

Koniambo



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Maison des Arts et Métiers



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1. TECHNIP



Technip Today

- With engineering, technologies and project management, on land and at sea, we safely and successfully deliver the best solutions for our clients in the energy business
- Worldwide presence with 36,500 people in 48 countries
- Industrial assets on all continents, a fleet of 32 vessels (4 of which under construction)
- 2012 revenue: €8.2 billion



Energy is at the core of Technip

Technip

Three Activities, One Technip



Subsea

- Design, manufacture and supply of deepwater flexible and rigid pipelines, umbilicals and riser systems
- Subsea construction, pipeline installation services and Heavy Lift
- Six state-of-the-art flexible pipe and / or umbilical manufacturing plants
- Five spoolbases for reeled pipeline assembly as well as four logistic bases
- A constantly evolving fleet strategically deployed in the world's major offshore markets



Offshore

- Engineering and fabrication of fixed platforms for shallow waters (TPG 500, Unideck®)
- Engineering and fabrication of floating platforms for deep waters (Spar, semi-submersible platforms, FPSO)
- Leadership in floatover technology
- Floating Liquefied Natural Gas (FLNG)
- Construction yard



Onshore

- Gas treatment and liquefaction (LNG), Gas-to-Liquids (GTL)
- Oil refining (refining, hydrogen and sulphur units)
- Onshore pipelines
- Petrochemicals (ethylene, aromatics, olefins, polymers, fertilizers)
- Process technologies (proprietary or through alliances)
- Biofuel and renewable energies (including offshore wind)
- Non-oil activities (principally in life sciences, metals & mining, construction)

[The best solutions across the value chain



Technip's Key Differentiators

- **Leading integrated company in project management, engineering and construction for the energy industry**
- **More than 50 years of know-how and experience on land and at sea**
 - Deepest subsea developments
 - Most advanced offshore infrastructures
 - Largest onshore infrastructures
- **Client focus**
- **Long-term relationships**
- **Global footprint and local presence**
- **Leading edge technologies, offering the best solutions**
- **Absolute commitment to safety**
- **The best talents**

[Taking it further is what we do

A Unique Worldwide Footprint

A UNIQUE FLEET

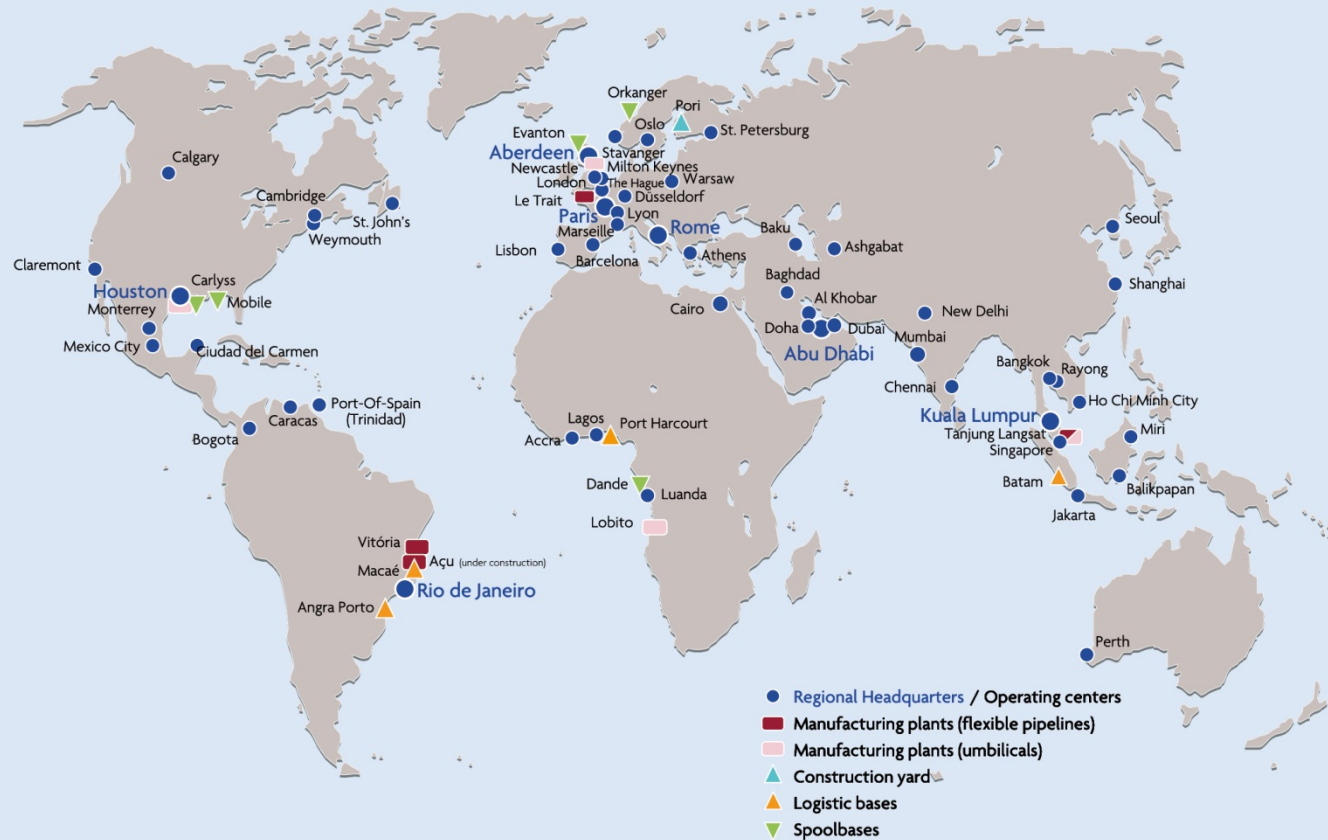
To undertake our offshore operations, we operate a specialized fleet comprised of **32*** vessels (of which 4 are under construction) which is unique in the industry.

