



CMI Services

Partner of your industrial projects

February 2016

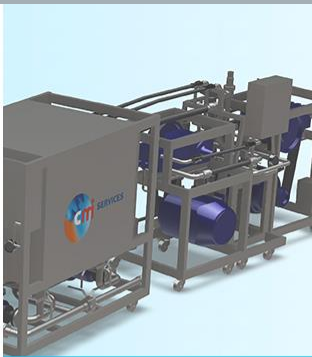
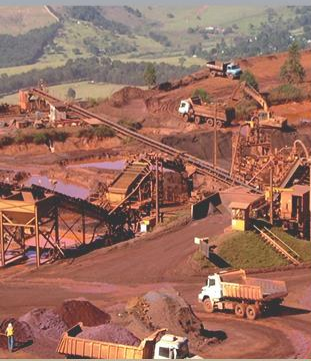
CMI Services

- CMI Services, maintenance & services specialist serving the industry and public infrastructure
- 2300 professionals dedicated to industrial equipment
- Specialized maintenance and local services
- Committed to improving the technical, economical, and environmental performance of our customer's equipment & facilities

CMI Services certifications



(Certifications and accreditations borne by one or several CMI Services business units)



Design & engineering

Wind

Rail

Industry & energy

Manufacturing

Public procurement

Metals

Mine, quarry & chemicals

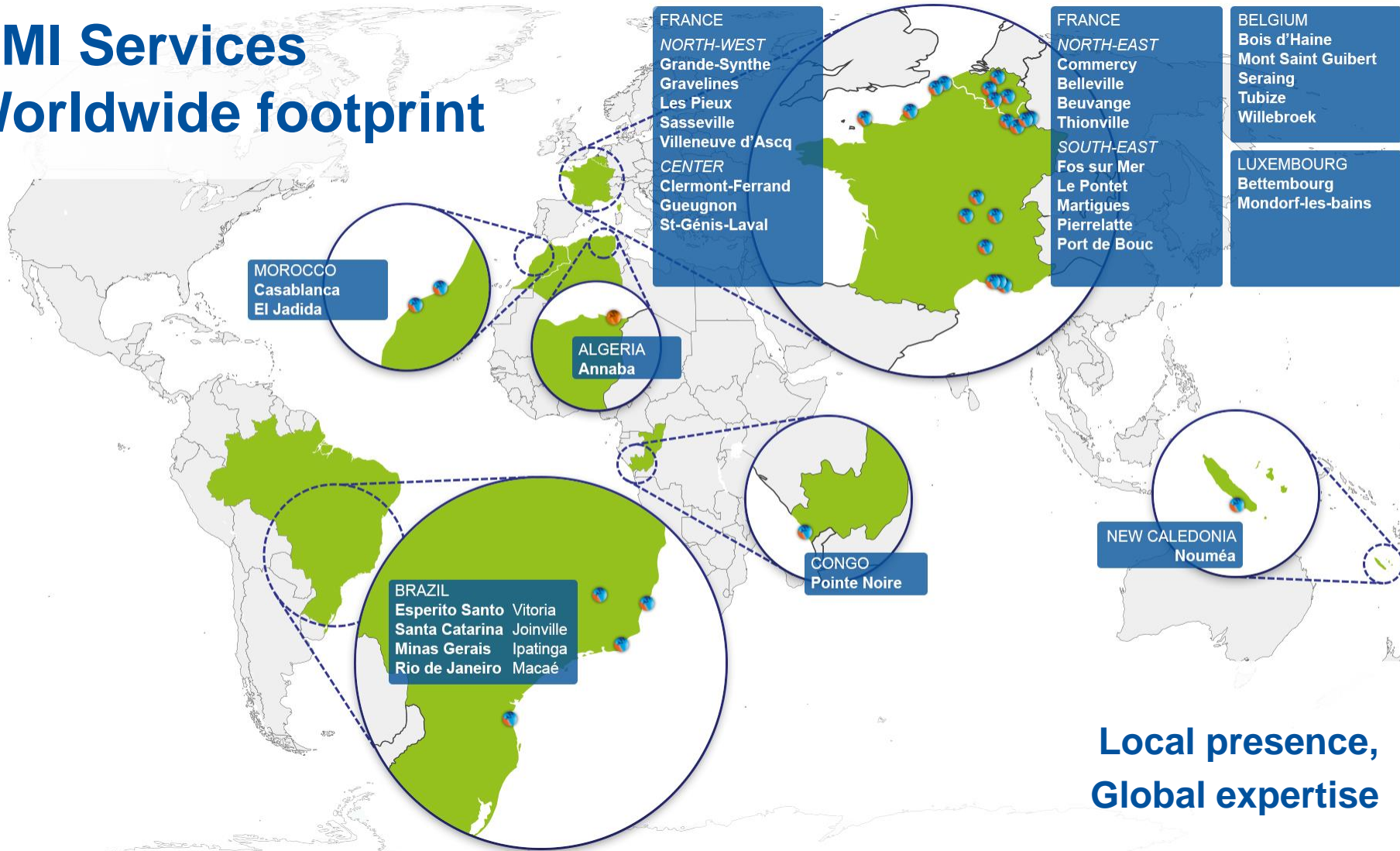
Nuclear

Petrochemicals

Workshop machining & repairs

CMI Services

Worldwide footprint



**Local presence,
Global expertise**

The CMI Services Approach

New Works

One-stop shop, from engineering to on-site installation

Equipment supply, low-cost sourcing

Predictive, condition-based, corrective, preventive, levels 1 to 5,
Multi-expertise
Maintenance plans
Mobile solutions
Intelligent lubrication

