



# Development of the Frontier Copper Mine, DRC

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**Eurasian Natural Resources Corporation PLC**

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# Content

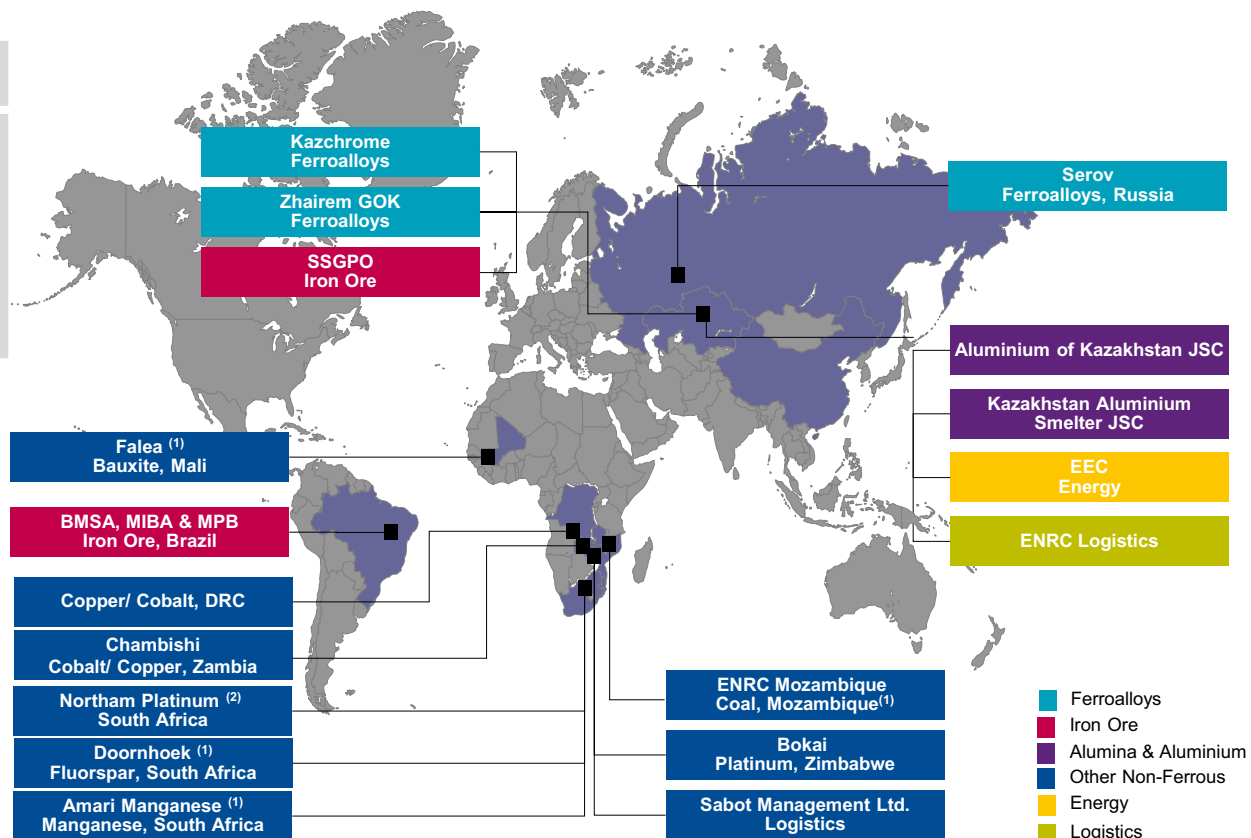
1. ENRC Group Overview
2. Copper Footprint in Africa
3. Development of the Frontier Mine
  - i. Overview
  - ii. Current status
  - iii. Geology
  - iv. Mining
  - v. Flowsheet
  - vi. Capital expenditure
  - vii. Power
4. Conclusions



# ENRC Overview

Eurasian Natural Resource Corporation PLC is a FTSE 100 listed, globally diversified natural resources group, with integrated and low cost mining, processing, energy, logistical and marketing operations.