4
RIGID REEL-LAY & J-LAY

11
FLEXIBLE-LAY & CONSTRUCTION

4
RIGID S-LAY AND HEAVY LIFT

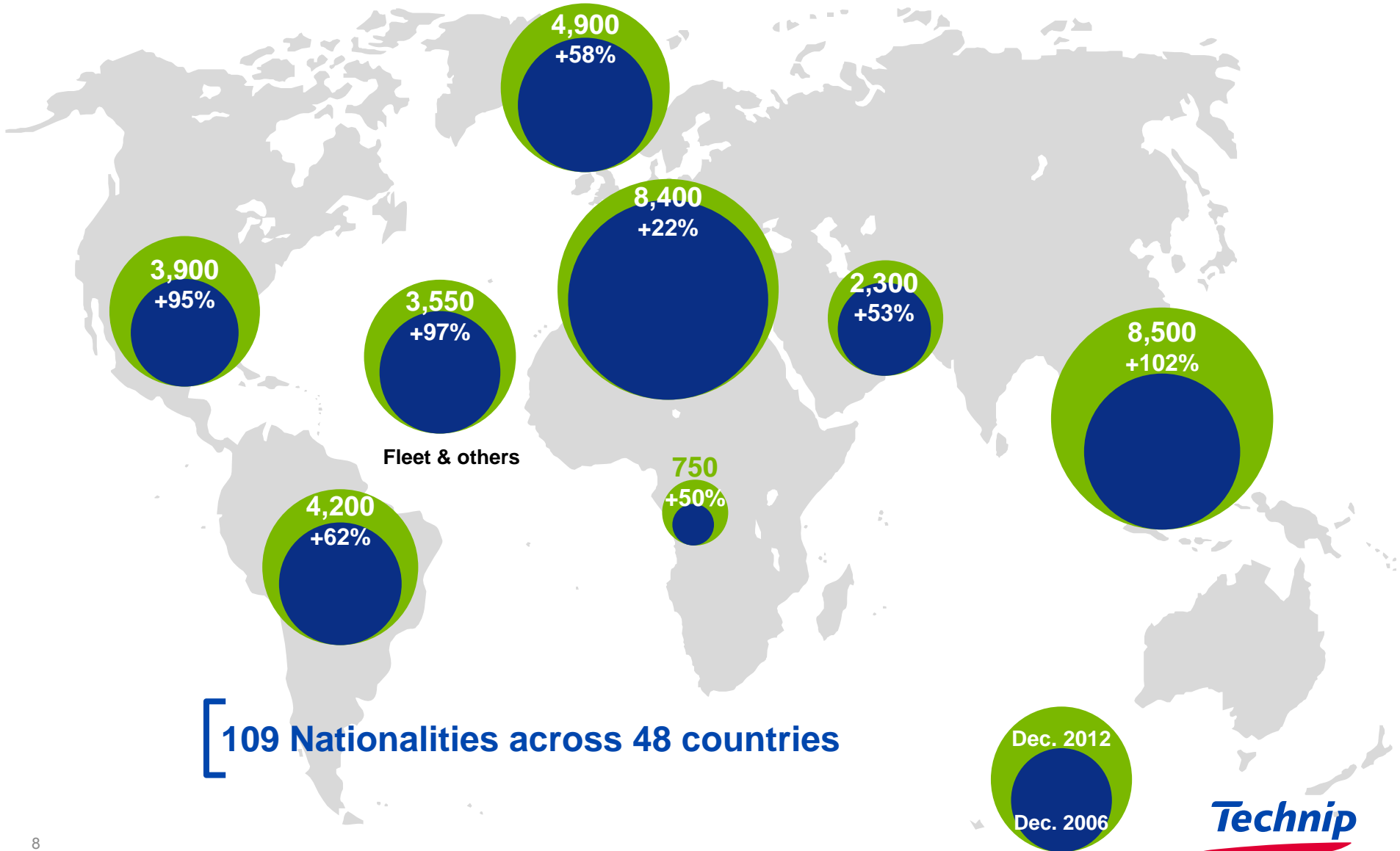
13
DIVING & MULTI SUPPORT VESSELS



*As of march, 2013



36,500 People Throughout the World, Growing Close to Clients





2012 Full Year Results

Revenue

Subsea	€4,048 million
Onshore / Offshore	€4,156 million
Group	€8,204 million

Operating Margin¹

Subsea	14.9%
Onshore / Offshore	7.0%
Group	10.0%

Net Income

€540 million

Net Cash Position

€183 million

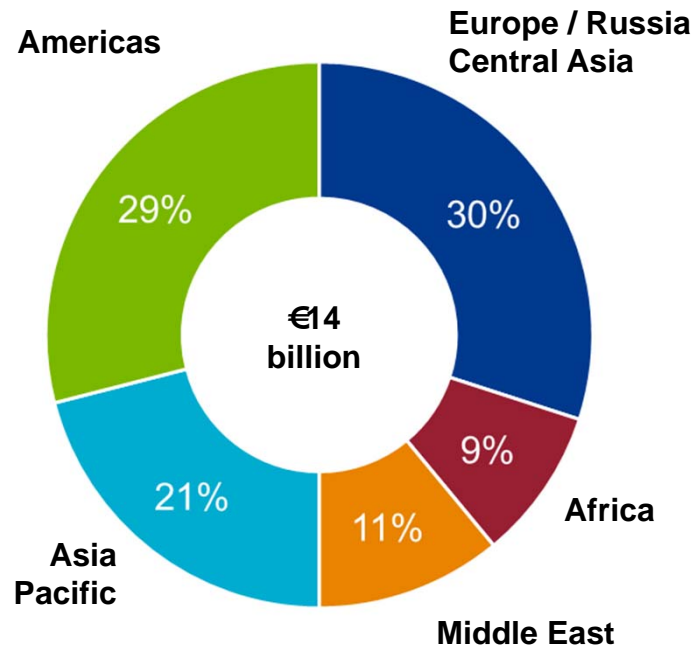
⁽¹⁾ from recurring activities

As of December 31, 2012

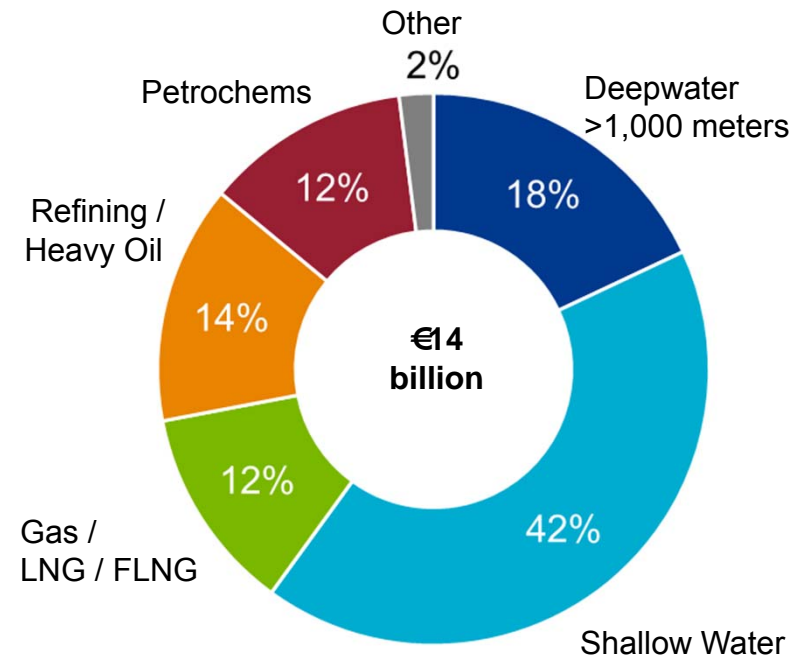
Diversified Backlog Across Regions and Markets

