

# Albioma

**Energy:  
it's time to switch!**

**SUSTAINABLE  
DEVELOPMENT  
REPORT**

**2017**



**ALBIOMA**

# Albioma, an independent renewable energy producer

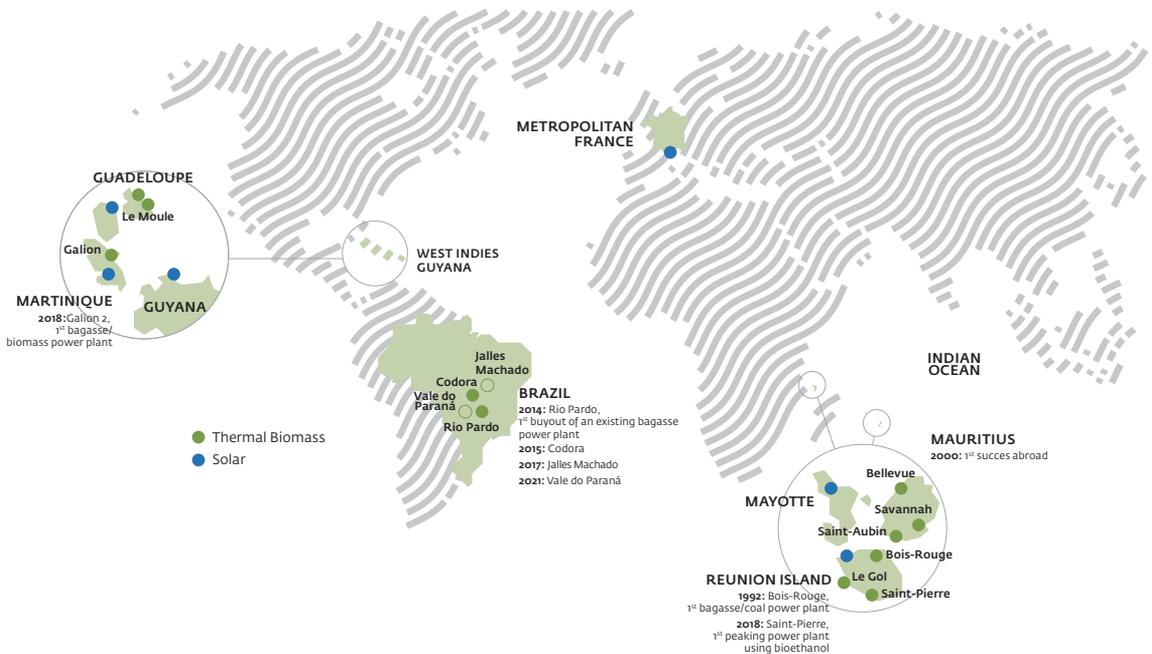


Albioma is an independent renewable **energy producer**, supporting the energy transition with biomass and photovoltaic power.

The Group, which operates in **Overseas France, Mauritius** and **Brazil**, has fostered **a unique partnership** with the sugar industry over the past 20 years, producing renewable energy from bagasse, a fibrous residue of sugar cane.

Albioma is also **the leading producer of photovoltaic energy** in Overseas France, building and operating innovative projects with integrated energy storage capabilities.

For more information, read our "Albioma at a glance" leaflet or visit [www.albioma.com](http://www.albioma.com)



# Editorial

## by Jacques Pétry, Chairman of the Board of Directors



Climate and energy challenges are central to the international community's shift towards a more responsible, more sustainable model. This trend offers a great opportunity to double down on our commitment to the energy transition and achieve our target of deriving 80% of our energy production mix from renewable sources by 2023.

We expect 2018 to be a very constructive year, with highlights including the commissioning of two new renewable energy plants in Overseas France: Galion 2, our first French year-round bagasse/ biomass power plant in Martinique; and the combustion turbine in Saint-Pierre on Reunion Island, which is the first French unit to operate using bioethanol for superior security of supply.

Our expertise and innovative flair are fully focussed on our two core businesses: energy production from biomass waste and photovoltaic power generation. We firmly believe in the strong fit between these energy sources: harnessing plant-based biomass ensures a continuous, stable supply to the electricity network, regardless of weather conditions and unforeseen climate events, while also facilitating the integration of intermittent energy sources such as solar power.

# Message from Frédéric Moyne, Chief Executive Officer

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Providing a safe, healthy working environment is an unwavering goal for Albioma.

In 2017, safety risk prevention was a high priority for the Group. Despite this focus, our safety performance was not always satisfactory. We have therefore decided to step up our efforts to implement our "safety master plan", with the same goal of zero-accident operation. The energy transition represents a unique opportunity for the Group, from which we will not reap the full benefits unless we durably improve our safety performance.

This transition is making the Group a major player in the regions in which we have traditionally operated.

Already, for the first time, renewable energy now makes up more than 50% of our production mix.

In Overseas France, we are working towards our clearly-stated goal of phasing out all use of coal. We will be converting all our thermal power plants to operate with biomass, giving priority to locally-sourced biomass: our plants, which are already helping to safeguard the sugar industry, will in the future also foster the emergence and consolidation of new local industries as part of the shift to a lower-carbon energy mix.