Number of geographies	10
Key commodities	<p>Ferrochrome</p> <p>Manganese</p> <p>Iron ore</p> <p>Alumina/Aluminium</p> <p>Coal/Energy</p> <p>Logistics</p> <p>Copper/Cobalt</p> <p>Platinum</p> <p>Fluorspar</p>



Note: (1) Prospects (2) Financial Investment

## Copper Footprint in Africa

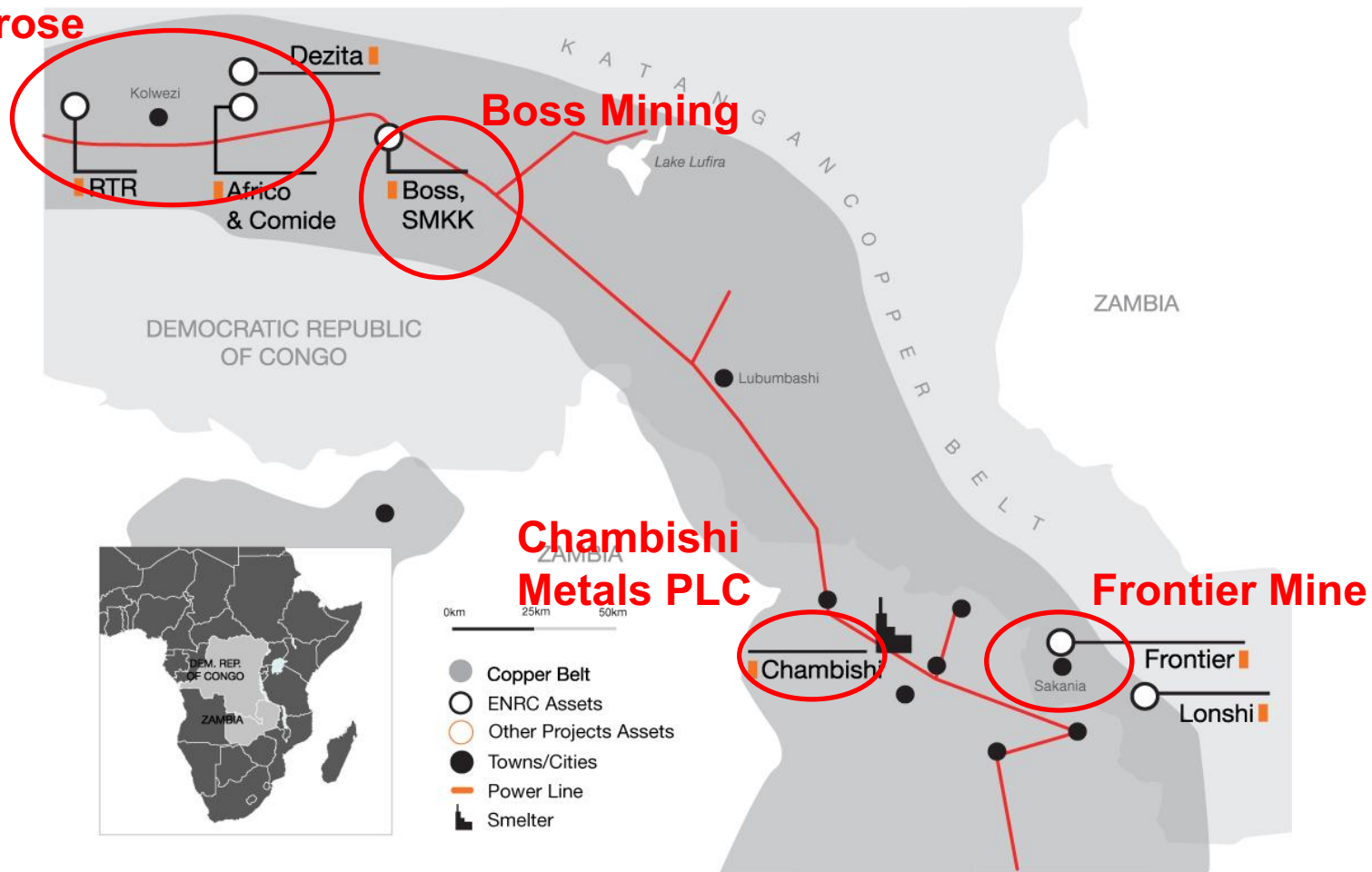
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- Initial entry into Africa through the acquisition of CAMEC plc in 2009 for US\$970 million
- Subsequent acquisitions:
  - Chambishi Metals PLC (Zambia)
  - Camrose (RTR, Africo and Comide) copper and cobalt assets (DRC)
  - FQM processing plants (DRC)
  - Frontier licence (DRC)
  - Dezita and SMKK licences (DRC)
- Considerable footprint acquired, with resources of more than **8.8Mt of contained copper and 911kt of contained Co**
- Currently copper capacity of **40ktpa** at Boss Mining (ex CAMEC assets)

