KONIAMBO NICKEL SMELTER PROJECT

CNAM
6 Octobre 2008

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Business Development Manager

*Avec mes remerciements aux sociétés **KONIAMBO NICKEL SAS** et **Xstrata Nickel**,*
en particulier à M. Kevin BROWN, Project Director

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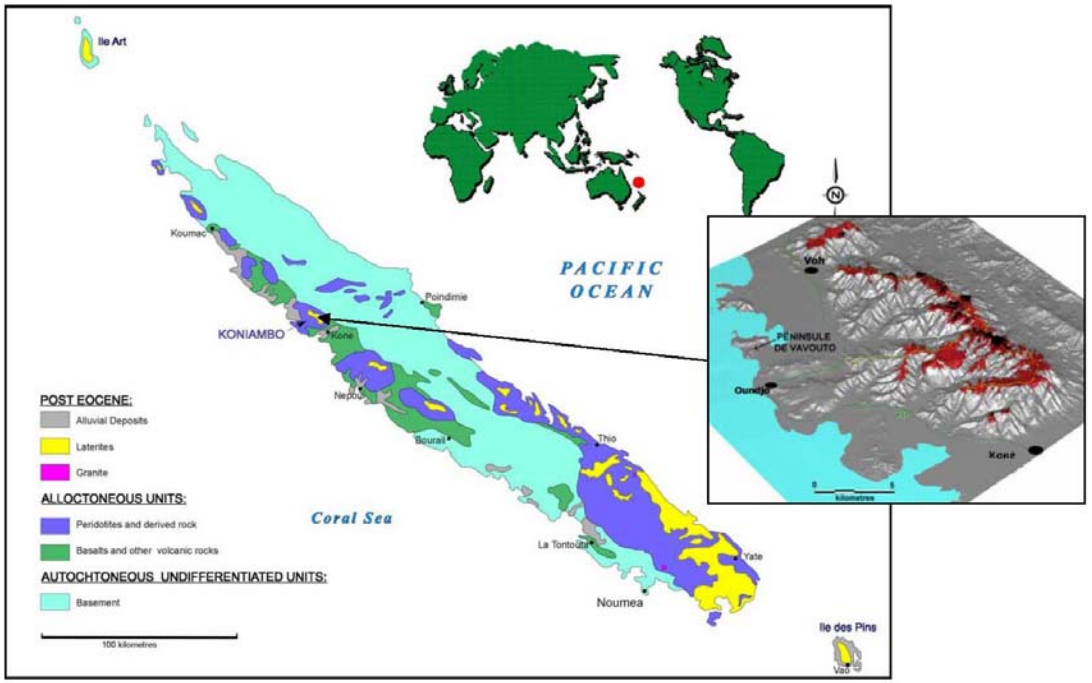
Contents

I. Project Overview

Project Overview

- 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 Koniambo Massif is located near the North Province capital of Koné in New Caledonia
- The project is being developed by Koniambo Nickel SAS, a joint venture between Société Minière du Sud Pacifique SMSP (51%) and Xstrata Nickel (49%)



II. 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

III. Project Timeline

Project Timeline

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

- 1988: Matignon Agreement signed
- 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

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Project Timeline

- 2007: Full release of project implementation
- 2008: Construction camp, major earthworks and lagoon dredging
- 2009: Smelter module construction, site infrastructure development
- 2010: Erection of smelter and power plant
- 2011: Project commissioning and start-up
- 2013: Full production commences

Pioneer Camp

January 2008

Project Timeline

Site Preparation

The Camp

IV. Local Community's Perception

Local Community's Perception

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

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Local Community's Perception

