



# UPDATE OF MINING SECTOR AND REFLECTIONS

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CANCONEX I PNG RESOURCE SUMMIT  
01 JULY TO 4 JULY 2024  
UNIVERSITY OF PAPUA NEW GUINEA





## Exploration Licence

## Mine Development & Extraction Licences

- Mining Lease
- Special Mining Lease
- Alluvial Mining Lease
- Lease for Mining Purposes
- Mining Easement

## Mine Development Agreements

- Mining Development Contract
- Community Development Agreement
- Tribute Agreement
- Compensation Agreement

<https://portal.mra.gov.pg>

# PNG Mines and Advanced Projects

## Types Of Deposits And Scale Of Mining Operations

### LARGE DEPOSITS

#### PORPHYRY COPPER GOLD

1. Bougainville
2. Ok Tedi mine
3. Wafi-Golpu
4. Frieda River
5. Yandera

#### EPITHERMAL GOLD

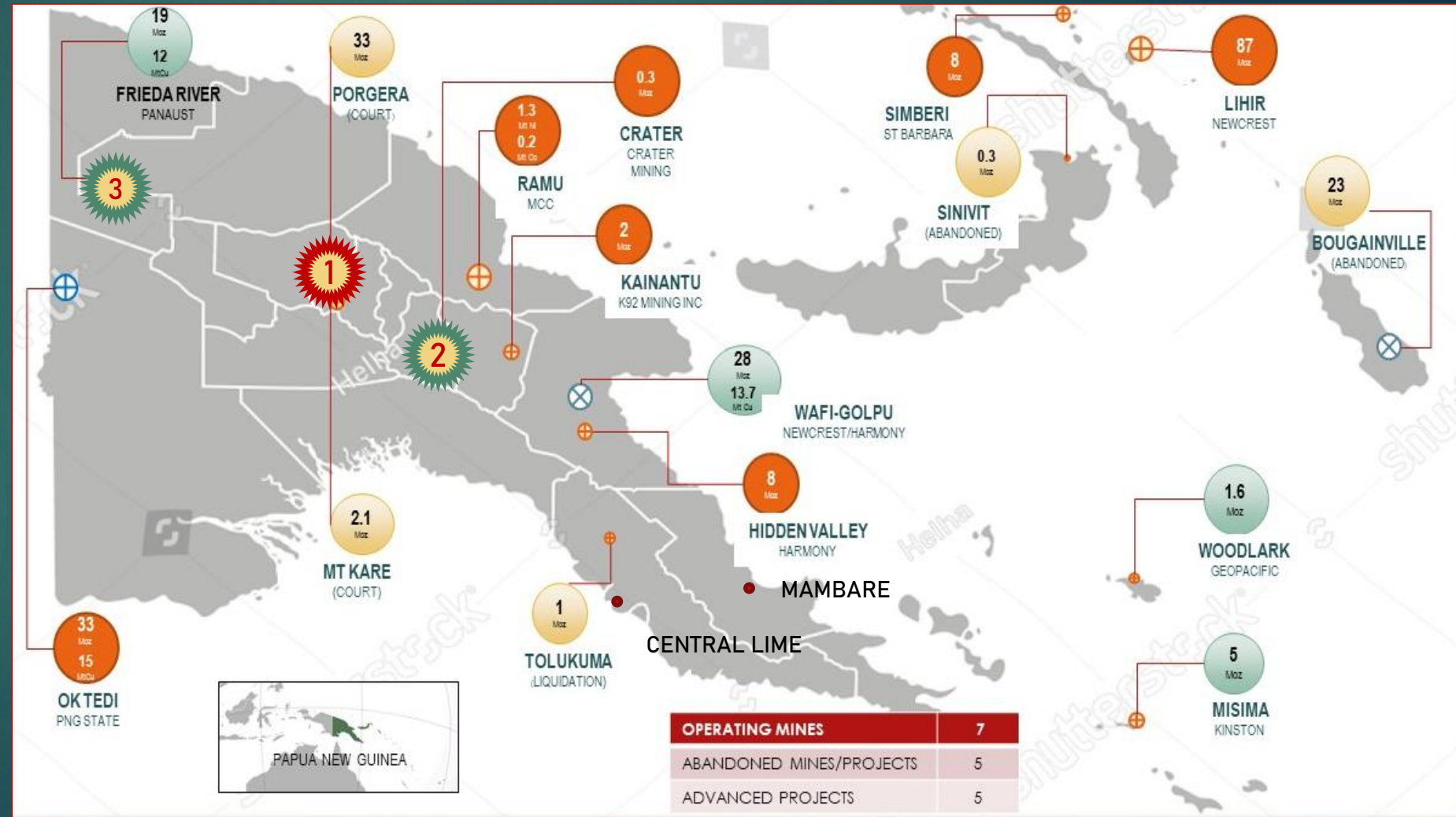
1. Porgera Mine; and
2. Lihir Mine.

#### LATERITE NICKEL-COBALT

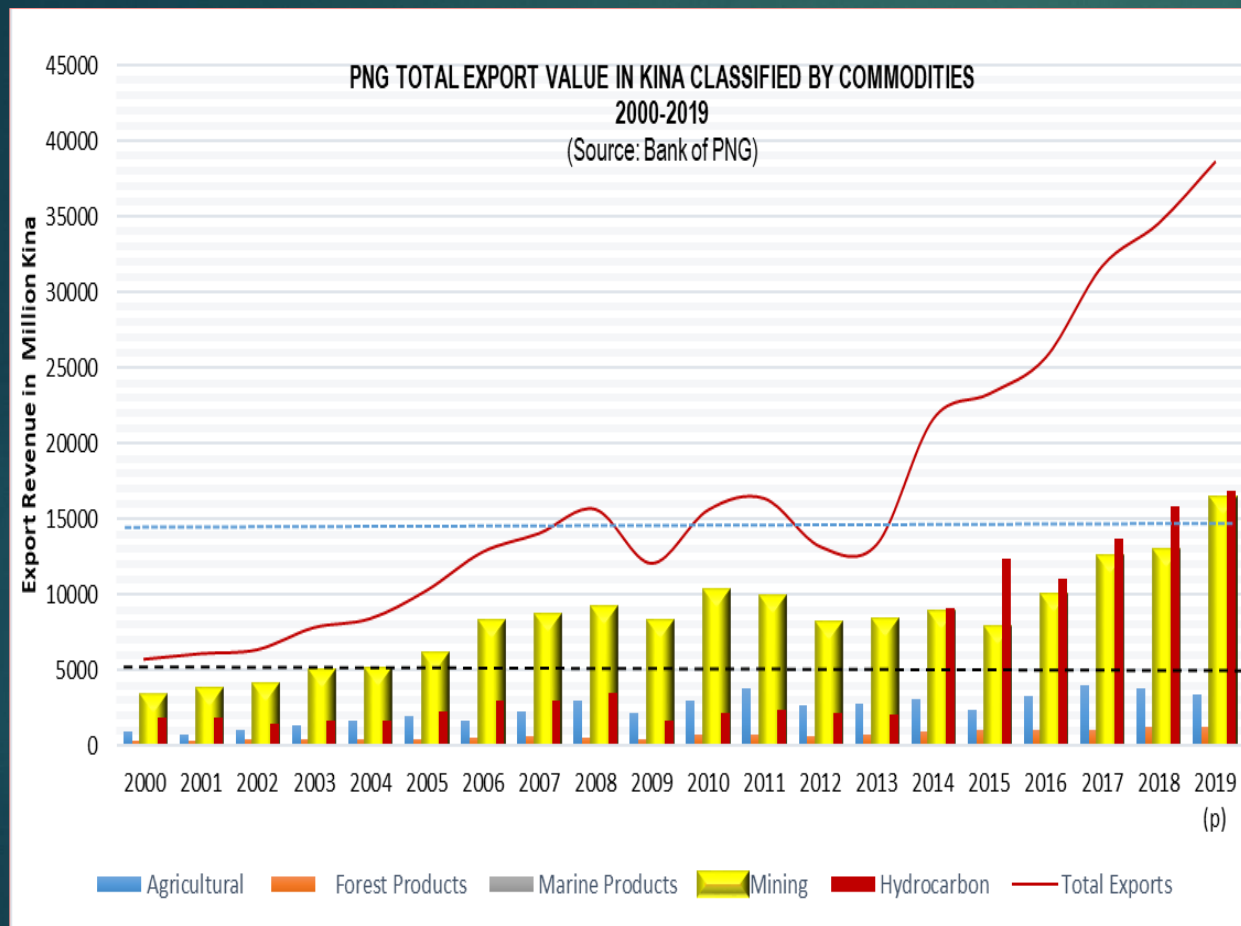
1. Ramu mine
2. Mambare Project

### MEDIUM-SCALE GOLD

1. Kainantu Mine
2. Simberi Mine
3. Hidden Valley Mine
4. Misima Mine
5. Tolukuma; Mine
5. Mt Kare Project; and
7. Woodlark project



