



# Unlocking Kroussou's Province Scale Zinc Potential

Mining Indaba & 121 Conference  
May 2022

# Disclaimer

## Forward Looking Statements:

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## Competent Persons Statement

The information in this presentation that relates to Exploration Results and the Process and Metallurgy for the Kroussou Project in Gabon are extracted from ASX announcements on 3 September 2019, 15 January 2020, 30 April 2020, 29 July 2020, 29 January 2021, 21 July 2021, 30 August 2021, 1 September 2021, 24 February 2022, 16 March 2022 and 20 April 2022 which are available to view at [www.apollominerals.com](http://www.apollominerals.com).

The Company confirms that (a) it is not aware of any new information or data that materially affects the information included in the original announcements; (b) all material assumptions and technical parameters underpinning the content in the relevant announcements continue to apply and have not materially changed; and (c) the form and context in which the Competent Person's findings are presented have not been materially modified from the original announcements.

## Our Vision

To realise Kroussou's province-scale Zinc potential, and create maximum value as a low carbon, globally responsible base metals producer



# Why Apollo Minerals

- ✓ 100% ownership of Kroussou Zinc-Lead (Zn-Pb) Project
- ✓ **Province - scale deposit**
- ✓ 80km trend with 18 defined prospects, **numerous Zn-Pb occurrences**
- ✓ Shallow, sulphide mineralisation – **unique worldwide**
- ✓ Strong exploration results to date
- ✓ **Highly positive metallurgical test results**
- ✓ Potential to have a low carbon footprint (*abundant hydropower, nearby rail and low strip potential*)
- ✓ **Impending supply deficit mounting for Zinc:** Traditional uses and in the low-carbon energy future
- ✓ Significantly undervalued compared to peers
- ✓ **Identified value pathway:** Exploration, Targeting, Metallurgy, Resource, Feasibility



# Gabon - A Successful Mining Region in Africa

## Unique Existing Infrastructure

- ✓ One of the largest ports in Africa<sup>1</sup>
- ✓ Extensive rail network (200km from the Project)
- ✓ Abundant Hydropower (200MW, +80MW planned)
- ✓ Site Access: Sealed N1 road to nearby town of Yombi



## Proven Mining, Oil and Gas Sector

- ✓ World leader (#2) in high-grade Manganese mining (COMILOG)
- ✓ Oil: approximately 30% of GDP, 76% export value, 39% of state revenue
- ✓ Oil production of around ~200,000 barrels daily



Gabonese Goal to reach “Emerging Country” status by 2025



Upper middle-income status, and high gross domestic product (GDP) per capita



## Supportive Operating Environment

- ✓ Modern and transparent mining code with highly supportive government and local communities
- ✓ Tax holidays of between 3-8 years depending upon project life
- ✓ Royalty of 3-5% on base metals (negotiable within Mining Convention)
- ✓ VAT Exemption for explorers through ‘Mining Convention’

## Growing presence of, Australian listed companies in the region

- ✓ Fortescue Metals Group (ASX: FMG) Dec-21
- ✓ Armada Metals (ASX: AMM) Dec-21
- ✓ Genmin Limited (ASX: GEN) Mar-21



# Zinc – A Critical Metal

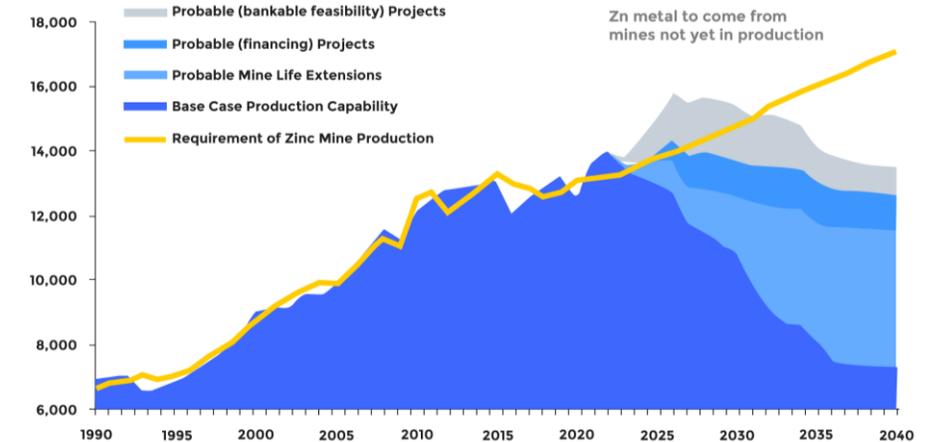
## New mines are essential to meet demand

