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The Three Pillars of Sustainability

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DATA METHODOLOGY

The American Forest & Paper Association (AF&PA) member companies are required to adhere to and report biennially on a set of Environmental, Health & Safety (EHS) and Sustainable Procurement principles.

The information in this report on member performance has been generated through our 2016 EHS performance verification survey of members. Other data is from other AF&PA or government agency sources, when indicated.
On behalf of the American Forest & Paper Association (AF&PA) and its members, I am proud to present our 2018 Sustainability Report.

AF&PA’s mission is to advance a sustainable U.S. pulp, paper, packaging, tissue and wood products manufacturing industry through fact-based public policy and marketplace advocacy.

Our members make essential products for everyday life from renewable and recyclable resources. In addition, they are committed to continuous sustainability improvement through our industry-wide Better Practices, Better Planet 2020 initiative.

The highlights presented in this report include achieving the Better Practices goals on worker safety and energy efficiency ahead of schedule.

Established in 2011, Better Practices, Better Planet 2020 aims to ensure our industry’s sustainable consumption and production patterns along the entire value chain, which aligns with the objectives of one of the United Nations Sustainable Development Goals (UNSDGs). Throughout this report, it is noted where our industry’s sustainability efforts overlap with other UNSDGs. Our alignment with the objectives of the UNSDGs, which were released in 2015, is evidence that our industry is working on some of the most pressing sustainability issues of our time.

This print report contains highlights of our members’ sustainability progress; additional data is available at sustainability.afandpa.org. AF&PA invites you to review our sustainability performance and we welcome your feedback.

Donna Harman
President and CEO
Our Products
From renewable and recyclable resources, AF&PA members manufacture products that make people’s lives better

Printing and Writing Papers
Printing and writing papers play a key role in nearly all aspects of everyday modern life—adapting to fit the needs of each new generation throughout all sectors of society and around the world.

School and office papers and manuals promote reading comprehension, information retention and learning; letters and cards, artwork and books communicate to individuals and wider audiences; and official documents like birth certificates, social security cards, passports and diplomas provide personal and vital information.

Paper-based Packaging
Corrugated boxes ship and transport everything from electronics to fragile glassware to perishable goods.

Paperboard packaging protects food, medicine and toiletries during transport and increases the shelf-life of perishable products.

Paper bags give customers a sustainable option to carry and contain their purchases, and paper shipping sacks safely and economically ship bulk materials such as flour, animal feed, sand, dry chemicals, fertilizer and cement.

Pulp
Wood pulp is used in industry products like paper, paper cups, tissue and cardboard—and in specialty products as diverse as LCD screens, home decor, shoes and handbags, food casings and filters.

Fluff pulp is used in absorbent and personal care items like diapers, feminine hygiene and adult incontinence products.

Dissolving pulp can be dissolved in a solvent and spun into textile fibers like rayon or Lyocell, chemically reacted to be formed into fibers or films; or used as a thickener for other products.

Tissue
Tissue products have helped to create modern life. They contribute to improved hygiene and convenience in our society, reducing the risks of communicable diseases.

Tissue products include bathroom tissue (toilet paper), facial tissue, paper napkins, paper towels, wipes, disposable baby diapers and adult incontinence products, feminine care products, special sanitary papers (such as those used in the medical industry), and decorative tissue papers, like crepe paper and laminated tissue papers.

Wood Products
Wood products are fundamental elements in the construction of commercial and residential green buildings, cabinets, fixtures and trim, home and office furniture, floorings, decorative panels, doors and window frames.

