

# PORT HAWKESBURY PAPER

2017

Key Environmental  
Measurements





An aerial photograph of a golf course and surrounding forest. The golf course features several green fairways and a central water hazard. The surrounding forest is dense, with trees displaying vibrant autumn colors of red, orange, and yellow. The sky is clear and blue. A semi-transparent dark blue rectangular box is overlaid on the lower-left portion of the image, containing the text "A LEADER TODAY, AND TOMORROW" in white, uppercase, sans-serif font.

A LEADER TODAY,  
AND TOMORROW





Port Hawkesbury Paper is a leader in responsible, sustainable forest products. Our goals of safety, efficiency, economic and environmental sustainability, and innovation help make us a mill to follow in North America.

We continue to use technology-based information gathering and oversight to improve resource inventories, operational planning, habitat mapping and other forest management objectives. We continue to make significant progress in forest management activities audited by third parties. Sixty values were identified for special management or protection, including species at risk, large intact forest landscapes, municipal water supply areas and culturally significant sites for Indigenous peoples. A detailed Annual Monitoring Report can be found on our web site.

A Life Cycle Assessment (LCA) was undertaken to analyze the environmental impact of our products from cradle to gate. The LCA results generally indicate a decrease in most impact categories due to a decrease in some of the energy, fuel and material inputs and we will continue to use the LCA methodology to measure GHG emissions in future reports.

Last year, Port Hawkesbury Paper (PHP) conducted research in biomass handling and storage, resulting in increased energy production using less biomass. In addition, we commissioned waste sludge residual drying as part of our continuing efforts to increase environmental sustainability. We learned that PHP is producing over one tonne less per hour of bio-solids, and has increased dryness by at least 4%, delivering a projected savings of \$360,000 per year. It has resulted in savings that have paid back the project cost in just six months, and it continues to be optimized.

We continue to place unmatched value on our employees and community, committing to the safety and efficiency of our workforce while supporting Indigenous peoples and workforce development in the region. We truly appreciate our partnership with community members, our colleagues in the municipal and provincial government, and our suppliers and customers. This report is an opportunity to look back at what we've accomplished, and look forward to the exciting initiatives on the horizon.

A handwritten signature in black ink, appearing to read 'M Hartery'.

**Mike Hartery**

*Paper Production Manager*

A handwritten signature in black ink, appearing to read 'M Dube'.

**Marc Dube**

*Business Development Manager*

A handwritten signature in black ink, appearing to read 'Bevan Lock'.

**Bevan Lock**

*Pulp Production Manager*



# THRIVING WOODLANDS: INNOVATION DRIVES RESPONSIBLE FORESTRY

**Port Hawkesbury Paper works diligently to ensure sustainable harvests, increased forest productivity and protection for wildlife, water and recreational resources.**

Forest operations at PHP are carefully planned to deliver a valuable, sustainable resource that satisfies economic, social, cultural and environmental benefits. With the use of high-end computer mapping and software systems, we supervise our operations to strict standards to ensure healthy productive forests. Integrated laser technology of light detection and ranging (Lidar) and unmanned aerial drones provide near real-time information for improving resource inventories, operational planning, habitat mapping and other forest management objectives. Reducing greenhouse gas emissions plays a huge role in managing climate change, and it's our commitment that our greatest natural resource will be around for years to come.

Last year marked significant progress in Port Hawkesbury Paper's forest management activities audited by third parties. A total of 60 values were identified for special management or protection, including species at risk, large intact forest landscapes, municipal water supply areas, watersheds, protected areas, steep slopes, views, and culturally significant sites for Indigenous peoples. To further ensure the long-term sustainability of the forests we manage in seven eastern counties in Nova Scotia, we continue to reduce our reliance on clear cutting. PHP also invests in training and technology, working closely with our contractors to better plan forestry operations, monitor results and improve operational efficiency.

The Woodlands Unit is leading edge in its forestry planning. Currently Port Hawkesbury Paper manages 30% of the Crown land in Nova Scotia, which

represents 58% (roughly 523,000 acres) of the Crown land in its forest management area. Because of 45 years of silviculture activities on these lands, the forest will increase in economic activity over the next 20 years.

