

SUSTAINABLE
DEVELOPMENT
REPORT



2019



EXCELLING
TOGETHER

◆ Enjoy the report

Preparing our annual Sustainable Development Report is an opportunity for us to step back and take stock of the previous year's results. The Aluminerie Alouette team can be proud of the work accomplished in 2019, during which we were able to deliver some 13,000 more tonnes of primary aluminium to our owners than in 2018. This performance is all the more remarkable considering that it was achieved during a watershed year in terms of pot replacements. During the first half of the year in particular, our employees and business partners worked together efficiently to start up 140 pots in less than six months, integrating the AP40 technology that is now preferred for both of our potlines. However, too many employees suffered serious injuries during the year: unfortunately, there was an increase in incidents with recordable injuries, and we all have to be more careful, starting immediately. Our environmental performance was positive, as we were able to reduce our emissions in line with the great majority of indicators, in compliance with internal and external standards and the applicable criteria.

◆ Our mission

Aluminerie Alouette, as an independent operating company, shall operate as a low-cost smelter using world-class business principles and continuous optimization of processes and assets. As a sustainable company, Aluminerie Alouette will maintain high standards of health, safety and environment in order to be recognized as a responsible employer and corporate citizen.

◆ Our strategy

Aluminerie Alouette is driven every day by a strategy based on five principles guiding us to achieve the level of excellence that contributes to maintaining Alouette among the leading producers of primary aluminium.



◆ People and culture

By definition, corporate culture is what sets an organization apart. Alouette has always stood out thanks to its participative management model, according to which each employee contributes to meeting objectives depending on his or her skills. Day after day, the 850-odd members of the extended Alouette family rise to a very large number of operational, economic and technological challenges. Like all manufacturing industry workers, they have to adapt constantly to new technologies, accept robotization and artificial intelligence and be resilient. Our corporate slogan, “Excelling Together,” has become all the more inclusive seeing that in addition to the notion of maintaining excellence among employees, business partners and communities, we now have to integrate Industry 4.0 concepts – ideas that are reshaping today’s Alouette. A number of employees opted for a well-earned retirement in 2019, and we stepped up our efforts to recruit new talent, in particular people who can help us master cutting-edge technologies. Together with regional socioeconomic stakeholders, Alouette launched initiatives to highlight the quality of local life in order to attract top talent. The company’s promotional tools thus featured an attractive slogan – “Are you ready for Sept-Îles?” – emphasizing the numerous advantages of putting down roots in the Sept-Rivières regional county municipality and growing with Alouette (photo opposite).



Highlights

COBRAL social club activities were attended by a **large number of families**.

Hundreds of employees participated actively in the 52nd and 53rd Forum sessions.

Close to 80 retired employees took part in the third annual brunch in their honour (photo opposite).

86 employees realized the potential of doing things differently thanks to White Belt training.

14 employees received Green Belt training in continuous improvement.

15 continuous improvement projects were launched during the year.

27,939 hours of training was delivered to employees in all sectors, students and interns.

Over 35 managers were supported by an expert to improve health and safety impacts.

17 employees celebrated 20 years of service during a very special tribute evening.

Four summer barbecues were held to encourage people to get together.

A continuous improvement project was presented at the Best Business Practices Trade Fair.

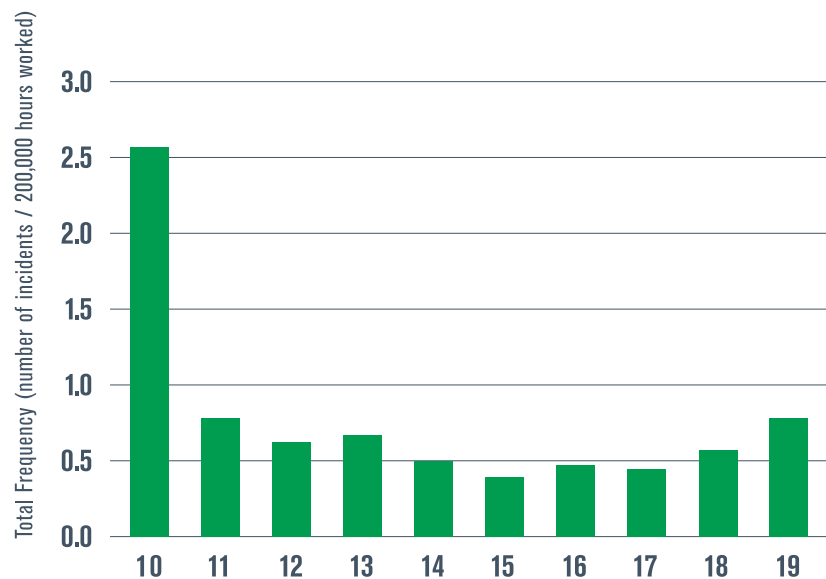
A new flexible group insurance formula was deployed.

An up-to-date, revamped cafeteria served varied menus.

◆ Health and safety, environment

Despite a reduction in the frequency of first-aid incidents, 2019 was a very difficult year in terms of incidents with recordable injuries. No fewer than 50 high-potential incidents occurred during the year. In each sector, including services, operations and maintenance, a number of people devoted their time to raising awareness, applying corrective measures and putting into practice innovative ideas aimed at reducing risks. Among other things, major coactivity in the industry remained a serious issue. Improvement projects therefore focused specifically on this challenge in passageways in places like the garage and the reduction area. In another area, Alouette's emergency response plan had to be deployed five times during the winter and spring due to the closure of the only road leading to the site. The deployments were exceptional, and safety was assured at all times. Under the heading of the environment, the company continued to focus on best practices and state-of-the-art technologies. All emissions, both at source and in ambient air, remained below current standards and criteria. The same applies to runoff water and residual materials. At the end of the year, the Sept-Îles smelter completed a process leading to certification under the Aluminium Stewardship Initiative (ASI) performance standard. At the time of writing, the company's application for certification is still being studied.

Total recordable injury frequency



In 2019, there were 10 incidents with recordable injuries, three more than in 2018. Reducing risks at source was a priority. The members of the Health, Safety and Environment Committee, representing all sectors, were actively involved in this area in addition to contributing to the prevention program, including accident audits and investigations.