Wood products include lumber, plywood, oriented strand board (OSB), composite panels and particleboard.
## Progress Toward Our Sustainability Goals

<table>
<thead>
<tr>
<th><strong>2020 Goal</strong></th>
<th><strong>2016 performance</strong></th>
<th><strong>Progress from baseline year</strong></th>
<th><strong>Progress, in percentage points, from previous report</strong></th>
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</table>
| Improve purchased energy efficiency by at least 10% | 11.43 million BTUs per ton of product | 11.6% improvement  
GOAL SURPASSED | ▲ 3.5  
2005* |
| Exceed 70% paper recovery for recycling | 65.8% (2017) | 14.3 percentage point increase | ▼ 1.0  
2015* |
| Reduce greenhouse gas emissions by at least 20% | 0.664 ton CO₂ eq per ton of product | 19.9% reduction | ▲ 3.9  
2015* |
| Improve safety incidence rate by 25%, while working to achieve zero Injuries | 1.672 recordable cases per 200,000 hours worked | 36.3% improvement  
(2006)  
GOAL SURPASSED | ▼ 4.5  
(2006) |
| Increase fiber procurement from certified forestlands and certified fiber sourcing programs; decrease illegal logging | 29.1% from certified forestlands  
99.1% from certified fiber sourcing programs | 6.1 percentage point increase  
12.1 percentage point increase | ▲ 0.1  
1.1  
0.1 |
| Reduce pulp and paper mill water use by at least 12% | 10,540 gallons per ton of product | 6.6% reduction | ▲ 0.1  
(2005*) |

* unless noted

### CONTRIBUTING TO SOCIETY

Our members manufacture sustainable paper and wood products that people use every day. American workers responsibly use natural resources to make these products in local facilities, which contributes to the health of local communities and the environment.
Energy Efficiency

GOAL: At least a 10 percent improvement in members’ purchased energy efficiency from 2005 to 2020

Purchased energy used by AF&PA member facilities is the total of all purchased fuels (fossil and biomass), as well as electricity and steam purchased from other providers. Members continually seek to use these purchased energy sources more efficiently.

Member purchased energy use per ton of production was 11.6 percent lower in 2016 compared to the 2005 baseline year.

Reductions in purchased energy are primarily driven by new, typically more efficient, boilers and auxiliaries and other energy efficiency projects undertaken at mills.

To reduce the need to purchase energy, AF&PA member pulp and paper mills self-generate the majority of electricity needed to run their facilities. In 2016, 55 percent of electricity needed to power member processes was self-generated. Forty-six percent of member mills generated more than half of their needed electricity. Twenty-two percent of member mills also sold excess power—much of it renewable—to the grid.

In 2016, 98.5 percent of electricity generated in the U.S. forest products industry was produced using combined heat and power (CHP). The forest products industry is the second largest industrial sector producer of CHP electricity after the chemical industry. CHP produces both electricity and steam, with total system efficiencies typically in the range of 60 to 80 percent. In comparison, non-CHP electrical stations like utilities are only about 33 percent efficient.

On average, about 66.6 percent of members’ energy demand is met through renewable biomass energy.

Member pulp and paper mills self-generate the majority of electricity needed to run their operations.

Progress from Baseline Year: 11.6% improvement

- GOAL SURPASSED

2016 Leadership in Sustainability Award for Energy Efficiency/Greenhouse Gas Reduction
Sappi North America’s Hood Heat Recovery Project at Somerset

Sappi’s Somerset mill in Maine reduced its energy-associated footprint and costs through updates that enable the mill to capture wasted heat and use it to heat the water needed in the manufacturing process. The modifications resulted in lower operating costs, fossil fuel use, purchased electricity, waste and greenhouse gas emissions.

2005 Baseline Performance:
12.94 million BTUs (per ton of product)

2016 Performance:
11.43 million BTUs (per ton of product)
2005 Baseline Performance: 51.5%
2017 Performance: 65.8%

Progress from Baseline Year: **14.3** percentage point increase

**Paper Recovery for Recycling**

**GOAL:** Exceed 70 percent rate of paper recovery for recycling by 2020

Paper recovery for recycling allows paper and paper-based packaging to go to their highest end-use: the manufacture of new products. In 2017, the recovery rate for paper consumed in the U.S. was 65.8 percent. The recovery rate has nearly doubled since 1990, thanks to voluntary industry efforts and the millions of Americans who choose to recycle at home, work and school every day.

