

***Comments on the validation of
Grid Connected Energy efficient power generation by Nabha Power
Limited, India
7 April 2011***

CDM Watch respectfully submits the following comment on the Project Design Document (PDD) for “Grid Connected Energy Efficient Power Generation by Nabha Power Limited”, India.

We highlight the importance of recognizing the integral role of transparency in the CDM validation process, and for taking this comment into consideration.

We wish to highlight serious concerns related to the following issues:

1. Additionality – Faulty baseline
2. Additionality – Baseline efficiency improvements
3. Public participation of civil society
4. Social sustainability
5. Environmental impact assessment

Due to limited time available, we are not able to elaborate all of our arguments in detail. Yet, based on the concerns highlighted below, we emphasize the PDD for “Grid Connected Energy Efficient Power Generation by Nabha Power Limited” must not receive a positive validation under CDM.

Moreover, we strongly believe that providing scarce CDM funding to the construction of new coal power plants violates the mission and intent of the CDM. In order to avoid risking the CDM’s reputation and in the interest of maintaining the integrity of carbon markets it is clear that the proposed project “Grid Connected Energy Efficient Power Generation by Nabha Power Limited” as well as all other coal projects do not have a place in the CDM.

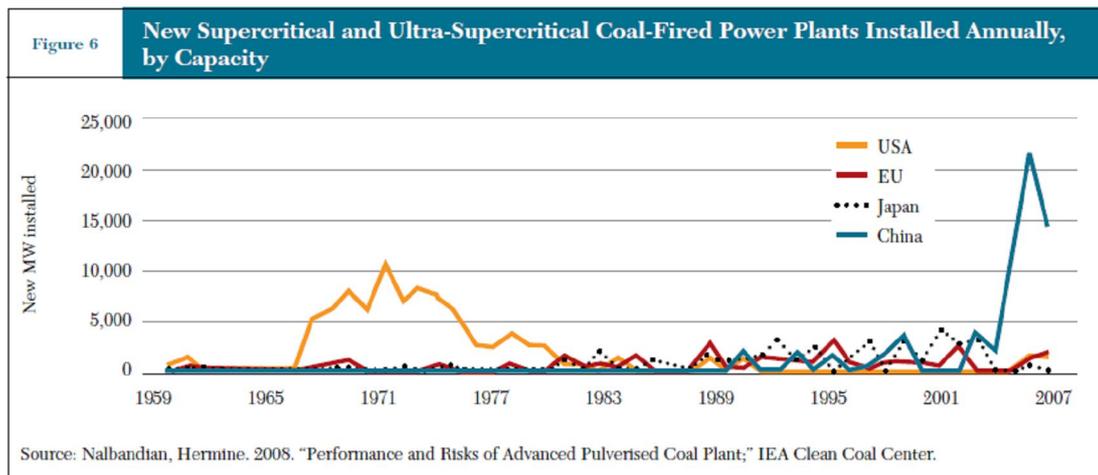
1. Additionality – Faulty Baseline

An analysis conducted by CDM Watch and the Stanford Environmental Law Clinic in March 2010 reviewed 14 coal projects pending validation. The research showed that none of the expected reductions of the reviewed coal projects are contingent on the additional CDM revenue. These projects would occur regardless of CDM financing as they are included in national energy policies. However, above all, the analysis found in the case of all projects in India and China that supercritical – not subcritical – should be used as the baseline scenario, which would render supercritical coal plants non-additional within the CDM.

As Stanford Environmental Law Clinic has pointed out in a submission¹ on the validation of the Shanghai Caojing 2X 1000 MW Ultra-Supercritical Project sub-critical coal plants cannot be considered baseline technology for either China or India where the majority of proposed projects are located. In fact, according to World Resources Institute supercritical and ultra-supercritical coal technology is growing so fast in China that the Chinese fleet is now more efficient than the United States².

¹<http://cdm.unfccc.int/filestorage/E/G/W/EGWBRZLZJPSAY9YSFZSCPR20C19LB9/Comment%20submitted%20by%20Stanford%20Environmental%20Law%20Clinic%20on%20Behalf%20of%20CDM%20Watch.pdf?t=NUd8MTMwMjAxODE4Mi41OA==|S8nQEz-KEEWw1U24JLE98axjVwc=>

