Restless Waters Fossil Fuel Emissions Conditioning a Reduction in Hydroelectric Resources in Chile

Rudnick, H., Palma-Behnke, R., Rudnick, A., & Benavides, C. (2014). Restless waters: Fossil fuel emissions conditioning a reduction in hydroelectric resources in Chile. IEEE Power and Energy Magazine, 12(5), 50-60.

Abstract

Climate change may result in a significant reduction of hydroelectric resources, worrying countries that are heavily dependent on it like many in Central and South America, where most electricity demand is met through hydropower generation. The impact in Chile was described, but Chile can serve as an example for the entire region, where climate change and GHG emissions have become a public concern. Preliminary analyses of the evolution of GHG emissions in the region show the great impact of electricity generation. The need for more accurate analysis and models for various countries in the region is clear. Specifically, mitigation and adaptation strategies should be carefully designed, exploiting potential synergies. Future development of the hydroelectric infrastructure should be analyzed, along with other water usage patterns in the areas of irrigation, drinking water, and industrial processes. The cooptimization of water and energy is therefore envisioned as a path to follow. This must also be considered in the energy market design and its revisions.