

**Comments on the Panan Hydro-Electric Project
Submitted to DNV Climate Change Services AS**

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We are writing to express our concern over the application for validation of the 300 MW Panan Hydro-Electric Project¹ in India. The Project Design Document (PDD) for this project is flawed and inaccurate. In addition, CDM validation of this project would reward a non-additional project, but also one of the most controversial hydropower schemes in Sikkim, India.

Summary of Key Concerns

- The PDD lacks accuracy and provides insufficient and non-rigorous information on a number of environmental issues.
- The PDD fails to mention the local opposition by the indigenous Lepcha tribal community.
- The local stakeholder consultation process failed to include all families that would be directly or indirectly impacted by the project.
- The PDD omits a range of possible negative impacts on freshwater biodiversity and local terrestrial biodiversity, as well as a mitigation plan for seismic risks.
- The project is common practice and likely non-additional.

1. PDD Quality

Environmental Impact Assessment

In the environmental impact assessment section of the PDD, instead of providing concrete and accurate figures on downstream releases and specific descriptions of mitigation activities, as required by the CDM Validation and Verification Manual (pg 5),² the developer makes broad and incomplete statements. For instance, the PDD states, “the proposed diversion dam is expected to change the habitat conditions to some extent in the stretch immediately downstream of the dam site. In order to maintain ecosystem, sufficient amount of discharge will be released.” Such descriptions show a lack of accuracy (e.g. how do you measure “some extent” and a “sufficient amount”?) and represent an environmental impact assessment that lacks rigor. Other examples of vague and inadequate statements on mitigation include: “proper sewage disposal systems are proposed”; “muck generated... will be dumped in an environmentally sound manner”; and “proper maintenance of vehicles” will minimize air pollution. Such broad statements are unacceptable as activities to mitigate the environmental impacts of the Panan project.

¹ <http://cdm.unfccc.int/Projects/Validation/DB/2FN6ZLKQZWUA2LTTIRAH73FERKHE0M/view.html>

² Clean Development Mechanism Validation and Verification Manual, Version 01.2, EB 55 report

Discrepancies

The PDD carries a number of discrepancies. For instance, on p. 31 of the PDD, the developer states, “The project activity involves construction of 115m high dam leading to submergence of 13.4 Ha which comprises 5 Ha of dense forest. In addition 6.67 Ha of land, required for building and construction purpose.” The total of these areas is 20.07 Ha of land. However, the PDD later states that the “total affected families due to various activities of the PHEP are 77 with total extent of loss of land of 35.933 Ha,” which is a greater figure than 20.07 Ha. In addition, on p. 7, the reservoir area is stated as 132,000 square meters, while 13.4 Ha is equivalent to 134,000 square meters.

2. Social Impacts

Stakeholder Consultations

According to the PDD, a consultation was held in 2006 with 164 attendants. However, according to local partners, consultations were only done with land-owners who were willing to give up their land, but not with those who would be affected but whose land did not fall in the acquisition process. PDD reports on page 35 that the special status of the Dzongu will be protected, but does not mention how.

In addition, while an expected 77 families will be directly affected by the project, this is not an accurate picture of the situation. The tunneling, use of explosives, influx of workers, etc. will directly and indirectly affect the entire area. We have seen this in the Teesta Stage V 510 MW project, where initially only 56 families were to be affected according to the EIA. However, by the time the project was commissioned, the number of affected families had crossed 1,000 and is still increasing. The project developer is required to invite comments from all local stakeholders “that can reasonably be considered relevant for the proposed CDM project activity,”³ but in the case of the Panan project, this did not happen.

Local Opposition

Section E of the PDD (Local stakeholder consultation) fails to provide a complete summary of all local stakeholder comments on the project as required by the CDM Validation and Verification Manual,⁴ because it ignores the local opposition and hunger strike against the project led primarily by the indigenous Lepcha people. The PDD only states that the Lepcha tribal community fears that “they may lose their identity, culture and special status given under article 371 (F)” but does not mention their opposition.

