

A photograph of a warehouse interior, showing a forklift operator in a yellow safety vest and hard hat moving a pallet of large rolls of paper. The scene is overlaid with a semi-transparent green filter.

PROVEN RESILIENCE

MEETING THE CHALLENGE THROUGH ADAPTATION,
STRENGTH AND SUSTAINABILITY

A decorative background pattern consisting of white, irregular, concentric lines resembling a topographic map, set against a light green background.

2019-2020 SUSTAINABILITY REPORT





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ABOUT PAPER EXCELLENCE

Paper Excellence is a diversified Canadian manufacturer of purpose-made pulps; and of printing, writing, and packaging papers, along with specialty food grades. While a relative newcomer to the Canadian forest products industry, it is already one of its largest members. Paper Excellence owns mills in three provinces, a west coast distribution centre, and a seedling nursery and woodlands in Nova Scotia. We seek continuous improvement in manufacturing processes, cost structure and market position; while minimizing our environmental impacts and building mutually beneficial stakeholder relationships.

SEE A [MAP](#) OF OUR MILL LOCATIONS.



EXECUTIVE MESSAGE

The pulp produced at Paper Excellence mills is almost infinitely adaptable, and end uses range from household towels and tissues, to medical-apparel fabric, to fibre-reinforced plastics. Our paper products, meanwhile, are strong enough to be hung from nearly six kilometers in height before breaking under their own weight.

And our production meets key sustainability criteria, such as assured origins in well-managed forests and a high percentage of renewable-energy use in our manufacturing processes.

Not only do these core attributes – adaptability, strength and sustainability – characterize our products, but we also foster them across all aspects of how we conduct business. And in combination, they make us a resilient organization. That ability to overcome and recover was tested to an unprecedented degree in 2020, and we proved ourselves equal to the challenge.

Rising to Unprecedented Challenges

In February 2020 we experienced a malware attack that interrupted paper production, and complicated operations throughout the months-long effort that was required for full recovery. Then came the COVID-19 pandemic, which required rapid and significant operational adjustments. While we minimized transmission within our mills and communities, there was no sheltering from COVID's impact on product demand and sales.

In combination with limited and high-priced fibre supplies in British Columbia, these two major challenges made multiple mill curtailments necessary in 2020, along with a focus-on-the-essentials strategy across all corporate activities to carry us through the year. This was a disheartening turn of events, following the finalization of our milestone acquisition of Catalyst Paper in early 2019, which set the scene for a focus over the balance of that year on integration and optimization.

Taking the Long View

But we believe a corner is being turned here in 2021, and we remain confident in the enduring value of pulp and paper in the global economy, and in the long-term future of this industry in Canada. In our vision, it is a sunrise industry closely linked with sustainability and carbon reduction. We believe the operational platform we've assembled can capitalize on long-term market opportunities, as evidenced by our re-starts of some of the production we curtailed.

With that long view in mind, we're pleased to present this inaugural Paper Excellence sustainability report. We intend it as a further means of introducing ourselves to our neighbours, customers, regulators and stakeholders; and of outlining our approach to business and our beliefs about business's role within society. It also demonstrates our commitment to transparency, regarding both achievements to date and challenges that we continue to address.

In 2021 and beyond, corporate focal points will include optimization and future-proofing of the production capacity and market position of our mills, exploring potential pathways forward for non-operating sites, and furthering the momentum of our expanding efforts to engage with Indigenous partners and communities.

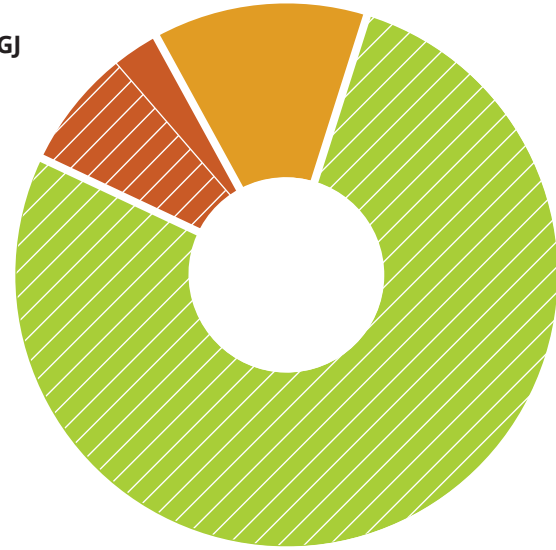
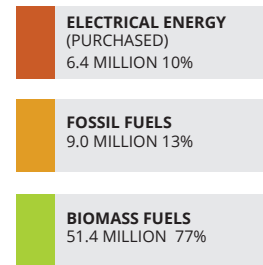
We see the environmental and other performance results reported here as benchmarks, and we will provide ongoing disclosure as we work to improve them. Progress may not always be linear nor will it necessarily be fast. But whatever further challenges arise on the path to an ever more sustainable future, we have the proven organizational resilience to continue our progress.



PERFORMANCE HIGHLIGHTS

ENERGY MIX IN 2020

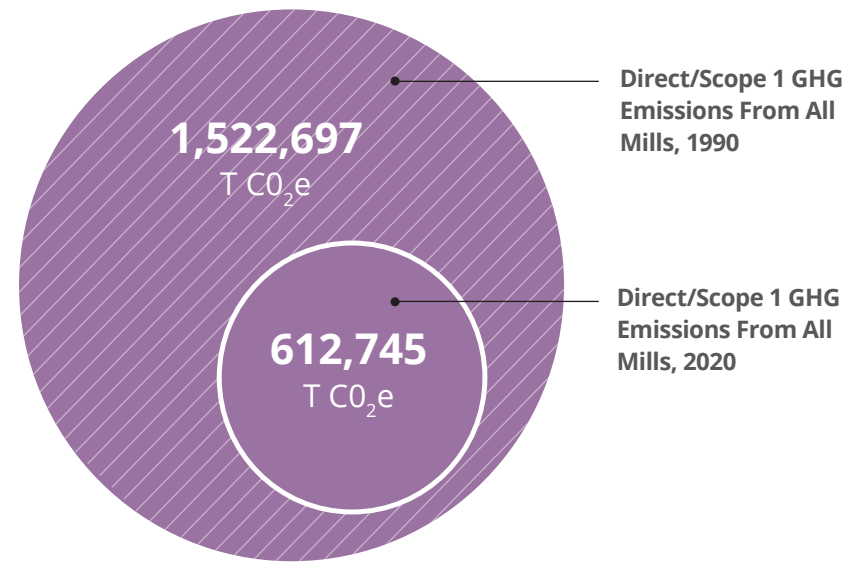
Total Usage = 66.8 million GJ



84% OF OUR TOTAL ENERGY USE IN 2020 WAS RENEWABLE

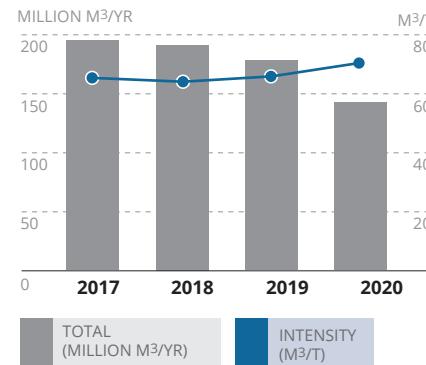


GREENHOUSE GAS EMISSIONS FROM PAPER EXCELLENCE MILLS ARE DOWN 60% SINCE 1990*

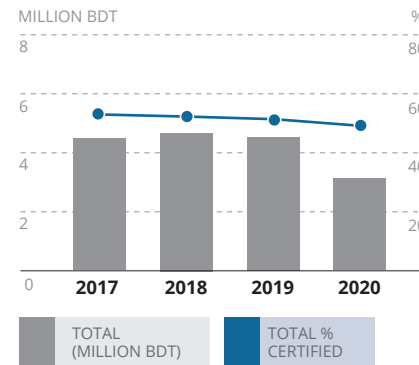


* This reduction has been achieved even with the inclusion of Meadow Lake emissions (a mill not built in 1990) in current emissions totals.

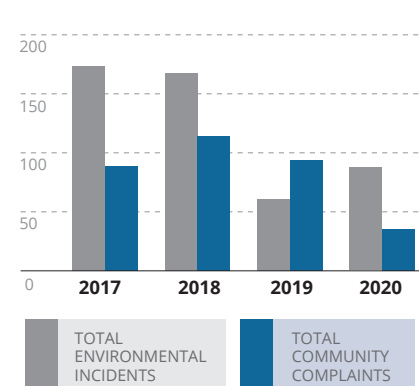
WATER USE (PROCESS WATER DISCHARGES)



WOOD FIBRE USE & CERTIFICATION



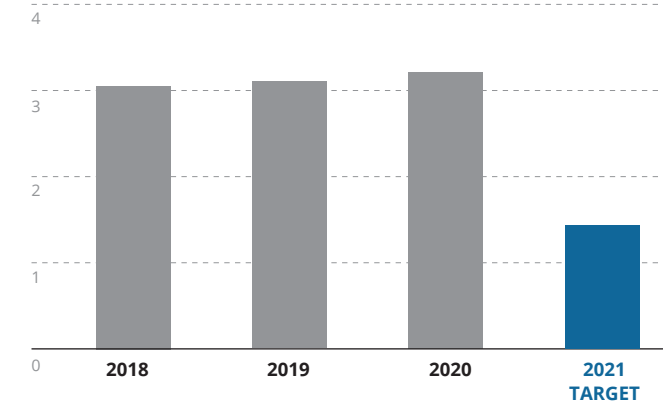
ENVIRONMENTAL INCIDENTS & COMMUNITY COMPLAINTS



BDT = Bone Dry Tonne

EMPLOYEE SAFETY

MEDICAL INCIDENT RATE*



*incidents per 200,000 hours worked

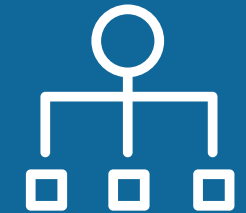


KEY ECONOMIC METRICS



2,395

EMPLOYEES
(DEC 31, 2020)



\$1.7 billion

DIRECT ECONOMIC CONTRIBUTION IN 2020

Operational spending; salaries, wages and benefits; income and property taxes; capital expenditures.



>2.8 million T

PRODUCTION CAPACITY

RECOGNITION



One of the **50 Best Corporate Citizens in Canada** (Catalyst Paper) as determined by Corporate Knights, 2019 & 2020. Vice President EH&S and Corporate Communications Graham Kissack is seen here with Corporate Knights CEO Toby Heaps,



Previous CEO, Brian Baarda is seen here accepting the 2019 **BC Export Award - Natural Resources** along with the other category winners.



ABOUT THIS REPORT

This is Paper Excellence's first sustainability report, focusing primarily on the period from January 1, 2019 to December 31, 2020, and encompassing all of our Canadian operations. The acquisition of Catalyst Paper became effective on March 15, 2019, but performance of the Catalyst operations has been incorporated into data from prior to that date. As a privately held company, Paper Excellence does not publicly disclose its financial performance.

This voluntary reporting initiative is intended to present a holistic perspective on our sustainability priorities, initiatives, challenges and opportunities. We have exercised due diligence in compiling and internally verifying the data and factual characterizations contained in this report, but no external or other auditor has been engaged to verify its contents. We do not provide any assurances with respect to the stakeholder, employee and other subjective perspectives included in this report.

While this report has been developed with reference to current standards and best practices relating to sustainability disclosure, Paper Excellence does not declare it to be in accordance with any specific guidance of that type. Stakeholders can expect an expanded scope and rigour of disclosure over time, and can provide feedback on this report to: info@paperexcellence.com

Mill-specific environmental performance data can be found in the appendix, beginning on page 41.



SUBSEQUENT CORPORATE TRANSACTIONS

In February, the International Chamber of Commerce arbitration court (ICC) ruled that an affiliate of Paper Excellence could proceed with the full acquisition of **Eldorado Brasil Cellulose**. The Company already held a 49.41 percent interest in Eldorado, and the full acquisition will proceed under the terms of a pre-existing agreement. Eldorado operates a mill in the Brazilian State of Mato Grosso do Sul specializing in the production of bleached eucalyptus pulp. The full acquisition is the subject matter of confidential litigation in the courts of Brazil that we expect will uphold the ICC decision. This mill's performance is not encompassed within the performance data disclosed in this report, which encompasses only Canadian operations.

In May 2021, a Paper Excellence affiliate announced a definitive agreement under which it will acquire all outstanding shares of **Domtar**. Paper Excellence intends to continue the operations of Domtar as a stand-alone business entity, led by its own management team, while Paper Excellence will retain its corporate and production locations. Domtar manufactures a wide variety of wood-fibre based products and has 13 pulp and paper mills and 10 manufacturing and converting facilities in Canada and the United States. The transaction is expected to close in the second half of 2021, subject to shareholder and regulatory approval and customary closing conditions.

A NOTE ON OPERATIONS

This report encompasses data from eight Paper Excellence mills in Canada, all of which were in full operation in 2019. Northern Pulp ceased operations in January 2020 (see page 36), and operational curtailments resulted in reduced production at Crofton, Powell River and Mackenzie that year. There were production re-starts at Crofton and Powell River in early 2021, while in April 2021 Paper Excellence announced the permanent closure of the Mackenzie mill.