We are rolling out our know-how in Brazil, where, with four bagasse-fuelled cogeneration plants either planned or already in operation, our industrial expertise focussed on energy efficiency is widely acknowledged.

We are also continuing to invest in solar power. In particular, Albioma was awarded 11 projects for photovoltaic plants with integrated storage and recently announced a strategic partnership to equip the rooftops of buildings operated by SHLMR, a large housing association on Reunion Island.

# Our CSR\* approach is central to the Group's strategy

Our goal of increasing the share of renewable energy in Albioma's energy mix to 80% by 2023 is supported by a clear CSR approach based on eight key commitments in three areas: the environment, labour relations and corporate citizenship.

These commitments - powerful levers for change - concern all our activities around the world.





Thermal power plant - Albioma Caraïbes, Guadeloupe

## 1 Our environmental commitments

### Work towards energy transition

The Group has set itself the goal of producing 80% of its energy from renewable sources by 2023.

Our strategy supported by  
**3 PILLARS**

- 1 – Work for the **ENERGY TRANSITION IN OVERSEAS FRANCE**
- 2 – Roll out the **BAGASSE/BIO MASS MODEL INTERNATIONALLY**
- 3 – Develop **INNOVATIVE SOLAR POWER PROJECTS** with integrated storage

Our strategy is enabling us to rapidly de-carbonate our production mix. Albioma is also pursuing its efforts to decrease atmospheric emissions.

Work is underway to equip one of our plants on Reunion Island with a new fume scrubber that will cut current emission levels by two-thirds. Our other plants on Reunion Island and in Guadeloupe are to be similarly upgraded in 2018 and 2019. This plant modernisation project represents a significant investment of €295 million.

### Key figures for 2017

**53%**  
of our energy mix from renewable sources

**540g**  
of CO<sub>2</sub> per kWh produced

**- 50%**  
greenhouse gas reduction by 2023

## Key figures for 2017

**2.0 cu. m**  
of water per MWh produced

**30%**  
of combustion by-products  
recovered

### Manage resources sustainably

We are well aware of the need to preserve water resources. After a period of steady decreases, water consumption per unit of energy produced has been stable for the past three years. We are following up the initial resource saving measures already implemented by harnessing the levers offered by the fume treatment modernisation programme and the work to convert our bagasse-coal plants to operate using biomass.

We are also carrying out a range of works to better characterise our waste, ash and slag, with the goal of identifying recovery solutions to replace landfill disposal.

Currently, all our bagasse ash is recovered by spreading it on agricultural land.

Optimising the energy efficiency of our facilities can also help to preserve resources. To this end, Albioma is equipping the first of its photovoltaic power plants with a system that will increase efficiency by approximately 15% and limit solar panel ageing, while also maximising safety. This system cools and cleans panels by spraying them with water, in a process that instantly adapts to changes in weather conditions. This process preserves water resources as panels will be cooled using collected storm water.

### Protect biodiversity

Careful consideration is given to biodiversity protection in every project developed by the Group.

For example, a study was conducted with the Reunion ornithological research society (Société d'Études Ornithologiques de La Réunion) to verify that the site of the planned combustion turbine in Saint-Pierre was not a breeding ground or nesting site of three protected species: the white-tailed tropicbird, the Mascarene swiftlet and the Mascarene martin. Furthermore, preventive measures have been adopted to mitigate the risks to local populations of Barau's petrel, an endemic species, consisting in installing suitable lighting systems to avoid birds becoming stranded on the ground.

Over the coming years, we intend to expand our biodiversity conservation initiatives at our facilities.



Barau's petrel ©Cellule Life+ - Martin Riethmuller

## Personal accounts



**Myriam Beauque**

CSR & Environmental project manager, Paris

I joined Albioma five years ago as a quality, health, safety and environment manager at one of the Group's subsidiaries. In 2017, I was invited to join the CSR team at head office, with a brief to coordinate the Group's QSE network, support the operational teams with regulatory compliance monitoring and lead projects relating to Albioma's CSR challenges. ACT, which stands for Assessing low-Carbon Transition, is one such project, focussed on the inclusion of climate aspects in corporate strategies. Last year, Albioma took part in the ACT programme, which is run by the French environment and energy management agency (ADEME). Informed by experience gained during the Carbon Disclosure Project, this experimentation, backed by the European Investment Bank, aims to develop a methodology that will be adopted worldwide as a means of measuring companies' commitment to decreasing their greenhouse gas emissions.



**David Agid**

Chief Biomass Procurement Officer, Paris

I joined Albioma in 2012, after working in various positions in industry and energy consulting. In 2014, I took up my current role as the Group's Chief Biomass Procurement Officer. One of our flagship projects concerns the fuel supply for our new Galion 2 cogeneration plant, which will generate enough power to cover up to 15% of Martinique's electricity consumption needs. Although our priority is to develop new local supply industries, we will also have to import biomass from neighbouring regions, to ensure that the plant is able to operate without interruption. We chose to use wood pellets from sustainably-managed forests located in the southeast United States, for reliable traceability and to minimise our environmental impact.

