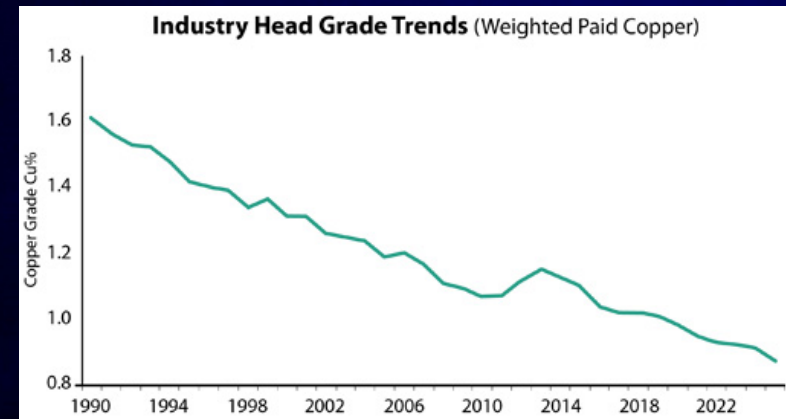
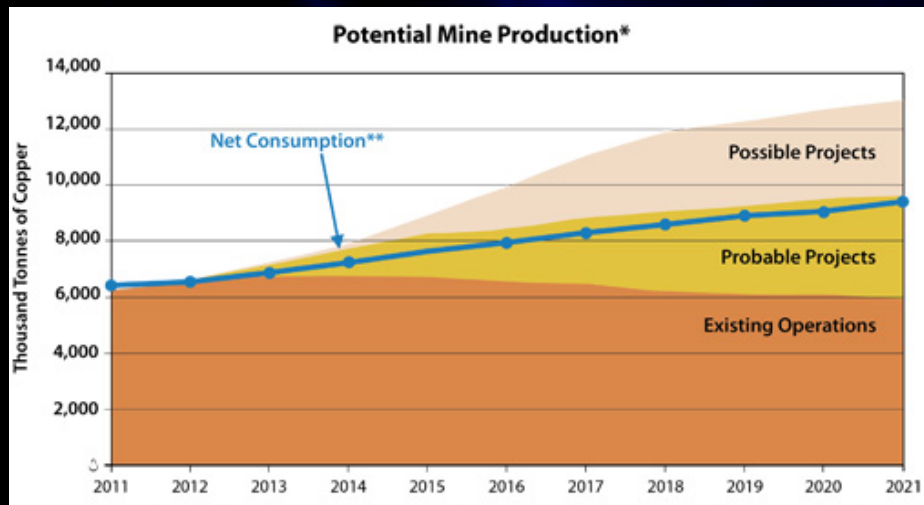


# Markets strong but Customers cutting Capex

- Mining companies shift focus from:
  - “Growth”, to
  - “Cost certainty”
- Companies will “SWEAT” existing operations and will delay projects (Gove Aluminum, QLA, Antamina)



Source: Brook Hunt



Source: Codelco (Copper)

- Fundamentals remain strong especially in Copper and Gold
- Middle East continues to invest in Alumina and Aluminum





# Bechtel M&M

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# Bechtel M&M





More than 1,000 studies  
on six continents



Several hundred  
major projects



Major market segments served includes copper, coal,  
aluminum and alumina.



# M&M: Some Key Accomplishments



- Built an aluminum smelter with world's largest potline in Oman
- First-ever Bechtel project in Iceland (an aluminum smelter) awarded the country's highest environmental award
- Repeat work for large customers including second stage of alumina refinery in Gladstone and third upgrade to the world's largest coal-handling facility at Port Waratah New South Wales
- Increasing production capacity at three major copper mines in the Chilean and Peruvian Andes
- Engaged in long term alliances some of the largest integrated mining and metals companies in the world including BHP and Xstrata.

