

25 July 2014

Dear CDM Executive Board members,

Objections to and comments on CDM credits for
Punatsangchhu-II hydropower project in Bhutan
and export of hydropower from it to India
by Punatsangchhu-II Hydroelectric Project Authority

We hereby strongly oppose the granting of CDM credits to Punatsangchhu-II Hydroelectric Project Authority (PHPA-II) for the 1,020 MW Punatsangchhu-II hydro power project in Bhutan for the following amongst other reasons.

The project is non-additional; there are serious flaws in the investment analysis

- 1) The PDD fails to disclose that 30% of the project funding is in the form of a grant from India. Please see the website of the Indian Embassy in Bhutan. <http://www.indianembassythimphu.bt/pages.php?id=97> Hence the financial viability of the project is not correctly assessed in the PDD. Granting of CDM credits to PHPA-II will result in a windfall gain to PHPA-II. On this ground alone the project should not be considered for CDM credits.

All projects that are being developed to provide 10,000 MW to India by 2020 have grants from India. This is also true of the 720 MW Mangdechhu hydropower project that has also applied for CDM credits <https://cdm.unfccc.int/Projects/Validation/DB/AV4D7HV34I0UH7WJ6S2G3UV9LA2KQV/view.html> and the PDD of this project also fails to disclose that 30% of the project funding is in the form of a grant from India. Please see website of Indian Embassy in Bhutan. <http://www.indianembassythimphu.bt/pages.php?id=97>

The UNFCCC has already registered Punatsangchhu-I hydropower project of the Punatsangchhu Hydropower Authority as a CDM project on 29 November 2013. <http://cdm.unfccc.int/Projects/DB/BVQI1356508539.12/view> The PDD of this project too did not disclose that it received 40% grant support and 60% loan support from India. Please see website of Indian Embassy in Bhutan. <http://www.indianembassythimphu.bt/pages.php?id=96>

- 2) Since the grant for the project from India has not been considered, the project's actual IRR benchmark is much lower than what is stated in the PDD. MHPA is a publicly owned company, owned by the government of India and the Government of Bhutan. The Government of India, making the grant, does not need the same rate of return as a private company. The Government of India is developing its hydropower capacity for a range of reasons, including reducing the country's dependence on imported coal, and diversifying its energy supply. These benefits contributed to the decision of the Indian government to provide a grant, and to devote funds generally to hydropower

development in Bhutan, and thus the actual benchmark of the Indian government in providing the grant and founding PHPA-II is much lower than commercial rates.

- 3) The difficulty assessing the true benchmark required by the Indian government in providing the grant and founding PHPA-II, considering a wide range of project benefits beyond return on investment, highlights the inappropriateness of the use of an IRR benchmark in assessing the additionality of government investments. Due the range of benefits from such a project, as stated in India's planning documents, and India's commitment to build hydropower and establish quantitative goals for this development, an IRR benchmark based on simple commercial terms is not an accurate predictor of the decision of the government to build an individual project. An IRR benchmark based on simple commercial terms should not be used to assess the additionality of large government investments.
- 4) The Indian government in its most recent budget of July 2014 has earmarked finances for the development of hydropower in Bhutan. Hydropower development in Bhutan with joint efforts of India and Bhutan is on-going and is part of the national planning process of both countries. This project is also one of the projects identified to be developed to supply 10,000 MW to India by 2020. See the website of the Indian Embassy in Bhutan mentioned above.

All such hydropower development in Bhutan using earmarked finances are planned for development and thus are non-additional, and should be considered non-additional by the CDM governance bodies and the project validator.

