similar industries for adopting such measures in their distillery plants. The introduction of the project activity would also encourage technology providers to further their efforts in R&D of waste water treatment technologies bringing in investments.

The project has created employment opportunities both during erection and commissioning of the plant in the past, and currently in its operation and maintenance.

The GMR Group is known for its work for the community at large. Over the years the Group has helped the overall development of the region. Employment potential in rural areas has substantially increased throughout the year, avoiding migration of labour to other places for livelihoods during lean seasons. The company has also been carrying out its corporate social responsibilities with utmost priority. It has established the GMR Foundation, a premier national body in the area of corporate social responsibility that have been actively involved in promoting education, health, hygiene, and rural empowerment. It has set up a number of educational institutes at primary, secondary, and tertiary/professional levels. The company has set up a mobile medical unit, in association of Help Age India, covering about 25 villages. It has also set up Rural Entrepreneurship and Employment Generation Institutes in Andhra Pradesh and Kerala.

#### **Report from the field**

In the village Sankilli, we met the sarpanch(head person) C Sharada Naidu and her husband C K Naidu, an advocate, along with several other villagers. Among them were B Sriram Murthy, the village revenue officer; B Thavitinalliv, the retired secretary of the primary agricultural cooperative society; K Rammurthy Naidu, the former vice-president of the primary agricultural cooperative society; and K Pavllliya, a farmer from the village.

“This is a very big industry and foul smell from the plant makes this place unliveable”, said the local people in unison, “All our sources for drinking water, including the groundwater, are already highly polluted with the toxic effluents from the plant; open water tanks are filled with polluted water”. Such unbridled pollution causes crop loss for the farmers regularly. The local people also suffer from diseases such as lung disorder, asthma, skin ailments, and related problems. Although the GMR factory has a mobile health facility, the pitifully little treatment and medicines on offer do not cure these diseases; and hence people have no faith in such a ‘facility’.

This factory, which first came as a sugar unit, is built on farmers’ lands. Gradually, the company diversified into power, ethanol and spirit refinery—even though the villagers had given their NOC(No objection certificate) only for the sugar unit way back in 1995. In 2003, villagers had strongly opposed construction of the ethanol plant, as they knew that it was a highly polluting industry; but the company management forcibly went ahead with the work. A so-called public hearing was organized by the district collector inside the company without any formal announcement or providing adequate information to the local people. People had agitated against this, but they had to face repressive police action. The district collector finally gave the NOC for the plant against the will of the people, making a mockery of the ‘public consultation’ process that is mandatory under law.

The project authority never bothers to discuss the pollution issue publicly, despite people's relentless complaints. The only meeting the company convenes is that involves sugarcane producers.

Due to the massive air and water pollution, villagers lose their livelihoods. The fate of the fish-workers seems to be already sealed and the farm produce too declines by the year. Again, those who lost land to the factory were never fairly compensated. People got 18,000 rupees for one acre of dry and 30,000 rupees for fertile land whereas the market prices were many times higher. To compound this, only about 15 locals got some kind of employment in the factory, and that too contractual ; all other employees are outsiders.

15 villages on the periphery of the plant are directly affected, and there are no signs of any relief coming their way. Even the sugarcane farmers have to constantly fight not only for fair price and regular payments for their produce and labour but also a fair weighing system when they sell the produce to the company. When the farmers came together to form an association, the company floated a parallel farmers' association to counter and silence the voices of genuine farmers.

## C. CHHATTISGARH

### **Power generation through waste hot gases of DRI kiln: Prakash Industries Ltd, Champa, Janjgir district**

#### **What the PDD says**

##### *The project*

The total heat energy available from the DRI gas of 1 x 500-tonnes-per-day kiln at the sponge iron plant of Prakash Industries Ltd (PIL) at Champa, on conversion to electrical energy in a captive power plant, produces about 10 MW of electrical power. Using the appropriate technology, the project activity entails power generation through waste heat recovery (WHR). The PDD also talks about a boiler (5 TPH, 485 C, 66 kg/cm) to be installed for the project.

During the 10-year crediting period (2008–2018), the project will earn total CERs of 576,350 tonnes of CO<sub>2</sub>e.

##### *Sustainable development*

Power produced through WHR at PIL will be used to meet in-house power requirement of the plant, and will save equivalent amount of power for the Chattisgarh State Electricity Board (CSEB) Grid, which is primarily fossil-fuel-based.

The project activity would result in reduced emissions by avoiding generation of this power in grid-connected power stations.

The barren land around the plant has been converted in to a green belt by plantation of trees. Another environmental effort on the part of the management is to use the fly ash coming out from the power plants in some beneficial ways. An automatic and state of the art technology fly-ash brick-manufacturing plant has been installed to maximize the use of the fly ash.

As part of its corporate social responsibility, the company will – among other initiatives – promote education facilities, primary health centres, hospitals, sports club, and places of worship for the local people, and will provide employment and recreation facilities to them.

### **Report from the field**

At least 25% of the 3000-plus population of the village Kotadabri work on daily wage under contractors in the PIL. People know about the 10 MW captive power plant inside the plant, and another 100 MW plant being built. Enquiries about the CDM projects of the factory revealed that the local people are in the dark about that. People also said that the factory mostly operates during the night; and during our visit we observed that the ESP (electrostatic precipitator) was not being operated. Nothing grows in the agricultural fields because of pollution, said the villagers. The PIL has adopted four villages as 'captive villages' for development among many such affected villages, but nothing much has been done for the 'development' of the area. The Prakash Sponge Iron Industry was established in 1993 and while the intervening period was long enough to something in terms of 'development', the area in fact has only become more impoverished. Though the Hasdeo River skirts the village, people have to walk as far as 4-5 kilometres a day in the summers to access a hand pump that's the sole source of drinking water: the the PIL pumps have sucked the river dry. Not only has the river gone dry, the groundwater level too has fallen dangerously. The plant seldom employs any villager directly.

Environmental conditions have been worsening along the entire stretch of the Hasdeo river, as in the Jangjir-Champa district alone 19 power plants on the river have been proposed. Already 5 plants are operational in the Jangjir-Champa district and the Korba district. All these industries extract water at the upper reaches and discharge effluents into the lower.

Some people mentioned that the PIL has recently started to construct a water harvesting structure (WHS) in the village. The ward member said, 'It is the industry that has started the pond for the welfare of the villagers.' Further enquiries elicited that the village already had a pond, which is now being utilized as a cesspit for dumping human excreta coming from the company's staff. The pond naturally is unusable and nobody goes near it anymore. Upon visiting the new 'WHS' site, one cannot but doubt whether it's going to be the village pond or a fly ash dump, considering the way the pond was being dug through JCB machines and fly ash being used as filling material. The ward member said that the mining department is doing the digging. Afraid of losing their jobs, the people in the hamlet looked too scared to discuss the problems; they also refused to be photographed.

The village Hathneora in which the Prakash Sponge Iron Plant has existed for some 20 years is still to get any benefits from the PIL. The village, with a population of 4000 and with around 2200 voters, sacrificed everything without getting anything from the Prakash Industries in return. The industry claims to have acquired the Panchayat land (as said in one of the public hearing) from the Panchayat body a few years back, but the subsequent Panchayat samitis (councils) denied having done so and say that they do not have any role in transferring village common lands to the company.

The factory employs around 300 village youth, mostly male, as unskilled workers under the contractors. The villagers served the company for 20 long years but the company hadn't even provided any skill-training to its employees. All the villagers are forced to work under different contractors in extremely low and uncertain wages.

No health service has been provided to the villages. In the name of health benefits, there are only first-aid facilities inside the factory. The company tied up with a Mission hospital to cater to their staff and other people are left to their own arrangements. Recently, one young person died from an accident inside the factory, and while he had to be shifted out to the government-run hospital, the contractor denied that he was on roll on that particular day. He later died on the way to the hospital. Subsequent protests by the villagers, and people approaching the local administration for action yielded a mere 10,000 rupees in the form of compensation.

The village near the Hasdeo River was one of the best bean-producing villages in the area: rich in agriculture, particularly vegetables, gram and linseed. But now the agricultural economy has been ruined. The water table went down, the bore wells had gone dry, and the pollution destroyed even the

biomass . Severe dust pollution have resulted in defoliation of several major medicinal plants like *tulsi* and drumstick over the years. Now the villagers have to buy everything – from cereals to vegetables – at an exorbitant price. With the village biomass gone, the animal population went down. The villagers had been using open wells before, and they are doing the same now too. The school building is in a poor shape and nothing has been done to repair it. The company promised to build a shed in the village graveyard some years back but didn't keep the promise.

## D. WEST BENGAL

### **a. Waste-heat-recovery-based captive power project: Jai Balaji Sponge Ltd, Raniganj, Burdwan district**

#### **What the PDD says**

##### *The project*

Jai Balaji Sponge Ltd (JBSL) is part of the Jai Balaji Groups of Companies—one of the major entities producing secondary steel in Eastern India, with more than 35 years of presence in the market. JBSL's sponge-iron-manufacturing unit with 105,000-tonnes-per-annum capacity with 7 RI kilns is located in the Mangalpur Industrial Estate at Raniganj in Burdwan district. Commercial production in the unit started in April 2000. JBSL has proposed technology renovation by setting up a 1200-tonnes-per-day ferro-alloy plant next to the sponge-iron plant and a 12-MW captive power plant (CPP) to run primarily on waste-heat energy with minor contribution from coal char, coal fines, and coal washery rejects. The CPP will partially meet the electricity demands of the sponge-iron plant and the ferro-alloy plant.

Of the 12 MW of installed capacity of the CPP, 9 MW will be generated by utilizing the sensible heat content of the waste gas from the DRI kilns for generating steam through waste heat recovery boilers (WHRBs). The power generated using waste heat comes under the scope of 'project activity' of the CDM component of the project.

Starting from 2006, the 10-year crediting period will last till 2016 during which this CDM project is estimated to earn 463,865 CERs.

##### *Sustainable development*

*Socio-economic well-being:* in Raniganj–Durgapur area, the project will contribute to employment generation and bridge the demand–supply gap of electricity both at the local and national levels. From the macro point of view, since Grid electricity will be replaced, the economy will be benefited by the corresponding reductions in the cost of coal mining and transportation, and savings in fossil fuels.

*Environmental well-being:* The project activity, by eliminating use of fossil fuels in power generation, will eliminate emissions of GHGs associated with the production of equivalent amount of power in conventional methods. The same amount of coal conserved through the project activity can be available for other industrial and manufacturing activities. Further, implementation of air-cooled condensing system instead of water-cooled condensing system, the project will avoid generation of huge amount of sludge in the process, and also contribute water conservation in a water-scarce area.

*Technological well-being:* The in-house power generation by the WHR-based CPP, besides savings fossil fuels and contributing to environmental cleanliness, will reduce transmission and distribution (T&D) loss, which would have occurred if supplied from the Grid.



## **Report from the field**

This was one of the rare occasions where we could enter the plant and talk to the workers. It was found that the plant employs three kinds of labour: (1) permanent; (2) temporary, through the union; (3) un-unionized labour.

### *Salary/wage structure*

Only the permanent employees receive a regular salary – ranging from 2800 to 6000 rupees per month – as well as benefits such as provident fund, gratuity, and health-insurance coverage (ESI). About 90% of total workers are temporary wage-workers, hired on no-work-no-pay basis. Among them, only unionized labourers get a wage of 85 rupees per day, besides benefits and overtime. Un-unionized workers, however, get just 70 rupees per day on no-work-no-pay basis; and sometimes they have to work for even 16 hours a day. They have no restroom, proper drinking water facility, or toilets.

About 10% of the total workers are local villagers, while the bulk is from neighbouring states like Bihar.

Because the factory continues to make local peoples' lives miserable, this study could not discern signs of any social well-being in the community. The management is extremely reluctant to do any welfare activity even for its workers, according to Parimal Halder, a trade-union leader. He also complained of 'managerial negligence' in labour relations.

Nearly 70% of the labours are illiterate and have no idea what 'social well-being' means, let alone the concept of 'clean development mechanism, or carbon credits!

### *Environmental benefits?*

Angry residents of nearby Mangalpur village once forcibly closed the gates of the factory, in a symbolic protest against pollution in 2004.

The union leaders claimed that pollution intensity has been reduced. But they also blamed the management for their unwillingness to operate the ESP (electrostatic precipitator, a pollution-control device) day and night. The union reportedly insisted that the management operate the ESP according to the WBPCB (West Bengal Pollution Control Board, the statutory regulatory body) guidelines, but the management was reluctant to do that, operating the machine only during daytime. This way they save 50,000 to 60,000 rupees a month.

Both the factory workers and the local community are hapless victims of pollution, inside and outside the plant. According to the villagers from a nearby village, emission of fly ash and dust has increased of late, and the factory doesn't properly operate ESP even during the day. They continue to dump fly ash on open fields, on children's playgrounds, and agricultural land. Walls and windows of the hutments in the village are covered with black spots. The continuous pollution also affects agriculture. According to a villager, paddy production is decreasing each year.

Old people and children are the worst sufferers, who complain of breathing problem and persistent cold and cough. Sometimes people were found to vomit black phlegm. Workers suffer from many diseases, one of which is bronchitis. Though this may be an occupational disease, they are not aware about that.

The plant management is doing nothing to stop the pollution. They show no interest about the workers' health; nor do they encourage or support afforestation or any other environmental activity.

Almost none of the stakeholders, including the workers and union leaders, has been involved in the CDM project. Nobody seemed to be even aware of it. The only person with any knowledge about the project was Biplab Dutta, associated with the Durgapur Citizens Development Centre, a local NGO. He came to know about the CDM project from *The Telegraph*, a newspaper published from Kolkata.

The management refused to comment on the issue: the officers were hesitant and didn't answer questions. An officer said that it is not possible for him to comment on environmental issues. They also said that they had been following the WBPCB guidelines. Even though the villagers and workers realize how their children's health, their daily lives, and agriculture are being affected, they feel helpless.

*Penal actions by the WBPCB*

WBPCB initiated several penal actions against the plant, and the management had to pay.

*Penal action against Unit I (Kiln nos. 1, 2, and 7)*

Bank guarantee of 1,000,000 rupees; forfeited out of bank guarantee 2,500,000 rupees; vide order no. 224-51/WPB-NOC/40/99 dt. 18.04.2001.

Bank guarantee of 500,000 rupees; forfeited instead of 1,000,000 rupees; vide order no.342-51/WPB-NOC/40/99 dt.30.04.2001

Bank guarantee of 500,000 rupees; submitted on 31 October 2005, is valid up to 28 October 2006

*Penal action against Unit I (Kiln nos. 3, 4, 5, and 6)*

Bank guarantee of 1,000,000 rupees; vide order no. 286-2N-448/2002 dt.25.04.2003

Pollution cost of 200,000 rupees; vide memo no. 1427-1K-12/2002pt ii dt. 28.07.2004

Unit donated 50,000 rupees to Ranigunj municipality for afforestation

Bank guarantee of 500,000 rupees; pollution cost of 50,000 rupees; vide order no. 3301-WBPA/Red(BWN)/Cont(332)/02 dt. 27.02.2006

The said Unit has already paid pollution cost for creating environmental hazards and also faced closure order on previous occasions.

**b. Waste-heat-recovery-based captive power project: Sri Ramrupai Balaji Sponge Ltd, Banskopa, Durgapur, Burdwan district**

**What the PDD says**

*The project*

Sri Ramrupai Balaji Steel Ltd (SRBSL) is an integrated steel company belonging to the Jai Balaji Group, a major Group among secondary steel producers in Eastern India. The Group has over 35 years of experience in steel industries. The present manufacturing capacity of SRBSL at Banskopa near Durgapur in Burdwan district consists of 80,500 tonnes per annum of pig iron, 80,000 tonnes per annum of steel bars and rods, and 120,000 tonnes per annum of sponge iron. The total power requirement of the steel complex is presently met by importing power from electrical utility companies—Durgapur Projects Ltd (DPL) and Damodar Valley Corporation (DVC). SRBSL proposes to install a 50-MW captive power plant (CPP) at its facility to substitute Grid power. The primary purpose of the proposed project is to recover the sensible heat content of the waste gases generated from sponge iron kilns using waste heat recovery boilers (WHRBs) to generate power.

Around 9.6 MW of power of the proposed 50-MW CPP will be generated by utilizing heat content of waste gases from the four direct reduction iron (DRI) kilns of sponge-iron-manufacturing process. The sensible heat component of the sponge-iron kiln flue gases will be utilized in WHRBs to produce steam. Steam thus produced will be fed to a common steam header from where it will be finally fed to turbo-generator sets to generate power. The power generated will be supplied to the steel complex of SRBSL. In effect, the waste-heat power displaces power from the Eastern Regional Grid, from where SRBSL would have imported in absence of the project activity.

A portion of the total CPP power contributed by the steam generated by WHRBs only comes under the scope of the project activity of the CDM component of the project. The project has been approved a 10-year crediting period starting in November 2006 and ending in October 2016. During this period, the project will earn a total of 515,040 CERs.

*Sustainable development*

*Socio-economic well-being:* The project helps in enhancing knowledge and skill of the employees with the new technology. It also helps in increasing direct and indirect employment opportunities in the area of construction and operation and maintenance of the equipment.

*Environmental well-being:* The project activity helps in reducing thermal pollution at the facility. The project leads to conservation of coal at thermal power plants and emissions related to its transportation. It will also eliminate CO<sub>2</sub>, SO<sub>x</sub>, and NO<sub>x</sub> emissions at those power plants. Further, under the project activity, air-cooled condenser is being installed rather than the conventional water-cooled condenser to keep the make-up water requirement to minimum. This is a pioneering initiative in an water-scarce area. On the whole, the project activity aims to contribute to a better local environment for the employees and the surrounding community.

*Technological well-being:* The WHR-based CPP developed as a cleaner technology will utilize waste flue gases of sponge iron kiln. The successful operation of the project activity can help other sponge iron plants to replicate this technology. The in-house generation of electricity will also reduce transmission and distribution (T&D) loss, which would have occurred in case of supply of electricity from Grid power plants to the SRBSL facility.

**Report from the field**

The SRBSL facility employs a staff of 30 permanent employees – all outsiders – who are on regular salary. These permanent employees enjoy benefits such as overtime, provident fund, gratuity, and ESI (health insurance). The workers, however, are all temporary, and many of them are members of a large trade union. They work on daily wages of 85 rupees on no-work-no-pay basis and get other facilities like permanent workers do. But workers ‘supplied’ by the contractors have to work on 60 to 70 rupees a day, a wage rate lower than ‘union workers’. They are deprived of any kind of benefit, even overtime. Usual work hours are 12 hours a day. According to the plant management, nearly 500 labourers are working in the facility; but union leader Badal Ghosh puts the number as 1750 in total, including 550 ‘union workers’ and 1200 contractual labours.

The Assistant General Manager says that they operate the ESP day and night. ‘We also planted trees along our factory boundary’, he said. According to him, the company supplies safety equipment to workers to save them from pollution, and follows WBPCB guidelines in controlling pollution.

According to the local villagers from Namo Sagarbhangra, the factory releases dust, smoke, and gases into the air day and night. The ESP is operated only occasionally, and villagers (especially, very young and very old persons) have been suffering from severe respiratory problems. Workers at the production site also suffer. Their living quarters are covered with a thick layer of coal dust.

This factory spews black coal dust and brown smoke throughout the day, as we too witnessed.

The local community’s experiences suggest that a layer of oily coal dust settles on budding grains and stops fruition. Hence, paddy cultivation in the area declined from 12–15 bags to 7–8 bags per bigha (0.33 acres). Water sources are also affected, as ponds or ring wells always remain covered with foul and thick layers of black dust. The factory pumps up huge amount of groundwater, and that has caused water table in the area to go down dangerously. Availability of drinking water has reduced substantially and, because of perennial water shortage, agricultural production has declined.

Before the factory came up, the local population (comprising peasants and agricultural labourers) used the land where the factory now stands as common property resource. Before this unit was established, some villagers used to cultivate part of this vested land. Though land in the area is not very fertile, the villagers had a reasonable income from the land. Their feeling is obviously different from the union leader, and persons who are not farmers.

Workers could be seen moving about the production site in just helmets and covering their noses with handkerchiefs. No other gear was visible, though the company claimed to have provided everything that is needed. Despite such claims, the management staff in the factory seemed rather nonchalant about the pollution. An officer said, “You can see the coal dust. Yes, it can cover the factory premises, walls, furniture. What can we do? Such units always have coal dust.”

Nobody among the ‘stakeholders’ – including the management representatives, union leaders, factory workers, and villagers – seemed to be aware of the CDM project or carbon-trading. The management never discussed the project with the staff or the union (in fact, pollution control and environment issues are, as a rule, not discussed!). According to the local people the WBPCB has been acting whimsically, and people are in the dark about specific pollution-controlling measures adopted by the board. The workers never heard of occupational diseases, and even workers suffering from severe breathing trouble had no idea that their ailments might be related to their occupation.

The plant has been subject to penal actions similar to the JBSL plant in Raniganj. They also received closure orders a number of times.

### **c. Tail-gas-recovery-based power generation: Himadri Chemicals and Industries Ltd, Mahistikry, Hooghly district**

#### **What the PDD says**

##### *The project*

Himadri Chemicals and Industries Ltd (HCIL), the flagship company of the Himadri Group, was established to develop, manufacture, and market chemical products, with a special emphasis on coal tar and its derivatives. They are in the process of setting up a 50,000-tonne carbon black plant at Mahistikry in Hooghly district. The process of carbon-black-manufacturing generates tail gas with substantial heat content. The project activity will entail utilization of the heat content of the tail gas – which is at present being flared un-utilized – for generation of electricity in a power plant. The power thus generated in the project activity, after meeting the auxiliary requirements of the captive power plant (CPP), will be exported to West Bengal State Electricity Distribution Company Ltd (WBSEDCL) Grid.

The International Financial Corporation (IFC), a member of the World Bank Group, has substantially invested in the plant, and entered into a carbon-credit buy-back agreement with the company, through carbon-delivery guarantee for the purchase of up to 461,340 CERs over a 10-year crediting period (2010–2020).

##### *Sustainable development*

*Social well-being:* The project activity will generate employment opportunities for the rural population of West Bengal in the process of its implementation and for its operation-and-maintenance activities. This will help in improving the social status of the local people in and around the plant site as well as improve their operating skills, thereby benefiting them in the long run. Furthermore, implementation of the project activity will not require any dislocation of local population. Therefore, the project activity is a welcome initiative of HCIL, which reduces the country’s over-increasing burden of unemployment and leads to an overall improvement of the social fabric. Over and above,

India being a power-deficit country, power generated by the project activity will actually cater to the growing demand of electricity, thereby leading to a better power balance scenario.

*Economic well-being:* The project activity will also create business opportunities for contractors, consultants, and suppliers. Therefore, it will result in an overall economic improvement of the locality and the country as a whole. Moreover, by reducing the dependency on Grid power, the project activity will make Grid power available for other usages, which, in turn, will lead to an overall economic progress of the country.

*Environmental well-being:* The project activity will reduce the thermal load of the local environment to a great extent by recovering and effectively utilizing the heat content of the tail gas. Furthermore, it will replace fossil-fuel-based power generation at Grid-connected power plants, thereby reducing the emissions of oxides of sulphur and nitrogen and suspended particulate matter. The project activity is a GHG-abatement project, which will reduce the generation of GHGs (primarily CO<sub>2</sub>) resulting from fossil-fuel-based power generation at the Grid-connected power plants. Therefore, the project activity is an initiative to combat global warming.

*Technological well-being:* In the context of generation of power, India is still very much reliant on the use of coal as the primary fuel. Thermal power plants are the major consumers of coal in this country. However, electricity as a basic amenity has not reached a large section of the country. The project activity will eliminate HCIL's power dependency on the Grid and also displace an equivalent quantity of the Grid mix by exporting power to the Grid. This will also positively contribute towards reduction in the use (or demand) of coal as a finite global resource, thereby minimizing depletion or else increasing its availability to other important applications. Also, generation of power through utilization of the heat content of the tail gas does not cause any significant increase in the air pollution in comparison to generation of power at the Grid-connected power plants primarily dominated by fossil fuels. Therefore, the project activity will lead to conservation of thermal energy and utilization of the same for generation of clean power.

### **Report from the field**

Despite the tall claims of ensuring economic, environmental, and social well-being made in the PDD, the plant in which the CDM project is located has been consistently fouling up the environment of the densely populated agricultural area in its vicinity. Constant emission of carbon gas from the plant and the fly ash content of that has affected the local agriculture badly, and the local people have been protesting against the plant for past several years.

Recently, the West Bengal Pollution Control Board (WBPCB), the regulatory authority responsible for enforcing environmental standards, has fined the company for unleashing pollution and has issued a notice to one of the two units in the plant to shut down operations until further notice. However, the local people are of the opinion that the worse pollution-causing unit is still on.

### **d. Demand-side energy conservation and reduction measures: ITC Paperboards and Specialty Papers Division, Tribeni, Hooghly district**

#### **What the PDD says**

##### *The project*

ITC Paperboards and Specialty Papers Division (PSPD), a part of the ITC Ltd, taken voluntary initiatives for energy-conservation and emission-reduction programme across their paper manufacturing unit at Tribeni in Hooghly district. As a first step, energy and industry experts were hired with the objective of studying the existing energy use in the paper-making process and suggest

measures for saving energy. After the study, as suggested by the experts, the implementation activity included replacing, retrofitting, and installing of new equipment through operational and engineering interventions. Carbon-dioxide emissions reductions were also estimated for these measures during feasibility studies. The purpose of the project thus can be stated as 'to initiate energy conservation programmes across the paper-manufacturing facility in order to reduce consumption of thermal and electrical energy by the facility with the primary objective to reduce GHG emissions at the facility. The measures adopted under the energy-efficiency programme can broadly be classified as follows:

Recovery and reuse of waste heat emanating from boilers, paper machines, and turbine through innovations and application of appropriate technology and thus reduce primary energy (steam/thermal) consumption in the process

Application of various replacement and retrofit measures of similar types at several places within the industrial unit to reduce electricity consumption

The 10-year crediting period (January 2006 to December 2015) will see the project earning total CERs of 81,951 tonnes CO<sub>2</sub>e, at average annual credits of 8195 tonnes CO<sub>2</sub>e.

#### *Sustainable development*

*Socio-economic well-being:* The project activity leads to avoidance of coal, which is an important source of energy for the utility sector in India. Often due to shortage of coal supply, the thermal power plants undergo forced outages in power generation leading to crisis in electricity supply to the common people in India. Thus, avoidance of coal will enable coal supply of India to divert to more important uses such as electricity generation.

*Environmental well-being:* The energy-efficiency measures reduce electrical energy consumption leading to reduction in fossil-fuel consumption at sources. The reduction in fossil-fuel consumption, in turn, will reduce equivalent emissions of carbon dioxide and proportionate GHG emissions and other polluting aspects from transportation, mining, and extraction of fossil fuels.

*Technological well-being:* The project initiation encouraged in-house engineers to participate and identify effective opportunities for energy-efficiency measures along with the energy and technology consultants. These helped in creating synergy between all the parties and created awareness on benefits of applying efficient technology and encourage technological innovations.

#### **Report from the field**

Despite ITC's loud claims of sustainability and carbon-neutral development in the PDD and their press releases, the paper and pulp plant continues to emit fly ash. Local residents have been suffering from the chronic cold and cough and respiratory trouble because of the unchecked, severe pollution.

Though the PDD claim that the company discussed the CDM project with workers and also told the local people about it, no stakeholder group (workers, local residents, the local club Madhusudan Ratnadip Sangha, and even the union) is aware of CDM or carbon trade. According to the union, the workers might have worked for the project unknowingly.

In fact, the company's labour-handling has been notorious in the Tribeni plant. About 400 out of the 1000-odd workers in the plant are employed as contractual labour, and they accuse the company of wilful exploitation. The company has suspended a union leader recently, and the workers are still on a hunger strike against the move and on other demands.

The company's claim of environmental measures adopted in the plant turns out to be a hoax. In an ash-pond near the factory, stood some 200-odd uncared for saplings of eucalyptus, and the large fly-ash-recycling project to manufacture ash bricks has also been stopped.

## E. KARNATAKA

### **Electricity generation using waste gases: JSW Energy Ltd, Toranagallu, Bellary district**

#### **What the PDD says**

##### *The project*

The JSW (Jindal Steel Works) Energy Ltd has been commissioned to generate electricity using imported coal and waste gas at its plant at Toranagallu village of Bellary district. The electricity generated is supplied to JSW and the Karnataka State Grid—the KPTCL (Karnataka Power Transmission Corporation Ltd). The input fuel to the JSW Energy power plant, apart from imported coal, is sourced from JSW Steel, which is generating corex gas and other waste gases from its process. The project is supposed to reduce GHG emission by increasing the proportion of waste gas in the fuel configuration for power generation.

During the initial operation period, the project faced uncertainties about the availability and steadiness of supply of the corex gas and other waste gases from JSW. Because of these, JSW Energy dropped the plan of utilizing waste gases, and had accordingly applied for and obtained the requisite approval from the KSPCB (Karnataka State Pollution Control Board) to combust coal exclusively. Subsequently, during March 2001, JSW Energy management decided to go for the current project activity so that the use of waste gas is maximized in the fuel configuration and emission of GHG is reduced. This decision has seriously internalized the potential benefits of CDM. Besides the potential CDM benefits, there is no other incentive for JSW Energy to maximize the use of waste gases for power generation.

The project activity involved additional investments to the tune of 240-million rupees (to the investment in power generation using coal) to achieve a steady supply of the waste gas.

The JSW Steel Ltd has also a CDM project operational, that is, generation of electricity through combustion of waste gases from the blast furnace and corex units at its steel plant (in JPL unit 1) at Toranagallu in Karnataka. With the advent of the separate JSW Energy, the total amount of corex gas supplied to by the JSW Steel Ltd and the JSW Energy Ltd is metered separately. Also, the JSW Steel Ltd and the JSW Energy Ltd are two separate legal entities.]

During a 10-year crediting period (August 2001 to July 2011), the project is expected to accrue CERs to the tune of 8,115,655 tonnes of CO<sub>2</sub>e. [The CDM project owned by JSW Steel Ltd is expected to earn additional CERs to the tune of 7,673,254 tonnes of CO<sub>2</sub>e over a crediting period of 10 years between April 2005 and March 2015

##### *Sustainable development*

##### *Social well-being*

The project demonstrates harnessing power from waste gas sources, which will encourage replication of such project in future across the region.

The project has built up a knowledge base about the operation of the waste-gas-based power generation and has built up a skill set for such kind of operation.

##### *Environmental well-being*

The project activity involves generation of electricity using waste gas, thus replacing a certain amount of fossil fuel used for electricity generation. This has resulted in reduced GHG intensity per unit of electricity generation for the state grid; and, in effect, the total carbon intensity of the Karnataka state has been reduced.

The project has reduced the local air pollutants and environmental impacts due to increased share in the use of waste gas in the fuel configuration.

*Economic well-being*

This project will demonstrate the use of new financial mechanism – that is, CDM – in raising finance for power generation from waste gases.

**Report from the field**

*People's responses*

A visit to the Toranagallu village and discussions with some Panchayat office bearers and villagers – Shankar who is a bill collector at the Gram Panchayat; Govind, a Panchayat member; Shivkumar, Panchayat member; and many other members – revealed that though the JSW Energy Ltd is a very big industry, established on an area covering 250 acres of land, the area is not declared as an industrial area by the government. The main products in this industrial set-up are steel and iron, where production of energy constitutes only a small proportion. JSW has got the land from the government at a throw-away price of 10,000 to 15,000 rupees per acre.

The company, before starting the project, had promised that they would adopt the entire area for all-round development and provide all kinds of civic amenities. However, after acquiring people's lands, the company didn't do a single social or developmental activity, and neither do they have any plans for doing so. They blatantly backed out on all their commitments about electricity supply, road construction, health facilities, employment benefits, and so on. The JSW Energy has only constructed a few bus-stop sheds and two roads, which are mainly used by the company.

Very few local people are engaged in the company as workers; most workers are from distant areas and even from other states. The village population is 8000; but with the number of people coming from other areas to work in the plants, the population touches 80,000. All the workers are contract labourers who are not allowed to work here for more than 2/3 years. Anyone who dares raise any question against the company's work ethics does not get further work.

The plant is indiscriminately releasing toxic waste water into the canal that passes through the village, not only polluting the canal water but also the village pond (which is linked to the canal) and groundwater. Even the water collected from tube wells is found to be toxic. Besides harming farm produce and activities, water pollution by the industry has made it difficult for the villagers to access safe drinking water and has given rise to incidences of several water-borne diseases in the village. On the other hand, unabated air pollution from the industry has compounded the problems for the local populace. Diseases, such as skin ailments, asthma, and tuberculosis, which were not prevalent in the area, are now common.

The company has also turned its back on improving health services in the area. The local government health centre is in dismal condition, depriving villagers of the requisite health services. However, the JSW Energy has opened a modern hospital named *Sanjeevani*, which only caters to its employees and discourages the local villagers to avail health facilities there by forcing them to pay unaffordable fees. Therefore, people have demanded that the JSW Energy develop the existing health centre, to which the company didn't pay any heed.

JSW has also illegally occupied the 600-acre village commons where there were plans of constructing schools, college, and an ITI (industrial training institute).

The villagers complained that before starting a new unit or project, JSW never even bothers to get the consent of the villagers. They call only a few Panchayat members for a meeting and bribe them with good food and sweets, and then take several photographs so that a fabricated story about people's consent can be published in the newspapers.



*The CDM hoax: sustainability criteria*

The field study clearly suggests that all the indicators of a CDM project have been grossly violated by the JSW Energy in the Toranagallu region. No initiative on sustainable development of the region has been taken up by the company, and nor have the local people been involved in any decision-making or project activities. The PDD claims that the project has built up a knowledge base about the operation of the waste-gas-based power generation and has built up a skill-set for such kind of operation. However, there has been no such initiative to even make people aware about a waste-gas-based power system, let alone building any skill-set for such kind of operation.

The economic development promised in the PDD has also turned out to be a hoax, as most people are now rendered unemployed after losing their land to the project.

In terms of environmental well-being of the region, the project has been an unmitigated disaster from the beginning. Instead of cleaning up the air and the atmosphere, it literally damned the local populace and their environment with unprecedented air, water, and sound pollution, which, in turn, brought a host of strange diseases and utter unease to the villagers.

JSW Energy has even made no attempts to make people aware about the CDM component of the project, such as GHG emissions, clean mechanism, carbon trading, or even global warming. However, they have claimed in the PDD that the local people have a direct hand in the reduction of GHG emissions in the project and thereby contributing to the mitigation of climate crisis.

*Additionality*

In case of the Jindal projects, the CDM fraud goes deeper than violations of the sustainability criteria.

Every new CDM project has to prove its 'additionality', which means that the project would not have been possible without the CDM benefits—monetary and otherwise. The additionality of the Jindal waste gas projects in Karnataka has been suspect from the very beginning; among others, the noted carbon market expert Dr Axel Michaelowa called the projects 'clearly non-additional', because the projects could have come up irrespective of the CDM money.

Dr Michaelowa's submitted a public comment challenging the project developers' claim regarding the timing of when the plant was going to use waste gas for electricity generation: essentially showing that this decision had been made long before the company had applied for CDM funding, and that it, therefore, failed the additionality test, that is, the JTPCL (Jindal Thermal Power Company Ltd) had already decided (and had an incentive) to implement it without the CDM. Dr Michaelowa writes:

*I made a public comment on the first project questioning its additionality. In my view, these projects could become a key precedent for allowing large non-additional energy-efficiency projects into the CDM. My comment read as follows: 'This project is non-additional. Its claim that a decision to use waste gases to generate electricity was made at a later stage than the actual investment [was done] into the corex plant is not true. Electricity generation from corex gases was always a key element of the project investment (this is a well-known fact in India) and thus the assertion that during March 2001, the JTPCL management took the decision for the current project activity is blatantly wrong. Moreover, the first tranche (130 MW) of the project started production well before 2000 and thus that tranche is not eligible for the CDM. See the publication (which does not mention the CDM at all and is another indicator that CDM was not seriously considered!) by the project participants—Dwijendra Ghorai, Friedrich Bräuer, Helmut Freydorfer, Dieter Siuka, L'unité COREX® chez Jindal Vijayanagar Steel : une réussite sur toute la ligne, Rev. Met. Paris, N°3 (March 2001), p. 239-250; (English version, COREX operation at Jindal Steel: a success story in Millennium Steel, 2001, p. 20-25.'*

It has also been alleged that there has been a price fix for the electricity being generated: one arm of the Jindal group is charging another arm of the company a higher price than normal for the electricity it generates under the CDM, so as not to make the waste heat plant financially attractive without the CDM.

These and other questions about the Jindal projects' additionality and CDM norm violations were raised in the course of a Channel Four programme in early 2007.

*Windfall profits*

The extremely serious objections to the projects to come under 'CDM', however, went unheeded. The Jindal group went on reaping enormous profits from the projects (Dr Michaelowa said during an interview with Channel Four that the projects can gross up to 20-million euros annually by selling CERs). One has to remember that this is an early 2007 estimate when the average price of a secondary CER (CERs issued by the UNFCCC and coming from a project that is handled by a reputed broker) was about 15 euros, and the CDM market touched its zenith of 27 euros/CER in July–August 2008, before the recession effects started to be visible. The two CDM Jindal projects in Karnataka have been issued 7,843,000 CERs so far (till 26 August 2009). Because of Indian companies' typical habit of holding on to their CERs (for fetching better price at a later date), it is difficult to assume exactly how much money a particular project has earned.

Jindals admitted to have earned, till late 2007, 1.1-billion rupees (it could be much more) from selling supposedly 'reduced emissions' (1.3-million CERs) at their steel plant in Karnataka. According to company sources, this boosted other incomes, and helped the Jindal Steel Works to record their best ever quarter in terms of profit<sup>1</sup>. If we consider the present figures of CERs issued, the total earning from their 'profitable' clean projects can be anything between 100-billion and 150-billion rupees! According to another estimate<sup>2</sup>, at the current market price of 15.5 euros per CER in early 2007, the company stood to gain 109-million euros over a 10-year period from the sale of CERs; and interestingly enough, JSW Steel is expected to 'save' on an average 0.77-million CERs per annum that can be sold in the open market, which means that the company would hold on to its CERs in wait of even bigger 'profit'!

The Jindals have 9 CDM projects in their kitty, only 3 of which have a collective potential of generating no less than 24,378,000 CERs by 2020. These are all located in the JSW area at Toranagallu. One of these (the biggest, with 8,589,000 credits) has not been registered with UNFCCC yet.

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<sup>1</sup> <<http://news.moneycontrol.com/india/news/stockmarket/marketnews/20/47/19>>

<sup>2</sup> <<http://www.capitalmarket.com/Cmedit/story2-0.asp?SNo=152283>>

**Table 1: State-wise spread of energy-efficient (industrial) CDM projects in India(as on 16-05-2011)**

States	Total CDM projects	Number of registered projects	*kCO <sub>2</sub> /yr	**2020 kCO <sub>2</sub> /yr	***kCERs issued
Andhra Pradesh	31	13	5457	54634	929
Arunachal Pradesh	1 <sup>a</sup>	0	469	4692	0
Assam	4	3	516.8	5168	
Bihar	4	2	557	5566	158
Chhattisgarh	37	21	4018	41017	815
Delhi	5	1	578	5783	
Goa	4	2	627	6266	180
Gujarat	51	20	10773	107726	468
Haryana	12	2	2802	28047	
Himachal Pradesh	3	1	674	6762	
Jammu and Kashmir	1 <sup>a</sup>	0	469	4692	
Jharkhand	9	3	2632	264	
Karnataka	26	5	3616	36138	7619
Kerala	4	0	515	5152	
Madhya Pradesh	11	3	4727	47265	
Maharashtra	28	6	3473	34732	11
Meghalaya	1 <sup>a</sup>	0	469	4692	
Orissa	38	13	1859	18759	335
Punjab	6	1	5041	50413	
Rajasthan	22	4	2181	21750	122
Sikkim	1 <sup>a</sup>	0	466	5128	
Tamil Nadu	20	8	1653.8	16538	122
Tripura	1 <sup>a</sup>	0	469	4692	
Uttar Pradesh	24	15	1186.3	11857	198
Uttarakhand	2	1	498	4976	
West Bengal	28	15	2309	25216	590
<b>Total</b>	<b>369</b>	<b>139</b>	<b>58035.9</b>	<b>557925</b>	<b>1154</b>

<sup>a</sup> Domestic production and sales of enhanced energy-efficient refrigerators in India by LG Electronics India Pvt. Ltd; this project is added to each state, as it will be supplied to all regions and provinces of India as per the PDD.