During part of 2020, Powell River operated its power boiler exclusively to produce electricity for sale. While total environmental metrics include emissions from this mill for the full year, intensity metrics include only the period during 2020 when paper was being manufactured.



OUR PERFORMANCE:
ENVIRONMENTAL

WATER USE AND IMPACTS

IMPACTS AND OUTCOMES

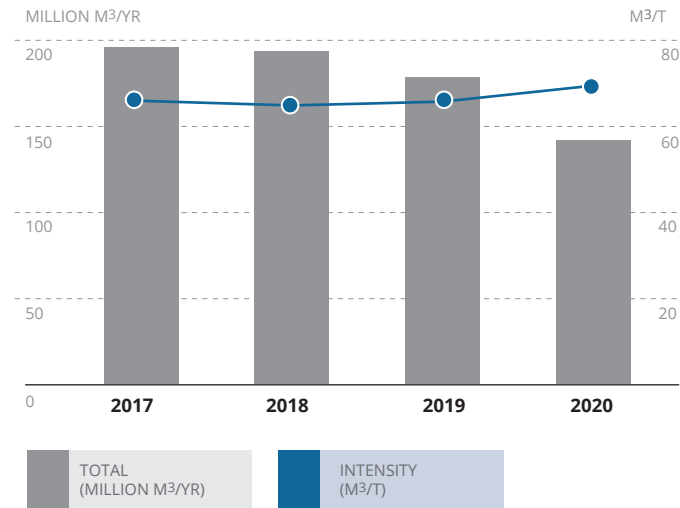
Paper Excellence mills rely on local fresh-water sources, both as an input to production processes and for cooling purposes. They have extensive effluent treatment systems, and closely monitor the quality of water discharges back to surrounding environments.

The Meadow Lake mill is an exception, where the relatively modest water requirements of its mechanical pulping process have enabled it to implement a closed-loop system with zero effluent discharge.

Intensity of water use increased in 2020 – a typical occurrence when production levels are down significantly – as did the intensity of three of the key parameters we monitor for in effluent. (See production figures and commentary, page 57.)

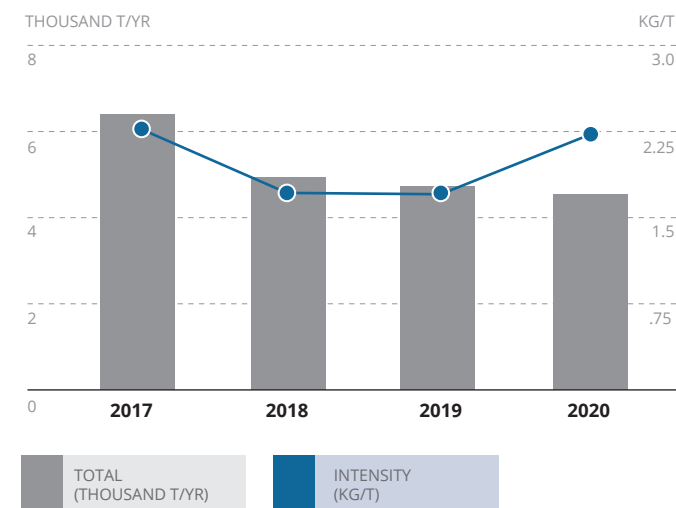


WATER USE (PROCESS WATER DISCHARGES)



Consistent with standard industry practices, Paper Excellence tracks water use based on treated effluent discharges, consisting of water used in manufacturing processes. In 2020 an additional 28 million m³ of water was used for cooling purposes, but did not come into direct contact with production processes.

TOTAL SUSPENDED SOLIDS (TSS)

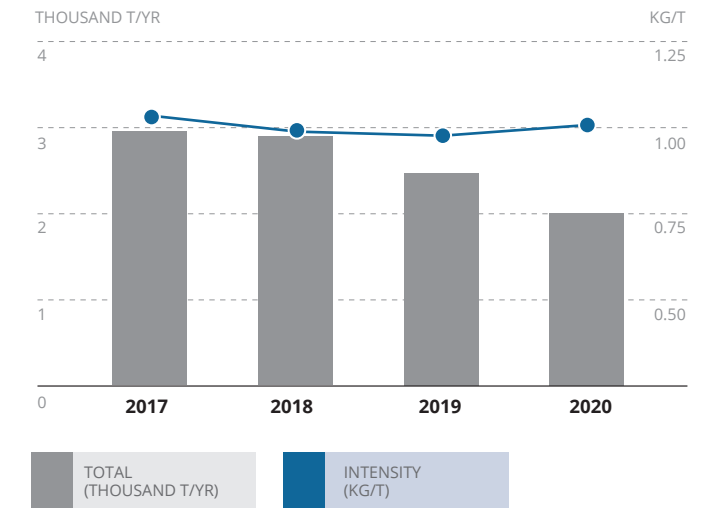


Intensity measures are per tonne of production.

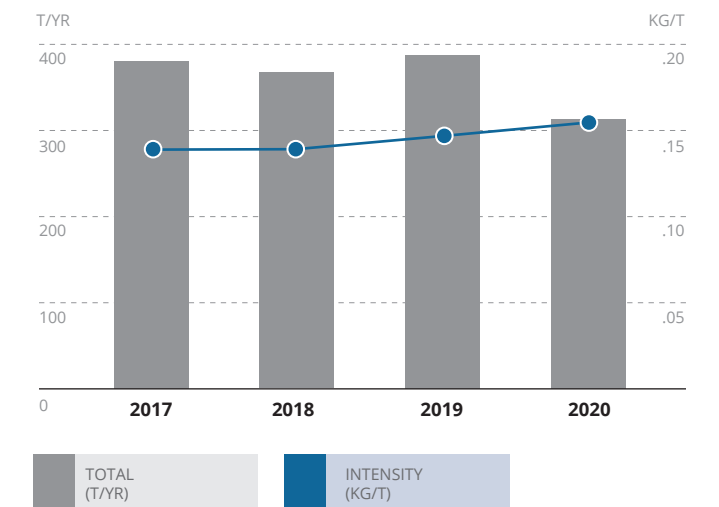
ACTIONS AND INITIATIVES

- Mills adjusted effluent treatment procedures to adapt to shifts in both production levels and product mixes. Powell River, for example, maintained full effluent-related compliance over the course of seven curtailments in 2019 – events which increase the likelihood of upsetting the balance of temperate, acidity and microbe health in effluent treatment facilities.
- Crofton has significantly improved the management of its microbe-based effluent treatment – based in part of additional testing of effluent inflows now conducted by treatment plant operators – bringing BOD intensity levels in 2019 and 2020 to less than half of a peak experienced in 2016.
- The Howe Sound mill reduced chemical applications that influence both BOD and AOX levels through a combination of improved monitoring, system control, and operational procedures.
- While curtailed since mid-2020 and permanently closed in 2021, the Mackenzie mill has nevertheless committed to the installation of new groundwater monitoring wells to better assess possible impacts from past operations around specific mill infrastructure.
- The Skookumchuck mill made multiple water quality-related investments, including addition of aeration capacity to address toxicity test failures in 2018 and 2019. A clarifier upgrade also improved the mill's ability to manage visual impacts on the colour of the river, even when flows are low.
- Skookumchuck is also working to address an oversight with respect to regulatory review in relation to wells drilled to access groundwater following flooding in 2013. The wells provide a back-up water source when flood conditions make it impossible to access water via the mill's usual river intake.

BIOCHEMICAL OXYGEN DEMAND (BOD)



ADSORBABLE ORGANIC HALIDES (AOX)



OUTLOOK

Water supply – with due regard for multiple users and values – is a heightened issue at all BC coastal mills, which rely on and help to manage higher-altitude sources that are heavily influenced by weather conditions. All of these mills experienced water management challenges in 2019.

Effluent ponds at the former Chetwynd mill have begun to exceed their capacity due to precipitation over the past several years.¹ Since the mill is not operating, and was closed-loop when it did operate, neither a viable treatment nor discharge option is available. Testing of portable evaporation equipment has shown promise as a potential means of addressing the oversight during the mill closure process which gave rise to this issue.

Long-standing issues relating to effluent treatment at the Northern Pulp mill led to its closure in January 2020, and its restart will depend on an effective treatment solution acceptable to stakeholders. (See page 36).

¹Administrative monetary penalties were incurred in connection with this and other permit-related issues at this site in 2020. Corrective actions were taken to prevent further exceedance pending fuller resolution.



PRACTICES AND PERSPECTIVES



BALANCING WATER LEVELS AND USER NEEDS

Water management has always had to be precisely calibrated, and that challenge is only becoming greater for our coastal BC mills as they are confronted with worsening droughts.

[SEE STORY](#) 1 MINUTE READ

ENERGY USE, CARBON MANAGEMENT AND AIR EMISSIONS

IMPACTS AND OUTCOMES

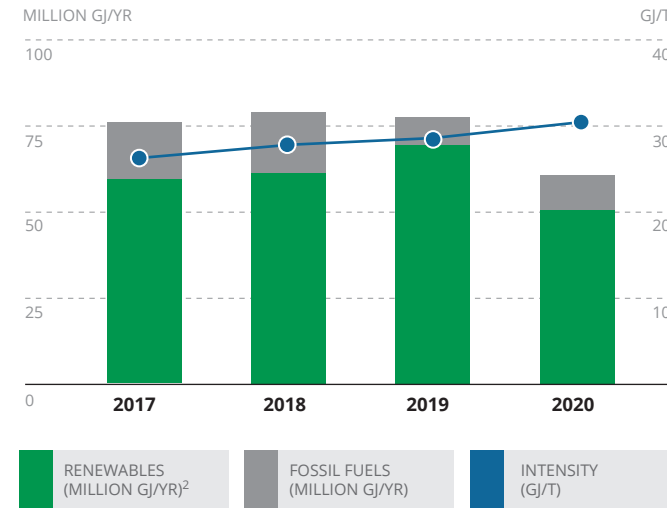
Total direct greenhouse gas (GHG) emissions from our mills declined significantly in 2020, largely attributable to a nearly 30 per cent reduction in production.

We saw a further increase in our GHG emissions intensity, which is typical under operating conditions such as 2020's, as emissions reductions are not typically fully proportionate to the production decreases they are associated with. Both mills where production increased in 2020 saw GHG intensity decreases. (See production figures and commentary, page 57.)

We saw comparable trends with our indirect GHG emissions, which are associated with purchased electricity.

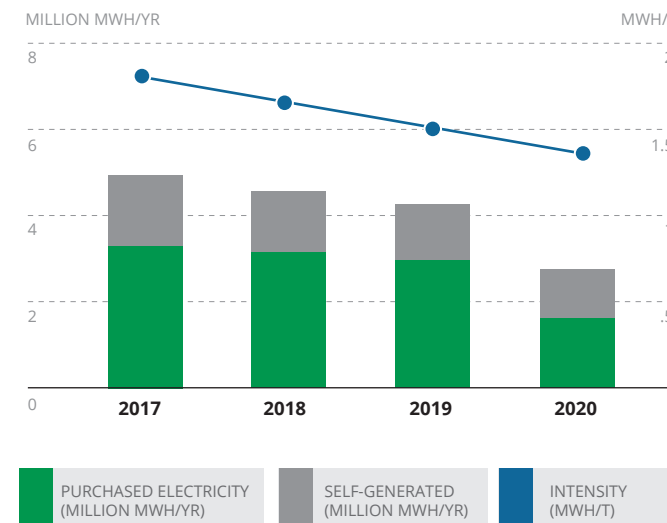
Our energy mix skews heavily towards carbon-neutral biomass fuels, and was 84 per cent renewable in 2020. Key air-quality metrics have typically varied within a moderate range in recent years.

FUEL ENERGY USE



² Estimated value for 2017.

ELECTRICITY USE

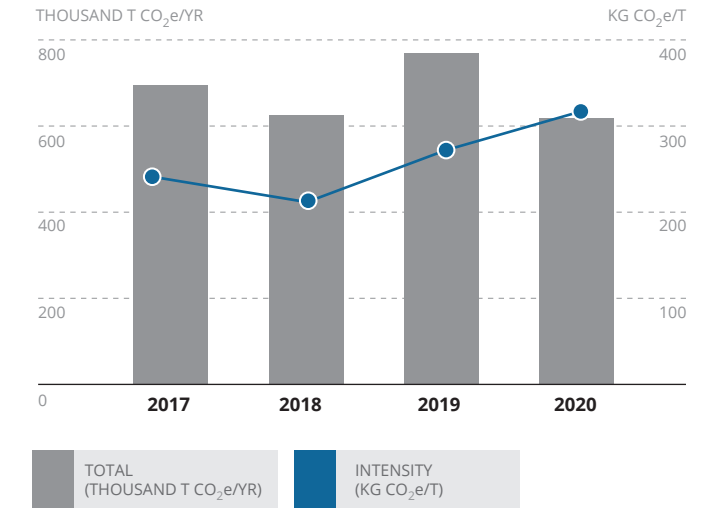


Self-generation figures are net of electricity sales.
Intensity measures are per tonne of production.