Highlights

- 26 years with no recordable injuries** in the laboratory and warehouse
- Six bimonthly 100% IMPACT theme days** focusing on health, safety and the environment
- Ongoing dialogue meetings** with supervisors and major subcontractors
- 96% compliance** with major risk procedures, measured according to protocols
- Maintaining of **Entreprise en santé | Élite** (“Healthy Enterprise – Elite”) certification (BNQ 9700-800:2008)
- Original activities** to promote healthy lifestyles
- Talk by Étienne Boulay** as part of the Health and Well-Being program (photo below)
- Maintaining of **ICI ON RECYCLE!** (“We recycle!” program) **Level 3 (Gold) certification**
- Representation on the **regional county municipality’s residual materials management plan follow-up committee**
- Maintaining of ISO 14001:2015, ISO 17025:2005 and OHSAS 18001:2007** certifications
- Diagnosis of health and safety practices** conducted by owner representatives
- Over \$6.7 million invested** in health, safety and the environment
- Reorganization and construction to have **permanent double changing rooms**
- Regional winner of the Grands Prix santé-sécurité du travail award** for an innovation
- Installation of a number of recharging stations** for employees’ electric vehicles
- Training for 395 employees** under the new version of the *Agir entre nous* (“Let’s Act”) program (cover photo)
- Emphasis on error traps** during work shifts

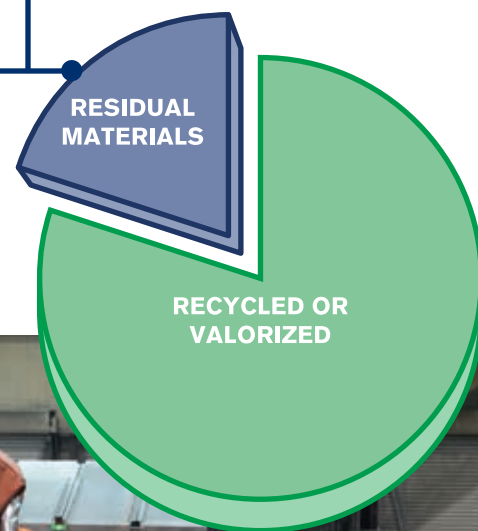
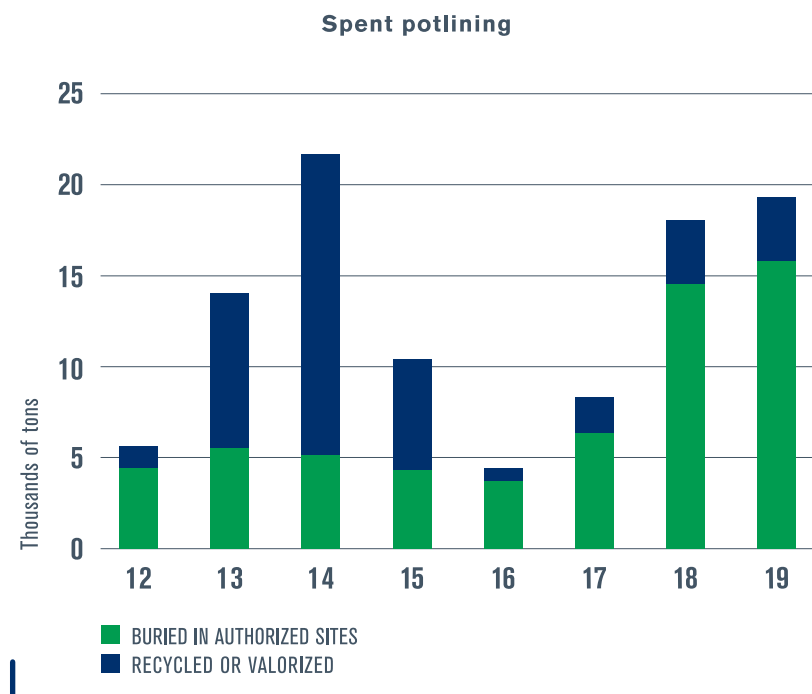
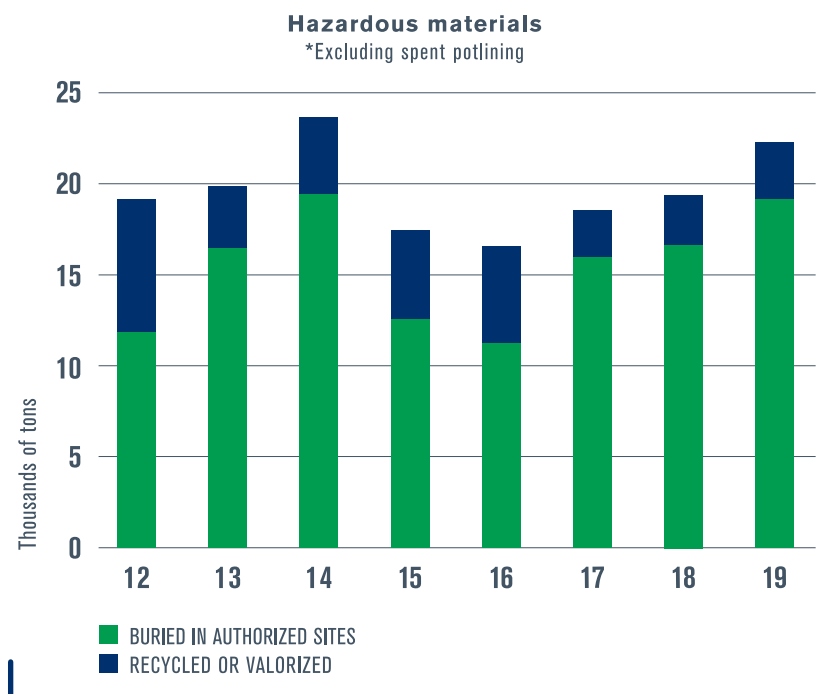


**MORE THAN A WISH –
A COMMITMENT**

◆ Recycling and reclaiming of residual materials and by-products

The smelter internally recycles or reclaims over 80% of the residual materials generated by its operations. This approach means that the operations sectors promote an internal circular economy. Other materials, such as wood, are reclaimed externally in partnership with various organizations. The company targets solid management of residual materials at all times, as shown by its *ICI on recycle +*, Elite Level certification, confirmed in 2020 at the time of writing.

The recycling and reclamation rate for residual materials sent to authorized sites was 86%, excluding spent potlining, for which the rate was 82%.

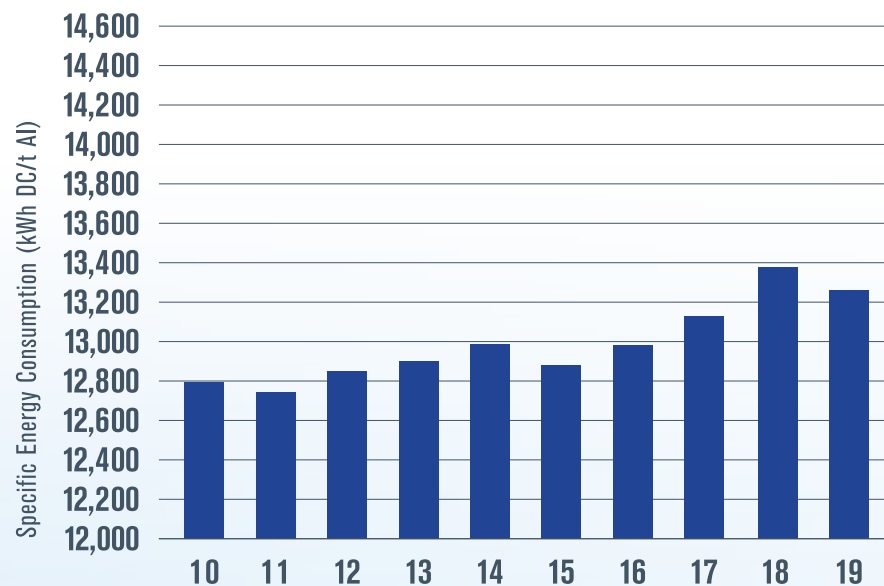


INSTALLATION AND COMMISSIONING OF SKIMMING ROBOTS AT THE CASTHOUSE MEANS THAT DROSS IS NOW REINJECTED DIRECTLY INTO THE ALUMINIUM PRODUCTION PROCESS, CONTRIBUTING TO REUSE OF THIS MATERIAL.