To achieve our goal, AF&PA focuses on recovery access and education with policy makers and the public. We collaborate with The Recycling Partnership to build recycling infrastructure in communities across the U.S.; deliver STEM-based curriculum materials to 5th grade classrooms through our youth education initiative with The Responsible Package; and provide resources for stakeholders and the public to improve the quantity and quality of paper recovery for recycling on our dedicated website paperrecycles.org.

**2016 LEADERSHIP IN SUSTAINABILITY AWARD FOR PAPER RECOVERY FOR RECYCLING**

**Dart Container’s Employee Recycling Center**

Dart Container opened a drive-through recycling facility at its Mason, Michigan headquarters where employees and their families have access to free, convenient paper recycling. Regular curbside residential recycling services in the area are uncommon, and often require payment. In its first three months, the facility recycled nearly 93,000 pounds of paper products.

The U.S. paper recovery rate has met or exceeded 63 percent for the past nine years.

Industry efforts and the millions of Americans who recycle every day have led the paper recovery rate to nearly double since 1990, when the rate was 33.5 percent.
Greenhouse Gas Emissions

GOAL: At least a 20 percent reduction of our members’ greenhouse gas emissions from 2005 to 2020

Efforts to reduce greenhouse gas (GHG) emissions from manufacturing processes are an inherent part of our industry’s environmental stewardship and are supported by our members’ use of carbon-neutral forest biomass fuel for energy.

In 2016, member GHG emissions—measured in carbon dioxide equivalents (CO₂ eq) per ton of production—were 19.9 percent lower than in 2005.

Progress from Baseline Year: 19.9% reduction

2005 Baseline Performance: 0.828 ton CO₂ eq (per ton of product)
2016 Performance: 0.664 ton CO₂ eq (per ton of product)

2017 LEADERSHIP IN SUSTAINABILITY AWARD FOR ENERGY EFFICIENCY/GREENHOUSE GAS REDUCTION

Resolute Forest Products’ GHG Reduction Program

Resolute adopted a series of sustainability commitments, including a goal to reduce GHG emissions from their facilities by 65 percent between 2000 and 2015. By improving the energy efficiency of their operations and increasing use of lower carbon fuels, Resolute surpassed that goal. At the end of 2016, the company had lowered GHG emissions by 73 percent compared to 2000 levels.

Members set the 20 percent reduction goal in 2017—after surpassing their previous goal ahead of schedule

Members reduce GHG emissions from their facilities by using biomass energy, switching to less carbon-intensive fuels like natural gas and increasing energy efficiency

Reductions in GHG emissions intensity are driven by decreased coal and oil use, as well as by increased use of less carbon-intensive natural gas. Members also avoid fossil fuel-based GHG emissions by adopting efficient manufacturing production measures and generating carbon-neutral biomass fuel on-site.

In 2016, carbon-neutral biomass and renewable fuels provided, on average, about 66.6 percent of member facility energy needs.
Worker Safety

GOAL: A vision for the industry of zero injuries and measuring progress toward that aspirational goal by further improving our incidence rate by 25 percent from 2006 to 2020

Any injury to our industry’s employees is unacceptable. AF&PA members continually work to develop innovative methods to improve the safety of their facilities so that workers can go home safe and sound after their shifts. In 2016, the member company recordable incidence rate was 36.3 percent lower than in 2006.

We still have a lot of work to do before reaching and maintaining our industry vision. In 2016, AF&PA members assigned safety training for 100 percent of their new employees. They also provide useful and timely safety updates and invest in programs to promote the well-being of their employees and the communities where they operate.

As part of the ongoing effort to help our members reduce serious injuries and fatalities (SIF), AF&PA convened safety workshops aimed at discussing how to identify and remediate SIF precursors; developed survey instruments for collecting SIF-related data from member companies; compiled a compendium of publicly available workplace health and safety information; and organized safety webinars.

