

The Paprec magazine for a greener planet

paprec **mag**

No. 49
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FEATURE

Paprec, a French leader for recycled plastic

REPORT

A state-of-the-art sorting line for recycling bulky waste

SPONSORSHIP

Paprec steps up its commitment to sailing

STRATEGY

Paprec, a green energy producer



PAPREC

Paprec Métal, third biggest player in its sector

This past summer, Paprec gained the experience of 150 people by acquiring two family-owned companies specialising in metal waste. The company Garnier has two sites in the Île-de-France region and Menut has six in the Centre-Val de Loire and Nouvelle-Aquitaine regions. These sites are home to high-level, specialised machinery. Paprec Métal now has 16 sites across France and handles 800,000 tonnes of waste. *More info to come in our next edition!*





“We can and we know how to decarbonise our economy”

■ **SÉBASTIEN PETITHUGUENIN,**
CHAIRMAN OF PAPREC ENERGIES

My father, Jean-Luc Petithuguenin, founded Paprec nearly three decades ago with the intuition that the waste of the 20th century would become the raw materials of the 21st century. That intuition has become a reality: for almost 30 years now, our recycled raw materials have been in high demand for their quality. They leave our facilities to be put back into production and help avoid the use of fresh natural resources; they also help decrease CO₂ emissions and thus contribute to the decarbonisation of the economy. As the leader in this sector, we always go as far as we can in our quest for recyclable materials, as illustrated, for example, in the report on our new sorting line for bulky waste.

From there, we have focussed on repurposing non-recyclable waste. We are pioneers in the collection and anaerobic digestion of biowaste, which produces fertiliser, but also methane gas. We already produce solid recovered fuel (SRF). That SRF is made up of residual items from sorting and non-recyclable non-hazardous waste, which replace coal as fuel for industrial processes or heating plants. Finally, we now have 29 waste-to-energy plants worldwide, allowing us to transform waste into heat and electricity. This edition digs down into the details of our green energy production business. That energy production is increasingly essential in our environmental, geopolitical, and economic context, as we hear from Philippe Chalmin, a French expert on commodity markets.

I hope you all enjoy reading this new edition of Paprec Mag.

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FROM THE PAST QUARTER

DEVELOPMENT

A new financing round

Get the resources you need to achieve your ambitions! That's what the Petithuguenin family has done by bringing new investors into Paprec Group's shareholder base as part of a new round of equity capital-raising. The family will remain majority shareholders. *"To continue our ambition-driven growth, we are again turning to financial partners who are ready to work with us in the long term,"* explains Jean-Luc Petithuguenin, Chairman and Founder of Paprec Group. Vauban Infrastructure Partners (Natixis Investment Managers) and Crédit Agricole Group are thus joining Bpifrance, BNPP, and Arkéa. Thanks to this new financing round—the fifth since the company's founding in 1994—Paprec is increasing its equity capital to € 800 million. The Group aims to become the waste management leader in France and to double its revenues and workforce in the coming years.



SPONSORSHIP

Paprec inaugurates a gallery dedicated to artists that it sponsors at the Group's Parisian head office on Boulevard Haussmann



Anne-Laure Sacriste



Eva Nielsen



Alexander Tinei

Since its founding nearly 30 years ago, Paprec has supported culture through various sponsorships, notably as a partner of the Opéra de Paris. The Group also supports individual artists each year. The latest initiative is the opening of an exhibition gallery at the Parisian head office of Paprec Energies on Boulevard Haussmann (8th district of Paris). The space allows the company's employees to admire the works of emerging and renowned French artists, who illustrate the tensions between content and form, between humans and the environment, echoing the big issues of our industrial age. *"The works on display are cross-cutting and intergenerational. Notably, the gallery includes a work by the historic artist Jean Dubuffet that resonates with contemporary paintings by Anne-Laure Sacriste, Alexander Tinei, and Eva Nielsen, who the Group is supporting this year,"* explains Isabelle Bernini, Head of Artistic Sponsorships for Paprec.

TRIVALO

At the cutting edge of waste sorting

Today, Paprec Group sorts the waste collected from one in four French people, making it the leader for pre-sorted recyclable waste in France. Faithful to its values of excellence and innovation, Paprec is continuously investing in its waste-sorting centres. In fact, the company invested no less than € 150 million over the last two years! Paprec is one of the only players in the market to own a portion of the sorting

centres that it operates, representing about half of the 32 centres managed by the Group across France. Over the last several months, a number of Paprec's plants have undergone some major modernisation work to meet the expectations of local-authority customers, particularly for the expansion of waste sorting rules and super-sorting. For example, this has been the case for the Périgueux (south-west France) and

Seiches-sur-le-Loir (north-west France) plants. Furthermore, the Group continues to grow this part of its business. It has secured new contracts, particularly for the design, construction, and operation of waste-sorting centres. By 2023, five new plants will be opened and operated by Paprec, in Bourges (central France), Tours (central France), Damazan (south-west France), Richwiller (eastern France), and Grenoble (south-east France).



COMMITMENTS

Diversity Champion

In early June, *Capital magazine* released its ranking of the companies that are most committed to diversity. Among the 300 companies studied, Paprec came in fourth place in the overall ranking and in first place for environmental businesses! The magazine relied on its partner Statista, a global specialist for conducting studies, which surveyed over 25,000 employees working in companies with over 250 employees. The criteria analysed covered gender parity and non-discrimination in hiring based on age, ethnic or national origin, sexual orientation, or disability.

