

# MORE THAN 300 NEW MINES REQUIRED TO MEET ELECTRIFICATION GOALS

## The Insurmountable Weight Of Electrification

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Electric vehicles are the latest ([mandatory](#)) craze, and there doesn't seem to be any slowing in that politically-charged [momentum](#). However, to make electric car batteries, elements such as lithium graphite, nickel, and cobalt need to be [extracted from the earth and processed](#), and according to new research, we have a pretty good idea of just how much we're going to need. And it's a lot.

According to [Benchmark Mineral Intelligence](#), demand is set to increase for these materials six-fold by 2032, which will require a lot more mines to open up – at least 384 of them.

In 2022, the supply for lithium sits at 678,000 tons, and Benchmark forecasts that by 2035 the demand will require 4,000,000 tonnes. An average plant can expect to mine 45,000 tons per year, meaning that to meet the world's lithium requirements would require 74 new lithium mines.

It's a similar story with the other materials used for [battery](#) production. For refined nickel, 72 mining projects with an average size of 42,500 tons will need to be built, and cobalt will require 62 mining projects at an average of 5,000 tonnes. Synthetic graphite would require 54 new plants with an average size of 57,000 tons.

Currently, there are only 70 graphite mines operating, with most in Africa and China. Australia is still the top producer of lithium, however, with over 13 mines producing lithium-containing spodumene rock which is then largely sent to China for refinement.

The numbers are slightly different if the materials are recycled. Just 59 Lithium mines would need to be built instead of 74, if the materials can be recycled. With mines requiring five to 10 years to be built, those 59 mines would be ready in approximately 2033. The number of cobalt mines required would be reduced by almost half to 38. Recycling will not have much of an impact on graphite, however.

Additionally, recycling facilities require a shorter lead time to build, which could reduce the requirement for new mine projects down to around 336 new mines, which is still quite a large number but might be more achievable.

The US Government has said it wants more than half of vehicle sales to be zero emissions by 2030, so either governments and automakers are going to have to [lower their expectations](#), or [mining companies](#) will have to accelerate the process of ripping up earth for rare metals. Ironically, that's the very thing these policies are trying to save.