

JJRS

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Topic Title: The Hidden Cost of Lithium: Ethics and Environmental Responsibility.

Audience: U.S. Department of Energy

Sustainable Development Goal

SDG #12: Responsible Consumption and Production: Ensure sustainable consumption and production patterns.

Executive Summary

The global transition towards clean energy has significantly increased demand for lithium, a critical mineral used in electric vehicle batteries and energy storage systems. The International Energy Agency estimates that meeting global climate targets could drive lithium demand to over 40 times today's consumption levels by 2040. As the United States expands domestic battery production and electric vehicle adoption, securing a sustainable and stable lithium supply has developed into a strategic priority. However, the rapid growth of lithium extraction and consumption has raised concerns regarding the environmental and social impacts associated with lithium mining and the limited recycling of lithium-ion batteries. The US Geological Survey reports that global lithium production has more than tripled between 2010 and 2022, while recycling remains in its infancy, with less than 1% of Lithium-ion batteries currently recycled in the US and EU. As demand continues to accelerate, ensuring that lithium production and use align with SDG 12: Responsible Consumption and Production will require stronger governance of supply chains and more sustainable management of lithium resources.

In order to address these hidden costs while ensuring a continued push towards clean energy, our team's approach consists of three key pillars. The first is implementing legislation that promotes environmentally responsible supply chains, ensuring that both environmental and labor standards are upheld. Second, companies should establish partnerships with local communities and governments, allowing them to reinvest in communities and support sustained growth. Finally, policies should be introduced that require companies to implement lithium recycling and next generation battery technologies that reduce reliance on primary extraction. JJRS believes that through these three areas, companies can continue to strive toward clean energy while minimizing environmental and ethical concerns.