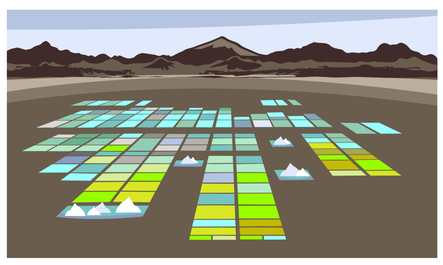
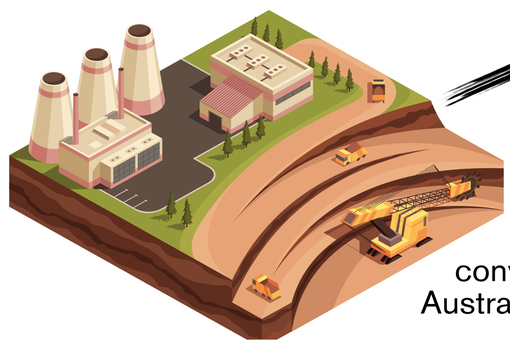
Does the grade and source of lithium used in batteries matter?

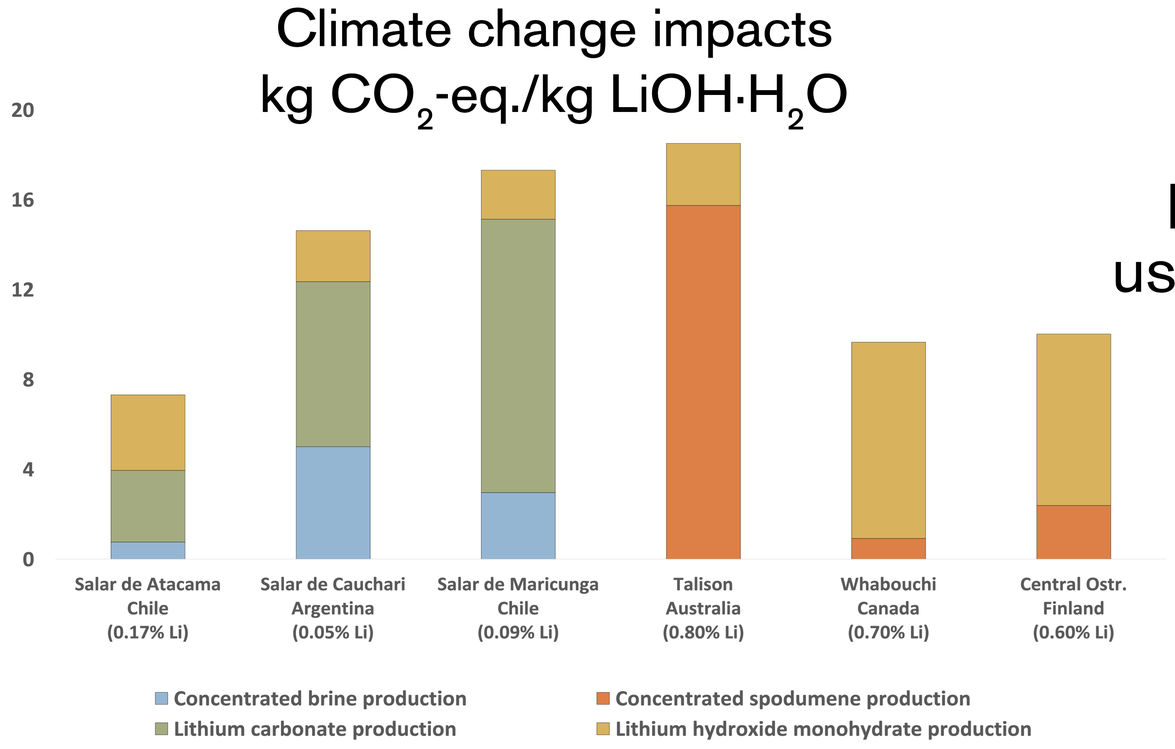
Largest lithium reserves are found in the salar region in South America, Australia, and China. Other regions with significant reserves are Zimbabwe, Canada, United States, Portugal and other parts of Europe.

