

Unique industrial solutions for a sustainable environment



OUR MISSION : CLEAN UP & DECARBONIZE THE ENVIRONMENT

Europlasma is a pure-player of the circular economy : **to limit the impact of waste on the environment and use it to create new resources.**

PLASMA SOLUTIONS

Very high temperature solutions for hazardous waste treatment and gases recovery



TOXIC WASTE TREATMENT

Asbestos waste treatment plant with recovery of the by-product



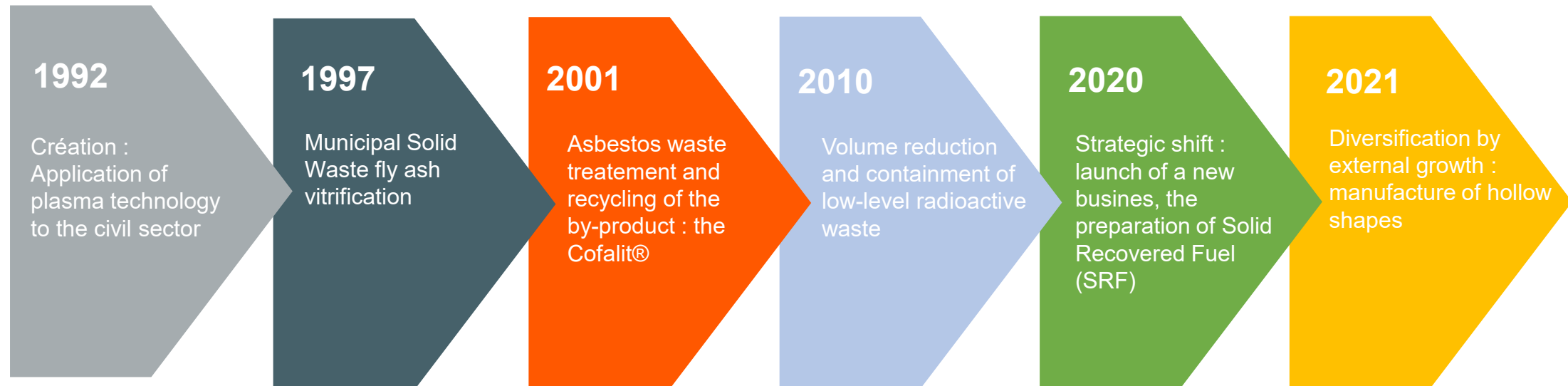
DECARBONIZATION

- Preparation of Solid Recovered Fuel (SRF)
- Manufacture of hollow shapes



GROUP'S HISTORIC

A French group with internationally recognized know-how



A MULTIDISCIPLINARY BOARD OF DIRECTORS



Jérôme Garnache-Creuillot, Chairman and C.E.O.

Began his career at Crédit local de France as Director of Specialized Markets.

Then, he joined Groupe BPCE to lead the financing activities of local authorities and infrastructures in France and becomes Global Head of public bodies and infrastructure financing a couple of years later. Most recently, he was Deputy Chief Executive Officer of a brokerage company where he founded the bond market activities. He also used to be advisor for the Central African Republic President.



Pascal Gilbert, Director

Began his career at the Ministry of Defense before joining the PSA Group where he was appointed Director of powertrain Engineering. In 2005 he was appointed CEO of D2T, a company specialized in engineering of thermal engines and test equipment. In 2008, he became General Manager in charge of SEGULA Group's international activities, then General Manager of Litwin SA (construction of turnkey industrial plants in energy, chemistry, oil and gas sectors). In 2013, he created his own consultancy, specializing in the international development of SMEs working in the energy and environmental sectors. In 2020, he became the Managing Director of the Chinese subsidiary Europlasma Environmental Technology.



Laurent Collet-Billon, Director

Was the Chief of the French defense procurement agency DGA from 2008 through 2017. In this capacity, he was responsible for equipping the French armed forces, defense R&D, international defense cooperation, and defense industrial policy. He started his career at the DGA in 1977, leading many communications programs through 1987.