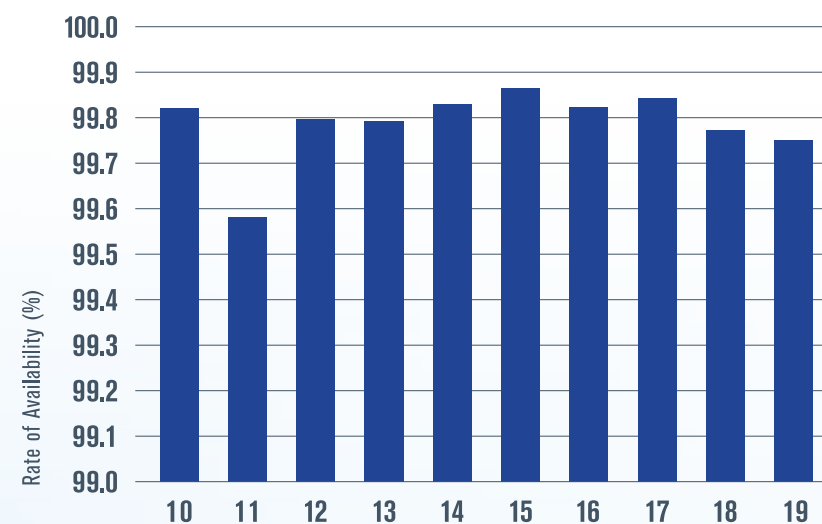
Energy consumption

Specific energy consumption in the smelting sector was 13,257 kWh (direct current) per tonne of aluminium. Extensive efforts were deployed to use energy responsibly and remain an industry leader.



Scrubber availability

Alouette operates seven scrubbers to protect the environment. Five gas treatment centres are located in the potrooms and there are two fume treatment centres in the anode baking furnace sector. In 2019, scrubber availability exceeded 99.7%, including planned downtime for maintenance in order to ensure scrubber efficiency. This figure confirms that the scrubbers were carefully and efficiently operated and maintained by employees.



Environmental incidents

In a spirit of full transparency, Alouette now includes a recap of the environmental incidents at its site over the past year entered in the records of the Ministère de l'Environnement et de la Lutte contre les changements climatiques (Quebec department of the environment and the fight against climate change). The incidents in 2019 did not have a lasting environmental impact. They were targeted by immediate and long-term corrective actions, to the authorities' satisfaction.

Environmental incidents during the year

- Ground spill of 800 litres of glycol caused by a mechanical breakdown
- Air emissions of dust following a dust collector malfunction

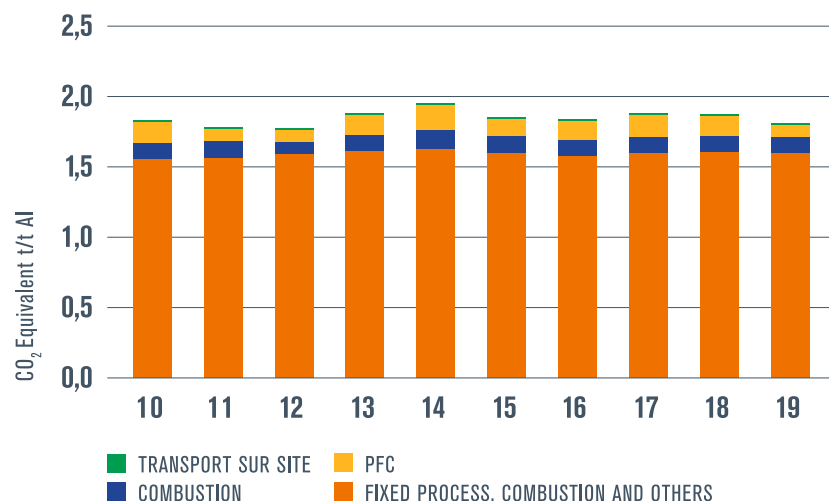


Air emissions

Greenhouse gas emissions

Direct greenhouse gas (GHG) emissions linked to the aluminium production process, fuels and anode effects* amounted to 1.81 tonnes of CO₂ equivalents per tonne of aluminium produced (t CO₂ eq./t Al). The company continued its efforts to reduce GHG emissions by implementing a variety of initiatives. Thanks to continuous improvement of process control and alumina feed, there was a reduction in perfluorocarbons (PFCs). In addition, the proposed deployment of a natural gas project will enable Alouette to reduce its GHG emissions generated by anode baking by about 30%. As required under Quebec's carbon market regulation, GHG inventories are verified annually by an external firm.

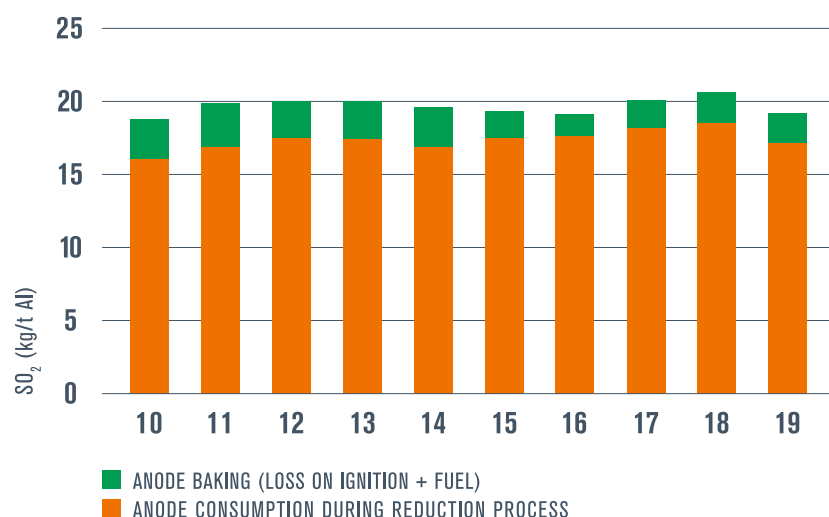
GHG emissions linked to electricity consumption accounted for less than 0.01 t CO₂ eq./t Al.



*Anode effects are operational instability phenomena that generate PFCs.

Sulphur dioxide (SO₂)

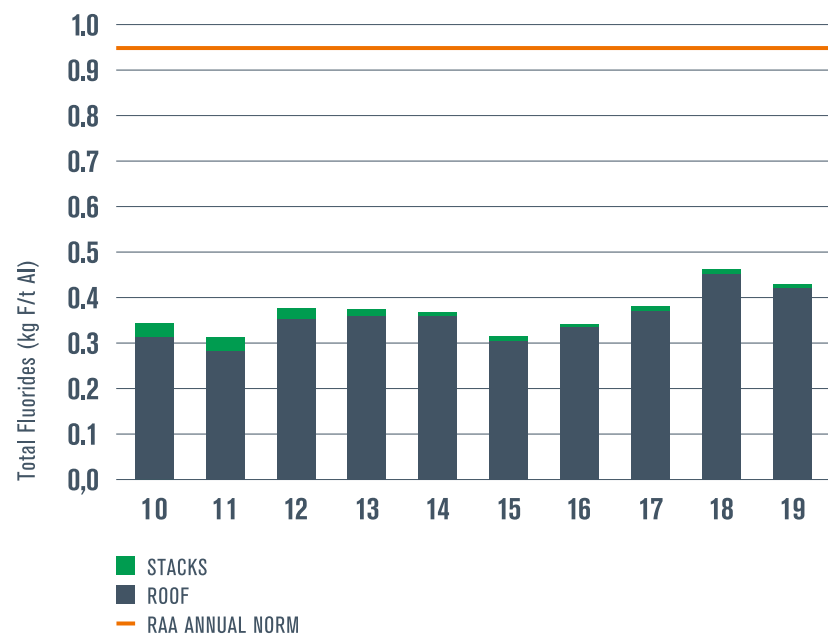
In 2019, sulphur dioxide (SO₂) emissions were 19.2 kg/t Al. The sulphur content of raw materials available on the market generally remained higher than normal – a real problem for the entire industry. However, excellent practices and operational stability enabled Alouette to mitigate the impact of this issue.