\*Annual reduction claimed in 1000-tonnes of CO<sub>2</sub>-equivalent per year

\*\*Total reduction to be claimed in 1000-tonnes of CO<sub>2</sub>-equivalent by 2020

\*\*\* Saleable CERs, in 1000-tonnes of CO<sub>2</sub>-equivalent, officially issued by the UNFCCC so far

**Table 2: State-wise spread of industrial (mostly WHR) CDM projects in the iron-and-steel sector of India(as on 16-05-2011)**

States	Total CDM projects	Number of registered projects	*kCO <sub>2</sub> /yr	**2020 kCO <sub>2</sub> /yr	***kCERs issued
Andhra Pradesh	2	0	59	589	
Bihar	1	1	54	543	
Chhattisgarh	31	19	1498	14981	973
Chhattisgarh, Orissa, Jharkhand, West Bengal (bundled)	1	0	381	3907	
Goa	2	1	143	1426	180
Gujarat	7	0	889	8892	
Jharkhand	6	3	398	4122	
Karnataka	16	4	2085	20834	7554
Maharashtra	7	2	366	3661	
Orissa	19	8	1078	10882	335
Tamil Nadu	3	2	100	1001	29
Uttarakhand	1	1	28	284	
West Bengal	7	4	482	5688	271
<b>Total</b>	<b>103</b>	<b>45</b>	<b>7561</b>	<b>76810</b>	<b>9342</b>

\*Annual reduction claimed in 1000-tonnes of CO<sub>2</sub>-equivalent per year

\*\*Total reduction to be claimed in 1000-tonnes of CO<sub>2</sub>-equivalent by 2020

\*\*\* Saleable CERs, in 1000-tonnes of CO<sub>2</sub>-equivalent, officially issued by the UNFCCC so far



Industrial Pollution Toranagallu, Karnataka - 1



Industrial Pollution Toranagallu, Karnataka – 2



Sponge Iron Pollution in Durgapur



Protest Against CDM backed Sponge Iron Pollution in West Bengal

## Case 2: Coal-fired CDM projects

### Why coal-fired CDM projects?

The Government of India has plans to set up nine special UMPPs (ultra-mega-power projects) in the country. One of the pilot projects in the state of Madhya Pradesh (at Sasan) and another in Gujarat (at Mundra) are expected to generate 70,000-MW of power and--the government thinks--to solve the brewing power crisis in the country to a great extent. While the Sasan project is an initiative of the RPL (Reliance Power Ltd) of the Reliance Group, the Tatas own the Mundra.

While both these projects applied for CDM status, a third similar project at Tirora village, in Gondia district of Maharashtra by the Adani Group managed to earn the distinction to become the first such officially declared "clean coal" CDM project in the world. Very recently, the Sasan project too got the nod from the CDM Executive Board of the UNFCCC. The Tata project at Mundra was turned down on additionality grounds. Several other coal-fired projects across the country have since applied for CDM.

Why Reliance or Adani or any other company should be allowed to burn huge amount of coal in the name of clean technology and earn obscene amounts of money is a question without any answer. The official argument is that adoption of a new technology (supercritical) in such projects will ensure less carbon dioxide emission, in comparison with the existing subcritical technology scenario. It is said that approximately 54% of India's 123,907-MW installed capacity is based on sub-bituminous coal, with the entire coal-based generation capacity implemented with subcritical technology. As a result of supercritical parameters, operational efficiencies of the project activity will be higher than the identified baseline scenario of subcritical technology. Higher operational efficiency will, in turn, lead to lesser coal consumption and lesser carbon-dioxide emissions.

Can there be a greater nonsense? How can a thermal power project that will mine and burn millions of tonnes of coal for years to come even remotely be considered as a 'clean' project, let alone given the CDM status? At a time when even children are aware of the necessity of cutting down fossil-fuel consumption, who plans 'ultra mega thermal' projects and dares to call them environment-friendly? That countries like India and China require energy cannot be a justification for setting up large thermal power plants, and then subsidizing and green-washing the criminal assault on the environment and the planet by passing them off as 'new technologies'. The irony is that while every such project displaces and devastates thousands of poor families, pollutes the local and the global climate, and destroys biodiversity, the Indian government argues for emission equity, on the pretext that India need to use coal as the primary source of energy... to assert, among all things, its holy right to the 'carbon space!' Call it a paradox or the neo-liberal wisdom, the UNFCCC readily buys these arguments!

The Indian government argues, and the World Bank and the UNFCCC approve. Clean coal or supercritical coal projects are now accepted by the UNFCCC as a valid category of CDM, and the World Bank Group's IFC (International Finance Corporation) would even go to the extent of supporting the Tata's ultra mega thermal project at Mundra. According to the IFC's environmental and social review summary for the project, 'Due to [Mundra's] high energy efficiency of supercritical technology, the CDM Executive Board meeting (under UNFCCC's Kyoto Protocol) of September 2007 approved the eligibility of supercritical coal-fired plants for carbon credits in developing countries, and the company is exploring an opportunity for the project to be registered under CDM.'

The bizarre rationale for this is that carbon emissions would be even greater if the power plants in question installed the same power-generation capacity in several smaller, lower-efficiency, coal-fired plants without supercritical combustion technology. And, they can do so because India cannot be forced to control its emissions. So, the international community, via CDM, subsidizes Indian corporations to pollute. Scarce global resources are used to sweeten dirty polluting projects that will

emit over several thousands of million tonnes of carbon dioxide during their operating lives, and this whole criminal exercise is projected as a climate-change 'solution'!

Very recently a United Nations panel recommended a ban on CDM *energy efficient thermal power plants* as their claims on emission reduction were inflated. In a report submitted to CDM Executive Board, the panel sought suspension of carbon trading for super critical thermal plants as emission reductions claimed have been overstated by 25 to 50%.

The original estimate of emission reduction by these projects was 34 million tonnes of carbon dioxide equivalent but the panel found that claim to be inflated by 25 percent. In some cases it was as high as 248%. The panel found that the baseline surveys conducted by respective countries to determine the efficiency levels of existing thermal powers plants in mid 2000 were flawed. "Extra caution should be given to ensure that the baseline emissions are estimated in a transparent and conservative manner," the panel said, while questioning the regime. (source: <http://www.hindustantimes.com/UN-panel-wants-suspension-of-coal-based-power-plants-under-CDM/Article1-718496.aspx>)

However, this did not stop another Reliance coal CDM project from getting registered. Soon after the panel's recommendations were made public, the Company got a nod from UNFCCC for their UMPP (ultra mega power project) in Krishnapatnam (see below).

## A. MADHYA PRADESH

### **GHG emission reductions through supercritical technology: Reliance Power Ltd, Sasan, Singrauli tehsil, Sidhi district**

#### **What the PDD says**

##### *The project*

India Sasan Power Ltd – a subsidiary of the Reliance Power Ltd (RPL), which again is a subsidiary of the Reliance Energy Ltd (REL) – is implementing a 3960-MW coal-fired thermal power project using higher-efficiency supercritical technology, at its coal-based generation facility at Sasan in Sidhi district. The project activity will be commissioned with 6 units of 660 MW each. This 20,000-crore-rupee (200-billion-rupee) project is envisaged to explore a debt–equity ratio of 70: 30 or 80: 20 in order to meet the required fund. To source the raw material – that is, coal – for this power project, the RPL has been allotted the Moher Amlai Extension Coal Block of the Northern Coalfields Ltd by the Union Ministry of Mines. The cost of the power project is 16,000-crore rupees while the mining component costs 4000-crore rupees.

The REL (RPL was formed later, and many REL projects were transferred to this new company), is a fully integrated utility engaged in the generation, transmission, and distribution of electricity. One of the major private-sector entities in India, the aggregate estimated revenue of the REL is to the tune of 9500-crore rupees (2.1-billion dollars) with the total assets of 10,700-crore rupees (2.4-billion dollars). The REL distributes more than 21-billion units of electricity to over 25-million consumers in Mumbai, Delhi, Orissa, and Goa—an area that spans 124,300 km<sup>2</sup>. It generates electricity through its power stations located in Maharashtra, Andhra Pradesh, Kerala, Karnataka, and Goa. The REL is currently pursuing several power generation projects based on gas, coal, wind, or hydro in Maharashtra, Uttar Pradesh, Arunachal Pradesh, and Uttarakhand with an aggregate capacity of over 12,500 MW. These projects are in various stages of development.



The company on its own as well as through its subsidiaries is currently developing 13 medium and large power projects with a complete planned installed capacity of 28,200 MW, one of the largest portfolios of power generation assets under development in India. The identified project sites are located in western India (12,220 MW), northern India (908 MW), north-eastern India (12,900 MW), and southern India (4000 MW). They include six coal-fired projects (14,620 MW), to be fuelled by reserves from captive mines and supplies from both India and abroad; two gas-fired projects (10,280 MW), to be fuelled primarily by reserves from the Krishna–Godavari Basin of the east coast of India; and four hydroelectric projects (3300 MW), three of them in Arunachal Pradesh and one in Uttarakhand. Apart from the 4000-MW Sasan project in Madhya Pradesh, it has another UMPP in Krishnapatnam in Andhra Pradesh. But, its UMPP with 7480-MW capacity planned at Dadri in Uttar Pradesh is expected to be the largest gas-fired power project in the world. The company intends to sell the power generated by all these projects to state-owned and private distribution companies and to industrial consumers.

The Sasan project is expected to start generating carbon credits in 2011 through the crediting period till 2021. Total CERs (certified emission reductions) by this CDM project is estimated to be a whopping 37,457,400 tonnes of CO<sub>2</sub>e, and the annual average over the crediting period of estimated reductions is 3,745,740 tonnes of CO<sub>2</sub>e. By any means, this is an enormous amount and might translate into anything between 50- to 60-million euros (nearly 400-crore rupees), at the current market price.

#### *Sustainable development*

##### *Social well-being*

Project activity empowers economically weaker sections of the society, including the scheduled castes and scheduled tribes. Project participant is committed to carrying out medical and health care. The project has constructed a new hospital and associated medical infrastructure, which provide medical care to the local populace. The project participant has also commenced the services with mobile medical care. Project participant is committed to promote increased educational levels in the project location. In order to improve educational facilities, project participant is constructing a new school near the project activity. For the current academic year, distribution of school text books, notebooks, and sports goods has been carried out in local primary and secondary schools. In order to discourage school drop-out, which is a major bottleneck for literacy rates, monthly stipends are offered to all students with higher stipends offered to girl students. The project location is predominantly waste land and people living in the areas have low levels of education. Livelihood is primarily dependent on agriculture. Project participant is planning to undertake re-skilling of the local community both in technical and non-technical areas. The acquired skill-sets are proposed to be integrated during the construction and operation phase of project activity. This would enable the people to have steady streams of income thus addressing issue of livelihood opportunities and urban migration.

##### *Economic well-being*

The project activity will address electricity deficit situation in India. The project activity has lower specific coal consumption. Amount of coal thus saved could be made available for other applications. The project activity improves India's energy security by expanding domestic energy resource base, reducing coal requirement through generation efficiency, and reducing import dependence. Out of India's non-coking coal imports of 41.52-million tonnes, approximately 57% is used for power generation purpose. Being the domestic pit-head-based power plant with an annual coal requirement of 13.9-million tonnes, the project saves approximately 1-billion dollars of foreign exchange every year.

Technical consultants and construction contractors associated with the project activity would be economically benefited during the construction and operation phase of the project activity.

*Environmental well-being*

The project activity not only reduces carbon-dioxide emissions to an extent of approximately 37-million tonnes during the registration period but also other major air pollutants such as suspended particulate matter, sulphur oxides, and nitrogen oxides. Under the integrated environmental development plan, the project activity is incorporating features aimed at preserving natural terrain, water run-off, removal of minimum vegetation, and prohibition of excessive excavation and terracing. Green belt would be developed not only to meet the mandated environmental requirements but also to introduce proven silvicultural practices to the region. Such practices include soil working, species selection, planting material, fertilization, protection, and post-planting management. All the major buildings and office complexes would be developed as energy-efficient buildings to qualify for LEEDS certification and TERI's *Griha* ratings.

*Stakeholders' participation*

The Sasan Power Ltd has identified all the people/parties involved with the project activity at any stage of its implementation/development and operation and considers them as stakeholders of the project activity. Date and venue for local stakeholder consultation meeting decided was 10 a.m. on 28 April 2008 at Samudayak Bhavan, Sasan. In order to reach out to all such stakeholders, an advertisement was published on 12 April 2008 inviting all of them to attend the local stakeholder consultation. Separate requests for participation were also sent out to the contractors, environmental consultants, officials of the district administration, and the media. Several participants representing local villages, District Collectorate, EPC contractors, and the media attended the same. At the end of the consultation, stakeholders expressed keenness in the construction of the Sasan power project. While appreciating the environmental benefits offered by the super-critical technology vis-à-vis subcritical technology, which is prevalent in the country, stakeholders have also expressed their keenness to understand CDM-registered projects and the role India is playing in emission reduction. After understanding India is a major player in the CDM arena, stakeholders appreciated the efforts undertaken by the Designated National Authority for making India a leading player.

**Report from the field**

Soon after getting the bid for the 3960-MW coal-fired, supercritical, thermal power project – India Sasan Power Ltd – the chairman of the Reliance Power Ltd (RPL), Anil Ambani, met the chief minister of Madhya Pradesh in March 2008, and gave assurance to the government that the project would start generating power in four to five years. The RPL had also offered 1.20 rupees per kWh of electricity sold. Along with the Sasan UMPP, Anil Ambani had declared, the group was working on projects worth 500-billion rupees in the state that included setting up the Ambani Institute of Information and Communication Technology in Bhopal and a cement factory in Satna district. Subsequently, the state government provided the company 125 acres of land in Bhopal to build the institute and 1306 hectares of land in Satna district for the cement factory.

Land acquisition for the Sasan thermal project was under way when the field visits were made, in which 30% would be government land and 70% was to be acquired directly by the company from local landholders. The Gazette notification for the project was made on 11 July 2007, in which 946.58 hectares of land from five villages were identified for land acquisition (Table 3).

**Table 1: Land acquisition for the Sasan UMPP**

Serial number	Name of the village	Area to be acquired (in hectare)
1	Tiara	76.27
2	Siddikala	105.58
3	Harhara	294.09
4	Siddhi Kurd	427.08
5	Jinjhi	43.56
<b>Total</b>		<b>946.58</b>

The notification claimed that the project would provide 1500 MW of electricity to the state of Madhya Pradesh; follow the Rehabilitation Policy 2002 of the Government of Madhya Pradesh, which makes it mandatory for the company to provide employment to at least one person of the family who would lose land; and institute a Trust involving the district magistrate to ensure welfare measures such as education, housing, and various civic amenities. Ten per cent of the cost of the total land identified amounting to about 5.8-crore rupees and 10% of the administrative cost amounting to about 1-crore rupees has been deposited by the company in the government treasury.

People from the villages of Siddikala, Siddhi Kurd, Jhinjhi, Harhara, and Tiara had already been notified to vacate their land for the project, and the affected people who were losing land and houses and also the liberty to use local resources to sustain their livelihoods pleaded ignorance about any public-hearing associated with the EIA (environmental impact assessment) process. As mandated under the Indian Environmental (Protection) Act 1986 and various amendments issued thereafter, conducting the EIA in consultation with the local people is mandatory before a project of this kind is approved.

TERI (The Energy and Resources Institute), an NGO based in New Delhi with national and international presence and known to be working closely with big corporations including the Reliance Group, has been given the responsibility to oversee the rehabilitation processes and grievances of the displaced people. Compensation has been calculated on the basis of the number of trees, status of residence land type, and irrigation facilities (including the number of wells), etc., as claimed by the district administration.

A field visit to the area established that it was not the company but the district magistrate who had been vested with special powers to acquire land for the company. The district magistrate seemed to have been taking special interest in the land acquisition process. At a camp held at village Siddhikala, though it was not necessary for the district magistrate to be present, he showed a lot of enthusiasm. It is the SDM (sub-divisional magistrate) who had to sign the cheques and then distribute them. The government already prepared the list of people to be compensated and the amount of compensation they would get; the cheques were ready to be distributed, if people would accept the package. The compensation amount was set for 60,000 rupees per hectare of irrigated land and 450,000 rupees per hectare of un-irrigated land. People were, however, not satisfied with these rates of compensation for land acquisition, looking at the escalating price of land. But, the absentee landlords – who stay outside the village – were ready to accept the cheques.

Sitaram Ram Bais of Siddhikala who was present at the compensation camp demanded, 'Let the company buy land at market rates... why is the government interfering?' The government had valued all his property at a meagre 56,000 rupees (29,000 rupees for the house and 27,000 rupees for his 15-decimal land), which he claimed was half the market rate and, hence, was not willing to accept such compensation. Most other people in the village shared these views and were not willing to accept the compensation package. However, few 'touts' having nexus with the administration had already purchased agricultural lands about four years back as they came to know about the Reliance thermal power plant being planned in the area.

On 6 January 2009, the administration in the presence of the district magistrate ordered demolition of 30 houses. The process was carried out without any prior notice to the people. These were the houses of those people who had been displaced a few years back by the NTPC (National Thermal Power Corporation Ltd) plant and its housing colonies and, with no option left, were staying on government land.

In Siddhi Kurd village, there were about 100 such families who are going to be displaced for the fourth time. But, the administration refused to pay any heed to their petitions and pleas on multiple displacements.

The land acquisition clause in the Madhya Pradesh Rehabilitation and Resettlement Policy 2002 says that if an area is 75% irrigated, there cannot be any industrial establishment. Any person visiting the area cannot but notice the intensely irrigated green landscape. The back waters of the Rihand reservoir are quite sufficient for even a second crop. People also have dug wells, with the water table at a 90-foot depth, in addition to already existing irrigation facilities. The problem, however, lies in the land-holding capacity of the people; most among them do not have more than an acre of land and have to borrow water from others who have wells on their land. Their lands are not considered as 'irrigated'. The administration manipulated the 'irrigation' percentage without even bothering to consider the agriculture department's data. Only those with wells on their land had been considered to be owners of irrigated land. Even brothers who till separate lands but use the same wells were taken as owners of non-irrigated land.

Even in cases where the legal entitlement had not yet been transferred from the father to the sons or even the grandsons, the latter were considered ineligible to have compensation and other benefits despite the fact that they had been cultivating their lands for years.

Reliance also encroached upon forest land for the Sasan UMPP; recently, the Forest Department restricted them from erecting a boundary wall. Entitlements of this land to people who have been cultivating here since 1960 were cancelled, in clear violation of the Forest Rights Act, 2006, as the Forest Department labelled the people 'encroachers' of government land. When people protested, they were paid some paltry amount as compensation in a well-orchestrated drama and the forest land passed into the hands of Reliance.

In Siddhi Kurd village, there were about 100 landless families who were earlier displaced by the nearby Rihand Dam. These families had been cultivating the government-held revenue land for the past 15 years. But, since they did not have entitlements to the land, they had not been considered for compensation. The number of such cultivating families without land entitlements and, hence, being considered as ineligible for compensation, is 664 in Siddhi Kurd, 550 in Harhara, and 69 in Siddhikala.

The company offers no permanent employment to people who have lost their land to the project. Some daily-wage jobs during the construction period are all that was on offer and that too by the contractor, not the company. People who had land titles would be given some identification card for accessing the company's welfare schemes. Landless people and those without land titles would not get this card.

People were at a loss and could not understand why the company purchased about 400 acres of land in the Majhoul area in Bhasmadand, some 15 kms from the affected area, to rehabilitate the displaced people. Bhasmadand is a water-scarce and an isolated place and, moreover, it would make it difficult for the people to travel to the project area for work, if they get any. The fact that they were not being rehabilitated on the unoccupied government land in nearby villages made people doubt that this land would also be acquired by the company for their staff colonies

The PDD claimed that the company would build medical infrastructure in the area, but no such establishment is found there. Some people informed about medicines being distributed to the tribal people. Villagers were aware about the nature of the project and say that Reliance is going to produce some 5000 MW of electricity. However, they expressed complete ignorance about any 'clean' technology being employed or the CDM aspect of the project.

There was no organized people's resistance in the area; no political party seemed interested in taking up their cause. People had been resisting even then, albeit in a fragmented manner.

Amidst people's struggles in these times of devastation, referring to his ambitious plans to industrialize the state, the chief minister of Madhya Pradesh recently said that 'Singrauli will become

Singapore’, to which the local people responded by saying, ‘Whether Singrauli will become Singapore or Singur, only time will tell.’

It may be noted that four new thermal power plants are coming up in the newly created Singrauli district with its headquarters at Waidan—HINDALCO, REL, JP Thermal Power Plant, and ESSAR. The NTPC had already been established some three decades back...

*Blatant lies in the PDD*

There are several significant lies and omissions in the project methodology as revealed in the PDD, particularly in estimating emissions from the project. In coal combustion, the major disturbing element, besides CO<sub>2</sub> emission, is the fly ash and its noxious content, in which nitrogen oxides are a critical component.

Various studies on this so-called ‘supercritical technology’ suggest that the level of emission depends on the type of coal used.

*The Hitachi-Naka No.1 boiler is the first unit equipped with the newly developed Hitachi NR-3 burner. The NR-3 burner is the latest design in the NR series of rapid ignition low-nitrogen-oxide pulverized coal burners for large-scale commercial plants. Two types of coals – type A from Indonesia and type B from Australia – were tested during the commissioning phase. For both the coals, combustion tests were made with varying combustion settings and adjustments including air-flow ratios. A reduction in outlet nitrogen-oxide emission led to less complete combustion of the fuel, resulting in a higher unburned carbon (UBC) level in the fly ash. As type B coal has a high fuel ratio (that is, ratio of fixed carbon to volatile matter, 2.0) and high nitrogen content, it is normally difficult to achieve low levels of both nitrogen oxides and UBC in the fly ash simultaneously.*

[Source: [http://www.hitachipowersystems.us/supportingdocs/forbus/hpsa/technical\\_papers/CG2004.pdf](http://www.hitachipowersystems.us/supportingdocs/forbus/hpsa/technical_papers/CG2004.pdf)]

In case of the CDM project in contention, it is for the first time Indian coal is going to be tested on this technology; so the amount of nitrogen-oxide and sulphur-oxide content of the fly ash is yet not known and might vary. Probably, that is why, very intelligently, the project proponents have omitted nitrogen emission from calculations.

Regarding environmental sustainability, the PDD suggests that the project activity not only reduces CO<sub>2</sub> emissions to the extent of approximately 37.5-million tonnes during the registration period, but also other major air pollutants such as suspended particulate matter, nitrogen oxides, and sulphur oxides.

The PDD should not have claimed about emission reduction of nitrogen oxides and sulphur oxides reduction, as they have excluded it from the calculations, and neither the baseline scenario nor the projected CDM project mention emissions of nitrogen oxides and sulphur oxides. And, how come the experts and authorities who validate such projects and award them CDM status miss such blatant loopholes, consequences of which have a tremendous bearing on the people and the planet?

**POSTSCRIPT: Reliance gets another coal CDM**

Reliance Power’s imported coal-based 3,960-MW Krishnapatnam Ultra Mega Power Project (KUMPP) has been registered with Clean Development Mechanism Executive Board (CDM-EB) of the United Nations Framework Convention on Climate Change (UNFCCC). The registration allows Reliance Power’s KUMPP to earn Certified Emission Reductions (CERs) each equivalent to one tonne of CO<sub>2</sub>. These CERs can be traded and sold, and will result in significant revenues for Reliance Power. With the registration of Krishnapatnam UMP with CDM-EB, Reliance Power has become the largest supplier of CERs among the Indian power generation companies with 3.48 million CERs. The company will generate approximately 34.8 million CERs during the initial 10 years of operation with the expected incremental revenue from the sale of CERs of over Rs 3,100 crore. Source: <http://www.thehindubusinessline.com/companies/article2218710.ece>

## B. CHATTISGARH

### **Coal-fired thermal power project: R K M PowerGen, Uchpinda-Bandhapali, Dabra block, Janjgir-Champa district**

#### **The project**

Uchpinda-Bandhapalli is the site of a 4x350-MW coal-fired thermal power project by RKM Powergen Pvt. Ltd, a subsidiary of the Malaysian Company, Mudajaya Group. The project required 900 acres of land, as per the agreement between the project proponent and the Chhattisgarh government. The project requires a whopping 122,784 m<sup>3</sup>/day of water, to be sourced from the Mahanadi River. There is coal linkage facilitated for the production of 350-MW power and, for the rest, coal is to be sourced from the captive coal block in Fatehpur. The project cost is estimated to be 59.5-billion rupees.

#### **Report from the field**

“Development comes as a true worship of power,” says the chief minister of Chhattisgarh, Dr Raman Singh. ...A visit to village Uchpinda in Dabra block of Janjgir-Champa district of Chhattisgarh contradicts the chief minister’s statement. Villages that actively resist land acquisition for the plant are Uchpinda, Bandhapali, Gewra, Dobnipalli, Kkrabhat, Kankot, and Nimodi, in five Panchayats. However, about 100 acres of what the government calls ‘waste land’ in Uchpinda-Bandhapali has been acquired, on which people depend for their livelihood: this so-called ‘waste land’ is a stone reserve, which people use to make stone slabs and sell those for a living. This is the major occupation in the villages, apart from rain-fed farming. There are also a few skilled artisans like Ghasiram, who is also one of leaders of the resistance movement. Uchpinda and Bandhapali are the most affected villages.

People say that in order to generate 1400-MW of power, about 1200 laden trucks would be ferrying coal through the villages everyday, which would destroy the environment, agriculture, health, and the area’s peace.

Neither the company nor the government bothered to obtain prior consent of the villagers before starting the project. People came to know about it only when the process of land purchase (indirect acquisition) began in 2007. Later, on 30<sup>th</sup> April 2008, the collector and revenue officials organized a public-hearing at Uchpinda, which was attended by nearly 4000 people. People registered their protest against the industry in clear terms. After an hour or so of the hearing, when it became obvious that the local people didn’t want the plant anywhere in the vicinity, the collector didn’t let anyone speak further and the meeting came to an end. Finally, when people got agitated, the officials escaped and declared the public hearing as ‘cancelled’. Yet the company got the environmental clearance from the Union Ministry of Environment and Forests in August 2008.

In December 2009, people had *gheraoed* the manager of the company and made him sit in his car for four hours until he agreed to see a part of the village fence that was hit and destroyed by an earth-moving machine of the company.

The factory illegally put up barbed fence on around 250 acres of common land belonging to five Panchayats. Asmin Sidar, the sarpanch of Gewra and an adivasi, said, “*Nistar* land of the village is for villagers and not for any company to grab. Some people have sold their revenue land, yes. But no common land can be sold. Then how can the factory take the common land? We will fight to the finish to restore our rights.” In these five Panchayats, there are 10 check dams constructed through the NREGS(National Rural Employment Guarantee Scheme) and watershed projects on this common land, which has been taken by the factory.

In the first place, the construction work for the plant had started without holding the mandatory public hearing. Despite bringing the matter to the notice of concerned authorities several times, no action has ever been taken. Rather, the police did a *lathi*-charge on the villagers when they were peacefully agitating against the plant.

On 12<sup>th</sup> October 2009, construction work on the company's boundary wall on some private land belonging to the adivasis of the Gewra village led to a heated argument between the contractor's workers and the villagers. People from Uchpinda, Kekrabhat, Bandhapali, Dhomnipali, Bandhapali, and Kanhakot rallied in support of the people of Gewra; in a scuffle between the labourers and the village people many women were injured. The contractor informed the company officials who filed a false complaint with the Dabhra police station. Following this, the police came and arrested Kesav Siddar.

Protesting the arrest, nearly 300 people went to the police station in the evening and demanded the release of Kesav Siddar. The police did another brutal *lathi*-charge. The very next day, on 13<sup>th</sup> October 2009, another person named Reshamlal Banjare was picked up by the police. Police later filed a case against 21 persons u/s (under sections) 147, 148, 149, 395, 452, 427, 323, 506 and then 200 others u/s 147, 148, 149, 307, 333, 294, 323, 506 of the Indian Penal Code.

The chief minister of Chhattisgarh is taking a special interest in construction of the plant. He made it clear that the state government would make every possible attempt to make the state a power hub in the country and has encouraged private capital investment in this direction. He also expressed the hope the new thermal power project would be completed in time and it would play a pivotal role in the progress of the state, while signing the MoU with the company on 3 April of 2006.

## C. MAHARASHTRA

### **a. High-efficiency power generation using coal-fired supercritical technology: Adani Power Maharashtra Ltd, Tirora, Gondia district**

#### **What the PDD says**

##### *The project*

The Adani Group, a diversified conglomerate has interests in various activities including commodity trading, edible-oil-refining, infrastructure, and services. Adani Power Maharashtra Ltd (APML) is a subsidiary of Adani Power Ltd. APML will implement a high-efficiency power-generation project – located at Tirora town in Gondia district – using coal-fired supercritical technology aimed at resulting in reduced consumption of fossil fuel and emissions of associated GHGs for thermal power generation. The installed capacity of the project is 1320 MW (2x660 MW). The electricity generated will be exported to the local/regional/national Grid.

The 10-year CDM status for Adani's coal-fired, supercritical power plant commences in August 2011 and ends in July 2021. In the first year (August 2011 to July 2012), the CERs estimated to be accrued to the plant are 964,567 (in other words, the project promises to neutralize about a million tonnes of tCO<sub>2</sub>e in one year); and from there on, the plant will generate 1,218,401 CERs annually. The total CERs earned by the plant in 10 years of crediting period will be 11,930,172.

*Sustainable development*

The high-efficiency, power generation project would offset fossil-fuel consumption. Less coal consumption would improve the local environmental condition by reducing emissions of carbon dioxide and other air pollutants like sulphur dioxide and suspended particulate matter.

Since the technology employed is the first-of-its-kind in the thermal power generation sector of Maharashtra, the project activity would initiate capacity building and development of new skills and knowledge base, which could be used as reference for other entrants. The usage and development of such technologies in developing countries like India will help in greater extent in fulfilling its energy generation need in a very environment-friendly way.

Due to its location, the project activity would contribute towards poverty alleviation by generating direct and indirect employment for the local community. Due to better technology usage, the project activity would help adding to the knowledge and skill base of the power plant operators. By contributing to improvement of the power deficit situation, it would improve quality of life and facilitate accelerated implementation of rural electrification initiatives in India.

The project proponent would extend medical care facility to the employees.

**Report from the field**

During our first visit to Tirora, Iswardayal Bhauji Patle, a local resident, informed us that the Adani Power Maharashtra Ltd (APML) had taken for its plant 550 acres of land from Chikhali, Churdi, Bhiwapur, Tamsar, and Mehandipur villages. Originally acquired about 15 years ago by the state government for the Maharashtra Industrial Development Corporation (MIDC), the land has been given to the APML. Additionally, the company is eyeing another 300 acres of land. The local people have been organizing protests to press for employment opportunities and compensations from the company for the land they have lost. Paying no heed to the protests, APML is going ahead with its work, without even procuring an NOC(No Objection Certificate) from the Panchayats; and this has irked people.

The villages closest to the project site are Mehandipur, Ramtola, and Dimantola, all in the Mehandipur Panchayat. This project displaced Ramtola, a small hamlet with about 40 families, completely. Some villagers now work on daily-wage at the construction site, while some others have been 'rehabilitated' in the Kachewani village, which is in a forest area. The villagers said that though about 15 years ago the district collector notified the village for acquiring 150 acres of land in the area, the government later acquired 100 acres of land at Ramtola. After the land was handed over to the Adani, the villagers told the government officials squarely that the Panchayat's NOC for the plant could only be given in exchange of permanent jobs and other civic facilities. The villagers allege that the local sub-divisional officer (SDO) acts as an agent of the AMPL, and not as a public servant. AMPL, however, started the project without an NOC from the village. The Sarpanch of Mehandipur Panchayat, Shantabai Rahangdale, who had lost 18 acres of land to the plant, said that the NOC was given in 2009 with the following conditions, which the company had agreed to oblige:

One person from each family to get a permanent job in the plant

AMPL to construct a building for the Aganwadi (childcare centre)

Constructing a road from Mehandipur to Kairabodi, which would link up the Nagpur-Gondia Highway

Compensation for each acre of land to be 1,500,000 rupees, considering the market price... or, on the basis of land for land

After getting the NOC, the Adani did nothing other than giving a few school uniforms to the village children and an almirah to the Gram Panchayat.

Shantabai said that the Adani had duped the local people with false promises. All workers in the plant are outsiders; most of them from the state of Bihar. The local people are refused work when they



demand it, even in construction activities. She said alike the people of Ramtola, all of whom lost agricultural land, 50 families from the Mehandipur lost their land too. The company already had local leaders and even ministers on their side; so there is no one to go to for support.

The sarpanch added that that environmental problems created by the Adani plant did not at all figure in the agenda of the public meeting held only once so far. People, however, raised the issue of Adani denying employment to the local residents after taking away their land; which only resulted in 25 people being engaged in some kind of wage work in the construction site under the contractors (not under the Adani), who are paid a meagre wage of 70 rupees a day, much less than the stipulated minimum wage. She demanded in the meeting before the district collector and SDO that the old people should be given pension, and that each acre of land acquired should be compensated with 1,750,000 rupees as nowhere in the region they can buy land below the price of 1,500,000 rupees per acre. People would not give any land to the project otherwise, she announced in the meeting.

Churdi, which is very close to the Adani project, and all other villages in the vicinity such as Garada, Chikali, Malpuri, Thanegoan, Kairabodi, Kachewani, and Gumandowda have all lost agricultural lands to the Adani project.

The sarpanch of Gumandowda, Omprakash Patle, informed that despite 500 acres of previously acquired land MIDC land having been handed over to the Adani, the company is still looking for another 350 acres of land. The company hasn't taken any NOC from the village Panchayat; yet they directly contact people and try to strike deals with them. No one from his village has any permanent employment in the project; some villagers only managed to get some wage work under the contractor. Like Ramtola in the Mehandipur Panchayat, the Udaytola village under the Gumandowda Panchayat had also been totally displaced and rehabilitated in Kachewani. The sarpanch said that the Adani project has announced the compensation for their land at 700,000 rupees an acre, whereas the ongoing market price was 2,500,000 rupees. He also complained that the district collector has altered land records in favour of the Adani.

Omprakash Patle also told us about another incident as to how laws were being twisted to favour the company. The sarpanch of Khairbodi village, he said, had demanded the Gram Panchayat tax from the Adani plant for using the village land. But the Adani did not agree, saying that the land belonged to the MIDC and therefore the Panchayat had no right to ask for any tax. Omprakash Patle too has put a list of demands before the Adani group:

At least one member from each affected family should be given permanent job in the project.

Land has to be bought at the ongoing market rate.

No farmer should be forced to sell his land; the rights to decide whether to sell their land or not rests only with the farmers, and their 'sense of self-respect' should not be outraged.

Ghanshyam Punaji Pardhi, the sarpanch of Thirekhani, fumes at the Adani having entered into dubious personal agreements on several occasions with just one member from a joint family, which has not only undermined the market price of the land but also created rifts within the family. Moreover, without having fulfilling its commitments, Adani has started forcefully digging the land for the project on the farmers' lands.

Some more examples of land grab: Ghanshyam Punaji Pardhi and Himanshu Agrawal haven't yet got any compensation, but the company is forcibly digging their lands. Kamlesh G Thakare didn't accept the compensation offered to him, but Adani is using his land, too. Thakare, who has been demanding a permanent job and proper compensation, tried to stop the work, but the company didn't pay any attention. Debilal N Rahangdale, on the other hand, has no issue with the compensation, but he has been demanding a permanent job in the project in exchange of his land; so he has stopped the company's work on his land. Rupchand T Bhagat, Shobelal Rinait, Panthulal Pardhi, Moti H Thakare, and Ramesh D Sharanagat have also stopped work on their land, demanding just compensation and

secure jobs. While Shivcharan G Sahare has got some compensation at 100,000 rupees per acre, Dhonduji Rinait has been offered a price of 600,000 rupees per acre. In another case, Zhamendra M Jambulkar who lived in a joint family has taken money from Adani without informing any of the family members—in a deal in which both the land and a part of the house will be destroyed.

It shows that the Adani has been using experts while negotiating with the people; all the land deals follow a divisive and destructive pattern which not only gifts the precious resources of the people to the company, the social fabric and age-old security systems also collapses—all to the benefit of the company.

We then visited Bhiwapur and found more narratives of injustice: the former sarpanch of Bhiwapur, Sunada Patle, along with other villagers Rajesh Patle, Bhimrao Rahagdale, Tejram Patle, Charandas Rahangdale, Munnaji Yede, and Tejram Rahagdale lamented that the company has not signed any agreement with the Gram Panchayat, which should ideally make any work it does in the area illegal. As a result, the people are agitated and have been organizing rallies and demonstrations, they said.

The villagers said that the company bought land from some farmers directly, without consulting the Panchayats and other local bodies. The sitting Sarpanch of Bhiwapur, Ramteke, however, opined that the Adani power project technically need not take a NOC from his village as it doesn't come in the project area. However, the project is going to affect some villagers who own land in the project area in the Mehandipur village.

Ramteke informed that the villagers of Kairabodi, Gumandowda, and some other hamlets have now come together to form the 'Unemployed Agricultural Action Committee': they held a rally and sat for a hunger strike for two days, demanding that local people should get preference in jobs at the company and that all the people who lost land and livelihood to the project should be employed.

The company called a meeting after sustained protests; and after people blamed the company for causing pollution, health hazards and unemployment in the area. Questions were also asked regarding the lack of roads, absence of education facility, and the plight of displacement. Villagers also alleged that APML forcibly captured forest land for this project, for instance in the Kachewani village.

In Chikali, at least 12 people lost their lands to the Adani. Chanda Kailash Patle, the Sarpanch, said that she had to give away her two-and-half acres for the project. Rajkumar G Rangari, a local *Bidi* contractor, said that the government had acquired his 12 acres of land in Mehandipur in 1995 in the name of MIDC but later sold that to the APML. He is demanding compensation at current land rates, which is about 700,000 per acre. Arvind Hirankhede, the vice-sarpanch of the Panchayat in Chikali, said that only 2% of the local people get some kind of daily-wage jobs, that too under the contractors. Providing employment to the people was never a priority for the company. People also demand electricity supply, road, drinking water, check dams, and more plantations from the Adani.

The Tirora plant has been lifting water from the Vainganga River: the company laid a big pipeline from the nearby water uplift project called 'Dhapewada Uplift Water Kawalewada'. This pipeline destroyed huge areas of fertile land in the village Thirekhani. There is even a small dam on the river exclusively for the plant.

The PDD says that the higher efficiency of power generation would reduce fossil fuel consumption and less coal consumption will improve the local environmental condition by reducing emissions of carbon dioxide and other air pollutants like sulphur dioxide and suspended particulate matter. But, people were not told how such 'high efficiency' plant works and sustains itself; and moreover, the company is completely silent about the mining at Lohara and the threat to the rich forests and biodiversity, which people feel is a blow to the self-sustainability of the environment, the local ecosystems, as well as people's livelihoods.

### **Postscript**

On our second visit to the Tirora plant site in December 2010, we failed to meet anybody who was ready to talk. By now a palpable feel of terror and unease hung over the entire locality, and it was clear that people were too afraid to talk. Our main contact in the Kachewani village, the social activist who had been organizing the villagers against the plant, could not meet us despite a previous appointment. Later we learnt that there had been an accident a couple of days ago at the plant site, and one of the local workers died. Angry villagers demonstrated at the plant gate and threw stones, and a huge police contingent had to come and drive them away. The company filed a complaint naming many of the protesting villagers, and the police and the company goons were looking for them.

We saw the vast enclosure of the plant and the towering chimneys belching 'clean, sustainable' smoke and tried to photograph those. Evidently, we were trespassing and violating the 'sanctity' of the company premises: as soon as we were on a village alleyway that skirts the plant fence, we were detected by the security guards. Soon afterwards, the hefty security officer of the plant in person gave us a chase and detained us with arrogant confidence inside the village. "Some disruptive forces are trying to rouse the villagers against our plant", said he, "we have to be on our guard!" He made sure that we were not planning to stop anywhere inside the village to talk to people and finally let us go, after much persuasion.

We did not dare to stop. The coal-fired supercritical CDM plant owns much more than their fenced-off few hundred acres, apparently. It looked that they own the villages and the land and the roads, and even things beyond, . The control, for the time being, seemed total and absolute.

### **b. Coal-fired thermal power project: Maharashtra State Power Generation Company Ltd, Koradi, Nagpur district**

#### **What the PDD says**

##### *The project*

The coal-fired Koradi power station owned by the Maharashtra State Power Generation Company Ltd (MAHAGENCO) began operations in 1974 and is one of the 9 active power stations operated by the state-owned company, which is a subsidiary of the Maharashtra State Electricity Board (MSEB). With 7 units at Koradi in Nagpur district, the total installed capacity of the plant is 1100 MW. With the overarching objective of GHG reduction, MAHAGENCO has now taken the decision to invest in supercritical technology. This will involve replacing the existing subcritical units with three new units of 660 MW each based on supercritical technology. Out of the three units, one 1x660-MW unit (which will replace 4 subcritical units of 120-MW each) is presented under this PDD (2x660 MW will be presented by the company in a separate PDD).

