

CNIM and its subsidiary LAB: Partners for energy transition and circular economy



Lab

ENIM
Innovate and Act



Turnkey solutions: CNIM designs, builds and operates facilities and provides maintenance, refurbishment and other services

CNIM designs, builds, commissions and operates waste-to-energy and biomass-to-energy plants.

CNIM transforms waste and biomass into electricity, district heating, process steam and air conditioning.

CNIM can also treat hospital waste, water treatment plant sludge or green algae.

Its facilities combine energy generation, waste sorting, recycling, composting and the treatment of waste incineration residues (fly ash and bottom ash) in a single turnkey offering.

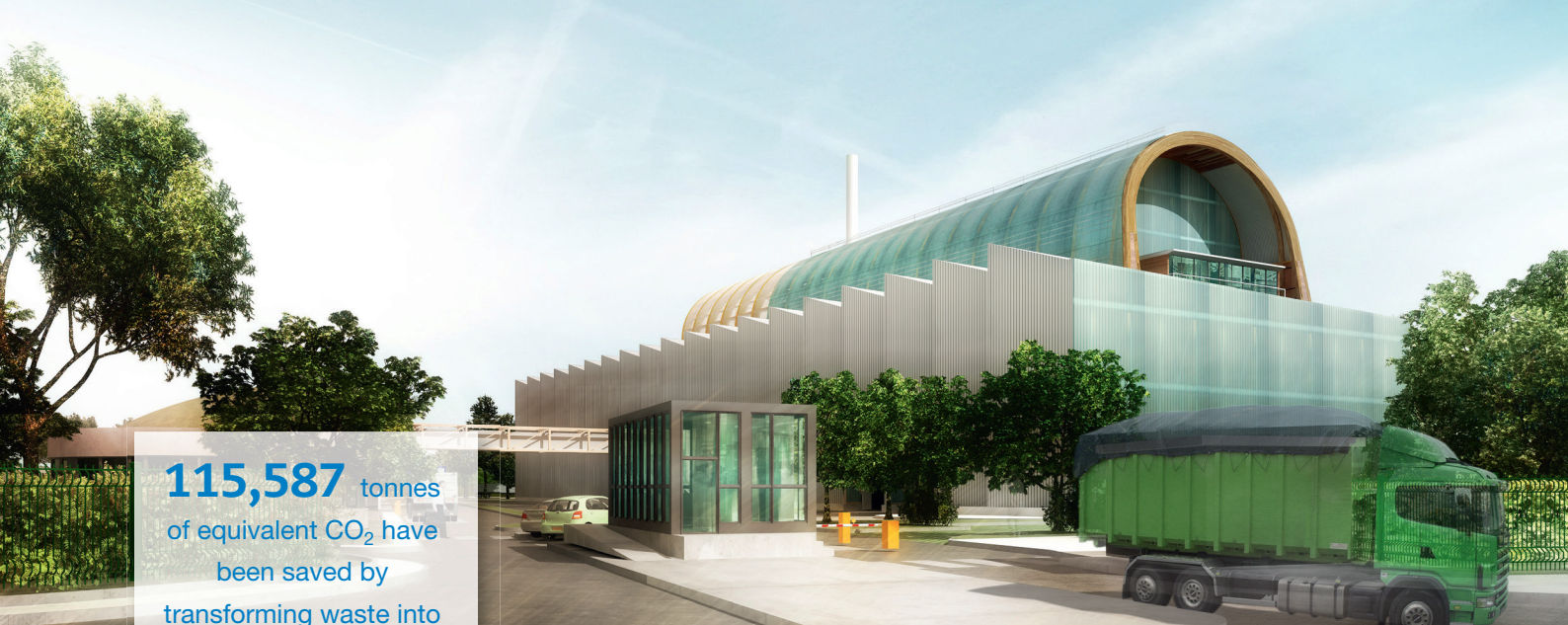
CNIM's combustion technology uses reverse-acting grates made by Martin GmbH, its technological partner for over 50 years.

> **CNIM has provided turnkey solutions for**
163 waste-to-energy plants treating **78,000** tonnes
of residual waste each day on **283** installed treatment lines.

> **CNIM creates renewable energy from waste**
produced by **82** million people worldwide.

> **Major cities have put their faith in CNIM**

Baku, Bilbao, Brussels, Leeds, London, Moscow, Porto, Portsmouth, Tallinn, Turin, and in France, Bordeaux, Lille, Lyon, Marseille, Nancy, Nantes, Nice, Paris, Rennes, Toulouse and more, as well as the Principality of Monaco.



