

Energy supply in the Arctic and the fair share of the climate mitigation burdens

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In 2015 the two researchers Christophe McGlade and Paul Ekins published an article on the geographical distribution of fossil fuels unused when limiting global warming to 2 °C (*Nature* January 2015). Their conclusion – based on cost-benefit calculations and considerations of equity – was that fossil fuel resources in the Arctic should be left in the ground, and that developing countries – if any – should be prioritized when distributing the portions left for extraction compatible with the 2°C target towards 2050. Furthermore, calculations from the Stockholm Environmental Institute (SEI) shows that equity in the carbon budget implies that a country like Norway takes an effort to mitigate climate change corresponding to ten times the size of its population (SEI Report 2014).

Equity in the carbon budget forces us to ask at least the following three questions:

What principles should govern a just distribution of the *supply side*, i.e. of the fossil fuels left for extraction?

How does the current challenges from climate change promote new opportunities for innovative energy systems as engines of technology development and economic growth?

How could we develop a paradigm for energy that promotes sustainability, energy efficiency and higher penetration of renewable energy (RE) sources supported by the smart grid?

Most areas in the Arctic with its cold climate, with Scandinavia being the exception, are heavily dependent on fossil fuels. The Arctic consists of large areas with a remote settlement. Some are connected to a central or regional grid but are potentially weak, others rely on fossil fuels to produce electricity. RE may represent new options in terms of improved stability in deliverance, better access to energy, and also control over sources and prices on energy. As well, our future distribution of the carbon budget depends heavily on the development, use and global transmission of the technology of RE sources.

However, about 400000 thousand indigenous people live in the Arctic, making “energy justice” a central and intertwined factor along with technological development and transfer of knowledge. Many Sami reindeer herders see their way of life and culture threatened by the rush for Arctic development. For them, RE projects take the form of land grabbing pushing the Arctic Frontier further into their pasture areas. The government expropriates land for roads and tunnels, windfarms and mines. Thus, equity in the carbon budget also has to take into consideration how implementation of RE projects and extraction of *other* minerals in the Arctic could take place while at the same time *respecting the life forms and traditional environmental knowledge of its indigenous peoples*. In an act of international solidarity between indigenous peoples, the Sami parliament in Norway recently persuaded the country’s

second largest pension fund to withdraw its money from companies linked to the controversial oil project Dakota Access Pipeline. They deserve the same kind of solidarity from their former colonizers in Scandinavia.

The above questions and statements reflect important parts of the research agenda at the new Arctic Centre for sustainable Energy (ARC) at the UiT The arctic university of Norway which is being established in 2017. We look forward to be a part of, and contribute to, the proposed Climate justice and equity research agenda!