# PNG Exports & 2024 Mining Performance

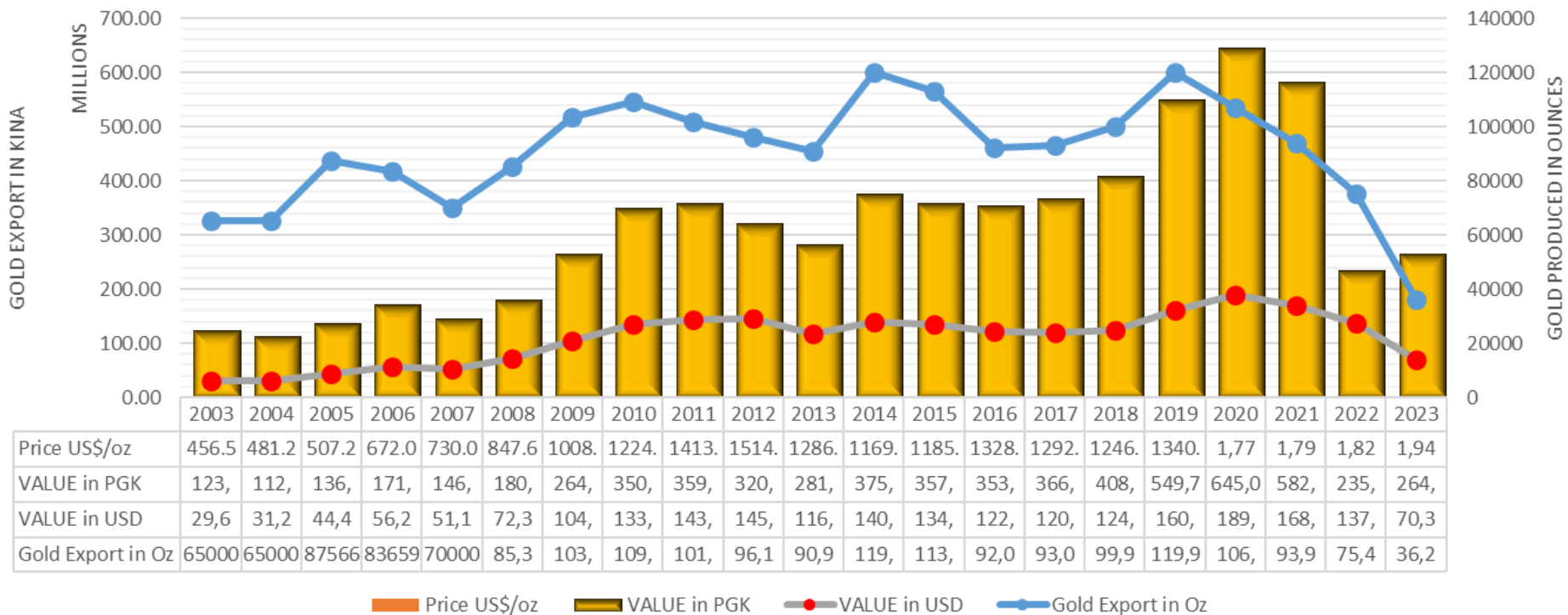


## 2024 Production Summary - Actual (Year to Date)

Period	Commodity	Produced	Shipped Or Exported	FOB Value (PGK)
Mine Production (Jan to May 2024)	Gold (oz)	498,571	502,564	4,154,752,843
	Silver (oz)	1,733,628	1,614,918	157,491,753
	Copper (t)	44,624	29,961	1,051,200,212
	Nickel (t)	13,165	13,529	578,126,979
	Cobalt (t)	1,199	1,241	59,685,001
	Chromite (t)	75,098	61,113	55,795,211
<b>Total FOB Value - Hard Rock Mines</b>				<b>6,057,051,999</b>
Alluvial Gold and Silver Export (Jan to May 2024)	Gold (oz)		14,284	115,991,065
	Silver (oz)		11,142	1,060,905
	<b>Total (Alluvial Export)</b>			<b>117,051,971</b>
<b>Grand FOB Value (PGK)</b>				<b>6,174,103,970</b>

# Alluvial Gold Mining Sector

## PNG ALLUVIAL GOLD PRODUCTION & EXPORT 2003 to 2023



Increased production from 80,000 ounces per annum in 2008 to over 120,000 ounces per annum. In 2023, reduced to **36,274** ounces - **export value of K247 million - Interventions required.**

## >20,000 Employees

## Porgera Restart

**PERSONS EMPLOYED AND HOURS WORKED**

■ Persons employed    ● Hours worked (000s)

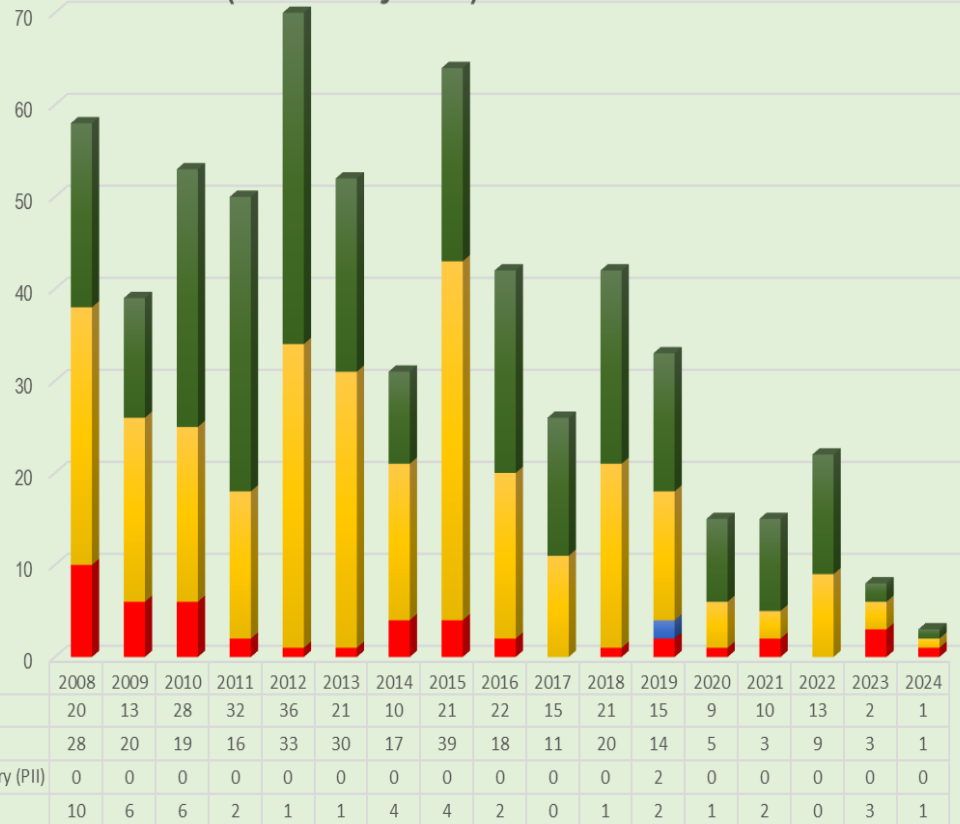


Category	Number	%
Total Employment	2,865	100
New Porgera Limited	2,475	86
Contractors	390	14
Females	245	9