PHP is the only industrial company in the Maritimes that is independently certified to the Forest Stewardship Council® (FSC®) forest management and chain of custody standards, Sustainable Forestry Initiative® (SFI®) forest management and chain of custody standards, and PEFC™ chain of custody standard. Certification is a voluntary process by which planning, procedures, systems and performance of on-the-ground forestry operations are audited by a qualified and independent third party against a predetermined standard. Forest operations found to be in conformance with the given standard are issued a certificate. Port Hawkesbury Paper supports the mutual recognition of credible forest certification systems that consider national and regional characteristics such as natural conditions, forest ownership structures and legislation.

## **PHP's key commitments to the environment:**

- To carry out operations in ways that do not endanger the environment. Sustaining a healthy environment is an integral part of all company operations.
- To continually improve all aspects of our sustainable forest management system for company-managed lands through experience and forest research.
- To utilize long-term landscape ecosystems planning, appropriate silviculture systems and operating practices that conserve biodiversity in managing our forest areas.
- To meet or exceed all applicable regulations, legal obligations and other requirements to which PHP subscribes.





# ASSESSING THE LIFE CYCLE OF OUR FOREST PRODUCTS

A ‘cradle to gate’ look at the environmental impact of our products and processes is invaluable to creating a sustainable operation.

Port Hawkesbury Paper contracted FPInnovations, a not-for-profit, world-leading R&D institute that specializes in the creation of scientific solutions in support of the Canadian forest sector, to complete a “cradle to gate” Life Cycle Assessment (LCA) comparing the 2013 and 2015 operations.

LCA is a tool designed to analyze the environmental impact of products throughout their entire life cycle or at distinct phases in the process. It allows for the comprehensive quantification and interpretation of the flows to and from the environment, including emissions to air, water and land, as well as the consumption of energy and other material resources. LCA provides a standardized method to view the environmental aspects of a product and offers the ability to understand the true environmental trade-offs in product selection throughout the product life cycle.

## Highlights of the LCA include:

- Decrease in wood supply transportation distance
- Decrease in steam consumption
- Decrease in water consumption
- Decrease in use of purchased Kraft pulp

The LCA results generally indicate a decrease in most impact categories due to a decrease in some of the energy, fuel and material inputs. The impact categories that show an increase are due to the electricity grid profiles and the use of certain material inputs.

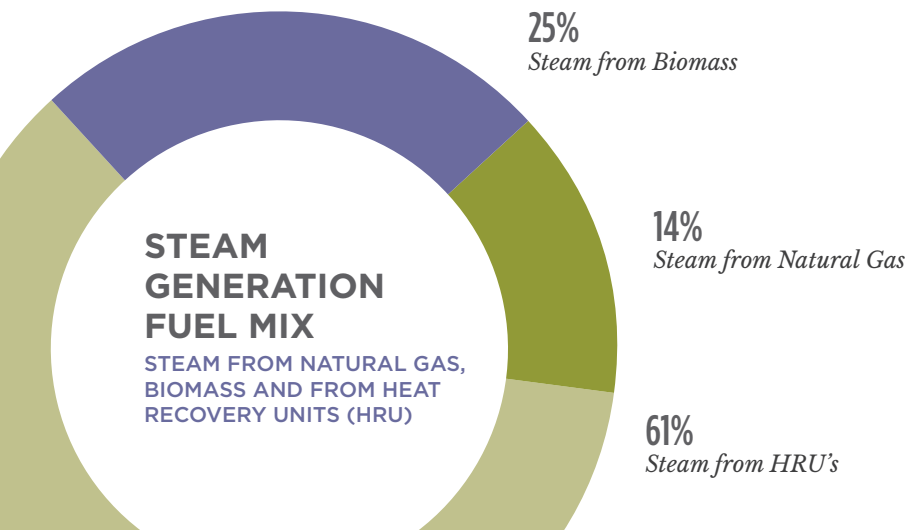


# CONSERVING ENERGY FOR A BETTER FUTURE

Port Hawkesbury Paper is committed to ongoing energy conservation and reduction, and great strides were made within the plant in 2017.