² <http://www.wri.org/publication/china-united-states-climate-change-challenge>



In the case of India, the fact that sub-critical coal technology is no longer baseline is very clear. As early as 1999 the government of India was advised to pursue supercritical coal plants due to their improved efficiency³; advice that they have incorporated into core government planning processes. For instance, the National Thermal Power corporation is responsible for nearly 26 GW⁴ of the country's 80 GW of coal fired capacity and is considering mandating supercritical coal technology for the 12th five year plan as over half of all capacity additions will be super critical technology⁵. Moreover, as a part of the Government's Ultra Mega Power Project (UMPP) program, which aims to build nine 4,000 MW coal plants, supercritical technology has been mandated as baseline technology⁶. Finally, for the 13th Five Year Plan, all new coal plants will be supercritical (Mathur, 2010).⁷

The result is that India was constructing 37 supercritical coal units (660 MW to 800 MW units) at eleven power plants in 2010, corresponding to a capacity of around 26 GW (Platts, 2010), or one-third of currently installed coal plant capacity. All told at least half of India's more than 70,000 MW in planned coal-fired generating capacity over the next several years will be supercritical. This information casts significant doubt on the claim that sub-critical technology is the appropriate baseline technology.

This renders the project ineligible under the current methodology. We therefore call on the DOE to validate the proposed "Grid Connected Energy efficient power generation by Nabha Power Limited" on the basis of the new baseline, which is supercritical and makes subcritical power plants non-additional.

2. Additionality - Baseline efficiency improvements

In addition to the faulty baseline used in the PDD for this project, we believe that also the vintage of data used in the PDD leads to non-additional emission reductions:

The PDD uses as a baseline emission factor the lower value between a) the identified baseline technology and b) an emissions benchmark determined based on a defined set of power plants but does not account for the vintage of data used to establish the emissions benchmark.

Especially in a case where the project will only be commissioned in 2014 it is important that the baseline efficiency be adjusted in take account for the time vintage between the period considered for establishing the benchmark and the start of commercial operation of the project plant. The adjustment is based on the autonomous technological improvements observed in the sector.

³http://www.egcfe.ewg.apec.org/publications/proceedings/CleanerCoal/HaLong_2008/Day%20%20Session%203A%20-%20Pankaj%20Gupta%20Supercritical%20Technology%20in%20.pdf

⁴ http://www.ntpc.co.in/index.php?option=com_content&view=article&id=96&Itemid=175&lang=en

⁵ <http://prosperingindianpowersector.blogspot.com/2010/12/supercritical-tech-set-to-be-made.html>

⁶ http://www.powermin.nic.in/whats_new/pdf/ultra%20mega%20project.pdf

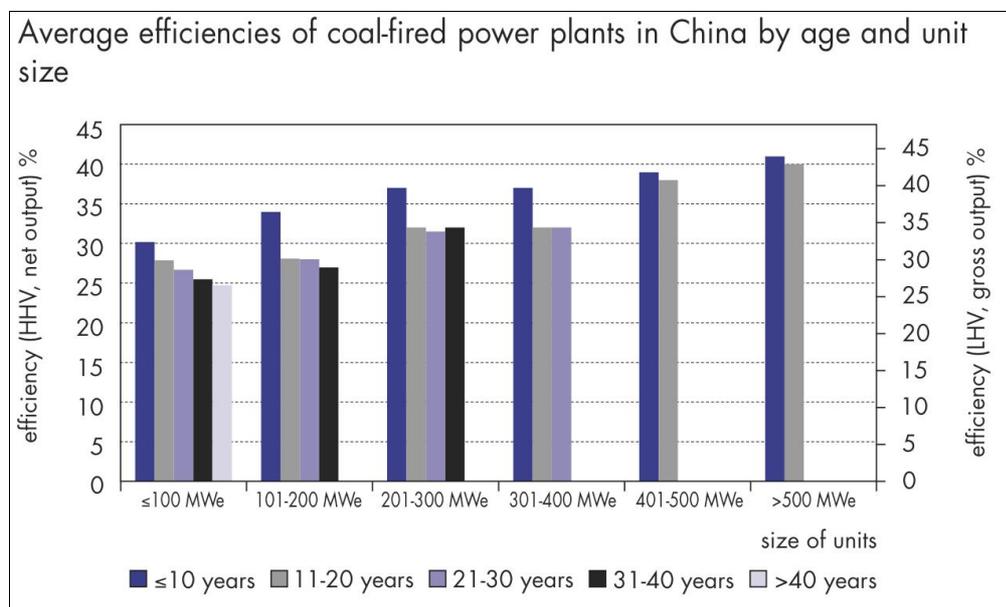
⁷ International Energy Agency 2011: Technology development prospects for the Indian power sector http://www.iea.org/papers/2011/technology_development_india.pdf

In practice the data vintage between the CDM project plant and the reference plants used to establish the emissions benchmark can be considerable, for the following reasons:

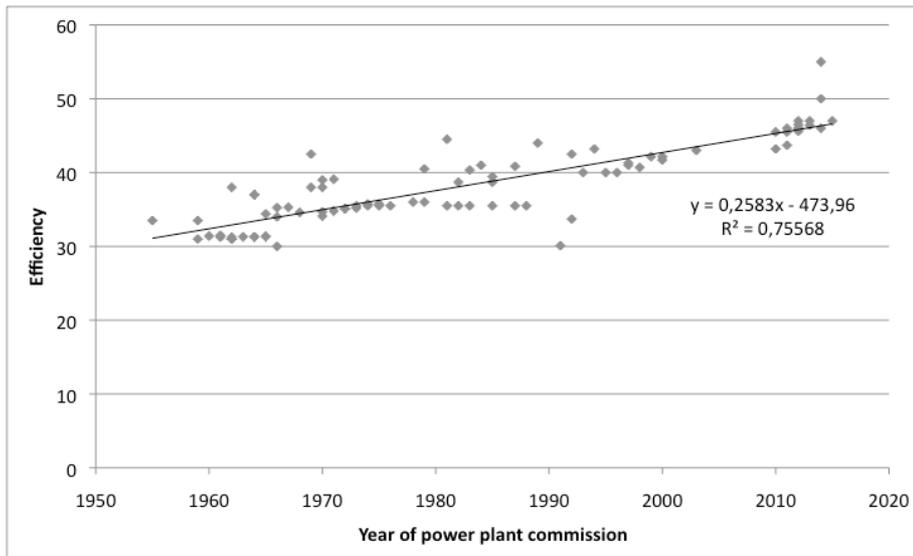
Technological innovation in the sector

Over the past decades, the efficiency of new fossil fuel fired power plants has improved considerably. Similarly, energy forecasts also assume that the efficiency of new power plants will continue to improve, due to the development of new materials allowing for higher pressures and temperatures in steam and gas turbines but also due to new processes, such as the gasification of coal (see, for example, IEA 2008a and van den Broek et al. 2009). Historical data on power plant efficiency improvements is summarized below:

- The figure below from IEA (2008b, page 51) illustrates the efficiency improvements achieved in coal fired power plants in China. The figure shows that power plants between 100 and 400 MW, constructed in the last 10 years are 5-6% more efficient than power plants constructed in the ten years previously. This results in efficiency gains of 0.5% to 0.6% per year for power plants built in the most recent decade. The figure also shows that the improvements vary with the size of power plants and over time.



- The IEA (2005, page 18) reports that “under ideal conditions, modern coal-fired power plants are capable of achieving efficiency levels of more than 40% on a higher heating value basis. This is about a 30% improvement on plants built in the 1950s and 1960s.” This corresponds to an average annual efficiency improvement of about 0.23% (assuming that the efficiency improved by 30% to a level of 40% over a period of 40 years).
- The figure below illustrates the efficiency of newly constructed coal power plants in Germany (Oeko-Institut, 2010). A regression analysis shows that efficiency gains were 0.26% per year over a period of about 50 years. This is largely in line with the estimate in IEA (2005) for industrialised countries.



- Van den Broek et al. (2009) systematically derived technology learning curves for different fossil fuel power technologies, by applying and extending a model developed at Carnegie Mellon University. The results for the technologies without CO₂ capture and storage are illustrated in the table below and an annual average improvement of power plant efficiency is derived from this data.

Technology	Efficiency (%)			Derived annual average improvement (%)	
	2001	2010	2020	2001 - 2009	2010 - 2020
Natural gas combined cycle	56	61	63	0,56	0,20
Pulverized coal	45	47	49	0,22	0,20
Integrated gasification combined cycle	39	42	47	0,33	0,50

The sources quoted above suggest that the historical average annual efficiency gains depend on a number of factors, such as the technology, the country, the fuel type and the time period considered. However, they are in all cases significant and range between about 0.2% and 0.6% per year.

Against the above said, project developers must show how the project takes into account the baseline efficiency improvement.

3. Public participation of civil society

From the information provided in the PDD it is not clear how and when local stakeholders have been invited by APDL to address concerns related to the proposed project. Indeed, the information provided rather suggests that the local stakeholder consultation did not take place according to the requirements for the following reasons:

- The PDD, page 56, section E, states that “NPL sent out invitation letters to the identified -stakeholders 2-3 days in advance” which implies that the local stakeholder consultation process was not conducted in an inclusive manner. 2-3 days in advance does not justify reasonable notice to enable affected stakeholders to participate in any meeting. This can also be assumed from the PDD according to which only 4 stakeholders (exclusively from local authorities and project participants) posed questions during the meeting. The PDD should provide a list with people that were invited as well as provide information about where the consultation was held.
- According to the PDD, page 2, the project is expected to be commissioned in May 2014. Yet, the PDD states, page 56, section E.2 that “the proposed project activity is an environmentally friendly project which enables improvement of the local area by setting up a power plant. [...]. The proposed project activity has therefore not caused any adverse social impacts on local population but has rather helped in improving their quality of life”. This wording suggests that this section was copy-pasted from other PDDs where the project activity has already been implemented. With a project being expected to be commissioned in 3 years, it is hard to believe that it has already helped in improving the quality of life. Much rather it is likely that the local

stakeholder consultation has actually never taken place and affected people have not been invited.