# PNG Mines Safety Performances

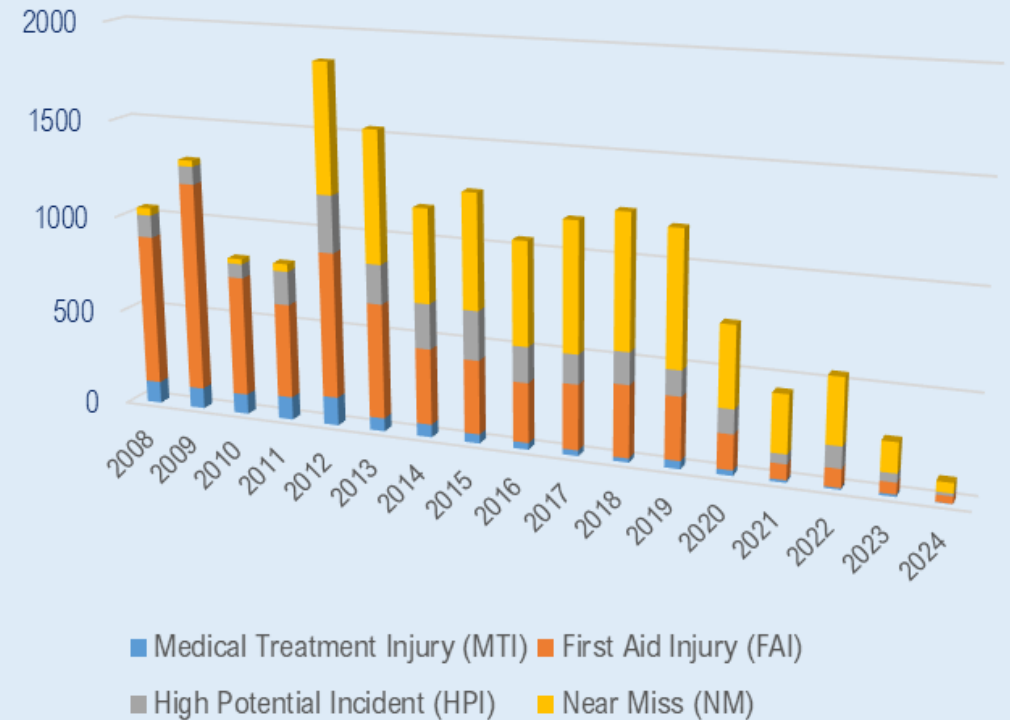
## SERIOUS ACCIDENTS

**PNG MINES SAFETY PERFORMANCES - SERIOUS ACCIDENTS**  
(2008 to May 2024)



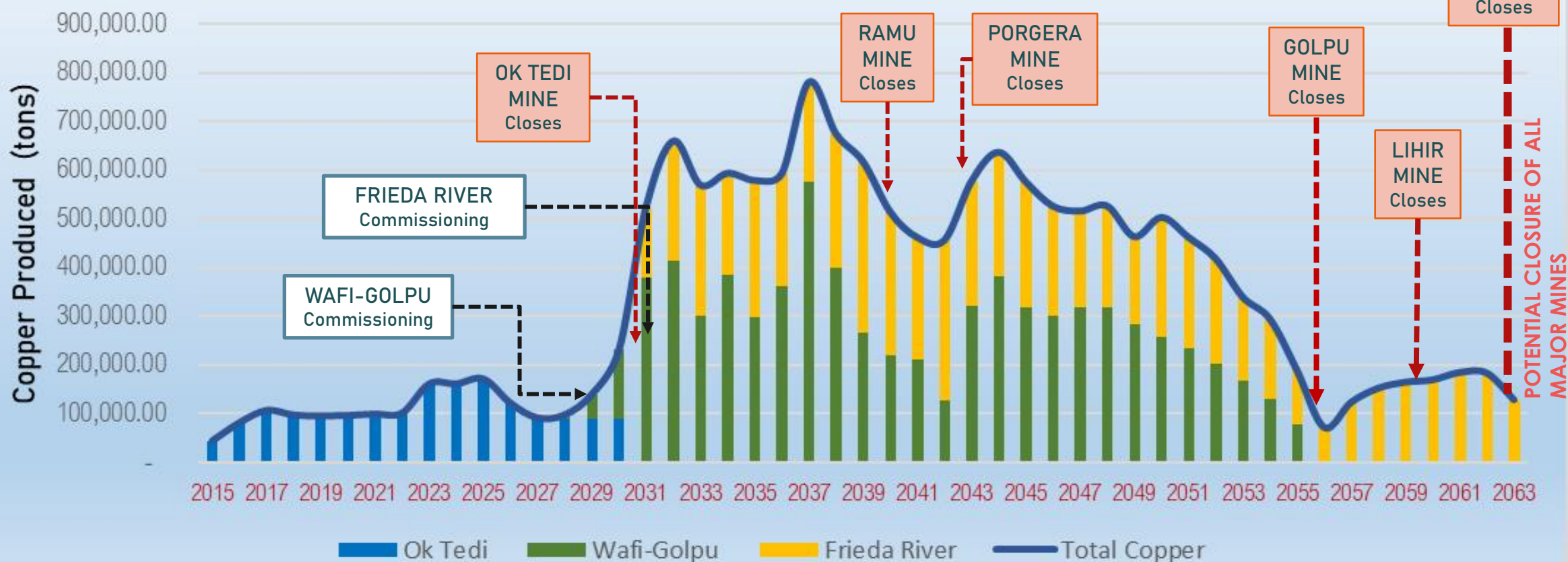
## OTHER ACCIDENTS

**PNG MINES SAFETY PERFORMANCES - OTHER ACCIDENTS**  
(2008 to May 2024)



# Mine Closure Outlook

## Copper Production - Papua New Guinea Historical & Outlook to 2063



# Export Imbalance – Minerals & hydrocarbons

Minerals & hydrocarbon) continue to account for 80% of PNG's total export revenue.