Since its founding, Paprec has been open about its values, promoting diversity, secularism, and the fight against all forms of discrimination. In 2014, the Group also adopted a secularism and diversity policy. At least 59 nationalities are represented in the company's workforce. Paprec Group is committed to being totally neutral in its hiring procedures and to only judging candidates on their qualities and skills.

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FROM THE PAST QUARTER

EVENT

Open houses at several sites

It's a Group tradition! During the months of June and July, three sites welcomed in customers, institutional representatives, partners, and journalists. The events offered the opportunity to discover the Group's various business lines and its cutting-edge industrial equipment. First up was the multi-purpose site in La Chapelle-Saint-Luc (north-central France), which has received € 6 million of investments since it was acquired by Paprec in 2017. Of note, François Baroin, a former minister, Mayor of Troyes, and President of Troyes Champagne Métropole, was in attendance. Another site to have its moment in the spotlight was the "historic" branch in La Courneuve (Paris region), which recently inaugurated its brand-new sorting line for bulky waste. The new line can process 55,000 tonnes per year (see page 16). The 2022 open house series ended with the plant in Calce, near the city of Perpignan. The Paprec Energies site is home to a sorting centre and a waste-to-energy (WTE) plant that produces heat and electricity.



Popular events
Several thousand customers, partners, suppliers, and others visit our sites during open houses. Many elected officials also like having the opportunity to check out our plants, like François Baroin, the Mayor of Troyes and President of Troyes Champagne Métropole, seen here in La Chapelle-Saint-Luc.



Grand opening
The "historic" site in La Courneuve (Paris region) inaugurated its brand-new sorting line for bulky waste, with nearly 800 people in attendance.

Calce, an emblematic WTE plant
The open house series came to a close with the plant near Perpignan, a showcase plant for the Group.



PAPREC GRADUATE PROGRAMME

Training the Group's future managers

Coming from all over France, nine recent graduates have joined the teams at the Group's plants. Most of them are engineers and one is a business school graduate. These lucky few have been hired on permanent work contracts and, for their first two years, will complete a rotation of three successive eight-month assignments in different regions. Among their missions: restructuring business at the site in Saint-Priest (near Lyon), improvement of the solid recovered fuel (SRF) production process at Paprec Sud-Ouest Bruguieres (south-west France), and development of the biogas production project in Gennevilliers (near Paris).

In addition to getting to know branch managers out in the field, the young employees are mentored by members of the executive committee, who are generally assigned based on the home region of the employee. The goal is to give them the opportunity to talk about their assignments and tasks, while receiving day-to-day support. If the young employees perform satisfactorily, they may quickly find themselves being promoted to manager positions within the Group.



For its entry into the Spanish market, this past May, Paprec Group acquired two companies: Recimed (photo above), a storage facility for non-hazardous waste; and Eco Actrins, specialising in the collection of household and industrial waste.

DEVELOPMENT

Our first public contract in Spain

Paprec's entrance into the Spanish market can now be considered complete. After opening several offices in Madrid and in various regions of the country, and after acquiring two companies, Grupo Paprec has reached a big milestone: it was awarded its first public contract. In September, Paprec Spain was awarded the contract for the transport and disposal of the rejected items from municipal waste collected by the syndicate of municipalities in the province of Castellon, north of Valencia. The syndicate, made up of 46 municipalities, serves 340,000 residents. There are around 90,000 tonnes of rejected waste each year. The contract, which has an initial term of three years and can be renewed for two additional one-year periods, is worth € 5 million per year. *"This has been a real team effort: these types of tender processes require excellent knowledge of European procedures that are quite complex. Everyone pulled together on this!"* said a jubilant Sylvain Cortes, CEO of Grupo Paprec.

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FROM THE PAST QUARTER

Paprec: facts and figures



16 million

tonnes of waste collected and repurposed



12,500

employees



6,000

local authority customers



65

countries where Paprec sells its raw materials produced by recycling



300

sites across 10 countries: France, Azerbaijan, Benin, Spain, India, Morocco, Poland, United Kingdom, Switzerland and Togo



70,000

industrial customers



2.5 billion

euros in revenues in 2022



2.5 billion

euros invested in plants since its founding

Our activities



8 million
tonnes

- Paper
- Cardboard
- Plastic
- Ferrous metals
- Other metals
- Wood
- Non-hazardous industrial waste
- Bulky waste
- Pre-sorted recyclable waste
- WEEE
- Construction waste
- Scrapped vehicles



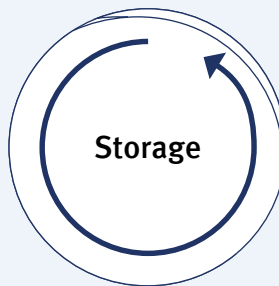
4 million
tonnes

- Waste to energy
- SRF
- Anaerobic digestion



2 million
tonnes

- Composting
- Garden waste
- Soil enrichment
- Storage
- Anaerobic digestion
- Methane capture



2 million
tonnes

**hear it
first-hand**

PHILIPPE CHALMIN,
CHAIRMAN & FOUNDER
OF CYCLOPE

“The waste economy is crucial for supplying green energy”

Philippe Chalmin is a leading French expert on commodity markets. He is in charge of a comprehensive report released each year that analyses trends in those markets. This year, the researchers working on the report under his direction all came to the conclusion that we are facing an unprecedented energy crisis, a major turning point in the economy, with both risks and opportunities.

Mr Chalmin, in the Cyclope report, an essential annual analysis of changes in commodity markets, you say that the current economic situation represents a “paradigm shift.” Why do you say that?

