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Environmental issues limit traditional pumped hydro

Pumped storage hydropower (PSH) is correctly reported as the largest source of electrical energy storage in California. But the potential for growth in PSH as it is currently developed (using natural streams and topography such as in the Sierra Nevada) is limited by at least two concerns that are not addressed in the report: (1) New large and small dams on rivers and streams are unlikely to be permitted in California due to environmental concerns; (2) climate change is altering precipitation patterns which leads to uncertainties in natural rain/snow fall that will have real impacts on projected storage capacity and therefore on investment costs.

On the other hand, novel pumped hydro approaches that make use of artificial impoundments (potentially underground), sea water or otherwise low-quality water, and topographic relief in mountainous desert areas may be environmentally acceptable and able to be permitted in California to increase capacity of PSH.

In short, the report should mention limitations in growth of PSH caused by environmental concerns and consider novel ways of carrying out PSH that can minimize environmental impacts.