The project activity due to utilization of efficient power generation technology will result in efficient use of fuel (coal) as compared to the existing subcritical units at Koradi and other similar project activities undertaken in the previous five years, in similar social, economic, environmental, and technological circumstances, and whose performance is among the top 15% of their category (based on subcritical technology). The project activity will, therefore, lessen GHG emissions and contribute towards environmentally sustainable development.

Starting in September 2011, the expected operation time of the project activity is 25 years. The expected date of commissioning or the expected date of registration with the UNFCCC is 1 December 2015 for a period of 10 years. The project will generate 215,184 CERs annually. The total CERs from the plant will be 2,151,840 in 10 years of crediting period.

##### *Sustainable development*

*Social sustainability*

The project activity has generated employment for the local population during the construction as well as operational phases of the project activity, both direct and indirect.

It has also provided an opportunity for the development of secondary small-scale entrepreneurs around the project site, such as small shops, etc. Overall, the project will result in creation of employment opportunities thus enabling the local people to have steady streams of income.

*Economic sustainability*

Scarcity of power restricts economic growth in a region. The project activity will address such situation of electricity deficit in India, thereby furthering economic growth of the region and India.

The project activity has lower specific coal consumption due to the employment of superior power generation technology resulting in fuel saving. The fuel thus saved can be used for other applications.

*Environmental sustainability*

Superior power generation technology (supercritical technology) will result in lesser emissions and thus reduce the environmental impacts of power generation in the region. Some part of the water requirements of the project will be met by utilizing sewerage water from Nagpur city. This will help reduce dependence on natural sources of water, thereby contributing to water conservation.

The plant water system is designed for maximum usage of waste water to attain 'zero discharge'.

Green belts have been planned on all sides to minimize impact of wind-blown pollution to the surrounding areas. Villages adjoining the ash disposal area would also be protected by green belt buffer.

*Technological Sustainability*

The project being the first-of-its-kind to be implemented with supercritical technology will not only help MAHAGENCO but also other similar utilities in India to acquire the technical capability and encourage capacity building among other government utilities. New and superior technology (supercritical) will result in contributing to the skill level of MAHAGENCO, thereby improving the knowledge base of the operation and maintenance of supercritical-technology-based plants in India in general and MAHAGENCO in particular.

In addition to this, MAHAGENCO, which is undertaking the CDM project activity, will contribute 2% of the CDM revenue realized from the candidate CDM project for sustainable development including society/community development.

**Report from the field**

According to the PDD, a public meeting was called by the company on 18<sup>th</sup> November 2009 with 'local stakeholders' for consultation on the CDM project. More than 60 persons participated in the meeting, the PDD says, the local villagers, employees and government officials were present in this meeting. The agenda of the meeting included opening remarks and presentation on the Kyoto Protocol, CDM, and the project activity, followed by a question-and-answer session.

On 4<sup>th</sup> June 2011, we visited the Koradi Power Station area and met the villagers. Among them were Vithal Nimone, the sitting sarpanch; Anuradha S Amin, former sarpanch; and Sanjay Bagde, local resident.

Anuradha Amin said that though she was present in the meeting and asked questions on behalf of the people as their representative, she was not aware of the carbon-credit business. It naturally transpires that most of the stakeholders who belong to the local villages received no information on the CDM project, including information about how many credits will be earned by the project and the cost and profit components of the project.

Amin also said that she raised the issue of fly ash pollution from the existing plants and voiced concerns about possibilities of increased pollution in the new projects. She mentioned that the Gram Panchayat has issued a NOC (no-objection certificate) for this company only on certain conditions, which were not met by the company.

She also raised questions regarding the continued pollution by the Koradi Power Station and the impact on local people's health: many people have been suffering from diseases like asthma, skin ailments and throat problems. A lady who lived near her house had a severe attack of asthma and had to leave the workers' colony. Many others too had to leave the place under similar circumstances.

Many villagers in the area have already been displaced because of the new project. Although some had been resettled in a new settlement nearby called Koradi Nagar, this 'new settlement' reels from severe power cuts and acute scarcity of water, which make it uninhabitable.

She raised the issue of transparency as well. A project of this kind should be first discussed in the Gram Sabha (the village assembly) and it is the responsibility of the company to come to the Gram Sabha and make all information public about the project, and take the people into confidence. The company only talked about the project infrastructure and energy generation and mentioned nothing about the 'clean' technology or CDM.

The sitting Sarpanch, Vithal Nimone, said that he was not aware of this so-called public consultation/meeting and the proposed CDM status of the plant. He was aware that 21 separate conditions were put in the NOC given to the company. He also mentioned that they had recently sent a reminder to the company on 1<sup>st</sup> May 2011, asking it to fulfil its CSR obligations as promised to the Gram Panchayat.

Most importantly, the Sarpanch said that the local people would agitate against the company on 6<sup>th</sup> June 2011, demanding uninterrupted electricity supply to the project affected villages. Due to the project activity, the villagers had to face heat wave conditions every summer as average temperature hovers between 40 to 44 degree centigrade for 2 to 3 months. The project area being highly polluted from the continuous coal-firing, the heat increases manifold. The villagers demand that there should not be any power cuts. "We are not asking for a full share of profits but just asking for a trifle for the welfare of the people affected by the project", said the Sarpanch.

Sanjay Bagde, a local resident and social worker, said "I know nothing about CDM and the so-called CDM status of the project." No one knows anything about this here, he added. The Koradi plant has an extremely adverse impact on local people, he lamented. He was also apprehensive about the new plant under CDM being located very close to human habitations, and the inevitable pollution and the health and environmental hazards it is going to cause.

#### *Fake environment impact assessment*

The PDD states that there was an *environment impact assessment* (EIA) done prior to the commencement of the project. Going by whatever environmental data was given in the PDD, the EIA claim seems dubious. The data given does not mention the presence of villages and even human beings within the stipulated 10-km radius. Villages such as Koradi, Mahadulla, Nanda, and Khasala are all within a radius of 5 kilometres from the plant. Also, the impact analysis should have included the total projected capacity of power generation (3X660=1980 MW) instead of a single plant.

There was no data on the present levels of air pollution, and what was being done to control the pollution. Instead, the PDD simply says that everything will be under "permissible limits". This is an attempt to hide scientific data.

The PDD mentions that the "old ash bund" (fly ash dump) at Koradi will be covered by plantations. While only plantations cannot address the problems of fly-ash dumping, especially when the active

ash bund is located near the Khasala village, the PDD is silent about the negative impact of the ash bund.

There were abundant signs of respiratory tract illnesses among the project-affected villagers. The PDD ignores this. The PDD mentions increased groundwater availability in the project area but furnishes no data.

**Table 2: State-wise spread of high-efficiency coal-fired CDM projects in India(as on 16-05-2011)**

States	Total CDM projects <sup>a</sup>	Number of registered projects	*kCO <sub>2</sub> /yr	**2020 kCO <sub>2</sub> /yr	***kCERs issued
Andhra Pradesh	3	0	2004	20036	0
Gujarat	5	1	7652	76517	
Haryana	1	1	12	137	
Jharkhand	1	0	1744	17445	
Madhya Pradesh	3	1	4068	40684	
Maharashtra	2	1	2301	23014	
Punjab	4	0	4544	45445	
Rajasthan	1	0	1097	10972	
Tamil Nadu	1	0	522	5221	
West Bengal	1	0	1004	11308	
<b>Total</b>	<b>22</b>	<b>4</b>	<b>24948</b>	<b>250779</b>	<b>0</b>

<sup>a</sup> Four transport-sector projects – Lohia Auto Industries Electric Vehicles, EKO Electric Vehicles, Electrotherm Electric Vehicles, and Hero Electric Vehicles – will perform in all regions and provinces of India and thus its respective values are added to each state.

\*Annual reduction claimed in 1000-tonnes of CO<sub>2</sub>-equivalent per year

\*\*Total reduction to be claimed in 1000-tonnes of CO<sub>2</sub>-equivalent by 2020

\*\*\* Saleable CERs, in 1000-tonnes of CO<sub>2</sub>-equivalent, officially issued by the UNFCCC so far



Koradi Thermal Power Plant



Reliance Power Plant at Sasan

## Case 3: Waste-to-energy CDM projects

### **A much-extravagant madness**

WtE (waste to energy, by combustion) projects in India and elsewhere are being awarded carbon credits (in India there are at present 25 such projects at various stages of registration), enabling them to earn good sums on the plea that they produce less greenhouse gases for power generation in comparison to the fossil-fuel burners. The waste is even termed as ‘renewable energy’. But, in fact, the amount of fuel and energy input required for drying waste, controlling pollution, and ash disposal are not taken into account. Waste input also cannot, by any means, be termed as ‘renewable’ as these sophisticated machines are actually destroying the material instead of restoring them.

Despite the earnings from carbon credits and sales proceeds of electricity, these plants are not sustainable. They seek protection from the public funds. This becomes obvious when S P Gon Chowdhury, Managing Director, West Bengal Green Energy Development Corporation, and the proponent of the WtE project of the Howrah Municipal Corporation, said, ‘Civic bodies need to change their mindset if they are serious about tackling the garbage issue. If a private company does take care of a section of it, they should get an incentive. Instead, all that civic bodies are concerned about is grabbing a pie from the carbon benefit that will accrue to the project.’ He also added that half the funding should come from civic bodies as the project has a major social component.

Waste incineration neither manages waste properly nor produces electricity efficiently. Instead, they cause pollution and destroy resources. Simply installing a project in the name of CDM (clean development mechanism) and wasting tax payers’ money cannot be a responsible decision. While there are viable low-tech, cost-effective solutions, why should we waste public money to help private companies amass profits by selling dirty technologies?

It has also been frequently observed that the so-called waste-to-energy projects threaten to replace a much less costlier and indigenous system of waste management, in which thousands of *kabari*-pickers or rag pickers get employed. The two projects in Delhi covered in this study also reveal that fact.

## **DELHI**

### **a. Integrated waste-to-energy project: Timarpur-Okhla Waste Management Company Pvt. Ltd, Timarpur and Okhla, Delhi**

#### **What the PDD says**

##### *The project*

The Timarpur–Okhla Waste Management Company Pvt. Ltd (TOWMCL), in close coordination with the New Delhi Municipal Council (NDMC) and the Municipal Corporation of Delhi (MCD), is developing an integrated waste-processing plant at the Okhla compost (next to the Sewage Treatment Plant) site to enable augmentation of waste disposal capabilities of the civic bodies. This integrated municipal waste-processing project will also include two municipal solid waste (MSW)-processing plants—one at Okhla and the other at Timarpur.

Earlier, Unique Waste Processing Company (UWPCL), a subsidiary of the Infrastructure Leasing and Financial Services (IL&FS), had incorporated the Timarpur Waste Management Company Pvt. Ltd (TWMCL) – through a public-private partnership (PPP) initiative – as a ‘special purpose vehicle’ for developing the waste-processing project at Delhi’s Timarpur site. Later, the management took a decision to also include the Okhla site and, hence, had the name of the company changed to TOWMCL.



The project activity will process 643,500 tonnes of municipal solid waste per year @1300 TPD of waste at Okhla and @650 TPD at Timarpur and will produce on an average 222,750 tonnes of RDF (refuse-derived fuel) per year (from 330 days of operation). TOWMCL's Okhla unit will include a power plant of 16-MW capacity where RDF and biogas derived from the waste will be used as fuel to produce renewable energy. The project is taken up to address a critical environment problem faced by the city municipalities in managing solid waste and also to produce 16 MW 'clean' electricity, to be supplied to the local region through the northern Grid.

With a fixed crediting period of 10 years (2009–2019), the project is expected to earn 262,791 CERs (certified emission reductions) on average annually, and a total of 2,627,909 CERs.

#### *Sustainable development*

The project will improve the environment of Delhi by hygienic treatment of solid waste, thereby improving health conditions of people in Delhi.

The project will provide employment opportunities to rag pickers who can collect the recyclables from the plant through manual segregation. The rag pickers would otherwise continue to work in unhygienic conditions.

The project will provide both direct and indirect employment to the local people.

The project will earn additional revenue to the state and central governments.

The project will help in replacing fossil-fuel-intensive power generation in the region.

There will be a decrease in the demand for land to dump solid waste; and the spared land be better utilized such as for hospitals, housing, and so on.

#### **Report from the field**

The site in which this integrated project is located is surrounded with thickly populated residential areas of Sukhdev Vihar, Gaffar Manzil, and Harkesh Nagar; and people in these areas have been opposing this project. The implementation of the project has been flawed right from the beginning—the public hearing for the project was held on 20 January 2007 in Saket, a place far away from the site. The proceedings of the public hearing prepared by the pollution control board mentions that there was no participation of the public, civil society organizations, and other stakeholders. The environmental 'in principle' clearance was given on 21 March 2007 and an amendment to this was done on 9 May 2007 as TOWMCL was taken over by the Jindal Urban Infrastructure Ltd (JUIL). JUIL was asked to submit a detailed project report; but it only sent a 'project appraisal memo' asking for a sanction of financial assistance for the project.

Residents of these areas have held demonstrations at various points of time to register their dissent to the project. In a demonstration in March 2011, residents demanded scrapping of the project on the grounds of toxicity it is likely to create, its close proximity (150 metres from the residential locality) to human habitation, and the illegalities involved in the process of implementation of the project. They had also issued a Press Release to this effect.

This project is propagated as one of the PPP initiatives although there has been very little engagement with the public so far. According to researcher Gopal Krishna, "The original project proponent IL&FS incorporated a company named UWPCCL as a 100% subsidiary for developing municipal waste-processing projects. Then, UWPCCL established a company namely TOWMCL for implementation of this project. This company will be run by a Project Developer to be selected on the basis of competitive bidding... In the whole process, IL&FS and the Andhra Pradesh Technology Development and Promotion Centre (APTDPC) will retain 26% of the stake in TOWMCL." In this, it is not clear where the people's voices or even participation will find a place. It seems that NDMC and

MCD – the two government bodies involved – are taking over the place of the ‘public’ in this PPP framework.

The discrepancy in the sanctioning and implementation of the project has also been highlighted by a fact-finding team in June 2010. The preliminary findings of the visit bring forth the following glaring facts.

RDF or incineration is completely inappropriate for Indian urban waste, which is largely biodegradable in nature. They extract a very high cost for the energy, which the plant claims to generate. The cost-benefit scenario projected by the proponents does not include environmental and health costs caused by toxic releases. These technologies also use valuable resources that can be recycled, such as plastics and metals, and support a massive recycling sector in the country. RDF is a thermal and combustion technology, mainly used to prepare waste for mass incineration. Burning of mixed waste will create problems of very toxic compounds such as dioxins and furans, heavy metals, and other pollutants.

The calorific value for the waste comes from material such as plastics and metals. Plastics, especially chlorinated plastics such as polyvinyl chloride (PVC), when combusted gives rise to these highly toxic pollutants. PVC plastic combustion, which is part of the mixed waste, is banned in India by regulations both in the municipal and bio-medical waste-handling rules.

The project claims to produce ‘clean’ energy from solid waste. This claim has been challenged by people in the area as well as by researchers as it is a well-known fact that incinerators emit dioxins and, according to the WHO, dioxins are highly toxic and can damage the reproductive and immune system of humans and can also cause cancer. The project claims to provide employment to rag pickers in Delhi and is supposed to make their working conditions more hygienic. The fact is entirely contradictory, however. Rag pickers are, in fact, instrumental in recycling the garbage – they are the ones who collect, segregate, and recycle. And, in this chain of jobs, the entire family is engaged and thus earn a living. This project will render these rag pickers jobless and will serve a severe blow on their livelihoods.

#### **b. Integrated municipal waste-processing complex: East Delhi Waste Processing Company Pvt. Ltd, Ghazipur, Delhi**

##### **What the PDD says**

###### *The project*

The Unique Waste Processing Company (UWPC), a subsidiary of the Infrastructure Leasing and Financial Services (IL&FS), has created another ‘special purpose vehicle’ in the name of East Delhi Waste Processing Company Pvt. Ltd (EDWPC) for developing project for the MSW-processing plant at Ghazipur in Delhi. The project works in close coordination with the New Delhi Municipal Council (NDMC) and the Municipal Corporate of Delhi (MCD). The EDWPC is also supported by the New Delhi Waste Processing Company Pvt. Ltd, which is a joint venture of the Delhi Government, IL&FS, and the Andhra Pradesh Technology Development and Promotion Centre (APTDPC).

The project also has a power plant of 10-MW capacity where RDF (refuse-derived fuel) will be used as fuel to produce renewable energy. Approximately 1300 tonnes of solid waste per day will be processed in the plant. The 10 MW of ‘clean’ electricity produced here will be supplied to the local region through the northern Grid.

With a fixed crediting period of 10 years (2010–2020), the project is expected to earn 111,949 CERs on an average annually, and a total of 1,119,493 CERs.

### *Sustainable development*

The project will contribute to improvement in the environment of the city through hygienic treatment of the waste, resulting in improved health standard of people in Delhi.

There will be inflows of funds through sale of CERs and this will have direct and indirect positive impact on the economics of the region. Local livelihoods options will be enhanced through regular flow of funds from the sale of CERs. By turning waste into energy, the project helps in reducing the demand on natural resources.

There will be a decrease in the demand for land to dump solid waste, leading to better land utilization such as for construction of hospitals, housing, and so on. By generating electricity through utilizing the RDF produced, the project will help in replacing the exhaustive fossil-fuel-intensive power generation in the region.

### **Report from the Field**

This project is situated in a densely populated area in the trans-Yamuna area of the eastern part of Delhi. The EIA for this project was carried out in 2008 by the East Delhi Waste Processing Company Pvt. Ltd (EDWPC), which is also a 'special purpose vehicle' to carry out the waste-to-energy projects in Delhi. Notwithstanding the conflict of interests, the project has been given a go-ahead. Contrary to the claims made by the project, waste management will become privatized and rag pickers will be left with very little choice but to depend on the whims and fancies of the private companies once the WtE plant gets going. According to Noor Mohammad, a rag picker from Ghazipur area, "The project has not started yet but our day-to-day movements are already restricted: the gates are guarded and we are checked every time we enter the landfill. Our only source of livelihood will be destroyed if we do not have access to the garbage dump."

The rag pickers in the area earn around 150 to 200 rupees a day by selling the recyclable material to traders. While the project promises to convert waste to 'clean' electricity, it is not known how clean the energy would be when the waste consisting of plastics and highly toxic material would be burnt. It has been well-established that incinerators produce dioxins, which are hazardous to health and the environment. This is being pushed as a climate solution in a place where rag pickers are, in fact, giving a service that needs to be acknowledged as contribution towards the 'solution'. Qasim at Ghazipur describes the work of a rag picker rather succinctly when he said that rag pickers primarily collect easily recyclable material such as glass, metal, and plastic that can be sold to scrap dealers. The contribution made by rag pickers by significantly reducing the waste going to the landfill goes unnoticed as they segregate the waste almost at source. Even when the waste reached the landfill, they do their bit to reduce the waste.

Although the project claims to provide employment to rag pickers and engage them in hygienic waste management, rag pickers we met rubbished all these 'tall claims' as they do not see any scope of getting work in a complex situation that private companies and their cronies would control.

**Table 1: State-wise spread of waste-to-energy CDM projects in India (as on 16-05-2011)**

States	Total CDM projects	Number of registered projects	*kCO <sub>2</sub> /yr	**2020 kCO <sub>2</sub> /yr	***kCERs issued
Andhra Pradesh	5	1	786	7846	89
Delhi	4	4	235	2452	10
Gujarat	1		57	574	
Haryana	1	1	263	2628	
Himachal Pradesh	1	1	40	403	
Karnataka	3		509	5085	
Maharashtra	4	2	323	3234	8
Meghalaya	1		30	301	
Orissa	1	1	23	234	
Punjab, Kerala, and Karnataka (bundled)	1	1	158	1581	
Tamil Nadu	1	1	115	1152	
Uttar Pradesh	2	1	111	1174	
<b>Total</b>	<b>25</b>	<b>13</b>	<b>2650</b>	<b>26664</b>	<b>107</b>

\*Annual reduction claimed in 1000-tonnes of CO<sub>2</sub>-equivalent per year

\*\*Total reduction to be claimed in 1000-tonnes of CO<sub>2</sub>-equivalent by 2020

\*\*\* Saleable CERs, in 1000-tonnes of CO<sub>2</sub>-equivalent, officially issued by the UNFCCC so far



Waste to Energy Plant, Timarpur



Protest against Timarpur Waste to Energy Plant

## Case 4: Wind energy CDM projects

### **A. WIND MILLS IN SATARA, MAHARASHTRA**

#### **A Historical Background**

Maharashtra Energy Development Agency (MEDA) started a 'Demonstration Wind Mill Project' at the Chalkewadi village in 1996. Initially, the Government leased 100 acres of land, which were not used for agricultural purposes, from villagers on a 5-year term, and later purchased the land at 6000 rupees per acre. The MEDA set up 4 power plants at the site, with installed capacities of 3.7 MW each. The apparent success of the project attracted private companies such as the Suzlon Energy Ltd, who were already in the trade as premier suppliers and manufacturers of wind turbines and related equipment. Suzlon erected wind plants in the area at invitation of MEDA, and purchased lands within a radius of 20 kilometres from the farmers of Chalkewadi and other adjacent villages like Vankuswadi, Absari and Kati, at the cost of 40,000 to 60,000 rupees per acre.

Many companies like Bajaj Auto, Tata, Encron, Star, GIO, Sarita Chemicals, Westaj RRB, Energy Micon and MTL later purchased the power plants set up by Suzlon. It was learnt from the workers in those plants that Suzlon sold the plants along with land at a minimum of 50-million rupees each, and they remain operational for 20 years. It was further learnt that Suzlon already invested a huge amount of 400-billion rupees in the wind-energy plants, and now the valley has approximately 1000 such plants. Out of these, MEDA has 11, Suzlon has 67, Bajaj Auto has 100, and the Tatas have 76.

Though lure of cheap infrastructure and bulk subsidies at source drew the companies to Satara, the possibility of earning additional revenue through sales of carbon credits acted as another strong incentive, as many companies applied for CDM registration, mainly with bundled wind-energy projects (bundling several small plants at different locations together). No new plants were set up for the CDM projects, and CDM is seen as easy money for something that already exists. The additionality logic and the investment barriers (proving that the project is a 'no-go' without carbon revenue) given in the PDDs submitted by the project holders, therefore, remain open to all sorts of questions.

#### **Additionality?**

It was found that private companies like Ellora Time Ltd., Bharat Forge, Star Gutaka, Sarita Chemicals, Westaj RRB, Energy Micon and MTL are selling electricity to the Maharashtra State Electricity Board (MSEB) at 3.16 rupees per unit. But these companies consume electricity provided by MSEB at the concessional rate of 1.20 rupees per unit. Both the Government of India and the Maharashtra Government have been providing subsidies and cheap infrastructure to such 'renewable' and 'green' companies. The projects also enjoy support of local political leaders. This happy combination of factors make a windmill project in Maharashtra an extremely attractive economic proposition, which does not require carbon credits to become viable, and would have come up even without the new subsidy in form of carbon revenue.

#### **Dubious projects**

More than the additionality aspect, however, the inherent dubiousness of the Satara wind-energy projects stems from their often unethical and illegal dealings with the villagers. Villagers were seldom paid proper price for the land acquired for the windmills and the lands were more often than not obtained through evidently fraudulent means. This study examined seven CDM wind-energy projects in Maharashtra (in various stages of registration), and it was the same story everywhere. Below, we look at some of them, and see how the projects grossly violate the sustainability criteria, and make a mockery of the claims the PDDs make. There were also severe environmental impacts of having so

many wind turbines in a small area. The study tried to observe the impact of wind-energy projects on local people, assess the level of public awareness about CDM, and also gauge the extent of people's participation in designing, selecting, and implementing the projects.

**a. Small-scale Grid-connected “Demonstration Wind Farm Project”: Maharashtra Energy Development Agency, Chalkewadi, Satara district, Maharashtra**

**What the PDD says**

*The project*

Village Chalkewadi in the Sahaydri (Western Ghats) Valleys in district Satara is blessed with wind-energy-generation potential with a mean annual wind power density of 218 W/m<sup>2</sup> (at 50-m height). The candidate CDM project – owned by Maharashtra Energy Development Agency (MEDA) – has, therefore, been conceived to demonstrate the applicability of MW-class wind electricity generators in medium wind regime (against the kW-class turbines) to harness the available potential at the site with allied benefits of providing clean energy to the local grid and strengthening/promoting the economic activities in the area. The project activity involves implementation and operation of 3.75 MW (3 X 1.25 MW) wind electric generators (WEG). The main purpose of the project activity is to generate electrical energy through sustainable means using wind power resources, to sell the generated output to the Western Region Grid and to contribute to climate change mitigation efforts.

The project being approved a fixed crediting period of 10 years (January 2005 to December 2014) is expected to earn total estimated reductions of 68,900 tonnes of CO<sub>2</sub>e.

*Sustainable development*

*Social well-being:* The proposed project activity leads to alleviation of poverty by establishing direct and indirect employment benefits accruing out of ancillary units for manufacturing lattice towers for erecting the WEGs and for maintenance during operation of the project activity. Additionally, the project activity was mooted to create a revenue source for MEDA, so that the institution should partially meet its financial needs through sale of electricity and reduce the burden over public money. The infrastructure in and around the project area will also improve due to project activities. This includes development of road network and improvement in quality, frequency, and availability of electricity, as the electricity is fed into a deficit grid.

*Economic well-being:* The project activity leads to an investment of about 144-million rupees to a developing region, which otherwise would not have happened in the absence of project activity. The generated electricity is fed into the Western Regional Grid through local grid, thereby improving the grid frequency and availability of electricity to the local consumers (villagers and sub-urban habitants) leading to new opportunities for industries and economic activities to be set up in the area, thereby resulting in greater local employment—ultimately leading to overall development. The project activity also leads to diversification of the national energy supply, which is dominated by conventional-fuel-based generating units.

*Environmental well-being:* The project utilizes wind energy for generating electricity that otherwise would have been generated through burning of alternate fuels (most likely, fossil fuels). Hence, the project contributes to reduction in specific emissions (emissions of pollutant/unit of energy generated) including GHG emissions. As wind-power projects produce no end-products in the form of solid waste (ash, etc.), they address the problem of solid waste disposal encountered by most other sources of power. Being a renewable resource, using wind energy to generate electricity contributes to resource conservation. Thus, the project causes no negative impact on the surrounding environment contributing to environmental well-being.

*Technological well-being:* The project activity leads to the promotion of state-of-the-art 1.25-MW WEGs into the region by a government institution, demonstrating the success of large-sized wind turbines, which feed the generated power into the nearest substation, thus increasing energy availability and improving quality of power under the service area of the substation. Hence, the project leads to technological well-being.

### **Report from the field**

During the initial euphoric days of the 'Demonstration Wind Mill Project', the villagers of Chalkewadi supported the MEDA to set up wind-power plants, with great expectations of new employment opportunities and other development in their village. Ramachandra Tatyaba Chalke, who has been the Sarapanch of the village for last 26 years, provided all support to the district collector and the company (Suzlon). Villagers have even given *shramdaan* (voluntary labour) for one week to construct the approach road to the village.

During the construction of the MEDA and first Suzlon plants, the villagers were earning about 100 rupees per day as wage. But now, such wage work is hardly available, because of the increasingly specialized and technical nature of jobs. The plants employ 46 people from Chalkewadi as permanent staff. A few others get employed on a contractual basis.

In the year 2003, people from 4 blocks organized a protest against the establishment of wind turbines in the area because the plants apparently drove away the clouds, and caused a decrease in rainfall. People from all *talukas* (blocks) like Bid, Patan, Mann and Satara had to suffer from unprecedented drought for three years in succession. Though the prolonged and intense monsoon in 2004 took the edge off the agitation, people seemed still very insecure about the turbines.

The Chalkewadi Gram Panchayat receives 2500 rupees per plant as a form of annual levy from Suzlon. The levy is collected for 70 plants in the Panchayat area, which the villagers use in developmental activities.

It is observed that representatives of Suzlon regularly meet villagers to discuss the problems caused by the plants. In spite of that, there is complete disengagement between local villagers and the company. As the villagers have sold their lands, they are indifferent to the company's affairs and, according to many, meetings with Suzlon are though routine affairs, nobody is much interested.

Villagers were aware that MEDA received a United Nations award for its work in generating renewable energy. Otherwise villagers have absolutely no idea about the CDM aspect of the project, what it is for, and what it involves.

### **b. Wind farm: Ellora Time Ltd, Bhambe, Nivkhane, and Chikhali villages, Satara district, Maharashtra**

#### **What the PDD says**

##### *The project*

The project proponent, Ellora Time Ltd, is 'a leading industrial house in India involved in the manufacturing of household electrical and electronic goods'. Apparently, 'right from its inception, the company is working towards sustainable development and socio-economic well being of the area in which it is operating'.

The project activity has been undertaken to harness the available wind power potential at Satara vis-à-vis development of local economy. The project activity has established 44 sophisticated, state-of-the-art wind energy generators (WEG) of 350 kW capacities aggregating to a total installed capacity of



15.4 MW in Satara District. The generated electricity is wheeled to the nearest grid substation through a 33-kV supply line and fed into the grid after stepping up to 132 kV. The wind electricity generators have been installed at three different sites in the district as follows.

Site I: village Chikhali: 14 WEGs of capacity 0.350 MW (loan from IREDA)

Site II: village Nivkhane: 15 WEGs of capacity 0.350 MW (self-financed)

Site III: village Bhambe: 15 WEGs of capacity 0.350 MW (loan from IREDA)

The 10-year crediting period of the project started on 1 April 2002 and will end on 31 March 2012, during which an estimated 223,650 tonnes of CO<sub>2</sub>e (CERs) will be abated by the project activity.

#### *Sustainable development*

*Social well-being:* The proposed project activity leads to alleviation of poverty by promoting direct and indirect employment benefits accruing out of ancillary units for manufacturing lattice towers for erecting the WEGs and for maintenance during operation of the project activity. The infrastructure in and around the project area will also improve due to project activities. This includes development of road network and improvement in quality, frequency, and availability of electricity, as the electricity is fed into a deficit grid.

*Economic well-being:* The project activity leads to an investment of about 750.4-million rupees (16.7-million dollars) to a developing region, which otherwise would not have happened in the absence of the project activity. The generated electricity is fed into the Western Regional Grid through the local grid, thereby improving the grid frequency and availability of electricity to the local consumers (villagers and sub-urban habitants) leading to new opportunities for industries and economic activities to be set up in the area, thereby resulting in greater local employment—ultimately leading to overall development. The project activity also leads to diversification of the national energy supply, which is dominated by conventional-fuel-based generating units.

*Environmental well-being:* The project utilizes wind energy for generating electricity, which otherwise would have been generated through burning of fossil fuels. Hence, the project contributes to reduction in specific emissions (emissions of pollutant/unit of energy generated) including GHG emissions. As wind power projects produce no end-products in the form of solid waste (ash, etc.), they address the problem of solid waste disposal encountered by most other sources of power. Being a renewable resource, using wind energy to generate electricity, it contributes to resource conservation. Thus, the project causes no negative impact on the surrounding environment.

*Technological well-being:* The project activity leads to the promotion of state-of-the-art 350-kW WEGs into the region, demonstrating the success of these small-sized wind turbines, which feed the generated power into the nearest substation, thus increasing energy availability and improving quality of power under the service area of the substation. Hence, the project leads to technological well-being.

#### **Report from the field**

##### *Bhambe village*

This place is the part of the Sahyadri Valleys (Western Ghats). The ongoing wind energy project is spread over a number of valleys. The river Koyna flows through one part of the project area covered with thick forests. The area had already been announced as a 'sanctuary', cutting people's access to it. A dam named Tarali has also been constructed on the river, displacing many families. Bhambe village is very near to this dam.

On the Bhambe site, Ellora Time Ltd acquired about 250 acres of land from villagers, and 70 wind turbines were erected within the area. These wind turbines stand on agricultural lands held by private farmers as well as village commons under control of the Gram Panchayat. Helped by political leaders, the company did not have to come to the village to finalize the land acquisition deal; they did it in the

city. Prior to construction of the windmills near Bhambe, villagers had no knowledge of their lands being handed over to the company, and they put up a strong opposition against construction activities. The company sought help from the local administration, and the entire community of Bhambe was put in jail for two days, for 'obstructing development'. The construction of both the wind turbines and the Tarali Dam started after 1997.

People displaced by the turbines await the ever-elusive 'rehabilitation', and neither were they ever compensated. The company provided no jobs to the villagers, and villagers said in unison that this wind project gave them no benefits whatsoever. In Bhambe, Ellora Time Ltd has carried out no developmental activity, though it made plenty of promises, including that of giving jobs to people whose lands had been acquired.

The company does not supply any electricity to local consumers, and the project did not so far create any new opportunities for industries or economic activities in the area. It caused more unemployment and misery rather than generating 'greater local employment', as the PDD claims. The company maintains no contact with villagers. People are generally poor at Bhambe, and after losing their lands to the project, the poverty has further deepened.

#### *Chikhali village*

On the Chikhali site, the company took over 500 acres of the villagers' lands, at a ridiculous price of 16,000 rupees per acre. More than 150 wind turbines have come up at Chikhali.

Since the villagers of Chalkewadi (2 kilometres from Chikhali) had supported MEDA in establishing the wind-energy plants and Chalkewadi was much publicized as a model for such windmill projects, Chikhali villagers thought that they too would get good money and employment for land from such windmill projects if they allowed those in their village.

Apparently, a local trader acted as the agent for the company and convinced villagers to sell their 'stony' lands to the company at almost throwaway prices. The company promised that the project would employ at least one member from each of the families giving away land. According to the villagers, the company employed some locals in the beginning, but for a very short period, and now only 2 persons had a permanent job as security guards.

Chikhali has a small temple badly in need of repair. The villagers recall how, in a meeting held in this temple, the company promised that all the children of the village would be made its permanent employees, and assured the villagers that they would build a new temple in the village. But that was before the mills came up. Now, if an animal strays into the grounds near the power plant, the guards beat it up. The company also did not pay the promised levy of 1500 rupees per plant to the Gram Panchayat, and when people asked for it, the company literally asked them to 'go to hell'.

Understandably, the villagers see the project as a complete fraud, which our observations corroborated. Not even one *paisa* of the claimed invested capital (750.4-million rupees) has been spent for the development of the community.

Villagers at both Bhambe and Chikhali never heard about the concept of any 'clean' technology to generate electricity or CDM; and do not seem even remotely aware of carbon-credit sales.

### **c. Wind power project: Bharat Forge Ltd, Kadve Khurd, Satara district, Maharashtra**

#### **What the PDD says**

##### *The project*

Bharat Forge Ltd (BFL), the flagship company of the 1.25-billion-dollar Kalyani Group, is a 'Full Service Supplier' of engine and chassis components. It is the largest exporter of auto component from

India and leading chassis component manufacturer in the world. With manufacturing facilities spread over 6 locations – two in India, three in Germany, and one in North America – the company manufactures a wide range of safety and critical components for passenger cars, commercial vehicles, and diesel engines. The company also manufactures specialized components for the railway, construction equipment, oil and gas, and other industries. It is capable of producing large volume parts in both steel and aluminium.

To meet electricity demand in its plant at Pune, BFL had decided to implement 4.2-MW wind-energy power project at Kadve Khurd village in Satara district. There are 7 power plants of 600-kW capacity each in this wind farm. Entire electricity generate is used in the BFL plant, via MSEB Grid network.

With an annual average CERs of 8616 tonnes of CO<sub>2</sub>e, the project will earn a total of 60,315 CERs over an approved crediting period of 7 years (January 2009 to December 2015).

#### *Sustainable development*

*Social well-being:* The state of Maharashtra in India is facing power shortage for last many years. In a smaller way, the wind-energy power project has helped the state in bridging the demand–supply gap. It is also contributing towards the plans of the Government of India to meet 10% of total power demand in the country using renewable-energy sources. Use of wind energy in place of fossil fuel has also helped in conservation of the natural resource.

*Economic well-being:* The project had generated direct and indirect employment in the wind farm.

*Environmental well-being:* Power generation using wind energy is free of any GHG emissions. There are also no emissions of oxides of nitrogen or sulphur in the plant operations.

*Technological well-being:* The technology used in the power plant is well proven and safe. BFL has tried to continuously improve the performance of wind mills by implementing innovative design changes, and management practices.

#### **Report from the field**

Kadve Khurd – a landlocked, isolated village – is the part of the Sahyadri Valleys, and is located deep inside the forested hills of the Western Ghats. Today, 30 wind turbines stand in and around the village Kadve Khurd.

The villagers of Kadve Khurd knew nothing about the project before the company started erecting the turbines on their lands. There was strong resistance by people whose lands were being almost forcibly acquired; but, with support from the local administration that acted as an agent of the company, the plant was constructed in 2001.

The project occupies 299 acres of land in the village, largely *devottar* or temple properties, and some private farmland—and the deal for these lands was struck with a simple village headman whose family has been traditionally holding the land on behalf of the villagers. Because the villagers had no ‘official’ titles to the land (they had old documents dating back to 19th century and earlier), the company did not bother about those and no compensation was ever paid. The local administration refused to hear the villagers’ case, and in vain they sought justice from the district collector’s court in Pune. The district collector refused to stay the construction of the plant and, in fact, vacated the stay given by a lower court. On top of this, the company, with support from the police, slapped several false cases of robbery and theft of equipment upon the agitating villagers.

In the village, people view the wind turbines as harmful junk, which provide no benefit to anybody. It gave them neither electricity nor employment, and destroyed the only pasture of the village. The company has also put a total ban on cattle grazing in the project area.

The villagers at Kadve Khurd had never heard of any 'clean' factory or CDM or carbon credits.

*The story of Shivram Ahare*

The company offered Shivram Ahare 50,000 rupees for his land, and after he managed to produce an old map, more (according to Ahare, the company agents informed him that they could 'buy' anybody, including the Prime Minister of India). Shivram Ahare refused to be impressed and when all attempts at coaxing and bribing failed, the company threatened to kill Shivram. He had to stay out of the village for 2 months.

Shivram Ahare then met Vikram Shing Patankar, the then minister of PWD in the Maharashtra state government. Vikram Shing Patankar asked the company to let Shivram alone.

Shivram filed his first case in 2001 in the *tehsil* (revenue block) court, which declared Shivram's documents outdated. The case then went to the Sub-Divisional Court that stayed the construction of the plants. The stay, as we saw, was vacated through the district collector's intervention, and villagers allege that the district collector was hugely bribed.

What documents did Shivram have to produce to prove that he was a legitimate landholder at Kadve Khurd village? The list of original documents was impressive by any standard, and included a *Sanad* (grant-deed) from the British period, besides the receipt of agricultural tax, and original village land documents.

Shivram Ahare could not go to the High Court within the stipulated 15 days against the district collector's order because, by that time, all village records were burnt by company's agents.

**More on how companies rule the plateau in Satara**

Wind mills now dot the entire Western Ghats plateau. Vankuswade in the Sahyadri Valleys is another village that is badly affected by the intrusion of windmills. The village has a population of about 6500 covering several *wadis* (small groups of houses) named Chandwada, Tehan, Dekadi, Ramel, Maral, and others. The windmill project here spreads in the valleys over a radius of 20 kilometres. The river Koyna flows in one part of the project area amidst thick forests full of wildlife. This area is, in fact, a wildlife sanctuary. Also, the village is at the fourth stage of the Koyna Dam.

At the Vankuswade site, the project is of 21 MW, with 200 turbines of 750-kW each erected in and around the village. NEG Micon is coordinating the project, which consists of several independently operated sub-projects. The project produces around 39,200,000 kWh, with high-capacity utilization factor of more than 28% to 30%. The government earlier purchased land at 15,000 to 16,000 rupees per acre. Another entity – the Navalakha Group and Associates – also took land at Vankuswade. This group's project comprises 41 windmills spread over 4 wind farm sites, namely, Chalkewadi, Parmale, and Malohi apart from Vankuswade. The buyer companies include Bajaj Auto, Tata Motors, Dhariwal, Malpan, Ajanta, etc., who all have purchased fully completed plants along with the associated land from NEG Micon and the Navalakha Group.

At Savarghar village, Suzlon has plenty of turbines, and their PDD says that all these will contribute to the development of the local economy, and that the project activity will lead to alleviation of poverty by promoting direct employment to the local people; availability of electricity to the local consumers (villagers and sub-urban habitants); new opportunities for industries and economic activities in the area. A visit to the area reveals that none of these tall claims materialized; rather the local communities have become gone poorer. The buyer companies here include Star Gutaka, Sarita Chemical, Westaj RRB, Energy Micon, MTL, etc.