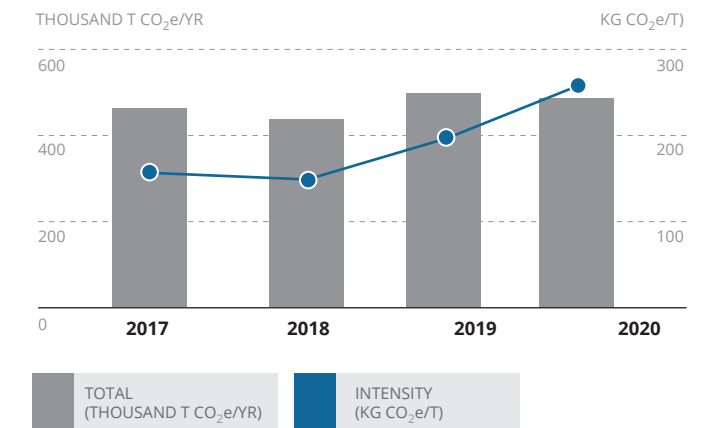
ACTIONS AND INITIATIVES

- The Meadow Lake mill incinerates waste wood in a high-temperature Olivine burner (although beneficial re-use options are being explored). The 25-year-old burner was rebuilt in 2019-2020 to improve its combustion efficiency, and along with materials handling and procedural changes, this resulted in significantly fewer community complaints regarding ash.
- The Skoomkumchuck mill improved the reliability of incineration of non-condensable gases (NCGs), which are both smelly and can result in multiple non-compliances if vented. Revised operating procedures reduced the soda ash build-up that can trip-out the incinerator, and successfully eliminated venting incidents in 2020. Progress has also been made with respect to incidents of opacity in emissions from the mill's power boiler.
- Howe Sound is also working to improve NCG management, by developing the option of incinerating them at its recovery boiler. This will provide an alternative when the mill's power boiler is not operating, and mitigate operational challenges associated with use of the lime kiln for NCG incineration. Engineering work remained underway and required permit changes were being explored at the end of 2020.
- The Crofton mill continued to address a long-standing issue relating to chlorine dioxide emissions. Reliability limitations on current sensors – and the inappropriateness of the prescribed monitoring method – have now been demonstrated. Crofton is pursuing monitoring modifications and a permit amendment, in an effort to secure more reliable measurements to guide bleach plant management.
- Expected installation of a sludge dryer at Meadow Lake in 2021 will address a waste-management challenge (see page 22), but also generate additional GHGs and other air emissions. There will be an enhanced focus on energy efficiency opportunities, such as heat recovery and re-use, to mitigate the carbon impacts.

GHG EMISSIONS (DIRECT/SCOPE 1)



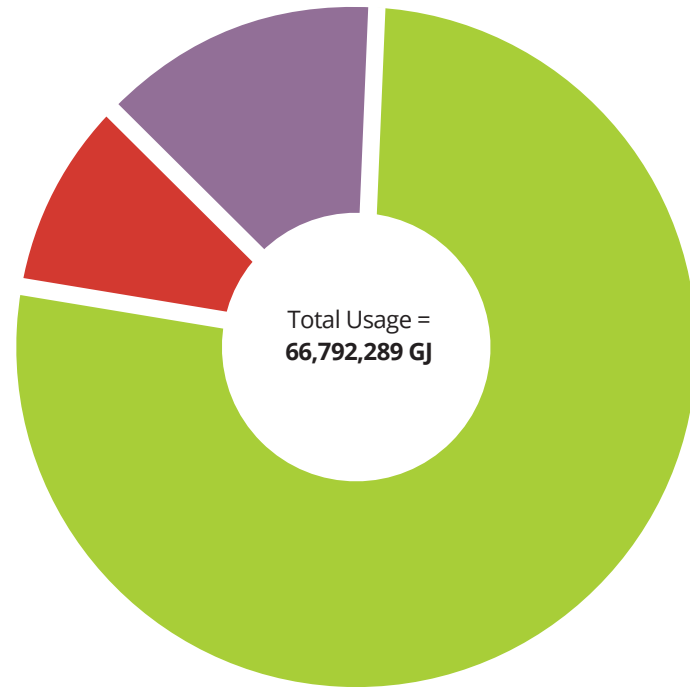
GHG EMISSIONS (INDIRECT/SCOPE 2)



Scope 1 emissions are those coming directly from our mills and other sources that we own or control. Scope 2 emissions are those associated with the generation of the electricity that we buy.



ENERGY MIX IN 2020

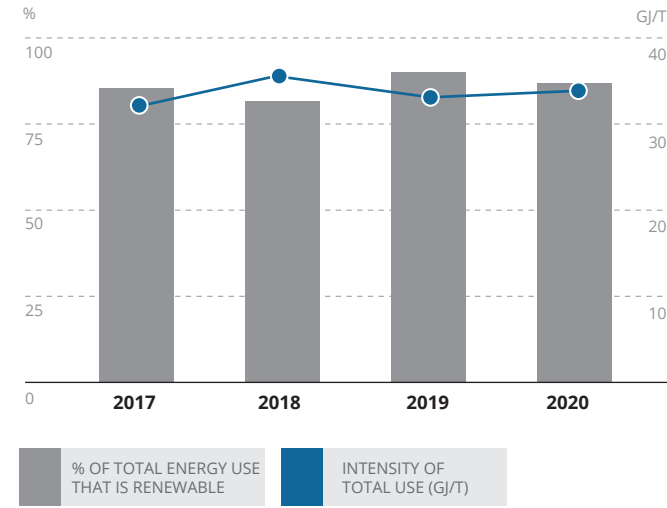


BIOMASS FUELS 51,371,290 GJ 77%	FOSSIL FUELS 8,996,508 GJ 13%	ELECTRICAL ENERGY (PURCHASED) 6,424,490 GJ 10%
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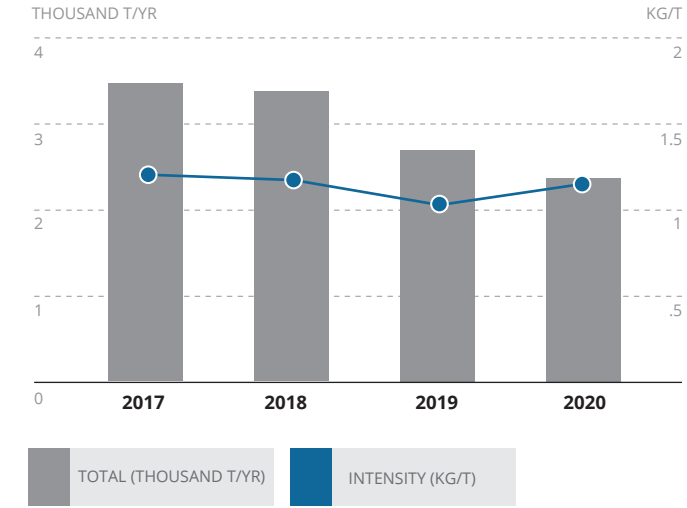
Breakdowns are based on net energy use and account for the use of some fuel energy to self-generate electricity.



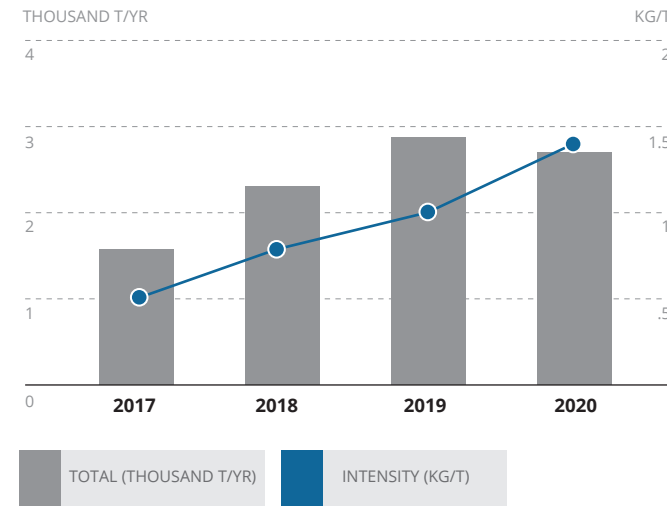
RENEWABLE ENERGY & INTENSITY OF ENERGY USE



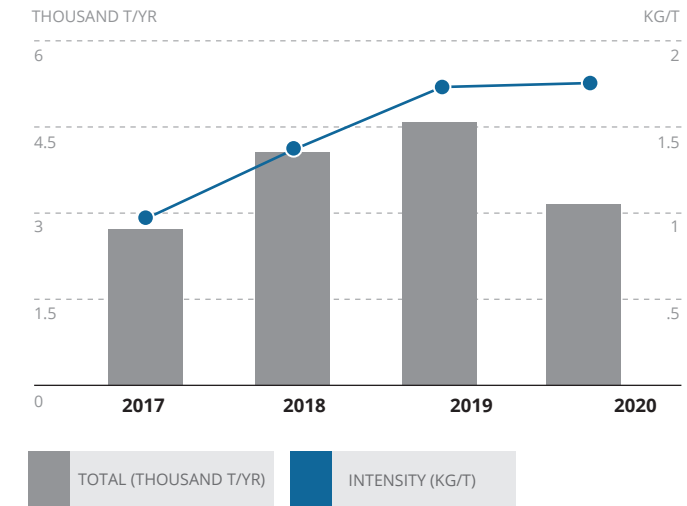
NITROGEN OXIDES



AIR PARTICULATES



SULPHUR DIOXIDES



PRACTICES AND PERSPECTIVES



OUR PLACE IN THE NEW ENERGY ECOSYSTEM

Syngas production and hydrogen hubs? The future role of our mills in helping to meet energy needs in the emerging de-carbonized economy could take any number of new and innovative forms.

[SEE STORY](#) 1 MINUTE READ

PRACTICES AND PERSPECTIVES



NET ENERGY EXPORTERS?

CARLO DAL MONTE, VICE PRESIDENT, ENERGY & BUSINESS DEVELOPMENT

Energy generation efficiency has been greatly improved at pulp and paper mills, and reality may be outpacing perceptions of these major industrial facilities.

[HEAR CARLO'S COMMENTS](#)

OUTLOOK

In 2021, Paper Excellence mills will continue to identify and pursue greenhouse gas reduction opportunities on varying scales; work to refine the effectiveness of permitting frameworks and compliance with them; and focus in particular on avoiding outputs such as odour and ash that can impact our neighbours.

While self-generated electricity remains foundational to the competitiveness and environmental management of our mills, in BC we are now realizing significantly lower prices for the carbon-neutral electricity we sell back to the grid, given the province's current surplus of clean electricity.

PRACTICES AND PERSPECTIVES

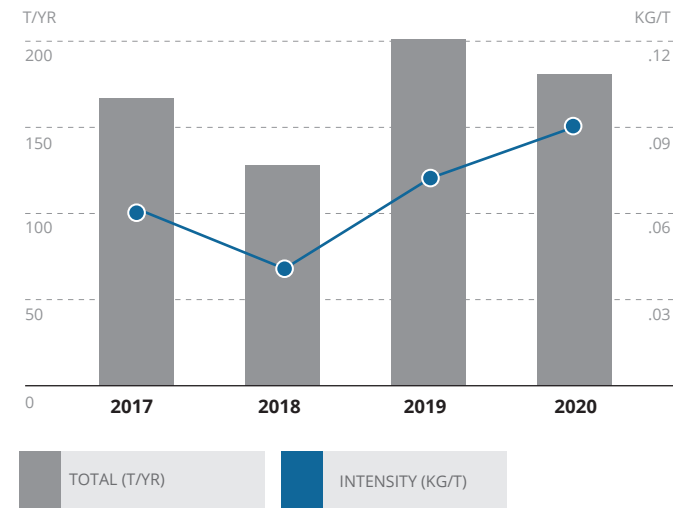


DIGGING DEEPER FOR CARBON CUTS

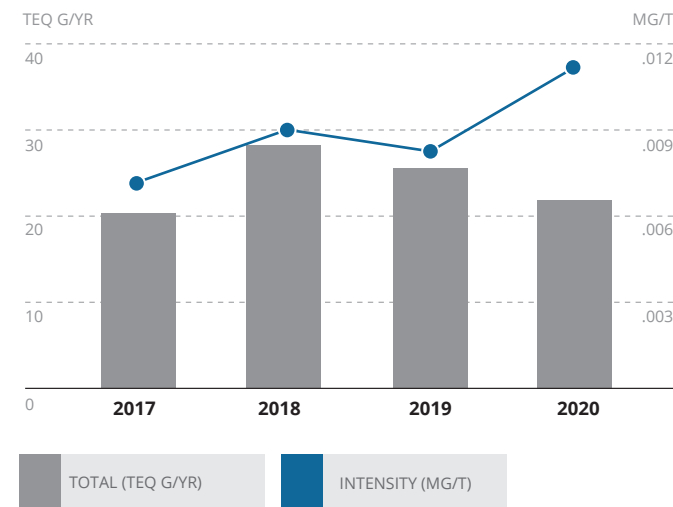
We've been lightening our carbon footprint for a long time, but are determined to continue this progress at our mills, even if the improvement comes in smaller increments.