- Zinc is seeing all time high prices with a **supply deficit mounting**
- **Current demand** mainly driven by the production of galvanised steel
- **Future demand** will be driven by traditional applications and essential ingredients of a de-carbonising world<sup>1</sup>
- **Zinc vital to a low-carbon transition** - Renewable Energy, Batteries, Mobility<sup>2</sup>
- Solar Energy transition will increase zinc demand



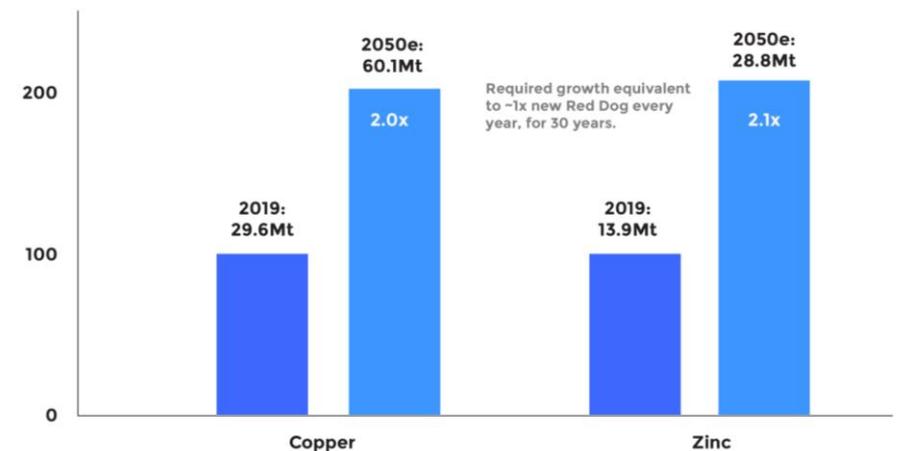
### Wood Mackenzie Forecast

Kt Zn



### Glencore Forecast (1.5c warming scenario)

Market Size (2019=100)



# Impending Zinc Supply Deficit

4 out of 10 major producers estimated to have less than 10 years remaining of mine life



Sources: <sup>1</sup>Teck Resources 2021 Annual Information Form; <sup>2</sup>Teck Resources 2021 Annual Information Form; <sup>3</sup>Vedanta Resources IR 2021; <sup>3,1</sup><https://www.mining-technology.com/marketdata/ten-largest-zincs-mines-2020/>; <sup>4</sup>NCZ - 15-Sep-21 Feasibility Study Demonstrates Compelling Value Proposition for In-situ Resource Development at Century; <sup>4,1</sup>Century Ore Reserves as of 30 June 2021; <sup>5</sup>2021-June-Kinsevere-Mineral-Resource-Ore-Reserves-Statement-update; <sup>6</sup>Glencore 2021 Annual Report; <sup>7</sup>Newmont Regional Operating Statistics 2021 and 2021 Annual Report; <sup>8</sup>

# Zinc – Vital to the Low-Carbon Energy Transition

- **Stationary power storage market** is expected to **grow by 34% pa** from 2021-2030<sup>1</sup>
- Zinc batteries provide the potential to **capture much of the stationary energy storage market** share<sup>1</sup>
- Zinc is used in multiple aspects of renewable energy production

## Zinc's Role in Renewable Energy Production<sup>2</sup>

A 10 MWh offshore wind turbine requires 4 tonnes of **zinc** coating to handle extreme environmental conditions



Zinc is a key ingredient in battery technology



Zinc is 100% recyclable

A 100MWh solar power farm requires 240 tonnes of **zinc** coatings to protect panel fixture



*“Meeting future energy needs with renewables and battery technologies is metals intensive and is expected to drive primary demand for cobalt, copper, nickel and zinc to multiples of current levels” – Glencore 2020 Climate Report*