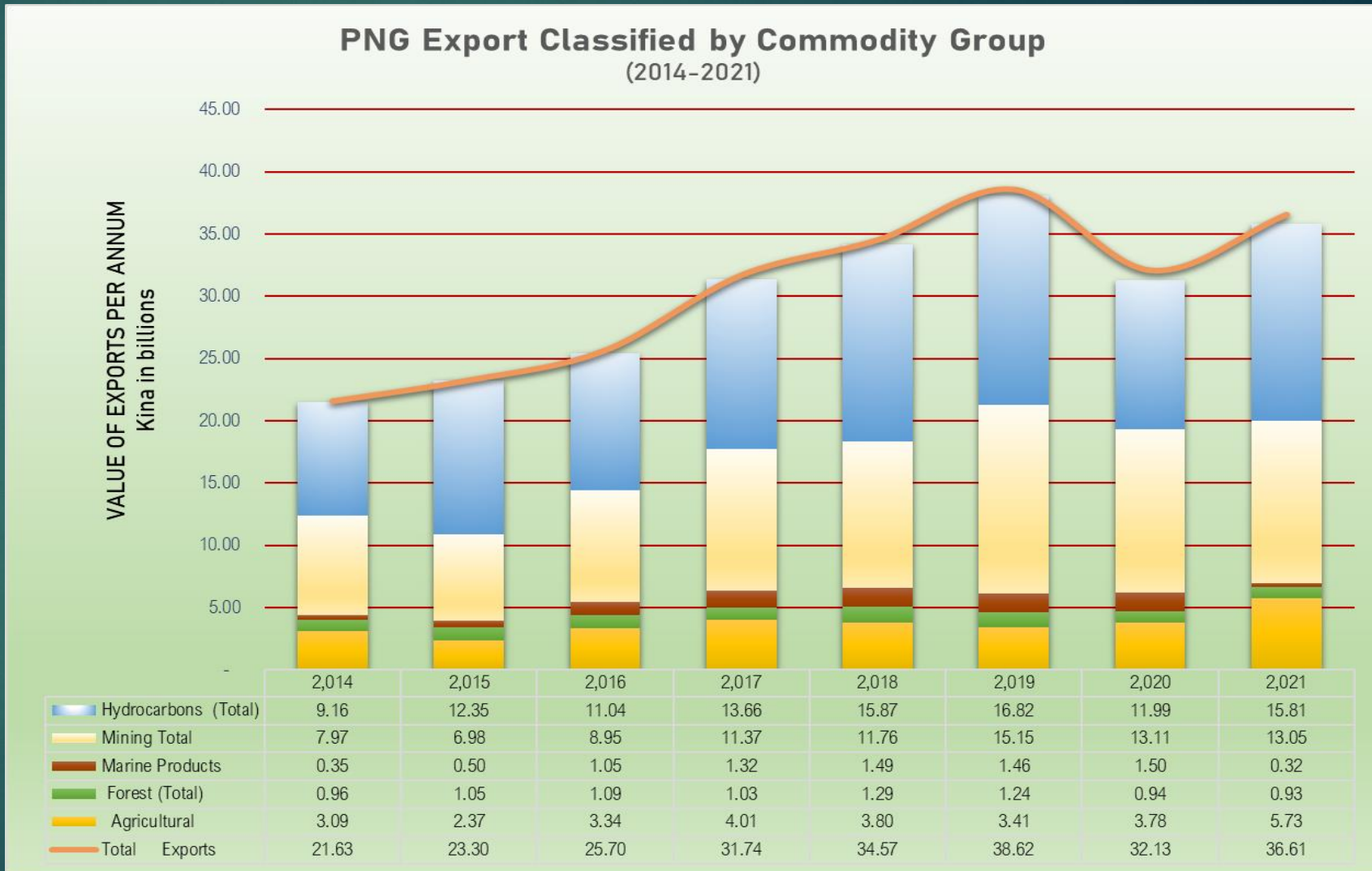
In 2023, total export revenue from the mining sector was K13 billion.

By end of May 2024, actual FOB Mineral Export Value was K6.2 billion.

Forecasts for 2024 is K16 billion.

**Significant export imbalance persists.**

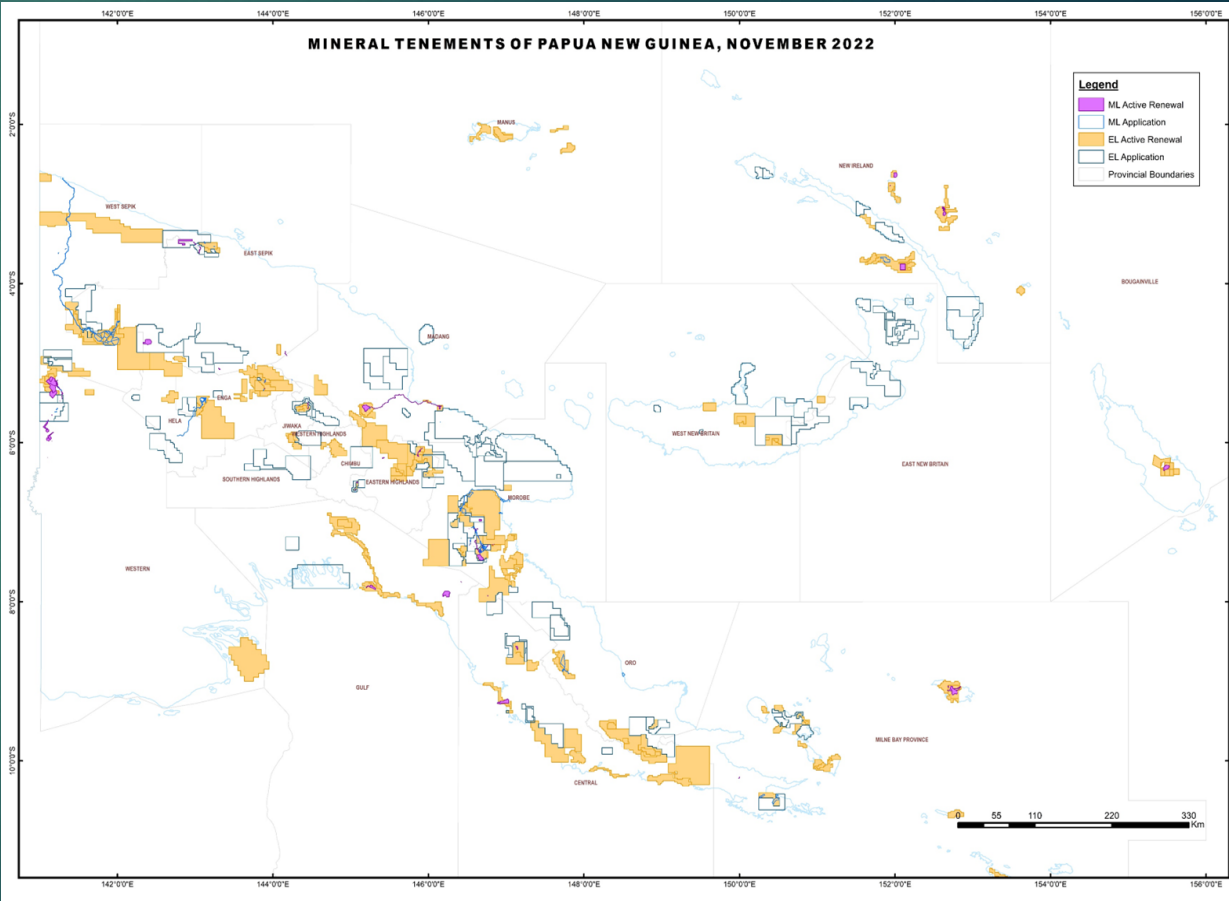
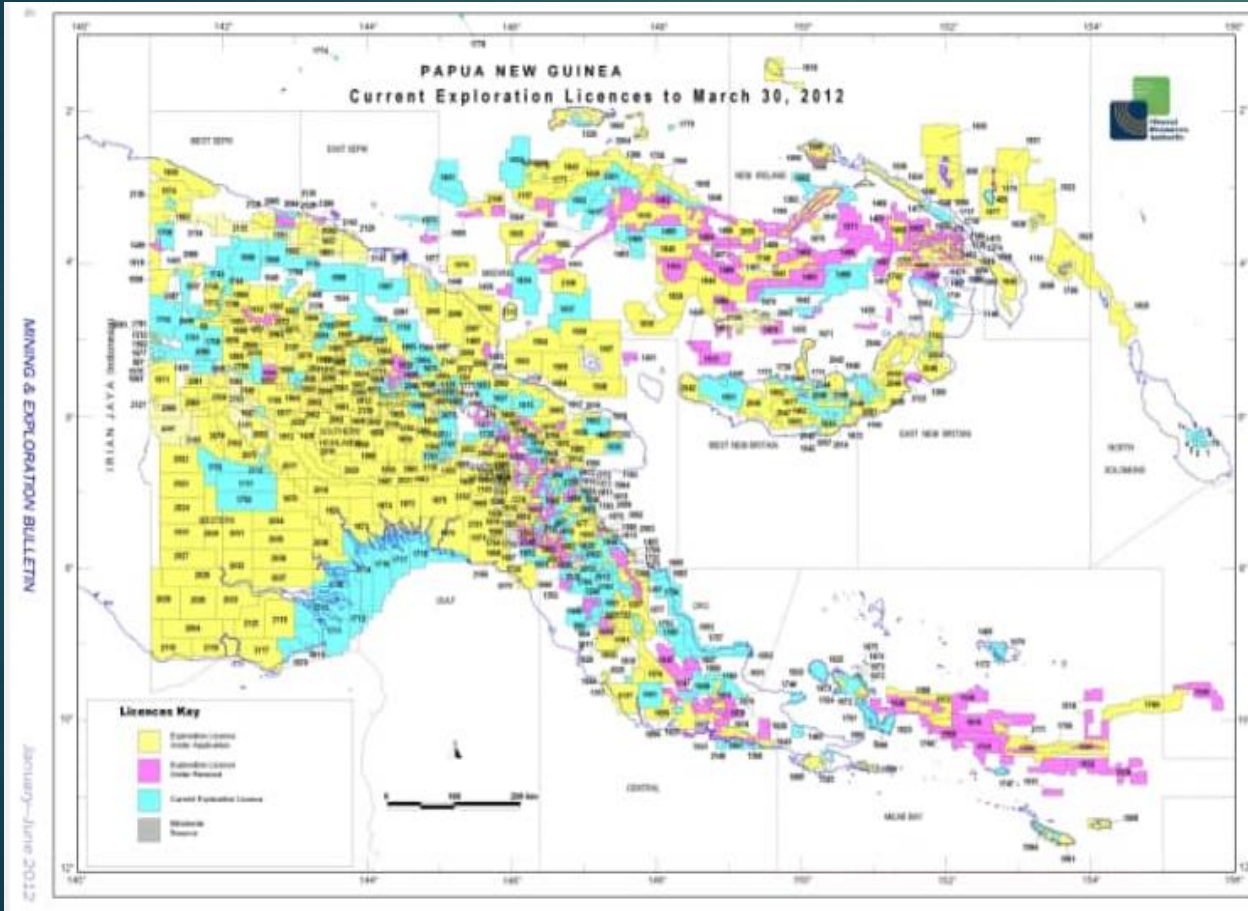
16/07/2024