[SEE STORY](#) 1 MINUTE READ

TOTAL REDUCED SULPHUR (TRS)



DIOXIN & FURAN RELEASES



Dioxin and furan figures include releases into air, effluent and landfill. Results are heavily influenced by factors such as operating conditions and fuel characteristics at the time of testing and are often highly variable. All mill specific emissions in 2019 and 2020 were below a 0.1 ng/m³ TEQ Canadian federal standard applicable to power boilers installed since 2001, even though all boilers predate 2001, TEQ is a "toxic equivalency" value.



WOOD FIBRE AND SOLID WASTE

WOOD FIBRE SOURCING

Wood fibre is the core ingredient of our products and the lifeblood of our operations. We purchase wood chips and pulp logs originating mainly from areas adjacent to our Western Canadian mills, and we own woodlands in Nova Scotia. To help safeguard ecological values and multiple uses and interests, we use fibre that is traceable back to well-managed, sustainable forests.

This is assured through an FSC-certified chain-of-custody system that all our mills adhere to, and by June 2020, 100 per cent of all fibre we used was classified as coming from “low risk” sources. The ongoing refinement of this certification standard in turn drives improvement in our fibre sourcing practices, including a heightened focus currently on species-at-risk and critical-habitat impacts.

An even higher level of assurance is attached to the significant portions of our fibre (51 per cent in 2020) that come from areas specifically certified to the independent FSC, PEFC and SFI forest management standards.²

In 2020 there was a material shortage of economic fibre in BC, and this contributed to production shuts at some of our mills. This resulted in part from curtailed production within the sawmilling sector, and was exacerbated by the lingering impacts of the mountain pine beetle on forests in the interior of BC, as well as by a prolonged labour dispute on Vancouver Island.

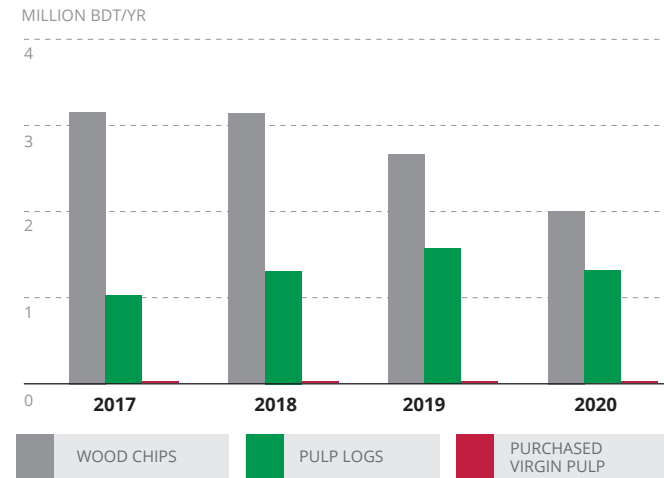


³ Forest Stewardship Council™, Programme for the Endorsement of Forest Certification™, and the Sustainable Forestry Initiative™.

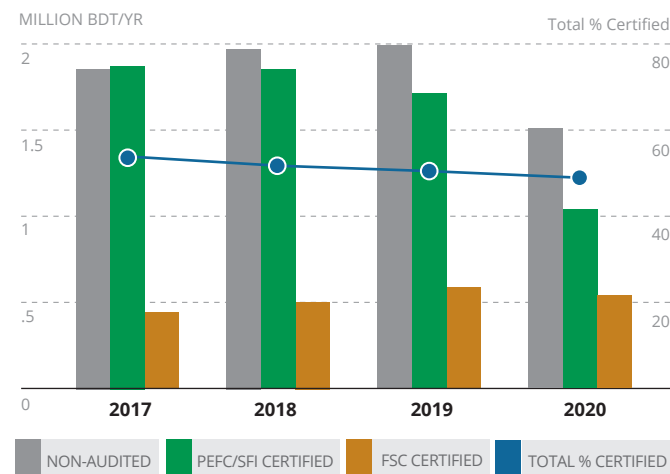
⁴ Contributing factors at those operations included lagoon dredging at Skookumchuck, while at Howe Sound the variation reflects both improved tracking of volumes to landfill and operational issues at the lime kiln that impacted waste generation.

BDT = Bone Dry Tonne

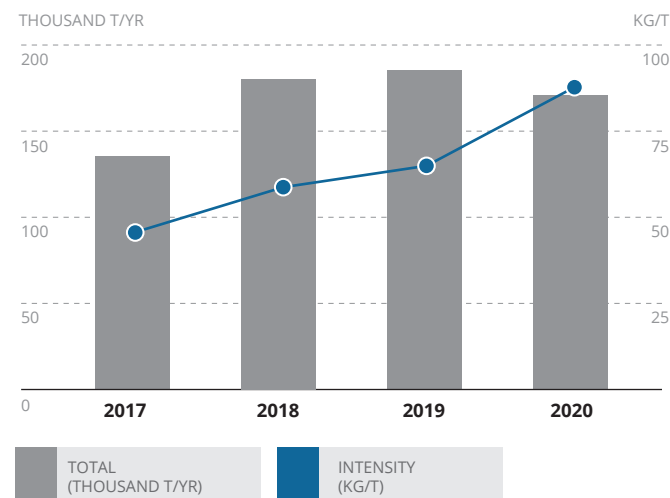
FIBRE USE BY TYPE (BDT)



CERTIFIED FIBRE (BDT)



SOLID WASTE TO LANDFILL

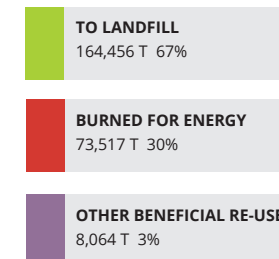
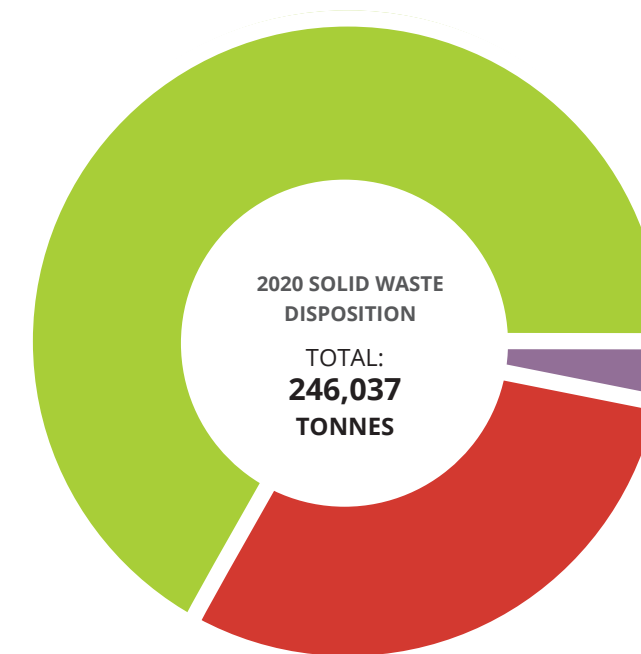


SOLID WASTE MANAGEMENT

While our mills generate significant volumes of solid waste, in 2020 we diverted 30 per cent of the volume for clean electricity generation. At the same time, we saw an increase in the intensity of our solid waste production, attributable mainly to increases at the Skookumchuck and Howe Sound mills.³

Waste reduction is a particular priority at Meadow Lake, where effluent treatment sludge has accumulated in recent years, triggering a regulatory requirement in late 2020 to reduce production. A dryer, to be commissioned in 2021, will significantly reduce the water content in sludge and better enable its use as a fuel. The mill reduced sludge generation through the addition of a fourth-stage rejects cleaner, which further removes solid contaminants from pulp and improves fibre utilization.

Optimization of use of fibre in both production and combustion – and reducing the amount that ends up in solid or liquid waste streams – is an ongoing focal point. Some of our mills are also involved in exploration of alternative uses for boiler ashes, through external industry and research partnerships.



PRACTICES AND PERSPECTIVES



FIBRE, FORESTS AND FIRE: MANAGING THE MIX AT THE URBAN INTERFACE

Getting the most from local resources isn't always a one-and-done. At Skookumchuck, we're working to fully recover available forest fibre, and reducing fire risks for residents at the same time.

[SEE STORY 2 MINUTE READ](#)

PRACTICES AND PERSPECTIVES



NOVA SCOTIA WOODLANDS: ADJUSTING TO NEW REALITIES

In Nova Scotia we have extensive private forest holdings and Crown lands under management, and are working to ease the impacts of the closure of the mill that these and other woodlands previously supplied.

[SEE STORY 2 MINUTE READ](#)



OUR PERFORMANCE: RELATIONSHIPS

WORKFORCE PROFILE AND WELLBEING

With the acquisition of Catalyst Paper in March 2019, our employee count grew to approximately 2,780, representing some 1,235 original Paper Excellence and some 1,550 Catalyst employees. We provided continuity of compensation and benefits and entitlements for employees, while taking steps to ensure retention of sales, marketing and other key talent.

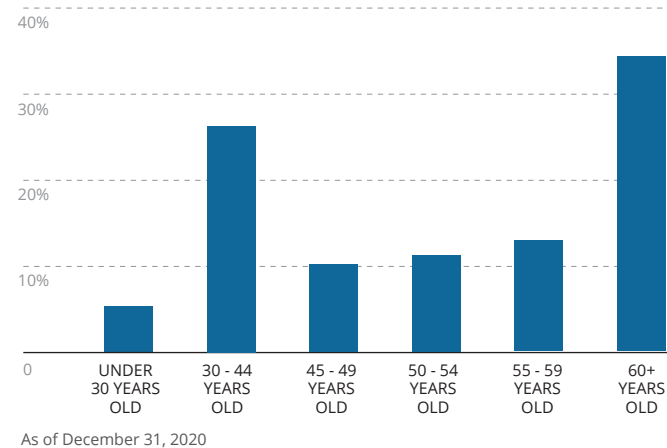
Challenging business conditions in 2020 meant employment interruptions and job losses at multiple locations. But with a view to the long-term talent requirements associated with performance improvement and pursuit of new opportunities, Paper Excellence continued to build out its recruitment and development efforts.

We encourage, acknowledge and act on employee-identified improvement opportunities, in part through our long-standing (and recently re-branded) "Continuous Excellence: Ideas that Work" program. With its extension to head office functions for projects implemented in 2020, this program is now company-wide.

Salaried employees are covered by a defined-contribution pension plan, while unionized employees are covered by a multi-employer defined-benefit plan. Most of our workforce is unionized, predominantly represented by Unifor and the Public and Private Workers of Canada, with smaller numbers represented by the United Steelworkers and MoveUP.

EMPLOYEE TURNOVER	2017	2018	2019	2020
Retirements	5.0%	6.1%	5.5%	2.5%
Voluntary Departure	4.1%	4.9%	3.1%	5.3%
Total	9.1%	11.0%	8.6%	7.8%

EMPLOYEE AGE PROFILE



As of December 31, 2020

PRACTICES AND PERSPECTIVES



HEARING THE VOICE OF EMPLOYEES

More than 1,000 employees spoke up in response to our ask for their views on our company and its performance, in a survey conducted shortly after the Catalyst acquisition.

[SEE STORY 1 MINUTE READ](#)

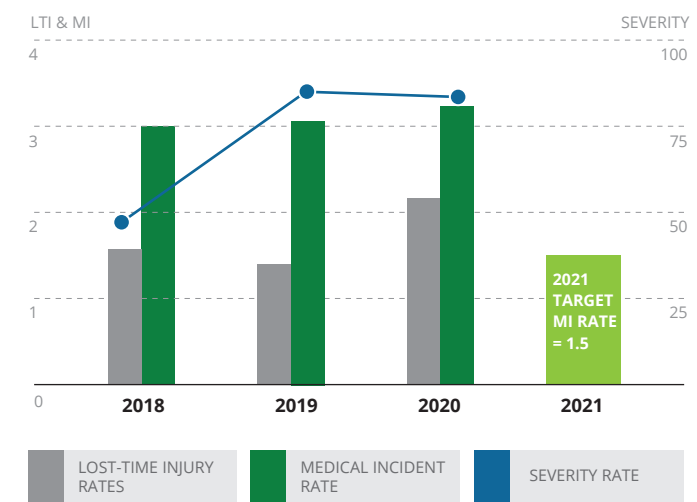
WORKFORCE SAFETY

Corporate and site-specific safety policies and management systems are based on a hierarchy with risk elimination at its apex. Recent mill severity-rate trends have been highly variable, but the corporate-wide severity rate was troublingly high in 2019 and 2020.

We are pursuing various improvement initiatives, and target cutting our medical incident rate by more than half in 2021. Recent and ongoing initiatives include program harmonization and inter-mill information sharing, more disciplined tiered safety audits, improved data tracking and analysis, and expanded safety leadership training.