Maintenance

Large projects and shutdowns

Global coordination and project management

CMI Services Maintenance Solutions

Maintenance

Contractual solutions

- Global, multi-expertise contracts
- Performance-based contracts
- Rapid-response capabilities, planned or unintentional shutdowns
- Spare part & warehouse management

Expertise

- Preventive, condition-based, and corrective maintenance, levels 1 to 5
- Predictive maintenance (vibration analysis, thermography, lubrication analysis, remote monitoring)
- Maintenance plans : study, review, manage, optimize, execute

Technological solutions

- CMI or customer CAMM (Computer-Assisted Maintenance Management)
- Mobile solutions (on tablets)
- The Li-Corne™ The intelligent greasing system

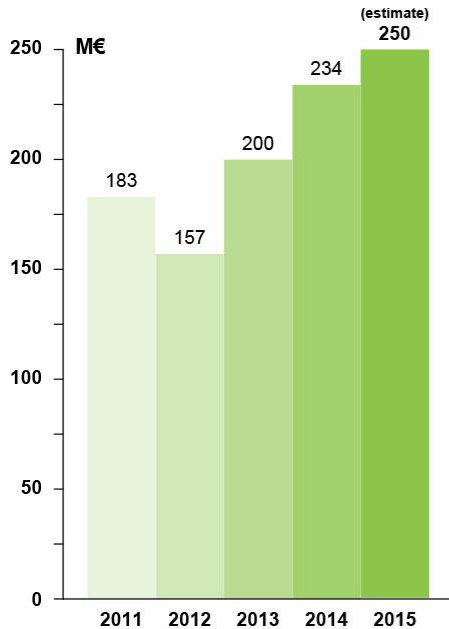


Key figures

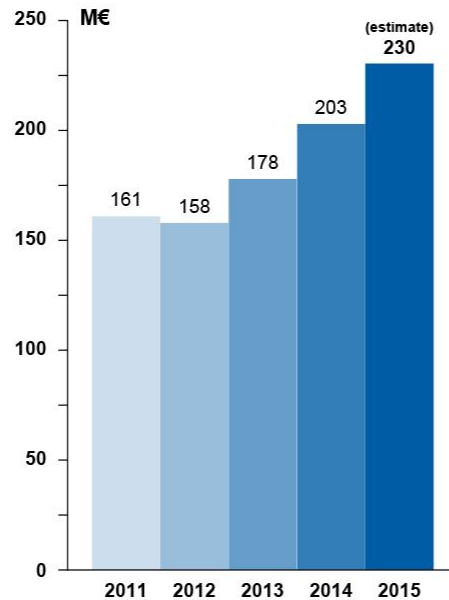
CMI Services

CMI Services in figures

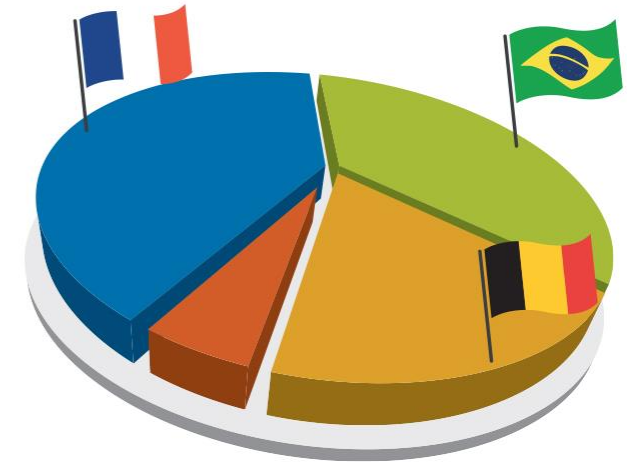
Order intake



Revenues



2,327 employees (as of end of 2014)

