Environment, Energy & Safety Report

Industry Progress Report

AMERICAN WOOD COUNCIL

DECEMBER 2018
Introduction

The American Wood Council (AWC) is the voice of North American wood products manufacturing, an industry that provides almost 450,000 men and women in the United States with family-wage jobs. AWC represents 86 percent of the structural wood products industry, and members make products that are essential to everyday life from a renewable resource that absorbs and sequesters carbon.

On behalf of the industry it represents, AWC is committed to ensuring a resilient, safe, and sustainable built environment. To achieve these objectives, AWC contributes to the development of sound public policies, codes, and regulations which allow for the appropriate and responsible manufacture and use of wood products. We support the utilization of wood products by developing and disseminating consensus standards, comprehensive technical guidelines, and tools for wood design and construction, as well as providing education regarding their application.

AWC members are very proud of their record of energy management and efficiency, mill safety, and protection of the environment, all while producing products that are central to the lives and homes of all Americans.

As part of this commitment, the industry has been publicly reporting its performance across a number of environment, energy and safety measures since 2014. This Industry Progress Report, our third, shows that there have been significant improvements over the last decade in these areas, despite the economic downturn that caused a drop in wood products manufacturing beginning in early 2006. Some of the metrics have leveled off in the last few years reflecting a stabilization of performance and maturing of the regulatory regime after an earlier period of intense change. The Report also provides some economic and employment data for the last decade.

In reviewing our progress, it is important to note that many factors that influence individual parameters play out over extended periods of time, so looking at longer-term trends, rather than focusing on changes between any two years, is encouraged.

1 Bureau of Economic Analysis 2016 data
Key Findings

• The broad forest products industry is the largest producer and user of bioenergy of any industrial sector. AWC member companies have met over 75 percent of their energy needs, on average, from biomass over the last decade.

• Using biomass from forest products manufacturing residuals displaces fossil fuel use and is a carbon-neutral, renewable fuel source.

• Energy intensity has improved significantly since the 2008-09 recession and is 17 percent below pre-recession levels.

• The 10-year trend in chemical releases has shown significant reductions, which includes formaldehyde and methanol.

• Worker safety incident rates for member companies are consistently lower than all manufacturing during 2004-2016.

• Capital spending by the U.S. wood products sector increased from 2012 to 2016; in 2016 spending was nearly 3 times that of 2009.
Environmental Profile

CHEMICAL RELEASES

FORMALDEHYDE
Formaldehyde emissions intensity of reporting AWC members, expressed in pounds per thousand cubic feet (MCF) of products produced, has declined overall since 2006. The emissions intensity for 2016 is 53 percent lower than that for 2006. The significant decline is likely due to a combination of required state and federal air pollution controls and product reformulation efforts to reduce formaldehyde in resins. The leveling of emissions since 2012 is indicative of AWC members having met these regulatory obligations and continuing to maintain strict compliance.

METHANOL
Methanol emissions intensity, expressed in pounds per thousand cubic feet of wood products produced by reporting AWC member companies, remained essentially flat since 2012, indicating AWC members’ have met regulatory obligations. The intensity declined from 4.2 pounds/MCF in 2008 to 2.8 pounds/MCF in 2016, a reduction of 33 percent. Given methanol’s relatively lower toxicity, industry and regulatory focus has shifted to other performance measures.

Reductions in methanol emissions are likely associated with clean air requirements to capture and destroy methanol from various presses, dryers and other process equipment that went into effect in 2008.

TOXICS RELEASE INVENTORY
The following chart tracks total Toxics Releases Inventory (TRI) per thousand cubic feet of wood products production for AWC member companies that reported to the AWC survey. These data, as well as the formaldehyde and methanol emissions data, were obtained from EPA’s TRI database.

Total TRI releases intensity has been trending downward since 2003. Between 2003 and 2016, the intensity decreased 37 percent.
Formaldehyde Releases Intensity

Methanol Releases Intensity

Total TRI Releases Intensity

Source: EPA (for facilities reporting 2010-2016 AWC Environment, Energy & Safety Survey; AF&PA EH&S Survey for previous years)
LIFE CYCLE PERFORMANCE

More attention is being paid than ever before to how buildings impact the environment, including the choices of materials used in construction and how those materials help conserve energy during operation. Wood is the perfect sustainability material because it is renewable, stores carbon that reduces greenhouse gases, and is energy efficient.