Public health guidelines allowed for continued mill operations during the COVID pandemic. Numerous workspace and procedural changes – including remote work when feasible – were among the measures that helped ensure low case counts and absenteeism among our employees.

INJURY AND SEVERITY RATES

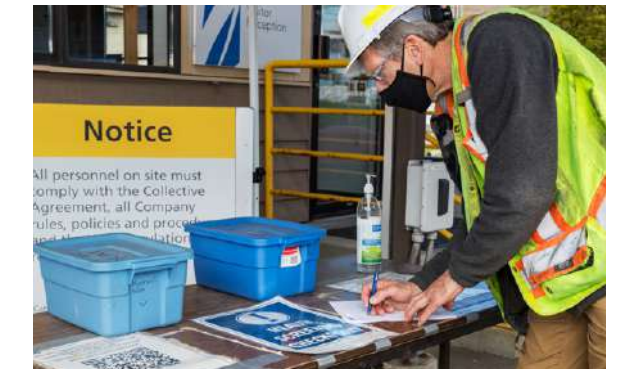


LTI and MI rates are injuries and incidents per 200,000 hours worked. Severity rate is number of work days lost due to injury per 200,000 hours worked.

"It is our belief that a truly successful operation will not cause injury to anyone."

- Read the Full Paper Excellence Safety Philosophy

PRACTICES AND PERSPECTIVES



MAINTAINING MILLS SAFELY IN THE COVID ERA

With a need for the combined efforts of hundreds of people working on-site, major mill maintenance shuts had to be re-designed to ensure the safety of all involved and of our host communities.

[SEE STORY 1 MINUTE READ](#)

PRACTICES AND PERSPECTIVES



SOMETHING DIFFERENT AND NEW

LEIGH CLASBY, DIRECTOR OF TALENT MANAGEMENT, PAPER EXCELLENCE

Innovation is hugely important at Paper Excellence, where existing materials and technologies are being creatively deployed to capture new opportunities.

[HEAR LEIGH'S COMMENTS](#)

COMMUNITY RELATIONSHIPS

DIRECT ECONOMIC CONTRIBUTION – 2020

	OPERATIONAL SPENDING	\$1,396.6 M
	SALARIES, WAGES & BENEFITS*	\$274.4 M
	TAXES (INCOME & PROPERTY TAXES)	\$23.2 M
	CAPITAL EXPENDITURES	\$22.4 M
	TOTAL	\$1,717.6 M

*INCLUDES SEVERANCE COSTS, AS APPLICABLE

DIRECT JOBS

	TOTAL EMPLOYEES (AT DEC. 31, 2020)	2,395
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INDIRECT & INDUCED BENEFITS (ESTIMATES*)

	7,960 JOBS ELSEWHERE IN THE ECONOMY
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	\$1.6B INDIRECT & INDUCED ECONOMIC CONTRIBUTION
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TOTAL ECONOMIC BENEFITS (DIRECT, INDIRECT AND INDUCED)

10,355 JOBS	\$3.4B ECONOMIC CONTRIBUTION
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MILL COMMUNITY BENEFITS – 2020

CROFTON	
Employees (at year end)	565
Salaries, Wages & Benefits	\$65.5 M
Taxes Paid (property taxes)	\$4.9 M

HOWE SOUND	
Employees (at year end)	358
Salaries, Wages & Benefits	\$43.1 M
Taxes Paid (property taxes)	\$1.5 M

MEADOW LAKE	
Employees (at year end)	197
Salaries, Wages & Benefits	\$17.3 M
Taxes Paid (property taxes)	\$1.2 M

PORT ALBERNI	
Employees (at year end)	310
Salaries, Wages & Benefits	\$36.7 M
Taxes Paid (property taxes)	\$4.4 M

POWELL RIVER	
Employees (at year end)	360
Salaries, Wages & Benefits	\$21.1 M
Taxes Paid (property taxes)	\$3.3 M

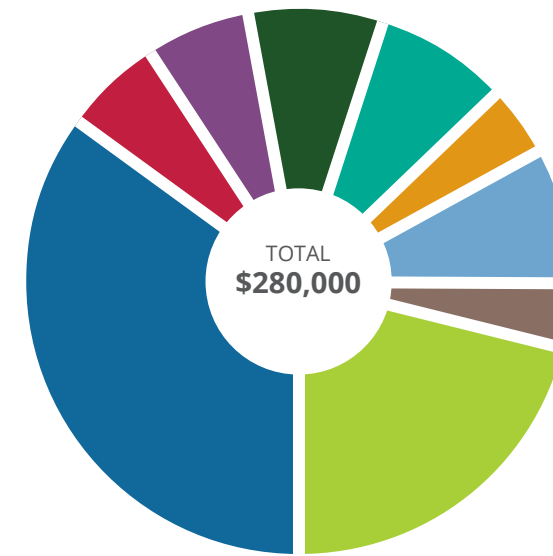
SKOOKUMCHUCK	
Employees (at year end)	280
Salaries, Wages & Benefits	\$30.4 M
Taxes Paid (property taxes)	\$0.3 M

OTHER LOCATIONS: RICHMOND HEAD OFFICE, SURREY DISTRIBUTION CENTRE, NON-OPERATING MILLS, ETC.

Employees (at year end)	325
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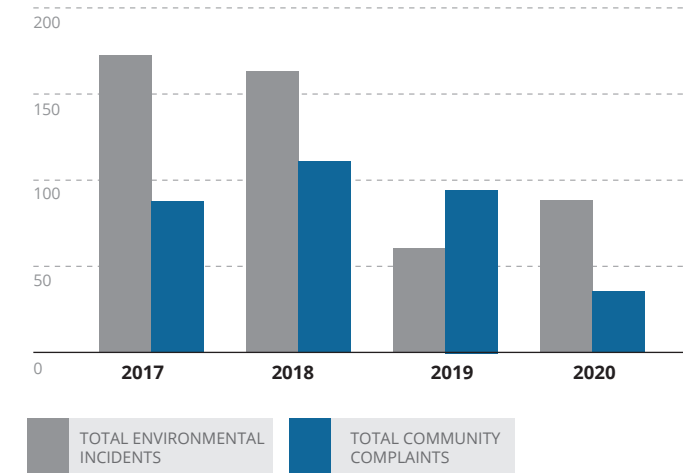
*Estimates of indirect and induced benefits are extrapolated from a prior analysis (using BC Stats multipliers) of the economic benefits associated with Catalyst Paper operations, with reference to 2019 production (a typical production year) at six operating mills. Paper Excellence intends to commission an updated assessment of the full scope of economic benefits associated with its operations prior to the publication of its next sustainability report.

2019 COMMUNITY DONATIONS



35%	CORPORATE	4%	SKOOKUMCHUCK
6%	CROFTON	8%	MACKENZIE
6%	PORT ALBERNI	4%	MEADOW LAKE
8%	POWELL RIVER	21%	NORTHERN PULP
8%	HOWE SOUND		

ENVIRONMENTAL INCIDENTS & COMMUNITY COMPLAINTS



A CORNERSTONE OF LOCAL ECONOMIES

Some of our mills are among the longest-established and continuously operating industrial facilities in Western Canada, and they remain cornerstones of local economies. With the addition of indirect and induced economic benefits, our operations contribute billions to the Canadian economy annually.

We also seek more targeted opportunities to contribute to quality of life in and around our operating communities, and in 2019 we distributed \$280,000 in diverse community donations.

Under highly challenging business conditions, donations were reduced to minimal levels in 2020. In 2021, we are developing a more structured program, focused on broadly beneficial and otherwise highly impactful services and infrastructure.



SUPPORT FOR LOCAL STUDENTS

Annual Paper Excellence scholarships are awarded to deserving high school students in our operating communities, in support of their full-time post-secondary studies. This program is being expanded to encompass scholarships specifically for Indigenous students. (Separate scholarship and endowment streams support annual scholarships specifically at the University of British Columbia.)



HELPING SHOWCASE BC'S FOREST HERITAGE

A donation of logs to the BC Forest Discovery Centre on Vancouver Island will be instrumental in maintaining its signature passenger train attraction. The cypress logs were milled on-site at the museum, to replace the one-quarter of rail ties that were no longer service-able. Like other cultural institutions, the museum faced tough financial circumstances in 2020.



A CENTENARY+ AT HOWE SOUND

In 2019, our Howe Sound mill marked its 110th anniversary with an employee and community celebration held at the local Gibsons Night Market, of which Paper Excellence is the main sponsor.

ENGAGEMENT WITH LOCAL RESIDENTS

Our mill communities are a key part of the talent pool from which we draw our workforces, and the stakeholder group that is most immediately impacted by our operational successes and shortfalls. We work hard to maintain good lines of communication and constructive engagement.

Some of our mills have long-standing Community Advisory Forums, and some participate in multistakeholder processes such as the Port Alberni Air Quality Council. Other mills engage neighbours less formally. At the Meadow Lake mill, for example, senior staff undertake an annual spring community tour to discuss any concerns residents may have.⁴

Federal regulatory changes in 2019 led to expanded dialogue with local communities and emergency response agencies, with respect to the scope of on-site storage of hazardous chemicals. The Port Alberni mill also supported a flood mapping project undertaken by the regional district, sharing data derived from its management of water levels in the lake and river system from which the mill derives its water.

The consultative work of a local Environmental Liaison Committee, established in Pictou County in 2020, will be instrumental in helping chart possible futures for our Northern Pulp mill. (See page 36.)



⁴ All advisory committee meetings and other engagement activities were either deferred in 2020 or shifted to remote platforms.

PRACTICES AND PERSPECTIVES



CURTAILED AND ENVIRONMENTALLY SECURE

When a mill shutdown is necessary, our focus shifts to addressing environmental risks, and meticulously addressing the hundreds of actions needed to ensure the site can go into safe hibernation.

[SEE STORY](#) 1 MINUTE READ

INDIGENOUS RELATIONSHIPS

The relationship between Indigenous peoples and broader Canadian society shows signs of having reached an overdue inflection point – one at which a more honest reckoning is being taken of the harms perpetrated in the past, and at which a route towards true reconciliation is beginning to be charted.

Paper Excellence hopes to be part of that transformation with the 36 Indigenous Nations in whose traditional territories we operate. We have successes to build from, such as the Mistik forest management partnership. And we have some difficult lessons that we continue to absorb, such as the legacy of deep ecological damage at Boat Harbour that came along with our acquisition of the Northern Pulp mill.

Over the past two years, we have begun to build a foundation for what we hope will become new and strengthened relationships with a great many Indigenous communities. This included formalizing a statement of **Our Commitment to Indigenous Peoples**. Even more fundamentally, it has involved a willingness to engage in patient listening and respectful dialogue, and to move forward with humility.

Exploring and building these relationships will take time, but we can note some positive momentum.

- We signed letters of intent with the Pelican Lake and Witchehan Lake First Nations, as part of broader efforts to expand collaborative Indigenous relationships in Saskatchewan in advance of the re-opening of our Prince Albert mill.
- We continued to advance consideration and discussion of potential business partnerships, and hired an employee with specific responsibility for potential Indigenous wood-fibre supply arrangements.
- We found various opportunities to support Indigenous communities through corporate philanthropy, including development of a scholarship program specifically for Indigenous students.

In early 2021, we took the important additional step of becoming a member of the Canadian Council for Aboriginal Business, and embarked on its Progressive Aboriginal Relations certification program.



TONY COTE SUMMER GAMES

For the second time in 2019, our Meadow Lake mill sponsored the Tony Cote Summer Games, hosted by the neighbouring Flying Dust First Nation. The six-day event, at which employees also volunteered, is one of the province's most prestigious Indigenous youth sporting events.

PRACTICES AND PERSPECTIVES



AWESOMELY BEAUTIFUL AND INNOVATIVELY CO-MANAGED

Our Saskatchewan mill has a long-standing partnership with the Meadow Lake Tribal Council - providing a source of fibre and, more importantly, a widely recognized model for inclusive forest management and Indigenous leadership in the forest-products industry.

[SEE STORY](#) 1 MINUTE READ

BROADER PARTNERSHIPS

Complex forest products-related sustainability issues don't lend themselves to being resolved within silos. Paper Excellence therefore collaborates with partners who offer us important external insights and expertise, and who often challenge and help change our own thinking.



GREENBLUE

The work of GreenBlue's Sustainable Packaging Coalition is particularly important to us as we produce more specialty food grade papers. We are working with other coalition members on a verification guide for customers wanting to source responsibly managed wood-fibre for packaging purposes.



CORPORATE KNIGHTS

Our engagement with this sustainability-focused media, research and financial-information organization is multi-faceted. We disclose data to and are routinely recognized through its "50 Best Corporate Citizens" ranking, we supply paper on which its quarterly magazine is published, and we are a member of the Corporate Knights-convened Council for Clean Capitalism.



COAST FOREST

Our BC coastal mills have participated in the Coast Forest Conservation Initiative since 1998, through which industry partnered with environmental groups to find solutions in BC's Great Bear Rainforest. We support full implementation of ecosystem-based management by the companies who operate there – and believe this collaborative model could be more broadly applied to management of old growth areas across BC.