# M&M: Business Focus



4C Strategy

Clients

Countries

Commodities

Core Competencies



# M&M GBU Strategy Summary



## CURRENT M&M STRATEGIC DIRECTION

- Sustaining “Four C’s”
- Intense focus on key, tier one customers
- Self-perform engineering and construction, where appropriate and possible
- Increasing use of GECs
- Copper and Met Coal major commodities
- Gold is emerging
- Assist all GBUs to enter our regions where appropriate
- Middle East customers continue to invest

## CURRENTLY CONTEMPLATING

- Water treatment and desalinization
- Diversifying the customer base in Key regions
- Following ‘Tier One’ customers to new countries and commodities

### Customers

- BHB Billiton
- Rio Tinto
- Xstrata
- Antofagasta
- Anglo American
- Barrick
- Teck
- Ma’aden

### Commodities

- Copper
- Aluminium
- Met Coal
- Alumina
- Iron Ore
- Gold

### Countries

- Chile
- Peru
- Middle East
- Canada
- Australia
- Africa



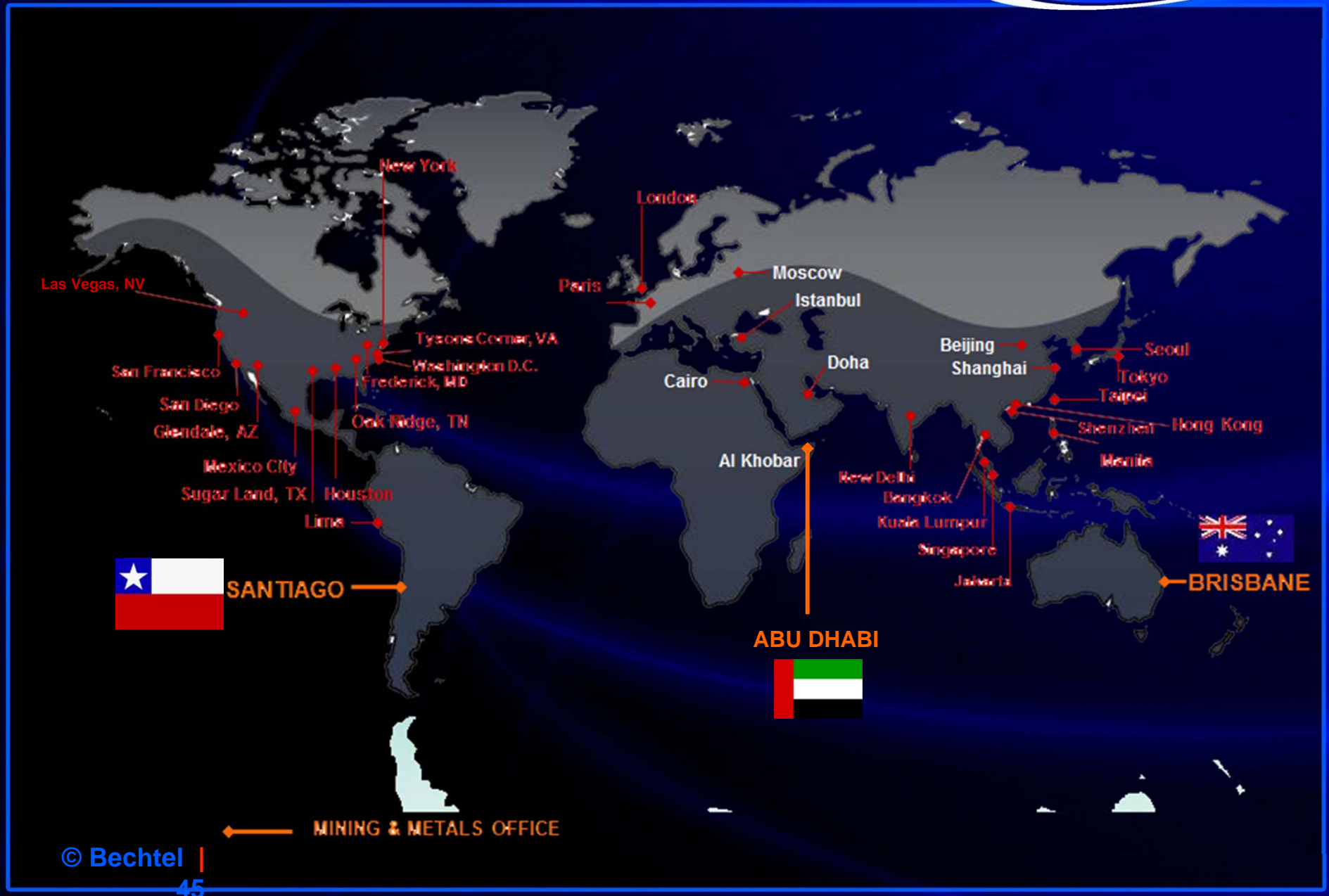
# M&M: Business Focus



- Zero incidents. Safety first both inside and outside the work environment.
- Major Mining and Metals projects around the Globe.
- Copper Center of Excellence – Santiago.
- Alumina/Bauxite Centre of Excellence – Abu Dhabi.
- Material Handling Center of Excellence
- Mining and Metals Global Strategy
  - Alumina, Aluminium, Copper
  - Major Industry Operators (Rio Tinto, BHP Billiton, Xstrata, Alcoa, Alcan)
  - Strong execution capability in two regions



# M&M: Global Offices



# M&M: Global Offices





# M&M: Signature Projects



**ANTAMINA COPPER-ZINC CONCENTRATOR**

## → Project Details

### **LOCATION**

Ancash, Peru

### **CLIENT**

Compañía Minera Antamina S.A.

### **SCOPE**

Engineering, procurement and construction management



**COLLAHUASI COPPER CONCENTRATOR AND EXPANSION**

## → Project Details

### **LOCATION**

Atacama Desert, Chile

### **CLIENT**

Compañía Minera Doña Inés de Collahuasi SCM