THANKS TO THE USE OF RENEWABLE ENERGY (HYDROELECTRICITY), CANADIAN ALUMINIUM PRODUCERS CONTINUE TO BOAST ONE OF THE WORLD'S LOWEST GHG EMISSIONS INTENSITIES.

Total fluorides from reduction process

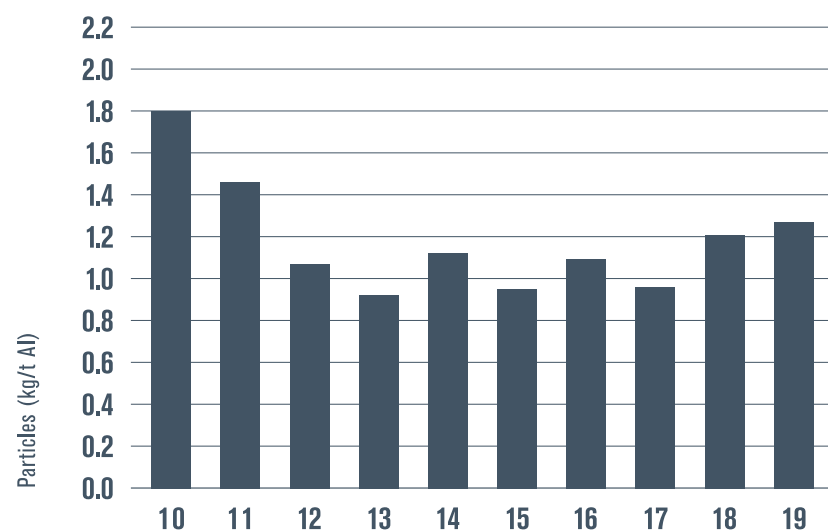
Fluoride emissions in the smelting sector were 0.43 kg/t Al. Among other factors, emissions were influenced by the start-up of a large number of smelting pots as part of the major pot retrofit program under way. Thanks to employees' efforts to maintain the best operational practices and efficient scrubber management, fluoride emissions were kept well below the regulatory limit.



*RAA: Règlement sur l'assainissement de l'atmosphère (The Clean Air Act)

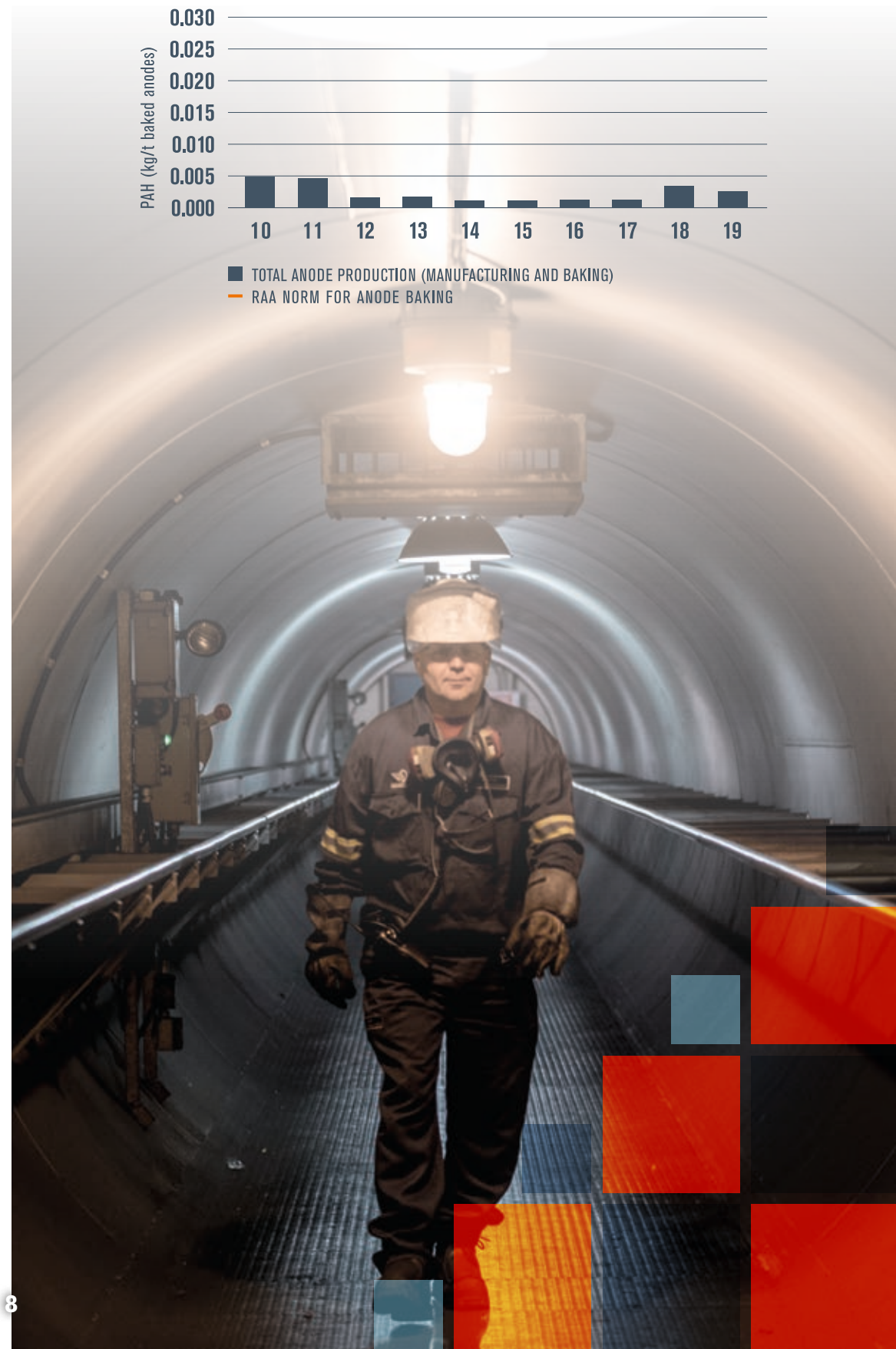
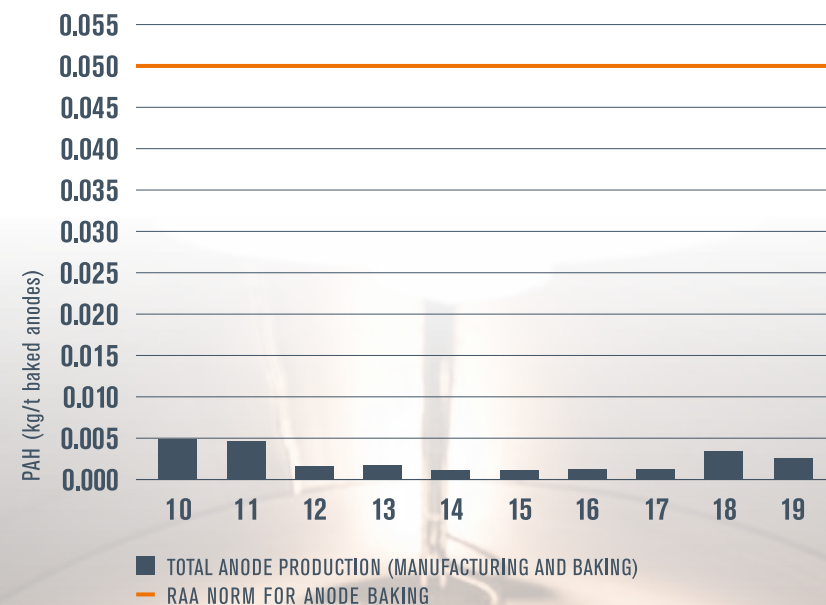
Particles