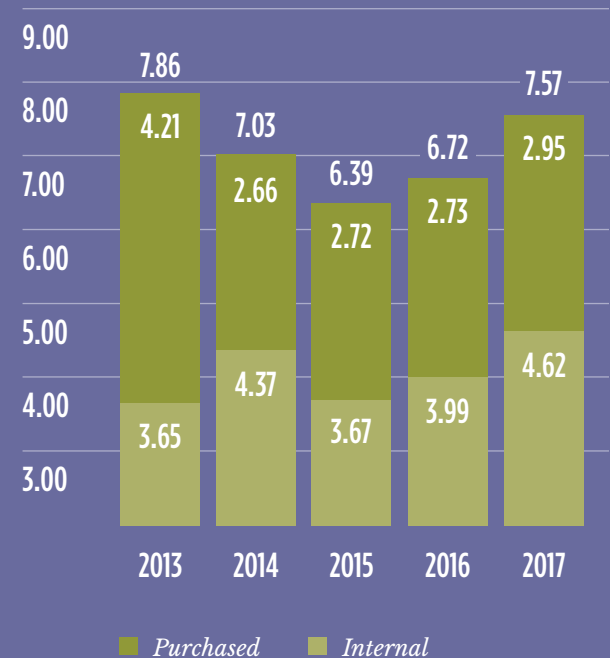
Port Hawkesbury Paper purchases 100% of our electrical energy from Nova Scotia Power (NSPI) and the chart illustrates the source of energy used to generate the steam on site required to run our manufacturing facility. Last year, PHP conducted research on the biomass plant handling and storage to improve fuel quality, resulting in increased energy production using less biomass. Increasing the mill's ability to produce more and stronger TMP fiber instead of kraft fiber for use in paper production provides the added benefit of using fewer trees due to the higher yield from this type of pulping process.

Partnering with local universities, we are studying opportunities for further industrial symbiosis on our site. This is an association between two or more operations whereby some of the wastes or by-products of one process become the raw material for another. During 2017, we began the construction of a facility to test the potential to grow striped bass and oysters in water heated using the low grade waste heat which is currently a by-product from the mill.



## NET STEAM CONSUMPTION

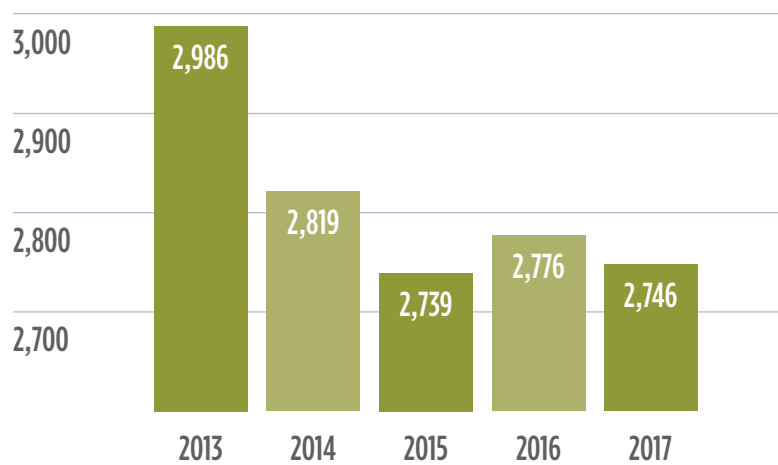
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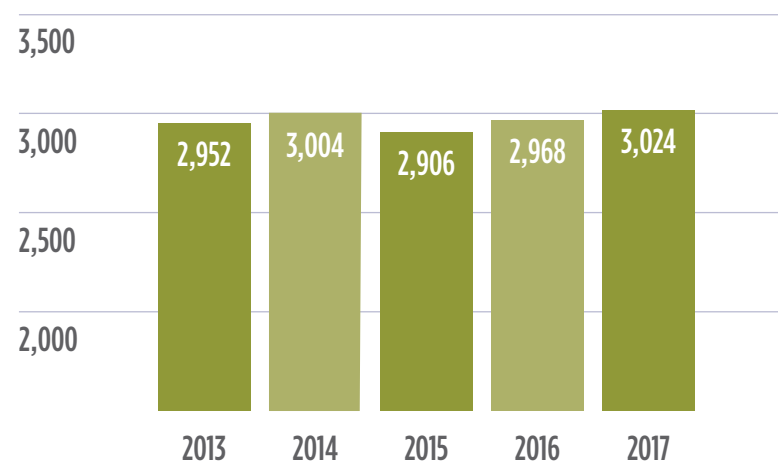
## AIR QUALITY/GHG EMISSIONS