Philippe Chalmin: Coming out of World War II, we went through the “Thirty Glory Years” of economic prosperity as Western Europe was rebuilt. After the fall of communism, we entered an era of globalisation,

in a world without “western” and “eastern” blocks, or “southern” and “northern” blocks, with a flourishing market economy and the emergence of big countries like China... But that cycle is ending with a series of interruptions. First, the interruption of the pandemic, which brought economies to a halt and raised some questions about the functioning of the free-market economy. We’ve also seen political interruptions, ●●●

“Previous energy crises were tied to our dependence on oil, whereas this one is tied to natural gas.”



hear it first-hand

PHILIPPE CHALMIN,
CHAIRMAN & FOUNDER
OF CYCLOPE



right trajectory. Twenty-two European countries have committed to abandoning coal by 2030. For Poland, it will be more like 2049. For oil as well, we’re on the right path. Countries have switched to natural gas, which is a lower-carbon fuel and has become the transitional energy source. The COVID crisis has accentuated that trajectory, with some feeling that nature has come back to “take revenge” on humans.

Among the crises we face, there’s the energy crisis. In the report, you say that the one we’re currently going through is unusual. How so?

P.C.: Previous energy crises were tied to our dependence on oil, whereas this one is tied to natural gas. Gas is the key fuel for the coming years, with a geopolitical role that equals the one that oil has played over the last several decades. A strong increase in demand and tensions over supplies: Europe has seen a 500% increase in the price of gas! We also have to admit that we long enjoyed cheap natural gas. As such, we are now seeing the end of cheap fuel. But there’s also a positive side to that: it’s a constraint that will enable us to make progress and take some drastic measures more quickly.

These climate and geopolitical crises have added to the urgency of getting away from gas imports—especially for Russian gas!—and of accelerating the decrease in consumption. What are the paths forward for Europe?

P.C.: European energy consumption is relatively stable, but its local production has decreased by a third over the last several years. Dependence on imports of gas, par-

... with the rise of despotic regimes, and particularly with the breaking of peace with Ukraine, bringing about the first major war [in Europe] since 1944. The world growth rate has fallen below 3%, which is less than demographic growth, thus decreasing per-capita GDP, bringing about greater inequalities. We are living through the end of these “Thirty Glory Years of blissful globalisation.”

Does this “end of an era” endanger the energy transition?

P.C.: It’s true that we are at a fragile moment in the energy transition: the world is still “addicted” to fossil fuels like oil and coal. However, we have already turned a corner in the energy transition—at least in Europe. The countries that have abandoned coal won’t go back; others are still far off, but they’re on the

ticularly Russian gas, has thus increased, representing 40% of our needs. Germany is the leader in this, and currently, it does not have regassification capacities. We will, of course, have to accelerate savings on energy consumption, including via energy efficiency, but we will still need to use gas. The “reliable” alternative is LNG coming particularly from the United States, which means shale gas, which Europe wanted to avoid, pushing it to put the noose of Russian gas around its neck! The cost of gas has also risen sharply because China has the same concerns and needs as us, and tensions will be increasing.

We are also in an era of electrification of the economy, with the cost of electricity also rising sharply.

What are the solutions there?

P.C.: The world was hoping that renewables could be the solution, but their intermittence remains a huge shortcoming. To meet demand, we need to use gas. And yet, the price of electricity is indexed to the price of the fuel providing the MWh—which right now is gas! Europe is considering decoupling the price of electricity from the price of gas. I think that we even need to begin controlling the price of electricity.

What is the place of nuclear energy in global considerations?

P.C.: The need for a decarbonised economy obviously pushes us toward nuclear energy. In 2021, eight reactors were built, compared to two and four in the two years before that. The obstacle remains an ideological one. It’s wild that nuclear power scares people more than coal, when coal is a terrible polluter!

What role does Europe see for new “green energy” sources?

P.C.: After energy savings and energy efficiency—initiatives already underway—Europe plans to move towards other sources of energy. For example, increasing the production of hydrogen. I’m not really convinced by that, except for storing and transporting energy. The other opportunity offering a serious alternative is agricultural, forest, and household waste. In this respect, the role of companies like Paprec, who are capable of transforming household waste or biowaste into energy, is essential.

The words for “crisis” in China and Japan are made up of two characters meaning “danger,” but also “opportunity.” What are the opportunities to come out of this series of crises?

P.C.: For me, the opportunity is to accelerate the energy transition. Costs will continue to increase in the long term and low-carbon solutions will become competitive. In this respect, the waste economy is essential and energy recovery from waste, by producing gas or electricity, will continue its rapid growth. One significant advantage of that energy source: it’s local and contributes to national energy independence! •

A BRIEF **BIO**

- With a degree from the prestigious HEC business school, an added speciality in history, and a doctorate, Philippe Chalmin is an emeritus professor of economic history at Paris-Dauphine University.
- He is the Chairman and Founder of CycloPe, the leading European research institute for commodity markets, which has published every year since 1986 the CycloPe report on global markets and the economy.
- In October 2010, he was also appointed as chairman of the French Observatory on the Establishment of Food Prices and Margins at the Ministry of Agriculture and the Ministry of the Economy and Finance.
- He has been a member of the French Prime Minister’s Economic Analysis Council, the High Council for Biotechnologies, and the Auction Market Authority.
- He is the author of around 40 books, some of the most recent being *Le monde a faim* (2009), *Le Siècle de Jules* (2010), *Demain, j’ai 60 ans, journal d’un économiste* (2011), *Une brève histoire économique d’un long XX^e siècle* (2019).

strategy

DEVELOPMENT



Paprec, a green energy producer

As countries go through an environmental transition, the waste treatment industry offers crucial solutions to help respond to needs for energy independence. Already a supplier of new raw materials that help save resources and limit CO₂ emissions, Paprec has become a major player in the production of energy from non-recyclable waste. It's a low-carbon source of energy expected to grow exponentially.



