

Blog | By Paulo-Guedes-Pinto

Why Remanufacturing Electric Motors is a Big Idea



When To replace or repair? That's the question.

In 2021, [Deloitte](#) reported that over two billion tons of waste ends up in landfills worldwide, and that number continues to rise. Add consideration for electronic waste, pollution, and the increasing strain on limited natural resources, and the case for sustainable manufacturing processes gets stronger and stronger.

[800 million](#) electric motors were sold in 2022, which represents a 10 percent increase from 2021. Today, electric motors consume roughly 50 percent of the world's energy, a number that's likely to grow as more industrial applications shift to electric power. With increased demand for electric motors, industrial companies, like Infinitum, are looking for ways to participate in the circular economy and assume greater ownership over end-of-life management through strategies like design for serviceability and remanufacturing.

The [Ellen MacArthur Foundation](#) defines a circular economy as one that decouples economic activity from the consumption of finite resources. Recycling and

remanufacturing are two of several strategies under the circular economy umbrella that could positively impact lifetime emissions for electric motors:

Correctly Disposing of Equipment

Conceptually, recycling is simply disposing of equipment correctly at the end of its life. It involves waste management, like shredding and melting, to process materials for potential reuse. To maintain as much purity as possible, recyclers separate steel from other materials like copper, aluminum, or magnetic alloys. While it's better than tossing equipment into a landfill, recycling is still labor intensive, so careful consideration should be applied when selecting it as a circular economy strategy.

Remanufacturing as a Circular Economy Pathway

Recycling levels up end-of-life for motors, but refurbishment and remanufacturing take it a step further by extending the life of the motor. In the remanufacturing process, a product or system is disassembled, and each component goes through an assessment process. Any worn components are replaced with updated equivalents to restore the product's reliability, while keeping some original components and materials in use longer. This arrangement saves energy and avoids unnecessary waste.

Remanufacturing is commonplace in consumer electronics, and it has been for years. Companies like Apple and Best Buy have robust refurbishment programs, and consumers are buying in. [One estimate](#) projects the refurbished computer and laptop market will reach \$8 billion USD by 2031, and that doesn't account for smartphones or other consumer electronics that are eligible for refurbishment.

Remanufacturing is set to skyrocket as industrial companies look to apply this technique to cut waste and save energy in complex, high-tech manufacturing applications. Efforts in this space provide great value to customers because remanufacturing costs are typically lower than out-right replacement, and the process happens with zero effort on their part. At Infinitum, we're excited to see more and more of our peers taking ownership of their product lifecycles.

Designing for Remanufacture

Designing out waste and limiting emissions creates a strong base for the circular economy. Incorporating elements that support remanufacturing sets our customers up for the greatest possible success. At Infinitum, we're committed to design and manufacturing techniques that support the circular economy from the start:

- **Modular Design:** Our approach allows us to meet application and output requirements by incrementally adding or removing stator panels and/or motor modules. By design, Infinitum motors are more easily customized, serviced, and disassembled for refurbishment or remanufacturing.
- **Materials Selection:** By intentionally designing all aspects of our motors for lighter weight and lower operating noise (e.g., eliminating steel core and copper windings), we use fewer raw materials and precious resources, lessening demand on the environment and the supply chain.
- **Shipping Practices:** We reduce our transportation footprint through localized sourcing and production, but it's not always about how you ship. What you ship matters too. Infinitum motors produce all the power in half the weight and size of a conventional motor. Smaller footprint and weight also contribute to reducing emissions in the shipping process.

By committing to emerging standards and implementing designs that support the circular economy, we can encourage the industry to be better stewards of our finite natural resources. By working with Infinitum, customers have access to state-of-the-art motors, but they also gain a sustainability partner for a lifetime, literally.

Stay in the know!

Join our newsletter — Sign up with your work email to receive quarterly communications, updates, and new developments from Infinitum.

[Sign up today](#)