Most particle emissions originate from roof vents, scrubbers and baghouses. Particle emissions were 1.27 kg/t Al. This low level may be explained by the reliability of Alouette's scrubbing equipment and the efforts devoted by the team assigned to the equipment.



Polycyclic aromatic hydrocarbons (PAH)

Emissions of polycyclic aromatic hydrocarbons (PAHs) at the Anode Plant (manufacturing and baking) remained stable, at 0.0026 kg/t of baked anodes, well below Quebec's regulatory limit for anode baking (0.05 kg/t of baked anodes).



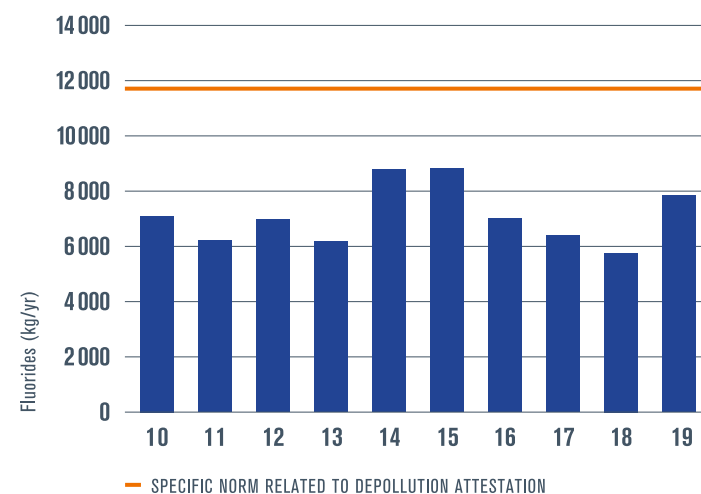
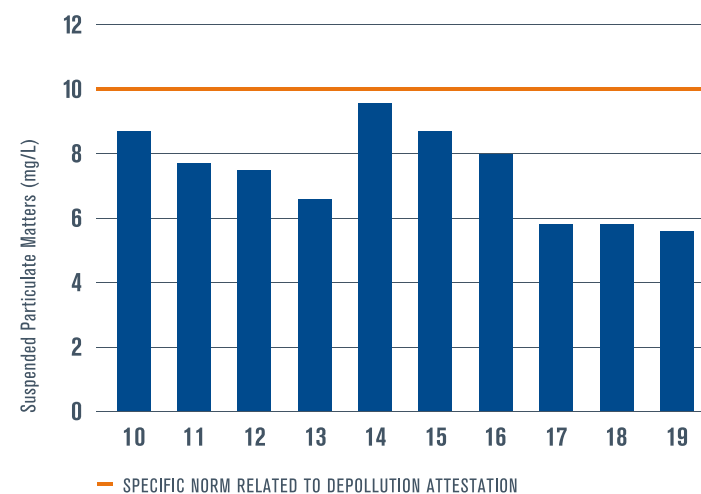
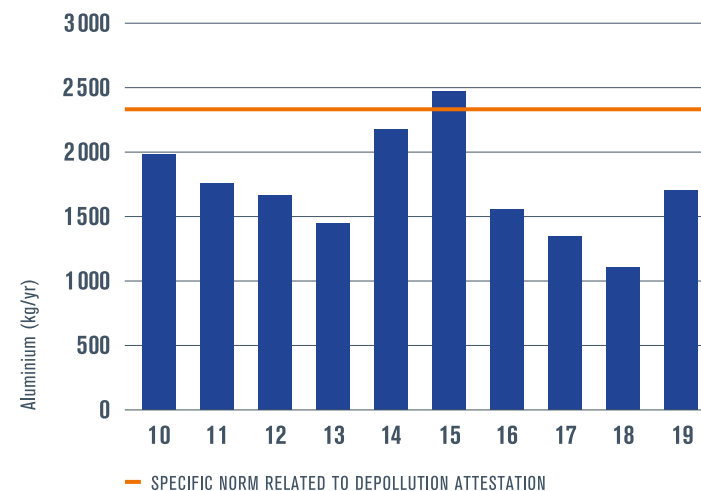
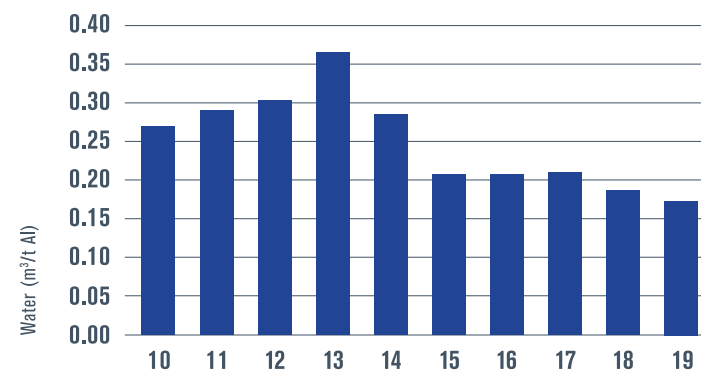


Water consumption

Alouette cares about responsible water management. In 2019, potable water consumption amounted to 0.17 cubic metres per tonne of aluminium. Water was used primarily for consumption and sanitary purposes, as well as to meet process cooling needs. No process water was discharged into the environment. Instead, process water was reused at the fume treatment centres, enabling a substantial savings in terms of water consumption.

Runoff water

The storm drainage outfall is located at the place where water leaves the settling pond. The system gathers rainwater from the site and buildings. The water undergoes continuous sampling at the outfall. The operational strategy for the system is strictly applied. The increase in the figures for aluminium and fluorides may be explained in part by the strong spring freshet following very heavy snowfall during the 2018-2019 winter.



