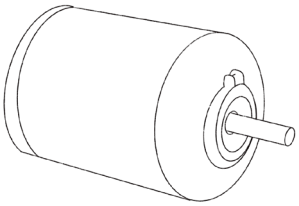
Copper has been called “the new oil.”*

Increasing price volatility and decreasing resource availability make copper and permanent magnets less attractive than more sustainable options.

Traditional electromagnetic motors are dependent on copper, iron, and permanent magnets. Permanent magnets require rare-earth metals that are difficult to mine and have an intensive refining process. While copper can be recycled, it isn’t always put through the process. Permanent magnets and rare earths (including dysprosium and neodymium) are not recyclable.

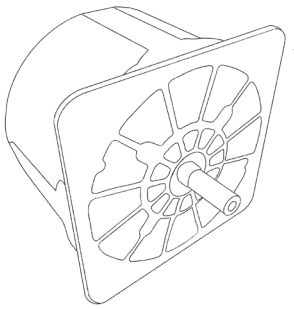
Torque in traditional motors is created by passing electric current through copper wires, meaning there is no way around having copper in traditional motors.

OTHER MOTORS



Copper Use: 40kg
Permanent Magnet Use: 15kg
Torque Generation: 450 Nm

C-MOTIVE’S COOLTORQ™ MACHINE



Copper Use: < 1 kg
Permanent Magnet Use: 0 kg
Torque Generation: 450 Nm

Not only are C-Motive’s machines more efficient in their use of electricity, they generate more torque for each unit of resources that the motor is made of.

There’s a lot of discussion around the importance of saving electricity and the direct impact it has on carbon emissions. That said, sustainability is not just about the amount of electricity that is needed to run the motors, but to produce and refine the raw materials that go into the motors.

x 626

There is an equivalent of 626 times the weight of Eiffel Tower in copper installed in electric machines around the world.

x 38

An equivalent of 38 times the weight of Eiffel Tower in permanent magnets is installed in electric machines around the world.

At least **90%** of the world’s permanent magnets are sourced internationally

In the last 10 years:

3x increase in copper prices

3x increase in dysprosium prices

2x increase in neodymium prices

*https://www.goldmansachs.com/insights/podcasts/episodes/05-18-2021-nick-snowdon.html

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