He then became an advisor on strategic and defense matters to the former Minister of Defense, André Giraud. After returning to the DGA, Mr. Collet-Billon led the joint program “Horus”, the airborne nuclear deterrence component, and then the intelligence and surveillance satellites programs, before assuming different leadership positions in the DGA's activities.

From 1997 to 2001, he led the DGA's Department for observation, IT and telecommunications projects (SPOTI). In May 2001, he became deputy to the Chief of the DGA, and number two of the DGA. He has served as an advisor to Alcatel-Lucent and was a member of the Thales board of directors from 2014 to 2017. Today he is engaged in consulting activities.

OUR TECHNOLOGY : THE PLASMA TORCH

- Proven technology coming from aerospace
- Patented technology
- Non-transferred technology => flexibility
- Large wide range of powers from 25 kW to 4 MW
- Very high temperature ($> 8,000^{\circ}\text{C}$)

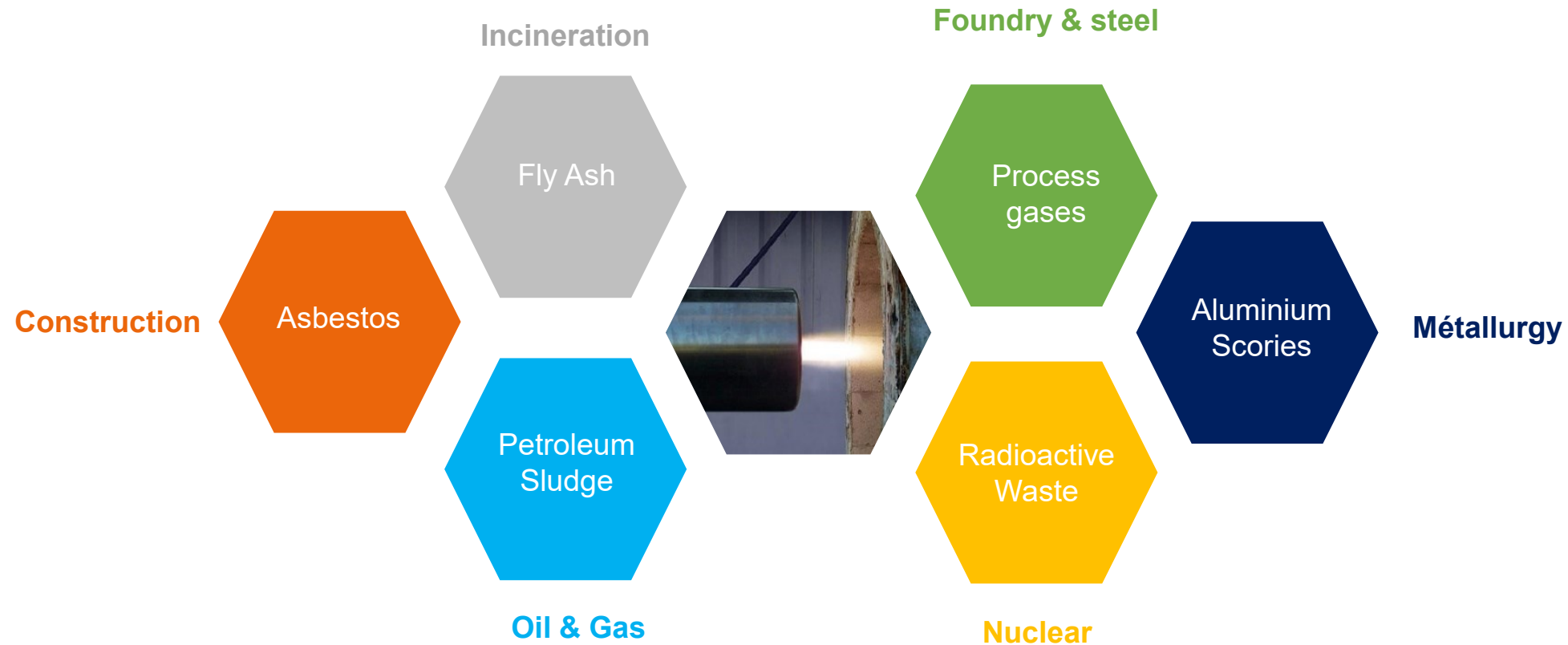
Advantages :

