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Dear Mr. Sanderson Alberto Medeiros Leitão,

We are writing to express our concern regarding the applications of controversial large Brazilian dam projects for carbon credits within the Clean Development Mechanism (CDM). These projects include the Madeira Complex projects – 3150 MW Santo Antônio Hydropower Project[1] and the 3750 MW Jirau Dam[2] – and the 1820 MW Teles Pires Dam[3] in the Tapajós Basin.

In order to receive letters of approval, these projects must demonstrate to the Comissão Interministerial de Mudança Global do Clima that they meet a series of criteria on sustainable development.[4] However, as we describe below and in greater detail in the Annex, these projects fail to meet these criteria on a number of fronts:

- **Contribution to local environmental sustainability:** None of these projects contribute to local environmental sustainability, and all three hydropower plants have had their environmental licenses legally questioned by federal prosecutors because of their enormous environmental and social impacts. Experts have criticized their EIAs, citing the lack of consideration for transboundary impacts, underestimation of sedimentation, impact on migratory fish species and subsequent effects for the food security of both indigenous and urban citizens.
- **Contribution to improvement of labor conditions and net job creation:** It would be absurd to consider that the dams contribute to the development of good working conditions. Repeated strikes and demonstrations by workers at Jirau and San Antônio have exposed poor working conditions, including inadequate sanitary facilities, poor food provision, lack of appropriate medical care, uninhabitable shelters, etc.
- **Contribution to the distribution of income:** It is well known that these projects have negatively impacted a large number of families in coastal, fishing and farming communities, through the loss of their lands and livelihood resources. In addition, the cost of living, urban violence, and prostitution in the new development areas is expected to rise, thereby negatively affecting local economies and most residents.

[1] http://cdm.unfccc.int/Projects/Validation/DB/S253ZCTBJU9LJ3VF72CS1J8SHY02PP/view.html
[2] http://cdm.unfccc.int/Projects/Validation/DB/M4OO2XA6U9D8X8CASOJDWPFTIZ2Z3H/view.html
[3] http://cdm.unfccc.int/Projects/Validation/DB/0LAWB1YZURTG26K2GL72WDDP2VOALS/view.html
[4] Contribution of the CDM Project Activity to Sustainable Development, Annex III of the CIMGC Decree of 2003, http://www.mct.gov.br/index.php/content/view/320870.html

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- **Contribution to training and technological development:** These projects clearly have not contributed positively to worker training. In addition, CDM financing could be supporting new and innovative technological developments rather than hydropower, which already contributes 80% to the overall electricity supply.
- **Contribution to regional integration and linkages with other sectors:** As the energy generated by these projects will be for the interconnected system to meet the national energy demand, the contribution of plants to regional development is small.

In addition, these projects do not meet the CDM criteria for sustainable development and additionality on the following grounds:

- **Projects emit greenhouse gases:** As demonstrated by the latest research in reservoir emissions, hydroelectric plants in the tropics are intrinsically large emitters of CO_2 and CH_4.[5] In addition to large emissions produced by decomposition of submerged vegetation in the reservoirs – particularly in the first 10 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. Moreover, these projects will lead to greater deforestation of the Amazon rainforest – a key climate regulator and carbon stock – through an increase in migration, land speculation, and through spurring large-scale soybean agribusinesses.
- **Projects are not additional:** The resources for implementing all three projects are guaranteed by private and public investors and public funding through the participation of state companies and the Brazilian National Development Bank (BNDES). All three dams are already under construction, which proves that they would have been built regardless of CDM funding and are therefore not additional.

We urge you not to issue letters of approval to any of these projects, since they do not comply with your criteria for CDM participation. If approved, these projects would undermine international mitigation efforts and would be prejudicial to the integrity of your criteria and procedures. In addition, we would welcome if you could clarify your vision for Brazil's participation in the CDM and reaffirm its commitment to keeping the guidelines strong.

We would be happy to provide further information on technical data and scientific analyses for these projects, or participate in meetings for further discussion on this matter.

Sincerely,

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[5] Fearnside, P.M. 2008. Hidrelétricas como "fábricas de metano": O papel dos reservatórios em áreas de floresta tropical na emissão de gases de efeito estufa. *Oecologia Brasiliensis* 12(1): 100-115. doi: 10.4257/oeco.2008.1201.11; Fearnside, P.M. & S. Pueyo. 2012. Underestimating greenhouse-gas emissions from tropical dams. *Nature Climate Change* 2(6): 382–384. doi:10.1038/nclimate1540

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Annex:
Further Information on Santo Antônio, Jirau, and Teles Pires Dams

Relevant criteria for Brazilian CDM projects[6]	Summary of Individual Violations of Criteria for Brazilian CDM Projects	Sources
Santo Antonio		
Contribution to local environmental sustainability	The Santo Antônio Dam has already caused irreparable damage to the livelihoods and cultures of riverine populations, indigenous communities, urban populations, and family farmers. Several lawsuits against the project have also questioned the legality of its installation license based on: the deficiencies of the EIA; its failure to meet the conditions of its First Phase License; its non-compliance with regulations that require prior analysis of potential conflicts over the use of water resources; and its lack of prior consultations with indigenous peoples as required by the Constitution.	International Rivers Comments: http://www.internationalrivers.org/node/3052 Philip Fearnside Comments: http://www.internationalrivers.org/node/3053
Contribution to improvement of labor conditions and net job creation	Workers reported the frequent occurrence of accidents (some culminating with the death of workers), which are covered up by the Santo Antônio consortium.	"The Madeira River Complex," Amazon Watch: http://amazonwatch.org/work/the-madeira-river-complex
Contribution to training and technological development	Brazil is already highly dependent on hydropower for its electricity, with about 80% of its electrical energy coming from hydroelectric dams. This means that limited CDM financing should go to technologies that require the extra financial spur for development rather than to a technology that already enjoys significant political and financial support.	
Contribution to regional integration and linkages with other sectors	A study by Greenpeace on alternative energy scenarios in Brazil concluded that energy losses in the country's transmission system are an estimated 20%, a phenomenon largely related to a heavy dependence on extremely long-distance transmission lines, such as those planned for the Santo Antônio Dam.	[r]evolução energética, Greenpeace International, 2007: http://www.greenpeace.org.br/energia/pdf/cenario_brasileiro.pdf
Additionality	The 3,150 MW Santo Antônio project is at an advanced stage of construction, with	International Rivers Comments:

[6] Contribution of the CDM Project Activity to Sustainable Development, Annex III of the CIMGC Decree of 2003, http://www.mct.gov.br/index.php/content/view/320870.html

	initial turbines already becoming operational. In addition, reports about the project have stated a much higher IRR than what is used in the Project Design Document (PDD), which is a serious contradiction and raises questions about whether the PDD's investment analysis was manipulated to generate a lower IRR in order to appear additional.	http://www.internationalrivers.org/node/3052
Greenhouse gas emissions	The PDD underestimates the reservoir size; the actual reservoir size would disqualify the project from the CDM. In addition, the PDD ignores current research on greenhouse gas emissions from hydroelectric dams in the tropics.	Philip Fearnside Comments: http://www.internationalrivers.org/node/3053
Jirau		
Contribution to local environmental sustainability	Technical studies conclude that the Jirau hydropower project will cause transboundary impacts in Bolivia and Peru. The project EIA avoided an analysis of transboundary impacts and a relevant mitigation plan. In addition, the planning, licensing and construction of the Jirau Dam has been marred by repeated violations of Brazilian legislation and international agreements regarding human rights and environmental protection.	International Rivers Comments: http://www.internationalrivers.org/node/7477 Philip Fearnside Comments: http://www.internationalrivers.org/node/7471 Jorge Molina Comments: http://www.internationalrivers.org/node/7472
Contribution to improvement of labor conditions and net job creation	Violations of workers' rights to fair wages and living conditions led to labor unrest beginning in 2011, when 35 sites that serve as living quarters and 45 buses were set on fire. Further incidents have occurred in 2012, including when 30 dam structures were set on fire in protest over poor wages and conditions. Slave-like conditions have even been reported at the dam site.	International Rivers Comments: http://www.internationalrivers.org/node/7477 "2011 Missão Jirau - Hidrelétrica do Madeira," Plataforma DHESC: http://www.dhescbrasil.org.br/index.php?option=com_content&view=article&id=449:2011-meio-ambiente-missao-jirau-hidreletrica-do-madeira&catid=131:relatorios&Itemid=156
Contribution to the distribution of income	Construction of the Jirau Dam has caused social and environmental impacts on federally-protected indigenous territories as well as on nearby tribes living in	International Rivers Comments: http://www.internationalrivers.org/node/7477

	voluntary isolation. The Federal Public Prosecutor of the state of Rondônia is currently investigating these impacts in order to measure how Enersus has complied with the indigenous peoples' mitigation plan developed as a condition of the project license.	
Contribution to training and technological development	(same as Santo Antônio arguments above)	
Contribution to regional integration and linkages with other sectors	(same as Santo Antônio arguments above)	
Additionality	The project clearly does not meet criteria for additionality. The Brazilian National Development Bank (BNDES), acting as the financing facility for this proposed CDM project activity, provided preferential credit lines for the proposed project activity. In addition, the PDD's IRR calculation methods and benchmark are obscure.	International Rivers Comments: http://www.internationalrivers.org/node/7477
Greenhouse gas emissions	The PDD classifies the dam as only a "minor emissions source" of methane, but makes clear that officially the emissions are zero and that no measurements or monitoring are required. No technical studies are cited to substantiate the claim that the dam would only be a "minor" source of methane. The claim rests on the loophole in the CDM's regulations classifying dams by power density, or the ratio of installed capacity to reservoir area.	Philip Fearnside Comments: http://www.internationalrivers.org/node/7471
Teles Pires		
Contribution to local environmental sustainability	Teles Pires Dam would destroy one of the most important spiritual heritage sites of the indigenous Munduruku, Kayabi and Apiacá, as it would flood 95 km^2 of surrounding land and destroy the Sete Quedas, which is the birthplace of over 200 fish species. The environmental licensing process has been marred by grave deficiencies in the analysis of impacts on indigenous peoples and their territories, and a lack of free, prior and informed consultations and consent among threatened indigenous communities.	International Rivers Comments: http://www.internationalrivers.org/node/3056 Philip Fearnside Comments: http://www.internationalrivers.org/node/3056
Contribution to training and technological development	(same as Santo Antônio arguments above)	
Additionality	Given the availability of other sources of	International Rivers

	funding for Teles Pires from the budget of Eletrobras, state pension funds, subsidized credit from BNDES and tax incentives, there are no grounds for arguing the additionality of this project.	Comments: http://www.internationalrivers.org/node/3056
Greenhouse gas emissions	In the PDD, the project proponents chose to ignore the scientific evidence for greenhouse-gas emissions from Amazonian dams and instead focused on the power density calculation. However, having a high power density does not 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. The amount of water in the river, however, has the opposite effect: the greater the streamflow, the higher the emissions that will result from water passing through the turbines and spillways.	Fearnside, P.M. 2012. Carbon credit for hydroelectric dams as a source of greenhouse-gas emissions: The example of Brazil's Teles Pires Dam. *Mitigation and Adaptation Strategies for Global Change*. Published online 6 May 2012 http://www.springerlink.com/content/c105v17021045048/fulltext.pdf