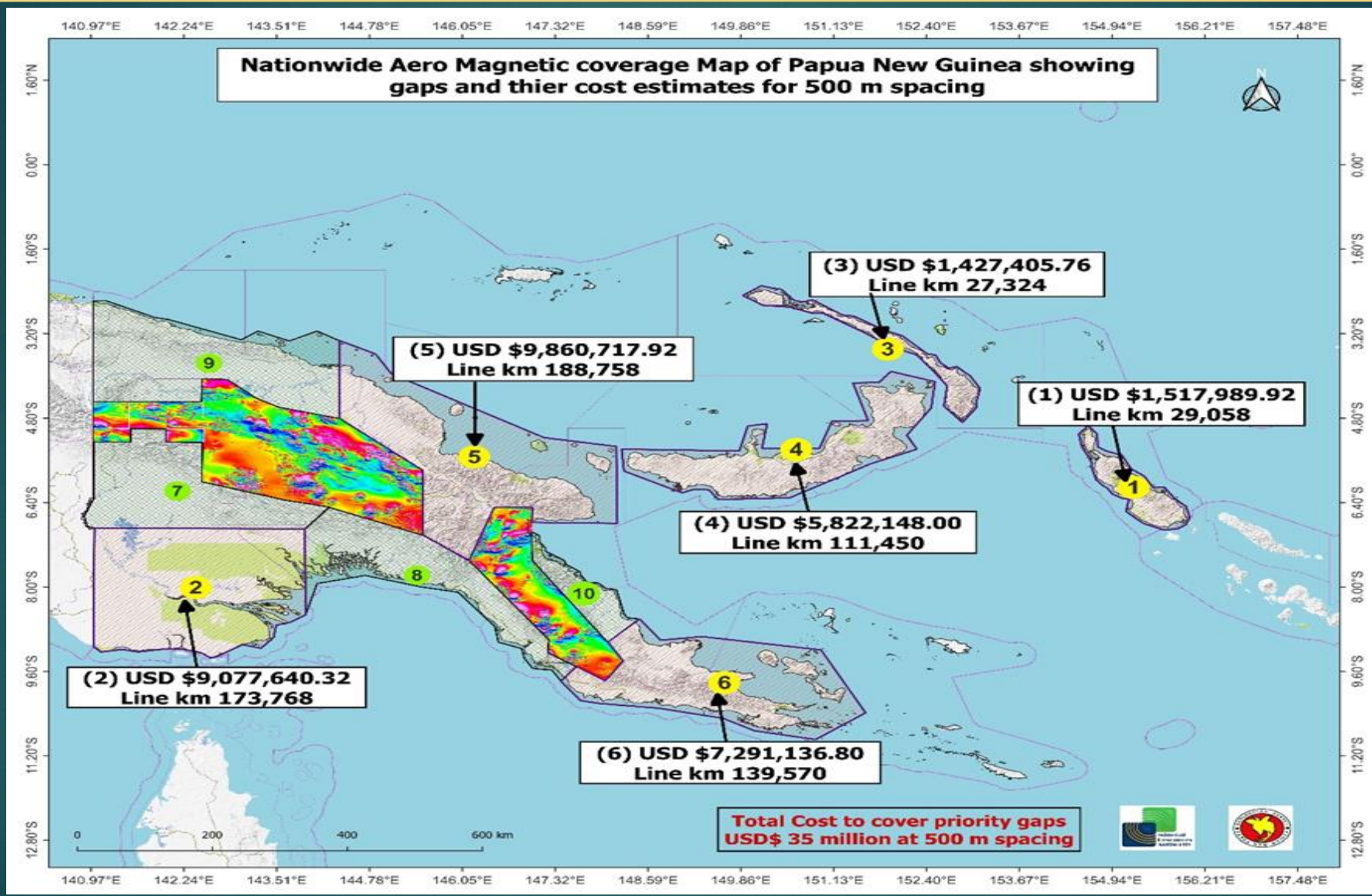
# 3. Declining Exploration Activities

**2012** – Nationwide Whole Coverage of Exploration Tenements

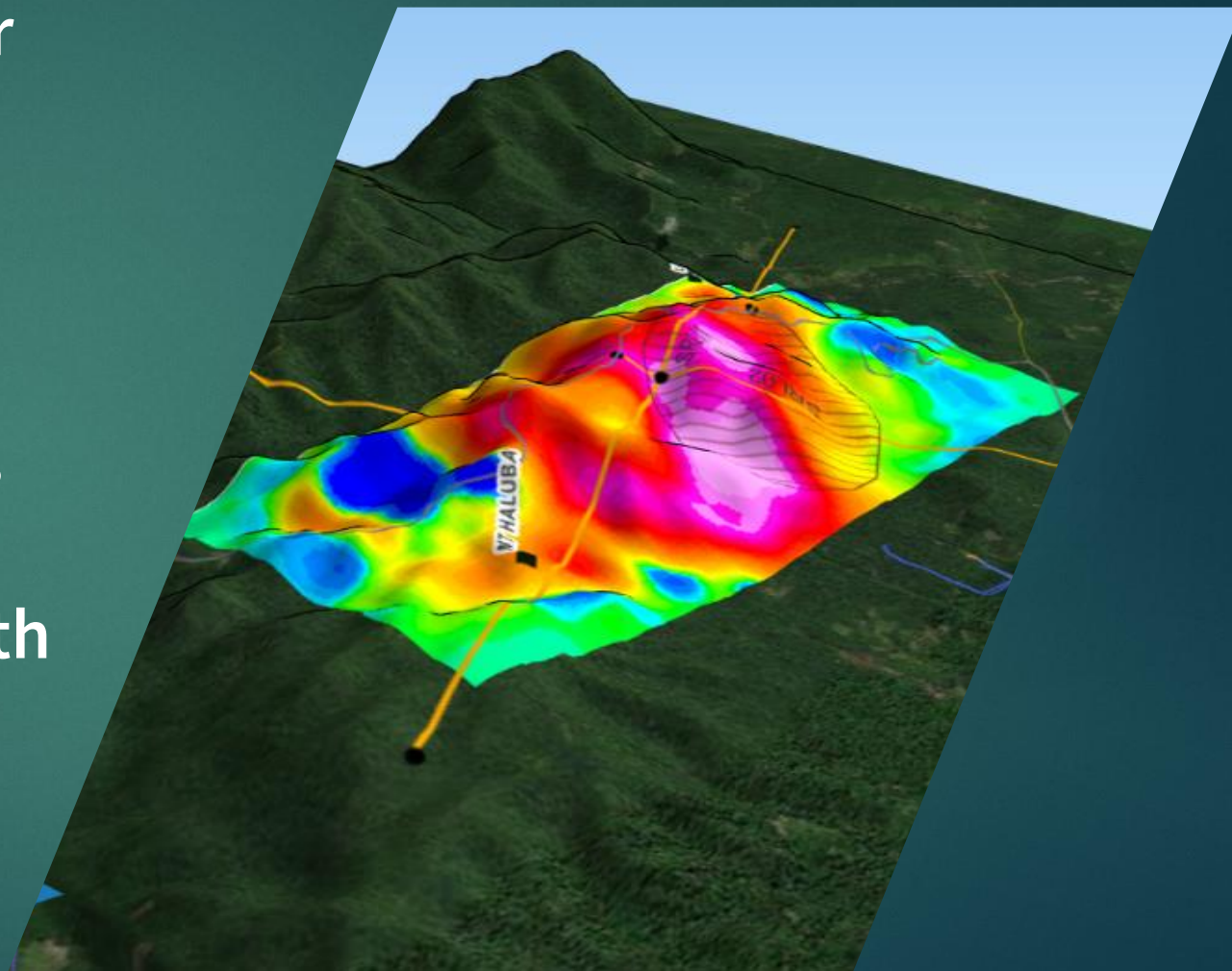
**2022** – Nationwide Coverage of Exploration Tenements Dwindled



