

THE ENVIRONMENTAL IMPACTS OF VIRGIN & RECYCLED FIBER

Is paper made from virgin fiber or recycled material better for the environment? Consider these factors:



FIBER QUALITY



Fiber used to create tissue paper has stricter requirements than other paper grades, including¹:

- ★ High absorbency and softness
- ★ Odor-free
- ★ Cleanliness and brightness levels
- ★ Compliance with food contact and cosmetic regulations

WATER EFFICIENCY AND WASTEWATER DISCHARGE



To produce high-quality fibers from recycled paper, twice the amount of water is needed compared to virgin pulp²

Higher water consumption increases pollutants discharged into the environment during production, including releasing twice as much wastewater compared to virgin fiber

ENERGY USE



300-350
kWh of
energy/metric ton

Extra washing cycles needed to produce high-quality fiber requires more energy³

Transforming recycled paper into tissue products is more complex and energy intensive than recycling other paper like newsprint and corrugated board⁴

Virgin fiber requires 300-350 kw of power to be transform into tissue products compared to 400-450 kw for recycled fiber. This means that virgin fiber tissue paper production is 14-66% more energy-efficient comparatively.⁵

WASTE GENERATION⁶



33-37.5%



less than
10%

Percentage of the total material lost during the recycling process to make tissue paper

The waste produced is 50% water weight for weight (w/w), therefore, a 100% recycled fiber tissue mill produces 1 to 1.1 metric tons of solid waste per ton of tissue paper produced

Recycled fiber is a better raw material for packaging paper and cardboard, as less than 10% of the material is lost during the recycling process

LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED) CERTIFICATION



LEED is recognized worldwide as a symbol of sustainability achievement



Janitorial paper products can help buildings achieve LEED certification points if they are:

FSC® certified for fiber procurement⁷

Green Seal® GS-01 certified tissue paper, paper towels, and napkins.⁷ Green Seal requires 100% recovered material. (Bath tissue ≥25% post-consumer recycled material, and paper towels ≥50% post-consumer recycled material, with remaining percentage being recovered material or agricultural residue.)⁸

UL EcoLogo 175 certified for toilet tissue and hand towels⁷ (≥50% recycled fiber content)⁹

Derived from a rapidly renewable resource or made from tree-free fibers⁷



Thus, LEED recognizes FSC® certified tissue products as having equal weight regarding environmental performance as both EcoLogo and Green Seal®

RAW MATERIAL SUPPLY



77.3%



In 2018, more than three fourths of the recycled fiber used by the U.S. paper industry went to packaging paper and paper board¹⁰

The novel coronavirus pandemic has changed consumer buying habits and behaviors:

More people are ordering online, increasing the demand for cardboard packaging¹¹⁻¹²

Paper and cardboard now require an even larger share of recycled fiber for production

Office paper is recycled into toilet paper and, with many people working from home, there is a shortage of this recycled fiber available to make tissue paper products¹³



Sofidel has developed a large base of trusted suppliers to procure FSC® certified fiber to ensure a reliable flow of raw material to produce sustainable tissue products

¹ Best Available Techniques (BAT) Reference Document for the Production of Pulp, Paper and Board. Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control). Michael Suhr, Gabriele Klein, Ioanna Kourti, Miguel Rodrigo Gonzalo, Germán Giner Santonja, Serge Roudier, Luis Delgado Sancho. (2015). Section 6.1.3.4. Page 558-559.

² Based on Sofidel's manufacturing experience producing tissue products composed of 100% recycled fiber in Europe.

³ In Sofidel's experience, the energy required to completely remove external bodies (plastic, wood, iron), fine particles such as mineral fillers, and glues or other polymeric components from the recycled paper can make the paper recovery process more energy intensive than the transformation of virgin fibers into tissue paper.

⁴ Best Available Techniques (BAT) Reference Document for the Production of Pulp, Paper and Board. Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control). Michael Suhr, Gabriele Klein, Ioanna Kourti, Miguel Rodrigo Gonzalo, Germán Giner Santonja, Serge Roudier, Luis Delgado Sancho. (2015). Section 6.1.2. Page 551 – 560.

⁵ Best Available Techniques (BAT) Reference Document for the Production of Pulp, Paper and Board. Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control). Michael Suhr, Gabriele Klein, Ioanna Kourti, Miguel Rodrigo Gonzalo, Germán Giner Santonja, Serge Roudier, Luis Delgado Sancho. (2015). Section 6.2.2.4. Page 574.

⁶ Pollution Prevention and Control). Michael Suhr, Gabriele Klein, Ioanna Kourti, Miguel Rodrigo Gonzalo, Germán Giner Santonja, Serge Roudier, Luis Delgado Sancho. (2015). Section 6.2.1. Page 563.

⁷ "Green Cleaning - Products and Materials." LEED O+M: Existing Buildings - v4 - LEED v4 - Green Cleaning - Products and Materials,

⁸ U.S. Green Building Council, www.usgbc.org/credits/existing-buildings-schools-existing-buildings-retail-existing-buildings-hospitality-exist-27.

⁹ Green Seal. GS-1: Green Seal Standard for Sanitary Paper Products. Edition 6.2. January 8, 2019. Section 3.2.

¹⁰ EcoLogo. UL 175: Standard for Sustainability for Sanitary Paper Products. October 31, 2014. Section 6.6.

¹¹ "Paper Recovery and Recycling." Two Sides North America. (2019). Information gathered from:

¹² <https://twosidesna.org/wp-content/uploads/sites/16/2019/11/Paper-Recovery-and-Recycling.pdf> and adapted from the American Forest & Paper Industry 2019 report.

¹³ Davis, Sarah, and Lauren Toney. How Coronavirus (COVID-19) Is Impacting Ecommerce [August 2020], ROI Revolution,

12 Aug. 2020, www.roirevolution.com/blog/2020/08/coronavirus-and-ecommerce/.

"Recycling in the Age of a Pandemic." Ecomaine, 2020, www.ecomaine.org/pandemic-recycling.

¹³ Karidis, Arlene. COVID-19 Drives Major Fluxes in Paper Supply Chain, Waste360, 9 Apr. 2020, www.waste360.com/paper/covid-19-drives-major-fluxes-paper-supply-chain

Using FSC® certified tissue products is just as, and in some cases, more environmentally beneficial than similar materials made from recycled fibers. Sofidel is dedicated to using FSC® certified fiber in its operations to maintain the highest environmental standard.

To learn more, visit www.sofidel.com/en/sustainability