In Baku, in the heart of Azerbaijan, 500,000 tonnes of household waste are used to supply energy to the capital city. In Krosno, in south-east Poland, a heating plant powered by waste rejected after sorting will provide heat to the city. In Gennevilliers, near Paris, Paprec project teams are working to prepare for the construction of a plant that will transform biowaste from the Paris region into gas, which will be fed back into the gas system... As energy prices skyrocket and reductions in carbon emissions become a necessity, as dependence on Russian gas causes headaches, accelerating the production of green, local energy has become essential in today's world.

Paprec is now a key player in this energy transition. The Group has masterful knowledge of all of the expertise needed to design and operate plants of all capacities. In fact, the Group has already patented some of its unique expertise. The goal? *“Enable local authorities and industrial customers to establish the most appropriate solutions to generate energy from their waste with the highest levels of energy and environmental performance,”* explains Sébastien Petithuguenin, Chairman of Paprec Energies. *“These solutions will allow them to respond to the major challenges of this century and play an important role in decarbonising the economy while keeping all costs under control.”*

Producing clean, local energy

With 29 waste-to-energy (WTE) plants worldwide, including 24 in France, the Group is already transforming four million tonnes of waste per year into electricity and heat.

The latest such project was in Sète, in south-east France, where the Group will design for the local authority Sète Agglopolie

a custom WTE plant capable of absorbing the large seasonal variations in waste production. The goal is to produce electricity from the waste which, up to this point, has been going at least partially to landfills. The plant will have unparalleled performance thanks to the “ROCK” kiln technology, which has been patented by the Group and is 100% made in France. The plant, with its oscillating kiln, will adapt to the calorific value of the various families of waste and will process up to 55,000 tonnes of material (versus 46,000 tonnes with the current

plant). At the same time, the plant's turbo-generator unit will produce electricity in an amount equal to the consumption of 4,500 homes.

These systems also generate heat, which can be used for nearby facilities. The WTE plant in Saint-Benoît-la-Forêt, in central France, and the plant in Calce, near Perpignan, heat nearby hospitals. In Pontenx-les-Forges, in south-west France, the WTE plant supplies 80% of the energy needed for heating the Grands Lacs greenhouse, where tomatoes are grown. ●●●





In Pontenx-les-Forges, in south-west France, the WTE plant supplies 80% of the energy needed for heating the Grands Lacs greenhouse, where tomatoes are grown.

Martin GmbH & Paprec Energies: a winning combo

Their cooperation has already lasted for 60 years: CNIM — now Paprec Energies CNIM — is the exclusive supplier for “Martin grates” from the German company Martin GmbH. The grates are considered one of the most robust and high-performance systems in the world. This winning partnership has just been renewed by the two companies. Paprec Engineering CNIM will continue to incorporate this technology into all its major projects for waste-to-energy plants — notably in Europe and the Mediterranean basin — and will take advantage of its extensive experience for its future projects. The two companies have a joint venture in India to supply these special technologies to the local and broader Asian markets.



STÉPHANE LETERRIER
CEO OF PAPREC
ENERGIES

“

With mastery of the most advanced technologies in the sector, Paprec, which is already the recycling leader, now offers green energy production for local authorities, and soon for industry. Generating energy from waste is crucial for responding to the environmental and geopolitical challenges of this century and for national independence.”



Paprec Energies is developing in Poland SRF plants to transform rejects from sorting facilities and non-recyclable waste into heat or electricity. Here in Gdansk.

SRF (solid recovered fuel) is leftover material after sorting. The leftovers are shredded and treated, and will then be used in place of coal in industrial processes. Here in Chanceaux-près-Loches, in central France.



•••

SRF: from energy storage to creation

The French Energy Transition Law sets the goal of reducing by 50% the amount of waste sent to landfills by 2025. As a driver of this policy target, Paprec has already been investing over the last several years in technologies for the production of solid recovered fuel (SRF).

In the past, the rejects from sorting facilities and non-hazardous, non-recyclable industrial waste were simply sent to landfills. After several steps of sorting, shredding, screening, scrap metal removal, drying, etc., that waste can be used as fuel for industrial processes (cement-makers, paper mills, blast furnaces, etc.) or heating plants. These processes that generally use a lot of fossil fuels, such as coal or petroleum coke. For example, thanks to rejected waste from sorting facilities, the Group's Polish plant will provide fuel for the heating network in the city of Krosno. This has a major impact: the plant will reduce the city's dependence on coal by half! In France, Paprec Energies has proposed to the Syndicat des Portes de Provence (SYPP, a local waste authority in south-east France) an unprecedented plant to limit the use of landfills and reduce final waste. Named Syproval, the plant will manage household rubbish and rejects from sorting facilities: first, everything recyclable will be extracted and reused; the rest will be used to produce SRF to supply heat to the city's heating network.

Local authorities, of course, are asking for this sort of solution, but industrial companies are also looking for local solutions to manage their final waste, as well as to generate energy. Paprec intends to respond to that need by developing small SRF preparation lines directly on industrial sites. •••

•••

Electricity and heat, but also biogas...