115,587 tonnes
of equivalent CO₂ have
been saved by
transforming waste into
energy and usable materials
at **7** sites operated
in France and the UK.

CNIM operates waste-to-energy and biomass-to-energy plants for municipal and regional governments and private customers under standard operating contracts, operating contracts with energy generation requirements or under long-term concessions. CNIM is constantly improving its processes and technologies. It therefore improves the energy efficiency of the sites it operates and contributes toward reducing the environmental impact of waste-to-energy and biomass-to-energy operations.

At Thiverval Grignon, after several years of continuous improvements to the waste-to-energy facility's water management, there is now zero water discharge, as all of the water (industrial and rainwater) is fully reused within the process.

CNIM's services include operating both CNIM-built plants and other pre-existing facilities, whether or not energy recovery equipment is already installed.

Where required, CNIM can install waste-to-energy equipment to generate electricity, heat or process steam as part of the renovation of an existing plant or as a service to plant operators – always with the aim of reducing operating costs and enhancing environmental performance while staying below regulatory limits.

> CNIM operates

- In France

- > 4 waste-to-energy plants: Plouharnel, Pluzunet, St Pantaléon-de-Larche, Thiverval
- > 1 waste sorting center: Thiverval
- > 1 composting plant: Lantic
- > 2 biomass-to-energy plants: Nesle and Estrées-Mons

- Abroad

- > 3 waste-to-energy plants in the UK: Dudley, Stoke-on-Trent and Wolverhampton
- > 1 waste-to-energy plant in Azerbaijan: Baku

Innovative treatment systems for flue gas and combustion residues

The LAB logo is positioned in the upper right corner of the page. It features the word "Lab" in a white, sans-serif font, with a white swoosh underline that extends to the left. The logo is set against a background of a blue sky with wispy clouds. The entire page is framed by a large, vertical photograph of an industrial facility, likely a waste incineration plant, with tall chimneys and conveyor systems visible against the sky.

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CNIM's LAB subsidiary designs and builds turnkey treatment systems for flue-gases and residues (bottom ash and fly ash) produced by waste-to-energy and biomass-to-energy plants, power plants producing electricity and district heating, and industrial boiler houses.

Solid and liquid residues are treated in order to recycle their constituents or make them safe for disposal. LAB works on CNIM turnkey projects, as well as on projects for other constructors.

LAB has filed patents for over 50 innovative flue gas treatment processes, helping to reduce the consumption of reagents, maximize energy recovery and optimize performance.

LAB processes conform to European Best Available Techniques and guarantee compliance with emissions limits even stricter than those prescribed by European law.

LAB Geodur treats bottom ash from incineration and offers patented recycling and recovery systems for ferrous and non-ferrous metals.

121,908

tonnes of bottom ash
from waste incineration
fully reused in road
engineering processes.

> Flue gas treatment by LAB

LAB's processes involve:

- dry, semi-dry or wet treatment systems to eliminate dust, heavy metals and acid gases;
- catalytic systems for nitrogen oxide treatment;
- systems for the removal of dioxins and furans.

All of them can be installed with a standard configuration or customized in line with the customer's business, country of operation, specific requirements and type of material incinerated.

> Bottom ash treatment by LAB Geodur

RecuLAB™ NF is the leading recycling process for the post-maturation recovery of ferrous and non-ferrous metals from bottom ash from the incineration of household waste.

RecuLAB™ Au is the only wet bottom ash recycling process to recover ferrous, non-ferrous and precious metals >0.03 mm.

Some recent projects completed by CNIM and LAB



Waste-To-Energy plants (CNIM and LAB)		
Location	t/h	Commissioning year
Marseille (FR)	2 x 20	2010
Brno (CZ)	2 x 14	2011
Baku (AZ)	2 x 33	2012
St Omer (FR)	1 x 12.5	2012
Thumaide L6 (BE)	1 x 13	2012
Lincolnshire (UK)	1 x 19	2013
Tallin (EE)	1 x 31	2013
Torino (IT)	3 x 22.5	2013
Oxfordshire (UK)	2 x 19	2014
Staffordshire (UK)	2 x 20	2014
Cardiff (UK)	2 x 23	2015
Shropshire (UK)	1 x 12	2015
Suffolk (UK)	2 x 16	2015
Wilton - Middlesbrough (UK)	2 x 29.2	2016
Yorkshire - Leeds (UK)	1 x 20.5	2016
South London (UK)	2 x 17.5	2018