- 5) In addition, Bhutan has a deficit of power, especially in the lean season. It imports power from India during this period. For Bhutan to be self sufficient in power it needs to develop hydropower and other renewable energy (solar, wind, micro hydro, etc) as Bhutan does not have fossil fuels. Hydropower projects would have been developed to meet Bhutan's power requirements. This is another reason the power provided by the project is non-additional and should be considered non-additional.
- 6) It is unclear from the PDD if the value of the electricity provided to Bhutan, called a "royalty" in the table on page 25 of the PDD, is included in the revenues earned by PHPA-II. Surely the value of this power to Bhutan should be included as revenues of the project. The financial value of the project to the Government of Bhutan, partial owner of PHPA-II, looks very different whether or not that electricity is generated and provided to Bhutan.
- 7) On page 38 of the PDD it is stated that the proposed activity is not common practice in the region. This is patently false. Elsewhere in the PDD the region has been taken to be Bhutan and NEWNE grid in India where the hydropower is to be used. This is an appropriate region for the common practice assessment since most of the power is expected to be used in the NEWNE region. The proposed activity is common practice in India that forms part of the NEWNE grid. For example, in the states of Sikkim and West Bengal on the Teesta River is the completed Teesta-V and under construction are Teesta-III, Teesta-VI, Teesta Low Dam-III and Teesta Low Dam-IV. For an exhaustive list of hydropower dams that have received environmental sanction between April 2007 and December 2012 and would be in various stages of construction see page 16 onwards of

http://sandr.in/env_governance/TOR_and_EC_Clearance_status_all_India_Overview_Feb2013.pdf.

While listing the projects in Bhutan that are within a range of +/- 50% of the project on page 37, the 720 MW Mangdechhu and 1,200 MW Punatsangchhu-I hydropower projects have been omitted. The Mangdechhu hydropower project has also applied for CDM credits

<https://cdm.unfccc.int/Projects/Validation/DB/AV4D7HV34I0UH7WJ6S2G3UV9LA2KQV/view.html> and the Punatsangchhu-I hydropower project is already registered <http://cdm.unfccc.int/Projects/DB/BVQI1356508539.12/view>.

In addition, the Indian states of Arunachal Pradesh and Sikkim have identified 164 and 27 hydropower dams respectively and most of them are run-of-the-river peaking power plants. India's Central Electricity Authority has identified around 80 hydropower dams in Bhutan. Attached is a map of the identified locations in Bhutan. India and Bhutan have plans to build up Bhutan hydropower capacity, and are doing so by government backed efforts that do not require commercial level returns on investment. Hence the project is not additional.

Stakeholder consultation requirements have not been met

- 8) The EIA of Punatsangchhu-II hydropower project has not been made available to the affected communities and citizens of Bhutan even though right to information is a constitutional right in Bhutan. We state this after a visit to Wangdue and project area in February 2013 and having spoken to people in the project area. The EIA is not available on the website of the National Environment Commission (NEC) of the Royal Government of Bhutan <http://www.nec.gov.bt/>. The EIA is not in the public domain. All of our attempts to see the EIA of the Punatsangchhu-II hydropower project during the course of four visits to Bhutan in 2013 and 2014, including requests directly to officials of the NEC, were unsuccessful. None of the NGOs, media persona and citizens we spoke to had seen the EIA of the project. On this ground alone the project should be rejected.
- 9) When we asked people if they had been informed that they have the right to reject the project at meetings they said that they were told that the project will be developed and people can only give their opinion and say what they would like or not like. This is a mockery of the local stakeholder consultation process. On this ground alone the project should be rejected.

The project poses a range of serious environmental impacts not documented in the PDD

- 10) Some of the other issues with respect to forests, ecology and environment are:
 - a) The two Punatsangchhu projects would destroy the habitat of about 20 White Bellied Heron, which account for roughly 10% of the world's population. They are a critically endangered species as per the 2007 IUCN Red List, with only about 200 of them in the world. Attached is a picture of the bird along the river.