State-of-the-art waste storage facilities collect gas generated from fermentation of waste. The gas can then be transformed to be fed into urban gas systems. A pioneer in this innovation, Paprec has teamed up with a start-up to use a process that produces methane that's pure enough to be used in an urban gas network. The process was implemented for the first time in France at the site in Saint-Florentin, in central France, and has since been extended to other Paprec sites.

However, gas generation will step up to a whole new level with the upcoming implementation of the obligatory collection of biowaste. Indeed, the European regulation will impose the sorting and collection at the source of biowaste starting in January 2024. This organic waste (notably food waste) accounts for one third of the contents of the average household waste bin in France. Once again, Paprec is leading the way. In Gennevilliers, near Paris, the Group is in the process of creating, in the territory covered by Sycotom, an anaerobic digestion plant with the unprecedented capacity of 50,000 tonnes. A true landmark of the environmental transition in the Paris region, the plant will be brought into service in 2025 and will transform into biogas (to be fed into the Paris-region gas network) and biofertilisers waste that up to this point has been incinerated or sent to landfills. All of this is thanks to an innovative, liquid-phase process that provides for better separation of undesirable materials (plastics, textiles, etc.) to obtain energy sources with optimum quality, particularly "a standard-conforming fertiliser with proven quality, while others offer digestate, which is still considered



The anaerobic digestion plant in Gennevilliers will transform biowaste from the Paris region into fertiliser for agriculture and gas, to be fed directly into the local gas network.

waste and can only be spread under strict conditions," explains Morgane Gorria, Scientific Director of Paprec's Organic Recycling Division. As an eco-responsible showcase, heated using biogas produced on site, the future plant in Gennevilliers illustrates the Group's desire to "keep pushing further with recycling and energy recovery," according to Stéphane Leterrier, Deputy CEO for Major Projects at Paprec. •

The French Energy Transition Law sets the goal of reducing by **50%** the amount of waste sent to landfills by 2025.

The Ikos eco-centre in Fresnoy-Folny, in Normandy, whose Capik anaerobic digestion unit allows for the production of heat, electricity, and recycled digestate turned into organic fertiliser used by local farmers.



MORGANE GORRIA
SCIENTIFIC DIRECTOR
OF THE PAPREC
ORGANIC RECYCLING
DIVISION

Tackling the issue of biowaste

Starting from 01 January 2024, in France, all biowaste (garden waste, food waste, agricultural waste) will have to be sorted at the source. Thus, that applies to individuals as well. Local authorities are responsible for offering residents solutions for biowaste separate collection and/or energy recovery. This is a major challenge that Paprec is already taking on: *The technology developed by the Group enables the organic recycling of this waste, which represents no less than one third of what goes into France's waste bins!*" notes Morgane Gorria. *Instead of being sent to a landfill, the waste is transformed into organic fertiliser and is returned to nature, which it nourishes, thus contributing to the environmental transition.*" An example? The Ikos eco-centre in Fresnoy-Folny, in Normandy, whose Capik anaerobic digestion unit allows for the production of heat, electricity, and recycled digestate turned into organic fertiliser used by local farmers. The future is here!

picture it





Paprec Chantiers 91 (Gennevilliers) is handling the construction waste from the future Olympic Aquatics Centre in Saint-Denis on behalf of Bouygues Bâtiment IdF Ouvrages Publics. The construction work, which began in July 2021, is expected to last until the end of 2023 and will generate 4,242 tonnes of waste.

Paprec, a French leader for recycled plastic

In response to increasing demand for higher-quality recycled plastic, Paprec, the French leader for recycling, has invested € 50 million over the last two years.

It has been an intense year for the plastic teams at France's leading player in the recycling business. Five plants in particular—Limay (north-central France), Verdun (north-east France), Chalon-sur-Saône (Burgundy), Trémentines (western France), and La Neuve-Lyre (Normandy)—have undergone major construction without stopping their operations. Why? Because demand for high-quality recycled plastic, like that supplied by the Group, is increasing sharply. There are several reasons for this interest: first of all, fossil materials are

increasingly rare and their prices have skyrocketed. Second, new regulations require manufacturers to incorporate more recycled material into their products. *“On top of that, consumers are demanding more products and brands concerned about reducing their environmental impact,”* observes David Étienne, Director of the Group's Plastics Division. *“As such, our goal is to show them that when we recycle, we can manufacture new products. We can even—and this is always our goal—return materials to their original usage,”* David adds.

€ 50 million invested

To do this, the Group launched a major € 50 million investment plan over the last two years. By equipping plants with ultra-modern machinery, we are able to perform more sophisticated and more extensive sorting of materials, particularly to ●●●



Thanks to investments made by the Group, the Paprec Plastiques 27 plant in La Neuve-Lyre has specialised particularly in the recycling of post-consumer plastic films, to be used for wrapping pallets. Each month, the plant produces 800 tonnes of the recycled product.