PRACTICES AND PERSPECTIVES



CIRCULARITY AT ITS BEST

ROBERT FOLLETT, GENERAL MANAGER, MISTIK MANAGEMENT LTD.

There's a full cycle of benefits associated with this unique form of Indigenous engagement in the forest industry: ownership, employment and planning all rolled together.

[HEAR ROBERT'S COMMENTS](#)



OUR PERFORMANCE:
INVESTING IN
OPERATIONS

Paper Excellence has built its extensive portfolio of Canadian mills in less than 15 years. We have acquired assets that are complementary to our existing holdings, and where we see the potential to achieve or improve profitability. We are ready and able to invest in the efficiency improvements and product-development breakthroughs that will position mills to compete in global supply chains for decades to come.

PORT ALBERNI UPGRADING FOR SPECIALIZED PRODUCTION

The Port Alberni mill on Vancouver Island was commissioned 65 years ago as a single-line kraft mill. Paper machines were later added to make newsprint, and many upgrades and advances later, it became a leading west coast producer of directory and coated papers.

Today, a more than \$13-million capital project, announced in late 2020 and scheduled for completion in late 2021, will see Port Alberni take the next big step in its ongoing evolution.

Upgrades will remove production bottlenecks and enable Port Alberni to expand its role in the production of the Catalyst Bistro line of papers for food service applications. Ultimately, the mill will be able to run these specialty grades on both of its machines concurrently, with the potential for them to account for most of Port Alberni's production.

While printing paper markets continue to shrink, use of paper as environmentally sound food packaging is expanding, and three of our BC mills already produce Bistro grades. The Port Alberni upgrade will be instrumental in better leveraging this market opportunity, and in helping secure the mill's future for more decades to come.

PRINCE ALBERT WORKING TO REVIVE A LONG-DORMANT MILL

Paper Excellence has owned the Prince Albert mill in Saskatchewan since 2011 but has never operated it, largely due to tariffs on dissolving pulp and to a non-compete agreement for paper-grade pulp with the former owner. Ahead of that agreement's expiry in early 2021, we announced a significant investment with a view of bringing this dormant mill back to life.

We intend to replace the entire fibre line to take full advantage of the mill's modern recovery boiler; and to improve product quality, operating costs and environmental performance relative to when it last operated in 2006.

Concurrently, we are in discussions with Indigenous groups in the vicinity of the mill, and with the Saskatchewan government, which has targeted growth and improved viability for the provincial forest sector. The re-start vision includes sale of clean electricity generated at the mill onto the provincial grid – which could potentially displace more carbon emissions than the mill itself is expected to generate.

Given the extent of the work needed to position Prince Albert for competitive operation in today's industry, we are targeting a 2023 re-start date, subject to regulatory approval and to building up the fibre supply chain.

NORTHERN PULP SEEKING A PATH FORWARD

On January 12, 2020, Northern Pulp Nova Scotia, our kraft pulp mill in Pictou County, Nova Scotia, produced its last bale of pulp before an indefinite shutdown. We had worked hard for an alternative outcome, but faced an accelerated hard-stop on existing effluent treatment arrangements, and were unable to secure timely approval of our proposed alternative.

Design of a proposed new treatment facility began in 2016, following passage of legislation that required us to cease using the leased effluent treatment facility at Boat Harbour more than 10 years prior to the expiry of the lease.

Our efforts to secure provincial environmental approval intensified after a government request for further study in early 2019, and we delivered what we believe was a scientifically sound response that October. But that was followed by a belated provincial decision to require a full environmental assessment – a process that could take years, whereas the existing effluent treatment arrangement had only weeks left to run.

We continue to believe the fundamentals exist for competitive and environmentally sound operations, including a new effluent treatment system that will safeguard natural values and other local interests. But we now know we will have to consider all aspects of our operations and proceed differently than in the past.

Accordingly, in June 2020 we paused the environmental assessment process relating to our proposed effluent solution,⁵ and formed an independent, community-based Environment Liaison Committee (ELC) in October 2020 to advise us as part of our community engagement plan.

The ELC produced a [report](#) in the spring of 2021 outlining the issues and concerns it believes need to be addressed if the mill is to re-open. This led to the development of a transformation plan to address community issues and concerns, while using best available technology to transform the mill into a best-in-class operation. Northern Pulp has filed a project description to commence the provincial environmental approval process for its transformation plan.

There will certainly be no shortcuts in the approval process, nor any certainties with respect to timeframes and outcomes, but we continue to believe in a potential future for Northern Pulp.

PRACTICES AND PERSPECTIVES



FEELING FORWARD MOVEMENT

MAYOR SHARIE MINIONS, CITY OF PORT ALBERNI

Investment on the part of a traditional industry fits in well within a diversifying local economy.

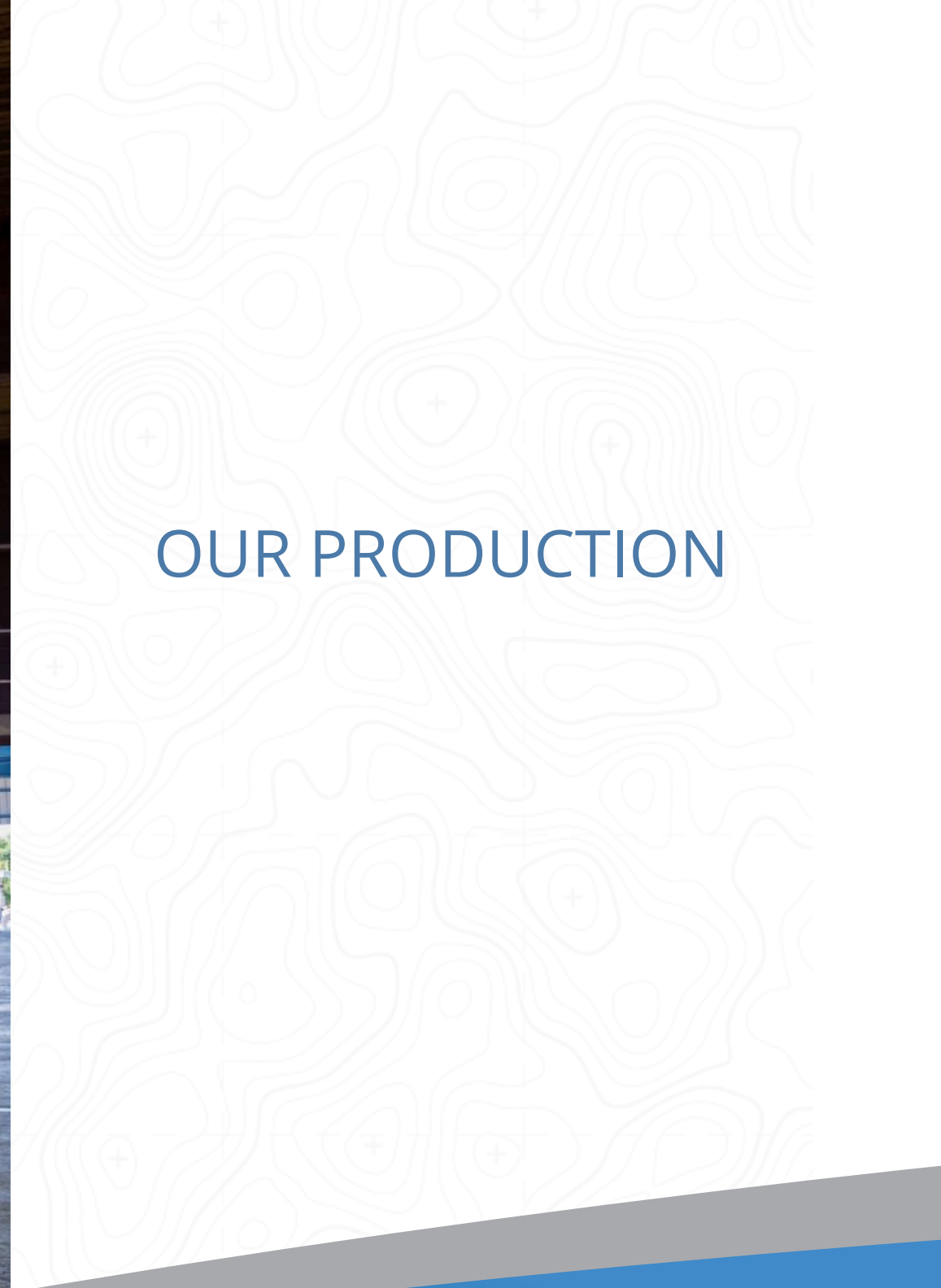
▶ HEAR SHARIE'S COMMENTS



⁶ In May 2021 Paper Excellence withdrew its environment assessment registration for this proposal.



OUR PRODUCTION



PRODUCTS OVERVIEW

With its acquisition of Catalyst Paper,⁶ Paper Excellence's product line extended to encompass a diverse range of specialty, printing and packaging papers, along with high strength kraft mechanical pulps. Our customers are in North America, Latin America, the Pacific Rim and Europe. They include converters, retailers, commercial printers, publishers and distributors.



SPECIALTY PAPERS

Our specialty line of papers includes industrial, packaging and our trademarked Bistro™ brand of FDA-compliant food-grade papers. Bistro™ products are used in multiple applications such as bags, basket liners, deli papers, base papers, interleaving, lightweight packaging and more. Unique among food papers, they are also certified by the Biodegradable Products Institute.



PRINTING PAPERS

We offer five legacy brands of Coated Mechanical Papers: Advance (#3), Ascent® (#4), Pacificote® (#4), Electrocote® Brite (#4.5) and Electracote® (#5). Coated paper is used in magazines, catalogs, inserts, and promotional marketing materials. We also produce our house-branded Catalyst® Directory Paper.



PULPS

Products include high-strength hardwood and softwood Kraft Pulps as well as Chemi-Thermal Mechanical Pulp – key materials used in the manufacture of paper, hygiene, packaging and innumerable other applications.

PRODUCT TRANSFORMATION

While most of us encounter hard-copy newspapers much less frequently than we used to, paper-based products are highly diverse and play an important part in everyday life. Our vision has led us to diversify our product offering to ensure our long term sustainable growth. Paper Excellence's product transformation has allowed for agility in fast changing markets and is designed to anticipate and support our customers' evolving needs.

One major focal point is an ongoing shift towards growing specialized food grade and lightweight packaging papers. Paper Excellence also remains well-positioned and committed to coated printing paper in the geographic markets we serve.

PRACTICES AND PERSPECTIVES



CONNECTING THE DOTS ON AN AMAZING RESOURCE

Nina Goodrich, Director, Sustainable Packaging Coalition

Packaging experts believe in the importance of considering sustainability in relation to both raw materials and post-use recovery.

[HEAR NINA'S COMMENTS](#)

GETTING PRODUCTS TO CUSTOMERS

Our logistics team efficiently manages product delivery to markets around the world, using an optimized mix of rail, trucking and marine shipping modes – and with a commitment to in-full, on-time and damage-free arrival. Our Surrey Distribution Centre in British Columbia, with a 1MT/year capacity, is a SmartWay® shipper and partners with carriers who share this verified commitment to reducing transportation-related carbon emissions.



⁶Catalyst Paper remains a separate entity and a "storefront brand", but is wholly owned by Paper Excellence.

APPENDIX

MILL-SPECIFIC ENVIRONMENTAL PERFORMANCE DATA

CROFTON	2017	2018	2019	2020
WATER USE & WASTEWATER				
Process Water Use m ³ /tonne	72	71	75	104
TSS kg/day	4,959	4,313	3,340	3,016
TSS kg/tonne	2.62	2.25	1.79	2.61
BOD kg/day	1,694	1,640	1,442	939
BOD kg/tonne	0.88	0.85	0.77	0.74
AOX kg/day	290	356	320	277
AOX kg/tonne	0.27	0.17	0.28	0.26
2378TCDD ppq	ND	ND	ND	ND
2378TCDF ppq	ND	ND	ND	ND
Trout Toxicity % Compliance	100	93	96	100

ND = non-detectable test result.
2378TCDD ppq & 2378TCDF ppq are specific dioxin and furan congeners in waste water.

ENERGY USE				
Fuel Energy Use GJ	18,927,745	18,885,163	19,501,111	16,674,748
Fuel Energy Intensity GJ/tonne	26.90	26.94	28.02	37.06
Electricity Use MWh	1,322,417	1,253,838	1,177,907	605,300
Electricity Intensity MWh/tonne	1.88	1.79	1.69	1.35
Total Energy Use (excl. self-generated electricity) GJ	22,752,016		22,787,355	17,981,193
Total Energy Intensity (excl. self-generated electricity) GJ/tonne	32.30	22,573,641	32.75	39.97
Renewable Energy - % of Total Use	87.1	32.20	87.0	84.4

GJ = Gigajoules; MWh = Megawatt-hours

SOLID WASTE				
Solid Waste to Landfill tonnes	18,359	25,143	28,789	17,695

Fuel energy measures include all purchased fuels and self-generated biomass (effluent treatment sludges and black liquor); electricity measures include all purchased and self-generated electricity. Total energy metrics include energy use both for the production of forest products and (where applicable) for the production of electricity sold to the grid; intensity metrics relate to production of forest products only.