- Destruction and recovery of the most complicated waste
- Reduction of greenhouse gas emissions
- Optimization of industrial processes



MORE THAN 25 YEARS OF EXPERTISE

Plasma torch applications in different sectors



SOME DATA FROM OUR MARKETS 1/2

Hazardous waste treatment

Asbestos in France :

- 90% of housing was built before 1997 (asbestos ban)
- 15 million homes are concerned
- 25 years after the ban, according to French Association ANDEVA more than 20 million tonnes remain
- At the current average rate of removal (200,000 tonnes per year), a century would be needed to remove all asbestos waste in France

Plasma solutions

Aluminum Dross in China

- 50 % of aluminum is produced in China
- 3 sources of Al-Dross production : electrolytic aluminium production (« premium aluminium »), Aluminum alloy production, Recycle Aluminum Alloy Production (« second-hand aluminium »)
- Total Chinese market size of Al-Dross estimated as 677,000 tons annually, 30 million tons stock

SOME DATA FROM OUR MARKETS 2/2

Fly ash in China

- Law of April 29, 2020 prohibits and penalizes the landfill of toxic waste
- 455 incineration plants are operational in China with an average volume of 1,300 tonnes of waste per day
- Estimated production of fly ash: up to 5.2 million tonnes/year in 2022

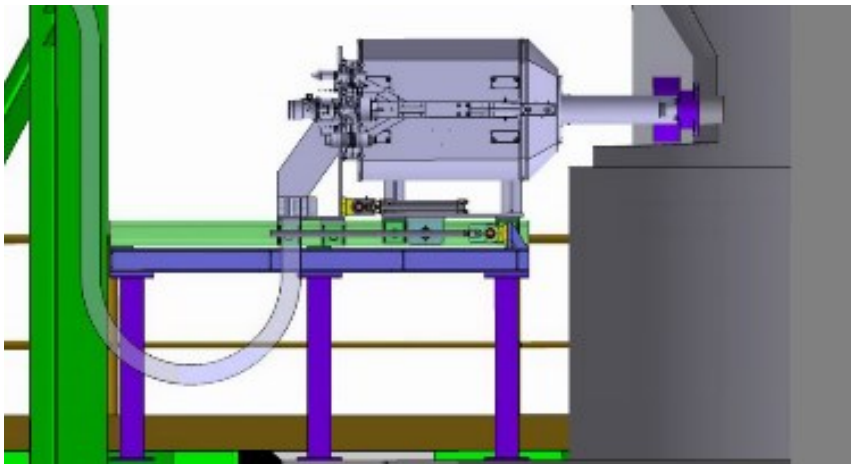
Decarbonization : Preparation of Solid Recovered Fuel (SRF)

- The sector's challenge : avoid 2.5 million tonnes of waste landfilled by 2025 to recover it for energy or in industry
- According to the French Agency ADEME, the 250,000 tonnes of SRF produced in 2016 were mainly consumed by cement works, which should use 1 million tonnes per year by 2025
- Objective: to create a network of SRF preparation units on the territory for a capacity of around 1.5 million tonnes of waste

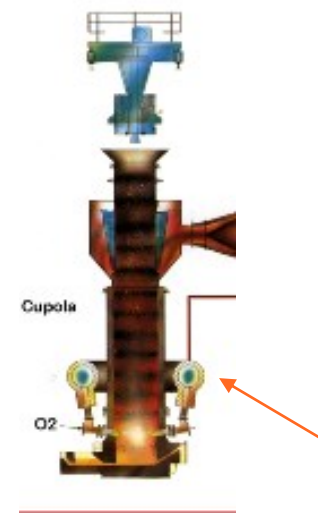
- Neutralization and recycling of fly ash
- Treatment of aluminum scories
=> recovery and recycling of alumina
- Volume reduction and containment of very low-level and low-level radioactive waste (VLLW and LL-RW)
- Asbestos waste destruction
=> Recycling of the by-product, the « Cofalit »
- Treatment of petroleum sludge (in development)