# Gaps in Geophysical Data



- ✓ Strive for improvements in our performances
- ✓ Secure the future of Mining industry through robust and smart exploration techniques
- ✓ Invest and promote the growth of long-term sustainable economy.





THANK YOU





# MAJOR PROJECTS OF NATIONAL INTEREST

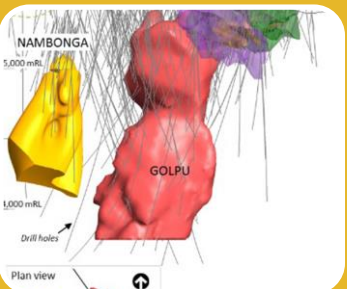


# Permitting Large-Scale Projects



## PORGERA MINE RE-OPENING

- **11 million ounces gold reserves; 600,000 ounces dori and 5% gold as concentrate per annum**
- **Shareholders Agreement signed and possibly new SML outstanding**
- Benefits: 51% State Equity including 10% Landowners + 5% Enga Provincial Government (EPG)
- Resettlement, **Social Licence fee**, 3% royalty
- Re-opening anticipated by Q4/2023



## WAFI- GOLPU PERMITTING

- **19 million ounces gold and 8.6Mt copper resource; 200,000 ounces gold & 200-300,000 tons copper per annum;**
- Environment Permit was Issued on December 18, 2020;
- Negotiations for Mining Development Contract in final stages; and
- Special Mining Lease Application before Mining Advisory Council – Q4/2022 Permitting



## FRIEDA RIVER PERMITTING

- Initiated Assessment. Deferred due to project complexities and over-commitments by the State Team
- Frieda Concept – shared-use power, road, bridge, wharf and airstrip development anchored upon mine development, and anticipates Public-private partnership arrangement.
- Anticipate resumption of assessments and commencement of MDC negotiations in Q1/2023.

# Status of medium - scale projects

## EXISTING MINES



- **SIMBERI MINES:** permitted conversion from oxide to sulphide ore processing, US\$300 million (US\$170 mill CAPEX + US\$120 mill SUSCAPEX), 6 million ounces mineral reserves, 160kt ounces gold production per annum from 3Mtpa, AISC US\$896 per ounce, Payback 3 years, LOM extended for 11 years to 2035.
- **HIDDEN VALLEY MINES:** Mining Lease extended for 10 years to 2030, LOM to 2027.

## PERMITTED PROJECTS



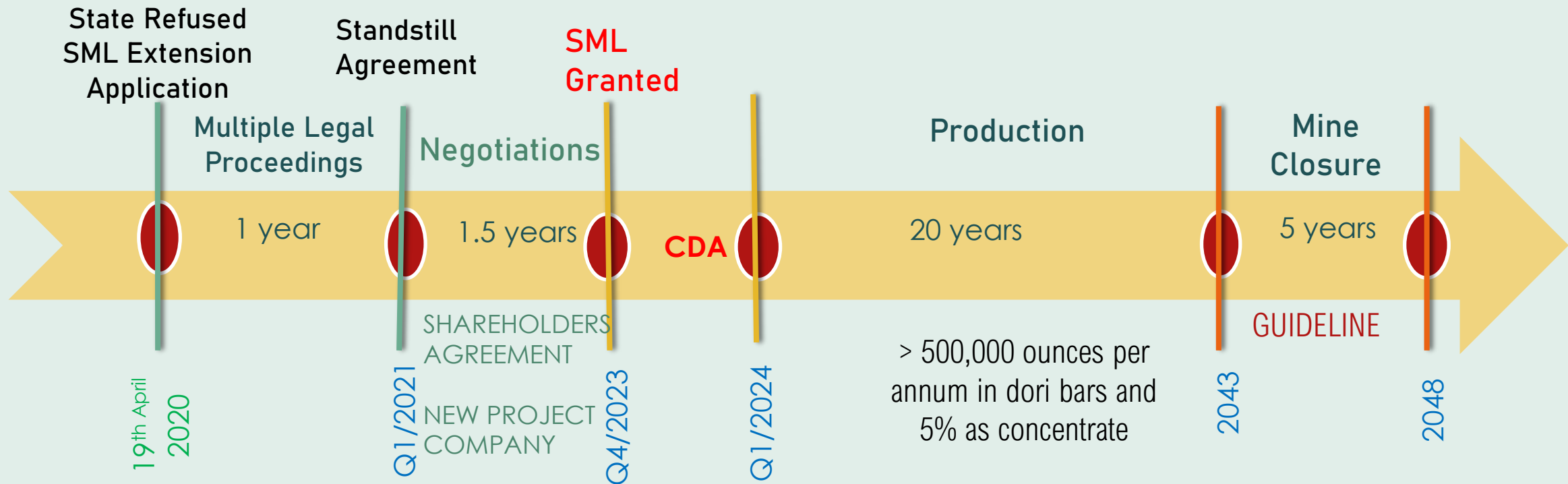
- **CENTRAL LIME, CLINKER & CEMENT.** Granted Mining Lease (ML) to 2040. Capital raising affected by COVID-19, US\$ 350 million CAPEX – equity & Debt Financing. Energy intensive.
- **WOODLARK GOLD PROJECT.** ML Granted in 2014. 1 million ounce reserve. Capital raising ongoing; \$100 million in resource definition drilling & Landowner relocation, and development work in past 18 months.

## UNDER PERMITTING



- **MAMBARE NICKEL** – proposed **Direct Shipment Ore** (Laterite nickel-cobalt) targeting > 1.25 Ni grade. JORC Resource of **162.5 million tons @ 0.94% Ni and 0.09% Co** (1.53 million tons of nickel)
- **WOWO GAP** - JORC Resource of 110 million tons @ 0.81% Ni and 0.06% Co (890K tons nickel + 66K tons of cobalt).
- **OK TEDI SML – EXTENSION FOR 20 YEARS** under processing, (LOM to 2053?)