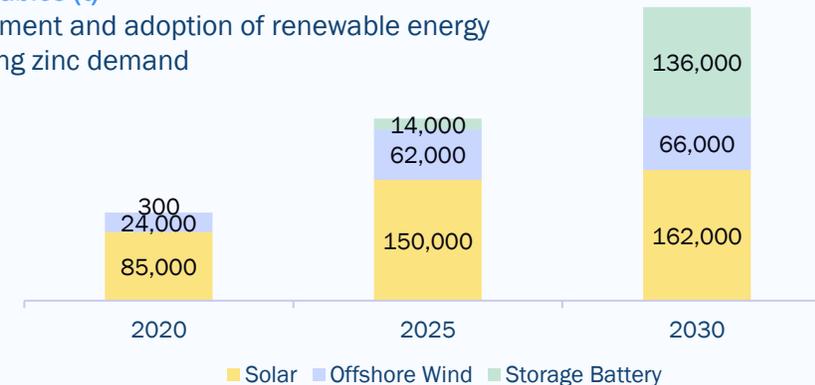
Galvanized steel requires **zinc** and is the **preferred material** used by electric vehicle manufactures



Zinc-ion batteries are safer than lithium-ion batteries -water-based chemistry

### Zinc Use in Renewables (t)

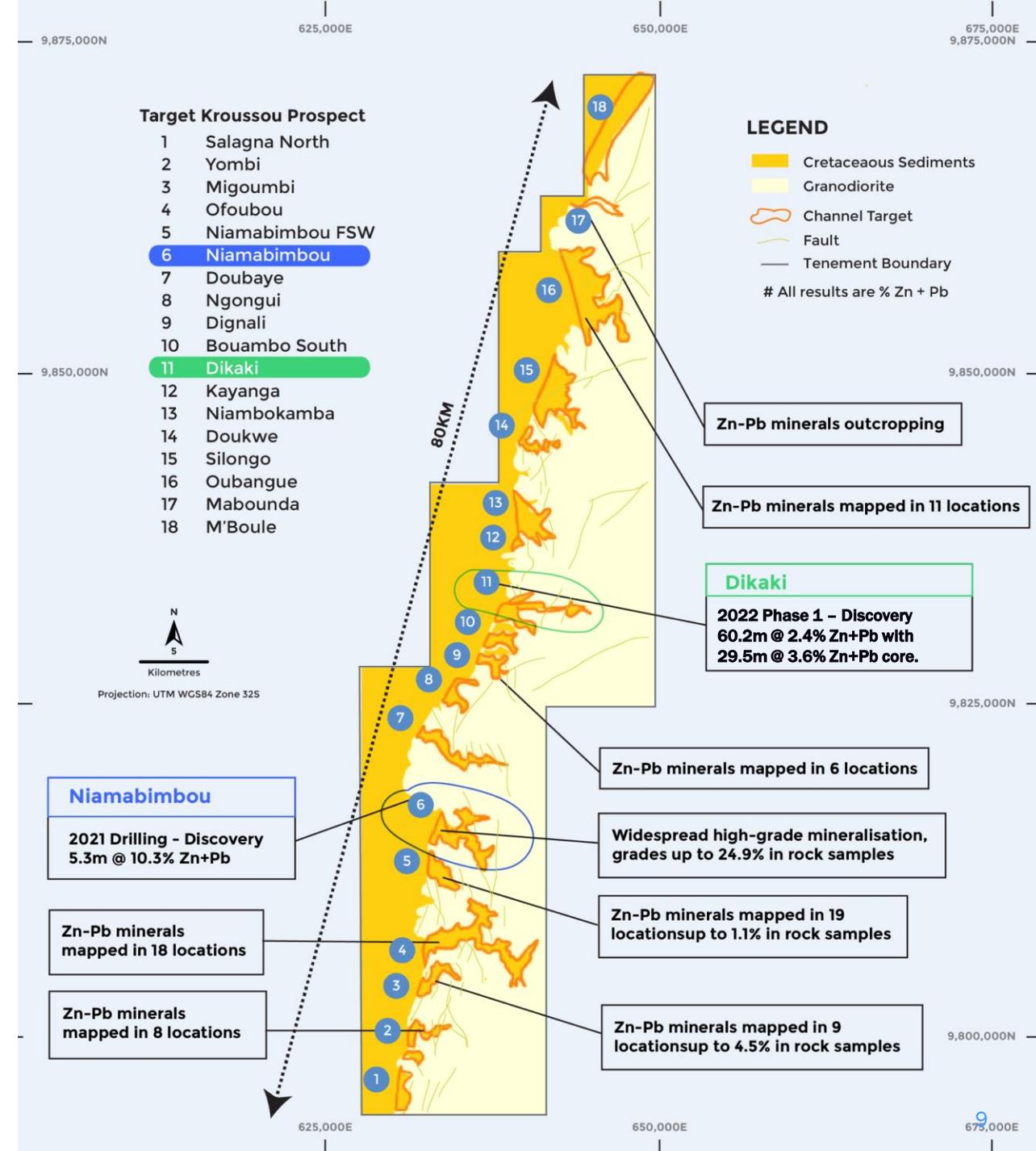
Accelerated investment and adoption of renewable energy is leading to growing zinc demand