As of December 2012

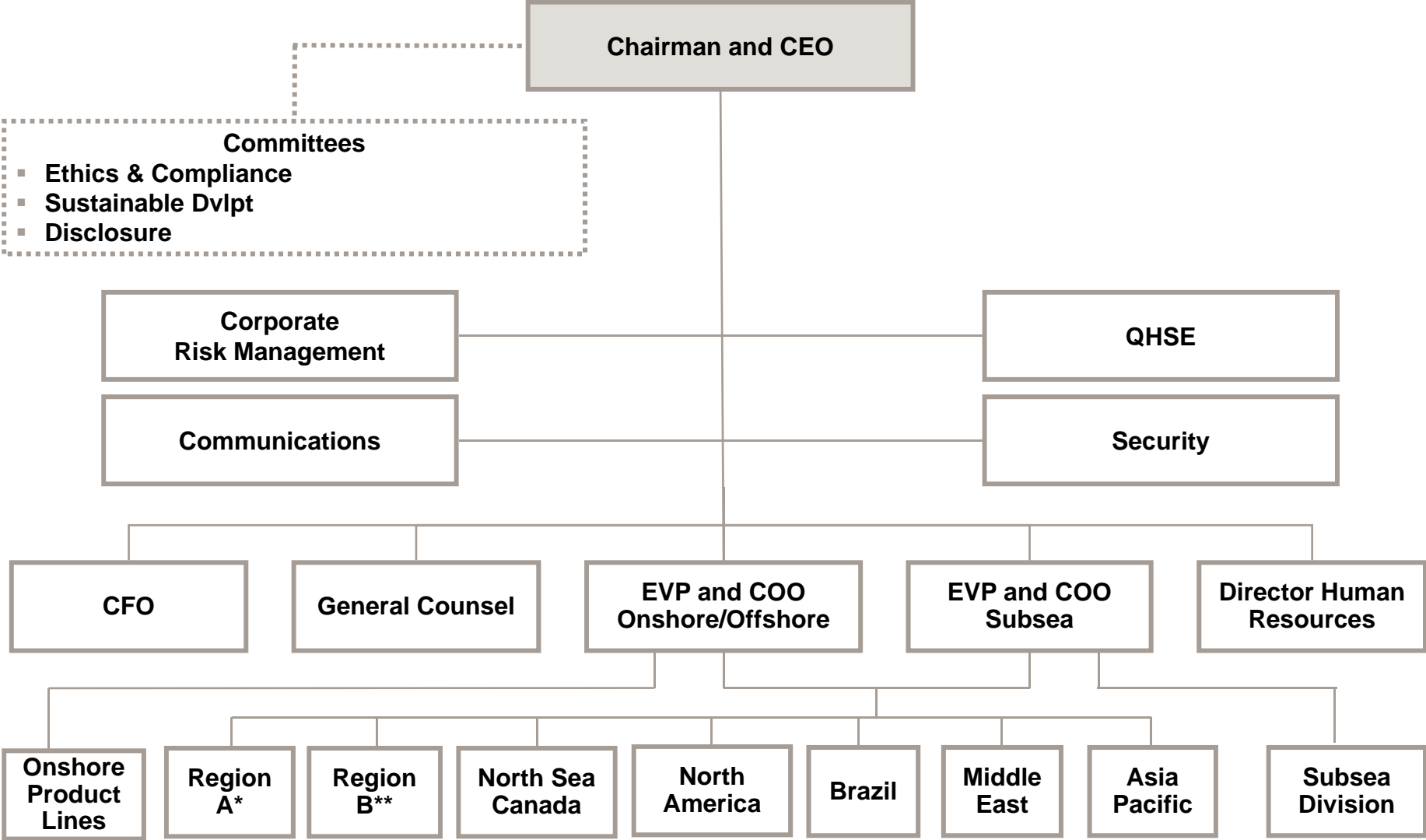
Backlog by geography



Backlog by market split



Group Organization Chart



* Western Europe, Africa, India, Pakistan
 ** Italy, Greece, Eastern Europe/Russia/CIS, South America





Our Vision and Mission to Take Technip Further

- **Our vision: “meet the world energy challenge through our projects”**

If energy were easy, there would be no need for a company like Technip. Today and tomorrow, we work with our clients, wherever they are, to bring **energy** to the world.

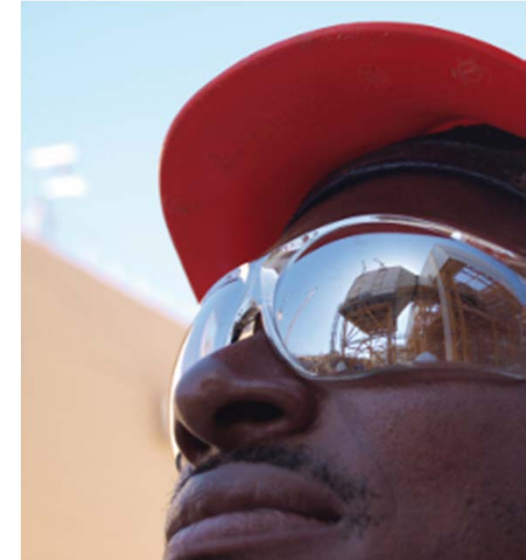
We will continue to contribute to their **success**, through our constant **customer focus** and our **integrated** and sustainable project approach. As the industry reference, we will demonstrate the **know-how**, the commitment and the **inspiration** to help all of our partners push further to achieve their goals.

This is our vision and above all, it is our passion.

- **Our mission:**

Our mission is to **deliver** safe and successful energy **projects** across the world for the benefit of our all stakeholders.

We maintain that focus whether faced with the biggest challenges or the smallest details.



Local Content and Support to Communities

■ Increasing the local content of our projects

- Establish a long-term presence in the countries where we operate
- Energizing local economies through multi-local presence and extensive networks of local suppliers
- Promote local employment
 - 64% of Technip recruitment in non-OECD countries in 2011
- Foster skills transfer

■ Building close relationships with local communities

- Transparent communications
- Cultural involvement
- Support of local associations and social organizations
 - Initiatives in favor of local communities in 31 countries in 2011



Our Values

- **Our values are operational. They have ensured our success to the present and will take us forward.**
 - We are inspired by them
 - Our industry believes in them
 - Our clients experience them
 - Our brand reflects them