## Highlights from 2017

### Coal ash and slag recovery in Mauritius

In Mauritius, the Group and our sugar-making partners are using an innovative Carbon Burn Out (CBO) facility. This technology aims to decrease the residual carbon content of our coal combustion by-products, in order to recover the resultant product as a cement admixture. The CBO process, based on high-temperature combustion (at around 1,000°C), innovates by enabling fly ash and slag to be mixed in the combustion hearth. In 2017, nearly 10% by tonnage of the by-products generated at the Group's three Mauritian plants were processed at the CBO facility. This figure is set to increase in the coming years as the plant ramps up capacity. This industrial facility serves three purposes: it eliminates the need for landfill disposal of carbon combustion by-products; it enables "zero-waste" production, as combustion products are recovered in the cement-making industry; and cutting emissions associated with cement imports to the island.

### Albioma becomes a founding member of the CO<sub>2</sub> Value Europe industry body



The International Energy Agency predicts that carbon dioxide sequestration, storage and recovery should account for 15% of the overall greenhouse gas reduction effort required in order to maintain the scenario of a 2°C increase by 2050. To this end, Albioma has helped to set up a non-profit organisation named CO<sub>2</sub> Value Europe. This organisation aims to promote the development and commercial deployment of industrial solutions capable of sequestering and converting carbon dioxide released into the atmosphere through fume stacks at industrial facilities. Through our commitment to this non-profit organisation, we hope to be able to keep close track of changes and research in this field and adopt best practices.



Thermal power plant - Terragen, Mauritius

## 2 Our employment-related commitments

### Ensuring occupational health and safety for all

Keeping the people who work for Albioma safe is a basic requirement. Operating energy-producing facilities entails certain health and safety risks for our employees and service providers. In view of our poor safety performance, the approach adopted by the Group was revised in 2017, with the appointment of a dedicated Chief Safety Officer, supported by a functional and operational organisation to bolster commitment at every level within the Group. This change reflects a desire to intensify the efforts made in recent years to consolidate a "health and safety culture".

#### ► Within the Group

The role of the Chief Safety Officer consists in providing technical support to and enforcing discipline among operational managers.

His prime missions are to consolidate the safety baseline and systematise the use of existing resources by teams at every level throughout the Group. This mission is guided by a policy - strongly backed by senior management - centred on a master plan and Albioma's 10 Golden Rules.

#### 6 commitments

1. Upgrade and standardise our requirements
2. Increase commitment by our managers
3. Encourage involvement by all workers
4. Involve and align our subcontractors
5. Acknowledge and promote our efforts and results
6. Learn from and capitalise on mistakes and shortcomings

#### 10 golden rules

1. Respect and example-setting
2. Protective equipment
3. Risk situations
4. Traffic
5. Lifting operations
6. Tagouts
7. Overhead work
8. Confined spaces
9. Heavy plant operation
10. Hot work

*Albioma has produced 6 commitments and 10 golden rules for safety, issued to all employees. This practical guide, based on real-life case studies, describes the appropriate behaviour to adopt in situations involving accident risks.*

## Personal accounts



**Jean-Paul Costes**  
Chief Safety Officer

We are well aware that successfully implementing Albioma's safety policy requires constructive dialogue between management and employees, where necessary with input from independent experts to help us achieve our ultimate goal of zero-accident operation.



### ► At our plants

Albioma's plant managers have responsibility for their employees and for their plant's performance. Each plant manager is supported by a Quality, Safety & Environment (QSE) manager tasked with enforcing compliance with applicable standards and ensuring that the management system operates correctly. The QSE manager organises training and awareness programmes as well as diagnostic assessment, risk prevention, inspection and audit initiatives to facilitate continuous improvement. In 2017, the Group's two thermal power plants on Reunion Island - Albioma Le Gol and Albioma Bois-Rouge - were successfully audited and retain their ISO 9001, ISO 14001 and ILO OSH 2001 triple certification. The same applies to the three Mauritian plants, which have been triple certified for several years. Lastly, the Solar Power business in France was granted ISO 9001, ISO 14001 and ILO OSH 2001 triple certification in 2016.

### ► Suppliers and subcontractors

At Albioma, we share our safety efforts and requirements with the suppliers and subcontractors that work at our facilities. We make every effort to help them understand the safety risks and our related requirements. Our safety dialogue is organised in three sequences, at different stages of the project, as defined in our "Risk prevention plan" (as required under the Decree of 1992):

- At the contract bidding stage, our suppliers and subcontractors are notified of our safety requirements;
- When a contract is signed, they are issued with specific information relating to the risks associated with our business and the work site;
- Before work begins, a safety briefing is organised with each subcontractor, to ensure that they are familiar with the risks faced while working on site and accept the Group's requirements.

Lastly, subcontractors are required to comply with our safety processes (including meetings to present Albioma's safety commitments prior to every maintenance outage, and annual performance reviews that, in the event of shortcomings, may result in the contractor being barred from the site).