# Kroussou – Province Scale Zn-Pb

## We've barely scratched the surface

- Shallow, sediment-hosted sulphide mineralisation – **unique worldwide**
- +80km trend of mineralisation, **Zn-Pb occurrences identified across project**
- ~1,000km<sup>2</sup> of sedimentary basin (total area of prospects)
- **18 prospects**, only 3 drilled to-date
- **Significant demonstrated potential at all prospects** – mapping, sampling and drilling by BRGM 1960's to 1980's
- Results to date demonstrate the **province-scale potential**
- Broader, deeper sections to the west basin remain completely untested
- **Shallow/outcropping mineralisation** conducive to low strip and open pit mining potential
- **Significant success from recent drilling**
- Drilling Underway with regional expansion



# Sulphide Mineralisation From Surface

Multiple styles of Zn-Pb mineralisation point to rich potential for exploration across numerous targets



Fracture-fill coarse galena within sandstone unit



Coarse textured galena, sphalerite and marcasite within the basal carbonates unit



Concentric textured sphalerite and coarse galena within a breccia unit



Coarse galena and sphalerite within a breccia unit



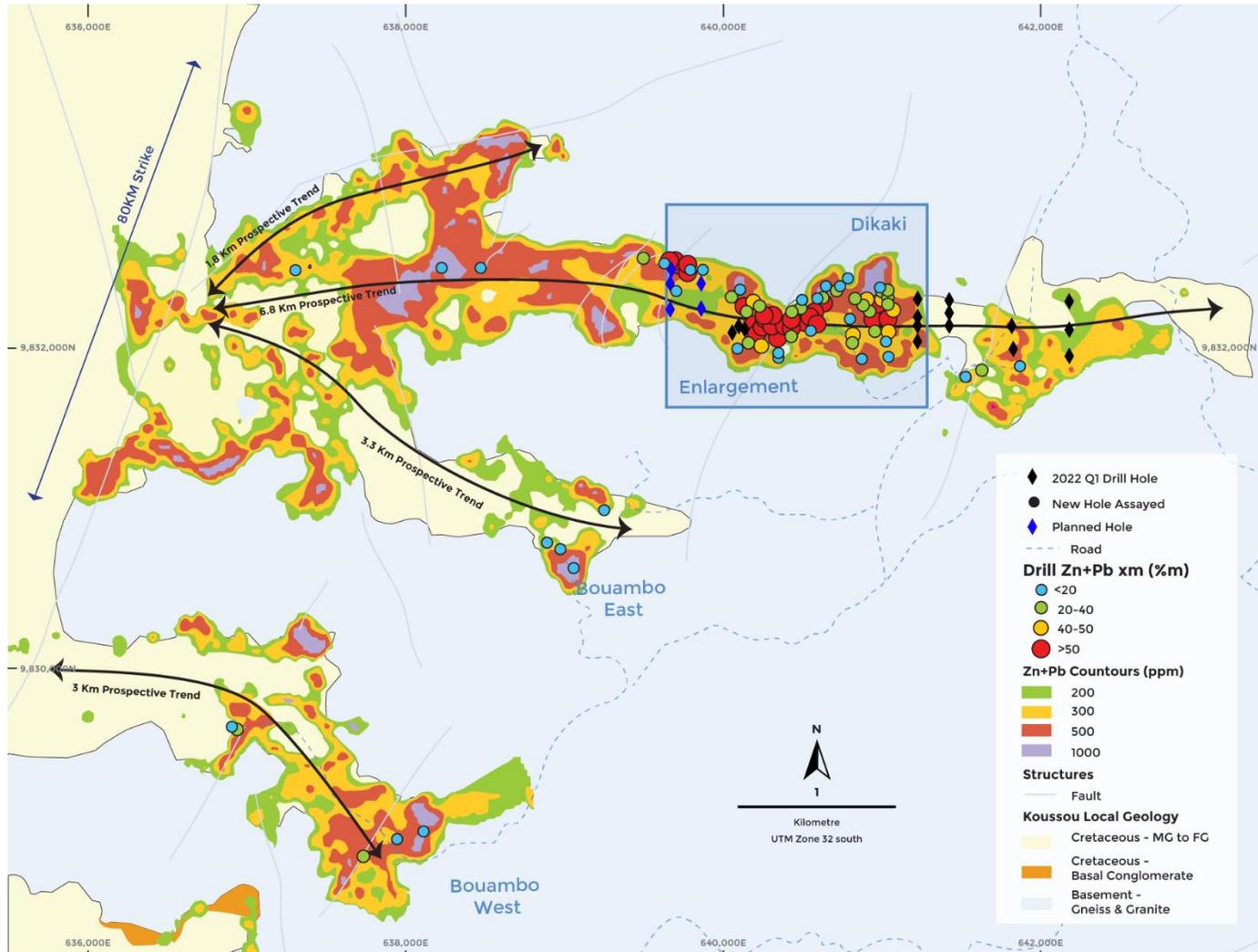
Carbonate hosted displaying coarse galena crystals



Outcrop of mineralised sandstone containing approximately 20 - 40 % galena and sphalerite