The North American wood products industry is committed to sustainability in its products and their use. In support of this commitment, and to stimulate product improvement, the industry prepared and has published third-party verified Environmental Product Declarations (EPDs) and Transparency Briefs that capture and describe the environmental performance of many of the products produced.

All North American wood industry EPDs have been independently third-party verified by UL Environment (ULE), a business unit of Underwriters Laboratories. ULE verifies that EPDs conform to the requirements of ISO 14025, the global standard governing EPDs. ULE’s review looks at both the underlying life-cycle assessments as well as the data reported in the EPDs.

These third-party verified EPDs provide users with a science-based tool to understand and weigh what environmental factors are important to them when making product selections.

In total, the wood products industry has produced and made available 12 EPDs, which can be found at awc.org/greenbuilding/epd.
Wood products facilities use all parts of natural raw materials received, not only to manufacture products used in everyday life, but then also use the manufacturing residuals to generate most of the energy needed. Data submitted to AWC’s Environment, Energy & Safety Survey indicate that member companies met nearly 75 percent their energy needs from renewable, carbon neutral biomass energy in 2016.

By using biomass manufacturing residuals, the wood products industry is harnessing the energy value of carbon before it is lost to the atmosphere through other means.

The result is that by using biomass, the industry displaces fossil fuel use and its associated emissions.

The greenhouse gas reduction benefit of using biomass manufacturing residuals for energy by the wood products industry is equivalent to about 24 million tons of carbon dioxide. This is equivalent to removing approximately 4.6 million cars from the road every year.2

The next two largest energy source categories in 2016 were purchased electricity at 13 percent and natural gas at 10 percent.

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The 2016 data continued the decade-long trend, shown in the chart above, in which wood products facilities have typically derived about 75 percent of their energy needs from carbon neutral biomass. This serves to decrease the use of fossil fuels and reduce the landfiling of biomass residues, thereby conserving landfill space and avoiding production of methane, an even more potent greenhouse gas.

Chart 6 shows energy use trends since 2004 for the wood products sector. Energy use at AWC member facilities has mostly held steady during the 2004-2014 period, with a 12 percent drop from 2014 to 2016. The energy intensity for 2016, measured as billion BTUs per MCF of production, was 16 percent lower compared to 2004. However, it is noted that energy use is not directly proportional to production and small variations could be attributed to inefficiencies that can occur when facilities operate at lower production levels than normal.
Since 2004, safety at AWC’s member wood products manufacturing mills has improved by almost 16 percent based on OSHA total recordable case rate (TRCR). The OSHA recordable case rate dropped from 3.4 in 2004 to 2.9 in 2016. This is calculated as the number of recordable cases per 100 full time employees working 40 hours a week and 50 weeks per year.

However, while still an improvement from the high in 2004, and consistently lower than the rate for either the wood products industry as a whole or all manufacturing, the total recordable case rate for AWC members has been slowly rising since 2008. The rate for 2016 is about 45 percent higher than that of 2008.

For 2016, data reported by AWC members indicates a recordable case rate of 2.9. This is lower than the 3.6 rate for all manufacturing reported by the Bureau of Labor Statistics (BLS). Interestingly, the estimated 2016 recordable case rate for all U.S. wood products facilities, not just AWC members, is 5.0.

The Days Away from Work, Restricted and Transfer (DART) case rate is a measure for severe injuries in the workplace. These are cases where the injured person could not work or had to be re-assigned or transferred to perform other functions.
Data reported by AWC members indicates a 2016 DART case rate of 1.7, which is below the 2016 rate of 2.1 for all manufacturing reported by the Bureau of Labor Statistics (BLS). It is also well below the estimated 2.8 DART case rate for all wood products facilities in the U.S. making similar products as AWC members.

The DART case rate for AWC members declined more than 35 percent between 2004 and 2006. However, since 2006 it has been increasing somewhat every year, resulting in a longer-term decline of only 3 percent during 2004-2016.

According to BLS, in 2016 there were approximately 393,000 employees in the U.S. wood products sector. The DART case rate of 2.8 for all wood products facilities indicates that 2.8 percent of employees at these facilities were involved in a workplace injury resulting in lost time from work, reassignment, or transfer to another job. For AWC members, the DART rate falls to 1.7 percent of employees being similarly affected.