- b) Development of dams in Bhutan largely follows the Indian model which has many issues and problems and has scant regard for the environment. Common problems include muck dumping in the riverbed and on forested hill slopes, inadequate release of minimum flows from dams, no monitoring of flows released, etc. Photographs of muck dumping by this project are enclosed.
- c) It is mentioned that stocking of seeds of one species of fish will be done (page 64 of PDD). There is no mention of where they will be stocked and how they will be used. The general statement / response is that there will be a fish hatchery. Even assuming without admitting that there will be one, no resources have been allocated for the hatchery.
- d) Allocation of money for the Environment Management Plan is not mentioned.
- e) The minimum flows from dams in Bhutan are prescribed as 10% of lean season flow. This is not scientifically based and grossly inadequate. The river and riverine ecology respond to seasonal fluctuations in flows. A diurnal fluctuation will send completely wrong signals to the flora and fauna. This has not been addressed by the project. The project should provide for environmental flows that are calculated using a “holistic methodology” such as Building Block Methodology that is prescribed by India’s (Federal) Ministry of Environment & Forests. A holistic methodology while calculating the environment flows would take into consideration not just the ecological requirement but also social, cultural and religious requirements. It would also mandate mimicking the natural flow regime in the river, which includes floods. The quantity and flow rate in the river are also essential signals to aquatic life on when to spawn, when to migrate, etc. There is no scientific study to back the statement that release of 2.5 cumecs from the dam is sufficient for maintenance of riverine ecology (page 64 of the PDD).
- f) While the project’s life has been shown to be 35 years (page 5 of PDD), it fails to state what will happen to the project thereafter. Dams have serious impacts on the marine biodiversity. It is for this reason that over a thousand dams have been decommissioned in USA alone. Restoration efforts that will be done after the life of the project is over should be spelt out.

Risks to the project

- 11) The geological risks of the project are extremely high. In 2013 there was a landslide at the dam axis of the Punatsangchhu-I hydropower project, which is already registered with you. Attached are photographs of the landslide. The Himalayas are a young mountain chain. Landslides and other geological risks are common along the length and breadth of India. For example, information is that one of the tunnels of the Panan hydropower plant in the state of Sikkim, India, encountered a hot spring and they have for years been unable to find an alternate alignment.
- 12) Glacial Lake Outburst Floods (GLOFs) mentioned on pages 29-33 of the PDD also pose a very serious threat to the project.

“Particularly in the Himalayan region, it has been observed that the frequency of the occurrence of GLOF events has increased in the second half of the 20th century.”

Research so far indicates that this is largely due to climate change.

“The risk of GLOF has been a major threat to Bhutan. The glaciers of Himalaya are important water sources for hydro power generation, drinking, irrigation and other domestic use but they are also a potential source of geo-hazard such as rock fall, landslides and flash floods.

*...
Among the identified potentially dangerous lakes, three lakes are in the Chamkhar Chu Basin, one is in the Kuri Chu Basin, seven are in the Mangde Chu Basin, five are in the Mo Chu Basin and eight are in the Pho Chu Basin.”*

The confluence of Mo (Mother) chhu (river) and Pho (Father) chhu is at Punakha, some kilometers upstream of the project. The combined river is Punatsangchhu. Of the 24 identified potentially dangerous lakes, 13 are in the Punatsangchhu basin. In recent years the Punatsangchhu experienced GLOFs in 1950, 1957, 1968 and 1994. These caused widespread destruction. The backflow from one of the GLOFs partially destroyed the Punakha Dzong, the religious and administrative headquarters of the region.

“The Wangdue valley is one of the two most GLOF vulnerable areas in Bhutan identified by UNDP.

*...
Punatsangchhu river possess highest risk among the other river systems in the Bhutan, holding huge ice reserve and massive and potential dangerous glacial lakes in the basin.*

*...
The study by Department of geology and mines of Bhutan along with the Institute of Geology, University of Vienna, Austria warned of possible hazard potential of combination of Raphstreng and Thorthormi tsho which could result in more than two times the volume of 1994 outburst and consequences can be very devastating.”*

- 13) Bhutan lies in a region with a high to very high seismic hazard. Tens of earthquakes have rocked Bhutan in the 20th and 21st century. Since the year 2000 alone there have been three earthquakes in Bhutan. The project is in a seismically active zone with a prevalence of earthquakes.
- 14) Glaciers are retreating. Glacial melt contributes a significant percentage to the water in the river. The availability of water is based only on data of past 14 years. It is well known that with climate change future is unpredictable and past trends cannot be relied upon.