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

V. The « Project »

The Project

General Information

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

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)**

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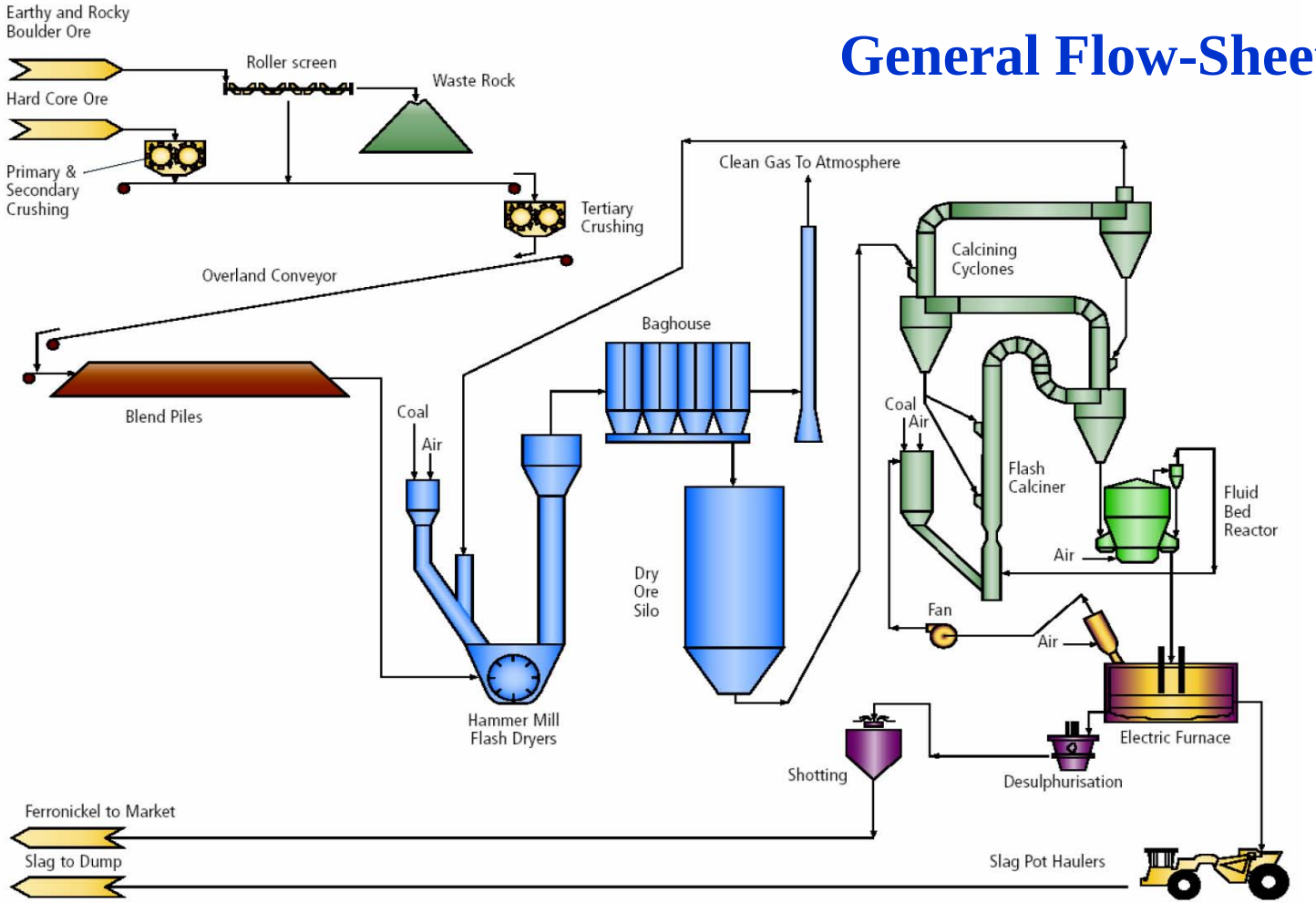
The Project

General Flow-Sheet



The Project

Facilities

- Open Pit Mine & Ore Preparation Facility
- Mine access road & overland conveyor
- Metallurgical Plant – 3mtpa ore feed, producing 176,000 tpa ferronickel product (60,000 tpa contained Ni)
- 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, …)