- The PDD, page 56, section E.2, offers a summary of comments received: if comments were voiced, the PDD should provide an overview of who and how many people participated at the local stakeholder consultation meeting. Also, the summary of participants' comments does not include any comments from affected people (e.g. the nearest habitants of the planed coal plant), and it is not clear the position/title of the people who made comments. However, it is obvious that three of four comments provided are closely related with the project proponent NPL: L&T Power, which is a founder of NPL; Punjab State Power Corporation Limited (PSPCL), which has entered into a Memorandum of Understanding (MoU) with NPL for a supercritical technology based power plant, and a representative from NPL. The comments provide a wide explanation about the project's supercritical technology, CDM concept and nice-sounding concluding speech which give an impression that only financially concerned parties were involved in the meeting.
- Moreover, project's proponent response about the employment for the local community does not provide any concrete number or specified employment positions: *"People will get opportunity to get associated with NPL through direct or indirect employment"*. Please specify the number of people who shall be employed as per the parameters of – skilled, unskilled, contractual and daily-wage workers from the nearest villages in Patiala district. Following, there is a lack of environmental and social impact assessment comments which encourages doubting if the meeting was held in reality and if all interested parties attended the meeting.

Based on the information provided in the PDD it is not credible that the local stakeholder consultation was carried out in an inclusive manner. The project activity cannot be validated under CDM rules until a credible and independent local stakeholder consultation, involving all directly and indirectly affected people, has been carried out in an effective manner.

4. Social sustainability

The PDD states that *"NPL will contribute 2% of the net revenues accrued from the sale of Certified Emission Reductions (CERs) on an annual basis towards achieving the sustainable development goals. If the activity undertaken involves capital expenditure exceeding the minimum requirement of 2%, the additional expenditure made would be set off against the requirements for the subsequent years. Such expenditure would be made within one year after the realization of revenues from the sale of the CERs. Monitoring plan proposed for the expenditure is included in Annex 4 of the PDD"*. The intended community development actions, Annex 4, page 61, do not sound to be credible due to the lack of specification, concrete action plan, and names of local stakeholders (e.g. hospital, schools, local NGO).

However, if so, the PDD should state which concrete actions are planned and how they have been agreed upon with local stakeholders.

5. Environmental Impact Assessment

According to the CDM rules, all references to support documentation of an environmental impact assessment undertaken are required in accordance with the procedures as required by the host Party (PDD, page 54).

However, the PDD states that *"In order to obtain the required clearance from the Ministry of Environment & Forest (MoEF), Government of India (GoI), an EIA Report is a statutory prerequisite. Thus, the Environmental Impact Assessment (EIA) study is **been conducted** to predict the possible environmental impacts due to construction and operation of the project activity, suggesting environmental remedies/safeguards and formulating an effective Environmental Management Plan (EMP) to ensure an environmentally sustainable development."*

This wording is not clear on whether the EIA has already been conducted – or is currently being conducted. Section D.2 states that *"the Environment Management Plan (EMP) is awaiting final approval."* This suggests that the EIA has actually not yet been finalized.

The PDD does not state the exact size of the project activity. In section D.1, page 54, there is stated that a comprising core of study area covers 10 km, and general study area covers 15 km radius. According to CDM Watch search the land requirement for the project is estimated as 1300 acres⁸. Yet, the area is highly populated and over 65% of the population is living in rural areas, 38% the population depends on agriculture either as laborers (17%) or cultivators (21%)⁹. Since the EIA has not been finalized, let alone be published it is not possible to know on which type of land the project activity will be constructed, e.g. whether it includes grazing land and agricultural land etc.

In order to put local stakeholders in a position to make an independent judgment based on realities, it is essential that all supporting documents be made available, including the necessary translation into the language of the region.

Therefore, the local stakeholders consultation should be repeated once the EIA has been finalized and a report been distributed.

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⁸ <http://thermalpower.industry-focus.net/index.php/punjab-thermal-projects/280-nabha-power-ltd-to-set-up-1320-mw-thermal-project-at-rajpura.html>

⁹ Official Website of District Patiala http://patiala.nic.in/html/district_economy.htm