# Dikaki – 1 of 18 Prospects

Assays confirm shallow, extensive mineralised (Zn-Pb) system

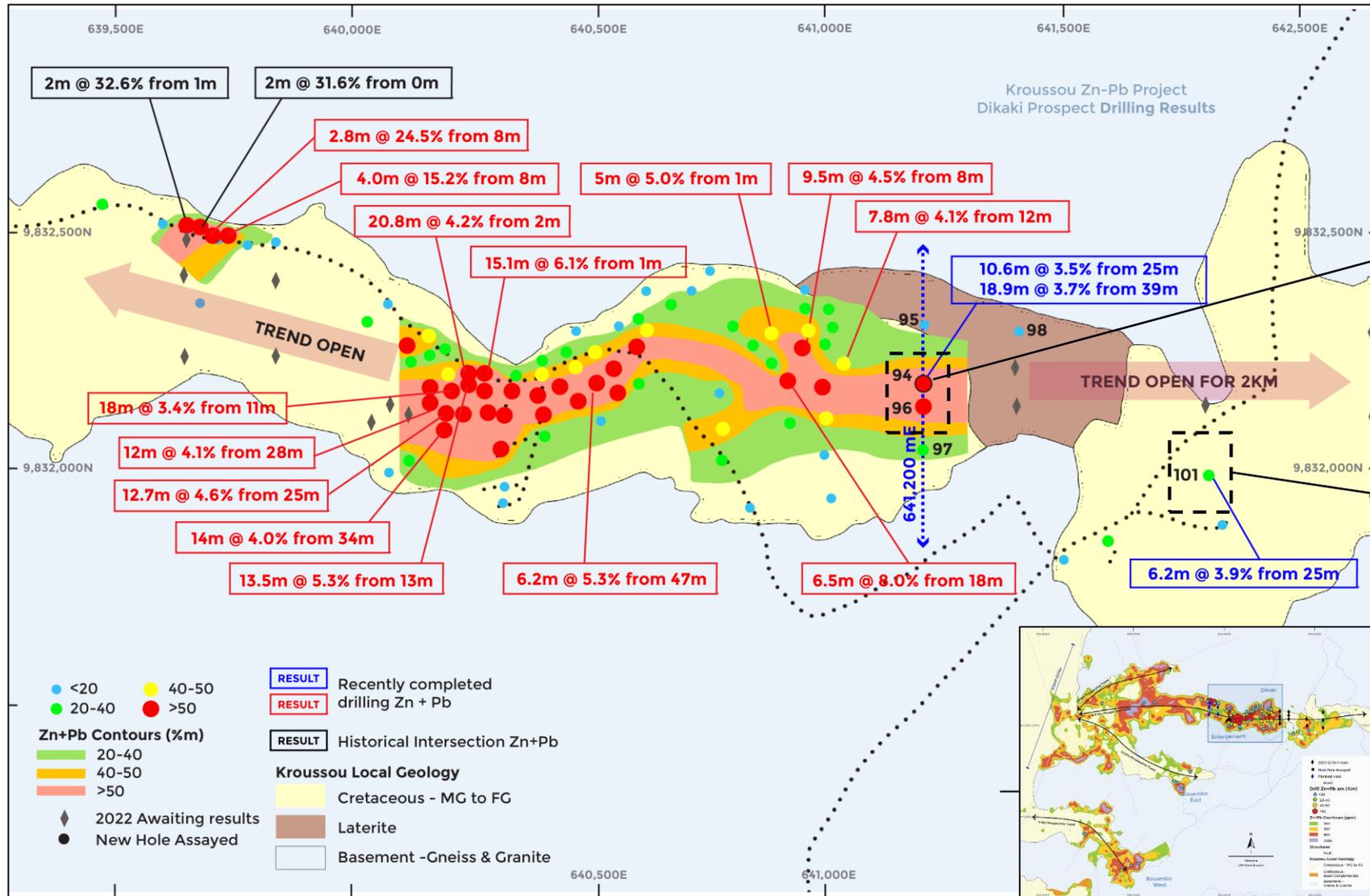


- **Significant shallow, high-grade, intercepts** including:
  - combined 29.5m @ 3.6% Zn+Pb from 25.5m<sup>1</sup>
    - within 60.2m @ 2.4% Zn+Pb from 1.9m
  - 32m @ 3.1% Zn+Pb from 4.0m
    - including 13.5m @ 5.3% Zn+Pb from 12.8m
  - 10.3m @ 5.4% Zn+Pb from 18m
    - including 6.5m @ 8.0% Zn+Pb
  - 15.1m @ 6.1% Zn+Pb from 0.7m
  - 20.8m @ 4.2% Zn+Pb from 2.4m
  - 4.1m @ 15.2% Zn+Pb from 8.1m
  - 2.0m @ 32.6% Zn+Pb from 0.9m