Doing the right thing



Trusting the team



Encouraging a fair return for all



Building the future

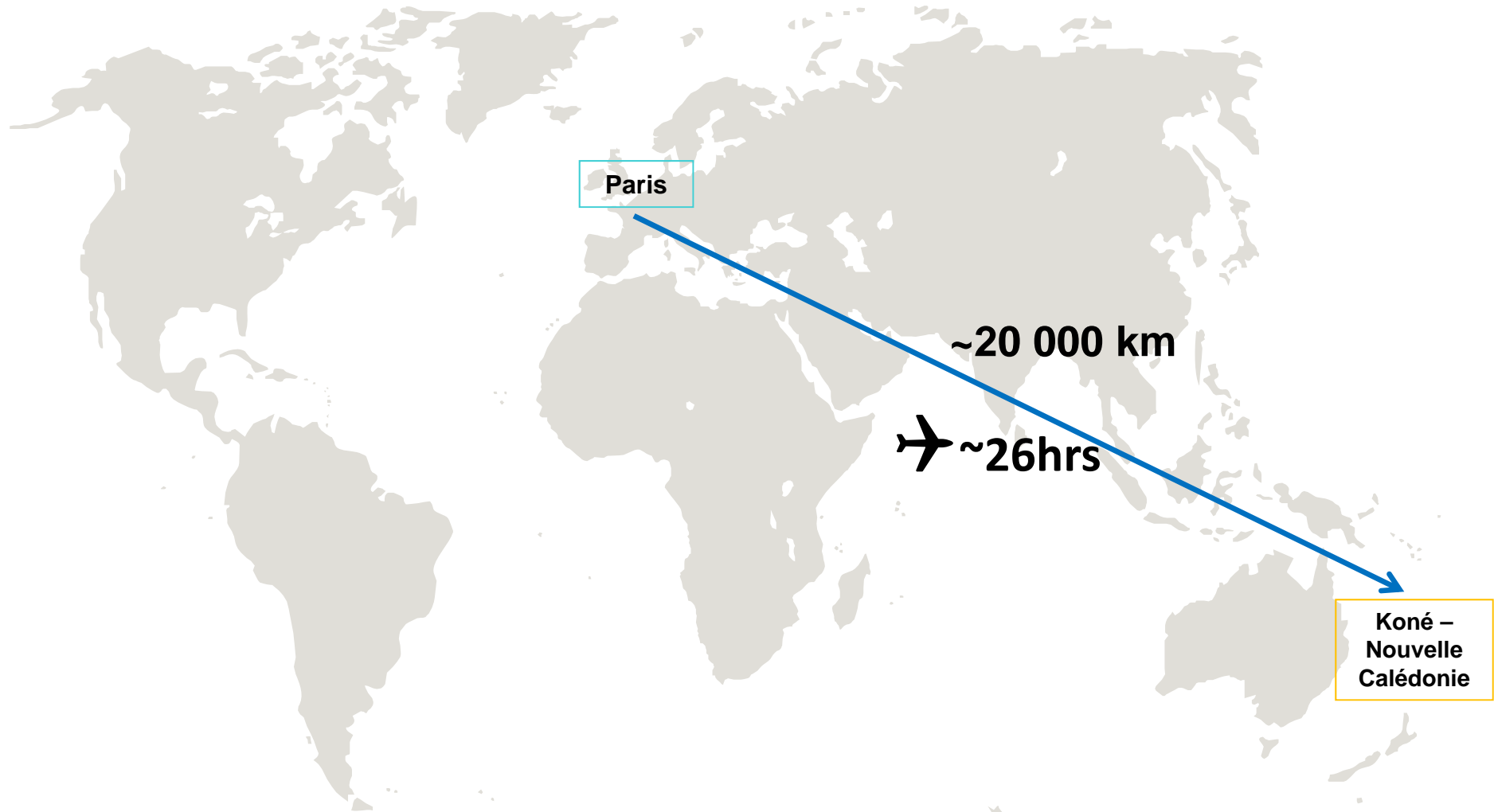


2. Koniambo Project





Koniambo: un projet “au bout du monde”



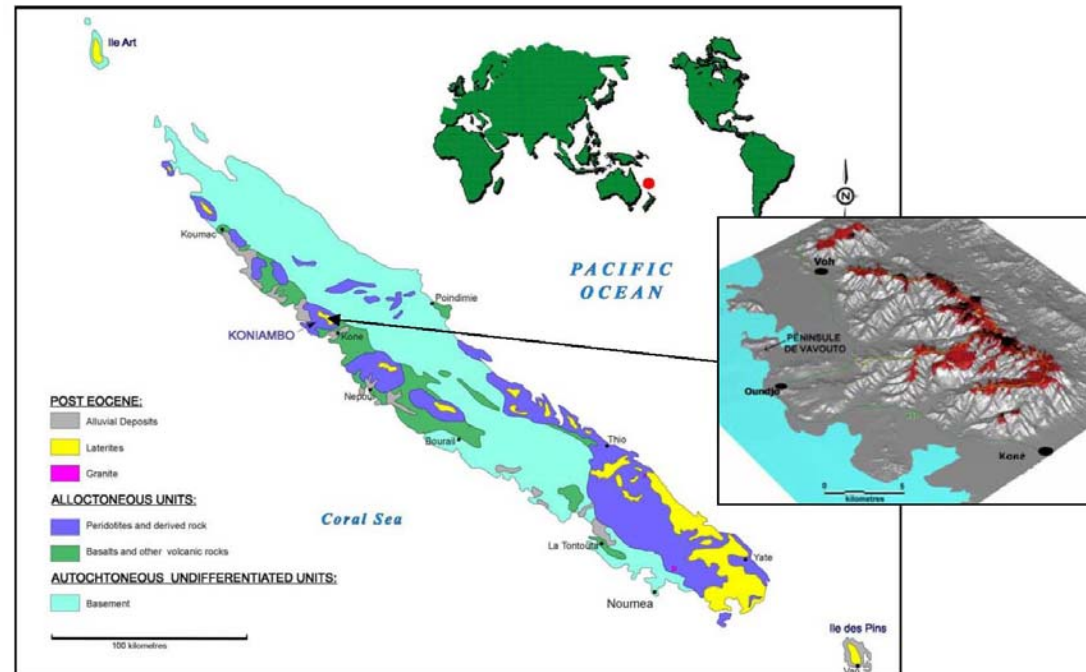


a. Project Overview



a. Project Overview

- The Koniambo Massif is located near the North Province capital of Koné in New Caledonia
 - Koniambo is one of the largest (80 to 100 million tons) and highest grade (2.5% Ni - average: 1 to 1.6%) undeveloped nickel resources in the world
- ▶ The project is being developed by Koniambo Nickel SAS, a joint venture between Société Minière du Sud Pacifique SMSP (51%) and Xstrata Nickel (49%)





b. Project Site



Project Site

Koniambo Area

- The Koniambo area includes the Koné, Voh and Pouembout villages (approximately 10,000 inhabitants living in the 3 villages, 19 tribes)
- **Koné**: administrative center for the North Province Government
- **Voh**: historically a mining village
 - Majority of the population living in tribes
 - Vavouto site on Voh's land
- **Pouembout**: historically a penal village, mainly dedicated to farming





Project Site

The Vavouto Peninsula





c. Project Timeline



Project Timeline

The Project development : a long-life effort of 15 years

- 1988: **Matignon Agreement** signed
- 1990: set up of **SOFINOR** – Absorption of **SMSP**
- 1994 : SMSP is looking for industrial partners for **development of Mining Business in North Province**
- 1998: **Koniambo Ore Body** transfer to SMSP & Falconbridge, today Xstrata Nickel, under the **Bercy Accord**