A marathon hunger strike of 915 days,⁵ which started in 2007, was called off after the government assured the protestors that they would organize talks. However, because the project was not been suspended, the protests have continued, with legal actions against the project developer. The protestors are primarily the protected indigenous Lepcha tribals. The project is

³ CDM Validation and Verification Manual, page 26.

⁴ Ibid.

⁵ <http://www.weepingsikkim.blogspot.com>

located in the heart of the tribal reserve of Dzongu, the last bastion of the Lepcha tribe. The Lepchas have been protesting vehemently against the project since its inception. The project will affect the culture, demography and social fabric of the Lepchas, who have become a minority in their own land.

While the PDD recognizes that the special status to the people of Dzongu is guaranteed under Article 371(F), it does not provide any information on how mitigation funds will be used to improve their lives.

3. Environmental Impacts

The PDD mentions minimal environmental impacts, minimal downstream impacts, and minimal impacts on aquatic species. However, several studies of this area expect substantial impacts in all three areas.

Ecological Impact

The PDD fails to mention that the project developers have not obtained clearance from India's National Board of Wildlife, a legal requirement as the project is located within 10 km of the Kanchenjunga National Park and the Biosphere Reserve. As per a 2006 Supreme Court of India ruling, any developmental project within 10 km of a national park should obtain clearance from the National Board of Wildlife. Without this clearance, the company cannot start work.

On page 31, the PDD claims that “the forest areas proposed to be diverted do not constitute critical habitat of any plant or animal species. There are no endangered species. Hence, any major impact on any species or its habitat is not expected. Minor disruption will be caused to flora and fauna due to these activities.” However, this is inaccurate and untrue. The District of North Sikkim, where the proposed project will be, has been declared a “high priority” biologically rich area.⁶ A study titled *Carrying Capacity of Teesta River Basin*⁷ conducted by the University of Delhi but commissioned by the Ministry of Environment and Forests, Government of India and funded by the National Hydroelectric Power Corporation Ltd also found that “there are around 154 species of mammals in Sikkim belonging to 26 families. Of these, almost half are found in North Sikkim,” the same district in which the 300 MW Panan project is proposed. Except for several rodents, most of these mammals are listed in the Wildlife Protection Act 1972 as amended up to 1993. Altogether, 16 species of mammals from North Sikkim are listed under Schedule-I of the Act (Schedule I provides the highest level of protection). The report then goes on to list the endangered birds, reptiles, amphibians, fish, butterflies and other invertebrates of the Teesta River Basin, which includes the Tolung Chu River, some of which are not found anywhere else in the world. The PDD fails to mention any of these endangered species.

Impact on Fisheries

The PDD on page 31 claims that no migratory species exist in the Tolung Chu River. However, PDD contradicts itself on page 33 by mentioning that local migration exists, and that fish farms

⁶ http://www.gbpihedennis.nic.in/HTML/vol113_1/BIODIVERSITY.pdf

⁷ http://www.sikenvis.nic.in/CCSOTB/Vol-X_Socio-Cultural%20Environment.pdf

and hatchery development will be necessary to conserve certain fish species. It fails to acknowledge the host of news reports and studies that highlight to the importance of Teesta Basin fisheries. For instance, the report *Fish Biodiversity as an Indicator of Riverine Status of Sikkim*,⁸ compiled to analyze the impacts of the 27 proposed large hydropower projects in the Teesta River Basin, provides a detailed picture of the fisheries in the Teesta River Basin. It lists the dominant fish species in the Teesta and Rangit tributaries as *Schizothorax spp* (Asala) *Neolissocheilus spp* (Katley), *Garra spp* (Buduna), *Pseudecheneis spp* (Kabrey), *Barilius spp* (Chirkay), *Semiplotus spp* (Chepti), etc. On top of this, the confluences of the Teesta River (specifically those in Sikkim) are nationally recognized as some of the most abundant angling spots in the country for commercially important fish such as the giant mahaseer.⁹ Such freshwater biodiversity is only possible with uninterrupted flow. However, none of these considerations are mentioned in the PDD.