100 percent of members’ new employees received safety training in 2016

Members continually work to realize the industry vision of zero injuries in the workplace

2006 Baseline Performance: 2.625 recordable cases/200,000 hours worked
2016 Performance: 1.672 recordable cases/200,000 hours worked

Progress from Baseline Year: 36.3% improvement

✔ GOAL SURPASSED

2016 LEADERSHIP IN SUSTAINABILITY AWARD FOR SAFETY
WestRock Company’s Safety First, Safety Always Project
To achieve a higher rate of employee safety engagement, improve safety culture and morale, and reduce injuries and costs, WestRock produced the Safety First, Safety Always video as part of their 2015 safety strategy. The video includes three modules: Speak Up for Safety; Plan for Safety; and Engaged for Safety.

2017 LEADERSHIP IN SUSTAINABILITY AWARD FOR SAFETY
Seaman Paper Company of Massachusetts, Inc.’s Raising the Reels for Safety
Seaman Paper improved the safety culture at their Otter River, Massachusetts mill with a simple, fool-proof solution. Older paper machines like the ones at the company’s mill were designed with lower reel heights, which exposed machine operators to a safety hazard. Seaman Paper opted to retrofit their machines by adding stands to the reels, elevating the centerline of the hazard and literally moving it out of their employees’ reach.
Sustainable Forestry

GOAL: Increase the amount of fiber procured from certified forestlands and through certified fiber sourcing programs in the U.S. from 2005 to 2020 and work to decrease illegal logging.

Members combat illegal logging by safeguarding against fiber procurement from illegally-logged sources.

Members create incentives for forest owners to practice sustainable forest management.

Progress from Baseline Year:

- 6.1 percentage point increase from certified forestlands
- 12.1 percentage point increase from certified fiber sourcing programs

2005 Baseline Performance:
- 87% from certified fiber sourcing programs
- 23% from certified forestlands

2016 Performance:
- 99.1% from certified fiber sourcing programs
- 29.1% from certified forestlands

Sustainable forestry practices keep forests plentiful and support the sustainability of our entire industry. Abiding by sustainable procurement principles for the wood fiber they purchase, our members create an incentive for forest owners to practice sustainable forest management.

The amount of wood fiber members procured from certified sourcing programs increased from 87 percent in 2005 to 99.1 percent in 2016.

Wood fiber that members sourced from third-party certified forestlands increased from 23 percent in 2005 to 29.1 percent in 2016.

AF&PA members that own forestland also conform to credible forest management program standards, such as the Sustainable Forestry Initiative® (SFI®), the Forest Stewardship Council (FSC®) program, the American Tree Farm System™ (ATFS) or the Programme for the Endorsement of Forest Certification (PEFC™).

2017 LEADERSHIP IN SUSTAINABILITY AWARD FOR SUSTAINABLE FOREST MANAGEMENT

International Paper’s Certified Forest Management LLC

International Paper created a cost-effective means for small private landowners to become FSC certified following customer demand for certified products. Through Certified Forest Management LLC, its own FSC forest management group, International Paper has directly enrolled and actively maintained FSC forest management certification for more than 200 private landowners in ten states (totaling nearly 520,000 acres) since 2012, significantly increasing certified forestlands and their certified fiber supply in the process.

Members continue their efforts to combat illegal logging by safeguarding against fiber procurement from illegally-logged sources. This includes documenting fiber sources, requiring suppliers to sign agreements and using third-party certification of chain-of-custody systems.

In addition, AF&PA advocates for funding of Lacey Act implementation and United States Department of Agriculture Forest Service International Programs to prevent illegal logging and the importation of illegally harvested forest products.
Water Use

GOAL: A 12 percent reduction in member pulp and paper mill water use from 2005 to 2020.

Water is an essential part of the pulp-and-papermaking process. Therefore, members continue to seek ways to reduce, reuse and recycle the water they use in their manufacturing processes.

In 2016, AF&PA member pulp and paper mill water use per ton of product decreased by 6.6 percent from the 2005 baseline year.