In Maloshi and Parmale villages, BF Utilities Ltd (BFUL) – a subsidiary of the Kalyani Group of Industries – is a major operating player, along with the Navalakha Group and Associates. The project

activity here comprises 41 windmill plants belonging to 23 different owners that come mainly from sectors such as manufacturing, hotel, medicine, construction, and logistic businesses and have no experience or expertise in wind-energy generation. They have given operation and maintenance contracts to the installer of the mills. All these 23 owners have agreed to choose Navalakha Translines to represent them in getting CDM benefits. The majority of these mills are supplied by Vestas RRB and a few by Suzlon Energy. Both companies took land from the villagers, on which 56 windmills stand now, monstrously looking down at people's space and resources.

## **B. BUNDLED WINDMILL PROJECT: TATA MOTORS LTD, SUPA AND SATARA, MAHARASHTRA**

### **What the PDD says**

#### *The project*

The project activity by Tata Motors Ltd involves development and operation of grid-connected wind-based electricity-generation facilities with aggregate installed capacity of 20.85 MW, located at two locations—Supa and Satara. The objective of the project activity was to construct, operate, maintain, and aggregate wind power projects to provide renewable power to the Maharashtra state electrical grid and use for captive purpose to reduce GHG emissions from reliance on fossil fuels. The project has led to reduced greenhouse gas emissions because it has displaced the electricity from fossil-fuel-based generating systems.

The electricity generated from this wind farm is supplied, using internal electrical lines, to a common local substation using transmission lines. Thus, though the activity has sub-projects (individual wind farms) of smaller capacities, they share common facilities within two common wind farms. Hence, such sub-projects have been bundled in the project activity, and not dealt as separate small-scale projects.

The aggregate 20.85 MW project activity comprises of total 51 wind converters with each machine having a capacity of 350 kW and 3 wind converters with each machine having a capacity of 1000 kW. Suzlon Energy Ltd supplied these machines. The project activity has been displacing energy that is despatched at the operating margin (largely thermal energy) and also delay any planned expansion of the Western Regional Grid generation by its equivalent size.

The project will abate 324338.75 tonnes of CO<sub>2</sub>e over a crediting period of 10 years (May 2001 – April 2011).

#### *Sustainable development*

Contributing towards the objective of Government of India of 10% of incremental capacity from renewable energy resources

Contributing towards meeting the electricity supply deficit in Maharashtra state

Abating carbon dioxide and reducing GHG emissions through development of renewable technology

Reducing the average emission intensity of oxides of nitrogen and sulphur and other pollutants, average effluent intensity, and average solid waste intensity of power generation in the system  
Conserving natural resources including land, forests, minerals, water, and ecosystems

Developing the local economy and creating jobs and employment, particularly in rural areas

Building capacity and empowerment of vulnerable sections of the rural communities in the vicinity of the project

Increasing income security of vulnerable sections of the society through redistribution benefits on account of the economic activities associated with the project

Strengthening local grid of supply company

### **Report from the field**

#### *People's responses*

We visited the Supa windmill project site of the Tata Motors. The project is located at Sahajanpur, a remote and hilly village, about 8 km from Supa. The population of the village is about 1100 in 200 families: a mixed community of scheduled castes, other backward castes, and others.

The PDD announces it loud and clear that the company had no problem acquiring land from the villagers for the project, suggesting that people had willingly given land. The villagers of Sahajanpur told us that the windmill company had hired a few local residents to act as agents to facilitate land acquisition from fellow villagers. The agents would prepare the document of sale deeds and pay the villagers only 20,000 rupees per acre, much below the then existing market rate. The company had already acquired about 900 acres of village land from about 80% of the residents. The villagers informed that they were then harvesting two good crops a year on their land, and without using fertilizers.

Motilal Dashrath Gavali, 45, and the chairman of the Vikas Seva Sahakari Society in Sahajanpur, said that when the windmill project started in 2001 people were very apprehensive since they knew nothing about the project coming to their land, and nor about what sort of work they would do there. Despite this, the agents somehow managed to trick the people into selling their lands. Among the agents were influential people like the sitting sarpanch and the erstwhile sarpanch who would prepare documents of sale deed sheepishly in the evening and take thumb impressions or signatures of the villagers; they would also hand over the money to the villagers before completing the sale process, to lure them into the deal.

Gulab Toloba Maiske, 65, said that he was paid 20,000 rupees per acre in 2001 for his 3 acres of land. The company officials told him that they were in fact overpaying people in Sahajanpur by 8000 rupees since people in Satara had got only 12,000 rupees per acre.

In the Sahajanpur area, the large landless scheduled-caste community were surviving on patches of government land, and all this land, about 78 acres of it, was also captured by the wind farm, destroying the community's livelihood.

People had initially resisted the acquisition of their land. The agents then took them on a visit to the Satara region and, in the process, influenced them to fall into the trap laid by the companies, the villagers said.

Baba Maiske, an engineer who earlier worked for the Ispat India Ltd and now works as an agriculturist for the past 12 years at Sahajanpur, told us about a meeting conducted by Tata in the project area. Some Tata officials came and picked up some villagers, including the engineer, in their vehicles for the meeting. The company people talked about something about CDM projects and the environment, but the villagers could not make any head or tails of it. However, the banner behind the meeting, ironically, read *Stakeholders' Meeting*, he said.

#### *False promises, the Tata way!*

Jobs promised by the company to the local people have not materialized, save for some 4/5 persons getting some work. Sanjay Baba Mote, a local youth earlier employed in the company's Satara farm,

was first transferred to Sahajanpur and then dismissed from his job. Mote told that there were many more like him who had met with a similar fate. The company explained that the project was now complete and there was no more work for the villagers. According to the PDD, the ten-year CDM project is expected to end in April 2011. After having lost their lands, the only hope the villagers had was jobs in the company!

The sarpanch of Sahajanpur, Vishwanath Laxman Shinde, who earlier worked as an agent for the company, stressed that the company had brought no benefit to the region. It had promised many things when it came, such as a 770-metre road, a building for the *Mangal Karyalay*, a two-floor building and vehicles for the gram panchayat, employment to the villagers, employment-generation programmes, water ponds, bunding, electricity to the temple, and so on. In league with some influential and corrupt individuals of the area, the company didn't keep a single promise.

The sarpanch also complained that despite having acquired so much land from Sahajanpur, the wind farms were not paying any tax to the Gram Panchayat. Earlier, they promised to pay 56,000 rupees to the Gram Panchayat in taxes every year.

The villagers also said that with power cuts lasting for 8 to 12 hours a day, this windmill project was an utter failure. The sarpanch was contemplating to go to the court against the windmill farms, demanding justice.

#### *The CDM hoax*

In the PDD, Tata Motors Ltd has mentioned alternative use of coal-based power for meeting the electricity requirement. But according to the UNFCCC additionality tool (EB 39 Report, Annex 10, Page 4, Footnote), 'coal-fired power station or hydropower may not be an alternative for an independent power producer investing in wind energy or for a sugar factory owner investing in cogeneration, but may be an alternative for a public utility.' This makes it clear that use of coal mentioned in the PDD cannot be used as an alternative fuel in a wind farm while addressing additionality; so how did the project pass off as CDM?

With the company not providing basic information about its objectives and activities of the windmill project, people's 'participation' in the 'CDM project' is absolutely non-existent, let alone any benefit coming their way. People are unaware about not only the CDM status of the project but also the very concept of CDM: they are bitter about the fact that the company acquired their land by fraudulent means. Most people in the area are poor; and now with their land gone and no alternative means of sustenance provided, they are migrating to other places in search of jobs. In other words, local people are deliberately not made stakeholders in the carbon-trading business, which is mandatory in the CDM regime. However, this does not prevent the company from reaping huge profits—Tata Motors were issued 167,127 CERs for the project by March 2007. This translates into an obscene 26,74,032 euros (or, about 1.5-billion Indian rupees), going by the then average market rate of 16 euros per CER—and the company could add even more to its coffers, if it had hoarded some CERs for releasing into the market in a more opportune time. In 2008, it will be wise to remember, the CDM market reached an all-time high; in July 2008, one CER fetched no less than 26 euros. Interesting enough, the Tatas have kept aside 3343 CERs in the Adaptation Fund. Since then, the Tata wind energy project received another 50,000+ CERs.

**Table 1: State-wise spread of wind-energy CDM projects in India(as on 16-05-2011)**

States	Total CDM projects	Number of registered projects	*kCO <sub>2</sub> /yr	**2020 kCO <sub>2</sub> /yr	***kCERs issued
Andhra Pradesh	4	2	120	1198	110
Gujarat	71	19	2381	24451	103
Gujarat (bundled)	9	2	267	2698	11
Karnataka	63	26	3854	38794	1556
Karnataka (bundled)	5	3	99	989	
Kerala	4	1	99	1000	
Madhya Pradesh	8	3	188	1934	21
Madhya Pradesh (bundled)	3	1	39	400	
Maharashtra	80	40	1793	18427	980
Maharashtra (bundled)	24	6	785	7844	
Rajasthan	77	20	1461	14616	466
Rajasthan (bundled)	15	2	396	3938	
Tamil Nadu	154	48	4584	46812	5113
Tamil Nadu (bundled)	23	1	738	7385	
<b>Total</b>	<b>540</b>	<b>174</b>	<b>16804</b>	<b>170486</b>	<b>8360</b>

\*Annual reduction claimed in 1000-tonnes of CO<sub>2</sub>-equivalent per year

\*\*Total reduction to be claimed in 1000-tonnes of CO<sub>2</sub>-equivalent by 2020

\*\*\* Saleable CERs, in 1000-tonnes of CO<sub>2</sub>-equivalent, officially issued by the UNFCCC so far





Wind Mill Satara Plateau



Wind Mill Sakhari, Dule

## Case 5: Biomass-based CDM Projects

### Andhra Pradesh

#### **Behind the coal stacks**

Much like wind farms dotting the countryside, biomass-based power plants have proliferated in many parts of the country, reaping enormous profits, powered and protected by their CDM status. Unfortunately, our findings confirm that much like the wind farms, these biomass plants too exhibit barefaced violations of the tall claims widely publicised in their PDDs (project design documents).

Our field studies suggest that none of the biomass companies carry out developmental works in their project areas. Rather, they cause serious pollution, a host of health problems for local communities, and even loss of biodiversity. The people remain unemployed and deprived of even basic amenities whereas they should benefit from the CDM project after having 'allowed' the project to take off on their land.

It is time to ponder about the so-called 'greenness' of the biomass projects when almost all such plants use coal in large quantities and often gleefully forget to mention it in their PDDs! Moreover, they also fail to calculate emission levels at the plants. No reference to how much, and for how long, coal would be used: the plant sites become full of high coal stacks.

Here we cover several biomass projects in the state of Andhra Pradesh. For more on biomass CDMs in India, see *Mausam*<sup>1</sup> inaugural issue 2008.

#### **a. Industrial-waste-based grid-connected power project: Sai Renewable Power Pvt. Ltd, Kamavarapukota, West Godavari district, Andhra Pradesh**

#### **What the PDD says**

##### *The project*

The project utilizes industrial waste – mainly palm-oil industry waste such as empty palm bunch, fibres, shells and also other agro-industrial waste such as rice husk – to generate electricity for a grid system. The annual fuel mix considered for the project is 70% palm-industry waste and 30% other agro-industry waste. The project activity is not eligible to use any fossil fuel.

Over a 10-year crediting period starting 2004 till 2014, the project will earn carbon credits worth 200,490 tonnes of CO<sub>2</sub>e.

##### *Sustainable development*

The objective of the project is to generate electricity in a sustainable way by utilizing industrial wastes and contributing to the mitigation of local and global environmental pollution. Since the project uses only industrial waste for power generation that would otherwise have been based on fossil fuels such as coal, lignite, and gas, it does not lead to net GHG emissions. So, by avoiding decomposition and release of GHGs, the project contributes to the mitigation of climate change.

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<sup>1</sup> *Mausam*, Issue 1: <[http://www.thecornerhouse.org.uk/sites/thecornerhouse.org.uk/files/Mausam\\_July-Sept2008.pdf](http://www.thecornerhouse.org.uk/sites/thecornerhouse.org.uk/files/Mausam_July-Sept2008.pdf)>

The project is located in an underdeveloped, rural area of the West Godavari district, where around 95% of the population thrives on agricultural activities—palm is being cultivated covering a huge area of over 3993 hectares. In the region, there are numbers of palm-oil processing and refining industries have been set up to which local farmers are selling their produce of palm crops. The project activity by utilizing waste these industrial units is generating additional income for both the industries and the farming community.

The project has generated an additional direct employment for about 50 persons and indirect employment for about 80 persons. The project has also impacted increase in other economic activities in the region leading to flow of additional investments.

Project investors will mobilize huge financial resources to the region to an extent of 202.7-million rupees. This is a very significant investment in an underdeveloped rural area.

The project is first of its kind in Andhra Pradesh; this will establish a technological base for utilization of palm-industry waste and will lead to establishment of similar projects in future.

All these ensure that the project contributes to the social and economic well-being in the region, which means the project activity contributes to sustainable development in the host country.

### **Report from the field**

The project, located in the Kamavarapukota Gram Panchayat, sources industrial waste – mostly palm-oil industry waste and partly agro-industry waste – for generating electricity for a grid system. The annual fuel mix for the project is 70% palm-industry waste and 30% other agro-industrial waste. The project activity is not eligible to use any fossil fuel.

On our visit to the area, we spoke to Marget Vasholetti, the Sarpanch, Village Kamavarapukota; K V S Ramarao, President of the Panchayat; Padalam Sathyanarayana, ex-ward member; and villagers such as Kancharla Venkatesh, P Tamdikonda Ramarao, and P Venkateshrao, among others. When the project started some 6–7 years back, they used rice husk for producing electricity, and pollution began to engulf the region. The ex-MLA Kotegiri Vidhyadharrao demanded that the government form a committee to look into the dust pollution issue and solve the problem with water sprays. Nothing had changed since then, however.

Later, when the plant started using palm-industry waste, the air pollution only increased and water sources too were contaminated, driving the villagers to despair—even drinking water seemed hard to get. The pollution has also badly affected farming by damaging crops and lowering productivity. The roads are always filled with dust, leading to fatal accidents regularly.

No villager within a radius of 10 kilometres from the project has got employment in the plant; only a few men have been engaged as electricians on a contractual. Contrary to what the PDD claims, the project activity has not helped or supported the villagers in any way: it works in complete isolation from the villages; neither project authorities nor the government ever come for any dialogue with the villagers who lost their land, environment and livelihood because of the project.

The villagers are visibly upset with the project, and it remains a mystery as to how the project managed to show a consent letter from the villagers! The villagers say that the project fraudulently got a NOC from the then sarpanch of Kamavarapukota; but that NOC should have no validity since none of the other bodies of the Gram Panchayat or any villager has agreed to it.

The project provided no information to the villagers about the nature of its activities. As a result, the villagers are still in the dark as regards the business the project is doing. Moreover, going by the

pollution level in the area caused by emissions from the plant, it is clear that no clean technology is associated with the project; and also that fossil fuel such as coal is being used.

**b. Renewable-energy generation project: Varam Power Projects, Chilkalapalem, Etcheria mandal, Srikakulam district, Andhra Pradesh**

**What the PDD says**

*The project*

Varam Power Projects Pvt. Ltd has a primary business mission of pioneering the utilization of low-density crop residues, which are otherwise burnt on the fields (leading to high particulate emissions and environmental pollution) or allowed to decompose (leading to methane emissions, which are potent GHGs contributing to climate change). The project proponents, after conducting a detailed analysis and survey, envisaged a 6-MW power-generation plant at Chilkalapalem village in Srikakulam district, by utilizing surplus biomass residues such as paddy husk, jute sticks, woody biomass, and other crop residues to generate electricity for a grid system of the state-owned power utility, Andhra Pradesh Transmission Corporation (APTRANSCO).

With an average annual turnover of 22,377 CERs, the project will earn a total of 223,771 CERs during the 10 years of crediting period (January 2002 – December 2011).

*Sustainable development*

The proposed project activity utilizes biomass for power generation, which would otherwise be generated by burning fossil fuels such as coal, lignite, and gas. The project would, therefore, not result in any increase in GHG emissions and would cause no negative impact on the environment.

The project would also offset emissions of other pollutants, besides carbon dioxide, such as carbon monoxide, nitrous oxide, sulphur dioxide, and suspended particles. The project would generate real, measurable, and long-term emission reductions.

The proposed 6-MW biomass-based power project would create jobs for local populace in various sectors such as biomass collection, biomass-processing, transportation, and in operation of the power plant. It would also create indirect employment of about 450 jobs for rural unemployed youth by putting in place a new supply-chain management of biomass. Besides, more indirect employment would be generated since the project would encourage setting-up of other agro-industries by providing the required power supply for them from the project.

**Report from the field**

Varam Power Projects Pvt. Ltd has put up a 6-MW power-generation plant at Chilkalapalem village in Srikakulam district, to generate electricity for a grid system of the state-owned power utility, APTRANSCO, by utilizing surplus biomass residues such as paddy husk, jute sticks, woody biomass, and other crop residues in the area—according to the PDD.

At Chilkalapalem village, the sarpanch Chichra Chilakaramu informed us that the project activity started some 10 years before with a NOC from the former sarpanch; but there is no formal agreement between the company and the Gram Panchayat. When the company acquired land for its factory, some farmers in the village sold their lands with the hope of being employed at the plant, which the company promised. However, the company did not offer any direct employment for the local people.

Contrary to what the PDD says, for generation of the ‘clean’ electricity, the company is regularly bringing raw material such as rice husk, waste wood, and crop residues from outside; the local

farmers have not been benefitted in this arrangement. On top of that, dust from the plant has created enough health problems in the villages, including badly affecting people's eyes.

The factory is constantly sucking a large amount of groundwater through several bore wells – people have no idea about the number though – of the depth of 6000 to 7000 feet, and this took a toll on the water sources of the local people—the groundwater level as well as the levels of the surface water bodies went down dangerously. To add to these, effluents from the plant are being released directly into the village lake.

After 10 years of profiting out of people's resources and spaces, all the promises of social development and alleviation of poverty by the company have been blown away with the smoke and dust its clean plan gives to the people. There is absolutely no indication anywhere that the company desires to do anything to improve basic amenities and the quality of life of the local people. The claims of implementing plantation projects to mitigate pollution caused by the plant were proved to be lies. In fact, we observed that the project is located on the highway and there is no space for plantation in the area.

In the name of local area development, the company donates 3000 to 5000 Rupees on occasions of religious programmes, besides paying a tax of 35,000 rupees per year to the Gram Panchayat.

Villagers such as Kishor Gupta, Chilka Asirnaidu, Chilka Dulappuda, and others confirm that the local people were neither consulted nor informed about the details of the project before it started. The villagers have little idea about what the plant does. They in fact told us that along with biomass, coal is also being used in the power plant.

### **c. Non-conventional renewable sources biomass power project: Perpetual Energy Systems Pvt. Ltd, Appayyapeta, Seetanagarm Mandal, Vizianagaram district, Andhra Pradesh**

#### **What the PDD says**

##### *The project*

The project – 7.5-MW Non-Conventional Renewable Sources Biomass Power Project – is owned by the Perpetual Energy Systems Pvt. Ltd (PESPL) and is located at Appayyapeta village, Seetanagarm Mandal, Vizianagaram district, Andhra Pradesh on a land area that measures 18 acres. The project aims to utilize the biomass – rice husk, juliflora, and bagasse – available in the region effectively for generation of 'clean and green' power, to be sold to the power-deficit state grid. The fuel requirement for the plant's full capacity is 26,850 t/yr of rice husk, 21,470 t/yr of juliflora, and 23,250 t/yr of bagasse. PESPL has proposed to use these fuels for a period of 4 months each in a year and source them locally within radius of 25 km from the plant. Other fuels like cotton stalk, black-gram stalk, and groundnut shell are also available abundantly and would be considered as alternative fuels. Vizianagaram district is a prominent district among agriculturally and industrially developed ones in Andhra Pradesh.

The project has been approved a crediting period of 5 years (2006–2010), and is expected to generate 20,322 CERs per year, 203,220 in total.

##### *Sustainable development*

##### *Social well-being*

The project being located in a rural area, it would naturally lead to the development of the region.

Since the biomass resources are collected and transported to the plant site from the fields, opportunities are generated for the rural people to collect and transport biomass. This would result in enhanced employment opportunities for the rural people.

More and more rural industries are expected to be set up as a consequence to the presence of a power plant in the area. This also would cause infrastructure development in the area, which ultimately would lead to further rural development. This would also prevent migration of the rural poor to cities. In order to ensure sustained sources of raw material supply to the power plant, the company has embarked on encouraging energy plantation by the farmers in their wastelands.

#### *Economical well-being*

The project activity has already generated employment in the local area. The project has also provided economic value to agricultural and wood wastes and has provided stable and quality power to neighbouring industries, farmers, and households. The project has created business opportunities for local stakeholders such as bankers, consultants, suppliers, manufacturers, contractors, and so on.

Biomass being collected straight from the farm fields has generated additional revenue for the farmers on account of supply of these crop residues to the project, which are otherwise being under-utilized/burnt with no commercial value.

#### *Environmental well-being*

The project uses only biomass for power generation, which otherwise would have been produced using fossil fuels such as coal, lignite, and gas. Combustion of biomass materials in the project results in GHG emissions of carbon dioxide, methane, and oxides of nitrogen. However, emissions of methane and oxides of nitrogen are at a negligible level of only 1% to 2%. So, the major GHG emission is in the form of carbon dioxide. Since biomass is formed by fixing the atmospheric carbon dioxide by the action of photosynthesis in the presence of sunlight, the carbon dioxide released due to combustion of biomass is assumed to be equal to the carbon dioxide fixed by the photosynthesis. Again, the carbon dioxide released during the combustion will be consumed by the plant species for their growth. In view of the above, biomass combustion and growth of biomass and associated carbon dioxide consumption and release can be treated as cyclic process resulting in no net increase of carbon dioxide in the atmosphere. Hence, the project activity will effectively not lead to any GHG emissions and contribute to the mitigation of climate change.

#### *Technological well-being*

The project is employing a better, energy-efficient technology, as it uses a steam turbo generator with matching boiler of travelling grate type capable of firing multiple fuels with highest possible system efficiency. In addition, the auxiliary power consumption for travelling grate type is relatively less than other efficient combustion systems.

### **Report from the field**

The plant is supposed to utilize locally available (within a radius of 25 kilometres from the plant) biomass – rice husk, juliflora, and bagasse – for generation of ‘clean and green’ power, to be sold to the power-deficit state grid.

During our visit to Appayyapeta, Surya Narayana( a ward member) and Ayyapa Swami( the vice-president of the Panchayat) and other villagers informed us that the factory had started some eight years back. But, the village Panchayat gave it a NOC only in 2009. With the entry of the plant in the area, villages such as Appayyapeta, Sitamagarm, Pedabogil, Dhoggipeta and others have been forced to deal with problems that were unknown to the villagers earlier—the sarpanch of Appayyapeta complained. Black dust has settled everywhere, including agricultural fields, and water has also become black and contaminated. As a result, farm production has gone down rapidly, throwing the local economy into disarray. The company has certainly not added any value to the local economy as they had claimed, the villagers said.

Contrary to all the tall claims in the PDD, the company hasn't opened up any vista for employment to the local people. Only 20 villagers are engaged in wage labour under the contractors. Also, it was clearly visible during our visit to the area that the company had no scheme for giving electricity to any neighbouring industries, farmers or households; villagers rue the fact that, unfortunately, they are not able to organize themselves to put pressure on the company to keep its words; there is no resistance because the supposed leaders seem to be on the side of the company.

The plant collects biomass through the big contractors, without involving the local people in the process, thereby depriving them of some possible economic engagement. The project, in the name of collecting biomass, is manipulatively wiping out essential fodder for the cattle, such as the long grass in the grazing fields. Also, the company takes away rice husk from the mill owners directly, which would otherwise have come back to the farmers who do not see it as waste, but as important food for their cattle.

All these combined – air and water pollution, health hazards, low farm output, plundering of village commons and farm residues, and no room for employment – have, in turn, resulted in a sharp increase in migration of the villagers to urban areas.

A year ago, one official from the state pollution control board had visited the Sitanagaram village to assess the status of pollution in the area; but nothing was done after that. Before commencing its plant – nor even after – PESPL had neither taken the consent of the local people nor has ever bothered to convene any meeting to discuss any issue relating to them. People are absolutely clueless about the project activity. It remains a mystery as to how the project got the environmental clearance.

#### **d. Biomass-based cogeneration energy project: Sri Kalyani Agro Products & Industries Ltd, Prathipadu, Petapadu mandal, West Godvari district, Andhra Pradesh**

##### **What the PDD says**

###### *The project*

The cogeneration power project by Sri Kalyani Agro Products & Industries Ltd (SKAPIL) is located at the premises of their existing rice mill at Prathipadu village in West Godavari district. SKAPIL has been engaged in rice-milling activities with a capacity of 12 tonnes per hour. The project activity is to set up a biomass-based cogeneration project with a capacity of 4 MW, utilizing rice husk generated from the rice mill and other surplus biomass fuels available in the region for generation of high-pressure steam to be utilized both for the rice-milling process as well as power generation. The generated power from the project is partly consumed by the rice mill and a steel plant established by the project proponent at the same location; the remaining power is to be sold to the Andhra Pradesh Transmission Corporation (APTRANSCO).

This project activity on an average generates 14,452 carbon credits each year. Over a crediting period of 10 years (2002–2012), the project is expected to earn 144,520 credits in total.

###### *Sustainable development*

By using surplus biomass material as fuel for power generation, which otherwise would have been produced by burning fossil fuels, the project will not result in increase of GHG emissions and cause no negative impact on the environment. The project ensures real, measurable, and long-term emissions reductions.

The project reduces instances of open-air burning and decay of unutilized biomass resources in fields, thereby reducing high particulate emissions as well as contamination of groundwater.

The project relies on the increased utilization of renewable energy sources for power generation and contributes to energy security of the country. Hence, the project contributes to the technological well-being.

The proposed 4-MW biomass-based cogeneration power project creates jobs for many people in various sectors like biomass (rice husk and sugar-cane trash) collection, biomass-processing, transportation, and operation of the power plant. The proposed project also encourages indirect employment by supporting other local economic activities.

The project activity will help the poor and vulnerable sections of the society who are often hit by inadequate power supply, load-shedding, and poor power quality to receive more reliable supply of power to commercial, residential, and agricultural consumers.

The project will source rice husk from within a radius of 25 km from the power plant. Out of 319 rice mills in the West Godavari district, 124 fall within this radius. The project activity will enable these rice millers to receive additional revenues for the rice husk produced, the benefit of which will further trickle down to paddy farmers.

The project being located in a rural area, it will reduce migration of rural people to cities by creating new economic opportunities. Power generated from the proposed biomass-based project could also be used for setting up small-scale industries, thus creating self-employment opportunities, which will further reduce migration of rural population to urban areas.

### **Report from the field**

Sri Kalyani Agro Products & Industries Ltd (SKAPIL), which has been engaged in rice-milling activities, has set up a 4-MW biomass-based cogeneration power project at the premises of its existing rice mill at Prathipadu village in West Godavari district. The project activity aims to utilize rice husk generated from the rice mill and other surplus biomass fuels available in the region for generation of high-pressure steam to be utilized both for the rice-milling process as well as power generation.

At village Prathipadu, the villagers informed that of the 1200-strong electorate in the locality, more than 600 are unemployed. SKAPIL started its operation some seven years ago with loads of promises to the local people; but only about 30 people have managed to get some kind of employment in the factory and that too only on daily wage of about 100 rupees. Even the few skilled youths (ITI-trained) did not find any job in the plant. The company had earlier acquired private farm land to set up the plant, thus taking away the regular income from farming and impoverishing the people.

Villagers who have agricultural lands close to the project are hit adversely as farm output has reduced drastically due to dust pollution and effluents from the plant. When farmers protest against the project for crop damages, they are given a ridiculous sum of 1000 or 2000 rupees as compensation and asked to leave the factory premises.

Toxic fly ash coming from the plant is released to the atmosphere and settles on the entire landscape—roofs of houses, farm land, pastures, water bodies. Since the plant came, the local people had to battle with hitherto unknown maladies such as skin and eye ailments, constant coughing, asthma, and other respiratory problems. Toxic effluents released to water bodies have forced the villagers to look for potable water elsewhere. People have been protesting against such crimes, but the company pays no heed. The project authority also never calls any meeting, as it cares little about the consequences of its misdeeds—it enjoys a great degree of impunity.



The Gram Panchayat had given a NOC to the project, but that was never discussed with all the members of the Panchayat. Villagers now see some kind of a nexus between some members of the Panchayat and the company.

Villager Pinamaka Mariamma said that when the project started, it used coconut waste for production of power but soon switched to coal, which compounded the pollution and health problems. K Bhaskar Rao, ward member, complained that the company did not even hold a public hearing on environmental impacts of the plant and went ahead with the project.

The company has apparently no scheme for village development. Not only has it done nothing to generate any direct employment, there is also absolutely no initiative to encourage indirect employment by supporting related economy. The project doesn't supply electricity to any commercial, residential, or agricultural customers, in sharp contrast to what it claimed in the PDD. Only the rice mills get some electricity in exchange of the rice husk they provide to the plant. So, the project is strictly a business proposition for profit, and not for local development by any remote standard. Rather, the project has adversely affected the local economy. The rice husk being supplied to the plant by the rice-mill owners actually belong to the farmers who use it as an important fodder for their cattle; now the farmers are deprived of the rice husk as well. Also, contrary to the projection in the PDD, the project has increased the rate of migration of rural people to urban areas.

The villagers are clueless about CDM.

#### **e. Thermal Energy Generation from Renewable Biomass: Agarwal Industries Pvt. Ltd, Vakalpudi, Kakinada mandal, East Godavari district, Andhra Pradesh**

##### **What the PDD says**

###### *The project*

The proposed project by Agarwal Industries Pvt. Ltd (AIPL) – in village Vakalpudi in Kakinada mandal of East Godavari district – involves steam generation by utilizing locally available surplus renewable biomass (primarily rice husk) with the installation of a 12-TPH boiler and a thermopac. AIPL is one of the India's leading companies for making of refined vegetable oil and *vanaspati* oil. The use of renewable biomass replaces an equivalent amount of fossil fuel combustion for steam generation, which was the scenario earlier with an 8-TPH coal-based boiler for steam generation (now kept as a stand by boiler as is used only in emergencies).

With an average annual generation of 28,484 CERs, the project will generate 284,840 CERs in 10 years of approved crediting period (2008–2018).

###### *Sustainable development*

*Social well-being:* the project activity has resulted in generation of a number of direct and indirect job opportunities for local people involved in transportation of biomass, loading-unloading, biomass storage, construction jobs, etc.

*Economic well-being:* the project activity has led to generation of additional income for the local population due to its various activities.

*Environmental well-being:* The project activity uses biomass (rice husk) as fuel for steam generation. Rice husk is a carbon-neutral fuel. Using biomass in the project activity replaces an equivalent amount of GHG emissions from fossil fuel, which was used earlier.

*Technological well-being:* The project activity will provide the necessary impetus for industries to come up with more such projects in the area and will encourage technology providers in putting more R&D efforts towards new technology development.

### **Report from the field**

R Suribabu, a Panchayat member of the village Vakalpudi, which comes under the Tammavarm Panchayat, informed us that the company came to the area some 8-10 years ago. The villagers have no idea about any clean mechanism in the plant as pollution caused by it has ruined their lives and livelihoods. Suribabu emphasizes the level of pollution by saying that 'if you wear white clothes and move around in the village for just an hour, your clothes would turn black'. Besides the output of their farm produce dropping drastically owing to the pollution, villagers increasingly suffer from many new diseases with no easily accessible health-care facility in the vicinity.

The villagers also expressed serious concerns over the natural-gas pipeline that runs through the village with no safety measures in place. There is not even any provision for basic fire-fighting. In fact, once there was fire inside the plant and the people were asked to vacate the village in no time.

The project provides no employment to the villagers as almost all employees have come from outside and even the biomass used in the plant comes from the outside traders. The labour employed in the plant comes also from other areas. Electricity is generated right in their backyard, but the villagers have no access to it.

### **f. Biomass-based grid-connected power project: Venkataraya Fibres Pvt. Ltd, Beechpally, Itikyal mandal, Mahboobnagar district, Andhra Pradesh**

#### **What the PDD says**

##### *The project*

The proposed project activity by Venkataraya Fibres Pvt. Ltd – located at Beechpally village in Itikyal mandal in Mahboobnagar district – aims to utilize locally available surplus biomass residues in a 6-MW biomass-based power generation plant to feed the grid system of the state-owned power utility, APTRANSCO—Andhra Pradesh Transmission Corporation. The region where the project is proposed is rich in biomass resources such as rice husk, paddy straw, pulse stalks, cotton stalks, groundnut shell, juliflora, castor stems, etc. The project promises to add value to these biomass resources by using them efficiently in energy generation. In the event of non-availability of sufficient quantity of biomass, the project participants may, however, utilize coal as supplementary fuel without any capacity addition to the existing power plant, as permitted by the Ministry of Non-conventional Energy Sources. However, the maximum quantity of coal that can be co-fired is restricted to 25% of the annual total fuel requirement.

Over the approved crediting period of 10 years (2006–2016), the project is expected to accumulate credits worth 259,060 tonnes of reduced CO<sub>2</sub>e.

##### *Sustainable development*

*Social well-being:* The proposed 6-MW biomass-based power project creates employment opportunities in different ways. During project construction for a period of 12 to 18 months, about 200 people will be required for civil construction as well as for plant erection. For regular operations, the plant employs around 48 skilled and 33 unskilled persons on continuous basis. Apart from direct employment the project activity will also have an indirect employment for rural population through biomass collection, storage, handling, and transportation. The number of potential beneficiaries under this category is about 800 to 900 persons.

*Economic well-being:* One of the strategic objectives of the proposed project is to demonstrate the concept of energy planning at a decentralized level to meet energy demand of local area. The project activity does not only improve financial strengths of the rural people, but also enhances their livelihoods by providing greater employment opportunities. The project activity supports the logistics of collection, transfer, and storage of biomass, thus enabling generation of additional income to rural population. Power generated from the proposed biomass-based project will lead to setting up of small-scale industries, thus self employment opportunities could be generated to raise the living standards of the people of the area, thereby reducing migration of rural population to urban areas.

*Environmental well-being:* The project activity utilizes biomass that is locally available for power generation, which otherwise is dominated by burning of fossil fuels such as coal, lignite, and gas, etc. The project will not result in increase of GHG emissions and cause no negative impact on the environment. The project generates real, measurable, and long-term emissions reductions, and ensures conservation of coal and other non-renewable natural resource and mitigation of climate change by eliminating emissions of GHG since biomass is a carbon-neutral fuel. This also reduces open-air burning of unutilized biomass resources, which otherwise results in high particulate emissions as well as contamination of ground water. By eliminating instances of decomposition of biomass residues, the project reduces the release of methane.

*Technological well-being:* The project contributes to the increased utilization of renewable energy sources for power generation and contributes to the energy security of the country. The project feeds the generated power to the nearest sub-station of the state-owned utility, and thereby energy availability and quality of power improves significantly under the service area of the sub-station.

### **Report from the field**

Venkataraya Fibres Pvt. Ltd has set up a 6-MW biomass-based power generation plant at Beechpally village in Itikyal mandal in Mahboobnagar district and proposes to utilize locally available surplus biomass residues such as rice husk, paddy straw, pulse stalks, cotton stalks, groundnut shell, juliflora, castor stems, etc. Electricity generated in the plant will be fed to the grid system of the state-owned power utility, APTRANSCO—Andhra Pradesh Transmission Corporation.

G Narsiha, the sarpanch of Beechpally, emphasized the fact that the company had flouted all norms and started operations without any NOC from the village. The project, which is located close to Beechpally and Thimmapur villages, generates enormous dust particles, badly impacting agriculture in the area and creating health hazards such as acute respiratory problems. The emissions are most severe at nights as they completely switch off the electrostatic precipitator (ESP); so every morning, thick layers of dust settle on fields, houses, clothes, and even on kitchenware. Agricultural lands are turning into degraded lands as farm output is decreasing. We observed that untreated boiler feed water is released by the plant, which goes into water bodies and the fields, and damages the crops.

Ramalu, 49, of Thimmapur village, which almost sits next to the plant, was aggrieved at the polluting environment brought in by the plant. He said that though the villagers were agitating against the company in demand for it to set things right or leave the place, the company kept promising to act and then forgets all about it. “They are habitual liars,” another villager quipped. Ramalu added that the company makes huge profit from the project activity but is not willing to fulfil any commitment.

Contrary to what the PDD claimed about creating employment opportunities of the local people, only 7–8 persons from Thimmapur have got some kind of jobs and that too on contract basis. G Narsiha informed that only 5 persons from Beechpally village are engaged in similar jobs. The project activity has neither created any indirect employment to local people in biomass collection, storage, handling, or transportation. Biomass is being directly procured from rice-mill owners and big contractors while all transportation contracts go to transport contractors. The project activity use waste wood as biomass, which the company is illegally obtaining from the forest nearby.

Pusphamma, 28; Balyaya, 35; Balraju, 25; Bisanama, 60; and other villagers alleged that the company has done absolutely nothing in the name of socio-economic development of the area and the people; it does not even support any work undertaken by the Gram Panchayat. Though the plant is generating electricity using people's resources, the local people have no access to electricity. The only support that comes is in the form of some paltry donation to the Hanuman temple. Villagers emphatically said that unless the plant is shut down, they will sink into deeper crisis.

The project activity has seemingly no scheme to develop a green belt; they have done only some plantations around the project area and that too with alien and useless species such as eucalyptus.

We observed that the local people had no clear idea about the activities of the project, let alone the CDM component of it. The project authority held no public meeting prior to its commencement. People laughed at the mention of any 'clean technology' employed by the project.

### **g. Biomass-based power-generation project for the grid system: Gayatri Agro-Industrial Power Ltd, Kethepally, Nalgonda district, Andhra Pradesh**

#### **What the PDD says**

##### *The project*

The project proponent – Gayatri Agro-Industrial Power Ltd (GAIPL) – has envisaged a 6-MW biomass-based power generation plant at Kethepally village near Suryapet in Nalgonda district. The proposed project would primarily utilize locally available biomass resources such as rice husk, paddy straw, castor stems, pulse stalks, and other renewable woody biomass (like juliflora) to generate electricity for a grid system of the state-owned power utility, Central Power Distribution Company Ltd. Being predominantly an agriculture-based economy, the region where the project is proposed is rich in biomass resources.

The project is expected to earn a total of 237,389 credits over its 10-year crediting period (2001–2011).

##### *Sustainable development*

The project will create employment for both skilled and unskilled rural youth by engaging them in collection and transportation of biomass resources to the plant site from the fields and rice mills. In addition, opportunities are being generated for the people to work directly in the biomass power plant. Thus, the project contributes towards the economic uplift of the poor and alleviation of poverty in the area.

The project has mobilized 250.8-million rupees for the setting up the project, which is a significant investment in a rural area to bolster local development.

The project will act as a nucleus for other economic activities such as setting up of cottage industries, hotels, shops, etc., in the area, contributing to further economic development.

The main resources for power generation are biomass fuels such as rice husk, paddy straw, castor stems, renewable woody biomass (juliflora), and pulse stalks, which are abundantly available locally. These crop residues are generally underutilized / burnt with no commercial value. The plant will now generate commercial value to these crop residues by collecting them straight from the farmers' fields, enabling the farmers to economically benefit from the arrangement.

Since, the project uses only sustainably harvested or surplus biomass material for power generation – which otherwise would have been fossil fuels such as coal, lignite and gas – the project does not lead to GHG emissions, and hence contribute to the mitigation of global warming. The project also reduces instances of open-air burning and decay of crop residues in fields by using them in the power plant, and thus reduces high particulate emissions as well as contamination of groundwater.

The project by adopting efficient utilization of renewable energy sources for power generation contributes to the energy security of the country.

### **Report from the field**

Chikaligudem village, which comes under the jurisdiction of Kethepally village, sits next to the project area and is the worst affected, according to the villagers we met. Among them were Mallapa Lingaya, 52; Ram Kota, 35; Renuka Baratha Mageshwara, 23; Vaja Koteswarya, 45; Sinu Wadesin (Ward member), 32; Venkataya (Ward member), 32; and Virmallaya, 37.

