

The Bittersweet Reality Of Lithium Mining

by Marshall Needham
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Letter To The Editor:

I am a sustainability major. In all my sustainability classes renewable energy is discussed as a necessary technology to combat climate change (and do other things). Until this semester however, I was never academically exposed to the specific process in which lithium-ion batteries (a key part of renewable energy) are made.



Subconsciously I knew, like any other product, the raw resources came from somewhere, but the cost of getting those resources was always a matter of carbon in my mind. The cost is much more than just excess carbon in the atmosphere. One of the most common ways of extracting lithium is to pump brine out of the ground and into pools, then once the water is evaporated you are left with lithium. This process has a negative

impact on the drinking water for surrounding communities (especially indigenous peoples in Chile). Wealthy first world countries imposing problems on other less fortunate countries/communities to have sustainable energy is wrong and those countries /communities should be compensated.

How does extracting brine have a negative impact on drinking water for surrounding communities? Well, according to Thea Riofrancos who wrote an article called *What Green Costs*, “any corporate representative will say that extracting and evaporating brine has no effect on freshwater”, but if you “talk to any scientist or regulator familiar with the Atacama basin and they will tell you that the two types of water interact...removing the brine eventually lowers the water table, threatening supplies needed for drinking and irrigation.” This bit of knowledge produced quite the conundrum for me. While the world at large gets many benefits to lithium-ion battery production, these communities are stripped of their drinking water.

Without batteries, the transition to sustainable energy (especially transport) would be much more costly and time intensive. The DOE says that electrical “storage is critical to integrating renewable energy sources into our electricity supply.” Since renewable energy is necessary for combating climate change, then lithium-ion batteries are necessary for combating climate change, at least until a more efficient mass producible battery is discovered. The benefits to society are immensely valuable. It allows people to have computers the size of their hands, and it allows people to have renewable energy when the sun isn’t shining and the wind isn’t blowing. There is also value to mining a lot of it at a time rather than only mining a little at a time from an economics perspective. Producing a lot of something allows processes to become more efficient more quickly, and there is also just an abundance of the material. If renewable energy (batteries in this case) is to someday be at competitive prices with unrenewable sources of energy, then abundant production is a necessary step.

So where does this wicked problem leave us? It cannot simply be forgotten that this renewable energy transition is built on the back of those who may not even reap the benefits. This is why I feel it necessary to recommend that populations (indigenous or otherwise) impacted by the extraction of lithium be compensated in some way by lithium importing countries. Whether that be in drinkable water, money, mineral rights, or some other form of compensation, these populations must be compensated in some way.

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Sources:

<https://www.energy.gov/science/doe-explainsbatteries>

<https://logicmag.io/nature/what-green-costs/>

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