



Improving Industrial Efficiency: Paper Manufacturing

One of the biggest challenges in paper manufacturing is identifying efficiency improvements that can help you achieve additional electricity savings. Following an in-depth energy efficiency and process improvement study, authors from Lawrence Berkeley National Laboratory benchmarked three processes with the greatest potential for electricity savings: papermaking, pulping, and wood preparation. Here are some specific steps, within these processes, that you can take to significantly reduce electricity usage and achieve measurable savings throughout your process.

Replace sorting systems to improve wood preparation

Save up to 154kWh/ton

Large wood pieces require additional mechanical action to break down. Replace your sorting system with fine-slotted wedge wire baskets to save energy in the pre-treatment process.



Log debarking

Add fungus to ease mechanical pulping workload

Save up to 50kWh/ton

Fungus helps to pre-digest and weaken the structure of the biomass, reducing the mechanical equipment workload.



Pulping of recycled papers

Switch to thermo pulping

Save up to 277 kWh/ton

Break down wood more efficiently using high temperatures and pressures for short periods of time.

Optimize motors and pumps

Save up to 315kWh/ton

Large motors and pumping equipment consume elevated levels of electricity. Install variable frequency drives (VFD's), and employ premium efficient motors to drive efficiency improvements throughout the process.



A blower motor



As illustrated below, 62% of the total electricity consumption required to manufacture paper is used in the following processes:

Papermaking

This includes all the steps required to make bleached pulp into the desired paper product.

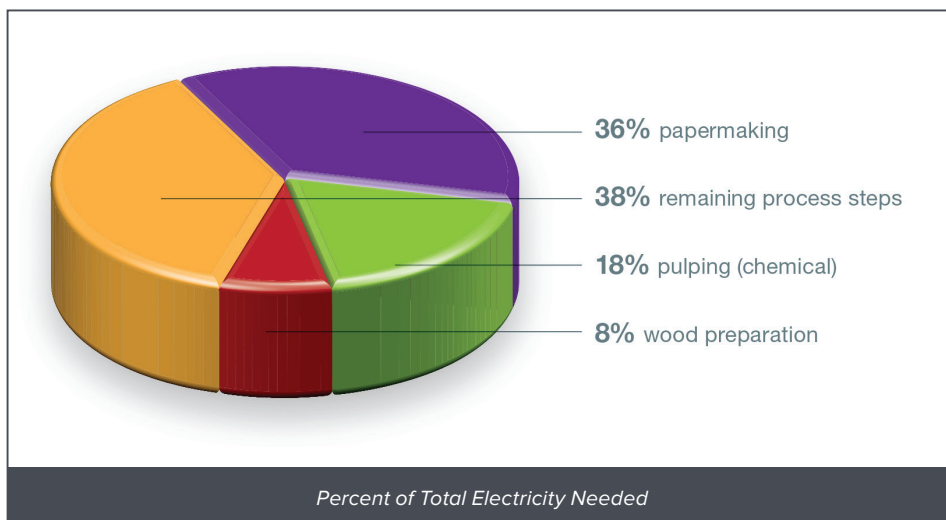
Pulping (digestion)

This includes all the process steps after wood chipping, but before digestate bleaching.

Wood preparation

This consists of roundwood debarking and chipping prior to pulping.

All other remaining processes only require 38% of total electricity consumption.



Get started

Visit nyserdera.ny.gov or call **1-866-NYSERDA** to learn more about how NYSERDA can help you significantly reduce electricity usage and achieve measurable savings throughout your paper manufacturing process.