### **SCOPE**

Engineering, procurement and direct-hire construction

# M&M: Signature Projects



**ESCONDIDA PHASE IV**

## → Project Details

### **LOCATION**

Antofagasta, Chile

### **CLIENT**

Minera Escondida Limitada

### **SCOPE**

Engineering, procurement, direct-hire construction and pre-commissioning services



**LOS PELAMBRES COPPER PROJECT**

## → Project Details

### **LOCATION**

Choapa Province, IV Region, Chile

### **CLIENT**

Compañía Minera Los Pelambres

### **SCOPE**

Engineering, procurement and construction management



# M&M: Signature Projects



(2004–2007)

**FJARDAAL ALUMINUM SMELTER**

## → Project Details

### **LOCATION**

Iceland

### **CUSTOMER**

Alcoa

### **SCOPE**

Engineering, procurement, and construction



(2005–2008)

**SOHAR ALUMINUM SMELTER**

## → Project Details

### **LOCATION**

Iceland

### **CUSTOMER**

Alcoa

### **SCOPE**

Engineering, procurement, and construction

# Bechtel Chile



- Founded in 1976
- Engineering, Procurement and Construction Services for small and large projects.
- Focused in mining projects. Have done power plants and airport projects.
- More than 20 large projects developed in Latin America.
- Leader in Copper Concentrator Projects
- Santiago is the headquarters for M&M in Latin America and Bechtel's Copper Center of Excellence.



# Bechtel Chile: People



We have more than 2,500 experienced and highly qualified employees:

- Copper Technologies Experts
- Engineering and Design Specialists
- Procurement Specialists
- Construction Specialists (CM & Direct Hire)
- Information Technologies Specialists
- Administrative Support



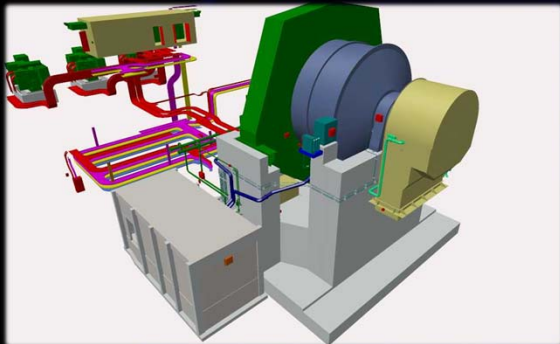
# Bechtel Chile: Our Strengths

- Unrelenting focus on ethics and safety
- Recognized as the world's copper concentrator experts in:
  - Technology
  - Studies
  - Design
  - Execution
- Solid Execution experience building the largest copper concentrators
- Unparalleled and extensive historic project database