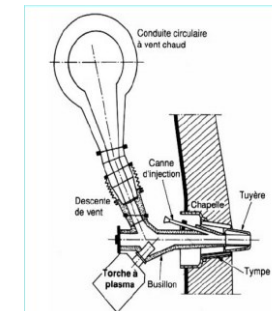
- Optimization of thermal processes (foundry, steel)
- Purification of gases from blast furnaces and cupolas
- Replacement of heating means from CO₂-emitting fossil fuels



Cupolas



Blast furnace



Plasma torch
position

OUR INDUSTRIAL REFERENCES

FRANCE : asbestos waste vitrification
fly ash vitrification
preparation line of SRF

JAPAN : fly ash and bottom ash vitrification
(equipment of 4 incinerators)



CHINA : fly ash vitrification

KOREA : vitrification of treatment plant sludge

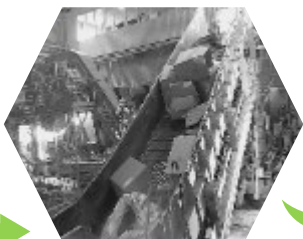
BULGARIA : Volume reduction and containment of
low-level radioactive waste

ASBESTOS WASTE TREATMENT

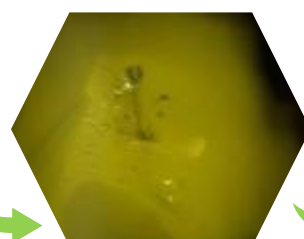
- Inertam has been operating for approximately 30 years the only one plant capable of eliminating asbestos (Landes – France)
- An authorization to treat 8,000 t / year
- Operation **7/7 – 24/24**
- **Recycling of the by-product: the Cofalit®**
- **Capacity increase to 13,000 t / year** (authorization in progress)



Delivery of waste by
authorized carriers



Waste preparation
(shredding)



Introduction of
shredded waste
into the furnace



Waste melting at
furnace exit 1.500°C



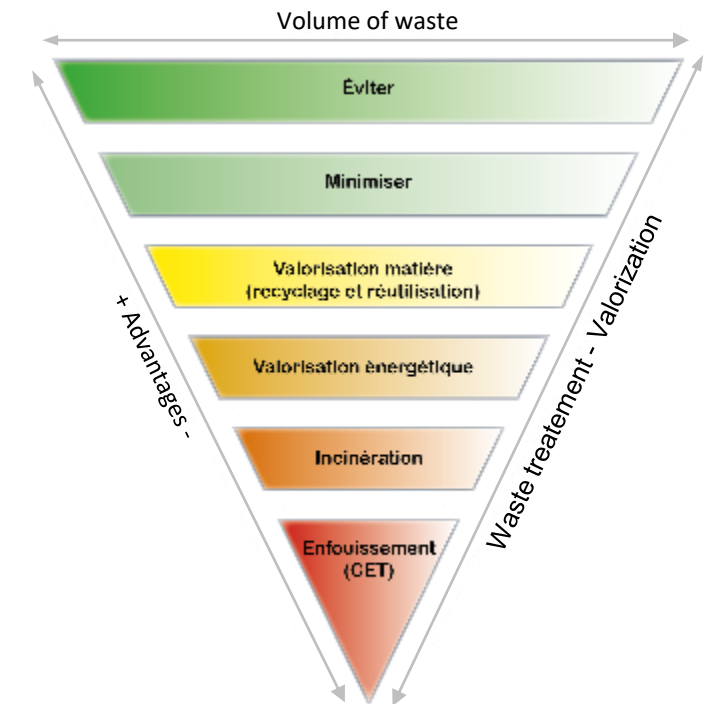
Inert and recycled
by-product : the
cofalit®