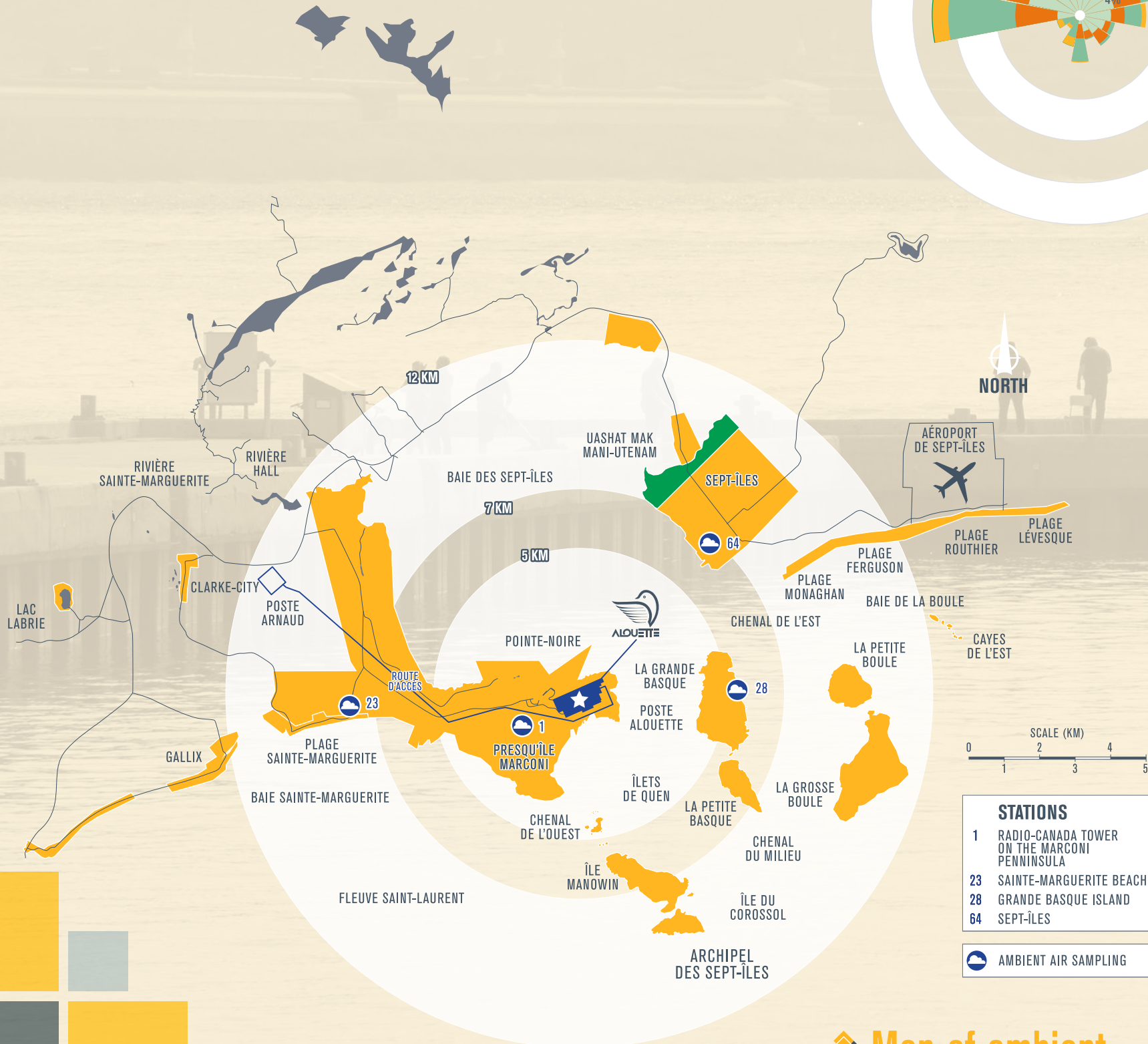
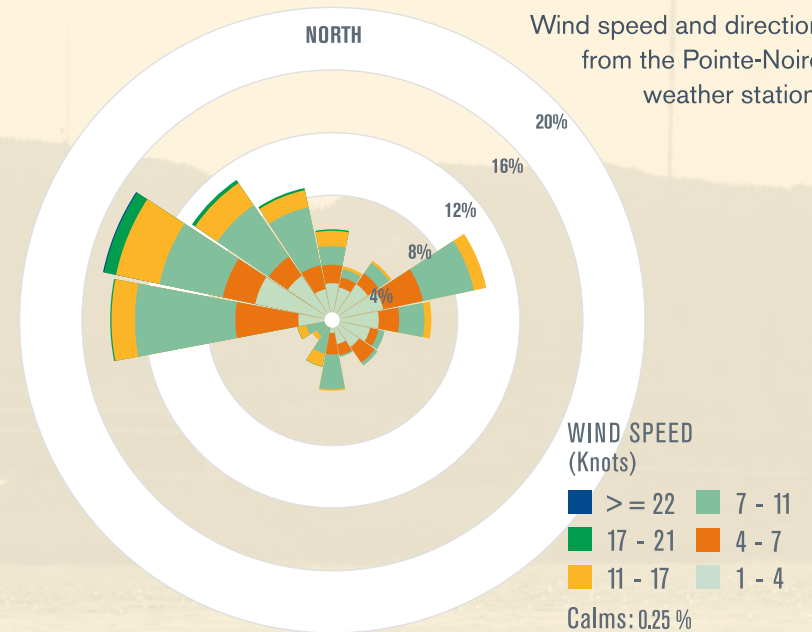
ALOUETTE CONTINUED ITS PARTNERSHIP WITH THE NORTHERN INSTITUTE FOR RESEARCH IN ENVIRONMENT AND OCCUPATIONAL HEALTH AND SAFETY (INREST).

◆ Ambient air

Alouette has four ambient air sampling stations, one of which is located right in Sept-Îles. The company operates all four stations according to Environment and Climate Change Canada's National Air Pollution Surveillance Program guidelines. Measurements taken at the stations include all air emissions, with no distinction between the respective sources of the airborne contaminants detected (Alouette or other). The data contribute to better understanding of air quality in general, as well as the potential impact of Alouette's operations. The parameters measured are chosen together with the competent authorities, taking into consideration the main air emissions generated by aluminium smelters.

WIND ROSE

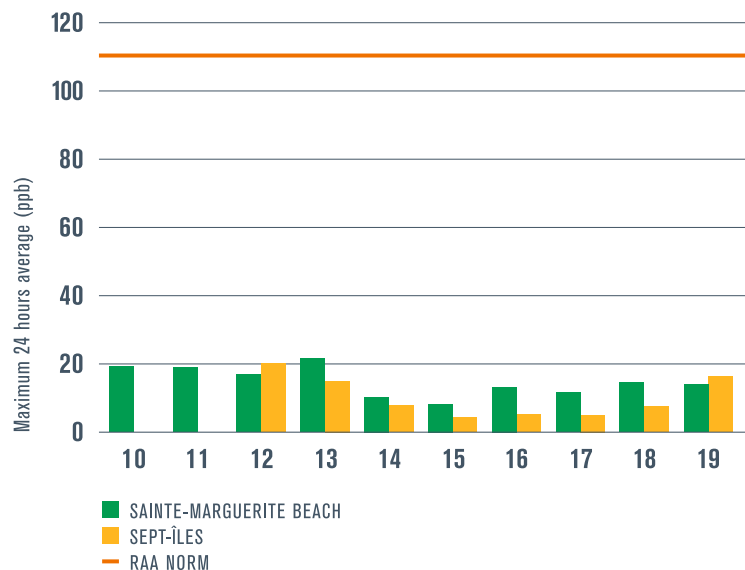
Wind speed and direction from the Pointe-Noire weather station.