**ENRC has a strong pipeline of near term, cash generating copper projects. The Group plans to become one of the largest copper producers in Africa, targeting more than 200ktpa of copper over the next 5 years.**

# ENRC's African Copperbelt Assets

## Camrose



## Frontier Mine – Overview

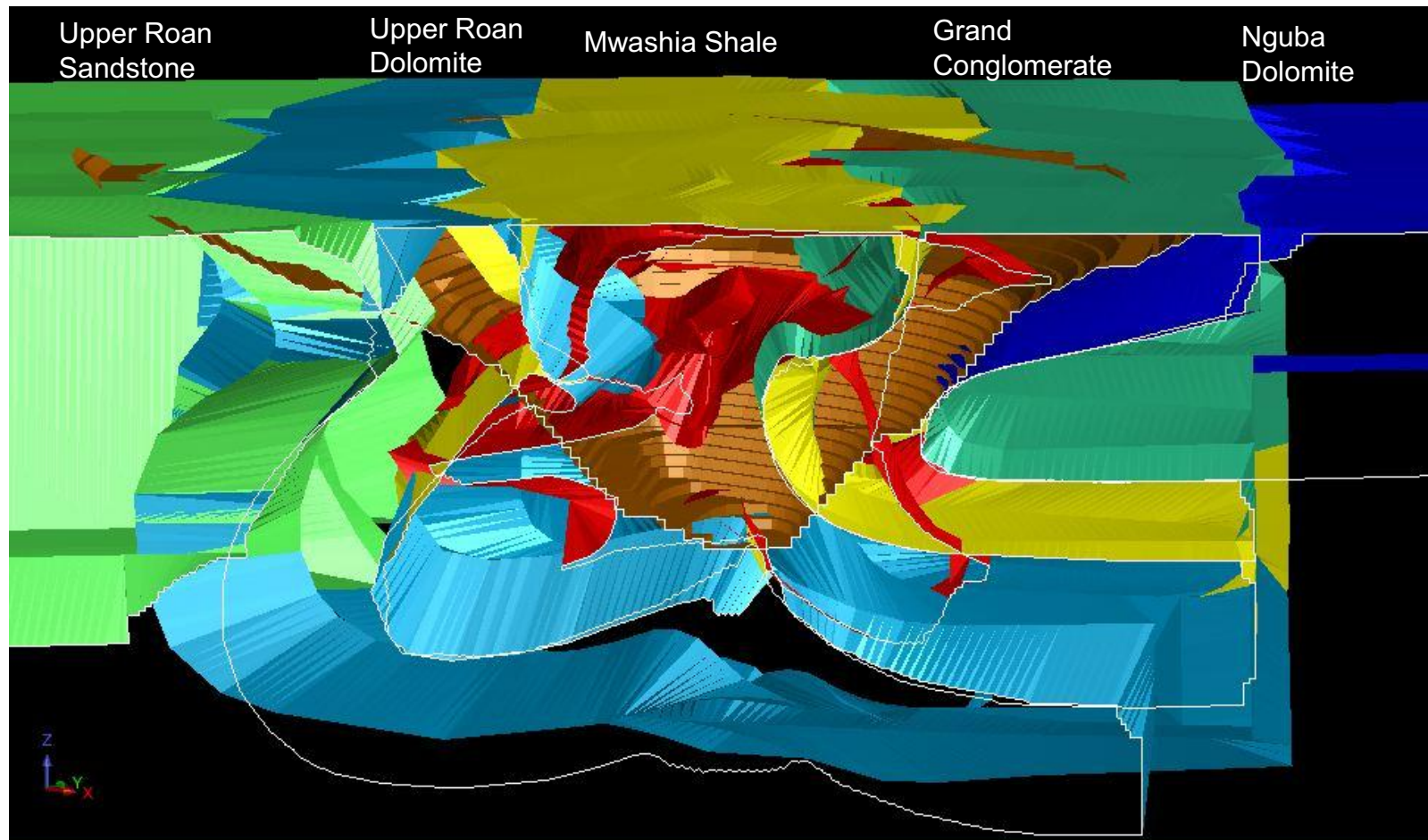
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- Processing plant acquired by ENRC in March 2012
- Mining licence awarded by the DRC Government in July 2012 (95% ENRC ownership)
- Estimated mineral resource of 273.8Mt grading 1.18% copper (SRK, January 2013)
- Mine and plant rehabilitation ongoing
- Process will consist of conventional crushing, milling and sulphide flotation
- Target capacity of 80-90ktpa of copper in concentrate, with a scalable secondary flotation circuit
- Plant has been test run