KG OF CO2 EQ PER METRIC TONNE OF PAPER PRODUCED



## ELECTRICITY CONSUMPTION

KWH PER METRIC TONNE OF PAPER PRODUCED

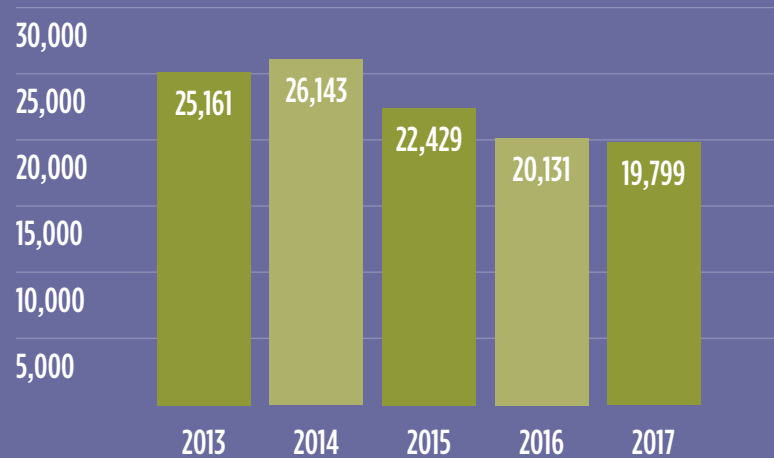


*Data compiled according to FPInnovations Life Cycle Assessment methodology*



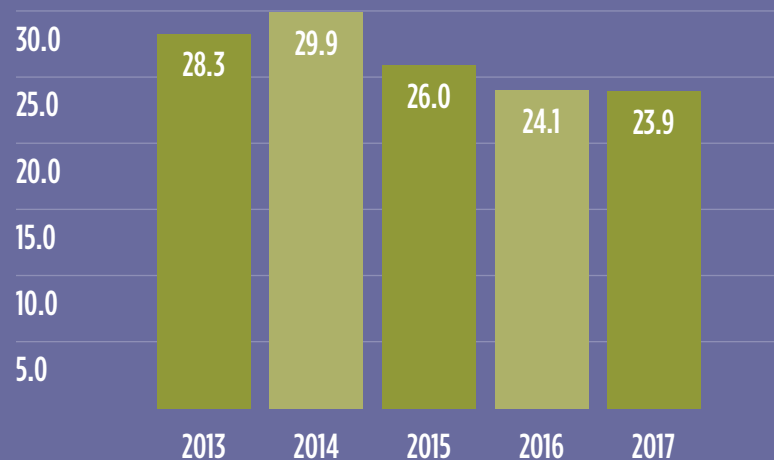
## TOTAL WATER CONSUMPTION

CUBIC METERS PER DAY OF RAW WATER TO MILL



## WATER CONSUMPTION

CUBIC METER PER METRIC TONNE OF PAPER PRODUCED



## WATCHING OUR WATER USE

Making paper is a water intensive process, so we carefully monitor our use of this natural resource by finding new ways to reduce our water consumption and effluent.

In 2017, PHP implemented an innovative waste sludge drying method as part of our continuing efforts to increase environmental sustainability.

We inject a strong acid into waste activated sludge (WAS) which results in increased bio-solid dewatering ability and decreased requirement for both environmentally and economically costly dewatering chemicals. Acidification disrupts linkages within the bio-solids to cause the eruption of water-containing microorganisms resulting in reduced dewatering chemicals, dryer bio-solids, and decreased overall bio-solids output to landfills.

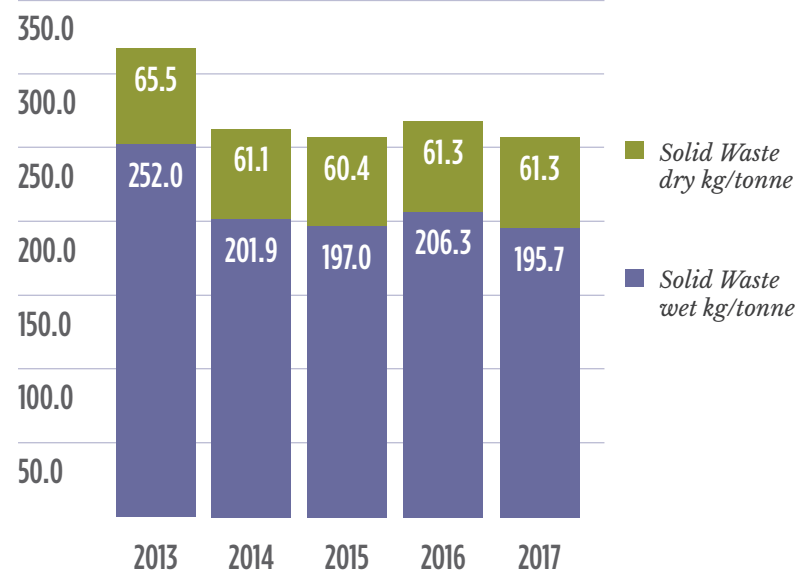
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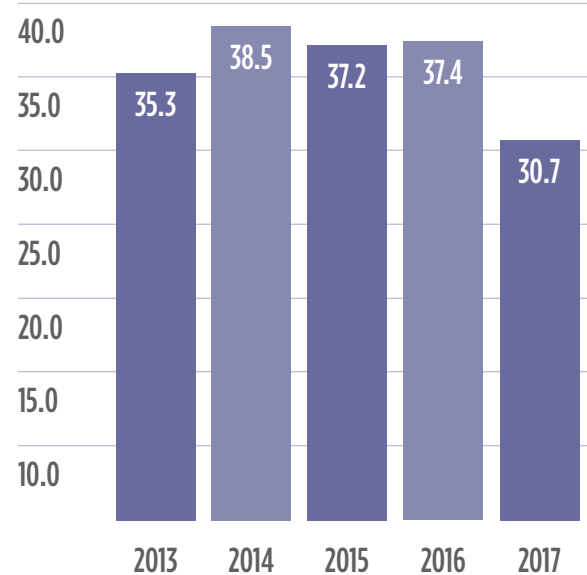
## SOLID WASTE GENERATED