# M&M: Copper Center of Excellence



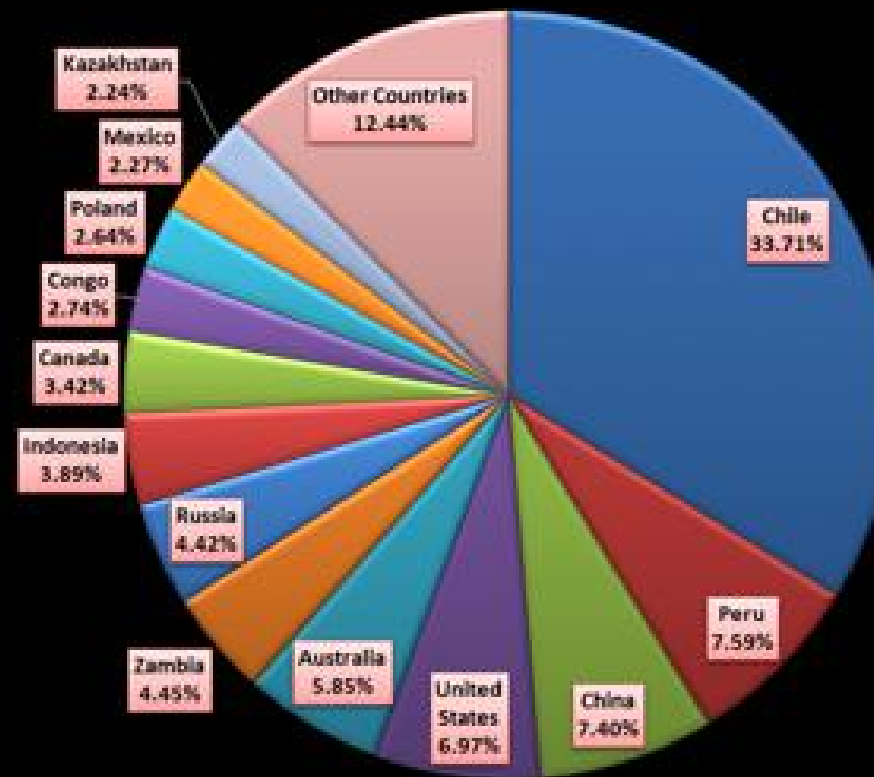
The Copper Center of Excellence is the virtual deposit of all Bechtel mining information, including:

- Historical Reports
- Plants Design and Costs
- Best Practices
- Costs Reduction Strategies
- Technology Specialists:
  - Large Mills (SAG and Ball)
  - Concentrator Design
  - SX-EW Plants Design
  - New Technologies and Development



# Chile is by far the largest producer – and will remain so

Copper Mine Production in 2011





# Because it's "Low Risk" and very economically and politically stable



	2010 GDP US\$ B	Pop" Million	GDP Growth 2010-2015	S&P Credit Rating	Corruption Rank	Doing Business Rank	Mining Invest "Rank	Political stability	TOTAL	Rank
Chile	203	17	4.9%	A+	1	1	1	1	4	<u>1</u>
Peru	153	29	5.9%	BBB-	5	4	2	4	15	<u>2</u>
Colombia	286	46	4.2%	BBB-	4	5	4	3	16	<u>3</u>
Uruguay	40	3	4.2%	BB-	2	3	7	5	17	<u>4</u>
Argentina	370	40	3.1%	B-	6	6	5	6	21	<u>5</u>
Bolivia	19	10	4%	B-	7	8	7	7	29	<u>6</u>
Ecuador	59	14	2.1%	CCC+	8	7	7	8	30	<u>7</u>
Paraguay	15	6	4.9%	BBB-	9	9	7	9	34	<u>8</u>
Venezuela	291	28	0.7%	BB-	10	10	6	10	36	<u>9</u>

