CDM Executive Board
UNFCCC Secretariat
Martin Luther King Strasse 8
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Germany

5 July 2011

Subject: Review of the Additionality of the CDM Project 4629: *Greenhouse Gas Emission Reductions Through Super Critical Technology - Jharkhand Integrated Power, Ltd., India*

Dear Mr. Hession,

We welcome the decision by the Executive Board to review the request for registration of Project 4629: *Greenhouse Gas Emission Reductions Through Super Critical Technology - Jharkhand Integrated Power, Ltd.*, to determine whether it complies with the CDM's requirements regarding additionality and respectfully request the transmission of the present letter to the responsible Secretariat and RIT Team members.

We have serious concerns about this project, and believe that it is so plainly non-additional under CDM rules that its registration would seriously undermine the credibility of the CDM process. Quite simply, this project will use supercritical technology, regardless of whether the CDM provides support. Thus, if registered, this Project could receive 21,399,251 CERs that do not represent additional emissions reductions, and could give the project participant an undeserved windfall on the order of € 257 million (based on current CER prices).

In light of the Executive Board's instructions to review the additionality of this project in accordance with paragraphs 43 to 52 of the CDM modalities and procedures, we respectfully request that the Secretariat as well as the Registration and Issuance Team (RIT) explicitly consider the following issues:

1. The Government of India has required the project to use supercritical technology.
2. Reliance Power, the owner of Jharkhand Integrated Power, has made an enormous commitment to supercritical technology for Tilaiya and other projects that is not dependent on CDM support, and views CDM credits only as "a new revenue stream for the Company."
3. The project sponsor failed to evaluate alternative tariff structures that would enable the project to achieve an adequate rate of return without CDM support. The Executive Board has already refused to register a similar Indian supercritical plant on these grounds.

4. The project sponsor should have evaluated end-use efficiency, demand side management, and reduction of transmission and distribution losses as alternative baseline scenarios.
5. Subcritical coal technology is not the proper baseline under *ACM0013* in India.
6. The PDD and *Validation Report* fail to apply the E+ guidelines in determining the baseline scenario.
7. The PDD and Validation Report do not adequately demonstrate that the use of supercritical technology will lead to additional CO_2 reductions, even assuming that subcritical technology is the appropriate baseline.
8. The sensitivity analysis is limited to an unrealistically narrow band of coal price fluctuation.

We are confident that after a rigorous examination of the *Validation Report* and other project documents, you will agree that the proposed Project does not comply with the CDM's additionality requirements, and will recommend that the Executive Board reject the request for registration.

Discussion

1. The Government of India has required the project to use supercritical technology. Under CDM rules, a project cannot be additional if it is "the only alternative amongst the ones considered by the project participants that is in compliance with mandatory regulations…"[1] Here, the Government of India's Request for Proposal (RfP) mandates that supercritical technology must be used. Accordingly, the *Verification Report* concluded that "the project developer is required to implement the project with super critical technology only."[2] This stipulation is *not* contingent upon the receipt of CDM credits.[3] It is difficult to see why the project nevertheless received a positive validation: since the use of supercritical technology is required by the Government of India, the project cannot be said to generate additional emissions reductions, and the positive validation was inappropriate under CDM rules.

2. Reliance Power, the owner of Jharkhand Integrated Power, has made an enormous commitment to supercritical technology for Tilaiya and other projects that is not dependent on CDM support, and views CDM credits only as "a new revenue stream for the Company." Reliance Power has already purchased the supercritical boiler, turbine and generator (BTG) package for the Jharkhand Integrated Power project, further confirming its intent to proceed regardless of the outcome of the Executive Board's decision on whether to

[1] *Tool for the demonstration and assessment of additionality, Ver. 5.2, Annex: Guidance on the Assessment of Investment Analysis*, at 5.
[2] TÜV Rheinland, 2011. *Validation Report for the CDM Project Activity: Greenhouse Gas Emission Reductions Through Super Critical Technology - Jharkhand Integrated Power Ltd. (Validation Report)*, at 41, 72.
[3] *Id.*

register the project.[4] This purchase was part of a massive US$10 billion order for 42 units of 660MW supercritical BTG packages, making it clear that Reliance intend to rely heavily in supercritical technology going forward.[5]

If CDM support really was essential for the project activity to move forward, one would expect that Reliance would have informed its shareholders of this contingency. In fact, Reliance's recent Annual Reports contain no such disclosures. The 2009-10 Annual Report informs shareholders that "we are adopting state-of-the-art super critical technology for our UMPPs and other thermal power generation plants", but does not warn them that (1) the choice of supercritical technology is contingent upon CDM support; (2) the project activity cannot go forward without CDM credits; or (3) the failure to have the project registered would pose any material financial risk to the project.[6] Indeed, the "key risks and concerns" section of the Annual Report never mentions the necessity of securing CDM support for Tilaiya or any of its other projects.[7] Where the Annual Report does discuss the CDM, it is only to tout the sale of CERs as "***a new revenue stream for the Company***."[8] (emphasis added).