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The Project

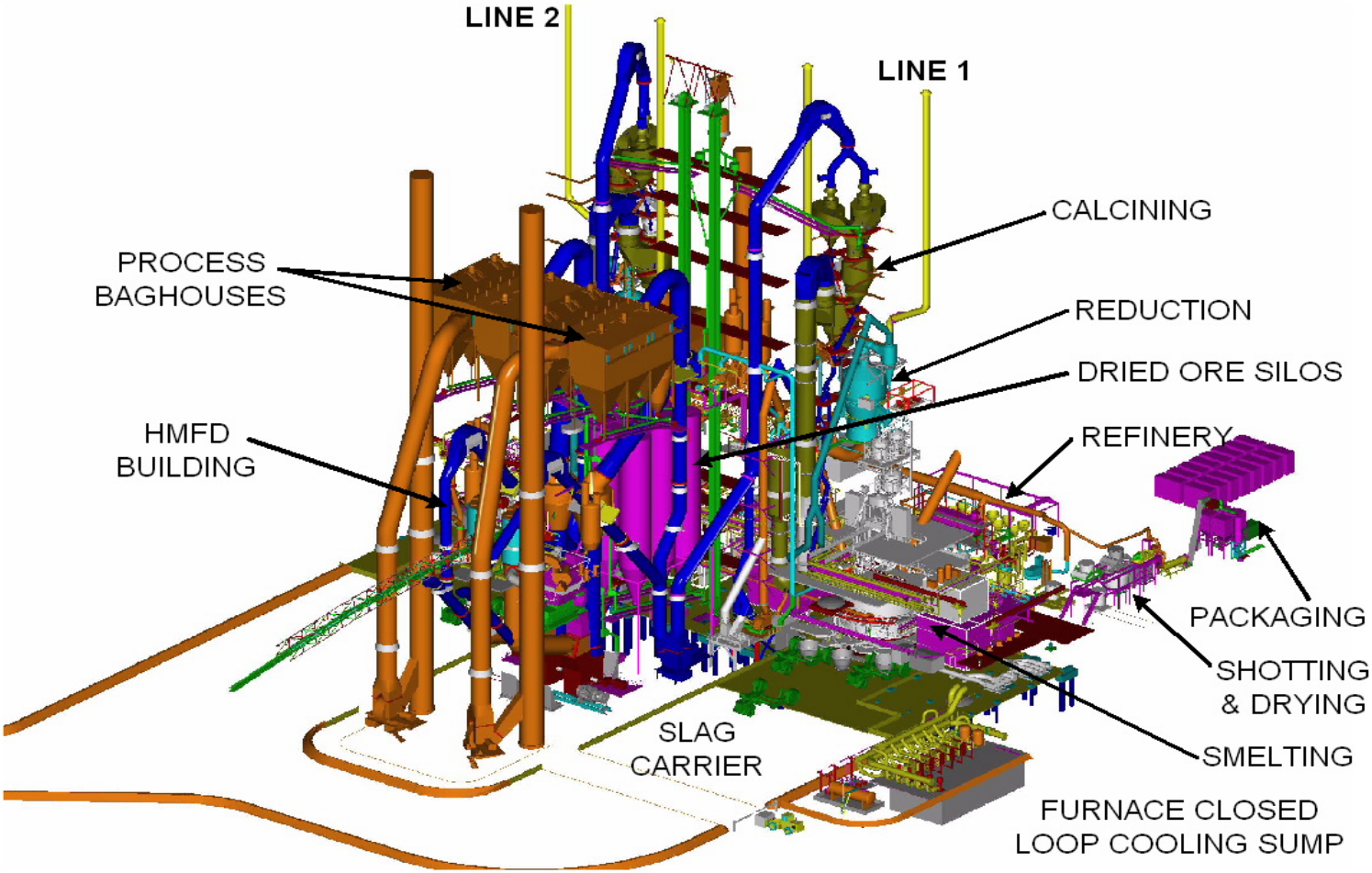

Overall Lay-out
Pointe de Vavouto
Anse de Vavouto
Presqu'île de Vavouto
Port
Dépot de Gazole
Formation végétale protégée
Unité de dessalement
Zone de stockage
Usine pyrométallurgique
Station de traitement
Parc de scories
Remblai
Minerai humide
Base vie
Aire de stockage
Entrée du site & parking
Tambounan (239m)

