GUYOT
énergies

Decarbonizing Agro-Industrial Processes

Case Studies with Replicable Waste-to-Energy Solutions

Mathieu Grossetête
Guyot Energies



Guyot Energies, an industrial energy producer

Recycling roots in Britanny

A family-owned group with expertise in recycling and resource recovery

Group presence in Spain

Hirumet in

Atxondo and Idiazabal

2 industrial energy projects in France

Laïta, Even Group

Dairy Transformation

- Recovered-wood boiler
- Industrial steam
- Operating

Bunge

Seeds processing (soja/colza)

- SRF cogeneration
- Heat and electricity
- Production planned in 2027

Guyot Energies invests

Develops, finances, builds and operates the facility

Energy supply contract →

The client purchases energy

- Limited upfront CAPEX
- Potential off-balance-sheet treatment

GUYOT énergies

A tailored energy mix for industrial decarbonization

Our focus: high-temperature heat, where replacing fossil energy is often more complex.

Industrial priorities

1. Reliable supply
2. Energy quality
3. Competitiveness

A whole-site approach

Efficiency and heat recovery first

Ressources rarefaction and the need to reduce carbon emissions make energy efficiency and heat recovery the first priorities in designing an optimal energy mix

A mix tailored to the site

- Temperature and load profile
- Local resources
- Infrastructure and financing

Combine solutions (biomass, thermal stroage…) with various energy sources

Lower emissions while maintaining reliable operations and competitive costs.

GUYOT énergies

01

Focus on solid waste valorization France and Spain

GUYOT énergies

Local resources can replace fossil process energy

France: why residual waste became an energy resource?

Less landfill, higher costs

Since 2015, Lower permitted landfill volumes and higher taxes drive up disposal costs.

2015		2026
20 €/t	⟶	**69 €/t**

SRF: solid recovered fuel

Non-recyclable, non-hazardous **sorting residues** prepared as fuel. France's 2016 rules govern SRF heat and power production.

Supporting material recycling

Competitive outlets for sorting residues can reduce disposal costs and strengthen the economics of material recycling.

Prevention, reuse and material recycling come first

Energy recovery applies to suitable non-recyclable residuals.

Projects have to be sized to industrial heat demand, rather than waste disposal volumes.

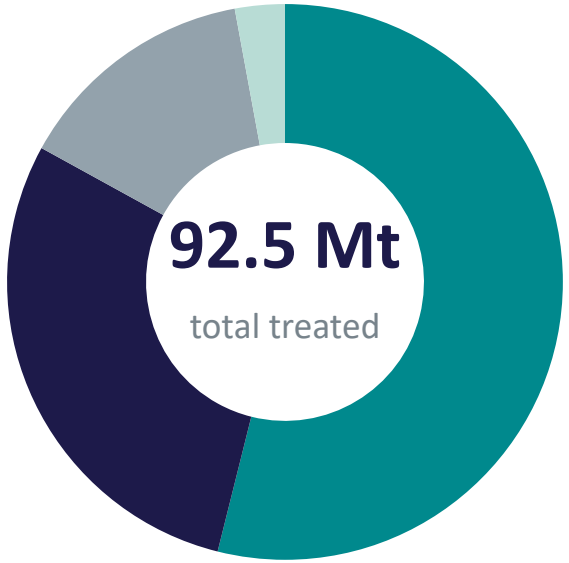


GUYOT énergies

Spain: waste treatment and rising landfill costs

Final waste treatment in Spain, 2023

waste streams treated across the economy



Material recycling
53.9% / 49.9 Mt

Landfill
29.1% / 26.9 Mt

Backfilling
14.1% / 13.0 Mt

Incineration
2.9% / 2.7 Mt

6–9 Mt

Indicative estimation within the 26.9 Mt landfilled

Waste whose treatment could yield SRF

LANDFILL COST PRESSURE in Spain

€10–15/t

- National minimum tax since 2023
- Other non-hazardous, non-municipal waste, in addition to gate fees

€20/t

- Catalonia, 2025
- Non-hazardous waste
- Previously €15.8/t

Regional tax increases, full cost recovery and tighter landfill access put upward pressure on disposal costs.