	2017	2018	2019	2020
CARBON & OTHER AIR EMISSIONS				
Total GHGs as kg CO ₂ e/year (Scope 1/Direct)	178,976,550	158,778,121	183,345,030	168,155,000
Total GHGs as kg CO ₂ e/tonne (Scope 1/Direct)	254	226	264	374
Total GHGs as kg CO ₂ e/year (Scope 2/Indirect)	9,560,673	9,221,181	11,228,002	14,520,600
Total GHGs as kg CO ₂ e/tonne (Scope 2/Indirect)	13.57	13.15	16.14	32.27
Particulate Matter kg/day	887	1,123	773	775
Particulate Matter kg/tonne	0.46	0.58	0.40	0.61
Sulphur Dioxides kg/day	3,190	7,004	7,997	4,246
Sulphur Dioxides kg/tonne	1.65	3.65	2.60	2.05
NO _x kg/day	2,341	2,261	2,544	2,626
NO _x kg/tonne	1.21	1.18	1.32	2.05
TRS kg/day	208	181	279	214
TRS kg/tonne	0.108	0.094	0.145	0.168
Power Boiler adt ng/m ³ TEQ	0.017	0.052	0.014	0.013
Ambient TRS % compliance A level 24-hr average	91.0	96.3	98.6	96.1
Ambient PM 2.5 average, ug/m ³	6.90	7.80	6.10	6.53

PM = particulate matter; TEQ = total dioxin equivalence; ug = microgram

FIBRE - PAPER PRODUCTION				
Fibre Use By Type - Tonnes				
Wood Chips	274,000	306,000	215,556	204,843
Pulp Logs	32,000	16,000	59,133	42,264
Total Fibre Used	306,000	322,000	274,689	247,107
Certified Fibre - %				
FSC Certified	0	0	0	0
PESF/SFI Certified	41	35	38	30
Fibre from Private Lands - %*	15	15	15	15

FIBRE - PULP PRODUCTION				
Fibre Use By Type - Tonnes				
Wood Chips	751,000	680,000	568,508	529,714
Pulp Logs	64,000	167,000	257,458	138,497
Total Fibre Used	815,000	847,000	825,966	668,211
Certified Fibre - %				
FSC Certified	0	0	0	0
PESF/SFI Certified	42	37	33	32
Fibre from Private Lands - %*	15	15	15	15

*Private lands figures are estimates

HOWE SOUND

	2017	2018	2019	2020
WATER USE & WASTEWATER				
Process Water Use m ³ /tonne	61	55	50	55
TSS kg/day	2,284	1,397	1,413	1,005
TSS kg/tonne	2.33	1.35	1.26	0.87
BOD kg/day	617	635	487	365
BOD kg/tonne	0.63	0.62	0.43	0.32
AOX kg/day	300	253	370	237
AOX kg/tonne	0.31	0.25	0.33	0.21
2378TCDD ppq	ND	ND	ND	ND
2378TCDF ppq	ND	ND	ND	ND
Trout Toxicity % Compliance	100	100	100	93

ND = non-detectable test result.
2378TCDD ppq & 2378TCDF ppq are specific dioxin and furan congeners in waste water.

ENERGY USE				
Fuel Energy Use GJ	16,729,396	16,977,747	18,151,370	18,557,501
Fuel Energy Intensity GJ/tonne	46.84	45.10	44.36	44.26
Electricity Use MWh	346,511	360,923	373,917	372,182
Electricity Intensity MWh/tonne	0.97	0.96	0.91	0.89
Total Energy Use (excl. self-generated electricity) GJ	16,902,495	17,153,517	18,340,410	18,745,094
Total Energy Intensity (excl. self-generated electricity) GJ/tonne	47.33	45.56	44.82	44.71
Renewable Energy - % of Total Use	89.2	91.4	90.7	90.8

GJ = Gigajoules; MWh = Megawatt-hours

SOLID WASTE				
Solid Waste to Landfill tonnes	27,637	37,910	48,380	58,422

	2017	2018	2019	2020
CARBON & OTHER AIR EMISSIONS				
Total GHGs as kg CO ₂ e/year (Scope 1/Direct)	114,965,592	97,617,416	109,734,487	102,441,430
Total GHGs as kg CO ₂ e/tonne (Scope 1/Direct)	322	259	268	244
Total GHGs as kg CO ₂ e/year (Scope 2/Indirect)	432,747	433,791	472,600	2,084,366
Total GHGs as kg CO ₂ e/tonne (Scope 2/Indirect)	1.21	1.15	1.16	4.97
Particulate Matter kg/day	747	645	987	1,215
Particulate Matter kg/tonne	0.76	0.62	0.88	1.06
Sulphur Dioxides kg/day	2,912	2,908	3,311	3,692
Sulphur Dioxides kg/tonne	2.98	2.82	2.95	3.21
NO _x kg/day	2,509	2,601	261	310
NO _x kg/tonne	2.56	2.52	0.23	0.27
TRS kg/day	159	94	172	177
TRS kg/tonne	0.163	0.091	0.154	0.154
Power Boiler adt ng/m ³ TEQ	0.280	0.061	0.053	0.011
Ambient TRS % compliance A level 24-hr average	100.0	100.0	99.9	99.8
Ambient PM 2.5 average, ug/m ³ *	9.70	5.60	3.40	6.40

PM = particulate matter; TEQ = total dioxin equivalence; ug = microgram
*Results for 2017 and 2020 were heavily impacted by forest fires.

FIBRE				
Fibre Use By Type - Tonnes				
Wood Chips	503,000	521,000	463,000	451,000
Pulp Logs	235,000	260,000	397,000	447,000
Total Fibre Used	738,000	781,000	860,000	898,000
Certified Fibre - %				
FSC Certified	0	0	0	0
PESF/SFI Certified	31	34	29	27
Fibre from Private Lands - %*	15	15	15	15

*Private lands figures are estimates

MACKENZIE

	2017	2018	2019	2020
WATER USE & WASTEWATER				
Process Water Use m ³ /tonne	120	125	178	194
TSS kg/day	3,708	2,571	2,436	2,807
TSS kg/tonne	6.61	5.04	5.49	3.96
BOD kg/day	1,480	1,160	883	918
BOD kg/tonne	2.64	2.27	1.99	0.76
AOX kg/day	213	168	161	133
AOX kg/tonne	0.38	0.33	0.36	0.13
Trout Toxicity % Compliance	100	100	100	100

ENERGY USE				
Fuel Energy Use GJ	8,432,326	8,315,535	6,691,696	3,898,945
Fuel Energy Intensity GJ/tonne	42.93	45.79	41.29	44.22
Electricity Use MWh	184,749	183,534	177,597	103,841
Electricity Intensity MWh/tonne	0.94	1.01	1.10	1.18
Total Energy Use (excl. self-generated electricity) GJ	8,390,383	8,441,807	8,475,103	4,753,804
Total Energy Intensity (excl. self-generated electricity) GJ/tonne	42.72	46.49	52.29	55.83
Renewable Energy - % of Total Use	79.1	78.3	74.9	70.7

GJ = Gigajoules; MWh = Megawatt-hours

SOLID WASTE				
Solid Waste to Landfill tonnes	4,755	3,920	7,257	3,347

THE PERMANENT CLOSURE OF THE MACKENZIE MILL WAS ANNOUNCED IN APRIL 2021.

	2017	2018	2019	2020
CARBON & OTHER AIR EMISSIONS				
Total GHGs as kg CO ₂ e/year (Scope 1/Direct)	95,394,000	95,004,254	212,228,192	134,434,423
Total GHGs as kg CO ₂ e/tonne (Scope 1/Direct)	486	523	1,310	1,525
Total GHGs as kg CO ₂ e/year (Scope 2/Indirect)	778,941	983,742	1,122,102	2,498,860
Total GHGs as kg CO ₂ e/tonne (Scope 2/Indirect)	3.97	5.42	6.92	28.34
Particulate Matter kg/day	1,308	1,334	2,953	1,762
Particulate Matter kg/tonne	2.33	2.62	6.65	3.92
Sulphur Dioxides kg/day	202	219	243	217
Sulphur Dioxides kg/tonne	0.36	0.42	0.52	0.90
NO _x kg/day	318	333	353	367
NO _x kg/tonne	0.57	0.65	0.80	0.82
TRS kg/day	40	26	84	79
TRS kg/tonne	0.07	0.05	0.19	0.19

FIBRE				
Fibre Use By Type - Tonnes				
Wood Chips	318,783	346,851	339,556	135,912
Pulp Logs	28,069	0	0	0
Total Fibre Used	346,852	346,851	339,556	135,912
Certified Fibre - %				
FSC Certified	0	0	0	0
PESF/SFI Certified	67	72	76	21
Fibre from Private Lands - %	0	0	0	0

MEADOW LAKE

	2017	2018	2019	2020
WATER USE & WASTEWATER				
Not applicable: Closed loop mill with zero effluent				
ENERGY USE				
Fuel Energy Use GJ	1,687,007	1,785,672	1,917,821	1,949,373
Fuel Energy Intensity GJ/tonne	4.13	4.15	4.82	4.80
Electricity Use MWh	660,490	624,530	564,953	564,953
Electricity Intensity MWh/tonne	1.62	1.45	1.42	1.39
Total Energy Use (excl. self-generated electricity) GJ	14,372,882	14,321,937	2,385,171	3,983,204
Total Energy Intensity (excl. self-generated electricity) GJ/tonne	35.19	33.25	6.00	9.81
Renewable Energy - % of Total Use*		8.3	36.1	32.3
GJ = Gigajoules; MWh = Megawatt-hours				
*2017 data not available				
SOLID WASTE				
Solid Waste to Landfill tonnes	10,381	17,401	19,509	19,102

	2017	2018	2019	2020
CARBON & OTHER AIR EMISSIONS				
Total GHGs as kg CO ₂ e/year (Scope 1/Direct)	89,216,000	67,545,950	77,878,600	68,673,840
Total GHGs as kg CO ₂ e/tonne (Scope 1/Direct)	218	157	196	169
Total GHGs as kg CO ₂ e/year (Scope 2/Indirect)	425,800,564	403,446,380	473,945,200	467,288,190
Total GHGs as kg CO ₂ e/tonne (Scope 2/Indirect)	1,042	937	1,192	1,151
Particulate Matter kg/day	384	1,943	2,086	2,275
Particulate Matter kg/tonne	0.03	1.65	1.92	2.04
Sulphur Dioxides kg/day	38	36	36	13
Sulphur Dioxides kg/tonne	0.03	0.03	0.03	0.01
NO _x kg/day	652	426	403	353
NO _x kg/tonne	0.58	0.36	0.37	0.32

FIBRE				
Fibre Use By Type - Tonnes				
Wood Chips	145,220	149,938	131,577	112,052
Pulp Logs	266,960	279,851	326,852	338,231
Total Fibre Used	412,180	429,789	458,429	450,283
Certified Fibre - %				
FSC Certified	35	35	45	52
PESF/SFI Certified	55	59	46	30
Fibre from Private Lands - %	4	5	9	18

NORTHERN PULP

	2017	2018	2019	2020
WATER USE & WASTEWATER				
Process Water Use m ³ /tonne	101	96	104	118
TSS kg/day	1,538	1,844	1,890	1,799
TSS kg/tonne	1.94	2.36	2.47	3.20
BOD kg/day	1,300	1,654	1,695	1,599
BOD kg/tonne	1.64	2.11	2.21	2.80
AOX kg/day	90.00	86.50	90.30	90.59
AOX kg/tonne	0.11	0.11	0.12	0.12
2378TCDD ppq	ND	ND	ND	ND
2378TCDF ppq	ND	ND	ND	ND
Trout Toxicity % Compliance	100	100	100	100

ND = non-detectable test result.
2378TCDD ppq & 2378TCDF ppq are specific dioxin and furan congeners in waste water.