The Project

Metallurgical Plant & Power Plant

The Project

Metallurgical Plant – 3D Model



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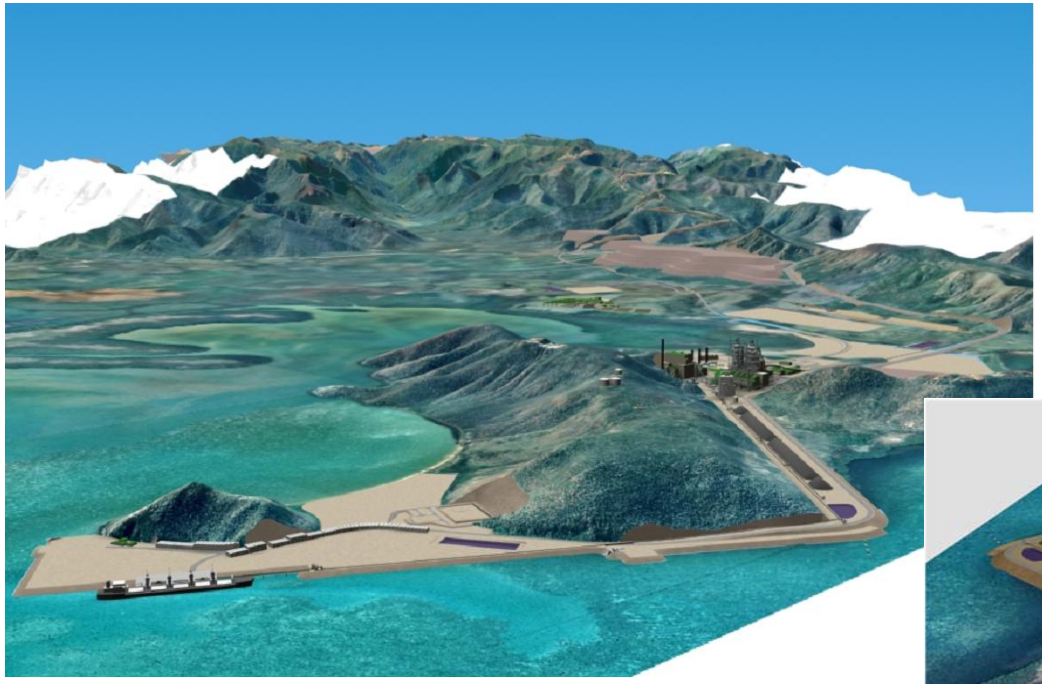
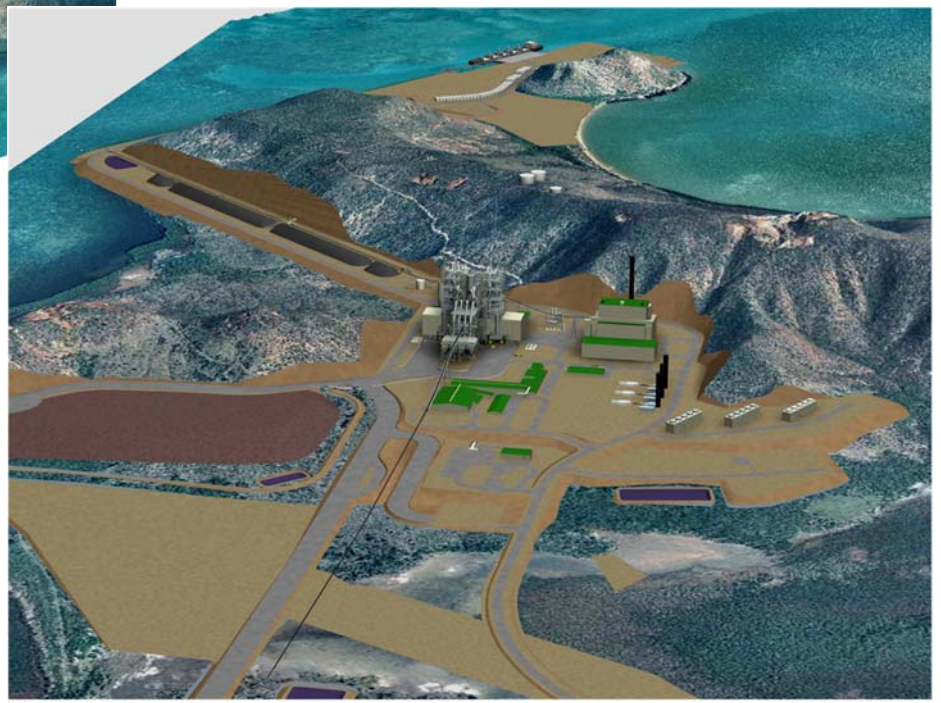
The Project



