Making Minerals Great Again

multidisciplinary studies for interdisciplinary solutions
Critical (energy) minerals are mineral resources that are essential to the “energy transition” and whose supply may be disrupted.

- “If you can’t grow it, you gotta mine it.”
- Minerals have always been critical to energy
- Cu: ~5 million tons of rock are mined / day; volumetrically equivalent to the excavation of 5 Panama Canals / year
- Exponential growth for the last century
Electric vehicles; projections to 2040

- 2017 production: 110,000 tonnes
- 2025 EV demand will require 2X current production
- 60% of production capacity in DRC
- 50-60% of refining capacity in China

Source: International Energy Agency

modified from Bloomberg NEF (2018)
Every resource problem is multidisciplinary

Solving three simultaneous equations:

\[ f(x_1) = \text{sound science and technology} \]
\[ f(x_2) = \text{consistency with policy which adequately addresses the welfare of society} \]
\[ f(x_3) = \text{financial viability to attract the interest of investors} \]

= complexity (trade-offs occur in multiple dimensions)

"As for the future, your task is not to foresee, but to enable it." - Antoine de St. Exupery
Our speakers

sustainable energy solutions

Dr. Rod Eggert

Dr. John Thompson
Dr. Wen Song

Diana Walters

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