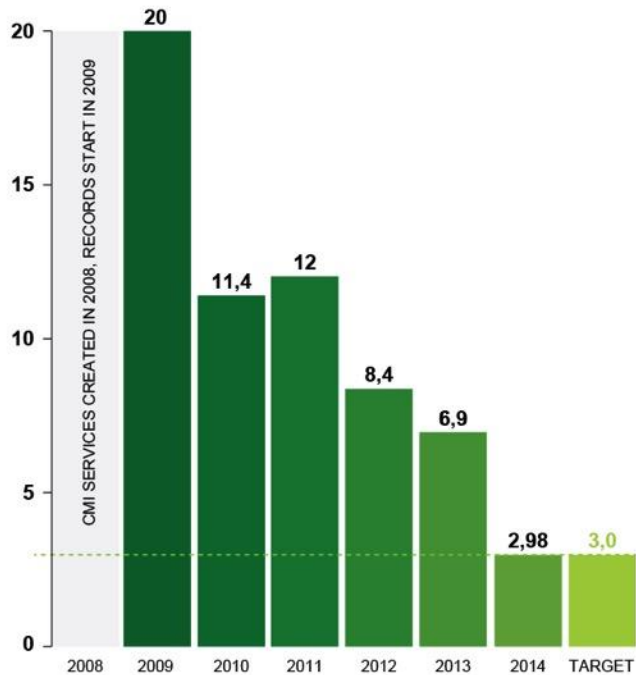


France 41%
Belgium 18%

Brazil 36%
Others 5%

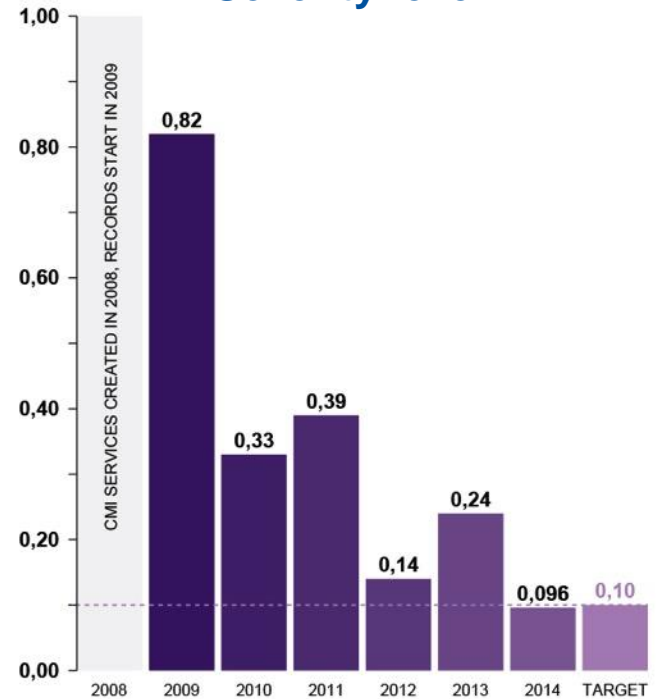
Safety, our first priority

CMI Services Frequency level*



*Local-time incidents per 1,000,000 hours worked

CMI Services Severity level**



** Days lost per 1,000 hours worked

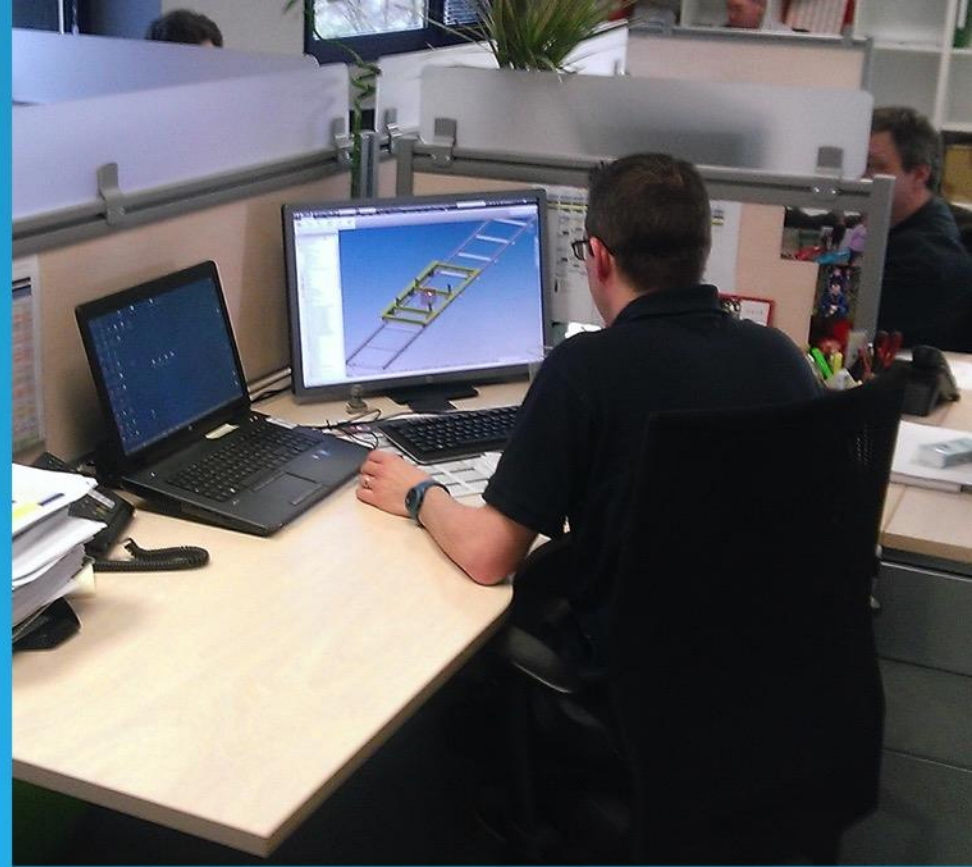


Our markets

CMI Services



Design & Engineering



- **Expertise**
 - Design Engineers, designers, draftsmen
 - Structural calculations (metallic structures)
 - Piping, tanks, pressure vessel calculations
- **Capabilities & Achievements**
 - Design & project engineering
 - Adaptation, modification, compliance works on operating tools, integration of new equipment (e.g. robots, cameras)
 - One-stop shop, from onsite survey to design & calculation
 - Technical assistance, analysis & advice