◆ Map of ambient air sampling stations

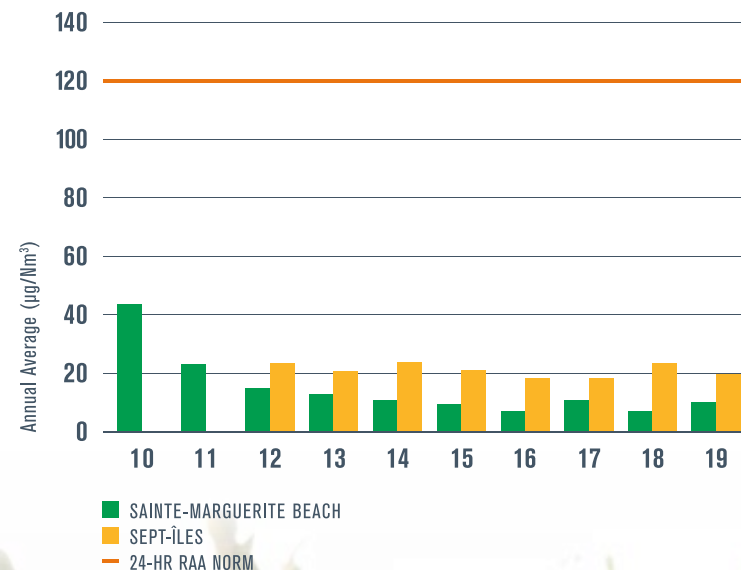
Sulphur dioxide in ambient air

Sulphur dioxide (SO₂) content in ambient air complied with the standard of an average of 110 ppb over a 24-hour sampling time. The maximum of 400 ppb over a four-minute sampling time was never exceeded during the year.



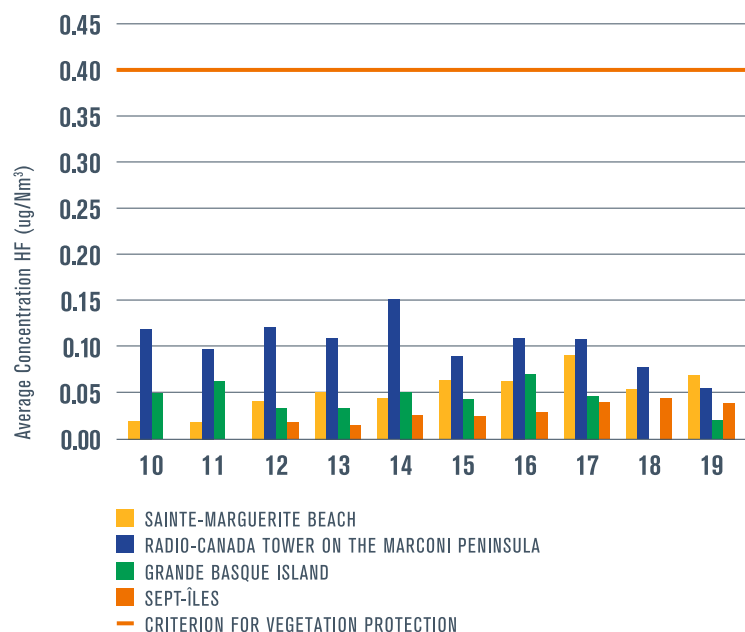
Total particles in ambient air

The chart below shows the annual averages for the different samplings. The 24-hour standard was never exceeded.



Gaseous fluoride in ambient air

Average gaseous fluoride (hydrogen fluoride) concentrations in ambient air remained below the vegetation protection criterion within a radius of 7 km around the smelter, including Grande-Basque Island and Arnaud Avenue in Sept-Îles. Assessments of the condition of vegetation in industrial and non-industrial areas are carried out annually. In 2019, the assessment once again showed that off-site plant life was unaffected by Alouette's operations.



*Exceptionally in 2018, data collection at the Grande-Basque Island sampling station was impossible due to a sampling equipment breakdown.



BUDDING VEGETATION IS MORE SENSITIVE TO FLUORIDE. ALOUETTE SCHEDULES THE MAINTENANCE OF ITS SCRUBBING FACILITIES OUTSIDE THIS CRITICAL BUDDING PERIOD. THIS MAINTENANCE IS ESSENTIAL FOR KEEPING THE EQUIPMENT IN GOOD WORKING ORDER, WITH A RATE OF AVAILABILITY AND PERFORMANCE (FLUORIDE AND DUST) SURPASSING 99%.

◆ Operational excellence

With an intensive pot replacement program during the first half of the year, all Alouette employees were called on to put their shoulder to the wheel in the operations, maintenance and related services sectors. A number of partners also helped optimize potlining and all other steps in the program, which was successfully deployed. Thanks to the cooperation of all sectors, as well as pot productivity and maintenance, close to 600,000 tonnes of aluminium was allocated in 2019. At the same time, the company continued its strategy of integrating Industry 4.0 principles. A brand-new interface enabled real-time monitoring of work, equipment and vehicles in the potrooms. New robots were commissioned in the casthouse to skim pigs and facilitate reinsertion into the process of dross, collected directly in the crucibles. Cutting-edge technologies were also applied in the maintenance sector, including equipment reliability tracking and identification of underlying problems. Efficient cooperation in this area continued with the Institut technologique de maintenance industrielle at Cégep de Sept-Îles. Installation of fans for forced-air cooling of the Potline 1 reduction cells was finalized at the end of the year. The system promises to generate positive results once it has been started up and fine-tuned. In short, all aspects of the organization are actively adapting to our new industrial age.

Highlights

594,727 tonnes of aluminium allocated

Specific **per-pot per-day production records**

299 of 594 pots now use AP40 technology

Several temporary power reductions to support the Hydro-Québec system during the winter

Modernization of data entry linked to smelting measurements (photo below)

Improved potroom service productivity thanks to various projects

Deployment of a new integrated interface dedicated to Metal sector production

18 fans installed in Potroom 1 for forced cooling of smelting pots

Centralization of maintenance planning



MORE THAN A PROCESS – A PROVEN APPROACH

◆ Shareholders, community and partners

A faithful partner of the Sept-Îles, Port-Cartier et Uashat mak Mani-Utenam communities, Alouette is reliably present for small and large organizations in the region, to the extent of its means, despite ups and downs of the economy. In tangible terms, the company accepted no fewer than 160 requests for support and donated \$535,000 to initiatives in the areas of community, culture, sustainable development, socioeconomic development, education, health, sports and recreation. Beyond monetary investments, Alouette's involvement takes the shape of direct volunteer work by hundreds of employees. In 2019, the company stepped up its efforts to promote this generous involvement, among other way by publishing profiles of volunteers. As in the past, the smelter also opened its doors to scores of tourists and students, with custom designed tours.