Solar evaporation ponds are unique to the Salars in South America in Argentina, Bolivia and Chile. Commonly referred to as the "Lithium Triangle"





Lithium is also extracted from spodumene ore using conventional pit mining techniques. Australia is a leading example of such processes being used.

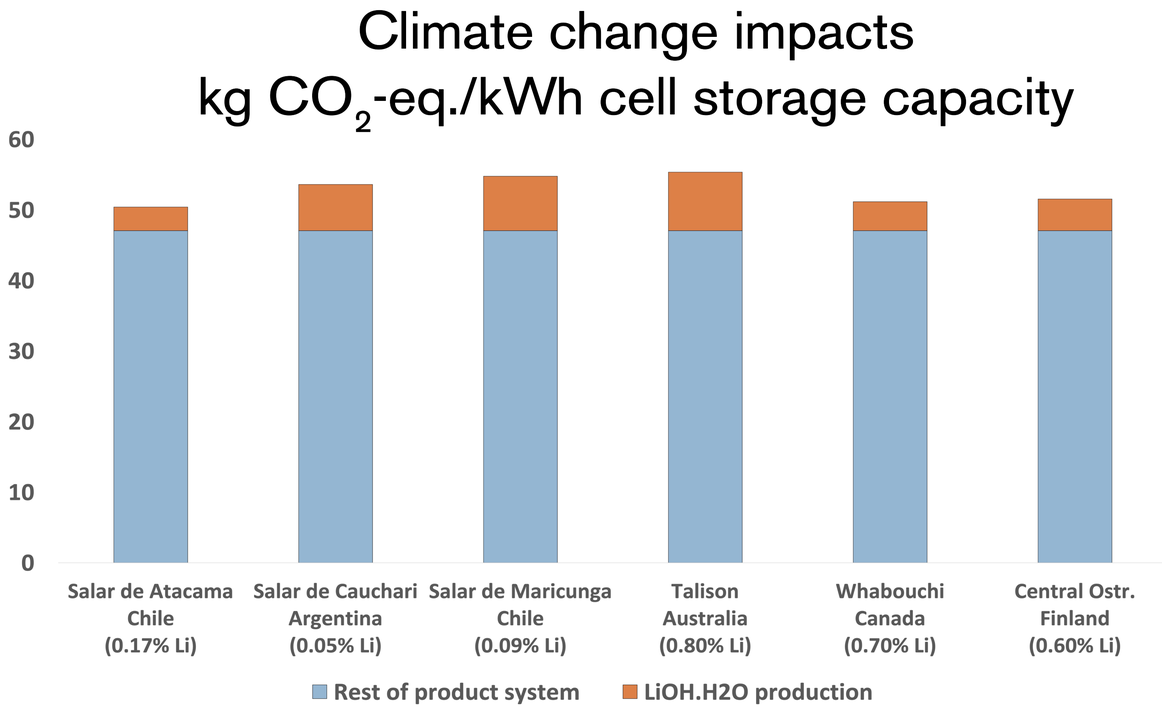


Lithium is typically extracted from brine aquifers using evaporation ponds, or from spodumene ore using conventional mining techniques.

The lithium concentration at the source varies, affecting the process design, energy and chemical use at each facility.

Varying lithium concentration at the source effects the overall impacts from production of lithium hydroxide monohydrate ($LiOH{\cdot}H_2O$), a key input in several battery chemistries.

5-15% of the lithium-ion battery production impacts are affected by the grade and source of lithium used in $LiOH{\cdot}H_2O$.



Mudit Chordia | Sanna Wickerts | Anders Nordelöf | Rickard Arvidsson
Division of Environmental Systems Analysis
Chalmers University of Technology

Corresponding author
mudit@chalmers.se
+46 76 855 4626