

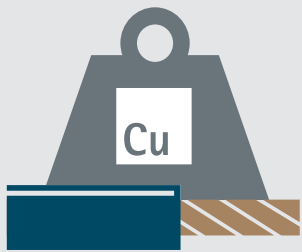
Copper's Key Role in Keeping America's Motors Running



Copper Development
Association Inc.
Copper Alliance

Electric motors are found everywhere in commercial facilities and industrial plants, powering fans, pumps, compressors and exhausts as well as manufacturing and assembly equipment. These motors rely on the strength, and superior electrical and thermal conductivities of copper in order to perform better, be more energy efficient and reliable.

Motors use approximately **260 million tons** of copper, in the form of wiring.



The U.S. Department of Energy reports that:

Motors from 1 to 200 HP account for between **30 to 50%** of the electricity consumption in commercial facilities in the United States.

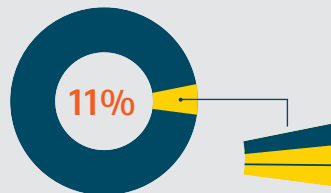


Industrial electrical utilization estimates are closer to **60 to 70%**.

Motors, including ones used in the household, account for nearly **23%** of all electricity generated in the United States.



Converting to a more energy-efficient motor, using increased amounts of copper, can result in **significant energy and cost savings**.



In 1998, the U.S. Department of Energy reported that only **11% of customers** had written specifications for motor purchases and **Two-thirds** of those customers included efficiency in their specifications.

New motors not only lower energy costs but also improve equipment reliability. Higher, more energy-efficient motors:



Improve Equipment Reliability

Substituting copper for die-cast aluminum in the rotor squirrel cage will measurably reduce motor losses by as much as **15 to 20%** and improve the motor's electrical efficiency.



Increase Productivity

Research shows that for most motors, the peak efficiency is in the **70-75%** load range and begins to drop off for loads below 50%.



Reduce Downtime and Repair Costs

The average estimated total cost of downtime for a plant's production capacity is **200-300%**.

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- ✓ Distributors offer discounts through volume purchases
- ✓ Energy program rebates are available for energy-efficient products.



The majority of motors in most facilities use 20 hp or less.

They have lower efficiencies than larger motors and therefore have an opportunity for greater cumulative efficiency gains when replaced with NEMA Premium Motors.