### Key figures for 2017

**22.2**  
frequency rate (Albioma target: 8)

**0.87**  
severity rate  
(Albioma target: 0.5)

**26 hours**  
of safety training per employee

## Personal accounts



**Audrey Hernandez**

QSE Engineer at Albioma Le Gol, on Reunion Island

Upon graduating as an Industrial Engineer from the ENSIACET engineering academy in Toulouse, I joined Albioma in November 2012. I routinely help to enforce safety and environmental regulations, working alongside the operational teams. One of my main missions consists in supporting the teams tasked with maintaining the plant's Quality (ISO 9001 v2015), Environmental (ISO 14001 v2015) and Safety (ILO OSH 2001) certification. The cross-functional nature of my position has given me insights into multiple facets of the company, including production, maintenance and Human Resources.

Since 2016, I have been focussing in particular on supporting three major projects: fume treatment compliance works; turbine replacements and a project to replace our digital instrumentation and control systems. In order to manage these projects effectively and ensure that our employees, contractors and subcontractors are able to work safely, we decided to reinforce the QSE teams during outages, doubling the number of people tasked with risk prevention and adding a safety coordinator. Our goal of remaining focussed on continuously improving our safety performance is reiterated every day.



**Rober Renzo**

Human Resources Director in Brazil

My background includes qualifications in labour law and an MBA in Management and Human Resources, backed by more than 22 years' HR experience in industry. In 2015, I took up an opportunity to join Albioma as Human Resources Director for the Group's Brazilian business.

The project on which I have focussed most over the past two years concerns the introduction of an enhanced safety programme. This has entailed organising around 40 safety training sessions at our Codora and Rio Pardo plants, as well as producing training materials relating to the Ten Golden Rules and publishing monthly reports for managers, covering performance indicators and topics requiring particular attention. All the necessary operational risk prevention procedures supporting these initiatives were implemented. Aided by this programme, we have significantly improved our safety performance and, conscious of our collective responsibility for safety, strive to remain alert in our everyday activities.

## Cherishing and supporting our employees as our businesses change

Our Group's skilled, motivated workforce is a crucial asset, particularly as we grow and our businesses change. Our diversity and effectiveness in transferring knowledge to upcoming generations are additional factors enhancing our ability to adapt.

### ► Building people

In-service training is a major vector for the career support provided to Albioma Group employees. For the second consecutive year, the average number of training hours per employee exceeded the Group's annual target of 35 hours per employee.

Albioma's growth accounts for this increase, due to additional training provision following the acquisition of industrial plants in Brazil and the construction of new facilities in Overseas France. The combined efforts of operational managers and the Human Resources department to weave occupational training into our business culture are another contributing factor. In this context of growth, business-specific training is predominant, although the Group also provides employees with opportunities for personal development and management skills training.

### ► Integrating young workers

Albioma supports young people as they enter the workforce, and continues to operate a dynamic policy of taking on trainees and apprentices alongside its personnel.

The Group has set a target of hosting a number of apprentices and trainees representing at least 5% of the total headcount. This reflects a significant effort by the company to address the challenges faced by young people entering the job market, particularly in our overseas locations. Albioma is committed to offering them high-quality work experience in the booming renewable energy sector.

### ► Increase the proportion of female employees hired

Albioma's workforce includes a large number of engineers, a traditionally male-dominated profession. The company continues to operate an affirmative policy to increase the share of female employees hired. As a result, women accounted for 56% of new recruits at corporate head office in 2017.

## Key figures for 2017

4.2%

trainees, volunteers  
and work-study employees

14%

female employees

56%

women among new hires  
at corporate head office



## Personal accounts



**Emmanuel Borel**

Chief Performance and Technical Expertise Officer in Paris

I joined the company in 1997, as an engineer specialising in energy. After an initial eight-year posting as a Plant Manager in Mauritius, I then spent four years as Operations Manager in Brazil, which at the time was a new market for Albioma. I have since returned to France, and work at head office in my capacity as Chief Performance and Technical Expertise Officer.

Supported by my team, my mission consists in providing advanced technical expertise to field staff, improving the performance of our production facilities, and standardising best practices across the Group. This is an essential task for a rapidly-evolving industrial company with numerous projects either being implemented or in the pipeline.

