

Does Canada have Enough Water to Meet Future Energy Demands?

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Summary

The availability of water resources to support domestic, agricultural, and industrial activities has been an increasingly important national issue. Still, there are many popular misconceptions about the status of Canada's water supply in both a global and national perspective. Canada is a water rich country; however the uneven distribution of water resources leaves portions of the country with over abundant supply, while other regions are fighting perennial shortages. Compared to most countries in the world Alberta is a water rich jurisdiction, but is the growing focus of national water issues. The southern river basins are now fully allocated, restricting future growth. At the same time there has been a fundamental shift in oil production from conventional to non conventional. This shift in energy supply comes with a significantly increased water demand – to the point where the majority of Canada's oil supply is now dependant on adequate water availability, dominantly derived from the Athabasca River. Assessment of potential impact from current and future demands relies on adequate understanding of natural modes of variability, the historical trends of river flow and future climate models. Here we present the fundamental geoscience needed to support this assessment.