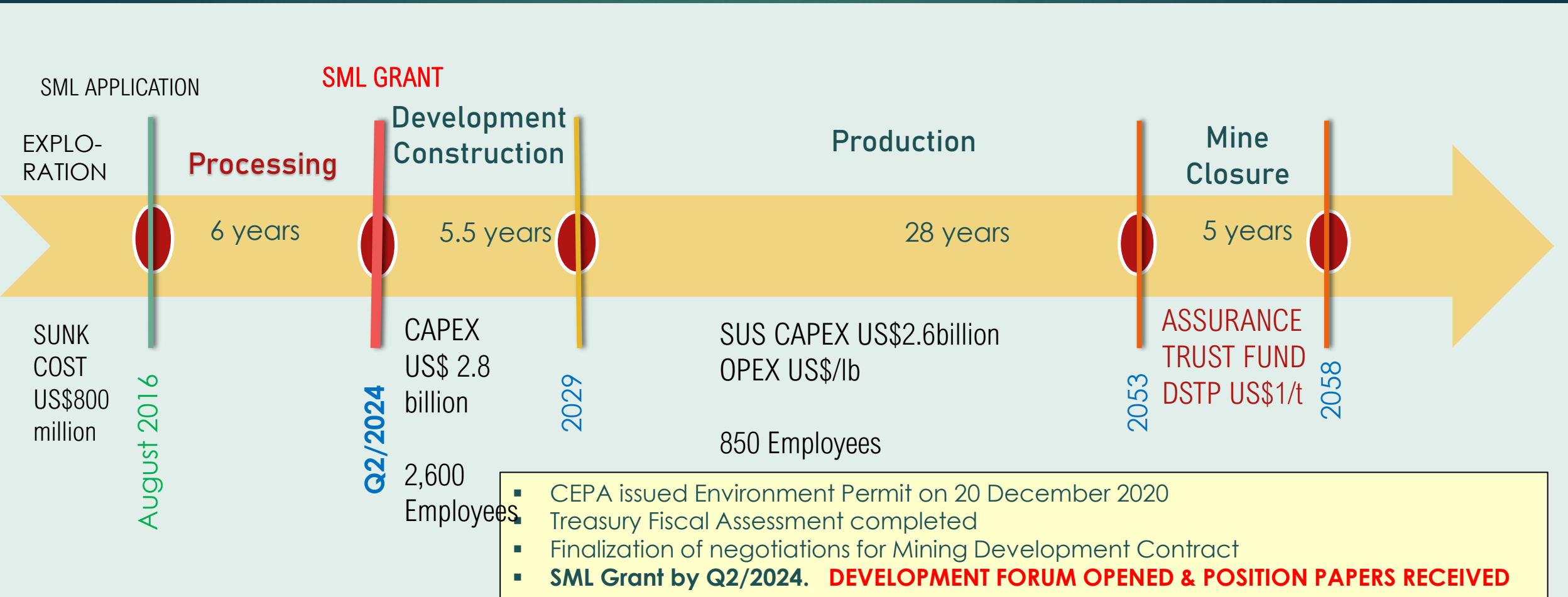
# 1. Porgera Mine Re-opening Schedule



- **Development Forum – Negotiations for Community Development Agreement (CDA) in progress.**

- **Re-engagement Of >3,000 Jobs**
- **Contribute 500-600,000 Ounces Of Gold Per Annum**
- **18% Metals Remain In PNG at the Outset**

# 2. Wafi-Golpu - Tentative Project Timeline



## DIVISION : DEVELOPMENT CORDINATION

### MOA /CDA REVIEW IMPLEMENTATION SCHEDULE FOR 2024

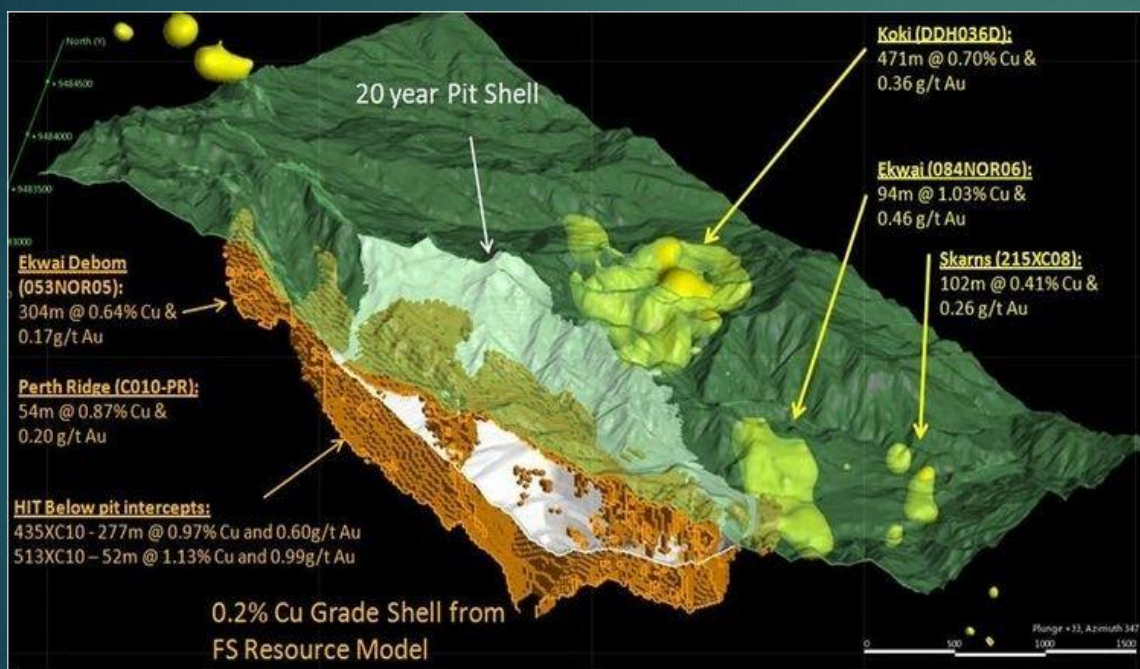
PROJECTS	Q1			Q2			Q3			Q4			Completion %
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
rcDA													
Porgera													50%
Wafi Golpu													40%
Ramu													33.30%
Ok Tedi													100%
Simberi													50%
Hidden Valley													30%
Lihir													50%
Kainantu													30%
CCL													40%
													100%
													60%
													80%
													60%
													100%

# 3. Frieda River Project - Tentative Timeline



- CEPA reviewing Environment Impact Statement
- Fiscal and Technical Peer Review and Assessment initiated
- Negotiations for Mining Development Contract pending
- SML Grant by Q4/ 2023

# FRIEDA RIVER COPPER \_GOLD RESOURCE



# FRIEDA RIVER PROJECT

4 interdependent components:

- Frieda River Copper-Gold Project (FRCGP), Frieda River Hydro-power Electric Project (FRHEP)
  - Sepik Infrastructure Project (SIP) and
  - Sepik Power Grid Project (SPGP)
- Total Capital Investment > US\$ 7 billion

Combined Measured, Indicated and Inferred Mineral Resource of **2.6Bt** at grades of **0.44% copper** and **0.23 g/t gold** (PanAust, 2017)

Contained metals **12 Mt Copper** and **19 Million ounces Gold**



**Frieda River Copper-Gold Project**  
One of the largest undeveloped copper-gold deposits in the world providing long-term revenue.

**Frieda River Hydroelectric Project**  
A dam that will double the power generation capacity of PNG and drive economic growth for 100+ years.

**Sepik Infrastructure Project**  
Upgrade key infrastructure to support the Sepik Development Project and increase industrial growth.

**Sepik Power Grid Project**  
Development of power lines for electricity transmission around PNG to allow export and import of power.



## Power Generation capacity 600MW

Mine will utilize 180 MW increasing up to 280 MW

## Power Grid Reticulation

A 370-km-long 275 kV transmission line from the FRHEP to the Indonesian border via Vanimo.

Due to the remote location and limited existing infrastructure in the region, the development of the mine will require significant investment in support infrastructure to provide the access, power and services necessary to operate the mine. Scope economically feasible mining project and to maximise the lasting development benefits to the region.