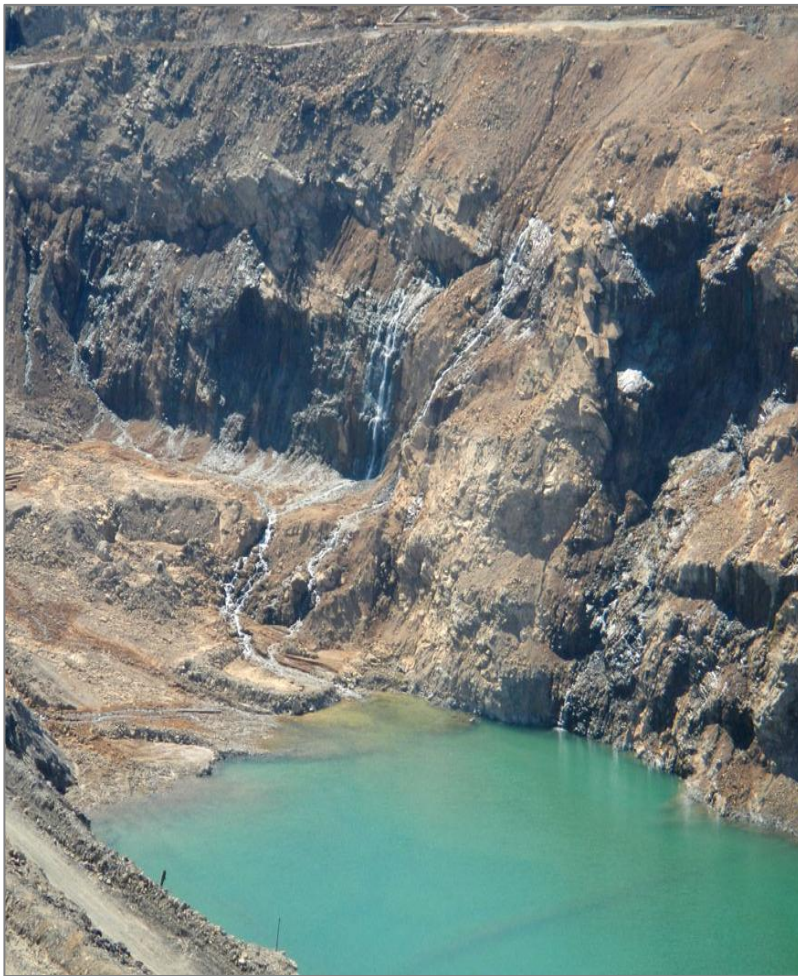
**Frontier on-track for full commissioning in April 2013, with steady state production by July 2013**