KG PER METRIC TONNE OF PAPER PRODUCED



## TSS TO EFFLUENT TREATMENT

KG PER METRIC TONNE OF PAPER PRODUCED





# PORT HAWKESBURY AND CAPE BRETON: SUPPORTING THE COMMUNITY

Port Hawkesbury Paper supports community organizations and activities ranging from hospitals, literacy initiatives, daycares, sports teams, food banks, breakfast programs, summer festivals, high school bursaries, volunteer fire departments and the YMCA — just to name a few.

In addition, our Woodlands group raises funds for the IWK Children's Hospital in Halifax through the Log a Load for Kids National giving campaign. With last year's golf event, our total exceeds \$146,000 since 2007. In 2017, we supported many local education programs with apprenticeships, Junior Achievement, co-op student work terms, hosting various high school and community college classes for mill tours, bursaries for high school graduates, and support for local literacy council programs. Port Hawkesbury Paper also provides financial support for selected local sports events, festivals, outdoor concerts, and food banks.

Our commitment is to find new ways to provide employment opportunities to Indigenous community members. All external job opportunities and requests for tenders are shared with the Indigenous communities. We currently employ Indigenous people as operators, apprentices, summer students, co-op engineering students and contractors. In addition, the mill's security service is provided in part by First Alliance Security of Waycobah First Nation.







# AS ALWAYS, SAFETY FIRST

Safety performance continues to be a key focus at PHP.

We continue to produce the best paper as efficiently and safely as possible. Having experienced great success in reducing lost time accidents, we have readjusted our focus to incident rate. A leading indicator, it is generated from the number of recordable incidents we have compared to our total work hours. This allows us to benchmark our performance against ourselves as well as other mills. Our safety incident rate in 2017 is slightly above the result for 2016, and we continue to put forth our collective best efforts to reduce the number of recordable incidents. Additionally, the mill's employee absenteeism rate continues to be very low at 1.7%.





## ABOUT PORT HAWKESBURY PAPER

Port Hawkesbury Paper is a forest operation and paper mill in Port Hawkesbury, Nova Scotia.

Port Hawkesbury Paper is one of the most cost-effective and highest-quality producers of supercalendered paper in North America and ships its products to customers throughout North America and around the world. The mill produces the Artisan® Plus and Artisan® (SCA++), Prominence® Plus (SCA+), Prominence® (SCA) and Maritime® (SCB) brands for use in retail inserts, catalogs, magazines, circulars and coupons. Each year Port Hawkesbury Paper directly employs 330 people, 450 people indirectly in forestry, and engages over 400 suppliers. Port Hawkesbury Paper is the only industrial company in the Maritimes that is independently certified by the Forest Stewardship Council® (FSC®) forest management (FSC-C023189) and chain of custody standards (FSC-C112699), Sustainable Forestry Initiative® (SFI®) forest management and chain of custody standards, and PEFC™ chain of custody standard.

This piece was produced with paper that has gone through the entire FSC chain-of-custody process—from the forest to the printer, and with other controlled material. **Please pass along or recycle this piece.**

Photos provided by Northumberland Aerial Imaging.

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### PORT HAWKESBURY PAPER

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