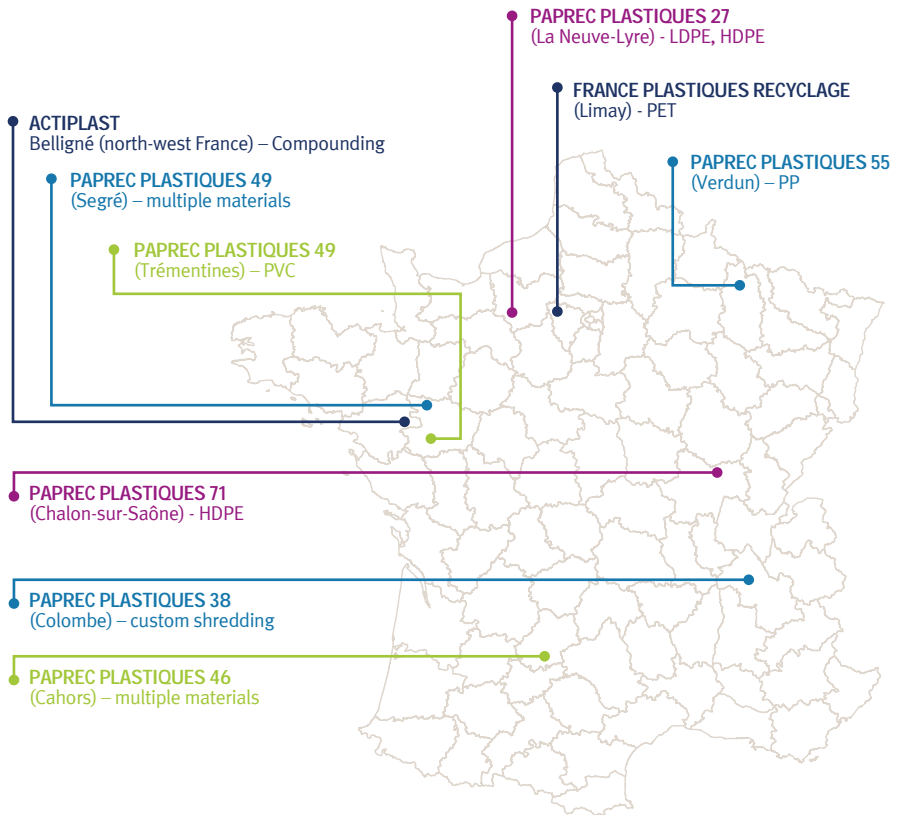
From bottle to bottle
The France Plastiques
Recyclage site in
Limay, in north-central
France, provides
food-grade recycled
plastic to mineral
water producers.

Plastics Division



France Plastiques Recyclage: ready to meet the demand for recycled PET!

And then there were four!
 For almost a year now, the France Plastiques Recyclage (FPR) plant has had a fourth extrusion line for recycling PET. The new line has doubled the production capacity of this Paprec Group star, allowing the plant to produce just over 50,000 tonnes per year of food-grade R-PET. Demand for this plastic, which is used particularly to produce bottles, is on the rise. This is especially the case as EU law requires that bottlers use at least 25% recycled plastic in their bottles in 2025 and 30% by 2030. The investments made by the Group, amounting to € 5 million, will allow FPR's teams to meet this growing demand.



9 plants **150 million** euros in revenues

300,000 tonnes sorted in plants

230,000 tonnes pelletised in plants

••• respond to expanded waste sorting guidelines. At the same time, the Group is increasing its production capacities. Five plants in particular received investments for modernisation and capacity expansion: France Plastiques Recyclage in Limay (north-central France), a bottle-reuse expert, Paprec Plastiques 71 in Burgundy, specialising in high-density polyethylene (HDPE) from pre-sorted recyclable waste (see boxed text), La Neuve-Lyre (Normandy), Trémentines

(western France), and Verdun (north-east France). To respond to growing demand for pellets of recycled polypropylene, the Verdun plant doubled its production capacities. And let's not forget the "floor-to-floor" project, which includes the planned construction of a plant in the Rhône-Alpes region in partnership with Gerflor, in order to recycle production and installation scraps. "We are constantly taking innovation and technology further and further. For example,

we are developing processes for adding colour to our products or for deodorising them so that they can be used in food packaging,” notes David Étienne.

In addition to these process investments, Paprec acquired a company specialising in plastic compounding, named Actiplast. “Compounding” is an extrusion-granulation process that incorporates additives into plastics. Carefully selected additives give the plastics specific mechanical or aesthetic properties. When applied to recycled plastic, this technique allows us to take on very rigorous specifications established by plastics manufacturers.

Recycling production and installation scraps

Additionally, the Group is currently building a plant in partnership with Gerflor. For a number of years, Paprec Group has maintained a close partnership with this company specialising in technical flooring. A dedicated processing line was built at the Paprec Plastiques 49 plant to transform production and installation scraps into recycled pellets to be put back into production at Gerflor’s plant in Lyon. The process, which is now well established, will move to be as close as possible to the customer’s production site. •



DAVID ÉTIENNE
DIRECTOR OF THE GROUP
PLASTICS DIVISION



Super-sorting of waste
A new sorting line will allow the Group’s Chalon-sur-Saône site to more finely sort its plastics.

Recycling plastic for food packaging

The Paprec Plastiques 71 plant in Chalon-sur-Saône is preparing to undergo a small revolution! The plant is already a leader in France for the production of recycled HDPE, with an annual capacity of 25,000 tonnes. The recycled HDPE is used to make opaque tubs and small bottles for the packaging of household goods. Now, the plant has received an upgrade thanks to a € 26 million investment made by the Group. First, the plant’s production capacities have doubled to reach 50,000 tonnes per year. Additionally, the plant is now equipped with an ultra-modern super-sorting line, the first of its kind in Europe, to perform more sophisticated sorting of various plastics (HDPE vs PP, and by colour). Finally, the line now has a new washing and shredding process to deodorise the plastic. The plant plans to initially offer recycled pellets to be put back into packaging, and is on a quest for the Holy Grail of recycling: authorisation for usage in contact with food.