# Geological Overview





## Condition of Open Pit



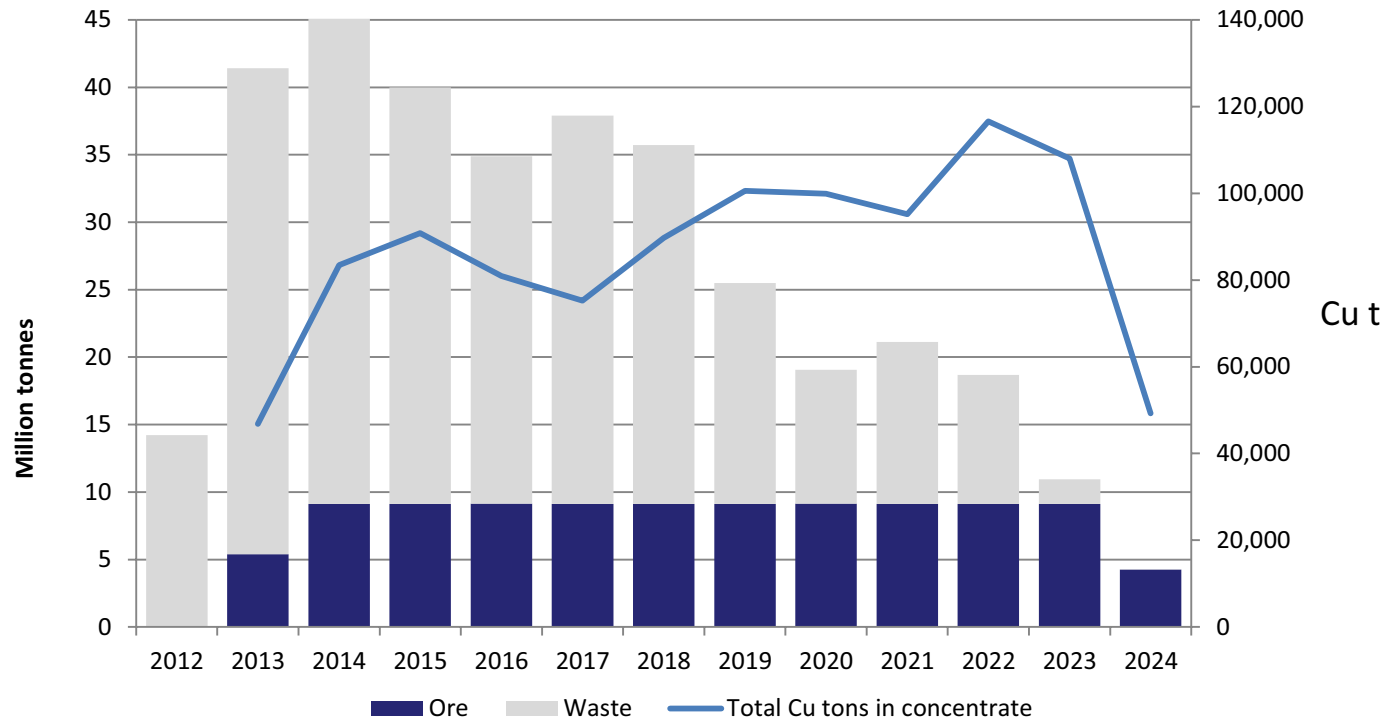
**Poor pit condition with unstable, steep gradient.  
A number of pit failures have occurred.**