At the same time that Reliance is seeking to persuade the Executive Board that CDM support is a "necessary element" of the project, it is telling its shareholders a vastly different story—that the project activity will use supercritical technology, that there are no risks to the project if it does not receive CDM support worth mentioning, and that any CERs it receives will be a new profit center for the company.

3. The project sponsors failed to evaluate alternative tariff structures that would enable the project to achieve an adequate rate of return without CDM support. The Executive Board has already refused to register a similar Indian supercritical plant on these grounds. By failing to consider alternative tariff structures that would improve the project's returns without the use of CDM revenue, the project sponsor failed to meet its obligation to fully consider the "project without CDM support" alternative as required by the *Additionality Tool*.[9] The project proponent has refused to evaluate alternative tariff structures, arguing that the tariff it considered was the basis of its winning bid proposal.[10] However, the CDM Executive Board has previously declined to register a proposal by another Ultra-Mega Power Plant on precisely these grounds. In its *Review of the Project Activity: GHG Emission*

[4] http://www.indianexpress.com/news/reliance-power-places-10-bn-order/703980/
[5] http://www.bseindia.com/xml-data/corpfiling/AttachHis/Reliance_Power_Ltd_281010.pdf, http://dengruo.info/201010/8-29-billion-u-s-dollars-overseas-shanghai-electric-sign-the-largest-contract/
[6] Reliance Power, *Annual Report 2009-2010*, at 6.
[7] *Id.*, at 18-19.
[8] Reliance Power, *Annual Report 2009-2010*, at 24, *available at* http://www.reliancepower.co.in/1104/7_102.pdf; Reliance Power, *Annual Report 2008-2009*, at 18, *available at* http://www.reliancepower.co.in/1104/1_102.pdf.
[9] *Tool for the demonstration and assessment of additionality, Ver. 5.2, Annex: Guidance on the Assessment of Investment Analysis*, at 5.
[10] *Validation Report*, at 75.

Reductions through grid connected high efficiency power generation. (3020), the Executive Board concluded that the project sponsor had not demonstrated additionality because it "had not considered a tariff that would enable it to achieve its ROE benchmark and implement the project activity without considering CDM revenues…."[11] That is the case here. Indeed, the *Validation Report* makes clear that the project sponsor has used the possibility of CDM support for the sole purpose of subsidizing its proposed tariff rate so it could outbid its competitors, and not to catalyze additional emissions reductions.[12]

4. The project sponsor should have evaluated end-use efficiency, demand side management, and reduction of transmission and distribution losses as alternative baseline scenarios. The Government of India Planning Commission's *Integrated Energy Policy* recognizes that "lowering energy intensity through higher efficiency is equivalent to creating a virtual source of untapped domestic energy….[a] unit of energy saved by a user is greater than a unit produced, as it saves on production losses as well as transport, transmission and distribution losses."[13] Accordingly, the Planning Commission found that "[s]everal [energy efficiency] options are less expensive than coal or gas-based generation, and therefore, *should be the "first resource" considered for fulfilling demand*."[14] (emphasis added). Towards this end, "efficiency power plants"-- i.e., bundled sets of energy efficiency programs that can deliver the energy and capacity equivalent of a large conventional power plant-- should have been considered on the same basis as supply alternatives in the baseline scenario analysis.[15] Recent studies have found that end-use efficiency improvements could reduce effective demand by more than 20 percent,[16] and add approximately $500 billion to India's economy between 2009 and 2017.[17] Similarly, reducing transmission and distribution losses also offers enormous opportunities to displace the need for new supply, and is a top

[11] http://cdm.unfccc.int/Projects/DB/DNV-CUK1254830678.73/Rejection/IWNNWJIB1G6WAG6F9RW59N3AOLQEXP , See also, *Final Ruling Regarding the Request for Registration of Rincon Verde LFGTE Project (3432)* ("The DOE (TUEV Rheinland) has failed to substantiate additionality of the project activity, in particular, the suitability of … the electricity tariff assumed in the PDD… The (insufficiently justified) tariff is a significant component in determining the additionality of the project activity, and with a 10% increase in the electricity tariff, the IRR for the project activity crosses the benchmark ….")