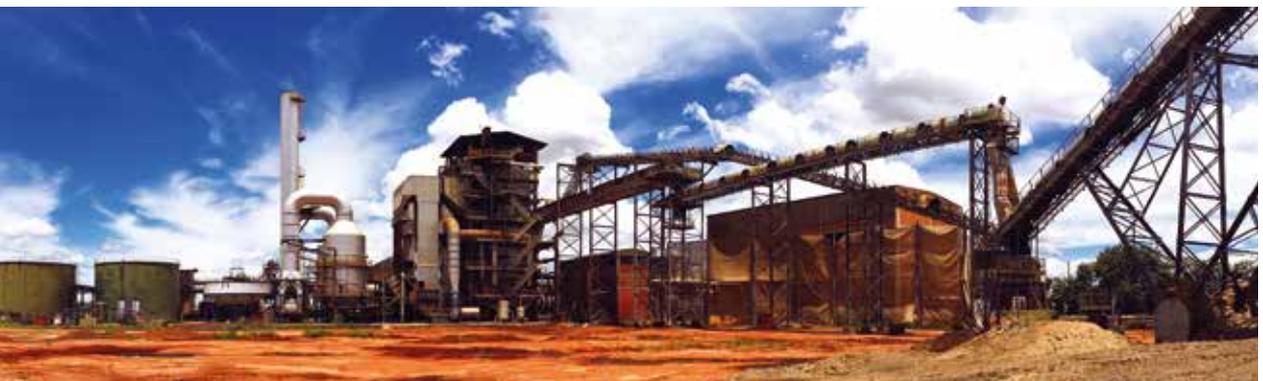


**Julia Joannot**

Finance Officer in Brazil

After training as an engineer in Bordeaux and gaining some initial international experience in China, I chose to work in the renewable energy sector and successfully applied for a trainee position with EDF Énergies Nouvelles. This experience inspired me to focus on financial aspects, and I decided to round out my education with a Masters degree at the ESSEC business school. It was

for my final work placement that I joined Albioma's Finance department. I am currently working as a VIE volunteer, helping to develop our new markets in Brazil. In this new role, I address multiple issues relating to management at existing plants, the acquisition of new projects in Brazil and certain aspects of business development.



Thermal power plant - Rio Pardo, Brazil

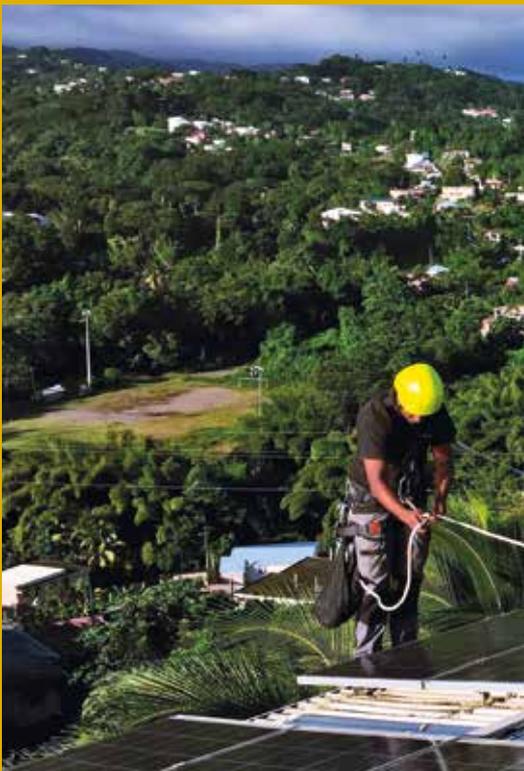
## Highlights from 2017

### Internal health and safety campaign

A communication campaign was launched in late 2017, restating the basic principles underpinning our strategy. Posters and videos translated into French and Portuguese were produced for use at our plants. 15-minute safety briefings have become a fixture in all operational teams. Safety Newsflashes were introduced to share feedback on accidents and near-accidents with Senior Management, regional managers, plant managers, all QSE managers and other employees concerned by such matters.

### "Be seen, be noticed" safety training

This safety leadership training was provided to all plant managers and head office staff between 2016 and 2017. The main aim of the training was to enhance people's risk perception and assessment skills by developing their ability to observe working conditions and behaviour from a safety perspective. The session also taught trainees to explore the factors that influence behaviour and to identify areas offering scope for improvement, thereby developing their "Be seen, be noticed" safety leadership.



### Safety measures for rooftop solar power plants in the West Indies

One of the leading risks in our solar power business is the risk of falling from a height. We have invested more than €500,000 in safety measures at our facilities in the West Indies.

Employees operating solar power plants were trained to use new equipment by ALPIC. It should also be noted that all our certifications are renewed annually, which is more frequently than required under applicable regulations.



All-biomass power plant - Galion 2, Martinique

## Highlights from 2017

### People are the key to successful projects

Headcount at Albioma Galion increased from 7 employees on 1 January, 2017 to 37 permanent employees by the end of the year. Our recruitment strategy prioritises hiring local talent, with a 98% success rate. Through a partnership with the employment agency Pôle Emploi and the training organisation AGEFOS, we were able to host nine jobseekers following a special training programme. All nine were hired upon completing their training. For some employees, landing a job with Albioma also represents an opportunity to return to live and work on their native island.

### Galion 2 won the 2017 CREF award

The Caribbean Renewable Energy Forum (CREF), which this year attracted 500 participants from 50 different countries including 20 Caribbean nations, presented its award for the best renewable biomass-fuelled energy production project to Galion 2. This award is a source of considerable pride for the Group, while also recognising the progress achieved by Martinique in expanding its renewable energy infrastructure.



2017 CREF awards ceremony



Thermal power plant - Le Gol, Reunion Island

## 3 Our civic commitments

### Providing a public service

As a power generator, our prime responsibility is to ensure a reliable supply of power that is available at all times and which helps to maintain stability in the electricity network. This is a major challenge in non-interconnected territories, where most of our facilities are located. As well as providing quality of service, our civic commitment is also reflected in our attitude to our partners at every stage in the value chain to which we contribute.