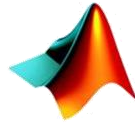
Autocad



Caesar III



Inventor



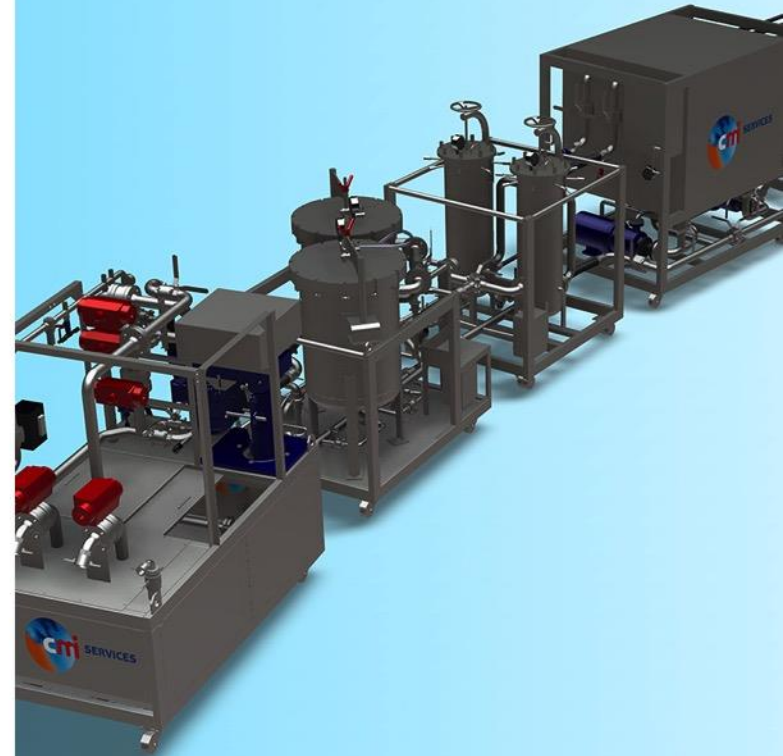
Matlab



Robot

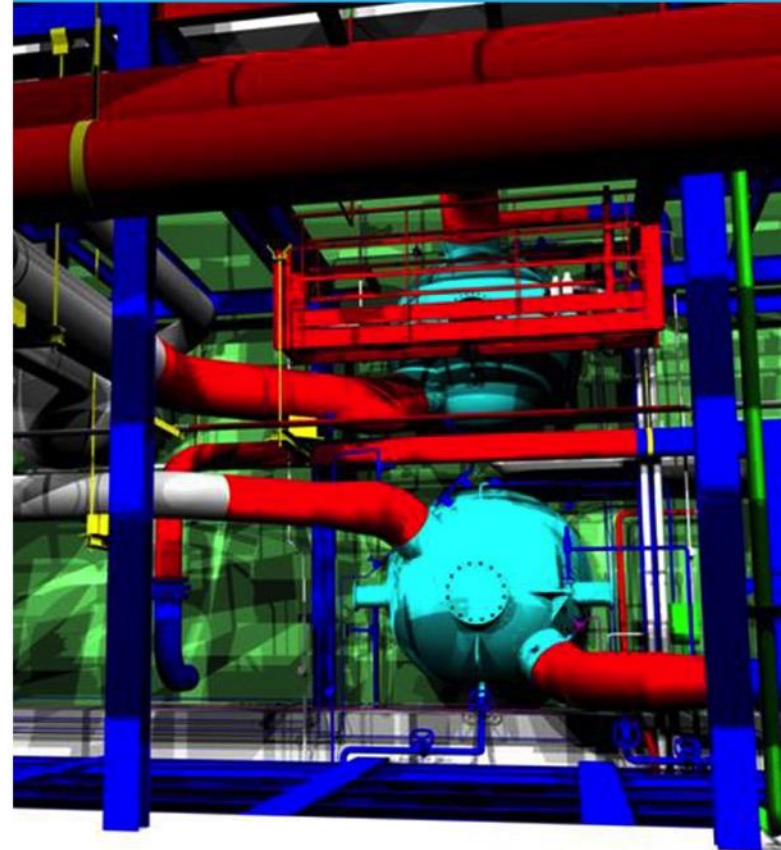


Solidworks



- **Recent Projects**
 - Nuclear
 - Steam Generator lancing unit (hydraulic cleaning)
 - Replacement reactor pressure vessel head
 - Control rod guide tubes containers and drying system
 - Study of reheater replacement
 - Industry
 - Cooling tower: comprehensive structural study of the supporting framework
 - Hoisting studies
 - Handling frame for a dam gate
 - Revamping of steel facilities
 - Rail: Track motor car cabins

