

“Glocalization” of Energy Transition - What Research and Advances in the Canadian Arctic Can Teach Us

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Extended Abstract

The world is currently going through a major energy transition, but in fact, this transition takes different forms depending on each region’s socioeconomic, cultural, geographical, and technological situation. The intricate interactions between global and local conditions strongly shape the transition, making it “glocal.” As a result, the underlying reasons (e.g., fight climate change, increase resilience and autonomy, promote energy justice) and preferred pathways for transitioning away from traditional energy systems are far from being unique. In this presentation, we will summarize recent events and research on the energy transition in Nunavik, an Arctic territory in the North of the province of Quebec (Canada), emphasizing how global challenges translate into local contexts and, inversely, how lessons learned locally can inform, guide and inspire others.

The communities of Nunavik are inhabited by a total of around 14,000 people, mostly Inuit, an Indigenous group from the North of Canada. The 14 villages are situated along the coasts. They are not connected to the main road network or the power grid. They rely on diesel power plants for their electricity supply and fuel oil furnaces for space heating. The hydrocarbons are transported by boat when the ocean is ice-free. Therefore, today’s energy situation is one of almost total dependence on imported petroleum products. Nevertheless, the communities are making significant efforts to reverse the situation and take control of the energy transition on their territory, with some successes already achieved [1].

The presentation will start by introducing the current energy situation in Nunavik, including energy supply, production, and demand. It will discuss some of the technologies that have recently been studied to decarbonize the energy sector in Nunavik (e.g., solar [2], geothermal [3], etc.), as well as energy efficiency measures that have been considered to better manage the energy demand, in particular from buildings. The pros and cons of these measures, their relation to local and global constraints, and recent research results will be presented. Based on recent interviews with local people and organizations, the lecture will examine how human and sociocultural considerations cannot be disconnected from technological and economic aspects if one is to “coconstruct” a just and sustainable energy transition [4]. We will also observe how the transition, despite being motivated by sound principles, can sometimes lead to energy injustices [5]. More generally, we will reflect on the challenges and role of energy engineering researchers in the complex, multifaceted, and multilevel energy transition situation.

References

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