#### ► Nurturing our partnership with agribusiness

Albioma's core business is the highly energy-efficient recovery of bagasse, a fibrous residue obtained when sugar cane is crushed to produce sugar or rum. This virtuous model typical of the circular economy enables the sugar industry to outsource energy production and sell any surplus production into the electricity network.

By this means, we play our part in safeguarding several thousands of jobs in communities where the sugar industry is a cornerstone.

#### ► Developing new local supply chains

The Group has a strategy to gradually phase out coal, replacing it with biomass at our thermal power plants in Overseas France. Priority is given to harnessing locally available biomass, while giving proper consideration to any conflicts of use. To this end, Albioma is stepping up its cooperation with local authorities, government agencies and specialist institutions, with the aim of coordinating the emergence and development of these new supply chains. As for the bagasse circuit, our model is inspired by the circular economy, which creates jobs and value in local communities. Several initiatives illustrate this collaboration with our partners, including the signing of a framework agreement between Albioma and the Regional Council of Reunion Island in 2017, and the partnership with the National Forests Office (ONF) in Martinique, initiated in 2015.

### Key figures for 2017

3.577 GWh

electricity sold into the network, equivalent to the consumption of 1.1 million households

2.1 m

tonnes of bagasse recovered

## Personal accounts



**Pauline Gillet**

**Biomass development officer in Martinique**

As a specialist in tropical forest management, my mission at Albioma is to enable the Galion 2 power plant to procure locally-available biomass. We are offering a new outlet for large quantities of currently unrecovered resources. For example, since 2016 we have been running a project - jointly funded by the French environment and energy management agency (ADEME) - focussed on recovering biomass from hedge maintenance in Martinique. In the course of this project, we surveyed some of the island's agricultural properties, defined low environmental-impact land management methods and supported the development of local hedge maintenance contractors. The growth outlook for this industry is bright: hedges have gradually disappeared from the Martiniquan landscape over the past 20 years, due to the lack of commercial outlets. Their return would be very welcome as, in addition to structuring the landscape and forming ecological corridors, hedges provide numerous benefits to farmers, acting as windbreaks that limit soil erosion, and providing shade and fodder for livestock. Organising this industry will also create local jobs.



**Jean-François Bourdais**

**CEO of KWBIO on Reunion Island**

KWBIO is a company of which Albioma is an indirect shareholder. It operates a biofuel preparation facility designed to supply Albioma's power plants on Reunion Island as part of the Group's biomass conversion project. This facility centralises and takes delivery of used pallets sold by local authorities and businesses (as well as some private collectors), then grinds them, screens the resulting material and transports it to Albioma plants. Our combination of technical and logistics expertise will help to foster the emergence of a pallet reprocessing industry, ending the need to dispose of them at special landfill facilities. Our ambition is to be a dependable partner upholding Albioma's specifications relating to renewable fuel supplies, but also to serve as a dynamic community stakeholder supporting government and regional authorities. This project offers an opportunity to create value for the community while simultaneously tackling a waste management issue.

## Highlights from 2017

### Albioma and the Regional Council of Reunion Island sign a framework agreement

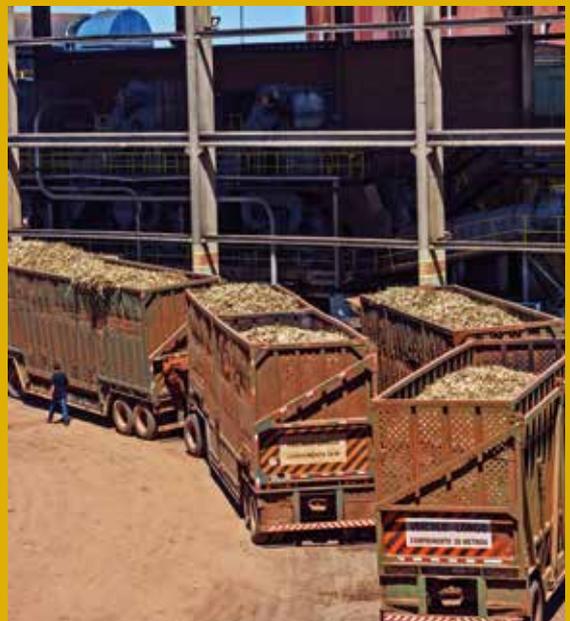
On 7 June 2017, the Regional President, Didier Robert, and Albioma's CEO, Frédéric Moyne, signed a framework agreement concerning the Group's contribution to Reunion Island's multi-year energy plan (PPE). The multi-year energy plan sets a target of deriving 50% of Overseas France's energy from renewable sources by 2020. The project to convert our plants on Reunion Island contributes directly to this effort. One of the first practical initiatives launched at the end of the year concerns our involvement in producing the regional biomass plan (SRB) managed by the Regional Council. Alongside partners such as the French environment and energy management agency (ADEME) and the agriculture and forestry agency (DAAF), we contribute to this plan by quantifying the available supply of biomass waste, of various origins, that is suitable for recovery at our plants. Among these potential resources, we are researching the waste-to-energy recovery potential of invasive plant species such as acacia, which are harvested in an effort to protect local biodiversity.