Improved technology and innovation enable water to be reused and recycled at least ten times throughout the pulp and paper mill process before discharge.

Eighty-eight percent of the water used for production of paper and wood products is returned to the environment after treatment in a wastewater system, meaning that only 12 percent is consumed (water that evaporates during the manufacturing process or that is in products is considered "consumed").

2016 LEADERSHIP IN SUSTAINABILITY AWARD FOR WATER
Procter & Gamble’s Water Conservation Response Project

Procter & Gamble’s Oxnard, California facility implemented five distinct projects that led the site to deliver a cumulative absolute fresh water consumption reduction of 28 percent between 2012 and 2015. Setting new site and business records for low levels of water consumption, the company proved to be an important and responsible partner in addressing California’s urgent need for good stewardship of scarce water resources.

2017 LEADERSHIP IN SUSTAINABILITY AWARD FOR WATER
American Eagle Paper Mills’ Project Phoenix

American Eagle Paper Mills commissioned Project Phoenix to increase efficiency and reduce water use at their Tyrone, Pennsylvania mill—one of the oldest working paper mills in the United States. Infrastructure updates resulted in an 83 percent reduction in total daily river and watershed water withdrawal; a 91 percent reduction in daily water consumption; and an 18.1 percent reduction in process water effluent per ton of paper produced.

Pulp and paper mills reuse the water they withdraw at least ten times before discharging it.

Paper and wood products manufacturing facilities return about 88 percent of the water they withdraw; the remaining 12 percent evaporates or is in products.

Progress from Baseline Year: 6.6% reduction

2005 Baseline Performance: 11,281 gallons (per ton of product)
2016 Performance: 10,540 gallons (per ton of product)
The Three Pillars of Sustainability
Economic, Environmental and Social

ECONOMIC

Employment
The forest products industry is among the top ten manufacturing sector employers in 45 U.S. states. In 2017, the industry directly employed about 934,000 men and women: 98,500 people were employed at pulp, paper and paperboard mills; 270,100 at paper and paperboard converting plants; 49,500 in logging operations; 397,000 at lumber and wood panel facilities; and 119,100 at wood kitchen cabinet plants. In 2016, employee compensation paid was $29.9 billion in the paper industry, $21 billion in the wood products industry and $2.3 billion in the logging industry, totaling $53.2 billion.

In 2016, employee compensation paid was $29.9 billion in the paper industry, $21 billion in the wood products industry and $2.3 billion in the logging industry, totaling $53.2 billion.

Paper industry employee earnings averaged $66,900 in 2016, which was 24 percent above the national average earnings of all non-farm private sector employees. In the Southeast, the leading U.S. region for paper production, paper industry employees earned 49 percent more than their private sector counterparts.

Impact on Local Communities
AF&PA member facilities are often located in rural communities where they frequently serve as the largest employer. As a result, local economies can be highly dependent on the economic viability of these facilities.
More than 75 percent of all U.S. pulp and paper mills are located in counties that are more than 80 percent rural.\textsuperscript{14}

In addition to employee compensation and $12.4 billion spent on capital expenditures, the forest products industry spent $138 billion on materials and parts, $5.1 billion on purchased electricity and $3.7 billion on purchased fuels in 2016.\textsuperscript{15} Many of these expenditures occurred in and benefited local communities.

**Contributions to GDP**

In 2016, the forest products industry contributed $89 billion to the total U.S. manufacturing Gross Domestic Product (GDP), of which the pulp and paper sector accounted for $59 billion and the wood products sector provided $30 billion. This translates to four percent of the U.S. manufacturing GDP.\textsuperscript{16}

**Profits**

Forest products industry operating profits totaled about $16.4 billion in 2017, which equaled the 2016 level.\textsuperscript{17} Industry operating profits for the ten-year period ending in 2017 averaged $13 billion a year. The paper segment of the industry earned $8.8 billion in 2017, while the wood side netted operating profits of $7.5 billion.