References



Wind



- **Expertise in maintenance, onshore and offshore engineering**
 - O&M
 - Commitment on availability factor
 - Preventive, predictive & corrective maintenance
 - Large components replacement
 - Spare parts
 - Commissioning
 - Vibration analysis
 - Oil sampling and analysis
 - Reliability and availability analysis
 - Evaluation beyond warranty period



Capabilities & Achievements

- Continuous HSE & working conditions awareness campaigns
- Mobile, flexible, trained & qualified teams
- Onsite works & machining
- High capacity workshop
- Continuous on-the-job training
- ISO 9001 Certification

References

Windfarm Operators



Equipment Manufacturers





Rail



- **Locomotive designer & manufacturer for nearly 200 years:**
 - Manufacturing, revamping, renting and maintenance of shunting locomotives up to 2000HP for rail freight
 - Mastering of three transmission technologies:
 - Hydrostatic: well suited for pulling heavy-load at low-speed (<60 kmph) – 3 designs: 300, 500, 750HP
 - Hydrodynamic: higher speed, equipped with VOITH gearbox or equivalent
 - Diesel-Electric AC/AC: latest technology – low maintenance costs, high yield



References



Compagnie des Phosphates de Gafsa



Groupe Chimique Tunisien

PSA PEUGEOT CITROËN



■ Services to Rail Operators

- Visits to rail convoys, before start or upon a technical arrival (qualified personnel)
- Overhaul and maintenance operations on wagons (mobile service)
- Certifications: ECM N2 (*in French: Entreprise chargée Maintenance*), VPI , ISO 9001 & VCA



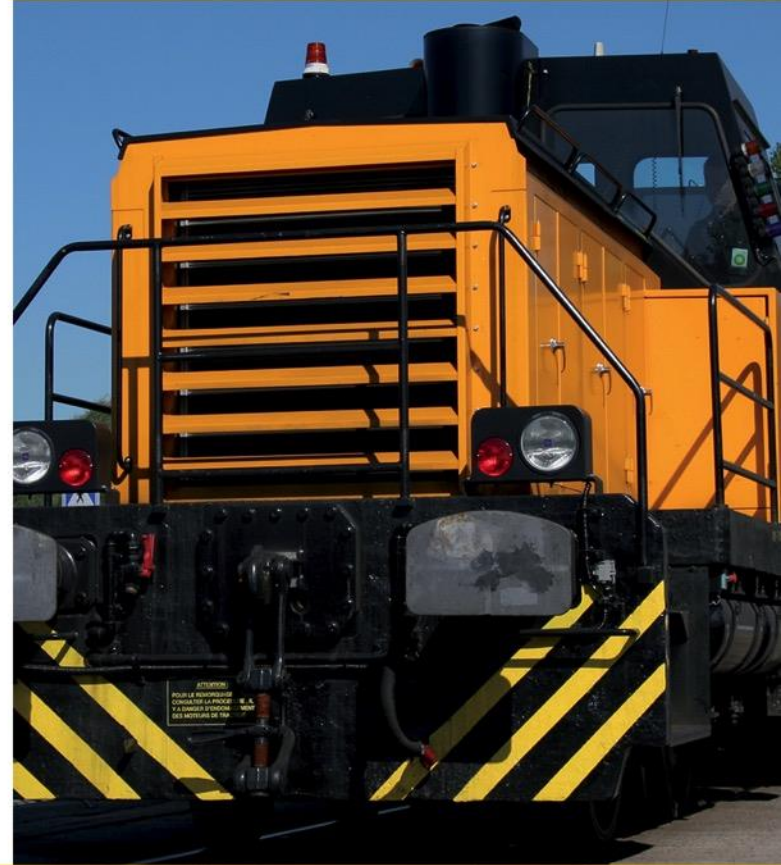
References



■ Industry Services

- Out-sourced traction on industrial sites: locomotive supply, shunting, maintenance of rolling stock and industrial track network
- Operational maintenance of a locomotive fleet
- Modernization of locomotives
- Supply of railway equipment
- Expertise
- VCA Certification

References



■ Railway Services

- Supply of equipment needed for railway operations:
 - Rolling stock: locomotives, wagons (first/second hand)
 - Tracks: rails, shunts, etc.
 - Consumables: brake pads, etc.
 - Breakdown service: railway cranes
 - Maintenance: track motor car

■ Capabilities & Achievements

- Equipment supply
- Modernization of catenary maintenance vehicles

References



Industry & Energy



- **Expertise**
 - Industrial boilers
 - Pressure vessels (Pressure Equipment Directive 97/23/EC & other international norms)
 - Design, manufacturing, and maintenance of components and systems
- **Capabilities & Achievements**
 - Thermal & Mechanical Design capabilities
 - Industrial processes optimization
 - Mechanical maintenance on paper mills (gears, paper mill rolls)
 - Design & supply of special-purpose machines
 - Design and compliance studies for hoisting gear



Capabilities & Achievements

- Frames, complex framing
- Supply of hoppers and chutes
- Revamping & repair of economizers, heat exchangers, high-pressure piping
- Supply & installation of stainless steel piping