Signing ceremony for the framework agreement covering the Albioma Group's contribution to Reunion Island's multi-year energy plan

### A win-win partnership with sugar refiners

Our partnership with the sugar industry is largely based on recovering bagasse, in a circular economy approach, and supplying the electric power and steam required for sugar refinery production processes. Our expertise also extends to enhancing the operational performance of their facilities, particularly in terms of achieving greater energy efficiency, in a win-win partnership approach. This injection of expertise has been a crucial factor in our new acquisitions in Brazil: in the space of two years, we have almost doubled the energy yields at Rio Pardo and Codora.



Truck delivering sugar cane - Rio Pardo, Brazil

### Involving local communities

Well aware of our company's status as a member of civil society, Albioma has for a number of years been carrying out initiatives reflecting the Group's desire to establish local roots and support host communities.



Aerial view of a photovoltaic facility - Lassalle, Martinique

### ► A partnership policy that projects our values

This dynamic is largely sustained by corporate philanthropy and sponsorship initiatives, selected for the values that they promote.

Our contributions typically support initiatives in one of the four following areas:

1. Energy savings
2. Education and promotion of trades
3. Environmental protection
4. Culture and traditions

This policy ensures a degree of consistency with our missions, while also addressing the major issues faced by the communities in which we operate. It is part and parcel of our civic commitment, creating value shared with our partners.



School trip to a photovoltaic facility - Lassalle, Martinique

## Personal accounts

### **Dominique Payet**

**Chairwoman of the Iris Hoarau association**

"In 2016, Albioma and the Iris Hoarau school in Saint-Denis on Reunion Island joined forces to install a solar power-generating playground roof. This project has yielded multiple benefits. The roof has improved the everyday lives of our pupils, who are now properly protected against the sun and rain, while also enabling a variety of related teaching and artistic activities that would not have been possible without this partnership. The structure is also a useful tool for discussing how renewable energy and energy independence can be put into practice, and provides pupils with access to digital technology capable of monitoring the school's electricity consumption in real time. We are very grateful to Albioma, which donated technical expertise and financial resources, as well as resolutely building community support for this innovative, environmentally-friendly project. The project's value as a tool for knowledge-sharing and cooperation is reiterated whenever Albioma technicians visit the school to perform maintenance."



### **Vanessa Valton**

**Personal Assistant at Albioma Le Moule in Guadeloupe**

Last July, I played an active role organising the "Family Day" event for families of Albioma Le Moule and Albioma Caraïbes employees. This open day gave family members an insight into our employees' working lives. The event also helped to build team spirit, enabling staff to get to know their co-workers in a relaxed atmosphere. The Family Day was organised with the aid of a specialist consultant who is currently developing an industrial tourism business in Guadeloupe. As a result, we were able to offer safe, independently-commented guided tours. We also organised a number of activities away from the plant, including ox-cart rides symbolising our Guadeloupean traditions.

## Highlights from 2017

### Support for the local population in the aftermath of cyclones Irma and Maria in the West Indies



In September 2017, the West Indies region was hit hard by two exceptionally powerful hurricanes, Irma and Maria. The Caribbean archipelago suffered extensive damage, particularly on the islands of Saint- Martin and Saint Barts, and some people lost everything. Albioma offered its support, donating €10,000 to the Red Cross organisation and the same amount to Fédération des Entreprises des Outre-Mer, a business association that coordinated its response to this climate event with the Fondation de France philanthropy network.

### Participation in the inaugural edition of CANGT's Energy and Climate Village event



The purpose of this event was to present the climate change

adaptation strategy developed by the District Council of Nord Grande-Terre (CANGT), where our Le Moule plant is located. Four themed workshops were also organised, including one to help individual consumers manage their energy consumption. An "Energy Rally" was also held for schoolchildren, to show them simple everyday tips for reducing their energy consumption. Albioma provided funding for this event and arranged a private tour of the plant for the group of children that won the rally.

### Support for the Guadeloupe education authority's inaugural "Chemistry Olympics"



In 2017, Albioma backed the Guadeloupe education authority's "Olympiades de Chimie" contest and the local winner, Yana Simonel, who reached 9<sup>th</sup> place

in the national contest. During the first stage, 14 secondary school students gathered to compete in two regional challenges, one based on laboratory experimentation, the other on a cooperative group project on a set topic. This type of event helps to promote chemistry-related professions, which are essential to the Group's activities as we tackle environmental protection and occupational health and safety challenges.

# 4 Key performance indicators

## A ROLE IN THE ENERGY TRANSITION

RENEWABLE ENERGY	UNIT	2015	2016	2017	SCOPE
Renewable energy as a share of production	%	45.1	50.7	53.3	Fully-consolidated companies (all except Mauritius)

## EFFICIENT USE OF RESOURCES

EFFICIENCY	UNIT	2015	2016	2017	SCOPE
Recovered biomass	million tonnes	2.4	2.3	2.3	Group
kWh exported per tonne of sugar cane	kWh per tonne of cane	112	114	122	Thermal Biomass
Availability	%	88	91	91	Thermal Biomass excluding Brazil
Water intensity of energy production	litres/kWh	2.0	2.0	2.0	Thermal Biomass