Seismicity and Hazards

Page 32 of the PDD mentions the serious seismic risks of the region, including the fact that Sikkim is in a high seismicity zone – Zone IV. However, the PDD makes no mention of how such geologic risks will be managed. The villages in the vicinity of the project area have already suffered massive destruction and casualties, including an earthquake measuring 6.9 on the Richter scale on September 18, 2011. The situation was aggravated by the use of explosives during the investigative work for the project, which affected the already weak geology of the region. In addition, the PDD fails to mention that the project developer has yet to submit geological and GLOF (Glacial Lake Outburst Floods) reports, which had been ordered by India's Central Electric Authority.

Cumulative Impact

The PDD fails to mention that there are 27 hydroelectric projects proposed in the Teesta River Basin and that many of them operating or are under construction throughout the state of Sikkim. The various components of the projects, including the dams, tunnels, the approach roads and bridges, will result in disturbances and destruction to the physical habitat of both the forest dwellers and aquaculture. The construction of dams and reservoirs for water storage, power generation and diversion for other usage can affect the flow and depth of the water. It also changes the drainage characteristics of watershed and may lead to more run off and fluctuation in river flow rate.¹⁰ There has been no credible cumulative impact assessment of all these projects.

Reservoir Emissions

As demonstrated by the latest research in reservoir emissions,¹¹ hydroelectric plants can be significant emitters of CO₂ and CH₄, especially those with a young reservoir and large carbon

⁸ http://www.sikenvis.nic.in/Reports%20and%20Publications/Biodiveristy-of-Sikkim/12%20Fish_221-232%20web.pdf

⁹ http://www.telegraphindia.com/1110101/jsp/siliguri/story_13377150.jsp

¹⁰ http://www.sikenvis.nic.in/Reports%20and%20Publications/Biodiveristy-of-Sikkim/12%20Fish_221-232%20web.pdf

¹¹ <http://www.internationalrivers.org/node/2374>

inputs prior to submergence. In addition to large emissions produced by the decomposition of submerged vegetation in the reservoirs – particularly in the first ten years of the plant (the period of the CDM projects) – a large amount of methane is released also at the turbines, spillways, and from the surface of the water immediately downstream.

The developer takes advantage of a loophole in the CDM regulation that allows zero or negligible emissions to be claimed if the power density is over 10 W/m². Unfortunately, having a high power density does not, in fact, result in zero emissions. A high power density means that the area of the reservoir is small relative to the installed capacity, which, in turn, reflects the amount of water available in the river. The small area means that emissions through the reservoir surface will be smaller than in a large reservoir, but not zero. While page 9 of the PDD claims there will be negligible methane emissions, without actual measurements or comparisons to similar existing reservoirs, it is not possible to conclude that a reservoir will be carbon neutral. In particular, the PDD fails to mention that during the monsoon season, the amount of organic matter deposited into the reservoir, such as driftwood and leaves, will increase and thus provide additional sources of methane.

4. Additionality

Large hydropower is common practice in India. The common practice analysis should cover the entire country, not just the small state of Sikkim. The CDM Executive Board issued guidelines on common practice at its 63rd meeting which specify that the "(a)pplicable geographical area covers the entire host country as a default." Since the development of hydropower in India is determined through a centralized planning process, including transmission planning, a national assessment is most appropriate. The Central Electricity Authority's Hydro Development Plan for 12th Five Year Plan documents which projects are planned to be built in each state of the country. Over 100 projects totaling 30 GW of hydropower are planned to come on line in the country during the 12th Five Year Plan (2012-2017). Eleven projects, totaling 2.5 GW, are planned in Sikkim. During the 11th Five Year Plan, during which time the MOU was signed for Panan, 16 GW of hydropower capacity addition was planned in the country, including 1.3 GW in Sikkim. Even though hydropower development does not always happen at the pace planned, hydropower is being built at large scale throughout the country, including in the eastern region that includes Sikkim. In the eastern region of India, many projects have been built and are being planned in the same size-range as Panan. Focusing just on Sikkim and just on projects between 150 MW and 450 MW provides a disingenuous and implausible assessment of common practice, and does not follow CDM EB guidelines.

Based on these reasons, we strongly and vehemently oppose the validation of the 300 MW Panan Project under the CDM. Please do not hesitate to contact us with any questions you may have.

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