All risks, geological, GLOFs, glacial retreat and earthquakes, put together make this project extremely risky.

False statements in the PDD

- 15) Paragraph d) on page 28 of the PDD is identical to the PDD of the Punatsangchhu-I hydropower project. If it's true for the Punatsangchhu-I hydropower project, the figures cannot be true for the Punatsangchhu-II hydropower project.
- 16) With respect to including off grid power plants in the project electricity system, on page 41 of the PDD it is stated that the information is not available in the public domain. The project participant is a government company. It can easily obtain the

information from the Department of Renewable Energy, Royal Government of Bhutan.

- 17) In Appendix 2 it is stated that there is no public funding involved. The Government of India has provided a grant. This is public money. It cannot be said that there is no public funding involved.

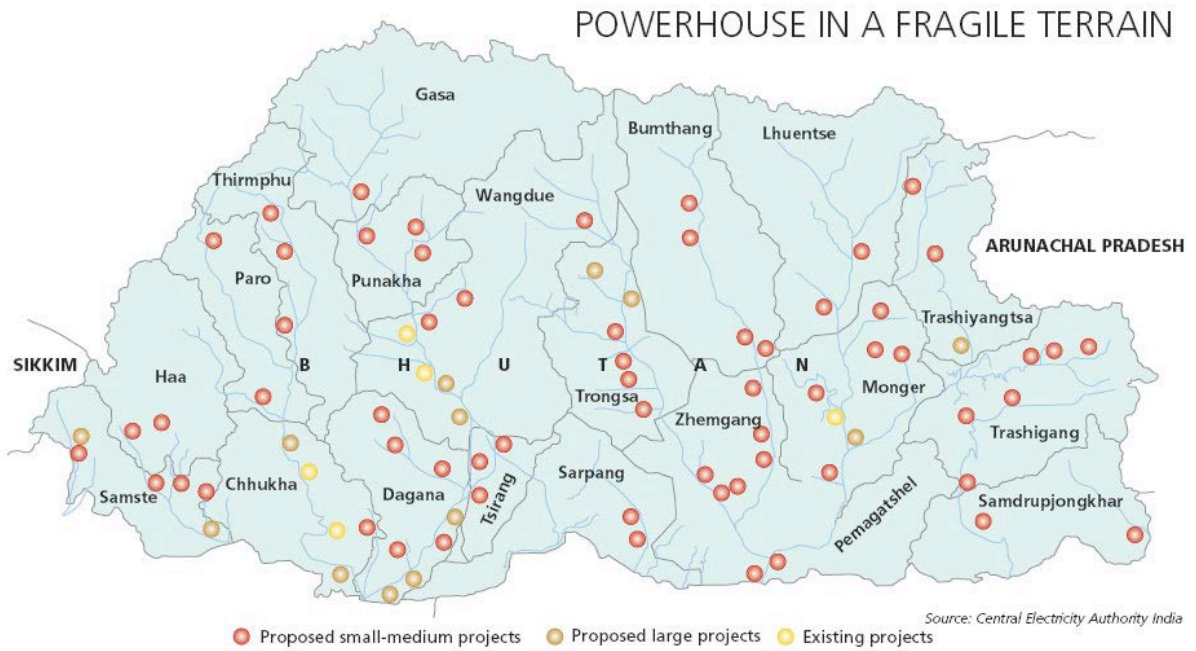
All in all, looking at all the above issues, Punatsangchhu-II hydropower project does not deserve to receive carbon credits under the UNFCCC. Doing so will only be a mockery of the displaced population and submerged forests, damaged biodiversity, clean development mechanism concept and global climate change mitigation efforts.

Yours faithfully,



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Map of hydropower dams in Bhutan prepared by Central Electricity Authority, India



White Bellied Heron
(February 2013)



Muck dumping in the river
(February 2013)



Landslide at dam axis of Punatsangchhu-I hydropower project
(November 2013)