GUYOT énergies

02

Case studies

Two complementary pathways
Two project stages

GUYOT énergies

Créhen

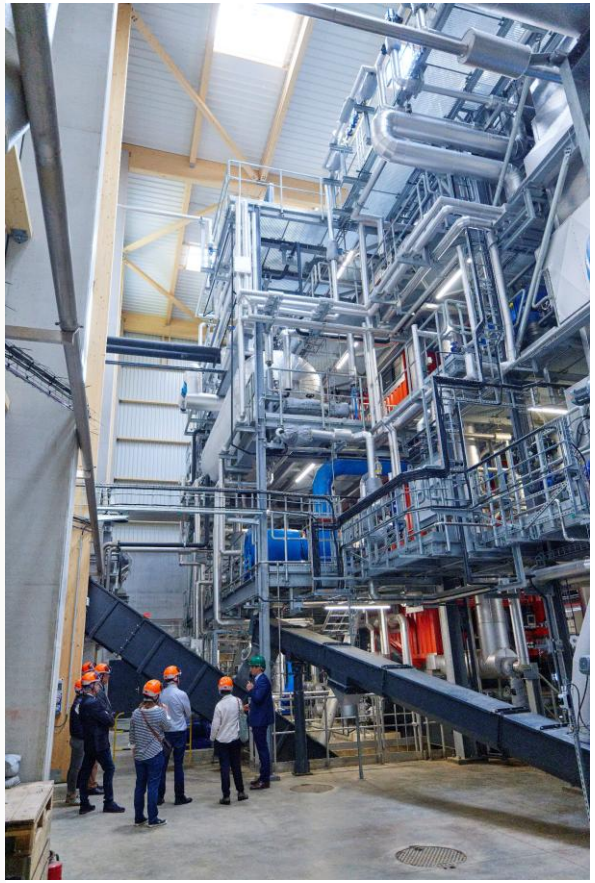
OPERATING



Recovered wood

- Steam for Laïta dairy
- Integration into an existing site

A proven solution, already in operation, valuing local wood waste.







Brest

PRODUCTION PLANNED FOR 2027



SRF cogeneration

Steam to Bunge and electricity

Under development / construction

A next step, transforming non-recyclable residues into energy.





Créhen: recovered-wood steam and industrial integration

9 MW LHV
Biomass boiler

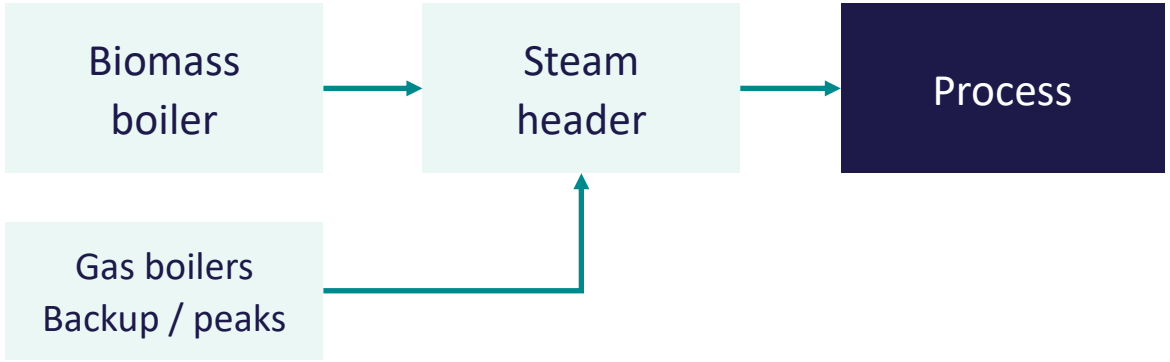
17,000
t/year recovered wood

57.6
GWh/year heat

Up to 72%
of site steam demand

12,000
t CO_2 avoided/year

Reliable steam, lower gas use



Biomass priority with flexible gas backup

Steam continuity and quality for the process

Local resource

Recovered wood without higher-value outlets

Long-term economics

- ✓ Structured public / private financing
- ✓ Cost visibility through a fixed energy price
- ✓ Site integration to valorize EUTS carbon quotas

€16m investment

€4.245m ADEME support

GUYOT énergies

Brest: SRF cogeneration and project delivery

40,000

t/year prepared SRF

Non-recyclable residuals Preparation and quality control

SRF cogeneration

85 GWh

Heat/year

Steam to Bunge

20 GWh

Electricity/year

Grid / PPA arrangements

2027

Planned production start

€70m

Investment

€14.5m public funding

Fuel assurance

Traceable specifications

Secure, predictable supply

Environmental compliance

Permits and emissions controls

Waste-hierarchy compatibility

Bankable contracts

Off-take and performance guarantees

Defined delivery risks

Replicability depends on six local conditions

Agri-food / Paper and pulp / Chemicals / Construction materials

01 Stable heat or steam demand

02 Secure, traceable local supply

03 Technology matched to fuel and duty

04 Integration with existing infrastructure

05 Permits and public acceptance

06 Bankable contracts and financing

Our ambition in Spain

Biomass/hybrid projects feasible today

Develop biomass-to-energy and hybrid projects

for industrial customers in Spain.

Pave the way to future solid waste projects

Prepare projects now for deployment

when the market is ready.

Rely on Hirumet, our Group presence in Spain to secure local fuel supply

GUYOT énergies



Muchas gracias por su atención



Lionel Bequet

MD, Guyot Energies

Lionel. bequet@guyotenergies.com
+337 76 95 33 20



Mathieu Grossetête

DO, Guyot Energies

Mathieu.grossetete@guyotenergies.com
+336 13 18 46 41