Biomass plants (CNIM and LAB)		
Location	MW	Commissioning year
Kogeban (FR)	80	2013
Ridham Dock (UK)	80	2014
Estrées-Mons (FR)	62	2014

Flue gas treatment (LAB)		
Location	Nm³/h	Commissioning year
Meath (IE)	1 x 128 000	2010
Winterthur (CH)	1 x 88 000 1 x 105 000	2011 2012
Düsseldorf (DE)	1 x 220 000	2012
Vaasa (FI)	1 x 172 000	2013
Brive (FR)	1 x 51 000	2014
Dombasle (FR)	2 x 126 000	2014
Mannheim (DE)	1 x 117 000	2014
Odense (DK)	1 x 159 000	2014
Paroseni (RO)	1 x 660 000	2014
Plymouth (UK)	1 x 207 000	2014
Roskilde (DK)	1 x 157 000	2014
Vantaa (FI)	1 x 118 000	2014
Horsholm (DK)	1 x 63 000	2015
Longyearbyen (NO)	1 x 45 000	2015
Trebovice (CZ)	1 x 375 000	2015
Copenhagen (DK)	2 x 213 000	2016
Le Gol - La Réunion (FR)	1 x 235 000	2016
Lisbjerg / Aarhus (DK)	1 x 137 000	2016
Tavaux (FR)	1 x 195 000	2016
Gloucestershire (UK)	1 x 135 000	2016
Paris Bercy (FR)	2 x 145 000	2015

CNIM and LAB endeavor to promote the Best Available Techniques (BAT) in environmental protection, energy efficiency and residue reduction in their offerings to customers. The processes developed are optimized from the moment they are designed in order to limit the consumption of resources (energy, water, reagents, etc.), minimize residues (flue gas residues from household waste incineration, used catalysts, etc.), and recover by-products (scraps, bottom ash, process water, etc.), whilst maintaining a high level of performance.

*Founded 160 years ago,
the CNIM Group has a family
shareholder base that
guarantees stability
for future development.*



The CNIM Group designs and manufactures equipment and turnkey industrial solutions with high technological content and provides expertise, research and development, services and operating capability in the areas of environment, energy, defense and industry.

Thermal and mechanical engineering, robotics, control systems and the machining of large-scale precision industrial parts are just a few of the skills on which CNIM's capacity to innovate – the engine of its growth – is based.

**CNIM coordinates projects
and sells equipment across the entire world.**

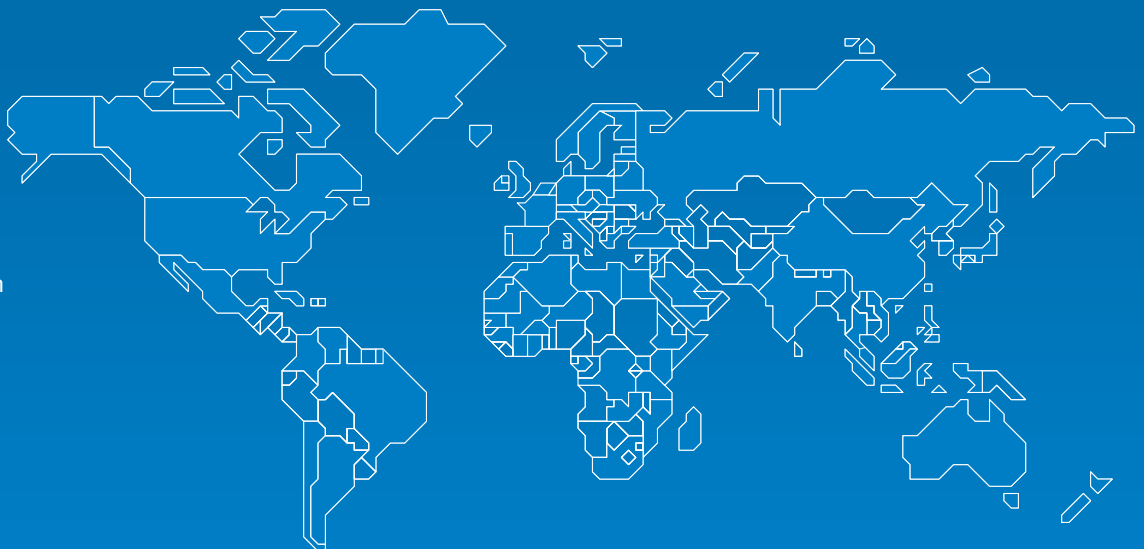
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