Highlights

Loyal partner of the 41st Orange Alouette Volleyball Tournament

Presenter of the 35th edition of the Innu Nikamu Indigenous arts and music festival

Ongoing support for the **67th Alouette Côte-Nord Invitational Bonspiel**

Ongoing agreement with *Maison des organismes communautaires de Sept-Îles* (Sept-Îles community organizations)

\$216,000 donation to Opération Enfant Soleil, together with employees

\$123,968 donation to Centraide Duplessis, together with employees

First fund-raising effort at the site entrance for the *Comptoir alimentaire de Sept-Îles* food bank

Ongoing major partnership with the Gallix ski resort

Financial support for four L'Envert de ta cour greening program projects, together with *Corporation de protection de l'environnement de Sept-Îles*

Official presenter of the 26th edition of Sept-Îles' *Vieux-Quai en Fête Alouette* summer festival

Sponsor of the International Congress on Industrial Port Research

Summer tours of the smelter for approximately **500 visitors**

Opportunities for dozens of students to discover our process and the related trades (photo opposite)

Continuation of the cultural development and artist grants agreement

Honorary chair of the Multiple Sclerosis Society of Canada's *Cyclo Tour SP* (MS Bike)

Mercuriades award finalist in the Community Engagement category

Donation of 500 lockers to the *Commission scolaire du Fer* school board

Four business partners honoured during the *Partenaires d'excellence* evening

Participation in the Du Boisé school's Vélobus project, aimed at preventing dropout



**MORE THAN A CORPORATE CITIZEN –
A COMMITTED PARTNER**

Financial excellence

There was a general decline in the price of aluminium in 2019 on the London Metal Exchange: at year end, aluminium was selling for about US\$1,850 a tonne. Despite this turbulence and Alouette's intensive pot change program at the start of the year, the company managed to control its production costs. Fortunately, there was good news during the year, announced during a visit by the Prime Minister of Canada, Justin Trudeau. His presence at the smelter coincided with the lifting of U.S. tariffs on Canadian aluminium – a greatly appreciated adjustment. The summer announcement of major support from the Strategic Innovation Fund for innovation and modernization work at the smelter was also positive financial news. This \$15 million contribution will go towards Alouette's huge investment projects, estimated at over \$474 million. The modernization plan covers the upgrading of the facility's smelting pots to AP40 technology, the use of automated production vehicles and the integration of various Industry 4.0 concepts. It also includes conversion to natural gas for anode baking, which, among other things will allow Alouette to reduce its greenhouse gas emissions.

Highlights

Over \$125 million in goods and services purchased from suppliers in the Sept-Rivières regional county municipality

Optimization projects in all sectors

Ongoing replacement of radio communications infrastructure

Investment in concrete work in the potroom basements

Refurbishing of roof skylights in the potrooms

\$1.6 million to implement compressor contingency infrastructure

New standards for entering service invoices

\$15 million grant from the Strategic Innovation Fund (photo below)

No financial penalties or fines further to government orders



MORE THAN A COMPANY – A CREATOR OF WEALTH



AMAG
AUSTRIA METALL

20%
AMAG AUSTRIA METALL AG
AUSTRIA



HYDRO

20%
HYDRO ALUMINIUM
NORWAY



IQ Investissement
Québec
FACILITER · FINANCIER · PROPULSER

6,67%
INVESTISSEMENT
QUÉBEC
CANADA



Marubeni
Métaux & Minéraux
Metals & Minerals

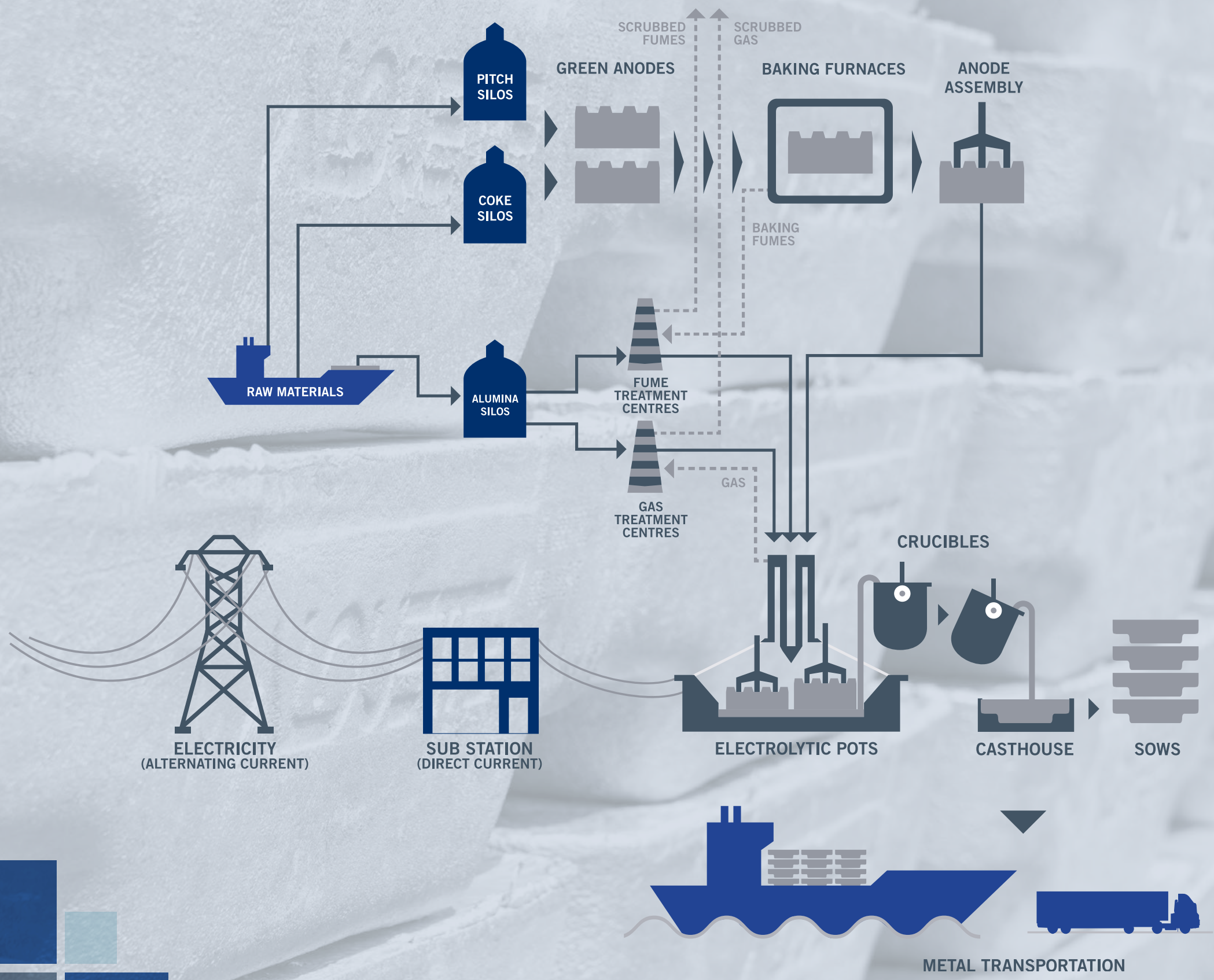
13,33%
MARUBENI METALS
& MINERALS
JAPAN



RioTinto

40%
RIO TINTO
CANADA

Production process





Aluminerie Alouette inc.
400 chemin de la Pointe-Noire
PO Box 1650
Sept-Iles, Quebec G4R 5M9
418 964-7000

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