- Dikaki alone has **>8km of identified mineralisation strike**, average channel width of 400m, average depth to mineralisation < 18m, average intersected thickness 20m
- **Demonstrated high-grade concentrates and high recoveries** from initial metallurgical test work

<sup>1</sup> Refer AON ASX Announcement dated 20/4/2022.

# Dikaki – Eastern Extensions

Step-out drilling further indicates significant, thick and shallow mineralisation

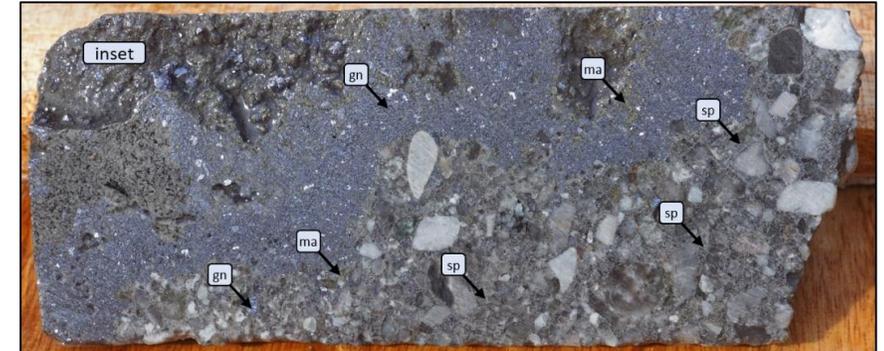


New 200m step out drilling displays **strongest ever mineralisation**  
60.2m @ 2.4% Zn+Pb from 2m with 29.5m @ 3.6% Zn+Pb core