References

aperam



BOREALIS

BUNGE

Cargill

Holcim

IBERDROLA



icdi

Klabin

MICHELIN



Nestlé

NLMK

SIGAL
ROSSMANN GROUPE

5N PLUS

TAQA (JLEC)
M O R O C C O

TERMONORTE

Tractebel Energia
GDF SUEZ

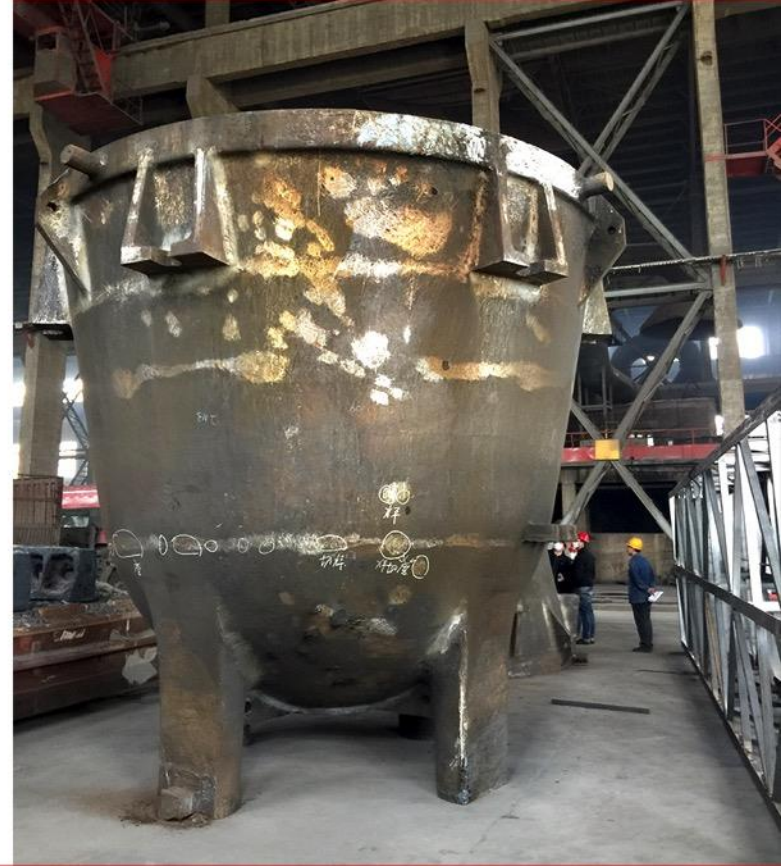
WEG



Manufacturing



- **Expertise**
 - Manufacturing of mechanical and/or welded parts, forged or casted parts
 - Piping & metallic frames
 - Manufacturing of gears and gearboxes
- **Capabilities & Achievements**
 - Very heavy load fabrication
 - Fabrication of assembled or to-assemble units
 - Logistical interface management including custom clearing from China to France (turnkey proposals)
 - Quality Controls and technical audits of local suppliers by CMI teams in China



■ Capabilities & Achievements

- Continuous Casting Rolls and related parts (supports, bearings)
- Slag pots (Torpedos – hot metal transfer ladles)
- Containers for activated pieces of equipment (nuclear)
- Gears and gearboxes
- Winding mandrels
- Overhead cranes
- Roll chocks

References



Public procurement



■ Expertise

- Corrective and preventive maintenance
- Project management, new works or revamping

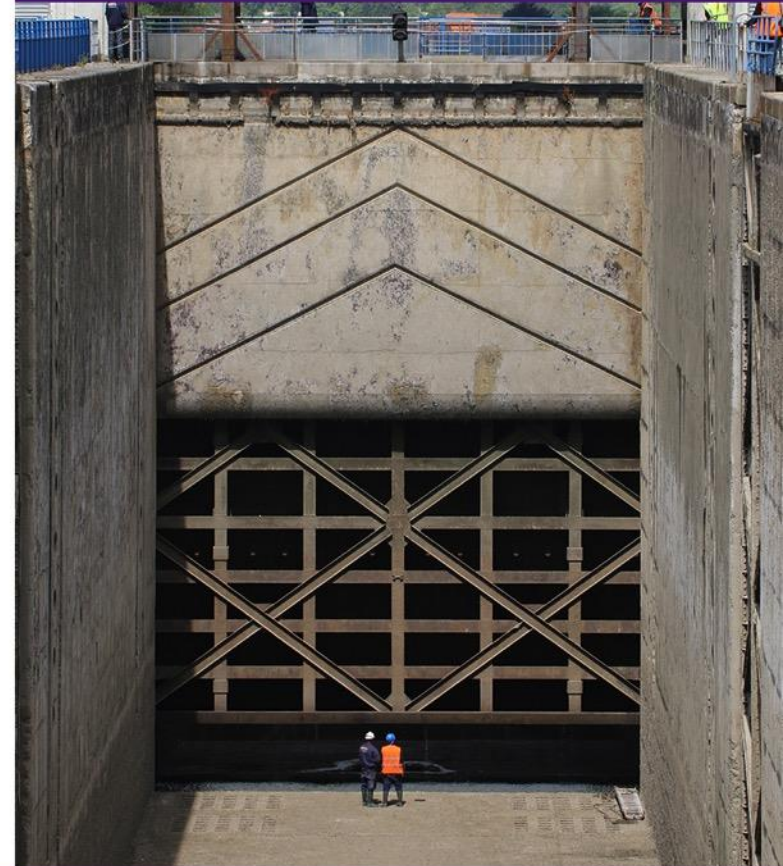
■ Capabilities & Achievements

- Large dimension frames & components
- Special-purpose maintenance on water system gates
- Fabrication & mechanization on dams (Koenigsmacker and Apach)
- Works on ports and waterways:
 - Revamping of dry-dock doors and bridges
 - Harbor crane works
 - Fabrication of special-purpose equipment
- Rail:
 - Fabrication of equipment related to infrastructure and rolling stock