# Bechtel Chile: Unmatched Design and Construction Experience



Las Bambas



Antamina



Ujina-Rosario Collahuasi





# Mining Projects in Latin America, last 12 years



Project	Country	Scope	CAPEX (US\$ millions)	Greenfield / Brownfield	Completion Year
Las Bambas	Perú	EPC/CM	6,200	Greenfield	Underway
OLAP	Chile	EPCM	650	Brownfield	Underway
Quebrada Blanca 2	Chile	EPC	6,200	Brownfield	Underway
OGP1	Chile	EPCM	3,200	Brownfield	Underway
Laguna Seca Debottlenecking	Chile	EPCM	234	Brownfield	2012
Antapaccay	Perú	EPC/CM	1,200	Greenfield	2012
Los Pelambres Repower II	Chile	EPC	718	Brownfield	2011
Los Bronces Development	Chile	EPC/CM	2,800	Brownfield	2011
Andina 94	Chile	EPCM	300	Brownfield	2009
Antamina Pebble Crusher	Perú	EPCM	180	Brownfield	2007
Los Pelambres Repower I	Chile	EPCM	137	Brownfield	2007
Codelco PTMP	Chile	EPCM	250	Brownfield	2005
Toquepala Leaching	Perú	EP	100	Brownfield	2004
Collahuasi Ujina-Rosario Transition	Chile	EPC	285	Brownfield	2004
Los Pelambres Pebble Crusher	Chile	EPC	120	Brownfield	2003
Escondida IV Expansion	Chile	EPC	1,100	Greenfield	2002
Antamina Copper/Zinc Concentrator	Perú	EPCM	1,214	Greenfield	2002
Cerro Matoso Nicket	Colombia	EPC	350	Brownfield	2001
Toquepala Concentrator Expansion	Perú	EP	75	Brownfield	2000
Los Pelambres Copper Concentrator	Chile	EPCM	966	Greenfield	1999

# Bechtel Chile: Clients



10 year Alliance to provide study and project execution services for all copper concentrator projects in Xstrata Copper's portfolio including Antapaccay and Las Bambas



Los Bronces, Collahuasi and Manto Verde Projects



5 projects since the year 1996



5 projects since the year 1997, BHP HUB



Collahuasi Copper Project, Collahuasi Ujina-Rosario Transition Projects plus several studies currently under execution



10 projects for the mining and industrial areas



# Copper projects are no longer just mines



- Pipelines, Ports, Transmission, Roads, Infrastructure.



# Las Bambas Project

14°05'06"S | 72°28'02"O



# Las Bambas Project

14°05'06"S | 72°28'02"O



# The Project

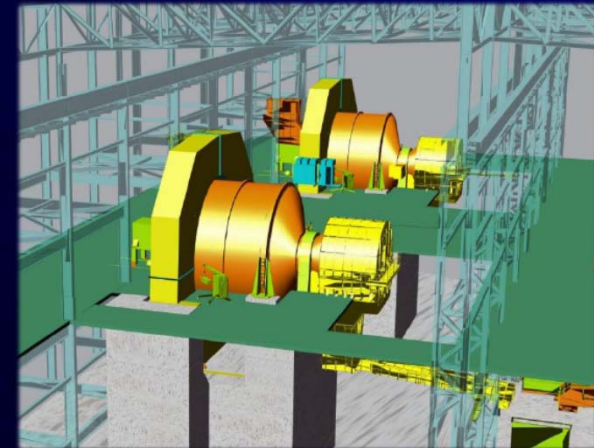
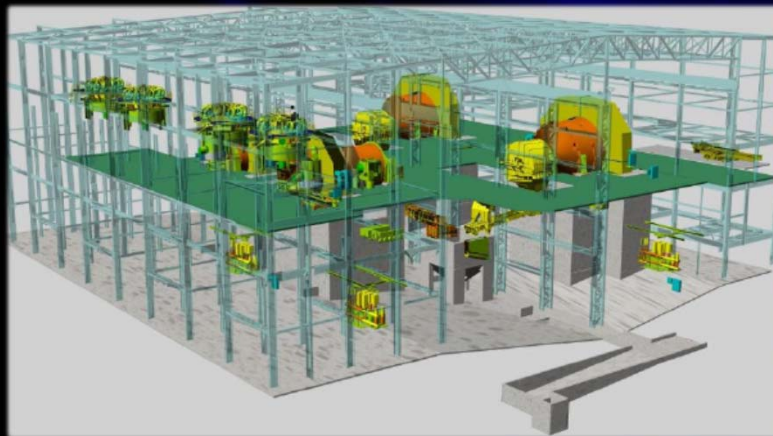
- Scope: 140,000 tpd copper concentrator
- Production: 400,000 tpy copper
- Schedule: EP NTP September 2010, CNTP June 2012, startup in 2Q 2015
- TIC: \$5.9B, Bechtel Scope \$3.7B
- Job hours: 55M craft, 5M NM, 60% direct hire
- Location: Apurimac Province, Peru
- Elevation: 4250 m.a.s.l