[12] *Validation Report*, at 36.

[13] Planning Commission, 2006. *Integrated Energy Policy: Report of the Expert Committee*, at xx.

[14] Planning Commission, 2011. *Interim Report of the Expert Group on Low-Carbon Strategies for Inclusive Growth*, at 31.

[15] See, e.g., the World Bank's recent support for mass distribution of compact flourescent light bulbs in Bangladesh. http://siteresources.worldbank.org/EXTENERGY2/Resources/ELIB_Presentation.pdf. Meg Gottstein, Planning, Financing and Building Efficiency Power Plants: Regulatory Practices in California and Other States, The Regulatory Assistance Project (2008), available at www.raponline.org; David Moskovits, Meeting China's Energy Efficiency Goals Means China Needs to Start Building Efficiency Power Plants (EPP), The Regulatory Assistance Project (2005), available at www.raponline.org.

[16] Greenpeace India. 2009. *Still Waiting*, at 14. available at http://www.greenpeace.org/india/Global/india/report/2009/11/stillwaiting.pdf

[17] Shakti Foundation, 2011. *The Hundred Billion Dollar Bonus: Global Energy Efficiency Lessons from India.*

government priority.[18] Current loss rates are between 35-40 percent,[19] and simply raising Indian transmission and distribution efficiencies to international best practices (less than 10 percent)[20] could eliminate the need for as much as 30 GW worth of additional capacity.[21]

5. Subcritical coal technology is not the proper baseline under *ACM0013*. Supercritical technology has become the technology of choice for new large-scale coal fired power plants in India, and therefore is a more appropriate baseline than subcritical coal technology. India is already rapidly deploying supercritical technology, and it will continue to gain market share without CDM support due to operational advantages, rising coal prices, and government policies. Indeed, as of 2010, India had 37 supercritical units between 660 MW and 800 MW under construction, with a combined generating capacity of 26 GW.[22] The PDD and *Validation Report* also fail to adequately assess other "realistic and credible" alternative baseline scenarios that are gaining market share, such as solar thermal power.

6. The PDD and *Validation Report* fail to apply the E+ guidelines in determining the baseline scenario. E+ guidelines require that national or sectoral policies that give comparative advantage to more emissions intensive technologies or fuels can only be accounted for in establishing the baseline scenario to the extent that they were in place prior to the adoption of the Kyoto Protocol.[23] The Government of India has historically subsidized the consumption of coal for power production by allowing state-owned enterprises to set the price of coal sold to power producers well below market rates.[24] While this subsidy was in place before 1997, it has dramatically increased. In 1997 coal prices on international markets were 350 percent above domestic prices; by 2008 (the most recent year for which data was available), they were 700 percent above domestic prices.[25] The differential between the prices charged by these state-owned enterprises and prevailing international market prices represents a subsidy that gives a comparative advantage to coal-fired power plants over cleaner modes of energy production, and to inefficient coal-fired power plants over more efficient ones. Accordingly, under the E+ guidelines, alternative baseline scenarios should have been evaluated as if the level of coal subsidy that existed on December 11, 1997 were still in place.

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[18] *International Energy Agency*; *Technology Development Prospects for the Indian Power Sector*, at 69. *available at* http://www.iea.org/papers/2011/technology_development_india.pdf

[19] Planning Commission, 2006. *Integrated Energy Policy: Report of the Expert Committee*, at 4.

[20] Greenpeace India. 2009. *Still Waiting*, at 14. *available at* http://www.greenpeace.org/india/Global/india/report/2009/11/stillwaiting.pdf

[21] Shankar Sharma, 2011. *Indian Power Scenario: Huge scope for low carbon energy pathway*.

[22] International Energy Agency, 2011: *Technology Development Prospects for the Indian Power Sector*, at 46. *available at* http://www.iea.org/papers/2011/technology_development_india.pdf

[23] EB 22, Annex 3, paragraph 7(a)

[24] http://www.coal.nic.in/chap10102.pdf

[25] Data gathered from EIA: http://www.eia.gov/emeu/international/coalprice.html , Indian Coal Ministry Annual Reports: http://www.coal.nic.in/welcome.html , BP 2011 statistical review: http://www.bp.com/sectionbodycopy.do?categoryId=7500&contentId=7068481 , and IEA Coal Statistics 2010