# Mining



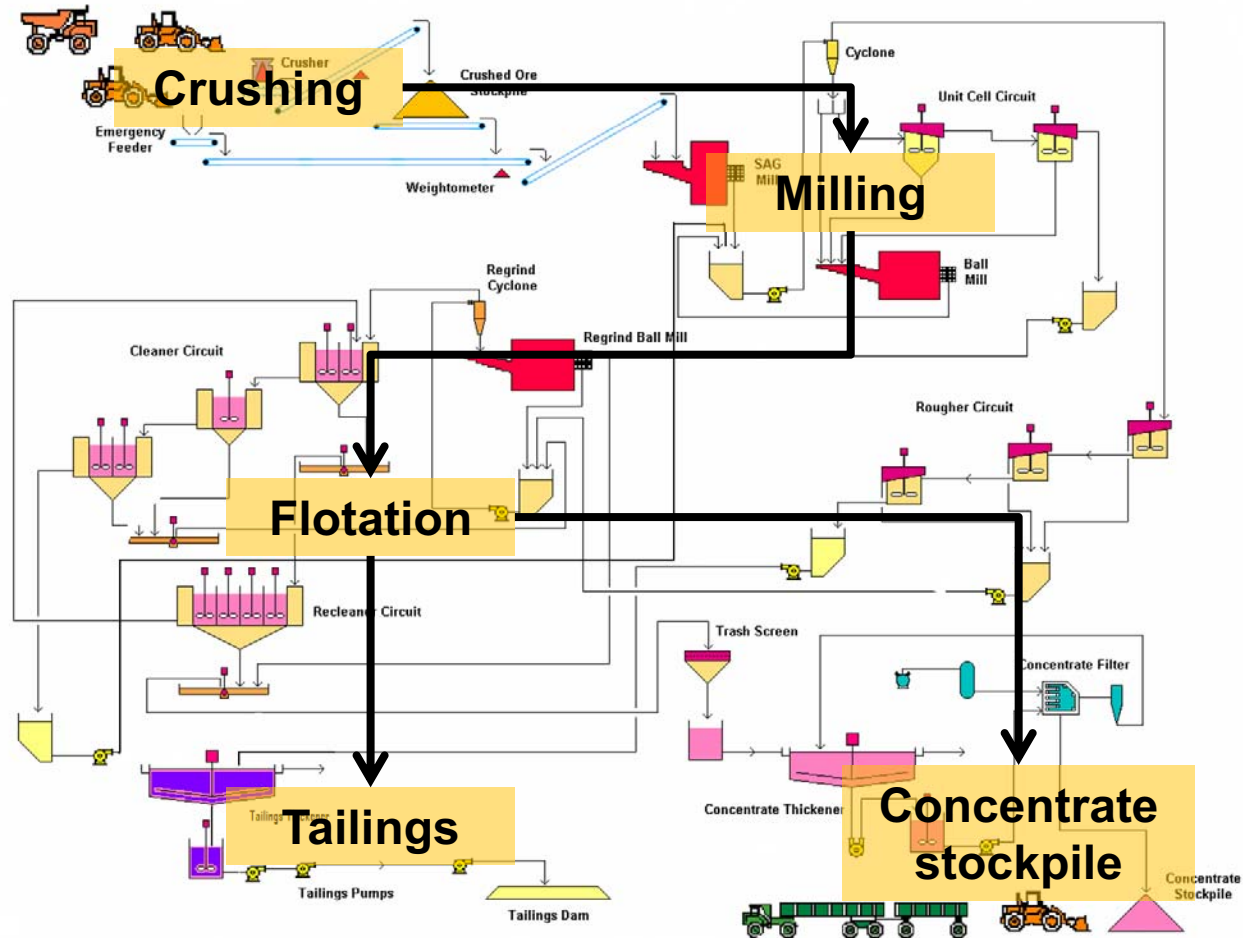
LOM	Waste (Mt)	Oxide Ore (Mt)	Sulphide Ore (Mt)	%Cu	Depth (m)	Strip Ratio
Cut 1	6.0	0.9	12.8	0.97	197	0.5
Cut 2	105.1	5.5	50.0	1.16	320	2.2
CCC-pit	21.6	0.9	5.5	1.27	170	4.1
Cut 3	107.0	0.4	32.7	1.19	350	3.3
Total LOM	239.6	7.7	100.9	1.15	350	2.5
Potential	330.3	0.3	60.5	1.18	450	5.5
Total Potential	569.9	8.1	161.5	1.16	450	3.6

