

10 Reasons Why Climate Initiatives Should Not Include Large Hydropower Projects

Courtesy of International Rivers updated by North American Megadams Resistance Alliance 6/2019

In 2015, 500 organizations from 85 countries issued *A Civil Society Manifesto for the Support of Real Climate Solutions*. <https://www.internationalrivers.org/node/9204> The Manifesto asserts that all climate and energy solutions must respect the rights and livelihoods of local communities. The 10 points are below, updated with new information in boldface.

1. 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. **Reservoir methane emissions are 25% higher than previously estimated and make up 75% of CO2e emissions.** Bridget R. Deemer, John A. Harrison, et al., *BioScience*, Vol. 66, Issue 11, 1 November 2016, Pages 949–964, <https://doi.org/10.1093/biosci/biw117>
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 impair the role of rivers to act as global carbon sinks by disrupting the transport of silt and nutrients.
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. **Since 2018, dam collapses in Laos and Brazil have killed hundreds of people and displaced thousands more.**
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. **The May 2019 Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) reports 1 million species are threatened with extinction, including river and wetland species.** <https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/> Canadian dams modify “the natural seasonal runoff by storing water for power production during the winter [which] interferes with the timing of the physical and dynamic balance of the coastal region” impacting marine life and climate. <https://www.sciencedirect.com/science/article/pii/S0025326X82904398>”. See also, 2016 report *Recent trends and variability in river discharge across northern Canada* (www.hydrol-earth-syst-sci.net/20/4801/2016/) “Flow regulation also suppresses the natural variability of river discharge,

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particularly during cold seasons.” **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](#). **Flooding for dams stimulates the production of the bioaccumulative toxin methylmercury which enters the food chain. Ninety percent of proposed Canadian hydroelectric projects may expose communities to methylmercury.**

<https://pubs.acs.org/doi/abs/10.1021/acs.est.6b04447> **The Three Gorges dam in China places populations at risk of methylmercury poisoning.**

<https://www.ncbi.nlm.nih.gov/m/pubmed/29965175/> 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%](#). **The cost of Canada’s Muskrat Falls dam has doubled to \$12.7 billion since approved in 2012.** <https://www.theglobeandmail.com/canada/article-audit-finds-muskrat-falls-cost-overruns-were-obvious-soon-after/> 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.

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