Initial scoping studies conducted

- 2001: Selection of NST Process, a more environmental friendly process
- 2002: Pre-feasibility study completed
- 2004: Feasibility study completed
- 2005: Environmental and social impact assessment

Principal operating and construction permits awarded

Commencement of front-end engineering design

Project Timeline

- 2007: Full release of project implementation
- 2008: Construction camp, major earthworks and lagoon dredging
- 2009: Smelter module construction, site infrastructure development
- 2010 till 2012: Construction of smelter plant, power plant, overhead conveyor, and utilities
- 2012/13: Project commissioning and start-up
- 2013/14: Full production commences

Pioneer Camp

January 2008



Project Timeline



Site Preparation

The Camp





d. Specificities of the Project





The Process

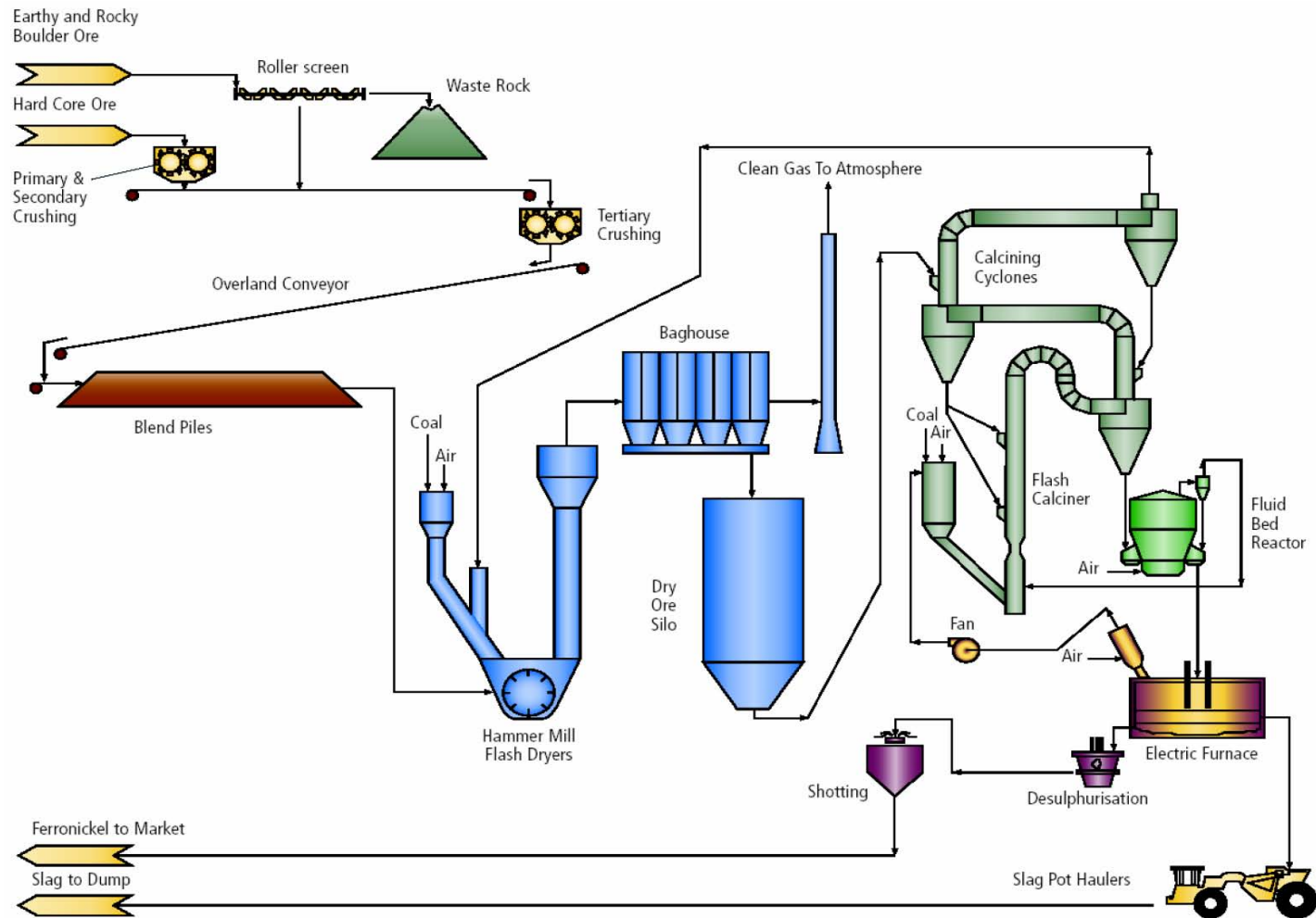
Greenfield pyrometallurgical facility with a 60,000 t/yr ferronickel smelter for the extraction of Nickel from saprolitic ore mined from the Koniambo Massif

→ 5% of the annual worldwide Nickel production

PROCESS : Pyrometallurgy

- Pyrometallurgy uses high temperatures to transform metals and their ores. These transformations may produce pure metals, or intermediate minerals or alloys, suitable as feed for other refining or commercial applications.
- Plant Nickel production : 60,000 t/year
- FeNi grade : 35%
- FeNi production : 176,000 t/year
- Ore to Metallurgical Plant : 2.5 Mt/year (dry)

General Flowsheet





Facilities

- **Open Pit Mine & Ore Preparation Facility**
- **Mine access road & overland conveyor (12 km length)**
- **Metallurgical Plant – 3mtpa ore feed, producing 176,000 tpa ferronickel product (60,000 tpa contained Ni) with electrical arc furnace**
- **Power Plant – 350 MW (2 x 135MW coal-fired boilers & 2 x 40MW diesel-fired combustion turbines)**
- **Deep-sea Port Facility – 4.5km access channel & 190m wharf structure to receive 50,000 DWT vessels**
- **Coal handling facility**
- **Desalination Plant for process & potable water supply**
- **Supporting infrastructure (storage, roads, power & water distribution, offices, ...)**