These villagers talked about the water and air pollution by the plant, and said that even drinking water has become contaminated beyond redemption, and the villagers are now forced to buy drinking water. This has put an additional burden on their already badly affected economy. The air pollution caused by the project activity has resulted in at least six cancer (in the nose) cases in the village. Respiratory and eye ailments are now commonplace. The Vijaywada–Hyderabad National Highway has become a death trap, as frequent accidents are a norm now, due to the thick and blinding dust blowing even during the day. Most accidents have taken place right in front of the factory gate, but no victim has ever been compensated. And, at night, villagers can no longer sleep in the open even in the summers for fear of being engulfed by the dust. Thick layers of dust on the roofs of their houses bore testimony to their plight.

Dust has affected the entire area so much that cattle no longer eat the leaves of trees. Initially, the company used to dump ash in the periphery of the village; but as the villagers protested, they now throw the ash straight in to the Musi River, polluting the water used by tens of thousands of people downstream. Even the waste has already percolated to the groundwater in the area.

Dust has also destroyed agricultural land around the factory area, villagers Ramkotayya, Mullp Lingyaa, and M D Shankaryya (all of whom have two acres of land each) alleged. The company took land from the farmers to set up the plant at much below the market price and that too without adhering to any standard: while Janya Kota was paid 34,000 rupees per acre for his 14 acres of land, Pannas Kashya was given 140,000 rupees per acre and Shree Ramalu 180,000 rupees per acre for the nine acres of land they each gave away.

After having devastated the livelihood base of the local populace, the plant has employed only 10 people of the area, that too, on a temporary arrangement in which they earn a paltry 70 rupees per day. All the contracts for biomass procurement go to the rice-mill owners and big contractors. On top of that, all the waste biomass is procured from outside, in sharp contrast to the PDD claim that biomass collection would provide additional livelihoods to the local people and also result in additional revenues for farmers for the biomass generated in their farms. People here said that instead of alleviating poverty, the plant has further impoverished them. The project also seems to have no programme for any developmental activity in the area. Rather the project authority doesn't wish to maintain any contact with the villagers whatsoever. When it commenced, the project did not bother to take any NOC from the village Panchayat; they told the people that they had already taken the required permission from the pollution control board.

The project authority did not even think it appropriate to inform the local residents about the nature of the plant: when it began to trouble the residents in many ways, people organized protests against the project. The project authority, with help from the police, harassed them by registering false criminal

cases against many and arresting a few as well. Kodapurna Chandra Rao (a teacher) and Kota Kotteshwar Rao are two among those who had been thus victimized by the company. Even the local MLA, Vijay Sagar, took the side of the company in tormenting the villagers.

We observed that though the project was said to be biomass-based, coal was used as a fuel abundantly: a fact corroborated by the villagers as well. Looking at the state of the pollution in the area, it was evident that the plant is not using the ESP (electrostatic precipitator) adequately.

#### **h. Biomass-based power project for the grid system: Ind-Barath Energies Ltd, Tikiya Tanda, Mirlyaguda, Nalgonda district, Andhra Pradesh**

##### **What the PDD says**

###### *The project*

Ind-Barath Energies Ltd (IBEL) has set up a 6-MW biomass-based power generation plant in Tikya Tanda in Mirlyaguda in Nalgonda district. This was the first independent biomass-based power plant commissioned in the state of Andhra Pradesh, which prompted other proponents to set up similar plants. The project primarily aimed to utilize locally available biomass resources such as rice husk, groundnut shell, coconut husk, etc., to generate electricity to export to the state grid.

The project will generate 25,022 CERs annually on an average. In its 10 years of crediting life (2000–2009), it is expected to accumulate a total of 250,228 CERs.

###### *Sustainable development*

The proposed 6-MW biomass-based power project will create opportunities for rural employment through biomass collection, storage, handling, and transportation, thus allowing not only increased self-sufficiency for power but also ensuring higher income generation for the local populace. This will also introduce commercial value to agricultural residues, providing extra income for the farmers. The latter will also effectively utilize the barren and uncultivable lands for better use. The proposed project will engage both genders in construction of the project, biomass collection, biomass processing, and during the operation for lifetime, leading to gender and social equity.

One of the strategic objectives of the proposed project is to demonstrate the concept of energy planning at a decentralized level to meet energy demand of local area. So, power generated from the project will encourage many small-scale industries to come up in the area, thus creating further employment opportunities. All this will result in reducing urban agglomeration.

The promoters have existing and effective linkages with the rice-millers located in the district. It would provide a provision to start cooperative bodies so as to achieve equity participation in the project activity. This would benefit not only the project in terms of ensuring a steady supply of the primary fuel, but also the district by increasing income and sharing in the profitability of the project.

The plant will burn biomass locally available for power generation, displacing the use of fossil fuels; hence, the project will not result in increase of GHG emissions and cause no negative impact on the environment. The project ensures real, measurable, and long-term emissions reductions.

##### **Report from the field**

The 6-MW biomass-based power generation plant at Tikya Tanda in Mirlyaguda in Nalgonda district by Ind-Barath Energies Ltd (IBEL) is the first independent biomass-based power plant commissioned in the state of Andhra Pradesh. According to its PDD, the project primarily aims to utilize locally

available biomass resources such as rice husk, groundnut shell, coconut husk, etc., to generate electricity to export to the state grid.

Upon visiting Tikya Tanda, we found that the village is entirely inhabited by the Banjara community. The village headman Sinu Naik, 30, and his father Amarsingh Naik, 70, informed us that there are about 200 households in the village, which comes under the Chitampalli Gram Panchayat.

After the factory was set up, an unprecedented water crisis gripped the village. Waste water from the plant polluted all the water bodies, and even the groundwater level went down. Villagers now have no source of potable water. Dust and fly ash from the plant has made life further miserable for the villagers, as the dust and ash invade everything in sight: water bodies, agricultural fields, food, clothes, roofs, and trees. Even the air the villagers breathe is laden with dust. Persistent cough, asthma, skin and eye ailments, problems in the lungs, and other respiratory diseases are now widespread in the region. Sound pollution is another hazard the villagers are forced to endure, more so at nights.

This factory has not ushered in any economic benefit for the people. No villager was employed by the plant, despite repeated demands. The factory arranged to get biomass from the rice-millers and contractors without involving the local people in the process, thereby depriving them of an economic opportunity. The villagers added that the plant is also using *subabool* timber and even coal as fuel. Since there is no employment at the plant, the claim of bringing in gender equity in the area looks simply ridiculous. Rather, new and increased economic burden on the people has only compounded existing social problems.

This company never consults the villagers for anything nor does it have any programme of local development. Initially, the company had promised to install four hand pumps in the village; but after installing just one, they forgot about the rest. To meet its own water requirements, the plant has laid a pipeline from the Tungapar River, which is sucking a great amount of water. Vira Naik and Ajay Babu – the latter a Ward member of Chinthapalli—alleged that the company made many promises to the villagers when it first came, but hardly honoured any. Local leaders in league with the company officials had got a NOC issued surreptitiously. So, the plant was set up in a fraudulent manner, they said. Sita Naik, who had to let go of her 4 acres of land, was given only 100,000 rupees, at much below the market price. Likewise, many others have been cheated. Ajay Babu also informed that the company had separately acquired 22 acres of land for plantations, which remains barren till date.

The local people have no knowledge about the CDM component of the project or any clean mechanism employed in the plant. They are only aware of the dust, fly ash, and effluents eating into their social and economic spaces.

**Table 1: State-wise spread of biomass-based CDM projects in India (as on 16-05-2011)**

States	Total CDM projects	Number of registered projects	*kCO <sub>2</sub> /yr	**2020 kCO <sub>2</sub> /yr	***kCERs issued
Andhra Pradesh	38	28	1126	13716	3159
Bihar	3	2	102	1057	
Chhattisgarh	25	16	1013	10994	503
Gujarat	18	5	593	6003	52
Haryana	9	3	319	3199	
Himachal Pradesh	1	1	27	266	
Karnataka	26	17	1143	12129	932
Kerala	3	1	49	490	
Madhya Pradesh	16	5	761	7619	78
Maharashtra	44	21	1711	17067	213
Orissa	5		171	1709	
Punjab	34	16	1324	13679	1285
Rajasthan	19	9	886	9831	288
Tamil Nadu	36	17	1703	17446	727
Uttar Pradesh	54	32	2550	26976	862
Uttarakhand	5	2	221	2200	
West Bengal	8	2	169	1690	9
Manipur	1		39	390	
<b>Total</b>	<b>345</b>	<b>177</b>	<b>13907</b>	<b>146461</b>	<b>8108</b>

\*Annual reduction claimed in 1000-tonnes of CO<sub>2</sub>-equivalent per year

\*\*Total reduction to be claimed in 1000-tonnes of CO<sub>2</sub>-equivalent by 2020

\*\*\* Saleable CERs, in 1000-tonnes of CO<sub>2</sub>-equivalent, officially issued by the UNFCCC so far





People talking about bio-mass project in Beechpalli



10 MW Biomass Power Project, Gadchiroli, Maharashtra

## Case 6: Hydroelectric CDM projects

### **A costly bargain for ‘clean development’**

Hydropower projects are prominent in India’s CDM kitty: 188 (as on 29 June 2011) dam projects in various parts of India have applied for CDM status. More than half of these are in the Himalayas, perhaps the biggest ones. The tiny state of Himachal Pradesh to the North of the India alone hosts 57 projects.

How clean are these ‘clean’ projects? Most of the hydro CDM projects in Himachal Pradesh and elsewhere in the India (for instance, Uttarakhand and Sikkim) have led to direct and indirect displacement of local people and triggered of disastrous environmental impacts: around the project areas, mudslides have become more frequent, water table is going down, and perennial springs are drying up. The wholesale damming of important rivers and dam builders’ ownership control over river water inevitably mean less or no water for river valley agriculture. Besides, there are socio-cultural impacts: large number of outsiders flocking to the hitherto closeted mountain villages and irreversibly disturbing the fabric of community life and their sustainable living.

In Himachal Pradesh, a paradise of rich biodiversity and beautiful mountain landscape, there is a plan to set up more than 850 hydroelectric projects. With loans from agencies like the Asian Development Bank and the World Bank, these projects are being established with huge infrastructures involving many private-sector companies. The story repeats itself from one project to another: tall promises of village development and plentiful jobs for the locals during the time of land acquisition, all conveniently forgotten once the project works start.

An area that was once a self-sustained economy, the state of Himachal Pradesh is hit by the skewed notion of ‘development’. It is hard to find a place without an earth-moving machine digging the earth—to build a dream that caters to the rich and the powerful sitting somewhere else. The CDM projects signify neither cleanliness nor development: at least for the local communities, they constitute an unmitigated curse.

For more detailed information on hydroelectric CDM projects in India see <http://www.sandrp.in/>. We append here a short and hitherto unpublished paper on the subject by Himanshu Thakkar of SANDRP.

### **A. HIMACHAL PRADESH**

#### **a. Sawra-Kuddu Hydroelectric Project: Himachal Pradesh Power Corporation Ltd, Sawra-Kuddu, Rohru tehsil, Shimla district**

#### **What the PDD says**

##### *The project*

The 111-MW Sawra-Kuddu Hydroelectric Power Project being implemented by the Himachal Pradesh Power Corporation Ltd (HPPCL) is a run-of-the-river project on the Pabbar River with a small reservoir having a power density of 449 W/m<sup>2</sup>. With its power house at Snail village near Sawra-Kuddu and the barrage at Hatkoti village in Rohru tehsil of Shimla district, the project activity will generate electricity utilizing naturally available potential energy in the form of head and discharges of the river and export the energy to the state grid, part of India’s Northern Power Grid. The natural river bed fall of the Pabbar River, a tributary to the Yamuna River, in a stretch of

approximately 13 kilometres will be utilized as head for the project. The project will deliver annually 328.83 GWh of electrical energy to the state grid.

This process of power generation, without causing any negative impact on the environment, will annually reduce 264,166 tonnes CO<sub>2</sub>e of anthropogenic emissions of GHGs by avoiding any fossil-fuel-based thermal power generation. So, the project will earn a total of 2,641,660 CERs over the 10-year crediting period between 2012 and 2021.

#### *Sustainable development*

The project activity would generate employment for 1000 persons during construction and 25 persons in operation of the plant—for both skilled and unskilled people.

About 80% of the population in the project area depend on the agriculture and animal husbandry with low economic returns. Basic infrastructure such as roads, schools, hospitals, healthcare facilities, and drinking water facilities are very poor in the area. The project proponent has earmarked 1.5% of the project cost for 'local area development' to take up improvement measures in education, healthcare, welfare facilities, preservation of culture, plantation, etc. Infrastructure will improve in the region due to various developmental activities in the vicinity of project area. With these activities quality of life for the local people will improve.

The growing demand for energy in the country if entirely met from the fossil-fuel-based power generation, pollutants such as suspended particulate matter (SPM), sulphur dioxide, oxides of nitrogen, etc., will be emitted. These pollutants cause human health hazards and adverse impact on the soil and ecosystems. Since the proposed project will use no fossil fuel, all these pollutants will be avoided.

There would be minor environmental impacts during the construction of the project activity. In order to offset these environmental impacts, various mitigation measures with financial provisions are proposed in the EIA/EMP. This will neutralize the impacts and is likely to improve environmental performance leading to sustainable development.

The projects would result in utilization of environmentally safe and sound technology in hydroelectric projects. Development of this project would induce setting up of more such projects in areas where renewable sources are yet to be harnessed.

#### **Report from the field**

An project funded by the ADB(Asian Development Bank), the Swara Kudu power plant is coming up on the Pabbar River in the Shimla district. According to the Government of Himachal Pradesh, the total land required for the project is (1) private land – 46.4791 hectares and (2) forest land – 53.9043 hectares. Around 70% of the required private land and 99% of the required forest land has already been acquired for the project. The project proponent, Himachal Pradesh Power Corporation Ltd (HPPCL), has contracted the project out to a private-sector company called Patel and Co.

The environmental clearance to the project was given in 2007 but the local residents say that the project began much before the clearance in 2004, which means that the project is clearly non-additional. When the project was planned, the budget was 648-crore rupees; but now the it has gone up to 1135-crores. The project will inundate 45 villages in 9 Panchayats and the government claims that all the project affected people have been compensated.

The people in the area seethe in anger as they had lost everything to the project and were not even given any decent compensation. Besides the villages directly affected by the project activity, several more mountain villages are going to be severely affected due to digging of tunnels underneath, and yet they do not fall under the PAP (project-affected people) category. Villagers of Bhadot have been living in constant fear of their village collapsing because of such a tunnel right beneath their village.

This area witnessed the massive devastation caused by a mild earthquake a few years back: huge boulders in the mountain above the village still threaten to tumble down anytime. People here compare the tunnel underneath with a ticking time bomb that can explode any moment.

The villages on the banks of the river had to bear the brunt of the heavy construction work: the dust and muck has already affected the production of cash crops like apple, pear, and peach. Villagers say that traditional cultivation of fruits and other crops provides them a comfortable, self-reliant economy, which the project has destroyed, along with their social lives. The entire patch now wears the look of a ravaged landscape.

Traditional water sources too have depleted due to the project activity and women now have to spend more time and cover long distances to fetch water.

## **b. Run-of-the-river hydroelectric project: Satluj Jal Vidyut Nigam Ltd, Bael, Rampur, Shimla district**

### **What the PDD says**

#### *The project*

The Rampur Hydroelectric Project (RHEP) – a 412-MW run-of-the-river project – set up by the Satluj Jal Vidyut Nigam Ltd (SJVNL) on River Satluj at Bael village near the town of Rampur in Shimla district is to be operated as an extension to the 1500-MW Nathpa Jhakri hydropower project. The generated power will be exported to different states under the NEWNE Grid as per the power-purchase agreement between the states and the project promoter. RHEP will consist of six turbine generators, each having a rated capacity of 68.7 MW. The project is designed to divert water from the Nathpa Jhakri power project through a tunnel to a surface power station at village Bael. The power stations at Jhakri and Rampur will be operated in tandem. The project does not require construction of a dam, reservoir capacity, or additional land inundation. The plant will be capable of generating approximately 1770-million units in a 90% hydrological dependable year. The hydro energy generated by the project will replace the fraction of thermal power supplied by the NEWNE Grid to the states. The hydropower project is expected to be completed by 2012.

With a fixed crediting period of 10 years (2012–2022), the project is expected to earn annually 1,407,801 CERs and a total of 14,078,010 CERs.

#### *Sustainable development*

##### *Social and economic well-being*

The project activity will support various measures for supporting the livelihoods of the affected families. These include support for income-generation activities, award of small contracts to local people, hiring of vehicles from the affected families on lease basis, employment in the project for the landless and houseless people subject to their suitability and availability of vacancies. In addition, children of the affected families are being sponsored for acquiring technical skills through industrial training institutions.

The project is operating a mobile healthcare van that regularly visits the project families as well as the local residents ensuring complete care, treatments, and health and hygiene awareness.

Infrastructural facilities in the form of grants for schools and colleges are also being provided apart from financial assistance for small infrastructure development like buildings, school rooms, school playgrounds, footpaths, footbridges, access roads, street-lighting, etc.

The project is also providing support for the construction of a bus station at Rampur, construction of senior secondary school, and widening of road.

The project activity's contribution of power supply towards the NEWNE Grid will help uplifting the social life of the people by ensuring a sustainable and reliable electricity source. The project activity will provide electricity to the households thus alleviating the power shortage which proves to be a hindrance to the economic growth of the region.

Business opportunities will be enhanced as a result of the project activity for manufacturers, contractors, suppliers, etc.

The generation of hydropower also removes a critical barrier of unpredictable supply of fuel and its costs, thus scaling up generation investments.

#### *Environmental and technological well-being*

RHEP is a run-of-the-river project and utilizes the water diverted from the Nathpa Jhakri tailrace. Hence, there are no requirements of a new dam construction to divert the water, de-silting chambers, forest submergence, or any additional land inundation.

The project activity generates clean and green power thus causing negligible emissions of GHGs. If a coal- or oil-fired thermal plant of the same capacity were to be built, the emission of GHGs would add about 12,000 tonnes of sulphur oxides, 6000 tonnes of nitrogen oxides, and about 2-million tonnes of carbon dioxide into the atmosphere each year. Pollution to the tune of this much quantities is offset by building and operating RHEP. This also reduces the dependence on fossil fuels for power generation thus conserving the natural reserves.

The project activity also promotes and supports compensatory afforestation.

The technology proposed for the project activity is environmentally safe and sound.

### **Report from the field**

The Rampur Hydroelectric Project (RHEP) has no dam or reservoir, therefore land is not going to be inundated. That doesn't mean that land is not being taken, however: huge tunnels are being built on the mountains to divert the natural flow of the Satluj River to the turbines several kilometres away, to generate electricity. Villagers say that such activities will affect and drastically alter the ecology of the riverside villages; the project has already started to change the land-use pattern and devastate their agrarian economy.

The local area development authority (LADA), which is implementing the project, has given construction contracts to the GAMMON and PATEL companies. At least 10,000 to 15,000 people have already been affected by the construction activities and 220 families lost their fertile lands to the project. The statutory public hearing was held here as a matter of formality in 2005 in which only 125 people out of a population of 15,000 attended. The project covers seven Panchayats and it seems the Panchayat chiefs have given a NOC(No objection certificate) to the company to acquire land. The entire mountainous landscape has turned into huge dumps of muck and dumping yards for raw materials, or sites for construction of infrastructure, which is of no use to the local people. The usual promises of village development and providing jobs to the locals were not kept and the local people have now no access to the project areas.

The local residents have raised their voices against the project time and again, but there was very little organized resistance. In June 2010, the residents of Averi village had staged a demonstration demanding compensation for the damages the construction work caused to their farms. The protests had to face severe police repression: police beat up the agitators badly, and not even young girls and old women were spared. The activists who lead the protest belong to the political left; they told us that

people's traditional rights over timber in the area were being grossly violated by both the project and the state government: the project was destroying large areas of forests in the vicinity; forests have been cleared for creating dumping sites as well as tunnel laying.

### **c. Allain Duhangan Hydroelectric Project: AD Hydro Power Ltd, Pirni, Manali, Kullu district**

#### **What the PDD says**

##### *The project*

Allain Duhangan Hydroelectric Project (ADHP) being set up by the AD Hydro Power Ltd (ADPL) is a run-of-the-river 2X192-MW hydropower project at the confluence of Allain and Duhangan rivulets – two tributaries of the Beas River – at Pirni village in Manali tehsil of Kullu district. This hydroelectric project, with a reservoir having power density of 6508.4746 W/m<sup>2</sup>, consists of high-head underground power plant that would utilize flows from a combination of glacial snow melt and monsoon rains in these two rivulets for harnessing hydropower.

ADPL intends to function as a merchant power plant with short-term Power Purchase Agreements (PPA) of duration of one to three years. The power generated at the project would be fed into Northern Regional Grid of India. A 220-kV power transmission line (of approximately 185-km length) is proposed to be constructed to evacuate power from the project, to an existing substation at Nalagarh, from where it will be fed to the Grid. The projected energy benefits have been assessed at (Central Electricity Authority approved) 678.18 GWh a year in 90% dependable years.

The crediting period of the project is 10 years, between June 2008 and May 2018. With average annual abatement of 494,668 tonnes of CO<sub>2</sub>e, the project will earn a total of 4,946,680 by the end of its crediting period.

##### *Sustainable development*

Sustainable development through utilization of renewable hydro resources available in the project region

Catering to power demand in northern India

Conservation of natural resources such as coal, gas, and petroleum fuels through use of renewable source of energy, thereby contributing to the cause of environment and mitigation of global warming

Adhering and contributing to India's national policy of promoting clean power

Providing employment opportunities to local community during both plant construction and operations

Development of infrastructure in the region

Catalysing implementation of other similar hydropower projects in India by private players

### **Report from the field**

The Allain Duhangan Hydroelectric Project (ADHP), surrounded by biodiversity-rich alpine forests and meadows, in the picturesque Bias river valley area, has been funded by the World Bank and had its environmental impact assessment in 1996. The central electricity authority gave the in-principle techno-economic clearance only in 2002.

In a glaring display of non-additionality, the Environment and Social Impact Assessment for the project done in May 2003, states (page 7) that "The project would be one of the cheapest sources of power generation in the northern region as compared to alternative of thermal and nuclear generation." Why should a project that is supposed to be the cheapest source of power, be even considered for CDM credits that are supposed to help make relatively unviable projects viable?

The entire project area is fortified and anyone who wants to go in has to take permission from the company officials who are extremely suspicious of unknown faces, as we experienced first-hand. Security guards in uniform patrol the fenced off territory weeding out intruders, and all ingress is strictly controlled through an elaborate system of barriers at every few kilometres and cross-checking the identity of the visitor by contacting 'control' at the main entrance through walkie-talkies. Why they observe such secrecy about the project and why such elaborate security is not clear; maybe the entrenched opposition by some of the local environmental activists made them weary. When we visited in 2010 June, we found that threats and police coercion had taken their toll: not much of the that opposition was visible.

The local people have their orchards and villages inside the project area, which the company has literally enclosed. Though 'access' to the area for the villagers inside the project limits has become easier now because of the road built by the company, no other benefit has come from the project. The locals who live inside the project area describe how their livelihoods are affected as outsiders are not allowed to come in. Most of them earn a living from tourism as it is an area known for skiing and trekking, which on face of such policing by the company has suffered a lot.

The villagers who have orchards inside the company premises find it difficult to transport their produce due to the company barriers erected in their own space. Villagers say that, apart from restricting their movements, the company does seldom interact with them.

The project work has already destroyed most of the pristine meadows and forests in the locality, the villagers said, and this we saw, too: high-altitude meadows locally known as 'thatch' have turned into muck-dumping sites; entire hill slopes are bare, and landslips have started occurring frequently.

## **B. ANDHRA PRADESH**

### **Grid-connected small hydroelectric project: NATL Power Ltd, Yethavakilla, Mattampalli mandal, Nalgonda district**

#### **What the PDD says**

##### *The project*

NATL Power Ltd has set up a small hydroelectric project at Yethavakilla village in Mattampalli mandal of Nalgonda district. The purpose of the project activity is to produce clean electrical energy in a sustainable manner, optimizing the utilization of renewable resource (water). The project activity envisages generation of electricity using the surplus water flow from the Vemuluru Vagu reservoir,

which was built in by Government of Andhra Pradesh for irrigation purpose. The reservoir depends for its water flows from its own catchments and from the irrigation drains of the left canal of Nagarjuna Sagar. The project activity has an installed capacity of 4.05 MW and is envisaged to export 18.75 gWh to the grid owned by the Andhra Pradesh Transmission Corporation Ltd (APTRANSCO) located the outskirts of Amaravaram village, 6 kilometres from the power house switchyard.

This is a small CDM project with 8357.2 CERs an year. Over the 10-year crediting period between 2001 and 2010, the project will earn a total of 83,572 CERs.

#### *Sustainable development*

The project activity will result in alleviation of poverty by generating direct and indirect employment for about 50 skilled and 100 unskilled people during construction of the project activity and 20 people during operations, which will improve economic status of the local people. There are good number of rice mills, agro-based industries, and cement industry in the vicinity of project area. The power generated from the project activity will stabilize the local grid and help in providing uninterrupted power supply to these industries.

The project activity will contribute to the local infrastructure development by construction of approach roads, transportation and communication facilities, etc. The project will generate both direct and indirect employment to the local populace and thereby check distress migration to urban areas.

The project will offset local air pollutant emissions (oxides of nitrogen, sulphur dioxide, suspended particulate matters) and other greenhouse gases, by displacing thermal power generation. By utilizing excess flow available from the Vemuluru Vagu reservoir for power generation, the project will displace burning of fossil fuels such as coal, lignite and gas, thereby emission of any GHGs. Hence, it will not impact degradation of natural resources, cause any health hazard, or have any negative impact on the environment.

The project will result in successful utilization and promotion of environmentally safe and sound technologies in small-scale hydroelectric power sector.

#### **Report from the field**

The project, owned by the NATL Power Ltd, so far hasn't resulted in jobs—any direct or indirect employment—for the local people during the construction phase or afterwards. The road that has been constructed for the project is entirely outside the village limits and the villagers cannot use it. The project in the area prevents people's access to the river, and their only source of livelihood—fishing—is destroyed. They are now forced to migrate to cities in search of work.

In the village Yethavakill, we met the sarpanch, Bhaut Upendur, 24, and later Venkata Rao, 58; Surya Nayak Bunom, 70; Balal Saider, 23; and Pulli Mayaga, 25. The villagers told us that the former sarpanch, Krishan Raj, gave the NOC to this company without consulting the villagers. There was no contract with the company and nor did the Gram Panchayat make any demands.

Here, the people affected by the project are mostly fish workers. At least 400 people from this village and about 1000 people from other 5 to 6 villages were totally dependent on fishing in the reservoir for livelihoods. Now, they have lost their basic source of living, the villagers said. The company restricted entry of the fish workers and, if in cases of violation, charges fines of at least 3000 rupees. People who already lost a lot see such behaviour by the company as 'putting salt to the wound'. People can enter the reservoir for fishing only when the company allows them, which is not more than 4 to 6 days a year. Villagers said that seeds of fish and small fish flow into the plant to perish, but they are not allowed to fish. Fish are also dying in the reservoir due to the project activity, which has polluted the water, and resulted in health problems for the people and their cattle.



After having destroyed the fishing economy of the villagers, the company refused to heed the villagers' demands for employment. All the workers in the project have been brought from other areas, the villagers alleged.

When the plant is in operation, it makes a unbearable din. In the name of local area development, the company provides some support for the local Hanuman temple. Though electricity is generated right in the village, it is not supplied to local residents; the power is exported to far-away Vijaywada via the grid.

**Table 1: State-wise spread of hydropower CDM projects in India (as on 16-05-2011)**

States	Total CDM projects	Number of registered projects	*kCO <sub>2</sub> /yr	**2020 kCO <sub>2</sub> /yr	***kCERs issued
Andhra Pradesh	7	4	152	1553	169
Assam	2		29	301	0
Chhattisgarh	1		23	208	0
Gujarat	2		30	316	0
Haryana	2		37	375	0
Himachal Pradesh	57	26	8377	83693	425
Jammu and Kashmir	4	2	446	4529	
Karnataka	50	22	1296	14034	1120
Kerala	4	2	108	1255	
Madhya Pradesh	1	1	14	180	
Maharashtra	14	5	261	2898	360
Meghalaya	1		298	2984	
Orissa	3	2	270	2613	0
Punjab	9	3	332	3319	299
Sikkim	6	1	8059	7914	
Tamil Nadu	6	2	72	722	
Uttarakhand	16	6	3160	31715	
West Bengal	3	1	52	524	8
<b>Total</b>	<b>188</b>	<b>77</b>	<b>23016</b>	<b>159133</b>	<b>2381</b>

\*Annual reduction claimed in 1000-tonnes of CO<sub>2</sub>-equivalent per year

\*\*Total reduction to be claimed in 1000-tonnes of CO<sub>2</sub>-equivalent by 2020

\*\*\* Saleable CERs, in 1000-tonnes of CO<sub>2</sub>-equivalent, officially issued by the UNFCCC so far

**Small Hydro Projects in India****Fiction for CDM credits**

**Small Hydro in CDM** A large number of small hydro projects from India are being submitted for CDM credits. As we will see from the data presented below, the traffic has gone up substantially in recent months.

Compared to large hydro projects, generally, small hydro projects are considered more people and environment friendly. However, there has been increasing evidence to show that if not taken up properly, small hydro projects can be quite destructive for the communities and environment in the vicinity of the projects.

**Adherence to WCD guidelines should be a must** It may be recalled that a number of organisations around the world had written, recommending that hydro projects applying for CDM credits should be following the guidelines of the World Commission on Dams (even when the dams in question are smaller than 15 m that WCD and ICOLD defines as large dams). From the recent experience, this demand gets further reinforced. There have been some encouraging developments in this regard.

In February 2003 the Federal Environment Ministry (BMU) published standards for CDM and JI projects which included the requirement: *"compliance with standards as they have been defined for the use of hydropower by the World Commission on Dams (WCD) is a precondition for the acceptability of projects regarding the aspects of the environment and sustainability."*<sup>1</sup>

The June 2004 report from KfW, BMZ and GTZ on "Implementation of the WCD recommendations within German Development Cooperation" made the following commitment: *"In processing any dam-building project, KfW follows the rule of verifying its compatibility with the WCD recommendations, even if the dam in question is so small that - like weirs - it falls short of the minimum structural height of 15 meters named by WCD as the boundary below which a dam is no longer considered an object of the WCD recommendations . . . KfW commissions internationally accredited experts to conduct the investigations."*<sup>2</sup>

The experience so far, however, has been far from encouraging about the CDM small hydro and a time has come when requirement of adherence of small hydro to the WCD guidelines must be mandatory.

**Small Hydro under validation** As on June 10, 2006, following small hydro projects from India have been listed on the CDM site for validation.

Sr No	Project	Capacity, MW	Comments deadline
1	Bilangana (Uttaranchal)	22.5	170606
2	Upper Awa (HP)	5	220606
3	Marhi (Kulu, HP)	5	230606
4	Bundled upper Khauli & Krinidhar (HP)	10	020706
5	Baneer Khad & Iku Khad (HP)	2 X 5	020706
6	Janapadu (AP)	1	080706
7	Kallam Spinning Mills	2.4	080706

**Registered Small Hydro** As on June 10, 2006, following small hydro projects from India has been registered by the CDM executive board.

Sr No	Project	Reduction claimed	Date of Registration
1	5 MW Taraila SHP (Chamba, HP) Ginni Global Ltd	25190	040606
2	18 MW Kemphole International Power Corp Ltd	35775	250506
3	Vajra, Chaskaman SHP of Vindhyachal HEP Ltd, Maharashtra	19132	150506
4	Babanpur, Killa & Sahoke SHP	21292	300406
5	Dolowal, Salar & Bhanubhura SHP	21026	300406
6	Lohgarh, Chakbhai, Sidhana SHP	25347	300406
7	3 MW Aleo Manali, HP	13614	140406
8	6 MW Somanamaradi grid connected SHP, Karnataka	16977	110206
9	20 MW Kabini SHP, SKPCL	44968	251205
10	10.25 MW Chunchi Daddi SHP, Karnataka	25490	161205
11	4.5 MW Manjhi SHP, HP	13168	061205
12	5 MW Dehar SHP, HP	16374	180505

**Request for Registration** As on June 10, 2006, only one project has been listed under request for registration on the CDM website: 2 X 5 MW Radhanagari SHP for which parties listed include UK and Northern Ireland, besides India.

<sup>1</sup> [http://www.bmu.de/download/b\\_kyoto\\_leitfaden.php](http://www.bmu.de/download/b_kyoto_leitfaden.php).

<sup>2</sup> <http://www.gtz.de/laender/ebene3.asp?Thema=110&ProjectId=313&Reihenfolge=6&spr=2>.

**Request for Review** Here surprisingly, one small hydro project from India has been listed. The listed projects is a 3X3 MW Manal, Chandani and Timbi HEP of HCPL in Sirmaur district in Himachal Pradesh and the reason given by four requesters is all same: "The use of default deficiencies for coal & gas fired power plants is not acceptable". The review request is clearly on very technical grounds.

**ADB funded small hydro in Uttaranchal** Three small hydro projects in Uttaranchal, being funded by the Asian Development Bank under the Uttaranchal Power Development Project approved in March 2006 have been filed to the Executive Board of the Clean Development Mechanism on May 5, 2006. The Project Design Documents of these projects were put up on the website of the CDM (<http://cdm.unfccc.int/Projects/Validation>). The projects are:

- ⇒ 4 MW Kaliganga-I and 6 MW Kaliganga-II (submitted as a single project),
- ⇒ 10 MW Madhyamaheshwar project (both in Rudraprayag district)
- ⇒ 9 MW Kaldigad project (Uttarkashi district).

A review of these documents by SANDRP (South Asia Network on Dams, Rivers & People) showed that the documents were full of falsehoods, misinformation, contradictions and wrong claims. This became even more apparent after a representative of SANDRP and MATU (a non government organisation of Uttaranchal) visited the villages in the project areas.

Before the comments period for these three projects expired, objections have been submitted by a number of organisations to the DNS, a Dutch company that is acting as Designated Operating Agency for these projects. SANDRP and Matu has also submitted objections. Here we are giving some of the main objections to the validation of these projects to give an idea about the shoddy quality of projects that are being submitted to get credits for under CDM.

At the outset, however, we would like to make it clear, as we made clear in the objections submitted to DNS, small hydro projects like these need to be developed if done in a proper way. However, the way these projects are being taken up now, cannot be an acceptable way as it would be neither in the interest of the local people, the economy or the environment.

**Objections** Some of the problems with the Projects as submitted now are listed below.

1. The project developer (Uttaranchal Jal Vidyut Nigam Ltd for all three projects) and funding agency (Asian Development Bank) have not done any satisfactory consultation with the people in the affected villages. The local people have not been given any of the project documents like the detailed project report, have not been given the environment impact assessment or environment management plan in the language that they can understand. Nor have the people been told about any of the adverse impacts of such projects. This is clear violation of the rights of the people and also violation of the CDM norms for consultation of the stakeholders and the local people. The claim made by the proponents in the CDM PDD in this regard (section G 1) is wrong.

A letter written by the affected people to the ADB and the project developer, given at the end of this article is quite relevant in this regard.

Till this is corrected, the project should not be validated.

2. Section G1 should have given details of the amount of land to be taken for the project, which has not been given. The summary Environmental Impact Assessment of the project (see [www.adb.org](http://www.adb.org)), page 60/63 shows that land will be taken for the projects as follows:

➤ **Kaliganga** totally 6.52 ha of land will be taken for the projects, including 3.66 ha of forest land and 2.85 ha of cultivated land from the farmers.

➤ **Madhyamaheshwar** The summary EIA shows that cultivated land will be taken from the farmers. The project will also need 4.999 ha of forest land, which clearance has not yet been taken.

➤ **Kaldigad** The summary EIA shows that cultivated land will be taken from the farmers. This will cause impact on the livelihoods of the farmers, contrary to what is stated in section G1 that there is not be any impact on

livelihood. The project also needs to take permission for diversion of 4.2 ha of forest land, which has not yet been taken.

This will cause impact on the livelihoods of the farmers, contrary to what is stated in section G1 that there is not be any impact on livelihood. The project needs to take permission for diversion of forest land, which has not yet been taken. The project should have been submitted for CDM validation only after all such required permissions are in place, which is not the case in this project.

3. The PDD repeatedly makes the most shockingly misleading statement (section A.2, A.2 (h), A.2 (i), F.1) that the projects is being taken up "without causing any negative impact on the environment". A project of this nature always causes significant negative impacts on the

A review of these documents by SANDRP showed that the documents were full of falsehoods, misinformation, contradictions and wrong claims. This became even more apparent after a representative of SANDRP and MATU (a non government organisation of Uttaranchal) visited the villages in the project areas.

environment, including due to diversion of agricultural land, due to diversion of forest land, due to diversion of the streams for the projects (thus drying up of the streams till the water return to the stream after tail end channel), blasting for the tunnels and diversion structure, addition of large number of outsiders to the area and the impacts thereof, the disposal of the muck created in the project activity, the laying of transmission lines & roads, noise and dust pollution during construction, increase of possibilities of soil erosion and land slides and so on. The project document should be honest on such impacts and should include management plan for such impacts.

4. The PDD contradicts itself when on the one hand it says in section A.2 (a) that project will generate “cheap hydropower”, on the other hand it seeks CDM credits so that IRR of the project goes up.

5. The PDD contradicts itself when on the one hand it says that the power will be connected to the grid and exported to the Northern region (the PDD also justifies the need of the projects in the name of power demand in the northern region), on the other hand it claims that it will lead to availability of power to the local population and taking up of industries in the area. Experience from other areas where such projects have been taken up show that such claims are baseless and such claims should not be entertained in a fair project document.

6. The PDD makes wrong statement in section A.4.3 that “only fossil fuel fired power stations would contribute to major part of the future capacity additions”, when in reality, a very large number of big hydro projects are planned and under construction in the Northern Indian region. Moreover, the figure of energy shortage of 10.06% in 2004-5 is wrong, as per the report of the Northern Region Load Dispatch Centre, the shortage was 9.01%. The figure of growth rate in peak power of 11.39% given is also wrong. The correct way would be to look at the compound annual growth rate over the last decade, which figure is 4.7%.

7. The claim made in section A.4.3 that National Electricity Policy of 2005 “favoured establishment of large thermal based power plants and large hydro power plants” is also very misleading. A number of sections (e.g. section 5.2.20, 5.12.1, 5.12.2) of the National Electricity Policy (available at [www.powermin.nic.in](http://www.powermin.nic.in)) are actually about renewable energy sources, including small hydro projects. The proponents are either ignorant about this or are making misleading claims.

Moreover, there is a separate ministry for non conventional sources of energy, at whose website ([www.mnes.nic.in](http://www.mnes.nic.in)) one can see the slew of incentives provided for SHPs. By not mentioning these, the proponents are trying to mislead the CDM board.

8. The claim made on section A.4.5 that “the proposed project activity is not a debundled component of a large project activity” is not correct as the project is very much

part of the larger ADB funded Uttaranchal Power Project, available on ADB website ([www.adb.org](http://www.adb.org)).

9. It is wrongly stated in section B.2 in PDD of Kaliganga Project that the project is located in Himachal Pradesh state, when the project is in Uttaranchal state.

10. It is stated in section B.3 of PDD that the Plant load factor of such projects is 20.7% generally. If that is the case how are the proponents claiming that for the proposed Kaliganga projects, the PLF would be 75.76%, 68.93% for the Madhyamaheshwar project & 86.76 % for the Kaldigad project?

11. The description under title “barrier – Royalty charges” given in section B.3, is irrelevant as that description is for Independent Power Producers and the proposed projects are not IPPs.

12. The claims under title “Regulatory Barrier” given in section B.3, that the IRR will work out to 6.54% for the Kaliganga projects, 5.94% for the Madhyamaheshwar project and 7.79% for the Kaldigad project are wrong, as they do not take into account the incentives that the central govt gives for small hydro projects. The Central govt incentives are described at <http://www.mnes.nic.in/frame.htm?majorprog.htm>. Such incentives include capital subsidy of upto Rs 150 million per project. In the case of Kaliganga since there are two projects in all, the capital subsidy available would be upto Rs 300 million. If all such incentives are taken into account, the IRR would be much higher.

13. What is stated about “Regulatory barrier” is also not correct. The Uttaranchal Electricity Regulatory commission, in its order dated Nov 11, 2005 (see: <http://uerc.org/Order1to25.pdf>) has set up a number of important norms for tariffs of power from small hydro projects in Uttaranchal upto 25 MW.

14. The claim in section B.3 that project is additional is not right. The summary EIA of the project (see [www.adb.org](http://www.adb.org)) says on page 60 that groundwork for the Kaliganga projects started in 1982. Moreover, since these are ADB funded projects, the finances for the project, including its deadlines and implementation mechanisms are fully in place, and the project would go ahead even without CDM credits.