# Las Bambas – Project Description, On Site

- 140,000 tpd Copper Concentrator at Las Bambas.
- Three separate open pit mines with minimum 18 year life
- Two gyratory primary crushers
- Two overland conveyors with combined 10.8 km length
- Two 70,000 tpd Semi-Autogenous Grinding (SAG) lines



- 2 – 40 ft diameter SAG mills with 26 MW gearless drives
- 2 – 26 ft diameter Ball mills with 16.4 MW gearless drives
- Tailings storage facility, distribution system and water reclaim.
- Two fresh water reservoirs and water distribution systems.
- Permanent accommodations complex for 8,000 personnel

# Las Bambas – Project Description, Off Site

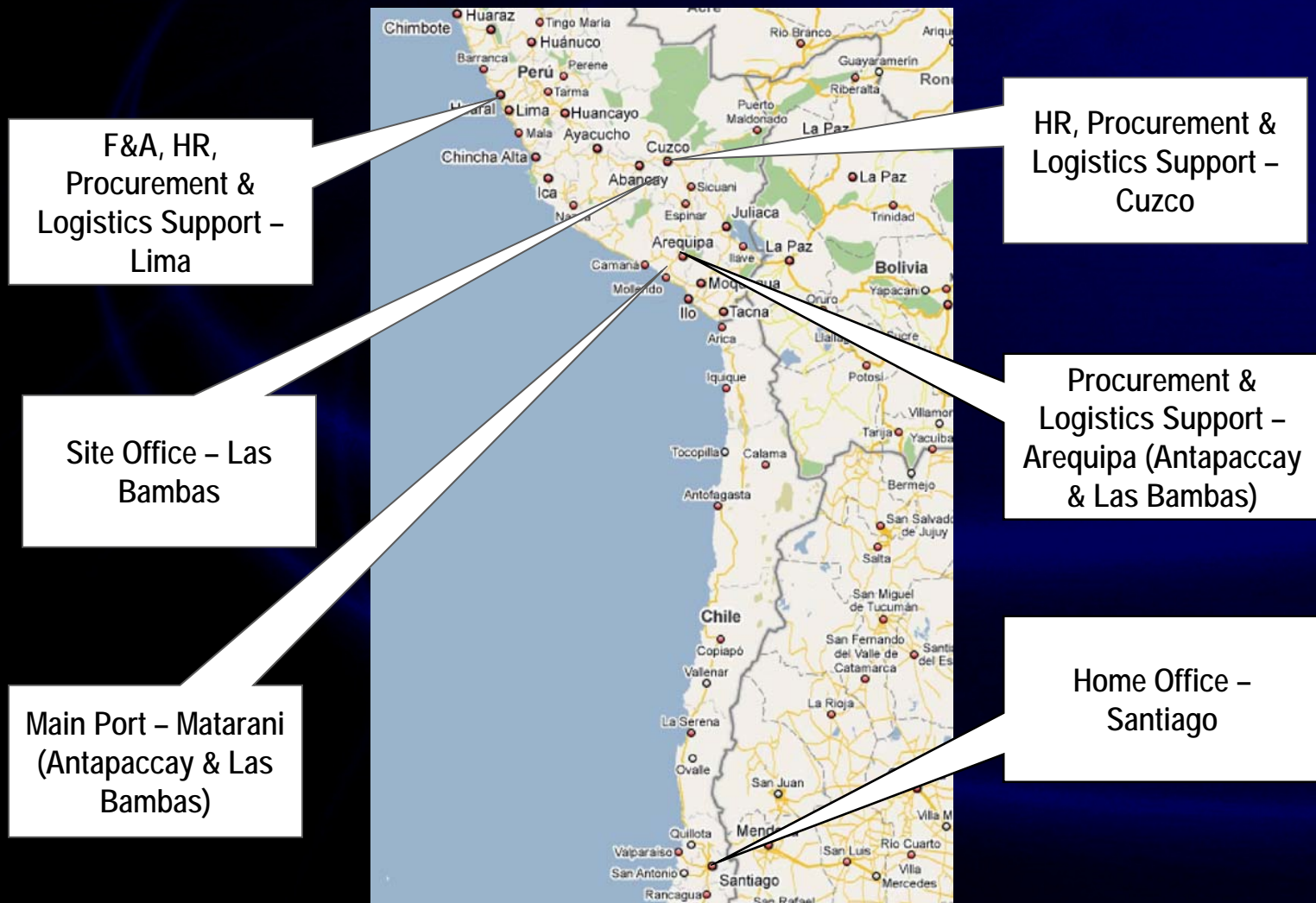
- 206 km access road from Cusco.
- 205 km long access and Heavy Haul road from Antapaccay.
- 205 km Concentrate Pipeline from Las Bambas and Antapaccay.
- Molybdenum Separation Plant (Moly Plant) at Antapaccay.
- Copper and Moly Concentrate Filter Plants at Antapaccay.