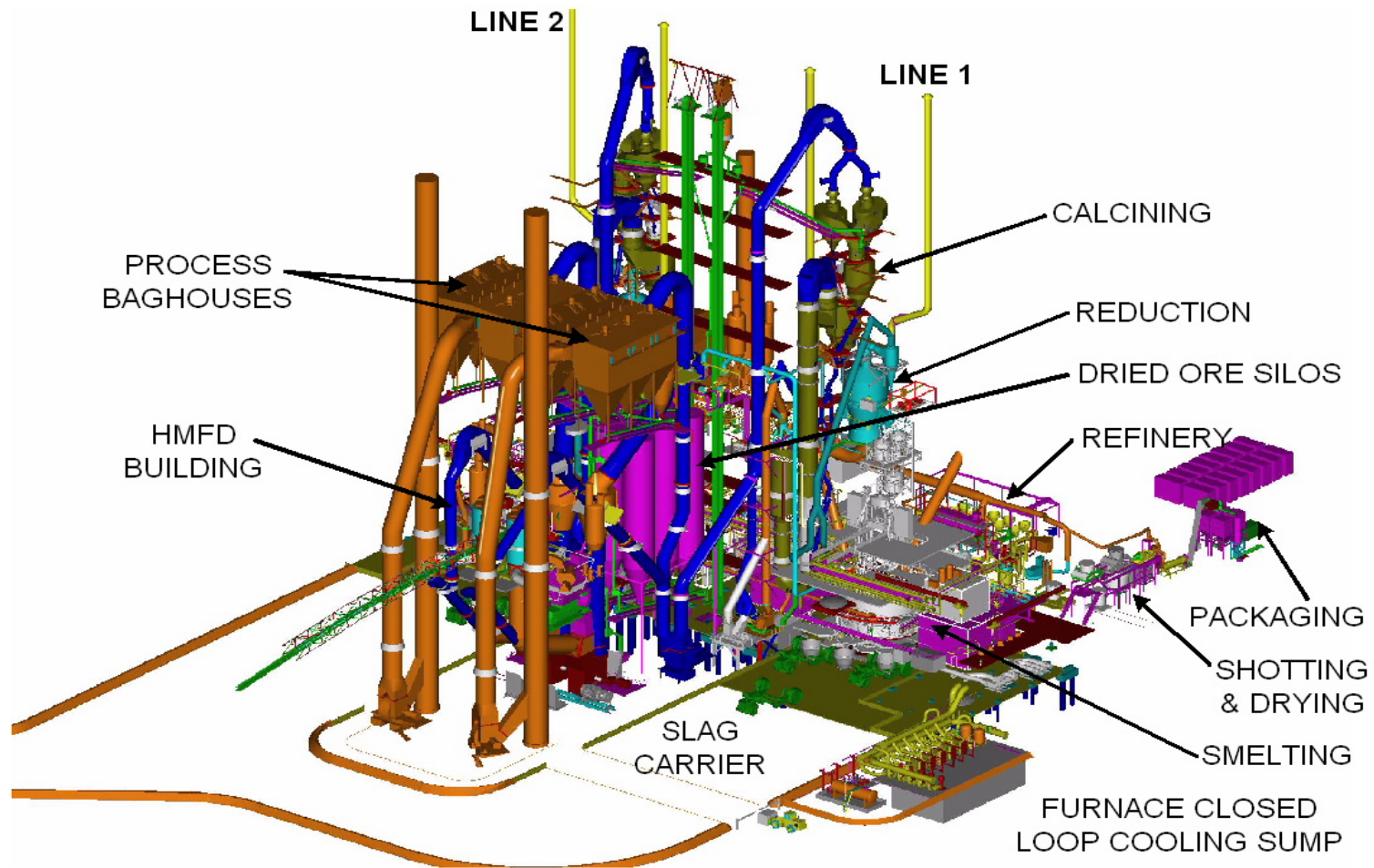
Overall plot plan



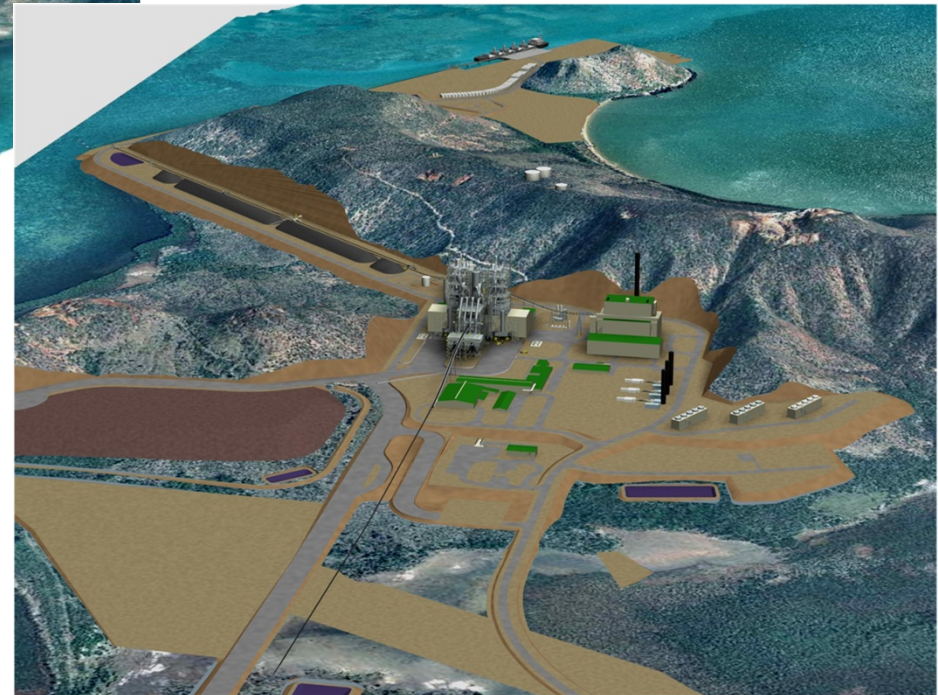
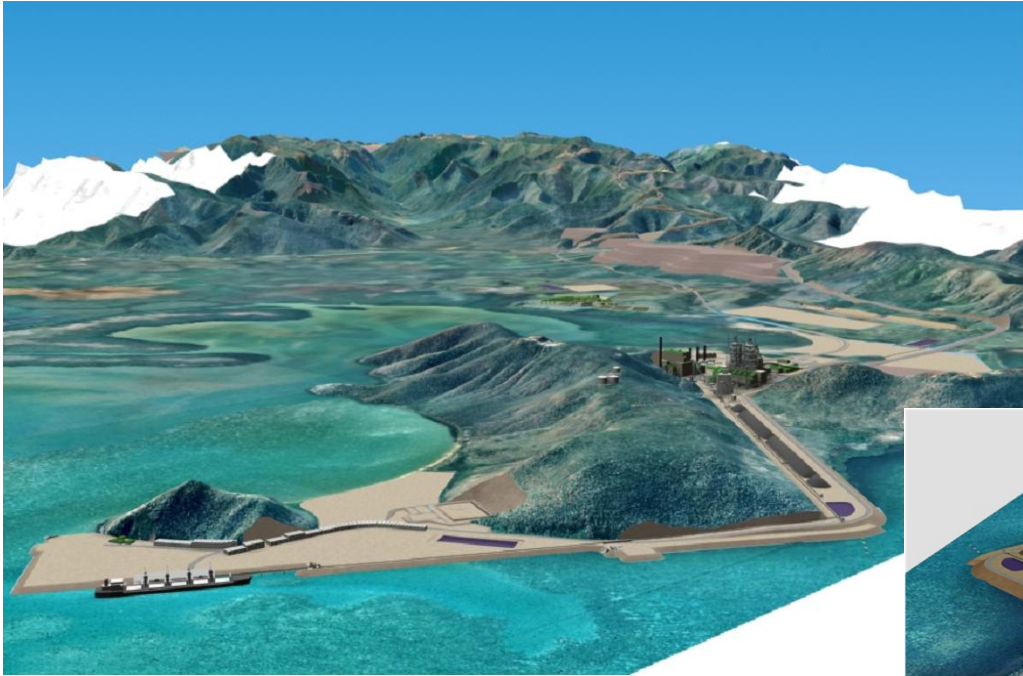
3D model : Metallurgical Plant & Power Plant



3D model – Metallurgical Plant



3 D overviews





The Main Challenges



Challenge 1: Built such large industrial plant whilst preserving the exceptional nature

- Mobilise a team of more than 100 persons in charge of the protection of the environment and retreatment of waste.
- Protection of The Lagon: control of the quality of all waste waters including raining water
- Treatment of all waste, especially the ones from Camps facilities in order to produce “compost”
- Development of a re-vegetalisation program in the mining area and around the Lagon in collaboration with the Client.