15. In Section E.1.2.4, the project considers generation mix of the N region for the baseline emission calculations. However, the project is in Uttaranchal and such projects should consider the state level emission calculations. Moreover the estimation of emission factor of 839.87 tCO<sub>2</sub>/ GWh seems on higher side.

16. The statement in section F.1 that “The construction of this project neither alters nor contributes to raising of water level in the stream nearby” is Totally false. Each of the four projects indeed would divert the whole of the streams, completely drying up the stream downstream

from the diversion point, till the water returns to the stream after tail end channel. A number of such totally false statements (e.g. there is insignificant aquatic life, there will be no impact on the same, there is no risk to health of the people, there is no risk of soil erosion, the power channel will improve the soil erosion at a later stage, etc) are made in this section. Such falsehoods cannot be accepted for any project.

Under the circumstances, the three projects in current form should not be validated.

**Allain Duhangan HEP: Agitation for over 3 years**

The 192 MW Allain Duhangan project in Kulu district in Himachal Pradesh has seen an agitation going on for over 3 years now. The project cannot even pass the additionality criteria of the CDM as the project is being funded by the International Finance Corporation, the private sector arm of the World Bank and the funding for the project had already been secured long back. The Environmental impact assessment of the project is shoddy (see [www.sandrp.in](http://www.sandrp.in) for detailed comments), the public consultation has been far from satisfactory, the local people's big concern about diversion of the Duhangan river and many other related issues remain unaddressed and cases have been filed in the High Court. And yet such a huge hydro power project has been submitted for credits under CDM.

**Bhilangana SHP: Serious problems** Another small hydro projects that has been submitted for the CDM validation from Uttarakhand is the 22.5 MW Bhilangana Hydro Power Project. The deadline for submitting

comments for this project as listed above it June 17, 2006. An intense agitation against the project has been going on in Uttarakhand over the last two years and more. The project has already seen human rights violations of the local people, including false cases, arrests, threats, and so on. The PDD of this project again is very inadequate, misleading and makes a number of wrong statements.

**Larger Questions** As said at the outset, small hydro projects are relatively less destructive than large hydro. There is also greater possibility of transparent, democratic planning and decision making in such projects. However, this is possible only if projects are taken up in a transparent, participatory way. As we can see from the few examples given above, the situation is far from acceptable in this regard. If such projects get through and get carbon credits, as they seem to be getting without great trouble, then they will not only bring bad name to small hydro, they would also bring bad name to the CDM.

UNFCCC must immediately put in place a credible review of the small hydro projects taken up so far in India and possible in other countries and in the meantime put on hold all CDM related validation, registration, certification or trade of carbon credits given to such projects. UNFCCC would also possibly have to review the whole process and make following of WCD guidelines for such projects compulsory in future.

SANDRP

## LETTER FROM AFFECTED PEOPLE ABOUT CONCERNS REGARDING THE PROPOSED SMALL HYDRO PROJECTS IN UTTARANCHAL

The people affected by the proposed Kaliganga and Madhyamaheshwar projects in Uttaranchal have written to the Asian Development Bank (funder for the projects) and Uttaranchal Jal Vidyut Nigam (developer) about their concerns regarding these projects. We reproduce below the main concerns expressed in the letters written in Hindi that have already been sent to those it is meant for, including the English translation of the same:

Respected sirs,

We are affected people from the area of the above mentioned projects. So far you people have called just one meeting on Feb 27, 2005. In that meeting, no information was given about the impacts of the project. Just some oral discussion

was done about the benefits of the projects. Sometime thereafter a six page pamphlet was given to head of gram panchayat kotma (given some scant information about R&R aspects of the project).

We have been given no information about the impacts of the project in the project area.

- What will be impact of the project tunnels on the houses, water sources, etc?
- What will be the exact place and mode of disposal of the muck created by the project?
- What will be the impact of this on the environment of the area?
- What will be the impact on the temperature (micro climate) of the area?
- What will be the impact on agriculture and horticulture in the area?
- What will be the impact of the project on the wild life of the area like dears, bear, antelopes, leopard, *Kakad* (Hindi name of the animal whose English translation is not known to the translator)?
- What will be the impact of the project on water birds in the river like egrets, ducks, water hens and fish in the river?
- What will be the social and economic impacts?
- How many labourers will work at the site?
- How many people of the local area will be able to get employment?
- What will be the impact on women's movements?

**To get information on all such issues is the right of the affected people. How can you go ahead with the project violating this right of the people? In the name of development you cannot neglect the environment of the area and rights of the people. This is clearly a fraud on the people. All this raises serious questions about the intentions and working of ADB and the UJVNL.**

**Copies of the detailed project report, the full environment impact assessment report and other related documents should be provided in Hindi to the affected villages. These documents should be explained to the people in all the affected villages by independent persons. At least a month after the above two steps a public hearing be conducted in villages affected by both the stages. The public hearing should be conducted by independent experts. Till all the above four steps are completed satisfactorily, no work should be done on the projects and no money should be given to the projects.**

- What will the impact of the project on the temples?
- What will be the impacts on water sources?
- What will be the impact on water flow in the river?
- If outside people come here, what will be the arrangement for their stay, food, water supply and sewerage?
- What will be the impacts of all these on our culture?

To get information on all such issues is the right of the affected people. How can you go ahead with the project violating this right of the people? In the name of development you cannot neglect the environment of the area and rights of the people. You have not done any meeting about stage II

project either, but we have learnt that you have shown the meeting as meeting for both the stages. This is clearly a fraud on the people. The rights of the stage I project have been violated. All this raises serious questions about the intentions and working of Bank (ADB) and the Corporation (UJVNL).

In this context we demand that:

1. Copies of the detailed project report, the full environment impact assessment report and other related documents of both stages should be provided in Hindi to the affected villages.
2. These documents should be explained to the people in all the affected villages by independent persons
3. At least a month after the above two steps a public hearing be conducted in villages affected by both the stages.
4. The public hearing should be conducted by independent experts of the country.
5. Till all the above four steps are completed satisfactorily, no work should be done on the projects and no money should be given to the projects.

### Signed by:

- ⇒ Murlidhar Bhatt (President) Gram Panchayat Kotma
- ⇒ Chandrasingh Rawat (member, group panchayat, Kotma
- ⇒ & 50 others from the Kaliganga project area,
- ⇒ Kunwar Singh Rawat, President, Giriya Panchayat
- ⇒ Mrs Anjana Rawat President-Chunni-Mangala Panchayat
- ⇒ & 6 others from the Madhyamaheshwar project area.



Devgad Hydroelectric Project



Allain Duhangan Hydroelectric Project

## Case 7 : Forestry CDM Projects

### **The Fraud by the Name of ‘Carbon Forestry’**

Carbon forestry, like other carbon-trading projects, is a well-designed and benign-looking fraud that fulfils a simple purpose: it gives the corporations in the North a 'green' excuse not to reduce their very real emissions at source. The same corporations enter into 'strategic' partnerships with their counterparts in the South, the local governments are bribed and duped, and affected community members are told packs of lies. At the end, corporations backed and subsidized by the state enclose peoples' commons to create new carbon sinks. This process is overseen by the World Bank and a host of big NGOs like the Forest Trend who peddle ecosystem services trade, including carbon forestry. Experiences from a host of countries bear this out; there are numerous instances of monoculture plantations filling up precious grasslands and rainforests in Brazil and other Latin American countries, in Africa, and in Asian states like Indonesia and Malaysia.

Carbon forestry is a fraud because there can be no reliable scientific estimate of any forest's carbon-sequestration capacity, once again mainly because the real forests are living dynamisms subject to sudden changes, which can upset calculations any time. Deforestation, forest fires, encroachment for development works, these all result in massive amount of emissions instead of carbon storing, and there are always chances that a forest may store and release carbon in equal proportions. To ensure that carbon remains safely stored in forests one has to, in turn, ensure that forests are not 'used' by humans at all, and prevent all natural calamities that can result in forest destruction. So far, the trend was to create commercial monocultures for future logging and claim that these also double as sinks as long as they are not cut and, therefore, they earn credits.

While what the World Bank and Indian government (and many others) are trying to do is to create sinks out of natural forests through the REDD/REDD Plus (Reducing Emissions from Deforestation and forest Degradation) scheme, the logic being that conserved and protected forests store carbon and earn credits; and if these are sold in the market, the money goes to the communities who will then stop using forests. REDD is yet not official, but anybody is free to sell credits in mainly the American voluntary market.

Apart from two private REDD Plus (there can be more) projects and several voluntary 'offset' projects, India at present hosts 9 LULUCF (land use, land-use change, and forestry) CDM – or, simply, 'carbon forestry' – projects in 10 states. Besides the REDD project in East Khasi Hills in Meghalaya, we cover here one of the largest and definitely the most publicized CDM: the ITC project in Khammam district of the state of Andhra Pradesh.

For a clearer perspective, two papers are added as supplement to this chapter: the first a 2009 paper on India's Carbon forestry programme in general (previously circulated as NFFPFW position paper), and the other and more recent one on the so-called pilot REDD plus project in the Khasi Hills in Meghalaya. The REDD paper has been shortened for inclusion in this report; the recent 2011 issue of *Mausam* carries the longer version.



## Reforestation of severely degraded landmass: ITC Social Forestry Project, villages in Khammam district, Andhra Pradesh

### What the PDD says

#### *The project*

Under the project activity, the degraded lands – covering an area of 3070.19 hectares – owned by the rural poor (tribals) are developed for raising monoculture eucalyptus plantations. The Bhadrachalam unit of the Paperboards and Specialty Papers Division (PSPD) of ITC Ltd is the primary developer of this project, initiated through the local NGOs. The participating NGOs are Action for Collective Tribal Improvement and Vocational Education (ACTIVE); Human Organisation for Poverty Eradication (HOPE); Society for Health and Agriculture Department (SHADE), Society for National Integration through Rural Development (SNIRD), and Society for Elimination of Rural Poverty (SERP)—all promoted by the Government of Andhra Pradesh. These bodies identified the tribal beneficiaries and grouped them into a *Sangha* (users' union/society) for taking up the plantation activity. Apart from providing finances for the project, ITC also distributes planting stock nurtured from hybrid clonal plants of eucalyptus developed at ITC's own R&D Centre in Bhadrachalam. The species considered for carbon sequestration are *Eucalyptus tereticornis* Smith and *Eucalyptus camaldulensis*. These species have not exhibited any invasive behaviour, as natural regeneration is absent. These are also not considered as genetically modified organism.

With its headquarters located at Sarapaka village, about 5 kilometres from Bhadrachalam town, the project activities take place in the tribal belt of the catchment area of river Godavari, spread across the following 14 mandals of Khammam district:

Aswapuram  
Chandrugonda  
Kunavaram  
Velerupadu  
Aswaraopeta  
Dammapeta  
Mulakalapally  
Kothagudem  
Bhadrachalam  
Dummugudem  
Paloncha  
Burgampahad  
Kukunuru  
V R Puram

The project targets to sequester 58k tCO<sub>2</sub>eq each year, and a total of 1128 tCO<sub>2</sub>eq for the entire project period up to 2020.

#### *Sustainable development*

*Social well-being:* The present project activity will lead to strengthening of the village level institutions that works towards empowering the poor and the deprived. The institutionalized mechanisms for the implementation of the project activity through *Mandal Samyakhya* would be responsible for bringing about social well-being to the poor and marginalized farmers in the region.

*Economic well-being:* The project activity would result in the alleviation of poverty by generating additional income from the proceeds of the wood sale. The initiatives by ITC to share knowledge and

assist the farmer with agricultural/forestry practices would enhance the income-generation capability of the farmers and thus lead to improvement in living standards of the farmers.

*Environmental well-being:* Plantations, once established, would act as a carbon sink. In addition, it would also act as a man-made green-belt and bring about gradual environmental improvement to the region. Further, as the project activity is undertaken on degraded land, the plantations would help control soil erosion, which, in turn, would improve soil and vegetation cover in the region.

*Technological well-being:* The project activity uses clonal technology, which is environmentally sound and cost-effective. Taking advantage of this activity, the local tribals, who lack the technological expertise, will be able to harness information and knowledge and benefit from the degraded land by using this technology. This technology would also foster continuous improvement in productivity.

### **Report from the field**

In the vast spread of the project area along the River Godavari and the River Kinnerasani, fishing is one of the primary economic activities of the locals, besides farming. The important crops grown in the district are millets, maize, red gram, groundnut, cotton, and chillies. Paddy is grown in the upland areas purely under rain-fed conditions. The *Khariff* paddy is cultivated between June and December and *Rabi* paddy between November and May. The cultivation is mainly dependent on river channels, wells, tube wells, and tanks. The soil quality is favourable for cultivation purpose.

We visited many villages in the Khammam district that come under the carbon forestry project by ITC, and found the following.

#### *Tippampally village, Chandragonda mandal*

Pepped up by the ITC initiative, Venkesteshwar Rao, 65, of Tippampally village took to eucalyptus plantation on 7 acres of his land in 2002 leaving aside groundnut farming that he had been doing traditionally. He was struck by the slogan of ITC – “less labour, more profit” – as he earlier had difficulties in meeting the labour demands in his fields. He also got the eucalyptus seeds on a 50% subsidy. He harvested the first crop of eucalyptus after three years, in 2005, and sold it to ITC for 200,000 rupees. But, today Rao regrets having the switch-over to eucalyptus. He said that this was a sure-shot loss-making proposal, which he could not understand in the beginning. He used to earn more by growing groundnut. Not only that, now he cannot grow any plant besides eucalyptus on his fields, as the latter sucks all the water from the ground and turns the soil infertile for other species, decreasing productivity each passing year. He informed us that he was able to run his family today only because of the six acres of land that he owned separately where he grew mangos.

There are at least 15 farmers in the village who have switched to eucalyptus plantations, which now cover about 100 acres of land. Rao told us that if people directly sell the produce at the ITC factory, they are paid 2200 rupees per tonne; if ITC provides the transport, then they get 1800 rupees per tonne. A farmer has to invest at least 10,000 rupees a year on each acre of land for eucalyptus plantation, which is higher than other crops. Farmers somehow manage till the first two harvests; but by the third harvest, they go broke.

Even the village Van Suraksha Samiti (forest protection council) under government’s joint forest management (JFM) programme is involved in the plantation of eucalyptus for which 50% of the cost is met by the government—all in the interest of the ITC and at the cost of the health of the forest.

Farmers are in no way stakeholders in the profits ITC would be reaping from carbon trading, and nor has any villager benefitted in any way from this project, villagers said. We observed that the company has no programme for socio-economic development of the region.

*Rampuram village*

In Rampuram, a tribal village in Pengadappa Panchayat, we met several farmers who have taken to eucalyptus farming for ITC: Pulchalal Srinivas (5 acres), K Sayaanarayana (1 acre), Chitna Chuchaya (3 acres), Chita Fullya (2 acres). All these people have already harvested once. Policharls Sriniwas (3 acres) and Palicharla Jinnan (3 acres) are in the first phase of the plantation.

All these farmers got eucalyptus seeds at 6 rupees per seed (no subsidy) and planted 200 seeds in one acre. There is an understanding that ITC would buy the harvest, but the company is not ready to get into any formal agreement. Attempts by the villagers to organize meetings with the company did not succeed. The farmers said they had to spend at least 30,000 rupees per acre in this plantation. The investment was not so much when they grew Jowar, pulses, and paddy. They are not happy with their decision to switch to eucalyptus: they said that even though the land is of relatively poor quality, irrigation facility is excellent in the area, making it ideal for food grains. Eucalyptus plants do not need to be watered as they suck so much water from the ground. At least 10 farmers in the village have already gone back to traditional crops and cotton, as they felt that eucalyptus was not going to sustain in terms of returns to the farmers. Cotton was a better option, they said.

However, there were farmers we met who had just taken to eucalyptus after ITC approached them: Kokadpu Bhaskarrao, Kokadappu Ramarao, Fulsheela Ramkrishna, S Ramarao, and Fualsheela Sakkhyam.

There was no sign of any socio-economic development activity by the company in the area.

*Penegudap village, Kotagudem mandal*

We met Ajmal Khan, who had taken 3 acres of land on lease from one Yellamelalla Prasad to raise eucalyptus, on an agreement that the profit would be shared equally. He bought the seeds without any subsidy and planted 1200 seeds per acre while the total investment for each acre turned out to be 40,000 rupees. After three years, when he harvested the first crop of eucalyptus and sold it to ITC, he found that he, in fact, incurred a net loss.

ITC, on the other hand, was not keen to advance any money to him, and nor did they show any interest in discussing the farmers' problems. Although one officer from the company comes to meet the farmers, she only talks about issues of buying and selling their produce strictly in a trader-like fashion, the villagers alleged. About 50 people in the village have taken to eucalyptus plantation, leaving traditional farming, and they all are perplexed about whether they took the right decision or not. In the absence of any help from ITC, a private company called BASIC has taken advantage of the situation and is now providing loan to the farmers at 7% interest rate, which the farmers find difficult to pay back. People have demanded that ITC should rather offer such loans directly, but the company does not pay any heed.

ITC has no programme for any local area development work or general welfare in the area.

*Kotigudem village, Kotigudem mandal*

The Kotigudem village is inhabited mostly by the Koya tribe, among a few others. Padma Sayam, 24, a tribal youth, told us that he took to eucalyptus plantation on his 6 acres of farm land two years back; he invested 12,000 rupees from his own savings, only to get disappointed with the output. He said that the soil there was not at all conducive to eucalyptus plantation or any such cash crops. So, he had to abandon whatever he had planted and return to the traditional rice crop.

About 10 other farmers in the village had the same story to repeat. They all rued the fact that whatever they had invested to grow eucalyptus after being lured by ITC had gone down the drain. However, some felt good about their timely decision to stop growing eucalyptus. ITC had in fact done a soil test but misguided them by saying that the soil was good for eucalyptus. The company did not even consider compensating the farmers after they suffered losses. All of them have now gone back to paddy.

People here have no idea about the concept of carbon trading and how much ITC is earning out of this. It will be interesting to find out if ITC continues to show Kotigudem village as part of the project-activity area and counting carbon credits against it!

*Kolgapally village, Kotigudem mandal*

Mandal Nageshwarrao, 50, in village Kolgapally told us that he was growing eucalyptus in 2 acres of land in which he had planted 3000 seeds. He got no subsidy for purchasing the seeds. He said that ITC had no contact with the farmers here as they sell their produce through middlemen. Nageshwarrao gets 1600 rupees for a tonne of the eucalyptus wood, which is much below the local market price. After investing 20,000 rupees, the return from one harvest after three years is only 35,000 rupees. Without resources, he now finds it difficult to switch to other crops. The project has in many ways impoverished him; but, ironically, the project proponent is not at all involved in the entire process. Nageshwarrao informed that at least 10 more farmers in the village are engaged in this plantation, and they all depend on middlemen and brokers.

*Vadigudem village, Kotigudem mandal*

In the village Vadigudem, Chinaballaya, 37, a Koya tribesman, planted eucalyptus on his 4 acres of land after procuring 3000 seeds on subsidy. He had to wait for 4 years for the first harvest, which, sold to ITC, fetched 47,000 rupees at the rate of 1800 rupees per tonne. He cannot calculate the amount he has invested, but says 'about 20,000 rupees in the first phase'. Chinaballaya complains that the ITC is not at all ready to sign an agreement with him. The company also refuses to give him some advance money so that he can look after the plantation better. He spent all the money he got from the first harvest in his son's education, and now works as a wage labourer to run his family.

In the village, 40 farmers are engaged in eucalyptus plantation on a total land area of 160 acres. The ITC never convenes any meeting with the farmers to discuss their problems, apart from the one meeting in Bhadarachalm in the beginning that Chinaballaya remembers as being the one in which they were given a good lunch and 50 rupees per person as travelling cost. In that meeting, the ITC officials had motivated and urged the farmers to grow eucalyptus in their farm land and sell the harvest to the company. Considering the unsustainable returns from eucalyptus and the long gestation period, farmers in the village are now rather more interested in the Yidipappu plant, as that can get them more profits: 3 acres of Yidipappu plantation gets them 50,000 rupees a year in the open market. So, why should they wait for 3–4 years for the same amount, says Chinaballaya!

Besides, the Forest Department and the ITC have jointly raised 40 acres of eucalyptus plantation in this village under the social forestry scheme. This plantation, which is on the road side, has destroyed the natural vegetation and forest there. Moreover, the Forest Department is using the local tribal people as daily-wage labourers in this plantation without paying them the stipulated wage.

*Mangapet village, Kotigudem mandal*

About 50 farmers in village Mangapet started eucalyptus plantation after ITC promised to buy the produce. Almost all the farmers are small land-holders with holdings of 3–4 acres. Prasad Satidam, 35, told us that although it had been more than 3 years since he planted the species on his 3-acre land, the company was asking him to wait for one more year for the harvesting. He has already invested 12,000

rupees on this, and now finds it difficult to wait any further. ITC insists on not signing any agreement with any farmer in the village, and nor is it open to the idea of issuing cash advances to any farmer. Satidam survives on the paddy crop he is doing on the 5 acres of land he owns separately. But, most other farmers are in utter despair as the whole situation is so uncertain.

The Van Suraksha Samiti under the JFM scheme of the Forest Department used to receive 1.5-lakh rupees a year from the government for forest protection and management of the 250-acre forest stretch. The fund somehow stopped coming in 2009. The Forest Department had started eucalyptus plantations through the Samiti on 25 acres of forest land in 2008. Villagers said that the fund that was coming for forest management was stopped at the behest of ITC so that the Forest Department could have some deal with the company for eucalyptus plantations on forest land. This has directly affected the villagers as the forest they'd traditionally depended upon now started to degenerate.

*Malkara village, Dhammapeta mandal*

In the tribal village of Malkara, Ankata Brahmaya, 43, said that he had already harvested eucalyptus twice on his 3-acre land. He had to pay 6 rupees per seed when he bought them and was told that this was on subsidy as the price of each seed was 10 rupees—he was clearly cheated. After having invested 30,000 rupees, the first harvest after 4 years got him 45,000 rupees. On the second harvest, after another 4 years in 2008, he got 50,000 rupees. Brahmaya looked clueless about why he entered this mess of eucalyptus plantation as it does not help him feed his family!

The second time around, said Brahmaya, a middleman had already landed in the village to buy the produce; it was not sold to the ITC directly. The company doesn't listen to the demand of the villagers for written buy-back agreements or entertain requests for cash advances. The villagers informed us that a NGO named ACTIVE conducts ITC's awareness programme among these tribal people about eucalyptus plantation; the NGO is active in villages Pedgolugudem, Lapuram, Deepugudem, Rcharpalli, and some others. The NGO is more or less acting as an agent for the company, the villagers said. When motivating farmers to take up eucalyptus plantation, the ITC assures them of transport and other facilities; but once the plants are cut, farmers are made to fend for themselves.

The ITC doesn't even provide adequate information about the possible impacts of eucalyptus plantation on their farm land: the villagers are in trouble now as they want to get back to their traditional crops and find that the land would take at least a year to rejuvenate for that. However, all the farmers have now stopped growing eucalyptus and have switched back to corn.

*Peddagulagular village, Dhammapeta mandal*

Yogunand Rao in the village Peddagulagular has been engaged in eucalyptus plantation on his 2 acres of land and has already had one harvest, which he sold to a middleman dealing with ITC. He observed that the land had degraded after the first crop and the plants demand more water now. The ITC continues to encourage the villagers to go for eucalyptus in place of the traditional crops. All the farmers engaged in plantations, however, now rue their land going degraded and the top soil being washed away. None of them, however, has any idea about the carbon trading the company is engaged in and the profit it stands to mint, out of the farmers' hard work and at the cost of an impending disaster.

*Chingolagudem village, Dhammapeta mandal*

Marthal Matthala, 40, of the village Chingolagudem has been engaged in eucalyptus plantation since 2001/02, on his 8 acres of land in the Pedulgudem village. From the first harvest in 2003/04, he made 14,000 rupees per acre after spending 10,000 rupees on each; on the second harvest, he got 25,000 rupees after investing 20,000 rupees on each acre of plantations. Today, Matthala feels sorry about his decision to switch from rice and corn to eucalyptus, as the profit margin in eucalyptus is negligible and that too comes after waiting for 3 to 4 long years.

The NGO named ACTIVE is promoting eucalyptus here too. In this village, nearly 200 acres of land where earlier a natural forest stood is now under eucalyptus. The NGO, which works out of the Sarpaka village, provided labourers for the plantation at 70 rupees per day. The NGO is also using the NREGS scheme for plantations on another 150 acres of forest land where the labourers are paid a mere 40–45 rupees per day. Besides, ACTIVE is engaged in eucalyptus plantation on some private lands.

The villagers Thota Venketesh, Machalu Ventketesh, Khawarti Nagesh, Resi Naglu, and Rahala Shiddager said that all the farmers are now looking for ways to abandon eucalyptus plantation and get back to paddy and corn.

*Aravapally village, Kukunuru mandal*

People belonging to the Koya tribe inhabit the village Aravapally. Malkandam Ramlu, 79, told us that of the 2 acres of land he owns, he planted eucalyptus on one-and-a-half acres. He had invested 5000 rupees, but couldn't wait for the long gestation period for the paltry return. Therefore after two years, he cut down all the trees and used them as firewood. His brother and other villagers like H Sirmaya, Kharam Satyam, and Payam Randu also narrated similar stories. The eucalyptus plantations, which covered about 15 acres of land in this village, are almost bereft of trees now.

*Laxmigudem village, Kukunuru mandal*

Laxmigudem is another village of the Koya tribe where ITC and its partner NGOs claim to have implemented the CDM project. Villager Sunav Ramalu, 35, informed us that one official (he is not sure whether he was from ITC or some NGO) came to him to sign a deal before he started growing eucalyptus on his 2-acre land. This person had first claimed 1100 rupees from Ramalu as consultancy fees. Then, he took a demand draft of 2200 rupees from Ramalu to process a loan of 150,000 rupees towards the expenses of eucalyptus plantation up to the third harvest. Although the official handed over a cheque of 50,000 rupees to him in the end, the cheque, the agreement, and the addresses the official had provided turned out to be fakes. Many other farmers have also fallen into the trap, and the 'official' has not appeared again in the area since then.

The economy of the 125 Koya families in the village is shattered, and the investment for growing eucalyptus keep them worried all the time. Neither ITC nor any of its partner NGOs cares!

*Teklaboru village, Kunavarm mandal*

In the village Teklaboru, Kogur Shiva, 45, the Mandal secretary of the Communist Party of India, raised eucalyptus on 32 acres of land of which he owns 7. The remaining 25 acres he has taken on lease from others. He gave us an account of how he invested 1,040,000 rupees and got in return an amount of 2,016,000 rupees after three-and-a-half years. The profit margin is going to come down yet further on each harvest, he said.

ITC is not willing to sign any agreement with him, despite the comparatively larger size of his plantation, which makes the future extremely uncertain for him. What fuels his worries is the ever-escalating lease money he has to shell out. He has been advising his fellow farmers to raise eucalyptus only on degraded land rather than wasting any fertile land for such insignificant returns. But, the company keeps sending agents to motivate farmers to take up plantation on any land they have.

Kogur Shiva informed us that in the Kunavarm mandal, eucalyptus is being raised on about 2000 acres of land, and on 500 acres in the Kunavarm town alone. However, without proper knowhow of eucalyptus farming, farmers in many villages are in a state of utter confusion and therefore prone to suffer huge losses. There are no provisions for bank loans or crop insurances in eucalyptus plantation, which makes the smaller farmers extremely vulnerable to risks. He regrets for not having gone for traditional crops

such as chilly, tobacco, and paddy, which would have ensured him much better returns annually. Moreover, the eucalyptus plantations in the region have started to affect the traditional crops.

Shiva said that about five years ago, the ITC had held a meeting with the farmers; but that was all about coaxing them to get into eucalyptus; there was no mention of climate change or carbon trading.

*Sarapaka village, Bhadrachalam mandal*

We met Chanu Nayak who holds a degree in chemical engineering and is the Sarpanch of Sarapaka village. He informed that the farmers in the village are engaged in eucalyptus plantation, which covers an area of 200 acres. The Van Suraksha Samiti (VSS), formed under the JFM scheme of the Forest Department, has been growing eucalyptus on about 350 acres of forest land. While the farmers buy the seeds at the rate of 5 to 8 rupees per seed, the VSS gets all the seeds for free from the government. Eucalyptus plantation on farm lands in the village had started in 1996 in which the farmers earned a paltry 1 to 2 rupees per plant at each harvest. However, for the past 3 years, farmers are withdrawing from eucalyptus plantation on their farm lands.

Initially, ITC had convened a meeting with the farmers, urging them to go into eucalyptus, and had promised 2000 rupees per tonne of harvest. They said this would make the farmers millionaires. Farmers fell into that trap and now had to wait for 3 to 6 years to sell the harvest for a pittance. The self-reliant farmers have thus turned into wage labourers.

This is an area protected under the Schedule-V of the Indian Constitution, where, according to the law, tribal land cannot be taken for any industrial activity. However, the law is being brazenly violated and the Forest Department—hand-in-glove with the company—has given away 350 acres of forest land to the company for commercial reasons. The Integrated Tribal Development Authority (ITDA) had gone to the court challenging the hand-over of 89 acres of tribal land in the scheduled area. The court dismissed the case by advising ITC to pay 1,000,000 rupees for tribal development in exchange for the land.

This being tribal land, the company had ‘officially’ adopted the village for implementing developmental programmes in order to get the sanction. However, there is not a single developmental programme visible in the area. The former sarpanch had given the NOC to ITC without consulting the people. The local administration openly sides with the company and is deaf to the villagers’ concerns. People have now got organized and are protesting against the injustice.

The population of Sarapaka has increased by 80% in the past 30 years owing to the presence of ITC’s paper and pulp plant, as workers to the plant come from Odisha, Bihar, Kerala, and other far-away places and stay in the village. So, the natives are now reduced to a mere 20% of the total population.

The effluents from the plant has poisoned the water bodies and toxic dust has filled the air; the local tribal people are plagued by unheard-of diseases such as breast cancer, ovary cancer, asthma, and other respiratory and skin ailments. Waste water is even released to the Godavari River directly.

The ITC had also tried to grab a patch of 37 acres of village land illegally; as villagers protested, the company returned the land to the village.

The ITC has also roped in NGOs by giving them contracts to promote and develop the plantation projects in the area. HOPE is one such NGO, which has got huge funding from ITC to promote the interests of the latter.

The sarpanch is aware about the CDM status (since 2000) of the ITC paper and pulp plant (the company claims to run six separate CDM projects within it!). He tried to explain to the people the benefits of a

CDM project they should get, and organize them to demand for the benefits from the company. People also questioned the pollution control board for its inaction to curb pollution from this CDM project!

In another brazen violation of law, ITC has been able to coax the ITDA to close down the sericulture scheme in order to promote plantations. For tribal communities, who primarily depend on the forest and agriculture, this is a big blow to their economic sustenance.

People have now started a mass movement against the company under the leadership of the sarpanch, and have made it clear that the Gram Panchayat is the sole decision-making authority here and not the company. They have asked for 100-million rupees from the company towards village development, as one of the demands<sup>1</sup>.

### **The great CDM fraud in Khammam**

All the claims in the PDD about social, economic, environmental, and technological well-being appear to be a big hoax. Nowhere could we find any trace of how the project activity has led to ‘strengthening of the village-level institution to empowering the poor and the deprived’, as was claimed by ITC in the PDD. The *Mandal Samyakhya* is neither technically and politically equipped nor adequately mandated to monitor the activity of the project in order to ensure benefits to the poor farmers.

Apparently, NGO's, or ITC's agents (other than NGOs, ITC has been using paid agents for selling the plantation idea to villagers. These ‘agents’ go from village to village and convince farmers about the high profits and low investments of Eucalyptus Plantations) convinced some villagers to start plantations in their land. It is obvious that some people are finding Eucalyptus an attractive and profitable proposition, especially when compared to the traditional crops. Many complained that with traditional crops they did not sometimes reach break-even.

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<sup>1</sup> Besides the plantations, ITC has six different CDM projects going in its Bhadrachalam plant. Each of these projects talks about sustainability, and say how ITC's CDM projects are changing people's lives. There is the usual rhetoric of waste-cycling and low pollution technology in each PDD, and the PDDs, along with ITC's well-designed portal and its Sustainability Reports (ITC publishes annual sustainability reports to prove its ‘greenness’), does not leave much room for doubts about the Company and its ‘genuine’ efforts towards fulfilling ‘corporate social responsibility’ commitments.

In reality, ITC, and its ‘environmental’, ‘carbon-neutral’ plant in Bhadrachalam, however, continues to pollute: water, land, and people's lives. The expansion programmes for the plant had to face stiff resistance from the local tribals, who accused the Company of illegal land-grabbing, and polluting the Godavari river. According to Trinath Rao, an advocate and activist associated with the local adivasi organization called AVVSP (Adivasi Samkshema Parishad), the company ITC is in occupation of 502 acres of land in the Scheduled Areas. AVVSP filed a case in the court of Special Deputy collector(T.W). Bhadrachalam, challenging such land take-over, and the lease agreements between the State and the ITC. The Petition contended that the State Government can not acquire tribal lands in a Scheduled Area, and nor can it hand it over to ITC. The Case is going on.

In a Public Hearing convened by the Andhra Pradesh Pollution Control Board on expansion plans of the Bhadrachalam Plant, AVVSP and representatives of political parties protested strongly against the Plant. Tribal people were angry that the company had not kept its promise to provide jobs to locals. Speaking at the meeting the then Sarpaka (the village where the Plant is located) Sarpanch (the village head) G. Punnamma said that the company did not allocate promised funds for the development of the village. The villagers also alleged that the company was polluting the Godavari River by releasing dangerous effluents into it. “Company officials are also cutting trees without informing tribal people”, said N.Tagore, an old villager. Other political leaders including V.Mahendra from the CPI and former MLA Thati Venkateswarlu said that the tribal population had not got any benefits from the company. People who took part in the meeting raised slogans against the management.

Source: Trinath Rao, and *Deccan Chronicle*, 25-2-2006



Though many villagers seem amenable to the idea of plantations, they still feel very insecure. They have to wait at least for 3 years for first ‘profits’, and meanwhile use the bank loan for subsistence—a situation that is potentially dangerous for farmers. In case the crops fail, they face bankruptcy and poverty, and losing their land altogether.

It’s evident that the farmers have only been tricked to eucalyptus plantation and then left to their own devices, as they invest their own money, use whatever little knowledge they have about eucalyptus in the absence of any knowledge-dissemination mechanism or training, and, in the end, have to be content with the paltry return they get. Instead of uplifting the economic status of the farmers, the plantations have rather impoverished them; in a predominantly tribal milieu where forest-produce and agriculture make the backbone of the economy and culture, the eucalyptus plantation project has changed the community resource base for the worse. As eucalyptus sucks a large amount of water from the ground, all other farming and forest output have been badly hit, plunging the farmers in deeper despair. In sharp contrast to what the PDD claims, eucalyptus plantation has resulted in massive soil erosion and has eaten up natural vegetation covers and forests.

Thousands of acres of fertile farm and forest land have been converted to commercial plantations of such a species that eventually turns fertile lands degraded—a disaster that farmers of the region have already started discovering the hard way. They even find themselves in a trap because they cannot so easily switch back to the earlier crops as the land would need at least a year (often more) to rejuvenate for that—a luxury the poor farmers cannot think of.

Who gains? Evidently, the ITC PSPD, who takes the advantage of the local people’s poverty, and gets the raw material for its paper factory at extremely low cost. A large share of the ‘profit’ from the plantations goes to the Forest Department who runs this plantation programme in the name of JFM, and possibly some of the more fortunate peasants. ITC PSPD also takes any profit coming from the carbon credit sales.

### **Additionality?**

Are these plantations new, or ‘additional’? In absence of land records for lands under the ITC LULUCF project, this is hard to determine. Because forest lands at Aswapuram adjoin the crop lands now being converted to Eucalyptus plantations, and plantations in both lands are being managed by the Forest Department under social forestry/JFM programmes, possibilities of mix-up in lands can not be ruled out. Besides, how can a routine departmental programme like JFM/ Social Forestry qualify for CDM? The plantations would have been raised, like many similar plantations in the area, with or without the benefit of carbon credit sales, firstly because ITC PSPD needs the raw material, and secondly because raising plantations of fast-growing species has been traditional practice of the Forest Department since last few decades.

In the PDD, ITC claims that poor tribal peasants of the region are not in a position to raise such plantations on their own accord, and hence the project should be considered additional. How true is this claim? In the first place, poor tribal peasants are not being benefited by the project (they are opposing it, actively), and secondly, Eucalyptus was being grown in private farmlands of the project villages even before the concept of carbon trading arrived (for instance Mr. Narkappa Reddy, a farmer at Paloncha Mondal has been growing Eucalyptus commercially for a long time, and has 3 crops within the last 10 years).

It is clear that ITC has decided to go for the ‘icing on the cake’, the easy and additional money that the carbon market promises. That the whole thing is being done at the cost of poor tribal peasants whose land,

food security and ecology are being terminally violated apparently does not disturb them, or the Andhra Pradesh Forest Department, who actively supports the Company.

The lack of awareness among the CDM project ‘stakeholders’ about CDM and carbon credit sales directly contradicts ITC’s declarations in the Project PDD Version 02, about communities and ‘Sanghas’ being aware about the project.

**Table 1: State-wise spread of forestry CDM projects in India(as on 16-05-2011)**

States	Total CDM projects	Number of registered projects	*kCO <sub>2</sub> /yr	**2020 kCO <sub>2</sub> /yr	***kCERs issued
Andhra Pradesh	1	1	58	1128	0
Chhattisgarh	1		4	46	
Delhi	1		15	188	
Himachal Pradesh	1		41	601	
Haryana (Afforestation)	1	1	12	137	
Karnataka	1		106	1377	
Orissa, Andhra Pradesh, and Chhattisgarh (bundled)	2		461	7972	
Tamil Nadu	1	1	3.6	61	
<b>Total</b>	<b>9</b>	<b>3</b>	<b>700.6</b>	<b>11510</b>	<b>0</b>

\*Annual reduction claimed in 1000-tonnes of CO<sub>2</sub>-equivalent per year

\*\*Total reduction to be claimed in 1000-tonnes of CO<sub>2</sub>-equivalent by 2020

\*\*\* Saleable CERs, in 1000-tonnes of CO<sub>2</sub>-equivalent, officially issued by the UNFCCC so far

## Annexe 1: Imaginary Sinks: India's Forest Carbon Ambitions

Various estimates now abound, about the carbon sequestration potential of India's forests, and possibilities of creating new tradable carbon reserves in India, especially once an international climate treaty including trading of such forest carbon is agreed. What these estimates have in common is their use of a set of very optimistic assumptions both about the actual amount of carbon that can be created through tree planting as well as the possibilities of tapping into this so far largely fictitious market. They also share the near complete omission of social consequences if the wrong kind of tree is planted in the wrong place, and people are displaced from areas they depend on for their way of life. The most recent such estimate was published in a 'technical paper' authored by the Indian Council of Forestry Research and Education, which was released with great fanfare by the Indian Government's Minister of Environment and Forests. According to the paper, (a) India ranks 10th in the list of most forested nations in the world with 76.87 million ha of forest and tree cover, (b), India's forest and tree cover accounts for about 23.4% of the total geographical area of the country, (c) Over the past decades, national policies of India aimed at conservation and sustainable management of forests have resulted in India's forests soaking up more CO<sub>2</sub> than they release; from 1995 to 2005; the amount of carbon stored in Indian forests are said to have increased from 6244.78 to 6621.55 million tonnes (mt) registering an annual increment of 37.68 mt of carbon = 138.15 mt of CO<sub>2</sub>eq, and finally, (d). This annual uptake of the greenhouse gas CO<sub>2</sub> by forests is enough to supposedly neutralize 9.3% of India's total annual emissions of 2000. Moreover, this amount of carbon sequestration will still be adequate to dent the country's emissions even when these will be on the increase because of an 'accelerated development process'. The 'Paper' included an elaborate methodology and a detailed technical description of how various types of forests were adequately sampled and the calculated figures matched with satellite images. What is missing, however, is an acknowledgement that such methodologies are based on a set of assumptions – assumptions which have a big influence on the outcome of the carbon calculations. This omission – another similarity among the many estimates recently published – calls into question the veracity of the data.

How much forest is left in India, and what is happening to them?

### **Forest cover in India**

According to recent estimates of Forest Survey of India<sup>2</sup>, standing forest cover in India is 67.5 million hectares (mha), or 20.64% of the total geographic area of the country (Table 1). 'Recorded' (meaning recorded by the forest department) forest area of the country is 76.52 mha, equal to 23.28% of the total geographic area of the country. Dense to moderately dense forests occupy about half of the total forest area; the rest is 'open forests' and scrub.

How credible are these forest cover data?