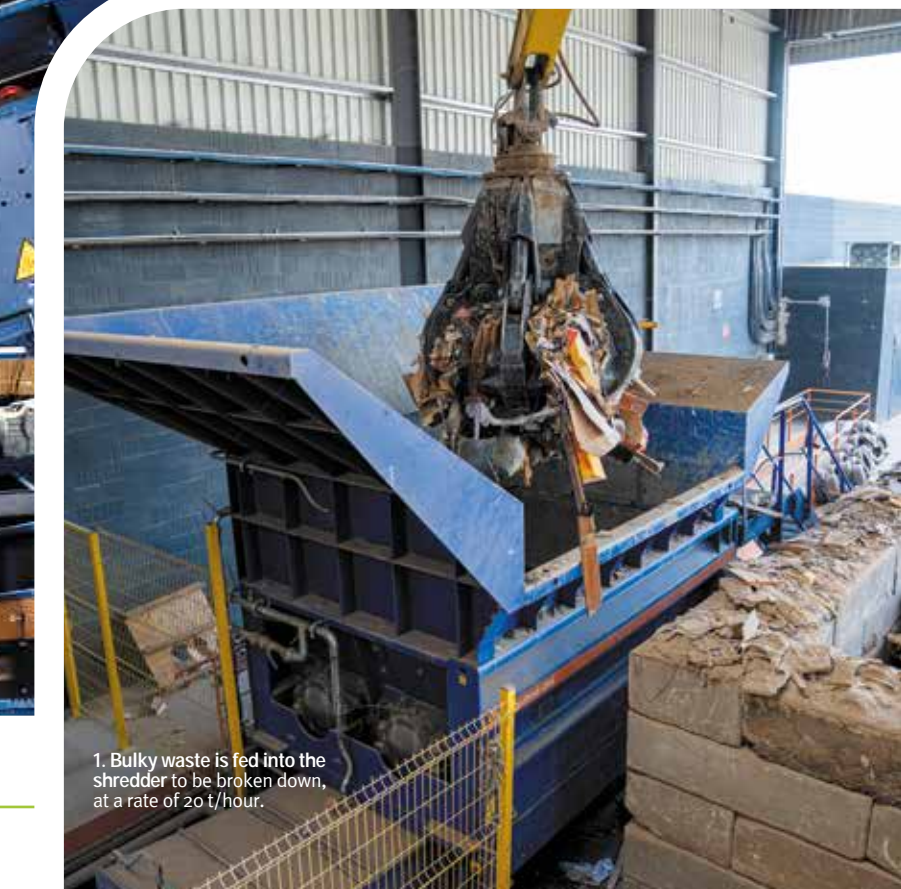


report

AN IN-DEPTH LOOK
AT THE HEART OF
OUR BUSINESSES

A state-of-the-art sorting line for bulky waste

rt recycling



1. Bulky waste is fed into the shredder to be broken down, at a rate of 20 t/hour.

A first for Paprec!

The historic branch in La Courneuve, near Paris, has a new piece of equipment for the processing of bulky waste from two waste collection authorities in the Paris region: Syctom and Plaine Commune. The new sorting line is capable of shredding and then sorting bulky waste automatically in order to maximise the repurposing of the waste.

Innovative, high-performance, automated, and equipped with sorting tools that employ artificial intelligence, the brand-new sorting line at Paprec La Courneuve (near Paris) is capable of sorting and recycling bulky waste from the Paris region collected by Syctom and Plaine Commune. The new line increases the



2. The waste then heads to the sorting line to be sorted by size, then by material. The line is equipped with several technologies: a vibrating sieve for separating out fine particles, a magnetic separator, an eddy-current separator, and an overband magnet to capture both ferrous and non-ferrous metals.



●●● site's bulky-waste recycling capacity to 60,000 tonnes per year, an increase of more than one third. However, that volume is still relatively low compared to household rubbish. This is because of the nature of bulky waste, which is harder to repurpose. The modern equipment offers high rates of capture and recovery of materials—from 60% to 95% depending on the material—and increases the rate of energy recovery for leftover waste. *“With this new equipment, Paprec is once again using innovation to improve recycling. In 2000, Paprec was the first company in France to offer bulky waste recycling. In 2022, we now have a fourth-generation sorting line equipped with high-performance automated technology,”* explains Mathieu Petithuguenin, the Group's Deputy CEO.





3. Heavy and semi-heavy materials then go to the ballistic and aeraulic separators. Finally, several optical sorters (for wood) and a robot equipped with artificial intelligence further refine the sorting and capture large non-hazardous waste. As a final step, waste recovery workers perform quality control.

An efficient, fitting solution for recovering repurposable materials

Many repurposable materials can be recovered from bulky waste, on the condition that the shredder is efficient and followed by the right sorting technology. The nature of bulky waste, made up of particularly large materials, requires that you have the right shredders. The objective is to recover repurposable materials and make use of rejects from waste sorting to provide inputs for one of the Group’s solid recovered fuel (SRF) lines or waste-to-energy plants.

An € 8 million investment

To fulfil that repurposing objective, Paprec’s historic site in La Courneuve received a major investment from the Group, in the amount of over € 8 million. Work started on the assembly of the new sorting line in early 2022 and ended in mid-April. *“This new machinery is strongly oriented towards the circular economy and is fully integrated into the virtuous cycle of material repurposing,”* says Mathieu Petithuguenin, Deputy CEO of Paprec Group. •



The site’s bulky-waste recycling capacity: **60,000** tonnes per year



4. The sorted materials—metals, wood, fine particles, SRF, cardboard, rejects—are either recycled or repurposed for energy (heat and electricity).

sponsorship



Paprec steps up its commitment to sailing



A winning duo for the Paprec boat!