The Environmental Preservation in the heart of Koniambo Project

Challenge 2: develop such large project in collaboration with the locals communities

Koniambo Project and the “Rééquilibrage”

- The “**Rééquilibrage Nord - Sud**” aims at better sharing responsibilities between the different ethnic groups (especially Kanak) in terms of job opportunities, education, wealth, culture, ...
- The Koniambo project is very largely considered as the principal mean for implementing the “**Rééquilibrage**” of the North Province and its inhabitants
- This goal will be achieved by:
 - **Providing job and business opportunities**
 - **Developing the region**
 - **Enabling the North Province to have its own economic development mean**



Challenge 2: develop such large project in collaboration with the locals communities

Local Community's perception

- **Very strong support** and identification with Koniambo Project by the Northern Province Population
- **Strong expectations for economic spin off**
 - Job & training opportunities
 - Local company creation
- Koniambo Project is seen as the vehicle for economic independence for Kanak population
- **Support is conditional on execution excellence relative to the environment & sustainable development**



Challenge 2: develop such large project in collaboration with the locals communities

With our Client:

- A closed and regular relationships with the “chefs de tribu” of the Koniambo Area
- Respect the habits and cultur of the local communities
- More than 90 local persons has been employed directly by Technip Nouvelle Caledonie to supervise the construction activities
- More than 2500 local people have been working on site at the peak as part of Construction contractors.



Koniambo, a project developped with the local communities

Challenge 3: Built such large industrial plant in a remote area

- Lack of manpower available locally
- Lack of resources available locally
- Strong restriction for importation of resources from abroad due to French and local Law



Modularization

- 25 Modules of 500 to 3000 Tons
- 32 000 Tons
- Erection with a lift
- Top of the modularized structure at 126m from ground level

The first time in mining industry





The Modularization



Main Construction Figures

- Earthworks : 7,000,000 cum
- Dredging : 9,000,000 cum
- Reinforced Concrete : 75,000 cum
- Equipment (1,500 items) : 100,000 tons
- Structural Steel : 39,000 tons
- Cables: 3000 Km

- Site Construction man-hours : 18,000,000
- EPCM man-hours (engineering & supervision) : 8,000,000

Overall investment : more than 5 billions US\$

Modularization

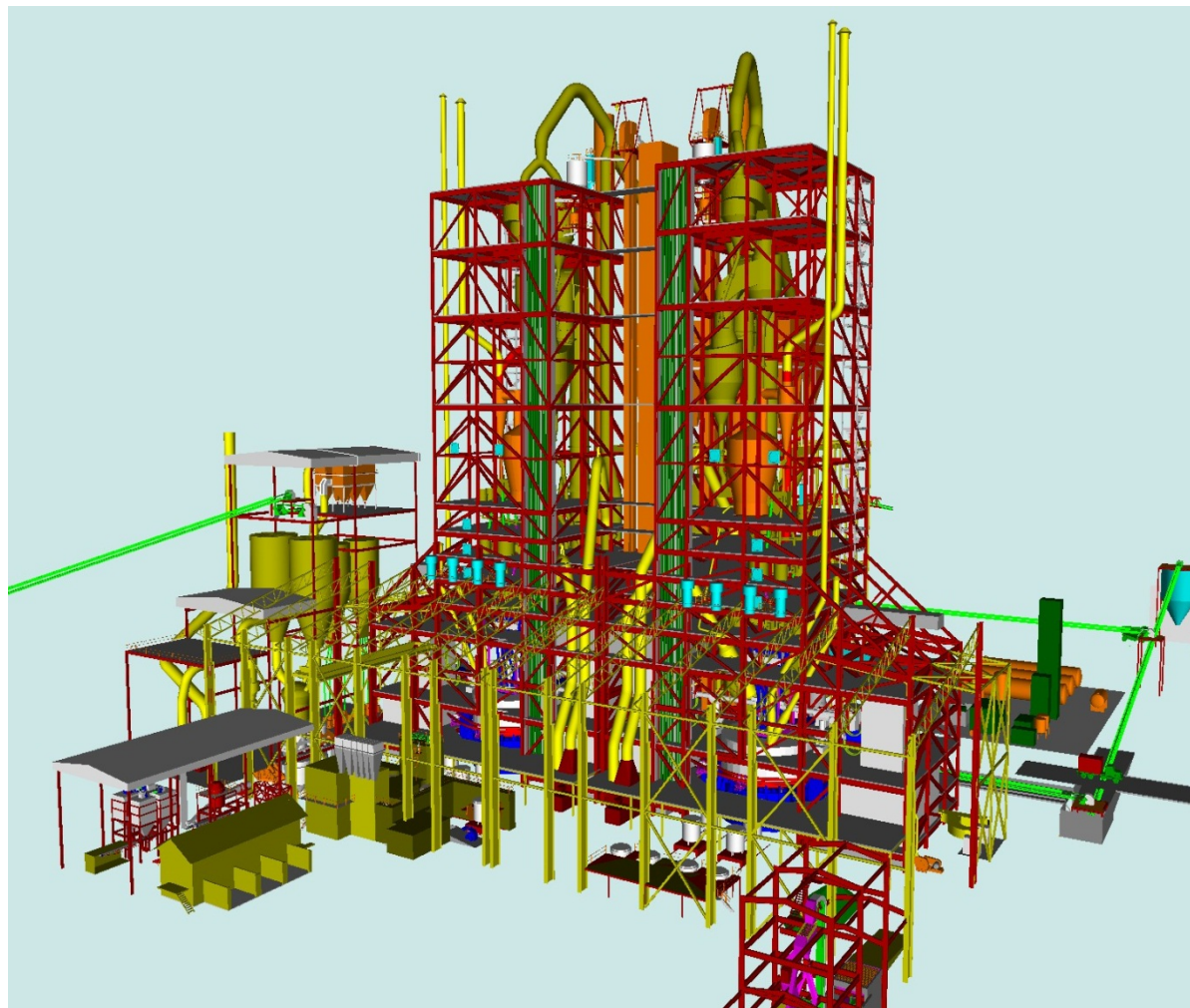
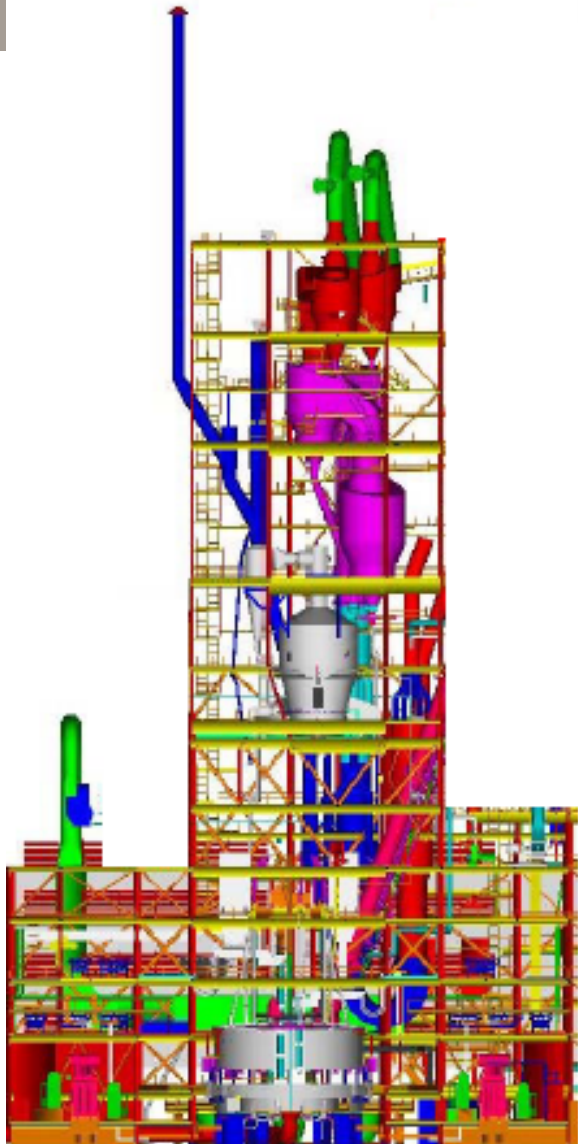
- **Our main construction concerns:**
 - **Shortage of construction manpower resources** associated with the “French” & “local” rules for immigration
 - **Shortage of construction means**
 - **3 to 4-years period for construction**