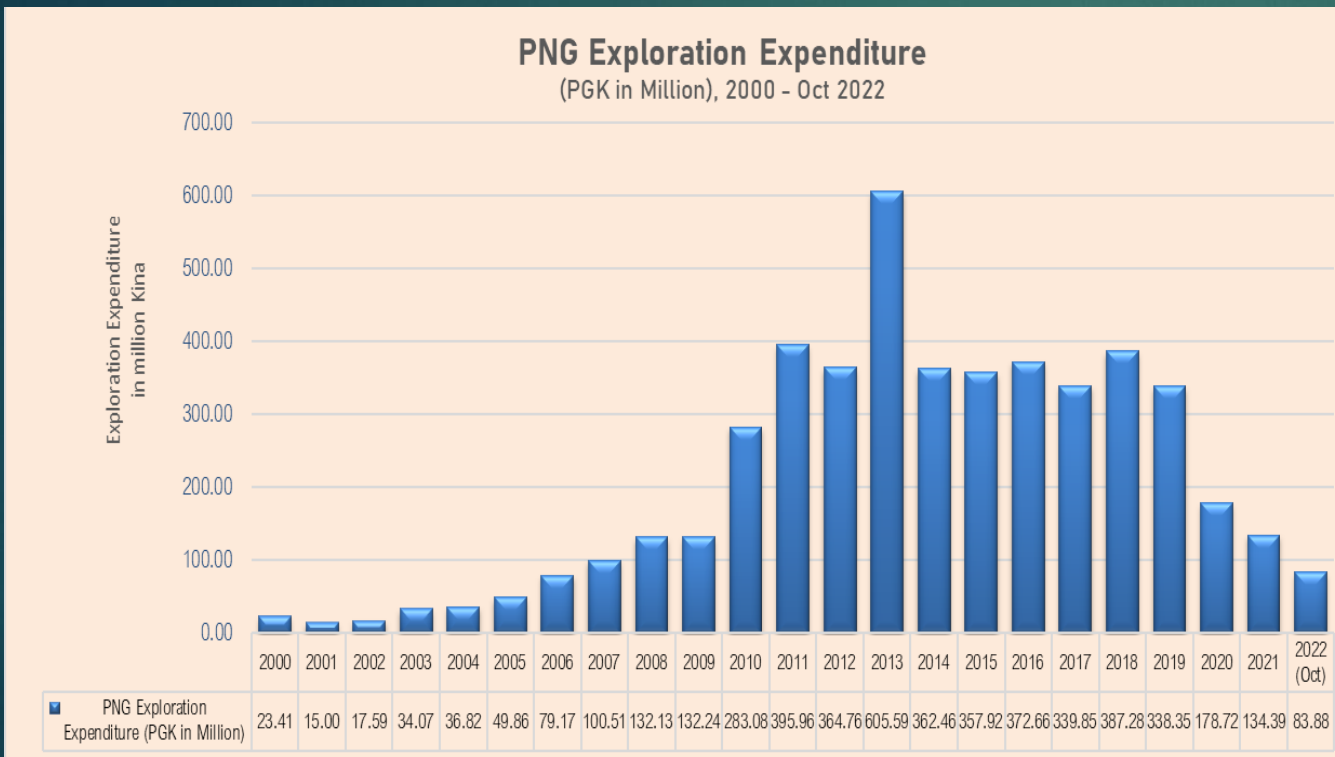


# CHALLENGES AND MRA WORK PROGRAM 2022- 2027

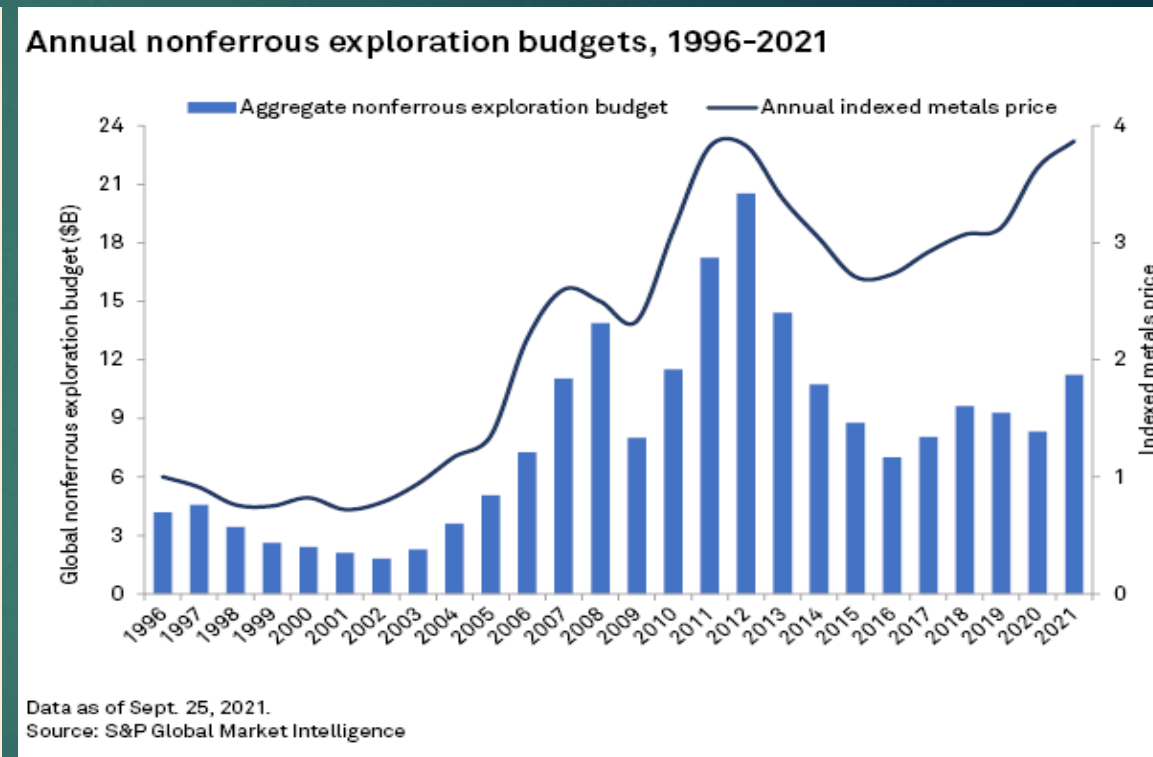


# Declining Expenditure Trends

## PNG Exploration Expenditure, (K in million), 2000 – Oct 2022

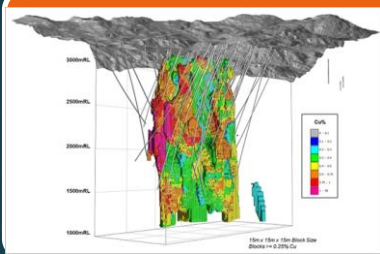


## Global Exploration Expenditure, (US\$ in billion) 1996 – 2021



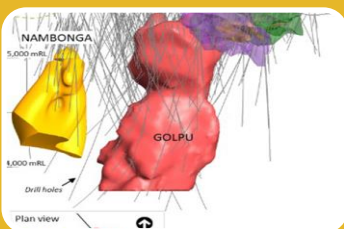
2023 - Declined to K108 million

# 5 YEAR PROGRAMS - MRA



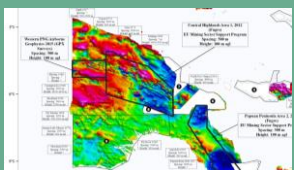
## TESTING OF DEEP-SEATED PORPHYRY

- Seismic Reflection - Equipment Purchased
- Dawadawa target - , Training Required for field Survey, (data Acquisition & processing)
- 10 high Quality Porphyry Targets Identified
- Objective to de-risk by drilling few holes



## PROVIDING QUALITY BASELINE GEOSCIENTIFIC DATA

- Geological Mapping at 1:100,000 scale;
- Geochemical Stream sediment Sampling;
- Geophysical Surveys – Airborne Magnetics and Gravimetric



## TESTING FLY PLATFORM – EXTENSION OF NORTH AUSTRALIAN CRATON

- Geophysical Surveys
- Similar Deposits found in northern Australian Craton



## NEW POTENTIAL GEOLOGICAL PLAYS

- Potential older Cretaceous Mineralised Arcs (Porphyry) under Sepik plains and Eastern Highlands



THANK YOU

THE MINERAL RESOURCES AUTHORITY  
OF THE INDEPENDENT STATE OF  
PAPUA NEW GUINEA