*Asbestos destruction plant
Morcenx-la-Nouvelle*

THE ADVANTAGES OF ASBESTOS VITRIFICATION

- **Long-lasting solution** : by-product Cofalit® inert and valorized
- **Elimination of health risk** : asbestos fiber destroyed so no risk of future pollution by leaching for example
- **Preservation of the landfill resource** for other hazardous waste without recovery process
- **About 60% reduction in the volume** of incoming waste
- **Transfer of responsibility to Inertam**, no more liability claim against the owner



PREPARATION OF SRF

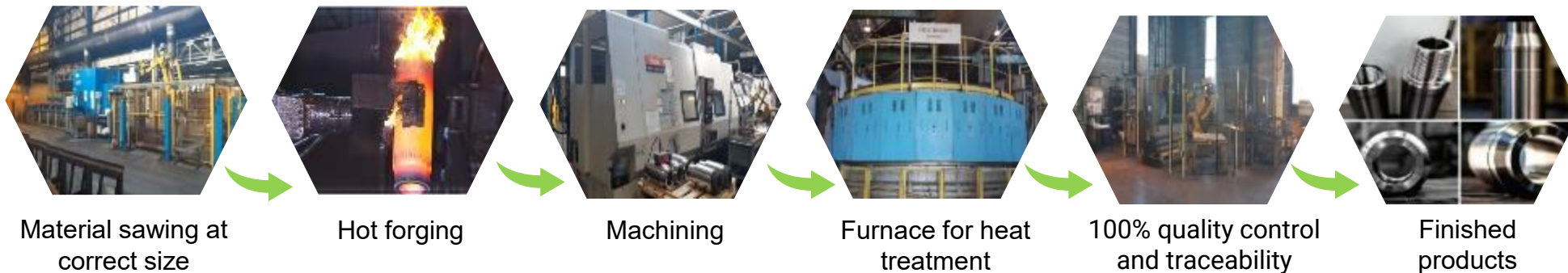


- Transformation of Industrial & Commercial Waste (I&C waste) into Solid Recovered Fuel (SRF) as a substitute for fossil fuels (gas, coal, fuel oil, etc.)
- Team know-how : operation of a sorting line since 2012
- Current annual capacity up to 55,000 tons per year to be increased from 2022 up to 80,000 tons per year (authorization in progress)
- 2021 : first multi-year contract of € 9 million over 5 years
- Customers: industries which are large energy consumers wishing to reduce their carbon footprint (e.g. cement factories, high NCV (Net Calorific Value) boilers, ceramic manufacturers, etc.)



MANUFACTURE OF HOLLOW SHAPES

- Secular know-how recognized since 1870
- Nearly 30 expert people
- Forging line equipped with presses from 320 to 1,500 tons
- Forging of parts up to 120 kg
- Production of parts by backward extrusion
- Significant capacity for machining steel and non-ferrous metal parts
- Flexibility of heat treatment for mechanical strength of parts
- R&D department, quality control and means of mechanical characterization



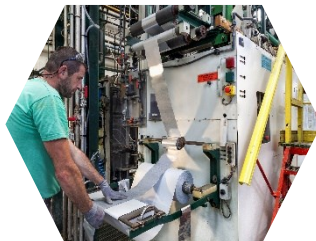
MANUFACTURE OF HOLLOW SHAPES

- Project under construction of an ultra-modern plant for manufacturing high-pressure gas cylinders and light alloy hollow bodies
- Only factory in continental Europe
- Delivery Scheduled for 2024
- Largest aluminium reverse extrusion press in Europe
- High-end, high-value markets where competition is weak
- Total investment €100M
- High flexibility of the manufacturing process and a capacity for rapid development and production
- Project partners: French state, Région Auvergne-Rhône-Alpes, Clermont Auvergne Métropole



PRODUCTION OF ANODE SHEETS FOR CAPACITORS

- Leading producer of electronic components for Electrolytic Capacitors
- More than 70 years of experience in continuous electrochemical treatment of aluminum foil
- Completely integrated in the global economy, exporting worldwide in different market segments
- More than 40 people experimented
- 2 manufacturing processes
- 1 engraving workshop equipped with 6 production lines
- 1 anodizing workshop with 12 production lines



KEY FIGURES