➔ **The solution: The Modularization**

- Limitation of the construction staff on site and pre-fabrication out of New Caledonia
- Fabrication of large module in South-Asian yard & transportation to New Caledonia



Modularization – Smelter Building



Modularization – Smelter Building

Qty of Modules : 25

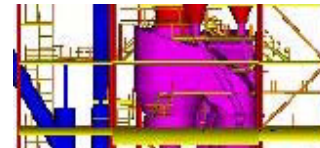
Weight range : 500 to 3,000 tons

Met Plant Smelter Building Modularization

3M103-Module



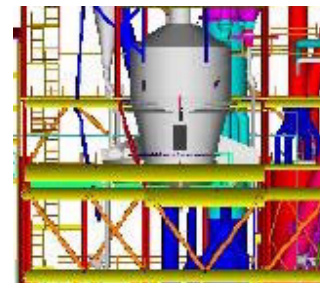
3M107-module



3M106-module



3M105-Module

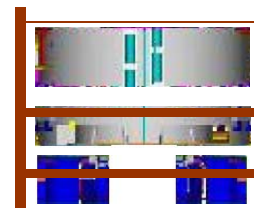


3M104-Module

3M101- Module



3M102 - module



Met Plant: approx. 32,000 tons

Steel : 23,000 tons

Eqpt: 6,500 tons

Piping: 650 tons

Modularization – Pictures





Koniambo - Today



KONIAMBO - Line 1 completed

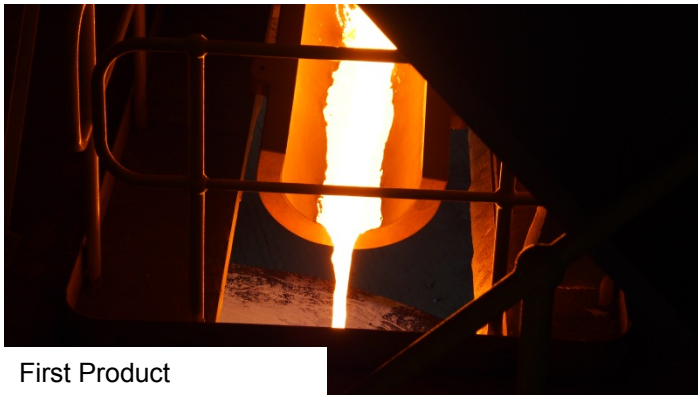
- Around 18 millions manhours done on site



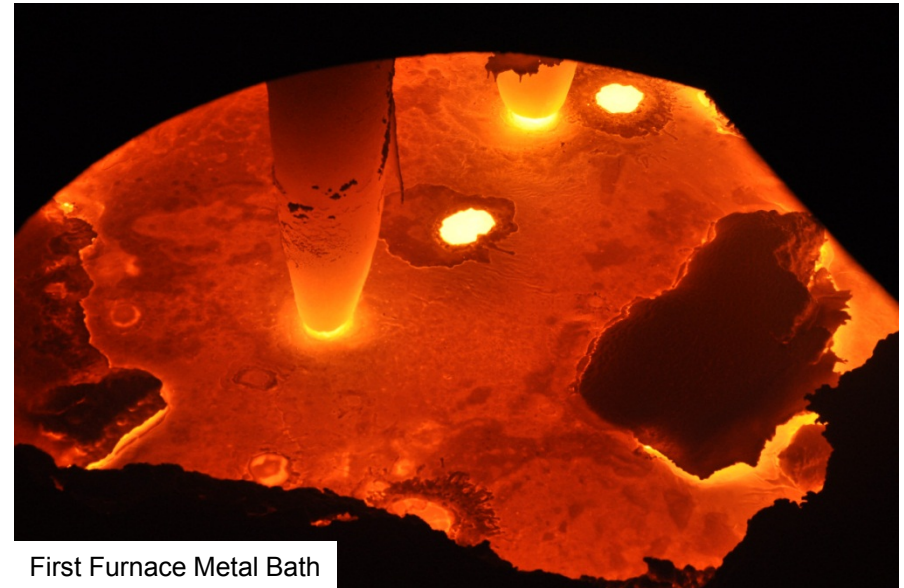
- “First wet ore from Mining to Plant “ done on 28 April 2012

KONIAMBO – 1st start up of line 1

“First Ore” in line 1 done on April 5th, 2013



First Product



First Furnace Metal Bath

- “First production done on April 10th, 2013



First Product



First Slag

KONIAMBO – Completion of construction of line 2

In parallel of start up of line 1, we are completing the construction of line 2 (73% of progress) with 4500 persons still mobilised on site today



➤ “First Ore” in line 2 targeted by end of 2013.

Merci