In 2017, Jean-Pierre Dick, the most successful skipper on the IMOCA circuit, along with Yann Eliès won the Transat Jacques Vabre aboard their Paprec boat.

A well-known sponsor in the world of offshore racing, Paprec Group is taking its commitments further to become a main sponsor of La Solitaire du Figaro and the title sponsor of the Transat en Double Concarneau – Saint Barthélemy. As such, the Transat en Double was renamed the Transat Paprec and is the first transatlantic race for mixed doubles. It's a strong commitment, made for the long term, that brings the promise of great moments in sport and shared experiences during these two major sailing events, while also working to boost the attractiveness of the sport for female skippers.

In the world of sport, the Group is known for its loyalty. For over 25 years, we have supported the greatest champions of ocean racing, including Jean-Pierre Dick, two-time winner of the Barcelona World Race, four-time winner of the Transat Jacques Vabre, and the French Sailing Federation's 2011 "Sailor of the Year." Our commitment continues today with Yoann Richomme and our partner Arkéa, with the building of a new boat for the Vendée Globe 2024. A boat that will soon head out on the Route du Rhum, a race in which our skipper will defend his title!

With six major victories on the IMOCA circuit and five appearances in the Vendée Globe, the Group has also racked up successes over the last 12 years on inshore circuits with a TP 52 skipped by Stéphane Névé. We are undeniably among the biggest powerhouses in sailing sponsorships. It's a field in which we find the values that are written into our DNA: stretching your limits, teamwork, and perseverance. These values have enabled us, in a matter of years, to rise to the ranks of the most vital players in recycling, as well as in waste repurposing for energy and agronomical products.

Paprec, a partner for excellence

Paprec has made commitments to the two emblematic races of the Figaro Bénéteau circuit and the French Elite Offshore Racing Championship, as a main partner of La Solitaire du Figaro and the title sponsor ●●●



Start of La Solitaire 2022
This edition marked the first year of Paprec's partnership with this legendary race of the sailing circuit.

••• of the Transat en Double Concarneau – Saint-Barthélemy, renamed the Transat Paprec.

The Group is very familiar with La Solitaire, given that it has been won by various skippers sailing boats sponsored by Paprec, but also because the company's CEO, Sébastien Petithuguenin, participated himself in the flagship race of the French Elite Offshore Racing Championship.

The Transat Paprec: the first 100% mixed doubles transatlantic race

Faithful to its historic format, with doubles using evenly matched boats, all sailing Figaro Bénéteau 3 monotypes, for over 30 years, this key race has offered sailing



IMOCA under construction
Yoann Richomme will sail the Vendée Globe 2024 in a brand-new boat.

“The mixed doubles format for the Transat Paprec will make it the first offshore race with this format, and that’s very good news. It’s a fantastic race and I’ve been lucky to win it twice. This great transatlantic competition can also be a first experience for some sailors and they learn from working with more experienced seafarers. It will be great for women to also benefit from that.”

ARMEL LE CLÉAC’H
SAILOR AND PROFESSIONAL SKIPPER

fans and the general public a first-class, fascinating, exciting competition.

The race spans from Concarneau, Brittany, to St. Barthélemy, its historic ports of call, on a course of nearly 3,900 miles. The Transat Paprec, formerly the Transat AG2R, has established itself as an essential event for both the biggest names in sailing and for young, up-and-coming talents.

In collaboration with OC Sport Pen Duick, FFVoile, and the Figaro class, an important update has been made to the race, with the establishment of a 100% mixed doubles format. Olympic series have already moved towards mixed doubles (470, Nacra). That wave will now reach offshore racing with the Transat Paprec. The new configuration should accelerate access to excellence for women in offshore racing.

St. Barthélemy, an island setting the example for the circular economy

“Our arrival in St. Barthélemy is an important symbol for Paprec Group. This French island does an exemplary job of managing its waste. For the past two decades, its waste managers have invested in cutting-edge technology, with a plant that transforms local waste into energy that powers the

desalination plant, and thus provides fresh water, and soon electricity, to the island’s inhabitants. This waste management contributes to St. Barthélemy’s energy independence and perfectly illustrates the principle of the circular economy. The plant, which recently inaugurated an expansion, is managed by Paprec Energies,” says Sébastien Petithuguenin, CEO of Paprec. •



Yoann Richomme, a Paprec-Arkea skipper, will defend his title in the Route du Rhum.



IN FRANCE, TODAY'S WASTE CREATES THE ENERGY OF TOMORROW.

Recycling and energy recovery are essential solutions for meeting the environmental challenges of the 21st century. And France is one of the world's best-performing countries in this area. This sector requires significant investments in high-tech machinery.

With 12,500 employees spread across 300 sites in 10 countries, Paprec Group has played a central role in the circular economy for the past 25 years. As a leader in recycling in France and a champion of energy recovery, it is helping drive progress at the national level. Paprec has developed expertise in all areas of the sector, from waste collection to energy recovery.

Over the past three years, the company has created 2,000 skilled jobs.



Photo credits: Arthur Joncour / Benjamin Sellier / Getty images



*Jean-Luc Petithuguenin, Chairman &
Founder of Paprec Group, was named
"Industrialist of the Year" in 2020.*



For a greener planet and a more fraternal society