# Mining Volumes



**2013 and LOM C1 costs for concentrate are expected to be US\$1.00/lb – US\$1.20/lb**

# Frontier Flowsheet





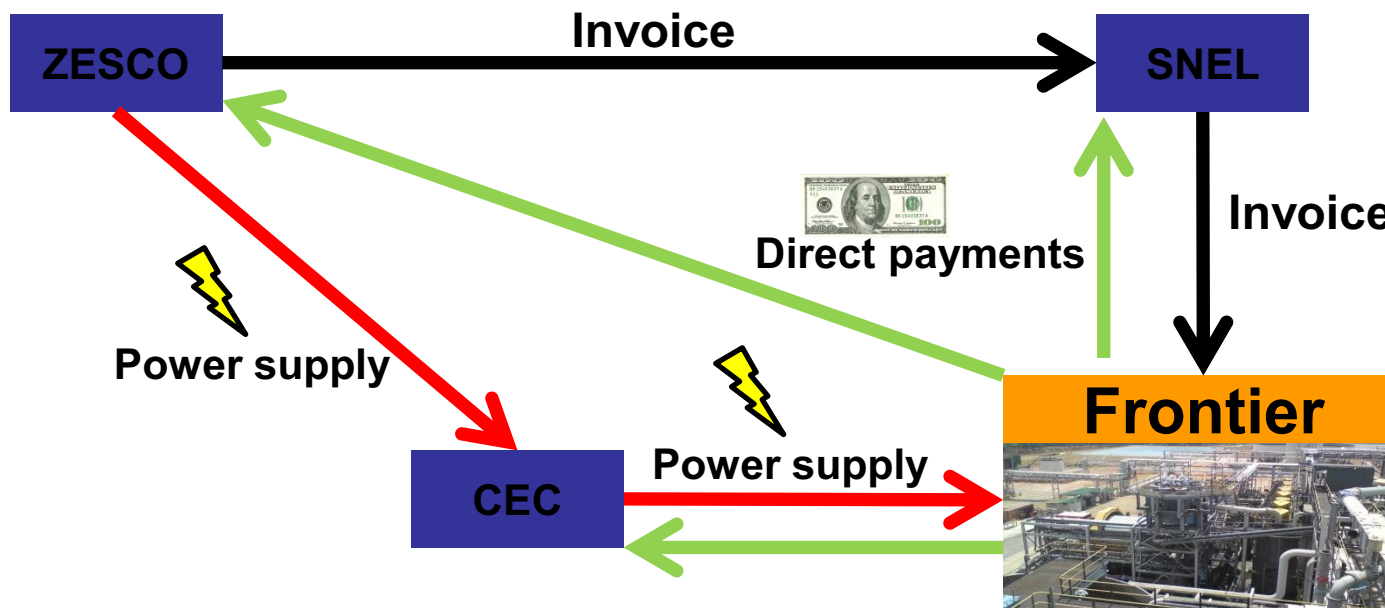
## Capital Expenditure

Type	Element	US\$m
Expansionary	Geotech & hydrology	15
	Mining	160
	Plant	6
	Infrastructure	5
	Exploration	16
	Other	7
	<b>Total expansionary 2013</b>	
Sustaining	Mining	4
	Plant	10
	Infrastructure	3
	Other	3
<b>Total sustaining 2013</b>		<b>20</b>
<b>Total Capex 2013</b>		<b>229</b>

**Total investment over the next 5 years of US\$490 million, including US\$42 million of sustaining capital expenditure.**

# Infrastructure: Power

- Signed contract with SNEL for full Frontier power requirement of 27MW
- Security of supply:
  - power generated by ZESCO and wheeled by CEC
  - power infrastructure to Frontier not linked to DRC grid



# Power Diversification

## Future lies in developing further hydro and thermal power generation

- **Thermal development:**
  - Luena brown coal deposit (Gecamines)
  - Makala deposit (requires a 500km power line)
- **Hydro development/refurbishment:**
  - Busanga hydroelectric scheme in Katanga (240MW)
  - Nzilo II hydroelectric scheme in Katanga (120MW)
  - Luapula hydroelectric schemes on the Zambian border (2x300MW)
  - Refurbishment of generating units at Inga I and Inga II
- **Import from SAPP members and IPPs**
- **Import from Congo Brazzaville:**
  - Gas Turbine 300MW (potential upgrade to 450MW) in Pointe Noire
  - Power line to be built, via Cabinda to Inga
  - Concerns regarding reliability of the HVDC; risk of power imported from Pointe Noire to be diverted to Kinshasa

## Conclusion

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- Frontier on-track for full commissioning in April 2013, with steady state production by July 2013
- 40kt of copper contained production expected in 2013
- Sustainable long-term production of 80-90k tonnes per annum
- No infrastructure concerns – rare for a DRC project
- Logistics optimised
- Excellent demand for concentrate product due to high sulphur content
- Downstream processing of concentrate volumes at Chambishi
- Important step towards goal of 200ktpa of copper production