- **References**
 - Port authorities, waterways, airports, railways, Chambers of Commerce & Industry, departmental councils, municipal authorities

References



Metals



- **Expertise**
 - Multi-competence maintenance (mechanical, electrical, automation)
 - Electromechanical maintenance on overhead cranes, manufacturing lines
 - Maintenance of crushers, mechanical and hydraulic presses
 - Management of multi-year performance-based contracts
 - Improvement of equipment reliability
 - On-site machining
- **Capabilities & Achievements**
 - Electromechanical maintenance of the cranes of a hot-rolling mill
 - Mechanical maintenance of the shafts of a hot-rolling mill
 - Maintenance contract for the rolls of a rolling mill
 - Rebuilding of hydraulic presses (2,000 T) and crushers (40,000 kg/m.s²)
 - Repair of the base of hydraulic presses
 - Dismounting, repair, and refitting works on mechanical parts (gears, shears, rollers, transfer trolleys)



Capabilities & Achievements

- Maintenance contract of the shafts of a cold-rolling mill
- Contract of cold relining of rolls
- Revamping of a sintering plant with equipment supply
- Maintenance contracts of level 3 to 5 according to the EN 13306:2010 norm
- Machining of slides and base for presses and crushers
- Maintenance of greasing system, centralized & manual

References

aperam

Aperam Alloys Imphy

ArcelorMittal

ASCOMETAL

AUBERT&DUVAL

Constellium

CSN
Companhia Siderúrgica Nacional

GO GERDAU

lisi
AEROSPACE

MANOIR
INDUSTRIES

PAM
SAINT-GOBAIN

TATA STEEL

ThyssenKrupp



USIMINAS



VALE



Mine & Quarry, Chemicals



- **Expertise**
 - Mechanical, greasing, electrical, instrumentation, general installation works
 - Electromechanical Maintenance
- **Capabilities & Achievements**
 - Maintenance contracts of level 3 to 5 according to the EN 13306:2010 norm
 - Supply, works, or revamping on crushers, grinders, electrical systems, various equipment and systems
 - Maintenance of filters in a phosphoric acid fabrication facility
 - Electrical Installation works



- **Capabilities & Achievements**
 - Maintenance of equipment in ore chemical processing plant
 - Disassembly and repair of pipe lines carrying sulfuric acid (with protective clothing)

References





Nuclear



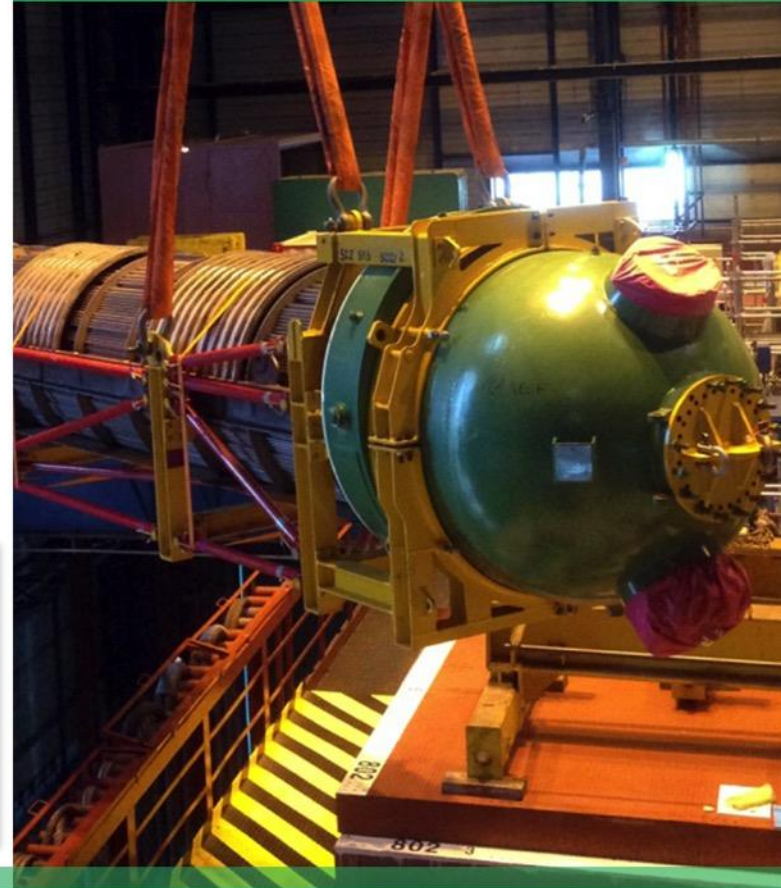
- **Expertise**
 - Nuclear valves, rotating machines
 - Heavy component replacement
 - On-site and workshop machining
 - Crane maintenance
 - Pressure vessel opening and closing
 - Pressure tests
 - Design and project engineering
 - Welding
- **Capabilities & Achievements**
 - On-site works, project management
 - Welding, piping, metal works
 - System overhaul
 - Global maintenance project for valves