- 130 km long 220 kV power line from Cotaruse to Las Bambas.
- 178 km railroad from Antapaccay to existing Matarani to Cusco railroad at Imata.
- Port Modifications at Matarani – by TISUR, the Operator.



# Las Bambas – Key Project Sites



# The Client

## ■ MMG – Mineral and Metals Group:

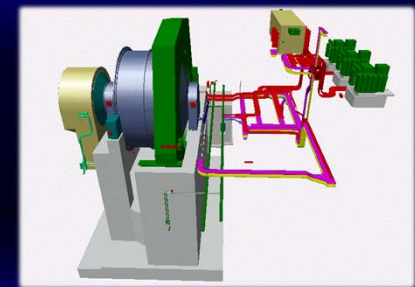
- 2013 Glencore , a significant share holder in XSTRATA took over operational control of Xstrata, PLC .As a condition to complete the acquisition, Glencore would have to divest the Project through an international sales process.
- The sale started in 2013 and consortium led by MMG,a subsidiary of Minmetal purchased Las Bambas in April 2014.
- China Minmetals Nonferrous Metals Co. (CMNM) , is a subsidiary of China Minmetals Corp. (CMC) a state owned enterprise. CMNM owns a 70% controlling interest in MMG. The remaining 30% is publically traded on the Hong Kong Stock Exchange.





# The Unique Challenges

- Safety and Peruvian Culture
- Community Relations
- Remote location, 800 km from the coast
- Largest copper concentrator ever built
- Permitting
- Altitude and weather



# Learning and Innovation - Safety

- Global Initiative: M&M Sign Up for Safety Campaign
- Customize Approach to Local Hierarchical Culture:
  - Letter from M&M President
  - Every worker signed a commitment banner
  - Personal, visible, all management involved
  - Reach deep into the organization





# Tincoc Canyon





# Learning and Innovation – Road Management Plan

- Traffic passes through 25 communities
- Narrow roads, 150 moves per day
- Cross functional team established to tackle challenge: ESH, T&L, Security, CR, Construction, Risk, Project Controls
- Used ARM software to manage road risk
- Key elements – Road General, convoys with escorts, check points, GPS tracking, radio communications system, local hires for town monitors, dynamic model to maximize traffic flow, security patrols





# Key Take-Aways

Learning and Communication:  
Understand client needs & goals

- Meeting client expectations ultimately defines success

Learning and Innovation:  
Set expectations and  
challenge the team

- Execution – Identify unique project critical “drivers”
- Safety – Lead with passion, adjust to culture, show you care



# Las Bambas

Photo Gallery