According to Forest Survey of India estimates<sup>3</sup>, India continues to lose its forest cover. The 2003 estimates record a net loss of nearly three million hectares of 'dense forests', which means serious and continued deforestation in forests with canopy density of 40 percent and above. Because satellite images acting as source of these data are still treated as 'classified' in the country, and 'ground-truthing' (if any) is carried out in a similar clandestine manner, it is difficult if not impossible to verify exactly how much

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<sup>2</sup> State of Forest Report, 2003

<sup>3</sup> State of Forests Report, 2003

natural forests vanish each year, and where. From the State of Forests Report, it can be seen that degradation of forests is not confined to any particular province or region, but it is happening, almost uniformly, throughout the country. For instance, while the province of Uttar Pradesh in the North records a loss of 2969 sq.km of dense forests, Assam in North East, and Andhra Pradesh in the South record losses of 2788 and 1788 sq.km. In 2006-7, a team of researchers from the Indian Statistical institute, New Delhi estimated the forest cover in two regions in the Himalayan province of Uttaranchal and found that the proportion of forest loss is much higher than estimates made by the FSI. According to FSI data, the Almora and Bageswar districts have 19 percent of degraded forests whereas the new study showed that the degraded forest constitutes almost 78 percent of the total. “We looked at a small part of the Himalayas, but discrepancies that showed up here might appear elsewhere because the FSI uses the same method” said R Prabhakaran, an ecologist in Bangalore and a study team member.

India’s North East, considered to be one of the richest biodiversity hot spots in the country, is fast losing its forest cover, according to data released by Aaranyak, an Assam-based NGO. The data shows that the northeastern states of India have lost almost 20 percent of their forest cover in the past two decades.

The total forest cover of the country, according to the Indian Government’s 2009 State of Environment Report, is 677,088 sq. km (2005 estimate), or 20.60 per cent of the geographic area of the country. Between 2003 and 2005, the total forest cover had decreased slightly by 728 sq. km. The states, which have shown a decline in the forest covers, are Nagaland (296 sq. km), Manipur (173 sq. km), Madhya Pradesh (132 sq. km) and Chhattisgarh (129 sq. km). There has also been a significant loss of forest cover in the Andaman and Nicobar Islands (178 sq. km) because of the Tsunami.

### **Explaining forest cover change: the ‘real’ menace of deforestation**

Official agencies in charge of environmental information in India seldom use ‘deforestation’, a harsh, taboo word. Usually it is ‘degradation’, a softer term that hides endless stretches of lost forests, hacked, plundered, looted, mined, built upon, and submerged. Factors that cause deforestation are hidden in layers of vague terms like ‘anthropogenic interventions’ and ‘biotic factors’.

In reality, there are many factors behind deforestation in India and elsewhere; the most important of which is logging—both legal and illegal. While data on illegal logging is scarce and seldom verifiable, it is common knowledge that organized illegal logging exists, and no province of India is really free from it. According to data from the Ministry of Environment Forest<sup>4</sup>, in just three years (2001-2004), more than 600,000 cases of illegal logging were recorded, and more than 300,000 Cubic Meters of timber could be recovered. This was just the tip of the iceberg; and the actual figure may be anywhere between 100-150 million Cubic Meters.

Besides logging, there is large-scale conversion of forests (official term is ‘diversion’). Destruction of forests for agricultural activities and different developmental projects like construction of roads, industries and townships, large dams and mining is common practice in India. In three decades between 1952 to 1980, a total of 4.3 mha of forest lands have been ‘diverted’ for ‘non-forestry purposes’, according to the same official estimate. A further one million hectare (and above, between 1981 and 2007, 1140236 hectares of forest land have been officially ‘diverted’) was gone in the next two decades. In 2007 alone, about 3 Million trees had been approved to be felled, for just 49 projects, including several mining projects. These activities /developmental projects which catered essentially to privileged urban communities displaced millions of tribal and rural people from their ancestral lands (Indian Planning Commission estimates suggest that 21.3 million people were displaced by development projects between 1951 and 1990 alone) and also created social and political tensions.

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<sup>4</sup> Forests and Wild Life Statistics, 2004

And the destruction linked to such megadevelopment projects continues today: The disreputable Sardar Sarovar mega hydro project on river Narmada would alone submerge 56,513 hectares of forest land and subsequently displace millions of people – and it will also release a lot of greenhouse gases in the form of methane once these submerged forests start to decay. People displaced or evicted from those different developmental projects—development oustees—often, of necessity, had to settle in forests, for livelihood and sustenance. Furthermore, in many cases the Government settled those evicted people in forests, causing additional deforestation.

Then there is the factor of ‘encroachment’ of forest land. The term ‘encroachment’ denotes illegal possession of others’ property or land, but in the context of Indian forests, it contains a different and complex social narrative. Though India still has a predominantly agricultural economy, per capita availability of cultivable land is low because of a number of factors like lack of irrigation facilities, adequate market support and most important of all, a highly inequitable distribution of land. In most parts of the country, there has been no land reform and rural elites directly and indirectly control both rights of access and ownership in prime agricultural lands. Landless people and peasants eking out a living on marginal lands are left with no option but to occupy the fertile forest land for survival, especially in forest areas of the country where the population is an ethnic mix of indigenous *adivasis* and a variety of migrants: development oustees, domestic and cross-border political refugees, and also large number of landless people from the neighbouring countryside. According to the Ministry of Environment and Forests<sup>5</sup>, more than 1.3 mha of Indian forests were under encroachment as of October 2004.

Another important reason behind deforestation is forest fire. Forest fires, mostly ground fires, continue to destroy forests, irrespective of the nature of the forests. An FSI sample survey conducted in 1995 found that annually fires affect some 53-54% of overall forest areas. In the year 2000, a maximum 3.7 mha of forest land were affected by forest fire.

Yet, despite the significant degradation and related loss of carbon from these forests, the areas affected are not considered as ‘deforested’, merely degraded, even if many of them will have lost most of their forest structure and composition for decades to come without significant policy changes

Underlying/root causes of deforestation usually remain unaddressed in India, and Government agencies either hide or deliberately falsify deforestation data. The myth of forest cover increase is a typical example of this, where growth of private and forestland plantations is equated with and shown to offset loss of natural/dense forests even though the carbon content is significantly lower in plantations.

### **Carbon uptake – the ‘potential’ of forests in India**

The discussion above shows that, instead of being linear and ‘constant’ constructs, Indian forests (like any other forest) are part of a larger, dynamic, and ever-changing socio-political and socio-ecological discourse (or multiple such discourses). Mathematical calculations and simulated models to project uptake and release of carbon in forests over time can never be expected to accurately reflect the innumerable, essentially asymmetric variables that shape the interaction between forests and people; neither hypothetical baselines nor imaginary ‘future’ scenarios can explain/interpret/predict contextually related but often spatially separated sets of uncertain social, political and ecological events influencing deforestation events. This methodological impossibility, coupled with doubtful and unverified official forest cover estimates, makes any credible estimation of all carbon stock in Indian forests downright impossible. Yet such estimates are at the heart of carbon trading schemes that have sparked governments

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<sup>5</sup> Forests and Wildlife Statistics, India.2004

and research institutes to producing forest carbon estimates and projections of the market and profit potential that increasing these forest carbon stocks holds.

Even assuming that India's forest cover will remain constant, and keep its carbon stored over a long period of time (an assumption that is common in estimates of carbon stored in Indian forests), the existing estimates of different agencies and research institutes, about the long-term potential of Indian forests to take up more carbon, vary widely. They range from the ADBs estimated technical potential for carbon uptake in the Indian forestry sector of 123 mt of carbon annually<sup>6</sup> to Ravindranath *et al*'s estimated potential for an additional 6.5 mt of carbon<sup>7</sup> that could annually be stored in trees. Bhadwal and Singh (2002) studied the carbon sequestration potential in India and estimated that under various scenarios 6.65 bt (billion tonnes) of carbon (or 13.3mt of carbon annually) to 6.94 bt of carbon (or 13.88 mt of carbon annually) will be sequestered during 2000-2050. Prasad *et al* (2003) analyzed the land use changes and forestry data of India from 1997 to 1999 and estimated that Indian forests would sequester 0.94 Gt (Gt: Thousands million tonnes) of carbon over period of time if land use changes similar to those that occurred during 1997-1999 continue.

These differences in the estimates underscore how much the variables and assumptions entered into the methodologies and how technical calculations will influence the data that is produced. In addition, many socio-economic and environmental factors that affect forest growth are difficult to capture in a single number that can be entered into such models, and hence they are often not considered in the calculations. Yet, high pressure on forests for fuel and industrial wood, lack of agricultural land, unequal distribution of cultivable land, lack of co-ordination among local communities and government personnel etc are all socio economic constraints which directly and indirectly affect how much carbon is stored in a forest. Natural and man-made disasters like flash floods, forest fires, soil erosion and landslides may equally affect and reduce long term health of forests. These variables thus also affect the physical process of carbon uptake. Attempting to reduce forests to a set of easily calculable variables that can be entered into mathematical models which in turn yield predictable forest carbon data is bound to fail in delivering an accurate picture – not least because many variables affecting forest growth are difficult to assess. But ignoring the socio-economic and political context in which forests are located, and which determines what happens to the forest, means that any accurate estimation of forest growth and carbon uptake by forests over time is bound to be a mathematical impossibility.

### **Forests and carbon trading in India**

What drive the new interest in the carbon that is stored in forests are the international negotiations about limiting climate change. These negotiations under the auspices of the UN Framework Convention on Climate Change however, appear to focus more on how to create new business opportunities for corporations than on avoiding catastrophic climate change by drastically reducing greenhouse gas emissions and ending fossil fuel dependency. The talk have opened opportunities for financing the expansion of tree plantations on agricultural land, with the reasoning that growing trees soaks up carbon. This carbon is then sold in a new, poorly understood financial market that allows industrialized countries to continue to pollute and which companies in India and elsewhere have been rapidly tapping into, earning precious dollars/euros. Creating 'new carbon sinks' and generating tradable carbon credits – while the meaning of these terms and the technical jargon surrounding them remains poorly understood, the business opportunity they provide has been readily taken up by Indian business.

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<sup>6</sup> Asia Least-cost Greenhouse Gas Abatement strategy (ALGAS), conducted by Asian Development Bank (ADB,1998)

<sup>7</sup>Ravindranath et.al. 2008 Forest conservation, afforestation and reforestation in India: Implications for forest carbon stocks, CURRENT SCIENCE, VOL. 216 95, NO. 2, 25

This 'opportunity' is seen to increase even further with the introduction of forests into this new carbon market. 'REDD' is the buzzword, an expression under which forests are discussed in the international climate negotiations, and which may form an extension of the carbon trading that currently already finances tree planting projects in India (through the Clean Development Mechanism of the Kyoto Protocol, the international climate treaty). Hence, if a project reduces any emissions caused by deforestation and degradation of forests, it should be able to sell carbon credits through the CDM or a similar mechanism. India now contends that it should be given carbon credits for both its old and new forests and plantations rather than only where new trees are planted in areas that were already deforested in 1990. The country has an ambitious programme of raising 30 million hectares of new plantations by 2020. A requirement for tree planting to happen on areas that were already deforested in 1990 if credits are to be sold through the Clean Development Mechanism limits the access, however, for plantations companies eager to expand their plantations in India. Much of the plantation expansion would take place on land more recently deforested, or new plantations would be established on 'degraded' rather than 'deforested' land due to the reluctance of the Indian authorities to classify land as 'deforested', as mentioned above, but this closes the door to the lucrative CDM carbon market.

India has thus submitted a proposal to the UN climate negotiations for a mechanism of "Compensated Conservation" that also rewards countries for maintaining and increasing their forests as a result of conservation, and which would give access to funding for plantations that currently don't meet the CDM requirements.

India presently has two registered forestry CDM projects, one in Haryana and another in Andhra Pradesh, by the corporate giant ITC. Besides, the World Bank supports a plantation project called "Rural Livelihoods in Orissa and Andhra Pradesh", and is actively considering support to a huge forestry project in the Himalayan state of Himachal Pradesh. Its neighbouring state of Uttarakhand is also making similar plans. There are several other projects in the pipeline.

India has maintained, since very early days of the trade, that it can generate around 5 mtc (million tonnes carbon)/year from LULUCF programmes, which is about 10 percent of the projected global total of 50 Mtc from such projects<sup>8</sup>. Translated into carbon credits, this sequestered carbon would fetch a value of \$ 125 million<sup>9</sup> at US\$4/5 per tonne (can be much more, going by the current CER prices of 13 Euros per tonne) over the 5 year period of 2008-2012.

The snag in this estimate was the requirement for plantations to be established on lands that were deforested already in 1990. Because of this limitation, established to prevent creating a perverse incentive where forests would be cut to create deforested land on which new plantations could be established that in turn can generate carbon credits, few plantation companies in India have been able to tap into the new opportunity of revenue generation. This may be set to change because of the "REDD" debate, and if 2009 Copenhagen UN climate talks or later UN climate negotiations reach an agreement on these "REDD" modalities, the carbon trading in India's forests is set to really take off.

The National Forest policy (1998) of India envisages bringing 33% of India's total land area under 'forests' within 2020. This has to be achieved by implementing the National Forestry Action programme (NFAP, 1999). Objectives of this strategic action plan include establishing plantations on about 29 mha of non-forest and farm lands, apart from improving another 31-odd mha of forests. Achieving this goal would require an outlay of over Rs, 39,148 Crores (More than 7 Billion Euros) in next 20 years, or about Rs. 1957 Crores (around 355 Million Euros) annually.

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<sup>8</sup> Operationalizing CDM, Planning Commission Document, 2003

<sup>9</sup> Planning Commission, *ibid*

Part of the financing was expected to come from the carbon market: The National Action Plan for Operationalizing CDM in India (2003) estimated that India could gain a worth of \$125 million over 5 years from 2008-2012 under the climate treaty's carbon market by planting trees that take up 5 Mt of carbon annually. This was to be achieved by massive plantation expansion in 'wasteland' which includes degraded forest, village commons and fallow lands..

Achieving these increases in forest (and plantation) cover will require huge investment and though India now has a standing reserve fund from the CAMPA, a compensatory afforestation fund created through obligatory payments in case of forest diversion, these will be better served if private corporations/agencies enter the forestry sector in India. The Indian pulp and paper lobby has been trying, since 1992, to lease 'degraded forests' in order to meet the growing demand of raw materials for wood-based industries. It has been arguing (unsuccessfully, so far) that the industry demands can be to a large extent met by raising 'protected' private plantations in forest lands lying degraded, thus reducing the substantial import costs. In 1994, when the Indian Government tried to bring a new Bill to legitimize handing over 'degraded forests' to industries, it faced stiff resistance from not only the community groups and NGOs, but also the Planning Commission which set up an expert committee, Chaired by N.C. Saxena, to look into the matter. The Committee's reports are the now famous (or infamous) Saxena Reports (1998), and these categorically refuted the industry claims that degraded lands do not support biodiversity, and that communities do not use those. The Saxena Reports also went on to show that leasing out these forests to industries would prove to be both ecologically and socially harmful, and would be an injustice to communities, who use all forests for livelihood and other reasons, and no forests in the country can be said to be 'absolutely degraded'. Though stalled for the time being, the industry replied with a blue print for "Re-greening India" (Report published by the Confederation of Indian Industries, CII, 2003), which made a strong case for forest lease, in order to ensure forest protection, and generating rural employment. Because trees take up carbon, possibilities of earning carbon credits were also mentioned in great detail.

### **Role of the World Bank**

This was absolutely as per prescription of the World Bank Forest Strategy 2003, and the CII plea for increased private stake in forestry was ably supplemented by the Bank which meanwhile came up with a 'sure' formula of increasing community stake and control over forests and reforming Joint Forest Management (Unlocking Opportunities for Forest-dependent People, 2006) so that private investors could come in. The World Bank study on India has found that though the JFM model has been successful, most communities still fail to utilize the '*full potential of forests*' to improve local livelihood. For communities to benefit from the untapped potential of forests, the study stressed, wide ranging and carefully phased reforms are required at both the national and State level.

The economic benefits from forestry have been envisaged to be immense. The total forest income from commercial timber, bamboo and non-timber products on improved forests is expected to rise from an estimated \$ 222 million in 2004 to approximately \$ 2 billion by the year 2020. Further, with modest value addition and quality enhancements, annual commercial incomes could also increase significantly. Ecological and eco-tourism values from current JFM forests could be as high as \$ 1.7 billion as formerly degraded forests mature and begin to generate important conservation benefits, the study concluded.

One can well imagine what "REDD" will mean in this context. Going by the previously mentioned 'Technical Paper's estimate, the Indian forests are cumulatively storing about 135 million tones of carbon. This is in addition to the carbon already stored in the forest biomass and soil. If all the stored carbon can be converted into credits, then it will mean a windfall return of billions and billions of rupees. This is a new market which not only the Indian Government, but also carbon brokers, consultants, plantation companies, conservation organisations and investors eye expectedly, and for understandable reasons.



Even if the international climate treaty failed to open the door to forests entering the carbon market, the existing voluntary market already trades carbon credits from forest conservation and tree planting projects at about 8 Dollars per credit (which equals one tonne of carbon). This can increase enormously should carbon credits generated from forest protection and tree planting be tradable under a future international climate treaty under the auspices of the UN.

However, for industry to be able to tap into these future possibilities, changes to the national forest legislation will be required that will allow for private investment in Government-owned forests<sup>10</sup>. A new form of forest management is suggested by both CII and the MoEF to pave the way for future access of the private sector to this forest carbon market.

### **MSP: the new avatar of Joint Forest Management**

Acts of leasing out ‘degraded’ forest land to the private sector would now be known as “multi stakeholder partnership”, under the new BANK-CII-MoEF prescription. Under these multi stakeholder partnerships (MSP), government would transfer degraded forestland to private investors on 30-year leases for raising industrial plantations on a huge scale. Revenue generated from such plantations would be distributed among investors, forest department and local communities organised under Joint Forest Management Committees. Ostensibly, this is being done for greater “community benefit”.

With launching of the MSP, Indian forests would finally start their journey towards complete corporatization. From a different angle, it is a kind of transition from old-world colonial feudalism to neoliberal market capitalism, the state being replaced by companies, and the centralized forest management by MSPs. On the part of the Government, this is also an attempt to end the challenging forest ownership debates with communities which have been ongoing since colonial take-over of forests in 19<sup>th</sup> century.

### **The Forest Rights Act 2006 and “REDD”**

However, the Government has had to shelve the MSP plan pre-maturely because of the historic Forest Rights Act (FRA) of 2006. The Act became operational in 2008. Though provincial governments are still not implementing the Act properly, and the forest bureaucracy as well as some big conservation NGOs tries their best to scuttle it, the forest movement of India has been considerably strengthened by it. The FRA gives forest communities wide ranging governance power over the existing Government forests, including the protected conservation areas. A recent Government Order issued by the MoEF bars any diversion of forests without community consent. Though the community institutions under the FRA, the Gram Sabha, are in their infancy, it cannot be doubted that the Act can be used in community interest.

What will happen to the carbon stored in the forest biomass under the FRA? The Act says that the community owns all Non-Timber Forest Produce of plant origin in any forest of India. Will the carbon supposedly stored in the biomass and forest soil be treated as a NTFP and hence treated as a community property? The Indian Government has evidently not thought about it yet. The ‘Technical Paper’ once again talks about JFM and does not mention the FRA at all. This clearly shows that the Government, despite very clear and precise provisions in the FRA, wishes to retain effectively control of the country’s forests. The “REDD” money will act as an incentive here, and the very strong forest bureaucracy of India will want to hold on to it. In reality, a “REDD” agreement as currently being discussed in international climate negotiations could, in effect, severely undermine implementation of the FRA. Forest movements of the country will need to develop a strategy to counter “REDD” and all forms of carbon trading in the country’s forests, to prevent loss of hard won gains enshrined in the FRA. Even with an operational FRA,

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<sup>10</sup> Current legislation does not allow for such private investments in government-owned forests.

there will be the danger of Gram Sabha leaders being bribed and de facto control and ownership of all forest resources may pass on to hands outside the community via the intermediation of the State. Because REDD will be an international treaty, there will be pressures upon the Indian Government to strengthen protection measures and ensure that the stored carbon is not leaked through human action. In turn, this will lead to more stringent enforcement of the old forest laws (a new legislation can also be created, or the FRA be suitably amended), barring community access to forests, and prohibiting human activity grazing, fishing or fuelwood collection in “REDD” forests. The World Bank, the biggest and most powerful promoters of “REDD”, will inevitably be talking of Public-Private partnership and the necessity of involving private players at some stage or another; and if REDD has to be operationalized, private players have to be imperatively roped in at some stage or another. It will be beyond the capacity of the existing Government machinery to do the complex carbon storage mathematics on each piece of forest cleared for REDD, and to sell the stored carbon in the global market.

At the present moment, “REDD”, and carbon trading are the greatest of threats facing the Indian forest movements and communities. Will we be able to resist these new threats? This will demand unity among all the movement groups and building up strategic alliances with other people’s movements.

The challenge has to be faced.

*(A paper by Soumitra Ghosh, Hadida Yasmin, Arindam Das)*

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## Annexe 2:

# REDD+ in India, and India's first REDD+ project: a critical examination

In its issue dated 31<sup>st</sup> May, 2011, the Indian environmental magazine *Down To Earth* (DTE) broke the story about India's first REDD project. A watershed conservation project in East Khasi Hills district of Meghalaya is now being developed as the 'maiden REDD pilot' in India, it was learnt. The story further mentioned that the project met 'several REDD criteria': one, it is situated in an area which in recent years saw a 5.6 percent increase in forest cover because of community action, and two, communities have established ownership rights over forests in that locality.

The brief story raised more questions than answers. Does anybody know what a REDD project will look like in practice, and how it will operate? Besides extremely vague and confusing statements that periodically come out of international climate negotiations, and gruesome stories of exploitation of communities in the name of REDD<sub>1</sub>, what public knowledge do we have about one of the most bitterly controversial climate change mitigation schemes ever proposed?

These, and similar questions are accentuated when we see that the project proponents Community Forestry International (CFI) seem quite sure about the REDD nature of their project; it would seek financial support from 'agencies like the World Bank's Forest Carbon Partnership Facility' so that the communities can 'engage in sustainable practices', we were told. More importantly, a senior officer (Jagdish Kishwan, additional director general of forests, wildlife) in the Ministry of Environment and Forests, Government of India (MoEF, GoI) praised it, saying that "these kind of pilot projects help understand the role communities play in influencing carbon stocks at the grassroots level"<sup>2</sup>.

The present report tries to examine and answer these and some more questions, first by going through some *REDD texts* (texts which either came out of REDD meetings/negotiations or contains statements/submissions by REDD+ proponents, especially in India) and then by presenting an account of a visit to Mawphlong in East Khasi Hills in search of India's first REDD+ project.

### **Part 1: Reading the context and the REDD claims: Unravelling a range of REDD texts**

#### **Text 1: Minutes of the ARWG meeting<sub>3</sub>**

The DTE story came out in May 2011. In February this year, the first meeting of the newly formed Asia REDD+ Working Group (ARWG) took place in Delhi. Not one, but two REDD pilot projects in India (the other, also from the North East India, is being conducted in the Naga Hills of Manipur) were presented in the meeting. Community Forestry International, the hosts of the ARWG meeting, has designed both the projects, and both are located in community-held forests (it needs to be kept in mind that most of India's forests are government-owned, a forest bureaucracy originally created by the British still runs them in a typically feudal style).

The minutes of the ARWG make interesting reading: like all other pro-REDD meetings, the ARWG Delhi meeting too talked about the need for financial incentives in forest conservation and asserted that REDD (here REDD+) presents a great opportunity: "*the meeting participants agreed that REDD+ represents a historic opportunity to create a mechanism that rewards low-income resource dependent communities for environmental services including carbon*". Also, "*The ARWG's mission would emphasize formulating REDD+ strategies that achieve multiple objectives including resolving resource rights conflicts, enhancing the livelihoods of forest-dependent peoples, and supporting the provision of a broad range of environmental services*". The ARWG would also expectedly "*create support mechanisms for innovative REDD+ projects and strategies through the provision of institutional, technical and financial support....including the sale of carbon credits in international private voluntary markets*" (all italics added).

Reading the minutes, we see the following: 1. The AWRG type of REDD+ plus projects meant resolving resource-right conflicts (why the conflicts come about and how these are to be resolved were not specified), enhance livelihoods of forest-dependant people (the project presentations suggest how: we'll come to that later) and support the 'provision of a broad range' (for whatever that may mean) of environmental services (not specified, nor the extremely significant question of who will control those services). Then we learn that AWRG will set up sales deals for the carbon credits coming from projects in the voluntary offset market: hence all the shop-talk above about risk-reduction and investor liquidity. AWRG will also ensure community involvement in carbon stock measurement; in other words, communities in REDD+ projects will learn how to measure carbon stored in their forests according to pre-specified models, courtesy AWRG. We are led to believe that despite all the talks about the carbon market, AWRG REDD+ projects will not be 'carbon-centric', and will be 'multi-goal community-based' ones, because AWRG is all about honouring the demands of the community leaders who attended the meeting.

### **Text 2: INDIA'S FORESTS AND REDD+, a note from MoEF, GoI, 2010**

The note informs us that the Indian Government's interest in REDD plus is purely altruistic: it wants to 'pass on' the incentives received from REDD+ 'to the local communities in protection and management of the forests'. Immediately afterwards, the note claims "that a REDD+ programme for India could provide capture of more than 1 billion tonnes of *additional* CO<sub>2</sub> over the next 3 decades and provide more than USD 3 billion as *carbon service incentives* under REDD+(italics added)". "REDD+ will benefit local communities as it explicitly safeguards their rights and those of indigenous peoples. India is committed that monetary benefits from REDD+ will flow to local, forest dependent, forest dwelling and tribal communities", it goes on to claim further. Interestingly enough, the note then plunges into the *Green India Mission*, one of India's eight climate missions, and showcases it as both REDD+ and REDD-readiness exercises. The "new flagship forestry programme" of India will generate 5 million hectares of new vegetation cover and resuscitate and conserve another 5 million hectares of forests with "a budget of Rs 46,000 crores (approx. USD 10 billion) over a period of 10 years", and thus, "will help in improving ecosystem services in 10 million ha of land, and increase flow of forest based livelihood services to, and income of about 3 million forest dependent households". The note claims that the Mission marks a "fundamental shift from our traditional focus of merely increasing the quantity of our forest cover, towards **increasing its quality and improving provision of ecosystem goods and services**(emphasis added)", by "not merely focussing" on "plantations to meet carbon sequestration targets". The Mission is all about a "deliberate and major focus on autonomy and decentralization" and will be "implemented through an autonomous organisational structure with a view to reducing delays and rigidity, while ensuring accountability". The "local communities will be at the heart of implementation, with the Gram Sabha as the overarching institution overseeing Mission implementation at the village-level", backed up by "a cadre of young '**Community Foresters**', most of whom will be from scheduled tribes and other forest dwelling communities, to facilitate planning, implementation and monitoring of Mission activities at local level".

### **Text 3: Views on implementing COP decisions on 'Reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries' (REDD-plus), a submission by MoEF, GoI, 2011**

This note lays down the outlines of the institutional framework for REDD-plus in India, and assures us that such framework will have all the space for 'local communities'. India's national strategy for REDD+ "aims at enhancing and improving the forest and tree cover of the country thereby enhancing the quantum of forest ecosystem services that *flow to the local communities* (italics added)", says the note, "...in the Indian context, carbon service from forest and plantations is one of the co-benefits and

not the main or the sole benefit". Immediately after, though, carbon estimates come in: "Initiatives like Green India Mission (GIM) and National Afforestation Programme (NAP)...will annually add 2 million tonnes of carbon incrementally, and post 2020, the forest and tree cover will be adding at least 20 million tonnes of carbon every year". All that the world needs for this huge amount of carbon safely sequestered in community-friendly Indian forests is a small token investment of "Rs. 90 billion (USD 2 billion) every year for 10 years", which will come mainly from "financial support from UNFCCC".

The country is keen on "*ensuring the safeguards for the rights of the local communities including tribals, and above all of women folk of the local communities*" says the note, and that it "*intends to involve the civil society and state forest departments in working out provisions and modalities for the same under the extant Forest Rights Act, and approaches of Joint Forest Management (JFM) and Community Forest Management (CFM)* (italics added)". Further on, the note lists the 'safeguards' the developing countries are expected to follow in order to "ensure full participation of indigenous peoples, local communities and other stakeholders": "ensure that all REDD-plus incentives available from international sources ... flow fully and adequately to the local communities which participate in *management or manage the forest resources or are dependent on the forest resources for sustenance of their livelihood* (italics added)". The note then explains how: "In India, tribals, forest dwellers and other local communities *have always enjoyed legal safeguards to practise their customary rights and traditions*" (italics added—and perhaps we need to keep in mind here that the colonial forestry practices started in India only after all 'adverse' rights had been extinguished, and in the history of Indian jurisprudence, there hasn't been any 'forest' act since then that even remotely allowed 'customary rights and traditions'). The success story of Joint Forest Management (JFM) follows: "...initiative involving local communities for protection and management of government forests. Joint Forest Management (JFM) ensures a fair share in the forest produce for the protecting communities. So far, more than 100,000 JFM committees covering about 22 million ha, which is about 30% of total forest area of the country, have been formed with about *22 million participating members*" (italics added—and it may be relevant to remember that forest movements and community groups in India never accepted JFM: they always viewed the JFM and the related data with distrust. Another point is that JFM has not been codified through legislation: rather, interpretation of it has always depended upon state forest departments). The Forest Rights Act, the only true 'legal safeguard' for indigenous rights in India was barely mentioned: "Promulgation of the Forest Rights Act has further strengthened the legal framework in the country for safeguarding the rights of local communities".

Reading the above in conjunction with Indian government's Green India Mission(GIM) Statement and India's previous country submissions on REDD and REDD+, following postulates emerge: 1. India has successfully measured the carbon stored in its forests, and also mapped the storage potential. 2. Its emphasis on REDD+ is driven by its desire to do the right with forest-dependent communities. 3. It knows exactly how much incentive can be generated out of India's forests, and consequently, can be passed on to the communities. 4. It not only has the necessary legislations in place that ensure that all existing community rights will be safeguarded under the REDD+ regime but also a decentralized autonomous structure in place to ensure community involvement in REDD+ projects. 5. This structure is Joint Forest Management Committees(JFMC) under the Gram Sabha (the village assembly), overseen and monitored by District Level Committees comprising and led by government representatives like the District Forest Officer, community representatives like the members of JFMCs, and other unnamed stakeholders. 6.These REDD+/GIM structure is in consonance with international REDD+ agreements and the commitment to upholding community rights expressed therein.

Each of these postulates is questionable, to say the least. Despite the self-proclaimed community-centric nature of REDD+, communities so far have not been meaningfully involved in carbon stock measurement activities anywhere, and nor do people living in Indian forests(or, for that matter, in other forests) know anything about the carbon sequestration potential (and hence, business potential) of their forests. Following an utterly non-transparent and undemocratic process limited to a handful of government officials and a few handpicked NGOs, the forests have been measured for their so-called

'carbon value', also avoiding the moot question that even in the Indian national context, measurement of forest carbon has always been an 'academically' disputed issue, and there's still no universally accepted and standardized models of such measurement<sup>4</sup>. Though the Indian government likes to emphasize the non-carbon values of forests in REDD+, it ends up with estimates of carbon credit sales when talking of specific incentives. One reason for this may lie in the relative non-tradability (for the time being, at least) of 'other' non-carbon environmental services (hydrological services, for instance, and bio-diversity) to be had from forests.

As to the enabling legislations and decentralized GIM, this is perhaps enough to mention that India's promotion of REDD+ and its Green India Mission have been severely challenged by forest movements and community groups in the country; in fact, both GIM and REDD+ have been seen as attempts to short-sell the country's forests in the international carbon markets<sup>5</sup>. The Indian Government, particularly its MoEF, had been consistently undermining and sabotaging the implementation of the historic Forest Dwelling Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (the FRA), 2006, ever since the process started, the movement groups point out. The REDD+ and GIM will only accentuate the prevailing inequity and miscarriage of justice inherent in India's forest policy regime, the core of which consists of coercive colonial legislations like the Indian Forest Act, 1927 and the draconian Wild Life Protection Act, 1972, they say.

Coming now to the international REDD agreements, we now randomly but in slightly greater detail examine a 'draft' (so far, there have only been drafts and no definite agreements) circulated during the COP 2009 in Copenhagen.

#### **Text 4:**

**Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention/Draft conclusions proposed by the Chair/Addendum (Draft decision -/CP.15)/**  
*Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.*

1. *Affirms* that the following [principles][principles and provisions of the Convention] guide the implementation of activities referred to in paragraph 3 below:

- (a) Contribute to the objective set out in Article 2 of the Convention;
- (b) [Contribute to the commitments set out in Article 4, paragraph 3, of the Convention];
- (c) Be country-driven and [voluntary] [put forward voluntarily];
- (d) Be undertaken in accordance with national circumstances and capabilities of the country and respect sovereignty;
- (e) Be consistent with national sustainable development needs and goals;

Decoding it, we see that the process will depend on the country which is reducing its deforestation, and its 'national circumstances' and 'capabilities', meaning that the process will depend much on the nature and extent of the forestry operations as well as the land-use in the country. If it was decided that timber/logging operations and converting forest land to non-forest purposes are more necessary than conserving forests, the targets will be set accordingly.

'National sustainable development needs and goals' were talked about in 1/e above, which is entirely vague. For instance, India has no such clearly assessed 'national needs', and while forest use is ideally subject to 'binding' legislations and judicial orders, forest land can still be 'diverted' on a large-scale for so-called development projects, which means that deforestation can be a country's economic priority than conservation of forests<sup>6</sup>.

2. *Further affirms* that when undertaking activities referred to in paragraph 3 below, the following safeguards should be [promoted] [and] [supported]:

- (a) That actions complement or are consistent with the objectives of national forest programmes and relevant international conventions and agreements;
- (b) Transparent and effective national forest governance structures, taking into account national legislation and sovereignty;

What is meant by ‘Transparent and effective national forest governance structures’, is not clear at all. ‘Effective’ in what sense? In ensuring that deforestation reduction targets are met? It is quite possible that existing forest governance structures will be drastically altered to meet such targets, and to ‘effectively’ ensure that deforestation events decrease. Read in conjunction with 1/e above, deforestation can go on in a country and at the same time forest laws and policies can be altered to suit the global REDD effort. ‘Transparency’ here means ‘transparency’ on a global scale, which means that the specific details of future deforestation reduction programme inside a developing country will be made available to the global monitoring body for REDD(or any such structure that may come up in the future). In short, this will lead to unlimited and unrestricted outside interference in a country’s forest governance structures, seriously compromising sovereignty, and potentially harming the interest of forest-based adivasis and other communities.

(d) Full and effective participation of relevant stakeholders, including in particular indigenous peoples and local communities in actions referred to in paragraphs 3 and 5 below;

Because the ‘relevant stakeholders’ have not been defined, and neither has any clarification for ‘full and effective participation’ been provided, this provides no safeguards for indigenous rights.

(e) Actions that are consistent with the conservation of natural forests and biological diversity, ensuring that actions referred to in paragraph 3 below are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits;[.]

The above means that actions under REDD will act as incentives towards forest protection and conservation of natural forests and not for conversion of forests to non-forest land use.

The problem lies elsewhere. In providing that countries can set their own country-level REDD targets according to their ‘national’ needs, the essentially decentralized nature of forest use by indigenous and other forest-based communities has been completely ignored. The only effective reduction of deforestation is possible through decentralized and local/forest-area specific forest governance structures. For instance, the Forest Rights Act 2006 in India provides some rudiments of such a structure. The present Draft does not even mention anything like that, and pays only lip-service to the crucial question of indigenous peoples’ and forest communities’ role in forest governance.

7. *Decides* that the activities undertaken by Parties referred to in paragraph 3 above [should][shall] be implemented in phases, beginning with the development of national strategies or action plans, policies and measures and capacity-building, followed by the implementation of national policies and measures, and national strategies or action plans and, as appropriate, subnational strategies, that could involve further capacity-building, technology transfer and results-based demonstration activities, and evolving into results-based actions [that shall be fully measured, reported and verified];

The REDD process in typically vague terms. While the need of the hour is to take immediate and time-bound steps to prevent large-scale conversion of forests for commercial purposes, and to halt industrial logging operations in natural forests, the Draft process as suggested above is time-consuming and complex, which will translate into tangible financial benefits for a whole body of consultants and NGOs, and not much else.

### **Reading the Texts Together: What is REDD? What is Indian REDD plus?**

Our reading of the above texts tells us several things in unambiguous terms. One, though both the REDD and REDD+ concepts are still yet full of uncertainties and imprecision, the Government of India has started compliance exercises inside the country, without bothering to clear any of the innumerable apprehensions about the process.

As of now, there are no safeguards for forest communities’ rights in the REDD+ process. On the contrary, there is every danger that all kinds of community access and use of forests will be badly restricted in a functional REDD+ project. The stories coming from all parts of the globe about communities being blackmailed, tortured and made subject of all sorts of exploitation in the name of REDD, where both national governments and private companies are involved. Despite the ‘community-talks’ in the AWRG deliberations and the MoEF REDD+ note, there is no guarantee that

things will be different in India, given the regime of sheer feudal tyranny by the government-owned forest department in most of the country's forests, and the increasing hold of corporate capital over forest areas.

The concepts of 'local communities' and 'rights' as expressed in the REDD texts are dubious, to say the least. The AWRG meeting didn't bother to define the term 'communities' and the MoEF equates 'communities' with JFMCs, which are nothing but extensions of the forest department. Such simplified assessments ignore the deep divisions within the forest-dwelling communities, the class, caste, gender and ethnic conflicts that often simmer under the placid construct of a non-existent homogenous 'community'. The forest and *adivasi* movements in India are grappling with the challenge of a truly democratic and equitable resource governance practice in their prolonged struggles of implementing pro-people legislations like the FRA and PESA, and in most places, recognized community institutions such as Gram Sabha do not exist even on paper. How this scenario fits in with extremely specialized and complex tasks like carbon-storage assessments and carbon credit sales, let alone being benefited by carbon money, is anybody's guess. The question of 'rights' is more problematic as the Indian government has no updated record of rights so far as forest communities are concerned, and it continues to ignore its own legislation (the FRA), which recognizes a range of community and individual rights including providing for completely community-managed forests in all types of forests, in favour of creating rights-free 'protected areas' for wild life conservation, and also for development projects like mining, large dams and power plants.

The texts above tell us that money, and largely money from carbon trading, is the core of REDD+. It's a business like any other, where investors invest, brokers earn commissions, and profiteers of all shades and kinds reap profits. Hence the emphasis on investor liquidity and low-transaction costs, and hence the business representatives in Delhi AWRG meeting. REDD business is looking more lucrative also because of availability of international funds for REDD readiness and such exercises, which mean more and substantially more money. Some of that money can trickle down to the poor among the forest communities in some cases once the REDD+ (and GIM) gets going, but the fund-flow will definitely be controlled by the elite and the powerful. And the trickling down too will happen essentially to keep the forest-dependant poor away from the forests, because the Indian Government is pushing a Joint Management model, where crucial decisions about forest usage are taken not by people but by forest officers. Given the experiences of JFM in India, the money will come in form of so-called 'support activities', for instance, manufacture and/or supply of low-smoke or woodless stoves.

Another important question remains unanswered. Apart from talks about the huge monetary potential of REDD+, and sometimes allaying people's just fears about curtailment of rights, what other information about REDD+ will be given to the communities? Will the poor forest-dependant people already severely affected by changing monsoon cycles, and other climate change impacts come to learn that their forests are being traded in international markets so that polluting companies in the rich countries can continue with their business-as-usual emissions? With its apparent emphasis on non-carbon forest services and talks of multi-objectives, REDD+ projects may try to create an illusion that in its present avatar REDD+ is anything but carbon trading. Will the communities-to-be-benefitted-by-REDD+ be given an informed choice about rejecting or accepting the project?

In most parts of India, where the government continues to exercise management control over all forms of forests, the answer is clearly no. As in previous and ongoing externally aided forestry programmes, the Government officials will control the GIM and any other REDD+ type programme in entirety, and the only permitted community presence will be through JFM. In some other parts of the country, particularly the North-East, where there are still customarily held community forest areas, it's still an open question. In the next part of this report, while dealing with East KhasiHills REDD+ project, we will try to look for an answer to it.