**Research & Development (R&D) Expenditures**

The forest products industry continues to devote significant resources to the development of new and improved products. Forest products companies with U.S. operations spent over a billion dollars on R&D in 2015: spending by the paper industry totaled $864 million, while the wood products sector spent $190 million. More than 90 percent of those expenditures took place in the U.S. During the 2012-2014 period, 18.1 percent of paper companies introduced new goods or services, compared with 9.4 percent of all U.S. companies.\textsuperscript{18}

**ENVIRONMENTAL**

Five of our six Better Practices, Better Planet 2020 goals demonstrate AF&PA members’ commitment to environmental stewardship across the entire value chain: from the raw, renewable wood fiber that is harvested to the energy and water used in their manufacturing processes to recovering paper and paper-based packaging to make new products.
**SOCIAL**

**Occupational Safety**

In our industry, safety comes first. The *Better Practices, Better Planet 2020* goal to improve worker safety is an important step toward achieving our industry vision of zero workplace injuries.

The forest products industry is among the top industry categories utilizing the Occupational Health and Safety Administration’s Voluntary Protection Program (VPP). For a work site to be admitted to the VPP, it must meet rigorous performance-based safety and health criteria. In 2017, the industry had 149 sites (80 paper facility sites and 69 wood products sites) enrolled in federal and state VPPs.

**Health**

Member companies offer their employees health risk assessments and health promotion programs, as well as host on-site health fairs. Many of our members...
provide education on a variety of issues, including diet and weight management, high blood pressure and cholesterol, smoking cessation, stress and substance abuse.

**Professional Development**

Our members are dedicated to helping their employees realize their full professional potential. Seventy-one percent of AF&PA member companies support their employees’ continuing education and career development efforts through reimbursement of college tuition or external programs, in-house training or sabbaticals.

In 2017, the average age of a U.S. pulp and paper mill employee was 48.6 years. To educate and train a new generation of paper manufacturers, 71 percent of AF&PA member companies offer apprenticeships or internships to college, university and technical institute students. Forty-six percent work with colleges, universities or technical institutes to develop curricula that will produce trained graduates.

**Engaging Local Communities**

Sixty-three percent of AF&PA member companies either have a charitable giving program or a corporate foundation to promote philanthropic activities.

Glatfelter’s Ohio Operations PEOPLE Partnership with Tiffin Elementary School

Glatfelter’s successful partnership with local Tiffin Elementary School in Chillicothe, Ohio includes greeting students on Fridays; helping sixth graders design wooden race cars for a Pinewood Derby event; and promoting literacy by providing children’s books printed on Glatfelter paper and reading to kindergarten classes. In 2017, the Ohio School Board Administration recognized Glatfelter with the Community Partner of the Year award for its impactful and evolving partnership with Tiffin Elementary.

UPM’s Blandin Employees for Life Fund

UPM’s employees at its Blandin paper mill in Grand Rapids, Minnesota founded, manage and support the Blandin Employees for Life fund, which helps community members who are challenged with the financial burdens of traveling for cancer treatments. Working together with the Grand Rapids Area Community Fund, Blandin Employees for Life has distributed hundreds of gas cards to local community members in their time of need.

**NOTES**

1 UNSDG #12: Responsible Consumption and Production
2 UNSDG #7: Affordable and Clean Energy
3 U.S. Energy Information Administration
4 U.S. Energy Information Administration
5 U.S. Environmental Protection Agency
6 UNSDG #13: Climate Action
7 UNSDG #15: Life on Land
8 UNSDG #6: Clean Water and Sanitation
9 UNSDG #8: Decent Work and Economic Growth
10 U.S. Bureau of Labor Statistics
12 Bureau of Economic Analysis
13 UNSDG #11: Sustainable Cities and Communities
14 U.S. Census Bureau
15 U.S. Census Bureau
16 U.S. Department of Commerce
17 U.S. Census Bureau
18 National Science Foundation
19 U.S. Department of Labor
20 UNSDG #4: Quality Education