3D Model View



The Project

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
- Electrical Cables: 920 miles
- Site Construction man-hours : 15,000,000
- EPCM man-hours (engineering & supervision): 4,000,000

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The Project

Modularization

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

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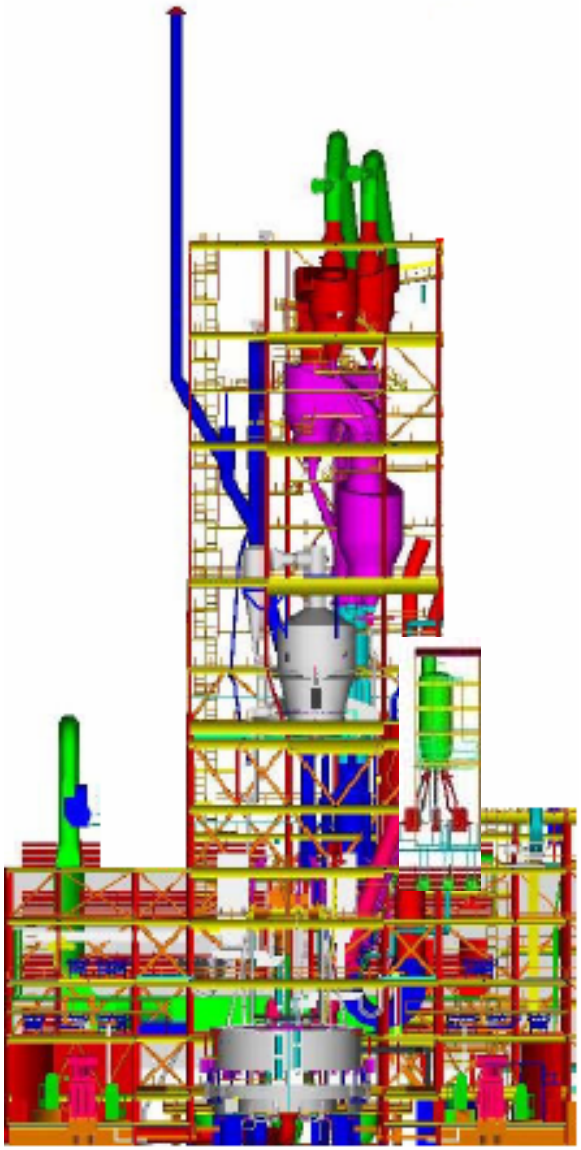
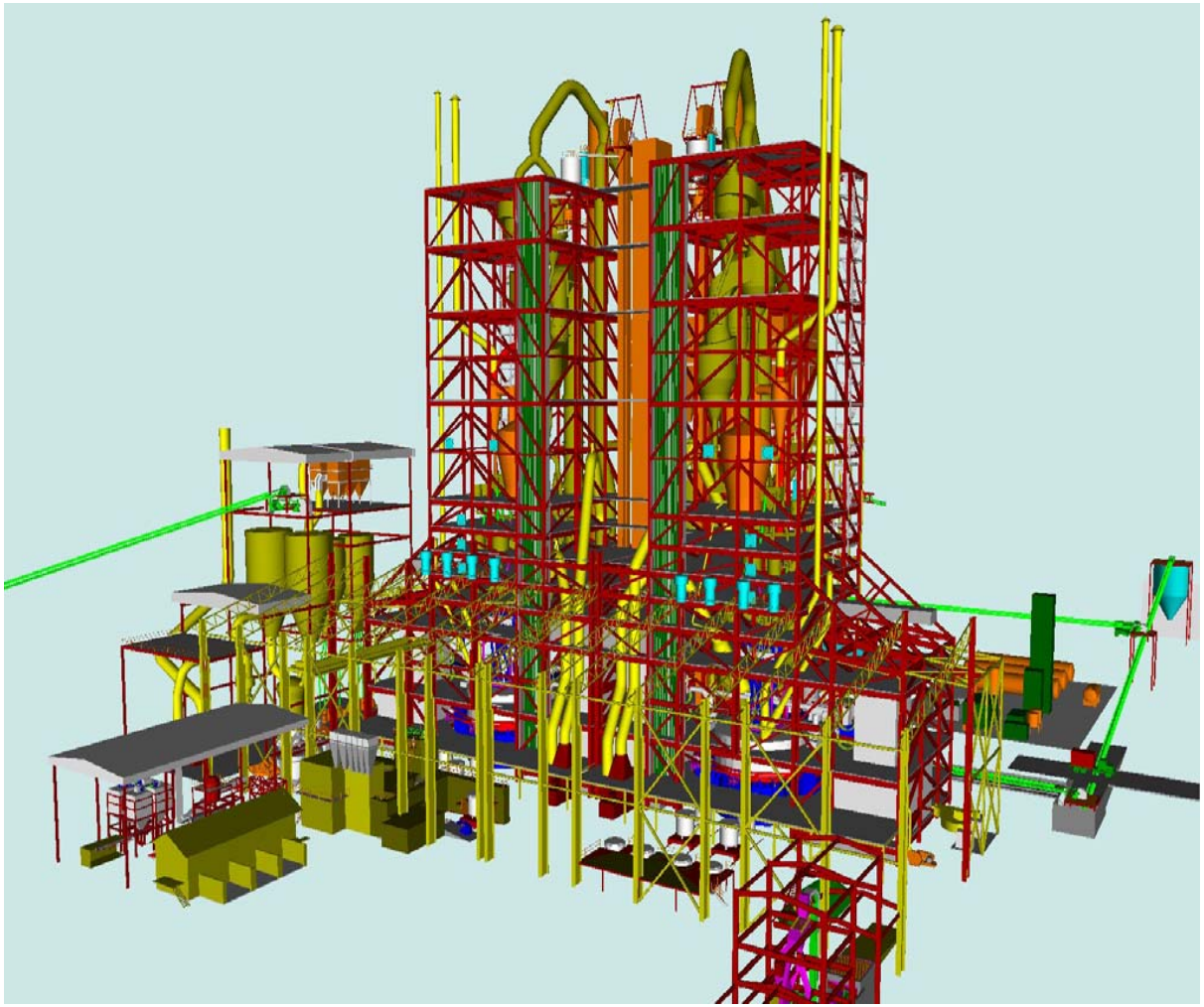
The Project