## **Part 2: The Khasi Hills REDD + project in Mawphlong, Meghalaya**

### **The Visit to Mawphlong: Talking to T Lyngdoh, Secretary, Mawphlong Hima**

The beautiful sacred forest of Mawphlong, nearby the colonial and touristy hill station of Shillong, is a prominent tourist attraction, which the websites on Meghalaya tourism regularly advertise and tourists and local people visit in droves. After this age-old sacred forest earned the laurel of being the first REDD project of India, I went Shillong and Mawphlong in late June this year, trying to know more about the forest and the intriguing project that's taking place around it. There was less rain when we reached Mawphlong this time, and the car had to stop before a more solid-looking barrier. There were newly-dug trenches around the fields touching the forest. The smiling old man could not be seen anywhere and neither was there any litter. My companion T Lyngdoh, the secretary of the Mawphlong *Hima* (the traditional Khasi term for a self-governed *elaka* (state) usually consisting of several clusters of villages), and also the local coordinator of the REDD project, informed that they were keeping the area pollution-free as part of the project.

Lyngdoh was friendly and full of information, but he didn't seem too eager to take me to the villages in his *Hima* when I rather naively asked him about the village people's level of awareness of REDD. "The project is just starting and people don't know anything about REDD etc yet. All they know is that we need to conserve our forests, and", he added, "we have been doing that for so many years." "Instead, I can take you to another place which I have to visit anyway in course of my work." That "another place" turned out to be a fenced-off and 'prohibited' watershed project located deep in the gorge of the Umiam river. The hilltops and tablelands on two sides were mostly bare, barring the ubiquitous Khasi Pine here and there. Nearer the road and the dammed river, however, there were traces of older forests of broadleaved trees. "All part of our project area", said Lyngdoh, "the trees are coming back because of our eco-restoration project". Because the entire Khasi Hills is traditionally a *jhoom* or swidden cultivation area I asked him whether *jhoom* was the reason behind the hilltops looking bare. "No, No, No *jhoom* here!", pat came the reply, "the villagers here torch the forests to get dry wood". Lyngdoh said that their *Hima* was free from this menace, only people belonging to neighbouring *Himas* indulged in such practices. Up in the hill slopes, small bamoo-and-plastic huts could be seen. "Those were charcoal makers' huts", said Lyngdoh, "though those were not in my *Hima*, we do not want these people out of the project and we'll teach them to how to cut trees in a better way to make charcoal". How many of those charcoal makers are there? Apparently "many, so many of these charcoal makers" in the locality, but all in 'other *Himas*'. People burn and cut trees to get firewood, and cut and burn trees to make charcoal. There is also grazing. How does the REDD project proposes to regulate those forest uses? "In my *Hima* we allow people to cut only some species." He showed us the straggling pines on the hilltops and talked about "assisted natural regeneration", which forms one of the three major components of the REDD project, the other two being afforestation and conservation of dense forests within the project area. "But isn't the Khasi pine some kind of an invasive species like the North Himalayan *Chir*, with a natural tendency to colonize open areas, project or no project?" By that time we reached the dam, and Lyngdoh couldn't answer the question. The dam water, which is the main source of water for the Shillong Town, was muddy and reddish at that time of the year and I didn't think of asking for the reason<sup>9</sup>.

My talks with Lyngdoh failed to produce any document related to the REDD+ project in Mawphlong, ("the project's just starting and we didn't have the necessary paperwork yet") but he talked about it at length. Originally it was a forest landscape restoration project started by Community Forestry International (Khasi Community Landscape Restoration and Conservation Project), said he. That project, covering about 1200 hectares of forests, ran from 2006 to 2009 and was now being extended to cover 9000-10000(8379 hectares, to be precise, of which 3652 hectares dense and the rest open/scrub forest<sup>10</sup>) hectares of forestland, said Lyngdoh, "The project will benefit at least 12000 people in my *Hima* directly, and we are thinking of even the Mawphlong bazaar area residents." How? It will help uplift people's livelihood, apparently.

Lyngdoh seemed to be well aware of the dangers of importing alien values to a typically customary management regime, and he talked about Government of India policies and Joint Forest Management in particular. Though the forest officers persuaded him to join the local JFM committee as the vice-president, he wasn't sure about the process: "Why should we allow forest guards and officers in our own forests? But they said they can't give any support otherwise, that's the rule". What would happen once the REDD project becomes operational, and more such unacceptable 'rules' come in and interfere with people's rights, this time not only from Government of India but also from international agencies? How would it feel to ask for outsiders' permission to use your own forests? Lyngdoh seemed distinctly uncomfortable: "Nothing is final yet. The Rules are not final. We haven't signed anything and please don't think we don't know how to take care of our rights...this is something we have been doing for centuries". But what about REDD? "REDD is only a presumption of some NGOs. We are just preserving our forests," he retorted. Does he know about where the credits from the Mawphlong project will go, and that most likely some big polluting company somewhere in the industrially developed North will use those credits to greenwash itself, and to evade its emission deduction requirements? "The preservation of our forests should not be an excuse for developed countries in maintaining their current levels of pollution", said Lyngdoh. But isn't REDD all about that? He doesn't know so much about REDD, said he.

### **The Mawphlong REDD+ project: the official version**

In spite of Lyngdoh's denial that rules interfering with people's customary usage of forests have not been framed in Mawphlong yet, the power point presentation<sup>11</sup> he and Ivan Roy (a retired IFS officer and one of three official coordinators of the project), made in the ARWG meeting in Delhi mentioned specific "mitigating deforestation drivers", which answered each deforestation/degradation activity with its corresponding 'mitigation' activity: forest fires with watchers, firewood collection with smokeless stoves, grazing with stall feeding, and stone quarrying with ban and new livelihoods.

That an elaborate set of rules existed even in the earlier and smaller eco-restoration project becomes clear from a CFI brochure for MacArthur Foundation and USAID<sup>12</sup>:

#### 1) On Fire Control

- Create and maintain fire lines to prevent fires from entering the forests from the adjacent villages
- Negotiate with cooperative agreements with neighboring villages to prevent fire from spreading.
- Appoint firewatchers from forest dependent families during the fire season.
- If fire breaks out, all able-bodied members of the community will put out such fire.
- Post signboards banning smoking and match boxes within forest areas.
- Strictly enforce local customary laws prohibiting setting of fire to the forests.

#### 2) Control of Grazing by Cattle:

It is realized that unregulated grazing by cattle and goats in forest areas is a major cause of forest degradation. In order to protect regenerating plants in the forests, it is imperative that grazing of cattle within the forest areas be prohibited. In order to achieve this, It is resolved that:

- Village cattle will only be allowed to graze in areas outside community-conserved forests.
- Cattle if reared, should be of superior breed and stall-fed with cattle feed procured from outside
- Inferior breeds will be replaced by more profitable livestock, such as pen-raised pigs and poultry

#### 3) Control of Unsustainable Harvesting of Firewood:

It is realized that unsustainable harvesting of firewood from the forest is another major cause for its rapid depletion.

- Cutting of green trees for firewood is banned
- All sale of firewood outside is prohibited.
- Alternative sources of energy such as coal briquettes and other eco-friendly and affordable fuel and efficient,
- smokeless stoves will be explored and adopted
- No felling of tress for commercial purposes will be permitted.

#### 4) Control of Quarrying:

Stone quarrying in the steeper areas of the project site has resulted in accelerated soil erosion and deposition of debris in the streams and reservoirs in the lower reaches. This has resulted in silting and drying up of such streams with the rapid depletion of fish, amphibians and other live form population.

- No quarrying will be permitted within the watershed containing the Mawphlang Sacred Grove and Community Forest areas by order

It had to be because the earlier eco-restoration project was a “payment against environmental services’ or PES project, where the project authorities signed ‘contracts’ with forest users for payment of money against specific, ‘verifiable deliverables’ like ‘fire suppression, grazing control, natural regeneration’. The idea was to “reward Payments for Successful Forest Restoration and Verifiable Biodiversity Conservation”, whatever that might mean<sup>13</sup>.

The present REDD project doesn’t mince matters while talking of mitigation. In their “*Project Idea Note for the Umiam Sub-watershed REDD+ Project East Khasi Hills District*”<sup>14</sup> submitted to PLAN VIVO, Community Forestry International and its local partners (an impressive array including the Khasi Hills Autonomous District Council, SYNJUK Umiam Sub-watershed Community Forestry Federation and Community Forestry Alliance North East—CFANE<sup>15</sup>), talk about “communities... mitigation activities” like “various forest protection, conservation and restoration measures”, “in order to reverse deforestation and degradation trends”. The protection, conservation and restoration “measures”(hardly any different from the above) are then outlined...

***(iii) Customary laws prohibiting lighting of fires in the forest areas should be made more stringent and smoking and carrying of match boxes in the forest areas during the fire season banned(emphasis added).***

(b) Fuel wood Collection: Over 99% of the rural community of the project area are dependent solely on firewood as a source of fuel...to reduce fire wood consumption, fuel efficient stoves will be installed in every household of the project...*Efforts will also be made to encourage the use of solar cookers which the Government is supplying at highly reduced prices to rural community....fuel wood plantations will be raised at suitable sites in and around communities(italics added).*

(c) Un-controlled Grazing: *Such grazing is another driver of forest degradation, as the grazing and trampling of saplings and young trees suppresses forest regeneration.* In order to reduce cattle grazing in the forest...*reduce the number of low-value livestock with more profitable stall-fed animals such as pigs and broiler chickens(italics added).*

(d) Stone Quarrying: ...a number of stone quarries are opening surface mines in forest and non-forest areas of the project site. Such stone quarries normally situated on steep slopes cause extensive landslides leading to deforestation...will be regulated through awareness programmes and *through the formulation and implementation of management plans(italics added).*

Not only these, the project ‘developers’ unequivocally declare that they “*fully intend to comply with all relevant national and international regulations governing REDD once they are formulated(italics added)*”.

There can be no doubt that the REDD+ project will frame its own rules to regulate forest usage by local communities beyond those customarily provided, at least on paper. Otherwise the mention of “customary laws” made “more stringent”(see a.iii above) makes no sense. The previous PES “contracts” can be replicated and extended to ensure compliance, or new frameworks made (*formulation and management plans* in ‘d’ above).

Despite its ‘community’ patter then, what the REDD+ project in Mawphlong in reality proposes to do is to impose an external and pre-decided regulatory framework upon the forest-using communities in the area to ensure ‘mitigation’ of ‘deforestation’ and ‘degradation’. All available forest-based livelihoods will dry up: firewood collection and sale (reduction and ban), work in stone mines (ban), livestock rearing(ban), and of course charcoal making because it means both felling trees and fire setting.

The project note contains two more interesting pointers. One, it claims that because the community members actually own “all community forests within the project area”, and hence, “all carbon rights pertaining” to such forests, there will not be any conflict of interests. The Khasi land-tenure system is “legally recognised” by all Government and other agencies, the note claims.

### **Mawphlong REDD+ project: Questioning the official version**

As it is usual with any such carbon offset or REDD project, questions as to the nature and purpose of the project abound. Besides, both the additionality and legality of the project are apparently suspect. Let’s look at the additionality aspect first.

**Dubious claims of additionality:** The additionality claims made for the project are at best dubious, if not outright nonsense. The claim that ‘a landscape level management strategy’ for the area could not be done without this project is extremely weak. One has to remember that the project area is community-governed, and has been so since ‘time immemorial’, as the project developers didn’t fail to remind us. Such governance is based on an elaborate and complex set of customary laws, and has proved effective enough so far in conserving many of the biodiversity-rich sacred groves and other prohibited/protected forests in Mawphlong and nearby Sohra. In Hima Mawphlong alone, there are several such separate prohibited/protected forests<sub>16</sub>:

*Khlaw*(also the variant *law*: both meaning forests)*Nongkynrih*, which can only be used when timber is needed for community purposes like construction or repair of the school buildings or the foot-bridge, with permission from only the Durbar Hima

*Khlaw adong Wah Lwai*, the prohibitory orders for which was further confirmed on 20/11/1951, during the chiefdom of Robising Lyngdoh

*Khlaw adong Kor-um Kharai Masi*, a forest reserved for conserving a catchment area, and where the late chief Robising Lyngdoh by his orders dated 20.12.58 prohibited a range of activities like the felling of trees, exploitation of sands, stones and even grazing and cultivation,

*Khlaw adong Dymmiew Blah*, which the Dorbar Hima held on 30-4-1970 declared as a protected forest, wood from which can only be taken for funerals,

*Khlaw adong Wahsein Iong*, During the tenure of the late chief Nakalsing Lyngdoh, the Durbar Hima held on 6/11/1948 formally declared this forest as a forest reserved especially for use of the residents of Mawmyrsiang and Wahrahaw villages. The Dorbar Hima which met on 8/6/1960 re-confirmed the prohibitory orders.

*Khlaw adong Kyiem*: Similar kind of a village reserve, kept exclusively for use of the villages Wahlyngkien, Sunei, Ramklang and Kyiem. The Durbar Hima which met on 19/01/1968 decreed that not trees, but only grass and fern bushes can be collected from this forest.

That the weakening in recent years of the customary management practices in Mawphlong and other areas in East Khasi Hills is not because of lack of money becomes evident when the project admits that Government of India is spending enough money in the region. The customary practices in indigenous societies weaken and deforestation happens because of complex sociological, economic and political reasons, which the present project simply didn’t bother to heed. Also, in case of Mawphlong, the customs are still resilient enough, which the ecologically vibrant sacred grove proves amply. It is totally unclear what new things or improvements this project proposes to introduce to the traditional and custom-governed resource management scenario at Mawphlong to check deforestation other than more government-forest- department-kind of policing and more codifications, which will directly hurt and damage the consensual and democratic nature of decision making in the *Hima* Durbars<sub>16</sub>. Neither is it clear how the customary resource-management practices in the Khasi Hills could be ‘improved’ in a so-called ‘landscape-level management strategy’ that, if the project note has to be believed, limits its ‘strategizing’ to keep the *bonafide* and legal owners away from the forests. The income-generation activities the project lists including the self-help groups are all covered by existing government schemes for rural and tribal area development (some of them pretty old by now), and the project fails to prove why and how such old schemes will perform better in the REDD+ scenario. We shouldn’t forget that government agencies are very much present in the project: the Khasi Hills Autonomous District Council, one of the partners is directly Government, and besides, the project has already signed a MoU with the Meghalaya forest department. Moreover, the project proposes to utilize the Government of India funds for forest area development and National Employment Employment Guarantee Scheme (NREGS) in project work, besides money from joint forest management schemes.

Therefore, the REDD+ project is clearly non-additional: the project results can either be achieved through the existing customary and governmental instruments, or they cannot be achieved. The project will not make much difference so far as its stated outcome is concerned.

**Is the project legal?:** The legal premises of the project totter miserably. It is not true that Indian forest laws do not apply in the project region. While the Indian Forest Act(IFA) does not apply in most forests of the area because of their land tenure types, other forest-related laws like the Forest Conservation Act(FCA) of 1980 and the Wild Life Protection Act(WLPA) definitely apply, and people in the North-East always disliked both of these intensely. While the Government cannot claim legal entitlement to forest produce in the community-held forests in lands falling under the Sixth Schedule of the Constitution of India, it can effectively interfere in others' using and marketing such produce, through the Forest conservation Act. The WLPA criminalizes hunting of all wild creatures anywhere in India, even ritual or ceremonial hunting still practiced by the tribal communities in the North East.

This means that carbon stored in the community-governed forests of the North-East can very well be treated as a forest produce, any use of which will be subject to complying with the relevant forest laws of the country, and also the present as well as future judicial orders dealing with such laws. Interestingly, the Indian government records continue to show all such forests as 'unclassified state forests', which proves that the government is not comfortable with their 'community' nature. Given this scenario, the absence of codified and written laws in the custom-governed community forests may go against the legal interests of the communities in a court of law in case of any challenge<sup>17</sup>.

There's also the question of tinkering with the customary rights of the community. On the face of it, the project proposes an overhaul or reform of such laws to ensure uniform compliance in its operational area, and hence the rule book and display boards proclaiming ban. It also proposes a complex and entirely alien hierarchy of self-help groups and local working committees at the bottom to 'community forestry federations', "community forestry alliances" and CFI at the top, with functional links to the state forest department and the District Council<sup>18</sup>. What if such excessive codification and institutionalization infringe upon a community member's legal rights of using the forest commons? The question demands answers because the various kinds of forest tenures in the Khasi Hills community forests contain widely diverse bundles of rights<sup>19</sup>. How does the present project propose to negotiate with those is a mystery. For instance, each or all of the different permitted uses of forests—felling of trees, collection of stone and sand, grazing of cattle and jhoom or sedentary agriculture—may legally exist in one or all tenures. Will the drastic restrictions on forest use which the project plans to enforce be uniformly applicable in all of them? Moreover, what's the guarantee that the concerned durbars will agree to such restrictions, let alone enforce them?

This situation may prove to be a legal quagmire once the National REDD+ framework is finalized, and the scale and extent of international interventions are determined. Because, in order to be officially qualify as a REDD+ project, compliance with the body of national as well as international rules will be mandatory. And compliance here means that every single institution likely to be involved in this complex process—the state or sub-national government agencies like the forest department, 'national' MoEF, the accredited validating agencies and finally, UNFCCC or any such apex international body—might, singly or together, influence and to a great extent change the prevailing forest-governance practices if those are assessed to be likely to cause 'leakage', in other words, involve cutting and burning of trees( or any other activity which may release carbon into the atmosphere). The involvement of state agencies in the project is already a fact: the MoU signed with the Meghalaya forest department mentions Joint Forest Management: The state forest department will "seek to arrange funding for community forestry purposes through the Joint Forest Management schemes"<sup>20</sup>.

The project developers in their documents harp on the 'community' factor and say repeatedly that the durbars have been—and will remain—involved in project activities. The question is, how and in what way? Do the members of the Durbar know enough about the REDD+ process, or what such a project

may mean for their age-old economic and cultural practices, as the traditional livelihoods choke, and the forest becomes off-limits for all practical purposes? Going by what T. Lyngdoh, himself a Durbar chief says, it doesn't seem too likely. There's little chance that any durbar will willingly say yes to such possibilities, especially when the local resource-use practices suffered so much in the recent past because of 'environmental' restrictions originating in Delhi.

The letter of approval the Khasi Hills Autonomous District Council issued for the project makes the approval subject to future discussions in the Durbar meetings, and obtaining Durbar consent<sup>21</sup>. The project activity calendar annexed to the Plan Vivo idea note lists "Dialogue with 64 villages in the watershed – Inform regarding REDD project – meet with women's groups and present at Durbar (council) meetings" and "Meeting with participating communities to assist them to develop Local Working Committees to manage local forests" in September-October to show compliance. **In other words the project developers, at the time of writing the project note, hadn't yet bothered even to inform the Durbars, the real legal owners of the forests in the project area, about the REDD+ project, let alone obtained their consent to it. Yet the project was announced to the press, presented in international REDD meetings, and money is already being raised for it.**

Like all similar REDD+ or other carbon forestry projects of the past and future, the Mawphlong project too builds itself upon a perfect mix of ambiguities and lies.

### **What's happening, really: The money in it**

That deforestation has become somewhat endemic in East Khasi Hills can be felt even by a first visitor. As one travels along the highways radiating from Shillong, the hillsides, heavily quarried and mined, look like huge raw wounds. Neither customary governance nor more official government feats could halt rampant limestone and coal mining in the entire region. Where there is no limestone or coal, the hills are scooped up for construction material like stone chips. Added to mining, there's unrestricted and wholesale clearing of forests for various purposes.

As we said, it is not easy to pinpoint why customary practices decay: many debilitating influences starting from urbanization and subsequent cultural changes to religious shifts and the overwhelming lure of the market society can be identified, along with poverty and in most cases, unequal access to resources. In the Khasi Hills case, however, the general opinion is that deforestation happens because the 'community' now means the rich in the community, and the rich need quick and more money. Because forest-based industries like veneer factories and large logging businesses are mostly no longer possible in the region because of restrictive acts like the FCA, mining is the only commercial option. What about the customary restrictions on forest use? It seems that in forests situated on *Ri Kynti* or lands exclusively reserved for certain clans, the land-owning clan determine the use<sup>22</sup>. According to Sanat Chakrabarty, an activist and journalist working in the community-held areas of the North-Eastern India for two decades or more, clans now mean only its elites. "The economically powerful elite of a clan control the resources in the name of the clan. The larger community interests are sacrificed, to feed a handful of private individuals. This is a process of privatization, and most of the community-held natural resources in East Khasi Hills are slowly being privatized", said Sanat. "These clan leaders can sniff money", said Sanat, "and it's quite possible that some of them are eyeing the easy money to be had from REDD. As long as there is money, nothing else matters".

Money? Judging by the estimates given in the Mawphlong project documents, there's not too much of it yet: the initial eco-restoration project had a total budget of US\$ 77,000 (Rs.35,35,085), and there's more ongoing support from the Ford Foundation and the MacArthur Foundation. Besides, another appeal has been made to the Waterloo Foundation for 100,000 Pounds. These and other possible grants will keep the project running until 2013<sup>23</sup>.

It'll be self-sustaining from the year 2014, when the first vintage, in other words the first sellable carbon credits from the REDD+ project will be due. The project estimates that it will generate a net annual average of nearly 14000 (13761) credits, and thus a total of 412,824 credits in 30 years<sup>24</sup>.

Monetarily, this translates into anything between US\$ 42000 and 80000 a year (going by a relatively conservative price range of US\$ 3-9 per credit).

Not a great sum of money, by any standard, and even a small CDM project anywhere in India can earn twice this amount easily. After meeting the project costs (including the transaction costs like consultants' fees and validating agency's charges) will there be anything left for supporting the economic activities, let alone incentives for the communities?

And given the extremely volatile state of the carbon market these days, even this return is uncertain. In absence of standardization, and any regulatory international mechanism, the forestry credits now coming mainly from the Latin American countries like Brazil are going to the largely unregulated voluntary carbon offset market in America, where credit prices can be notoriously unstable. In 2010, the average voluntary carbon unit price ranged around US\$ 6 in OTC (Over the Counter) sales, while in the more structured CCX (Chicago Climate Exchange), such units barely fetched one Dollar<sup>25</sup>. The market uncertainties may be one reason for the project developers trying to rope in Plan Vivo. The involvement of Vivo in the project means that at least a reasonably good amount of money will come to the project, as credit-buy back, and also to cover initial overheads and other costs. The project developers are also keeping an eye on the Government of India money that might come from Green India Mission and similar existing forestry schemes, and perhaps, also on the mitigation money India is looking for from the developed countries and the UNFCCC.

The project doesn't yet offer enough money even for the moderately rich in the clans in the Khasi Hills. One wonders whether they know enough about the market realities.

### **Can the project deliver? Two Scenarios**

What will happen is perhaps another story altogether: even if the voluntary carbon market picks up miraculously, and the REDD+ becomes official, and a larger market opens up for forestry credits, it is doubtful whether the Mawphlong Project will live long. The reason is simple: it won't deliver.

It won't deliver in either of the two possible scenarios.

Scenario One: The project hierarchy clicks, the committees, federations and alliances are formed, the docile durbars are informed about REDD, the women get enthusiastically involved. Subsequently management plans are developed, rules framed and enforcement starts alongside the economic support activities for the poor and the landless.

Will anything change, much? Not likely. Because from start to finish, the project cooks a recipe that's typically joint forest management, and the project documents read like archaic forest department working plans (and management plans), with their typical threat listings (is it a coincidence that two of the three coordinators the project engages are retired forest officers of the Indian Forest Service, and the third a recognized expert on JFM?<sup>26</sup>). The project happens in custom-governed forests on diverse land tenures which contain a range of rights structures that evolved over a long period of time and in response to specific and actual needs of the user communities. Yet it not only ignores the traditional governance structure and supplants it with an alien institutional hierarchy, but also criminalizes natural forest uses such as grazing and firewood collection. Ignoring the customary and in this case legal rights associated with specific land tenures—for instance felling of trees and collection of timber for specific purposes—it prescribes a flat set of rules generally applicable throughout the project area. The JFM did precisely this with its forest protection committees or VSSs, both its structure and rules pre-decided and framed by forest officers, and after about two decades of this utterly undemocratic and unjust exercise, even its biggest sponsor World Bank had to admit that the scheme lacked popular support and that it failed in almost all aspects<sup>27</sup>.

The present project, in JFM style, perceives the communities as something external in relation to the forests they use, and therefore, instead of integrating people with forest conservation, it proposes

measures that alienate them from their natural resource-base. For instance, stall-feeding improved variety of livestock supplied by the project will mean a reduction of the traditional grazing space in forests. Smokeless stoves and solar cookers also denote a similar loss of forest space: community members will now get less firewood from the forest. A clear ban on fire will also mean space shrinkage: charcoal makers will not be able to access their forests any longer, and there will be yet less firewood. For any *jhoom*-practising community in the vicinity, the fire ban will also mean starvation, because *jhoom* is dependent on fire. A ban on quarrying and mining will mean loss of legal clan space.

Will the people, the bottom-level users of forests, respond positively to this space loss and adapt to the changed scenario? So far as the economic relocation is concerned, there is little chance that people will leave their traditional livelihoods in favour of non-forestry activities outlined in the project, and at best any future income from such activities may only supplement the regular income from the forest. There are no baseline socio-economic data about the users likely to be affected by the project, and according to the activity calendar, these data will be generated. One wonders how and on what basis then the project chose the income-generating activities. Also, there's hardly any money in the project to support so many activities in 9 *elakas* (regions), beyond the usual JFM money coming through the forest department.

The enforcement of the project rules will be anything but easy. People will not let go of their livelihood—and, more importantly, rights—easily, and even if the Durbar consents can somehow be obtained (such things are known to happen), there is no guarantee that people will keep away from the forests without protest, and without putting up a fight. Therefore, the 'deforestation and degradation drivers' will not shrink significantly. In other words, the rate of deforestation will not slow down as expected, and the carbon leakage will by far exceed the project limits. Which all means that the project will sequester much less carbon than anticipated, and will fail to meet its contractual and obligatory commitments to generate a certain amount of credit within a specific time-period. In other words still, the project will not deliver.

Scenario two: Similar to Scenario one, with the exception that no customary rights are compromised, and people continue to use forests in exactly the same way they are used to. T. Lyngdoh wanted me to believe this (does he himself believe this?).

This might indeed happen, however. The indigenous communities in Meghalaya refused to comply with any legislation and government order that sought to compromise their hold over their resources, and despite the FCA and its ban on felling of standing trees in natural forests, clearing of forests continued in the entire region<sup>28</sup>. The mining on forestland continued in direct violation of not only the FCA but also the Meghalaya government's own prohibitive orders. Ceremonial hunting of leopards continued in the Jaintia Hills forests, in defiance of a Shillong High Court Ban. The clans are all powerful, as Sanat Charabarty said.

John Kharsing, the chairman of the assembly of Hynniewtrep (the Khasis are originally known as the Hynniewtrep), and hence one of the most influential leaders of the region provided a different and more indigenous perspective. A 'two-minute only' talk with him lengthened into a 30-minute video interview, covering the Khasi customary practices and history and more recent events like the FCA controversy and REDD. Excerpts from the transcript of this interview will help us conclude this report, and consequently, to prove, why the Mawphlong REDD project+ and such similar projects in the area will ultimately fail to deliver:

"At the time of India's independence, the Khasi chiefs signed a treaty with the Government of India but didn't sign the instrument of merger, which all 565 Princes of Native States did, whereby their land became Government of India land. The chieftains refused to do this because the land wasn't their own...People hold the land. The Government has none. That's why the FCA was contested...the Government of Meghalaya owns only 5 percent of land in the Khasi Hills area, the rest is owned by people: village forests, individual land, clan land, family land, sacred groves and so on...under 54 Chiefs in Khasi Hills...The clans own the land but there's not enough codification and therefore the customs do not have the force of law, the customs come into conflict with the Union acts".



“Our tradition has sustained...even after 150 years of British Rule. But there are conflicts over so many issues...*yes we are concerned about International treaties and agreements which might affect our traditional rights, even well-intended ratifications at the international level may not be applicable at the ground level*(italics added)...such treaties sometimes undermine the independence, sovereignty, liberty and the autonomy that the Constitution of India provided for while notifying these areas under its 6th schedule... But, well, big countries like to implement their own agenda, but ultimately people in the ground decide how the work is done...There are indigenous people’s forums in the international level, but not much is done...sometimes wrong people represent the indigenous peoples, you see? A process takes time...people come with projects but get stuck at the ground level...the GoI came with the JFM project...

(q: *people own the land here, what's the Govt doing? JFM is Govt*)...

yes, we told them to give us the money. They said, no we need to have forest guards in the committees and the money will come to them...sometimes law-making is so ridiculous...I represented a case in National Commission for Scheduled tribes...the chairperson was from Jharkhand and he was surprised that we have a treaty...are yaar, you are lucky, said he. They have taken everything away from us...the need is to reframe the land laws of the country...how to balance the poor and the rich? So if the Govt comes up with all those crazy ideas, then...

(q: *they may not come directly...it's important to know what you are entering into: people may come and say, here's a big deal, a beautiful deal, you just preserve your forests...when a person like you is not sufficiently aware of what's happening, how can you expect the people, the regular users of the forest, to know and understand the intricacies of REDD and such international processes?*)

...I happened to attend some conferences here and there, in Delhi...I understood it's about climate change...I asked a stupid question in one meeting: when the FCA came, hundreds and hundreds of people were thrown into the street, and I had to go to so many village durbars because the chiefs were asking desperately for my intervention...*they banned the felling of timber, how can we make charcoal...if you stop that, you choke his livelihood..what'll he do...no gas here...he has to cut trees...on the other hand you are also setting up industries that need charcoal...* (italics added and this needs to be read together with T. Lyngdoh’s statements on charcoal making and the Rules on forest fires)

REDD is not final, and we are watching..

(q: *this project is treated as a pilot REDD project...I want to know how?*)

I don't know the aspect of carbon sequestration...I haven't been informed...all I know is that it's a developmental--climate mitigation--project, and the chief wants to extend the sacred forest area...in the areas adjoining the sacred forest...I'll crosscheck with the chief...all I know that people are being benefitted and they are being encouraged to grow more trees..but if you tell me this has been notified as a REDD project

(q: *no notifications yet...REDD is all about trees storing carbon which you assess, price and sell in the market, international markets, after a validating agency validates your project...*)

...carbon credits?...when the German gentleman came...he is from a bank...I think he is from REDD...I asked him why are talking with the forest department? this land is private..So I am keeping a watch over things you know..I'll check how much info they have on REDD...even if it's a pilot project, it'll be good to know...who's the end user and all that?

The clans control 60 percent of the forest area...if JFM and such schemes are not modified to suit people's needs, they won't be successful. *I have not yet seen the present proposal...the final offer, what are the infringements on my rights...if there's any and then we'll be hundred percent opposed*(italics added)...For instance, *mining...the Government of Meghalaya tries to create a mining policy, which is essentially a process to implement the country's mining laws and rules here...otherwise these are not applicable. Here again all the mining landowners came together to oppose the mining laws...since they have not been modified to suit local conditions and land tenure systems....there was something called 'mining concessions'...what is a concession? How can somebody give me a concession to do something in my own land? FCA also...why do I need permission to cut my own tree? I understand environment and climate change and all that agenda, but when you say that I need permission to cut my own tree...I have lost my right to my land*(emphasis added)!

(Q: *when REDD becomes official, these concerns will be more profound...there is no guarantee that they will let you cut trees in any REDD forest*)

...The Constitution has been amended before...and recently the Govt refused to sign the nuclear treaty...the same has to happen here...the govt must apply pressure so that the existing treaty is amended to include the country's needs..the opinion makers and public leaders have to be active...

## **Post-script: A possible 3<sup>rd</sup> Scenario**

Both these scenarios may contain another, and more potentially possible third scenario: Nothing changes on the ground and deforestation goes on as usual, because of customary practices and purely monetary reasons, unaffected by REDD+, and its rules.

And yet, the project happens. The project happens because there's a well-written Project Design Document or PDD that guarantees, with help of really clever mathematics, so many hundred thousand tonnes of emission reduction. The project happens because it has the necessary connections and it hires a really resourceful validating agency to come and certify the genuine nature of that emission reduction. Finally, the project happens because some dirty corporation somewhere in face-away California or some such place willingly suspends its sense of disbelief, and decides to buy certified credits from the project, believing in the lie that the carbon filth it emits day in and day out is being sequestered in the leakage-proof sinks in India's Meghalaya, keeping the indigenous Khasis happy in the bargain.

Win-win, perfect sync and cool.

### **(a paper by Soumitra Ghosh)**

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#### **End Notes**

1. REDD and other variants of carbon forestry like smaller 'offset' plantation projects and larger Clean Development Mechanism or CDM plantation projects: for a compilation on REDD-related case studies see *No REDD, A Reader*, Carbon Trade Watch and Indigenous Environmental Network, 2011, <http://noredd.makenoise.org/>. See also the *REDD Monitor*, [www.redd-monitor.org](http://www.redd-monitor.org), for more news and critique of REDD. For market logic and information related to REDD and other carbon forestry projects see <http://www.ecosystemmarketplace.com>
2. <http://www.downtoearth.org.in/content/soon-india-s-first-redd-project>
3. *Asia REDD+ Working Group (ARWG) Meeting Report, January 31-February 2, 2011, New Delhi, India*, Community Forestry International
4. Ghosh, S, Yasmin. H and Das. A: *Imaginary Sinks: India's REDD ambitions*, an unpublished report on India's carbon forestry programme, 2009.
5. *A Formula for More Land and Resource Grabbing: Dangers of the Green India Mission, Joint Statement by Forest Movements in India*, issued by National Forum of Forest People and Forest Workers(NFFFPWF) and Campaign for Survival and Dignity(CSD), 2010 and *ON REDD CLIMATE SCHEME, Joint statement by Indian forest movements*, 2009. See also Jha, S, *The Green India Mission (GIM): A Roadmap for Neo-liberal Exploitation in Forest*,2011 and Aggarwal, A, *Implementation of Forest Rights Act, changing forest landscape and 'politics of REDD+' in India*,2011 for more information on REDD in India.
6. For instance, in a period between 2007 and August 2011, 8,284 projects were granted forest clearance by the MoEF, and 2,03,576 hectares of forest land were diverted for various development projects. The pace of forestland diversion has apparently doubled in the past five years. A large proportion of this forestland (50,000 ha) has been diverted for mining and power projects. The maximum amount of forest land diverted for mining in any single year happened in 2010—about 14,500 ha. Coal mining accounted for more than half of all the forestland diverted for mining. As many as 113 coal mining projects were granted forest clearance—the highest number cleared in any five year plan since 1981. 181 coal mines, 267 thermal power plants, 200 coal-based thermal power plants, 188 steel plants and 106 cement units also got clearance. See <http://www.downtoearth.org.in/content/environment-ministry-creates-record-forestland-diversion> for the full text of the Report by Center for Science and Environment, Delhi, India
7. No REDD, A Reader, and REDD Monitor, supra note 1, and also <http://www.smh.com.au/environment/conservation/carbon-cowboys-20110722-1hssc.html> for the amazing story of carbon cowboys and the carbon gold rush in the Amazonian rainforests of Peru.
8. See *Mausam*, the Indian climate magazine, issues 2-5, 2009: [www.thecornerhouse.org.uk/resource/mausam-issues-2-5](http://www.thecornerhouse.org.uk/resource/mausam-issues-2-5)
9. Apparently, debris coming from the mining and quarrying in the catchment areas of the Umiam River turned the dam water red. The Public Health Engineering (PHE) department of Meghalaya held rampant sandstone mining and presence of stone quarries at Umtynggar (Mylliem) and Mawjrong in East Khasi Hills responsible for the water pollution: "Rampant digging of sandstones and presence of stone quarries at the site of the Wah Umtynggar has diluted the water as the wastes flow to the Wah Umtynggar which connects the Wah Umiew," PHE Additional Chief Engineer SK Sunn said. Sunn said that it is difficult to stop this because of the land tenure system. See *Shillong Times*, August 7th, 2011

10. The figures are from the *Project Idea Note*(hereafter PIN) Community Forestry International(hereafter CFI) and others submitted to Plan Vivo: see [www.planvivo.org/.../Khasi-Hills-Community-REDD-ProjectIdeanote](http://www.planvivo.org/.../Khasi-Hills-Community-REDD-ProjectIdeanote)

11. *Khasi Hills Community Forestry REDD Project*, Community Forestry International(hereafter, 2011

12. *Payment for Environmental Services: A Case Study from Meghalaya, NE India*, CFI, [www.communityforestryinternational.org/.../PES\\_flyer-Mawphlang](http://www.communityforestryinternational.org/.../PES_flyer-Mawphlang)

13. The so-called PES can easily be used for wrong purposes. See Baltodano, J, *Plunging over the climate crisis cliff*, in *No Redd, A Reader*, supra note 1, for experiences from Costa Rica

14. See note 10

15. One wonders how exactly the Community Forestry Federation and Community Forestry Alliance were formed and what role they will play in the REDD+ project.

16. <http://nahduh.tripod.com/id3.html> . See Dutta, R, *Community Managed Forests: Laws, Problems and Alternatives*, EHRLI, New Delhi, 2001, for a discussion on the customary practices and forest tenures of Khasi Hills. See also, Hynniewta, T.M, Botanical Survey of India, *LAW LYNGDOH(sacred grove) in Mawphlong, Meghalaya*, [www.ias.ac.in/currsci/nov252007/1338.pdf](http://www.ias.ac.in/currsci/nov252007/1338.pdf) for more analysis of Khasi forest tenures. <http://nahduh.tripod.com/id3.html> also contains exhaustive information on the tenural system.

17. Attempts to write down the customary laws happened sporadically in the past: The Khasi National Durbar met on 6th, 7th and 8th November, 1929 and formulated and published a sort of white paper explaining about the land system. The Durbar explained in detail the rules and regulations about land holdings, sale and purchase. The Durbar also explained about the power of the village: Raid, Hima over land holdings. *U Khasi mynta bad ki Riti Tynrai*, a book by J. M. Phira, IAS, 1991, lists 14 types of tenures classified by the Durbar. There's also *The Notes on Khasi Law*, by Keith Cantlie, Deputy Commissioner Khasi and Jaintia Hills from 1930-34. See <http://nahduh.tripod.com/id3.html>. The only law in the independent India that recognizes traditional Khasi forest tenures is the United Khasi Hills Autonomous District (management of control of forest) Act, 1958. See Dutta, R, *ibid*.

18. *Appendix 1: Governance Structure: Early Implementation*, PIN, supra note 10.

19. See Hynniewta, T.M and <http://nahduh.tripod.com/id3.html>, supra note 16.

20. *Memorandum of Understanding Between Department of Forest and Environment, Government of Meghalaya and Community Forestry International*, Appendix 4, PIN, *ibid*. Though this MoU appears with the REDD project note, it was signed long ago in 2006 (or 2005? There are two dates in the document).

21. *Appendix 7: Letter of Project Approval from the Khasi Hills Autonomous District Council*, PIN, *ibid*

22. see note 16

23. PIN, *ibid*

24. *Ibid*

25. Peters-Stanley, M et al, *Back to the Future: State of the Voluntary Carbon Markets 2011*, [http://www.forest-trends.org/~forestr/publication\\_details.php?publicationID=2828](http://www.forest-trends.org/~forestr/publication_details.php?publicationID=2828).

26. Mark Poffenberger, the Coordinator of the Mawphlong project on behalf of the CFI, is an acknowledged expert on JFM, and his organisation CFI was associated with two similar pilot carbon forestry projects in JFM model in Adilabad district of Andhra Pradesh and Harda in Madhya Pradesh. For his work on JFM, see Poffenberger, M, *The Struggle for Forest Control in the Jungle Mahals of West Bengal in Village Voices, Forest Choices*, 1996, Delhi, and *Resurgence of Community Forest Management in the Jungle Mahals in Nature, Culture, Imperialism*, Delhi, 1995

27. World Bank, *India: Unlocking Opportunities for Forest-Dependent People in India, Volume I: Main Report*, 2005. See also, Springate Baginski, O and Blaikie, P (ed), *Forests, People and Power: The Political Ecology of reform in South Asia*, London, 2007 for more recent critique of JFM. See also *Broken Promises: How World Bank group policies fail to protect forests and forest people's rights*, by World Rainforest Movement, CDM Watch, Forest People's Programme and others, 2005, for more on the JFM swindle.

28. Dutta R, supra note 16



Eucalyptus Crops at Village Burghampada



Trucks loading eucalyptus - Village Burghampada



Nursery of Eucalyptus Plants – Aswapuram Village



Plantation of Eucalyptus – Sarpaka Village

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Ever since the unique mitigation strategy of carbon trading was conceptualized in the Kyoto Protocol, India seems to have been one of the busiest countries to put the concept into action. By the end of June, 2011, India had 645 CDM projects registered with the UNFCCC, 261 of which had already been issued 93834 kCERs. With such eloquent figures on the board, one likes to know a little about the reality of this emission-reduction. Even the most cursory of looks at the Indian CDM scenario sees not much other than good and solid corporate profiteering.

Though there is a proviso in the CDM mechanism that the projects must result in all-round sustainable development and benefit communities where those are located, the CDM projects in India barefacedly violate the sustainability criteria.