

Study examines pros and cons of hydropower

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Hydropower can generate electricity without emitting greenhouse gases but can cause environmental and social harms, such as damaged wildlife habitat, impaired water quality, impeded fish migration, reduced sediment transport, and diminished cultural and recreation benefits of rivers. A new *River Research and Applications* study considers these

issues as they relate to a hydropower project undergoing relicensing in California.

The study reveals that important positive and negative effects are not adequately examined in the [hydropower](#) relicensing process, and it points to opportunities to reduce the negative environmental impacts of hydropower without great economic penalties.

"Reducing hydropower generation in order to restore natural river conditions is often considered too costly by hydropower operators, but those costs might be lessened by taking advantage of complex electricity markets and providing grid-regulating ancillary services, especially in regions with high penetrations of renewable energy like wind and solar," said author Joseph Rand, of the Energy and Resources Group at the University of California, Berkeley. "At the same time, environmental groups arguing for more natural river flows must consider the carbon-emissions cost of reduced hydropower being replaced with fossil fuel generation. Yet, these and other important aspects are typically overlooked in hydropower relicensing negotiations."

More information: Joseph Rand, Overlooked trade-offs of environmentally protective hydropower operation: Impacts to ancillary services and greenhouse gas emissions, *River Research and Applications* (2018). [DOI: 10.1002/rra.3354](https://doi.org/10.1002/rra.3354)

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