Capabilities & Achievements

- Design & fabrication of skids for Steam Generator lancing
- Pressure vessel opening & closing (RPV)
- Overhaul of a fire-fighting system
- Supply of containers with a capacity of 33 control rod guide tubes, supply of Type-A containers
- Replacement of reheaters HP/LP
- Supply of covers for vessel head, of replacement vessel heads
- Supply of skids for the Ultimate Diesel Generators (UDGs)
- Design and supply of a pollution control room (KRS)
- Modification of coffer seals in the reactor pool (reactor building)

References



Petrochemicals



- **Expertise**
 - Carbon and Stainless steel piping
 - Polyester and plastic piping
 - Welding, prefabrication
 - Ultrasonic cleaning on fluidized bed
- **Capabilities & Achievements**
 - Expertise of anti-corrosion equipment, laminated glass-reinforced plastic (GRP)
 - Fabrication and installation of new units
 - Maintenance and outage works
 - Compliance with norms and standards: CODAP, CODETI, EN, DVS, DT, UIC, NFA



References



ExxonMobil



lyondellbasell



petroineos
REFINING AND TRADING



Petrochemicals

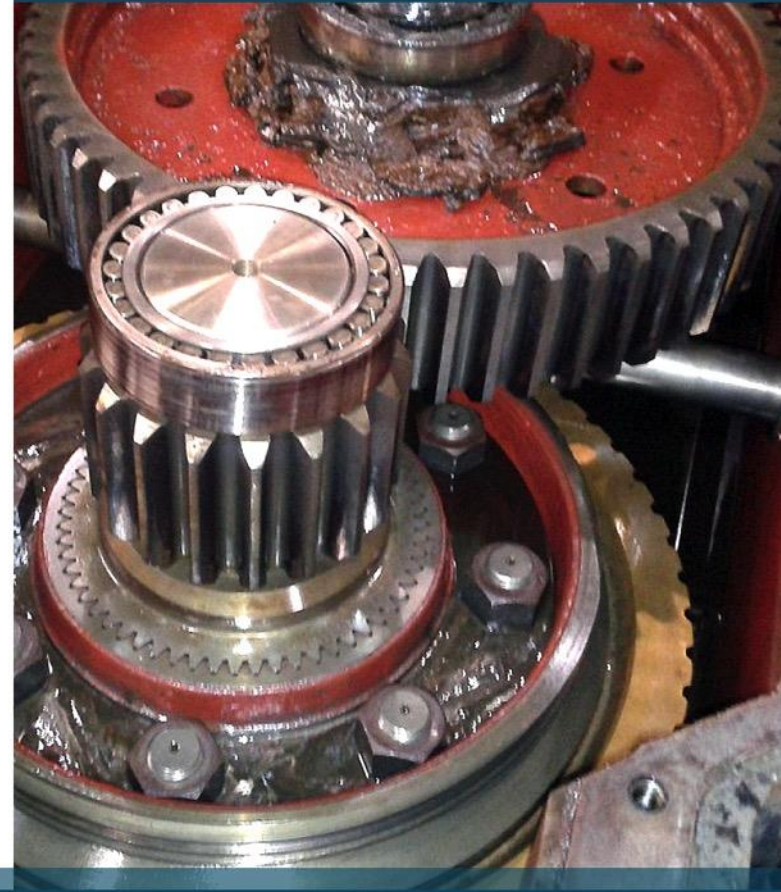


Workshop machining & repairs



Workshop machining & repairs

- **Expertise**
 - Specialist in precision heavy machinery
 - Machining of large pieces of equipment
 - Maintenance and overall mechanics
 - Rotating machines, manufacturing, spare parts, tooling
 - ISO-qualified personnel, welders qualified for all steel grades
 - Sew Usocome specialist and servicing agent
- **Capabilities & Achievements**
 - Boiler making
 - Repair of Mechanically welded equipment
 - Hardfacing
 - Over 15,000sqm of workshops in France and 40,000sqm in Belgium



Workshop machining & repairs

Capabilities & Achievements

- Hood annealing furnaces
- Continuous Casting Rolls
- Gears and gearboxes
- Maintenance and repair of mandrels
- Replacement of sealing on oil baffles (low- and high pressure casings) in thermal and nuclear power plants
- Comprehensive revamping of pinion stands
- Full retrofit of bloom lifting tong, cylinder and coil lifters



References

ALSTOM

aperam

ArcelorMittal

Ball
Ball Packaging Europe

DILLINGER
FRANCE

EDF

VALDUNES
MA STEEL

eni

versalis

vnf
Voies
navigables
de France



Thank you

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