
Large hydro – no solution to climate change!
Große Wasserkraft – keine Lösung für den Klimawandel!
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10 Reasons Why Climate Initiatives Should Not Include Large Hydropower Projects

A Civil Society Manifesto for the Support of Real Climate Solutions

Large hydropower projects are often propagated as a "clean and green" source of electricity by international financial institutions, national governments and other actors. They greatly benefit from instruments meant to address climate change, including carbon credits under the Clean Development Mechanism (CDM), credits from the World Bank's Climate Investment Funds, and special financial terms from export credit agencies and green bonds. The dam industry advocates for large hydropower projects to be funded by the Green Climate Fund, and many governments boost dams as a response to climate change through national initiatives. For example, at least twelve governments with major hydropower sectors have included an expansion of hydropower generation in their reports on Intended Nationally Determined Contributions (INDCs).

Support from climate initiatives is one of the reasons why more than 3,700 hydropower dams are currently under construction and in the pipeline. Yet **large hydropower projects are a false solution to climate change**. They should be kept out from national and international climate initiatives for the following reasons:

1. Particularly in tropical regions, hydropower reservoirs **emit significant amounts of greenhouse gases**. According to a peer-reviewed study, methane from reservoirs accounts for more than 4% of all human-caused climate change – comparable to the climate impact of the aviation sector. In some cases, hydropower projects are producing higher emissions than coal-fired power plants generating the same amount of electricity.

2. Rivers take about 200 million tons of carbon out of the atmosphere every year. In addition, the silt that rivers like the Amazon, Congo, Ganges and Mekong carry to the sea feeds plankton and absorbs large amounts of carbon. Hydropower projects and other dams disrupt the transport of silt and nutrients and **impair the role of rivers to act as global carbon sinks.**

3. Hydropower dams **make water and energy systems more vulnerable to climate change**. Unprecedented floods are threatening the safety of dams: In the US alone, floods have caused more than 100 dams to fail since 2010. Dam building has also exacerbated flood disasters in fragile mountain areas such as Uttarakhand in India. At the same time, the increasing frequency of extreme droughts makes hydropower economically risky and has greatly affected countries from Africa to Brazil that depend on hydropower dams for most of their electricity.

4. In contrast to most wind, solar and micro-hydropower projects, dams **cause severe and often irreversible damage to critical ecosystems**. Due to dam building and other factors, freshwater ecosystems have on average lost 76% of their populations since 1970 – more than marine and land-based ecosystems. Building more dams to protect ecosystems from climate change means sacrificing the planet's arteries to protect her lungs.

5. Large hydropower projects **have serious impacts on local communities and often violate the rights of indigenous peoples** to their lands, territories, resources, governance, cultural integrity and free, prior informed consent. Dams have displaced at least 40-80 million people and have negatively affected an estimated 472 million people living downstream. The resistance of dam-affected communities has often been met with egregious human rights violations.

6. Large hydropower projects **are not always an effective tool to expand energy access for poor people**. In contrast to wind, solar and micro-hydropower, large hydropower dams depend on central electric grids, which are not a cost-effective tool to reach rural populations, particularly in Sub-Saharan Africa and the Himalayas. Large hydropower projects are often built to meet the demands of mining and industrial projects, despite developers' claims that the energy is intended for the poor.

7. Even if they were a good solution in other ways, large hydropower projects would be **a costly and time-consuming way to address the climate crisis.** On average large dams experience cost overruns of 96% and time overruns of 44%. In comparison, wind and solar projects can be built more quickly and experience average cost overruns of less than 10%.

8. Unlike wind and solar power, **hydropower is no longer an innovative technology**, and has not seen major technical breakthroughs in several decades. Unlike with solar power, climate funding for large hydropower projects will not bring about further economies of scale, and does not encourage a transfer of new technologies to Southern countries.

9. **Wind and solar power have become readily available and financially competitive**, and have overtaken large hydropower in the addition of new capacity. As grids become smarter and the cost of battery storage drops, new hydropower projects are no longer needed to balance intermittent sources of renewable energy.

10. Hydropower projects currently make up 26% of all projects registered with the CDM, and absorb significant support from other climate initiatives. Climate finance for large hydropower projects **crowds out support for real solutions** such as wind, solar and micro hydropower, and creates the illusion of real climate action. Including large hydropower in climate initiatives falsely appears to obliterate the need for additional real climate solutions.

For these reasons, 500 organizations from 85 countries call on governments, financiers and other institutions to keep large hydropower projects out of their initiatives to address climate change. All climate and energy solutions need to respect the rights and livelihoods of local communities.

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