Modularization – Smelter Building



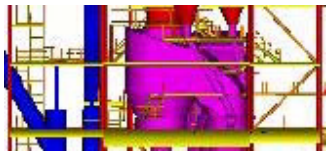
Modularization – Smelter Building

Qty of Modules : > 25
Weight range : 500 to 3,000 tons

Met Plant
Smelter Building
Modularization

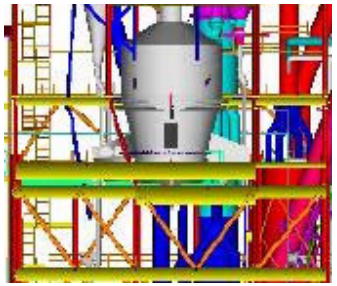
Met Plant: approx. 32,000 tons
Steel : 23,000 tons
Eqpt: 6,500 tons
Piping: 650 tons

3M107-module



3M106-module

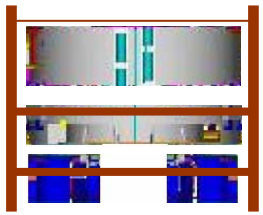
3M105-Module



3M104-Module

3M103-Module

3M101- Module



3M102 - module

V. Project Organization (EPCM Team)

Project Organization (EPCM Team)

- A Joint-Venture TECHNIP – HATCH (50 / 50)
- Our Main Asset :
  - Strong combination of process expertise with execution capability of very large project in French Territory
  - Experimented methods & tools for such a project
- Main Engineering Operating Center: Kuala Lumpur Technip Offices (Malaysia)
- 2 specialized centers:
  - Infrastructure : Brisbane (Australia)
  - Coal Facilities : Toronto (Canada)
- Staff involved in 2008 for eng. works: 700 persons
- Engineering under “French” norms

  …in 2 languages (French & English)
- With more than 20 nationalities

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VII. Project Key Concerns for a Sustainable Future

Project Key Concerns for a Sustainable Future

The Owner & EPCM Contractor Policy

- **As exclusively environmental :**
  - **Limit the environmental impact of our operations through efficient use of energy, natural resources, waste minimization and conservation of biodiversity**
- **As governance :**
  - **Work constructively and with transparency with local authorities, community representatives, public interest groups, NGO's and other stakeholders**
  - **Uphold fundamental human right and respect the traditional right of Local Communities to express their belief, 'the right of coutume' and other social practices**
  - **Contribute to a balanced development of local communities with due regard for local interest, and contribute to the economic, social and educational welfare of VKP district**

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Project Key Concerns for a Sustainable Future

“The Right of Coutume”

Access tunnel to mangrove forest ↑

Crab fishing in the mangrove →

Project Key Concerns for a Sustainable Future

Environment: Energy Production & Use of Resources

- Protection of Marine Environment with a continuous monitoring of the turbidity / other parameters follow up
- Erosion control & surface water management:
  - Continuous monitoring of the TSS downstream of main sediment control & catchments areas
- Waste management:
  - Waste collection & recycling - treatment by local / regional contractors
- Biodiversity protection
  - Definition with KNS of protected areas on Massif and Site
- CO2 monitoring & efficient energy use program for mid 2008

Pilot revegetation area

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Project Key Concerns for a Sustainable Future

People Interest: Population Consultation & Local Involvement

- Support to Owner early consultation of local population, NGO's & stakeholders
- Integration of human rights, labor standards, social and cultural vision, elimination all potential sources of discrimination, detection of all potential conflict
- Support to Owner Public disclosure program for communicating about possible impacts of the different major construction program

Ateou

(on Koné's land)

←

West Coast

→

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Project Key Concerns for a Sustainable Future

Long-Term Profit & Community Development

- Assessment of all local resources and competences useful for the project: Local Company Data base
- Economic partnership with a group of local companies (GIE)
- Early implication of local contractor in the bidding process
- Program to be designed for anticipating the re-conversion when the construction phase will end up

Local contractor & manpower

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Cœur de Voh -

Thank you for your attention