## ENVIRONMENTAL IMPACT MANAGEMENT

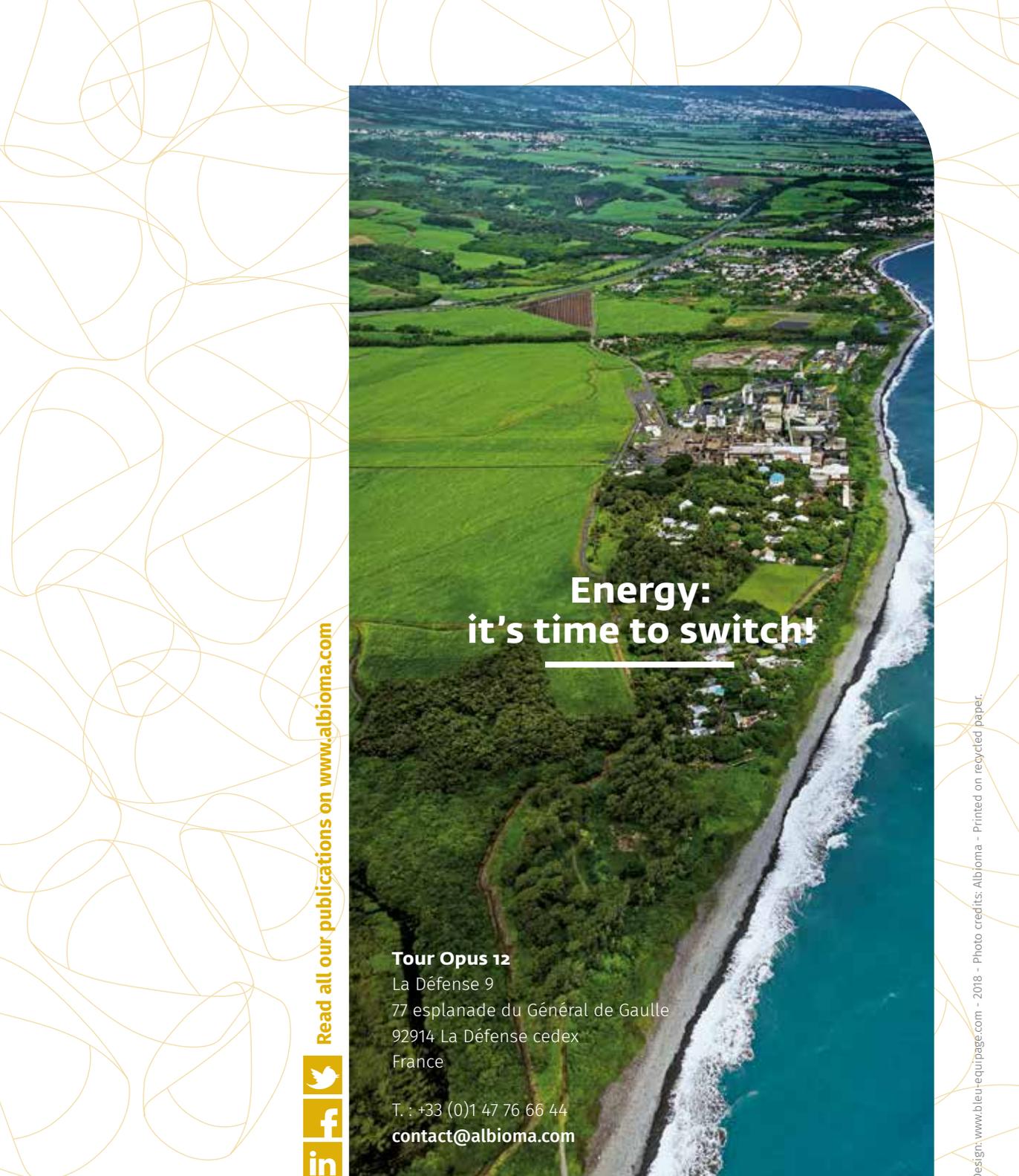
RECOVERY & ENVIRONMENT	UNIT	2015	2016	2017	SCOPE
CO <sub>2</sub> intensity of energy production	gCO <sub>2</sub> /kWh	561	558	540	Group
Quantity of combustion by-products (coal and bagasse) generated	thousand tonnes	430	420	467	Thermal Biomass

## SOCIAL AND CIVIC RESPONSIBILITY

SAFETY	UNIT	2015	2016	2017	SCOPE
Number of occupational accidents	#	21	21	26	Group
Occupational accident frequency rate	#	20.8	18.7	22.2	Group
Occupational accident severity rate	#	0.46	0.60	0.87	Group

LABOUR RELATIONS	UNIT	2015	2016	2017	SCOPE
Group workforce	#	615	624	651	Group
Number of hours of training per employee	h/yr/employee	32	41	55	Group
Percentage of trainees, volunteers and apprentices	%	4.6	3.6	4.2	Group
Percentage of female employees	%	13	14	14	Group

CIVIC RESPONSIBILITY	UNIT	2015	2016	2017	SCOPE
Number of households supplied with electricity	thousand households	1,073	1,112	1,118	Group



# Energy: it's time to switch!

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