ENERGY USE				
Fuel Energy Use GJ	9,350,291	10,489,498	10,033,651	342,056
Fuel Energy Intensity GJ/tonne	34.01	38.11	37.46	50.52
Electricity Use MWh	194,511	196,035	194,885	6,322
Electricity Intensity MWh/tonne	0.71	0.71	0.73	0.98
Total Energy Use (excl. self-generated electricity) GJ	9,438,952	10,621,316	10,088,317	343,920
Total Energy Intensity (excl. self-generated electricity) GJ/tonne	34.34	36.32	37.66	50.79
Renewable Energy - % of Total Use*		92.1	92.2	85.6

GJ = Gigajoules; MWh = Megawatt-hours

*2017 data not available

SOLID WASTE				
Solid Waste to Landfill tonnes	17,568	13,188	15,156	1,601

	2017	2018	2019	2020
CARBON & OTHER AIR EMISSIONS				
Total GHGs as kg CO ₂ e/year (Scope 1/Direct)	53,362,163	54,714,278	58,415,500	5,623,000
Total GHGs as kg CO ₂ e/tonne (Scope 1/Direct)	194	199	218	294
Total GHGs as kg CO ₂ e/year (Scope 2/Indirect)	16,993,320	15,631,260	10,477,650	1,152
Total GHGs as kg CO ₂ e/tonne (Scope 2/Indirect)	62.0	56.8	39.1	41.0
Particulate Matter kg/day	734	764	887	775
Particulate Matter kg/tonne	0.93	0.98	1.16	1.37
Sulphur Dioxides kg/day	266	48	5	0
Sulphur Dioxides kg/tonne	0.34	0.06	0.01	0.00
NO _x kg/day	1,263	1,285	1,374	403
NO _x kg/tonne	1.59	1.64	1.80	2.27
TRS kg/day	7.93	7.98	7.88	4.20
TRS kg/tonne	0.01	0.01	0.08	0.01
Power Boiler adt ng/m ³ TEQ	0.00	0.00	0.00	0.00
Ambient TRS % compliance A level 24-hr average	95.7	97.8	97.4	100.0
Ambient PM 2.5 average, ug/m ³	4.1	3.6	3.1	2.8

PM = particular matter; TEQ = total dioxin equivalence; ug = microgram

FIBRE				
Fibre Use By Type - Tonnes				
Wood Chips	354,054	322,452	328,991	2,856
Pulp Logs	228,196	235,376	220,299	1,394
Total Fibre Used	582,250	557,828	549,290	4,250
Certified Fibre - %				
FSC Certified	0	0	0	0
PESF/SFI Certified	37	37	30	100
Fibre from Private Lands - %	70	76	64	70

PORT ALBERNI

	2017	2018	2019	2020
WATER USE & WASTEWATER				
Process Water Use m ³ /tonne	87	95	83	90
TSS kg/day	973	1,106	1,070	1,123
TSS kg/tonne	1.09	1.27	1.45	1.68
BOD kg/day	530	570	520	450
BOD kg/tonne	0.59	0.65	0.71	0.67
Trout Toxicity % Compliance	100	100	100	100

ENERGY USE				
Fuel Energy Use GJ	4,620,197	5,366,061	4,568,174	4,578,093
Fuel Energy Intensity GJ/tonne	14.30	16.90	17.04	18.80
Electricity Use MWh	773,481	748,406	655,242	664,240
Electricity Intensity MWh/tonne	2.39	2.35	2.44	2.73
Total Energy Use (excl. self-generated electricity) GJ	7,147,480	7,804,273	6,693,452	6,722,153
Total Energy Intensity (excl. self-generated electricity) GJ/tonne	22.06	24.54	24.97	27.61
Renewable Energy - % of Total Use	91.7	94.9	95.2	93.2

GJ = Gigajoules; MWh = Megawatt-hours

SOLID WASTE				
Solid Waste to Landfill tonnes	21,246	18,648	20,597	19,287

	2017	2018	2019	2020
CARBON & OTHER AIR EMISSIONS				
Total GHGs as kg CO ₂ e/year (Scope 1/Direct)	38,896,408	27,475,975	28,012,653	28,538,955
Total GHGs as kg CO ₂ e/tonne (Scope 1/Direct)	120	86	105	117
Total GHGs as kg CO ₂ e/year (Scope 2/Indirect)	6,318,207	6,095,529	17,710,650	23,822,880
Total GHGs as kg CO ₂ e/tonne (Scope 2/Indirect)	19.5	19.2	66.1	97.8
Particulate Matter kg/day	14	18	37	28
Particulate Matter kg/tonne	0.02	0.02	0.05	0.04
Sulphur Dioxides kg/day	620	480	516	429
Sulphur Dioxides kg/tonne	0.70	0.55	0.63	0.57
NO _x kg/day	688	566	740	606
NO _x kg/tonne	0.77	0.65	0.90	0.81
Power Boiler adt ng/m ³ TEQ	0.06	0.05	0.04	0.03
Ambient PM 2.5 average, ug/m ³	9.9	10.4	8.8	8.9

PM = particulate matter; TEQ = total dioxin equivalence; ug = microgram

FIBRE				
Fibre Use By Type - Tonnes				
Wood Chips	94,000	98,000	39,854	48,821
Pulp Logs	106,000	101,000	131,994	106,047
Purchased Virgin Pulp	14,652	15,515	15,194	12,204
Total Fibre Used	214,652	214,515	187,042	167,072
Certified Fibre - %				
FSC Certified	6	7	8	9
PESF/SFI Certified	67	72	79	76
Fibre from Private Lands - %*	15	15	15	15

*Private lands figures are estimates

POWELL RIVER

	2017	2018	2019	2020
WATER USE & WASTEWATER				
Process Water Use m ³ /tonne	93	92	92	86
TSS kg/day	1,726	897	1,088	560
TSS kg/tonne	1.2	1.1	1.6	1.9
BOD kg/day	854	612	699	178
BOD kg/tonne	0.57	0.73	1.10	1.10
AOX kg/day	NA	NA	NA	NA
AOX kg/tonne	NA	NA	NA	NA
2378TCDD ppq	NA	NA	NA	NA
2378TCDF ppq	NA	NA	NA	NA
Trout Toxicity % Compliance	100	100	100	100

NA - not applicable
2378TCDD ppq & 2378TCDF ppq are specific dioxin and furan congeners in waste water.

ENERGY USE				
Fuel Energy Use GJ	8,644,946	7,977,510	7,843,079	4,900,565
Fuel Energy Intensity GJ/tonne	28.31	26.10	31.27	46.00
Electricity Use MWh	1,043,937	1,000,195	833,378	254,356
Electricity Intensity MWh/tonne	3.42	3.27	3.32	4.31
Total Energy Use (excl. self-generated electricity) GJ	11,359,169	10,606,677	9,890,161	5,175,883
Total Energy Intensity (excl. self-generated electricity) GJ/tonne	37.20	34.70	39.40	52.30
Renewable Energy - % of Total Use	91.5	90.4	92.8	85.7

GJ = Gigajoules; MWh = Megawatt-hours

SOLID WASTE				
Solid Waste to Landfill tonnes	25,749	27,461	28,980	18,410

	2017	2018	2019	2020
CARBON & OTHER AIR EMISSIONS				
Total GHGs as kg CO ₂ e/year (Scope 1/Direct)	68,585,637	64,165,236	49,290,882	38,320,231
Total GHGs as kg CO ₂ e/tonne (Scope 1/Direct)	225	210	197	267
Total GHGs as kg CO ₂ e/year (Scope 2/Indirect)	5,439,479	6,572,916	5,117,706	3,059,080
Total GHGs as kg CO ₂ e/tonne (Scope 2/Indirect)	18.0	21.5	20.4	24.5
Particulate Matter kg/day	33.41	22.29	23.90	51.40
Particulate Matter kg/tonne	0.04	0.03	0.03	0.05
Sulphur Dioxides kg/day	411	370	402	331
Sulphur Dioxides kg/tonne	0.49	0.44	0.53	0.42
NO _x kg/day	1,667	1,481	1,329	1,141
NO _x kg/tonne	1.99	1.77	1.76	1.62
Power Boiler adt ng/m ³ TEQ	0.04	0.02	0.06	0.03
Ambient TRS % compliance A level 24-hr average	91.8%	91.0%	93.2%	98.9%
Ambient PM 2.5 average, ug/m ³	2.30	3.06	4.67	7.03

PM = particulate matter; TEQ = total dioxin equivalence; ug = microgram

FIBRE				
Fibre Use By Type - Tonnes				
Wood Chips	260,000	250,000	178,402	42,285
Pulp Logs	-	13,000	25,423	948
Total Fibre Used	260,000	263,000	203,825	43,233
Certified Fibre - %				
FSC Certified	0	0	0	0
PESF/SFI Certified	75	53	60	54
Fibre from Private Lands - %*	15	15	15	15

*Private lands figures are estimates

SKOOKCUMCHUCK

	2017	2018	2019	2020
WATER USE & WASTEWATER				
Process Water Use m ³ /tonne	52	49	51	53
TSS kg/day	2,188	2,082	1,765	1,482
TSS kg/tonne	3.07	2.75	0.01	0.01
BOD kg/day	1,560	1,691	1,336	927
BOD kg/tonne	2.19	2.23	0.01	0.00
AOX kg/day	147	159	128	113
AOX kg/tonne	0.17	0.18	0.18	0.16
Trout Toxicity % Compliance	83	83	88	100

ENERGY USE				
Fuel Energy Use GJ	7,600,675	8,093,811	7,946,086	7,533,487
Fuel Energy Intensity GJ/tonne	29.91	29.99	30.58	29.90
Electricity Use MWh	206,667	212,721	210,432	211,064
Electricity Intensity MWh/tonne	0.81	0.79	0.81	0.84
Total Energy Use (excl. self-generated electricity) GJ	8,344,676	8,859,607	8,703,641	8,293,317
Total Energy Intensity (excl. self-generated electricity) GJ/tonne	32.84	32.83	33.49	32.92
Renewable Energy - % of Total Use*		92.3	93.9	90.2

GJ = Gigajoules; MWh = Megawatt-hours

*2017 data not available

SOLID WASTE				
Solid Waste to Landfill tonnes	7,904	8,387	12,472	16,239

	2017	2018	2019	2020
CARBON & OTHER AIR EMISSIONS				
Total GHGs as kg CO ₂ e/year (Scope 1/Direct)	52,295,403	49,026,600	52,382,345	66,558,588
Total GHGs as kg CO ₂ e/tonne (Scope 1/Direct)	206	182	202	264
Total GHGs as kg CO ₂ e/year (Scope 2/Indirect)	870,858	889,326	857,222	1,696,720
Total GHGs as kg CO ₂ e/tonne (Scope 2/Indirect)	3.0	3.3	3.3	6.7
Particulate Matter kg/day	284	296	214	514
Particulate Matter kg/tonne	0.00	0.00	0.00	0.00
Sulphur Dioxides kg/day	22	23	37	29
Sulphur Dioxides kg/tonne	0.03	0.03	0.00	0.00
NO _x kg/day	300	436	413	487
NO _x kg/tonne	0.00	0.00	0.00	0.00
TRS kg/day	23	13	9	12
TRS kg/tonne	0.03	0.02	0.00	0.00
Power Boiler adt ng/m ³ TEQ	NA	NA	NA	NA
Ambient TRS % compliance A level 24-hr average*	99.8	99.9	99.9	99.9
Ambient PM 2.5 average, ug/m ³	5.5	6.6	4.3	7.1

PM = particular matter; TEQ = total dioxin equivalence; ug = microgram; NA = not applicable

*In the case of this mill, this metric is based on a 20 ppb A-level limit on a 1-hour basis.

FIBRE				
Fibre Use By Type - Tonnes				
Wood Chips	439,817	443,628	391,665	425,810
Pulp Logs	104,589	138,081	153,686	185,833
Total Fibre Used	544,406	581,709	545,351	611,643
Certified Fibre - %				
FSC Certified	58	61	63	49
PESF/SFI Certified	33	31	33	44
Fibre from Private Lands - %	9	8	4	7

ADDITIONAL PERFORMANCE DATA

	2017	2018	2019	2020
SALEABLE PRODUCTION BY MILL (TONNES)				
Crofton	704,467	701,048	695,873	449,921
Howe Sound	357,133	376,471	409,209	419,261
Mackenzie	196,409	181,601	162,066	88,169
Meadow Lake	408,445	430,741	397,558	406,075
Northern Pulp	274,903	275,227	267,858	6,771
Port Alberni	324,019	318,059	268,030	243,477
Powell River	305,334	305,671	250,799	59,032
Skookumchuck	254,109	269,854	259,861	251,959
TOTAL	2,824,819	2,858,672	2,711,254	1,924,665

Total production declined by nearly 30 per cent in 2020, from the more typical levels of 2019. This reflected the combined impact of a malware attack, the pandemic, and challenging business conditions specific to our sector. This affected our 2020 environmental performance, since both inputs and outputs on a per-tonne-of-production basis (intensity) tend to be higher at lower production levels. For example, a 30 per cent reduction in tonnage does not typically result in an equally large reduction in carbon emissions.

TOTAL WASTE GENERATION 2020 (TONNES)	Total Generated	Landfilled	Used for Energy Generation	Other Beneficial Re-uses
Fly Ash	79,286	72,098	0	7,188
Effluent treatment sludges	95,530	22,013	73,517	0
Grate ash & sand	23,315	25,315	0	0
Dregs & grits	31,127	31,127	0	0
Other	14,028	13,903	0	125
Scrap metal	750	0	0	750
Total	246,036	164,456	73,517	8,063

TOTAL ENVIRONMENT INCIDENTS IN 2019 = 68

By Type		By Impacted Area		By Significance	
Permit non-compliance	35	Water	24	High	6
Release	19	Land	13	Medium	36
Admin. error	14	Air	31	Low	26

TOTAL ENVIRONMENT INCIDENTS IN 2020 = 89

By Type		By Impacted Area		By Significance	
Permit non-compliance	37	Water	39	High	10
Release	40	Land	12	Medium	31
Admin. error	12	Air	36	Low	48
		Land/Air combined	2		

Community Complaints in 2019 = 96

Odour	65
Particulate	14
Noise	12
Other	5

Community Complaints in 2020 = 42

Odour	31
Particulate	4
Noise	7





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