Increases in both DART and TRCR of AWC members since 2008 may be a result of the dramatic increase in hiring of new employees as the industry came out of the recession, the challenge of finding entry level, semi-skilled and skilled workers in a tight labor market and those new employees learning appropriate safety protocols, use of temporary workers having less experience with safety programs as mills expanded production, and greater reporting of events by mills especially with mergers of smaller companies into larger ones.
PRODUCTION

After dropping nearly 45 percent between 2005 and 2009 due to declines in housing starts and the overall financial crisis, both housing starts and production of wood products have continued to pick back up.

The slow but steady increase in new home construction has clearly lifted demand for wood. U.S. production of wood products rebounded by 43 percent between its mid-2009 low point and the end of 2017, according to Federal Reserve Board data. However, as can be seen from the chart shown above, both housing starts and wood products production remain significantly below pre-recession levels.

Coming out of the recession, sales of wood products have also been on the rise, from a low of $57.6 billion in 2009 to $96.0 billion in 2017, according to U.S. government data (Quarterly Financial Report for Manufacturing, Mining, Trade and Selected Service Industries).

In 2017, the wood products industry accounted for 1.4 percent of U.S. manufacturing GDP according to data compiled by the Bureau of Economic Analysis (BEA).
CHART 10

Wood Products Industry Capital Spending

CHART 11

Wood Products Industry Employment

Source: Bureau of Labor Statistics
$4.8 billion
Spent on Capital Improvements in 2016

1.4%
Wood Products Industry Share of U.S. Manufacturing GDP

CAPITAL SPENDING
As shown in Chart 10, the wood products industry spent approximately $4.8 billion on capital improvements in 2016. That level of spending is nearly 3 times the recession-period spending low of $1.6 billion in 2009. $1.3 billion of the industry’s 2016 capital spending went for buildings, while $3.4 billion was used for acquiring equipment.

EMPLOYMENT
According to BLS data, wood products employment bottomed out at 337,100 workers in 2011 and has been trending considerably higher in recent years as housing starts and industry production recover. Wood products industry employment rose 2.7 percent in 2016 and 1.0 percent in 2017 to 396,800 in 2017, but still off the high levels found early in the previous decade.
2018 AWC MEMBERS

Almond Bros. Lumber
Boise Cascade
Canadian Wood Council
Canfor Southern Pine
Charles Ingram Lumber
Collins Companies
Collum’s Lumber
Columbia Vista
D.R. Johnson Lumber
D.R. Johnson Wood Innovations
DS Smith Riceboro Lumber
Georgia-Pacific
Green Bay Packaging
Hampton Resources
Hancock Lumber
Harrigan Lumber
High Cascade/WKO
Hood Industries
Huber Engineered Woods
Hull-Oakes Lumber
Humboldt Sawmill
H.W. Culp Lumber
Idaho Forest Group
Idaho Timber
Interfor U.S.

Jordan Lumber & Supply
Kapstone Paper & Packaging
Lampe & Malphrus
Louisiana-Pacific
Masonite
McShan Lumber
Mendocino Forest Products
Mt. Hood Forest Products
Norbord
Nordic Structures
PotlatchDeltic
Rex/North Florida
Robbins Lumber
Roseburg Forest Products
Seneca Sawmill
Shuqualak Lumber
Sierra Pacific
Stimson Lumber
Swift Lumber
T.R. Miller Mill
Vaagen Brothers
West Fraser
Westervelt
WestRock
Weyerhaeuser
The American Wood Council (AWC) is both one of the youngest and one of the oldest major trade groups in the nation. AWC was re-chartered in 2010, evolving from a number of predecessor groups. Immediately prior to the founding of the new AWC, the forest products industry was represented by the American Forest & Paper Association (AF&PA). AF&PA grew out of two organizations - the National Forest Products Association (NFPA) and the American Paper Institute (API) - each, independent institutions with some common membership, representing the forest and wood products industries, and pulp, paper, and paperboard manufacturers, respectively.

AWC Member Data for 2010, 2012, 2014 and 2016 are from survey responses to AWC’s Environment, Energy & Safety Survey. For prior years, the data is from a similar survey conducted by AF&PA for its members with wood products operations. Note that survey data were collected for each year noted above in the following year, and then analyzed in the year after that. The set of respondents may vary from one survey year to another.

When data is used from other sources, such as from the Environmental Protection Agency (EPA) or Bureau of Labor Statistics (BLS), it is noted in the Report.