7. The PDD and *Validation Report* do not adequately demonstrate that the use of supercritical technology will lead to additional CO_2 reductions, even assuming that subcritical technology is the appropriate baseline. The amount of CO_2 emissions that will be released from a given coal-fired unit can vary widely depending on a number of site specific factors. These include coal quality, heating value, site conditions, condenser pressure, plant design, and the addition of pollution control equipment such as FGD or SCR.[26] The issue of coal quality is particularly important for determining CO_2 emissions performance for Indian plants.[27] Indian coal is particularly poor, with a high ash content and low calorific value. As a result, it produces lower emissions factors than those assumed in ideal conditions with higher quality coals.[28] Perhaps more importantly, it remains unclear whether it is the supercritical technology or the quality of coal that has a larger effect on CO_2 emissions intensity.[29] Taken together, site specific factors can cause supercritical units to operate far below predicted levels, and can even eliminate the operational efficiency advantages of supercritical over subcritical technologies. For instance, Sipat, the first supercritical unit in operation in India, only delivered an efficiency of 33.8 percent--marginally lower than the best sub-critical plants. More importantly, it had a *higher* CO_2 output (96kg/kwh) than the best subcritical plant.[30] Similar findings have emerged from the longer track record of supercritical plants in the United States.[31]

8. The sensitivity analysis is limited to an unrealistically narrow band of coal price fluctuation. Sensitivity analysis must consider future coal prices within a "realistic range of assumptions," as determined by project circumstances and past trends.[32] However, the project sponsor first assumes a current price for coal of $15/ton, which is 38 percent *lower* than the average Indian coal price in 2008.[33] Then, it limits the sensitivity analysis to +/-10 percent variation in coal prices. In reality, Indian steam coal rose 15.9 percent *annually* between 1994 and 2008 (the most recent year for which data was available).[34] On an absolute basis 2008 coal prices were 240 percent higher than coal prices in 1994. Moreover, these prices were set

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[26] US EPA, *Available and Emerging Technologies for Reducing Greenhouse Gas Emissions from Coal Fired Electric Generating Units*. a*vailable at*: http://www.epa.gov/nsr/ghgdocs/electricgeneration.pdf; Chikkatur and Sagar, 2007. *Cleaner Power in India: Towards a Clean-Coal-Technology Roadmap*, at 192.

[27] Energy Information Administration, *Carbon Dioxide Emissions Factors for Coal U.S.*, *available at* http://www.eia.gov/cneaf/coal/quarterly/co2_article/co2.html

[28]Chikkatur et al, 2008. *Coal Initiative Reports* at 2. *available at*: http://www.pewclimate.org/docUploads/india-coal-technology.pdf

[29] CO_2 Scorecard. *The World Bank's Coal Electricity Headache*. *available at* http://www.co2scorecard.org/home/researchitem/19#_ftn2

[30] Center for Science and Environment, 2010. *The Challenge of the New Balance*, at 35.

[31] CO_2 Scorecard. *The World Bank's Coal Electricity Headache*. *available at* http://co2scorecard.org/home/researchitem/19

[32] *ACM0013*, Ver. 4.0, at 4; *Tool for the demonstration and assessment of additionality*, Ver. 5.2, at 7, 15.

[33] Data gathered from EIA: http://www.eia.gov/emeu/international/coalprice.html ,

[34] Data gathered from EIA: http://www.eia.gov/emeu/international/coalprice.html , Indian Coal Ministry Annual Reports: http://www.coal.nic.in/welcome.html , BP 2011 statistical review: http://www.bp.com/sectionbodycopy.do?categoryId=7500&contentId=7068481 , and IEA Coal Statistics 2010

by state-owned coal producers[35] which have kept prices as much as one-seventh of average international prices.[36] Recent market based auctions of coal reserves have shown that prices can be as much as 67 percent higher when government price controls are removed.[37] With the cost of production jumping 32 percent over the past five years for Coal India,[38] it is highly unlikely that coal prices will remain within the assumed range. Within a more realistic range of coal price assumptions, modern supercritical plants surpass subcritical plants as the most financially or economically attractive alternative.[39]

Conclusion

Based on these concerns, we respectfully request that you recommend that the Executive Board reject this request for registration.

Respectfully submitted,

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[35] http://www.coal.nic.in/chap10102.pdf
[36] Data gathered from EIA: http://www.eia.gov/emeu/international/coalprice.html , Indian Coal Ministry Annual Reports: http://www.coal.nic.in/welcome.html , BP 2011 statistical review: http://www.bp.com/sectionbodycopy.do?categoryId=7500&contentId=7068481 , and IEA Coal Statistics 2010
[37] http://www.business-standard.com/india/news/bids-at-cil-e-auctions-way-above-notified-prices/404107/
[38] http://www.business-standard.com/india/news/bids-at-cil-e-auctions-way-above-notified-prices/404107/
[39] MIT, 2007. *The Future of Coal*, at 19.