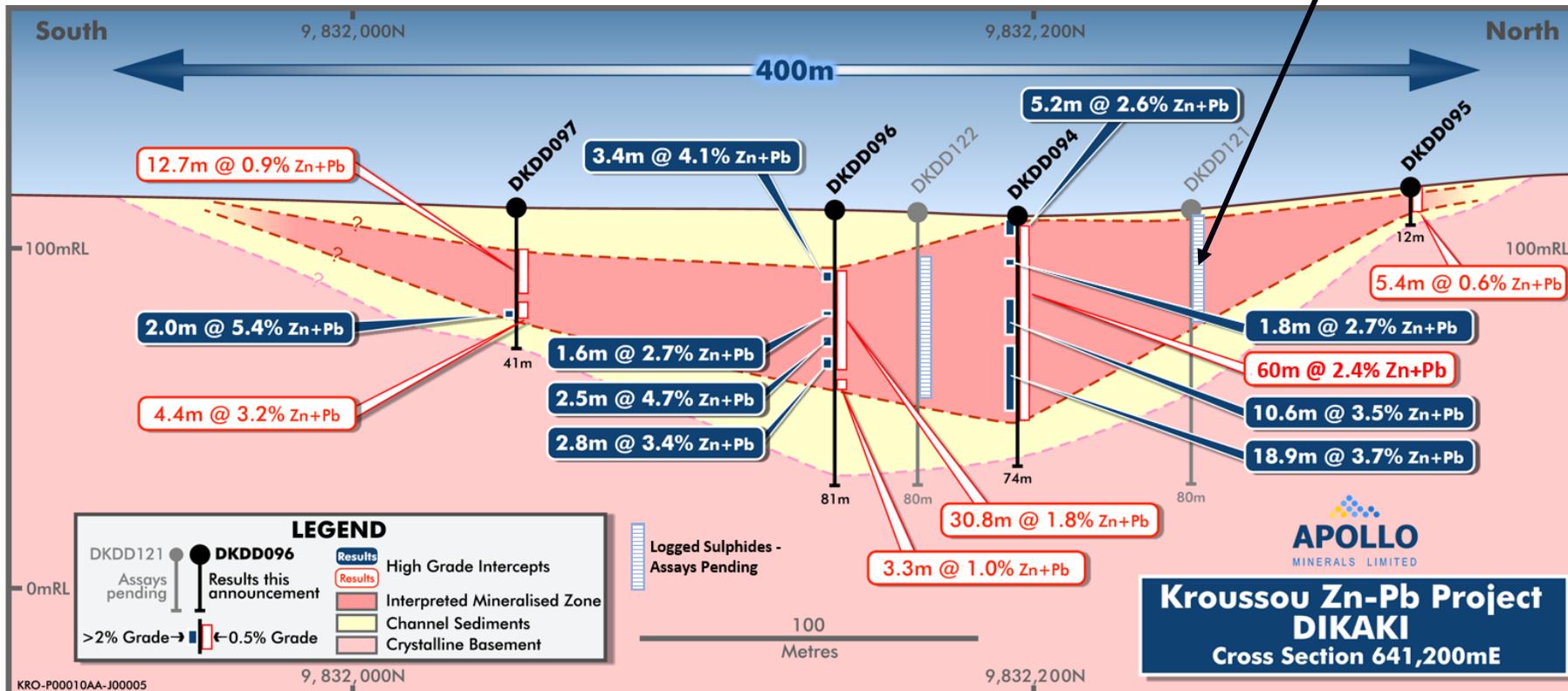
800m step out drilling **successful** with continued mineralisation

# Dikaki – Eastern Extensions – Latest Results

- Strongest mineralisation ever seen at Kroussou
- Combined 29.5m @ 3.6% Zn+Pb from 25.5m
  - within 60.2m @ 2.4% Zn+Pb from 1.9m
- Holes either side display significant visual sulphides – [assays pending](#)
- Open to the east for 2km



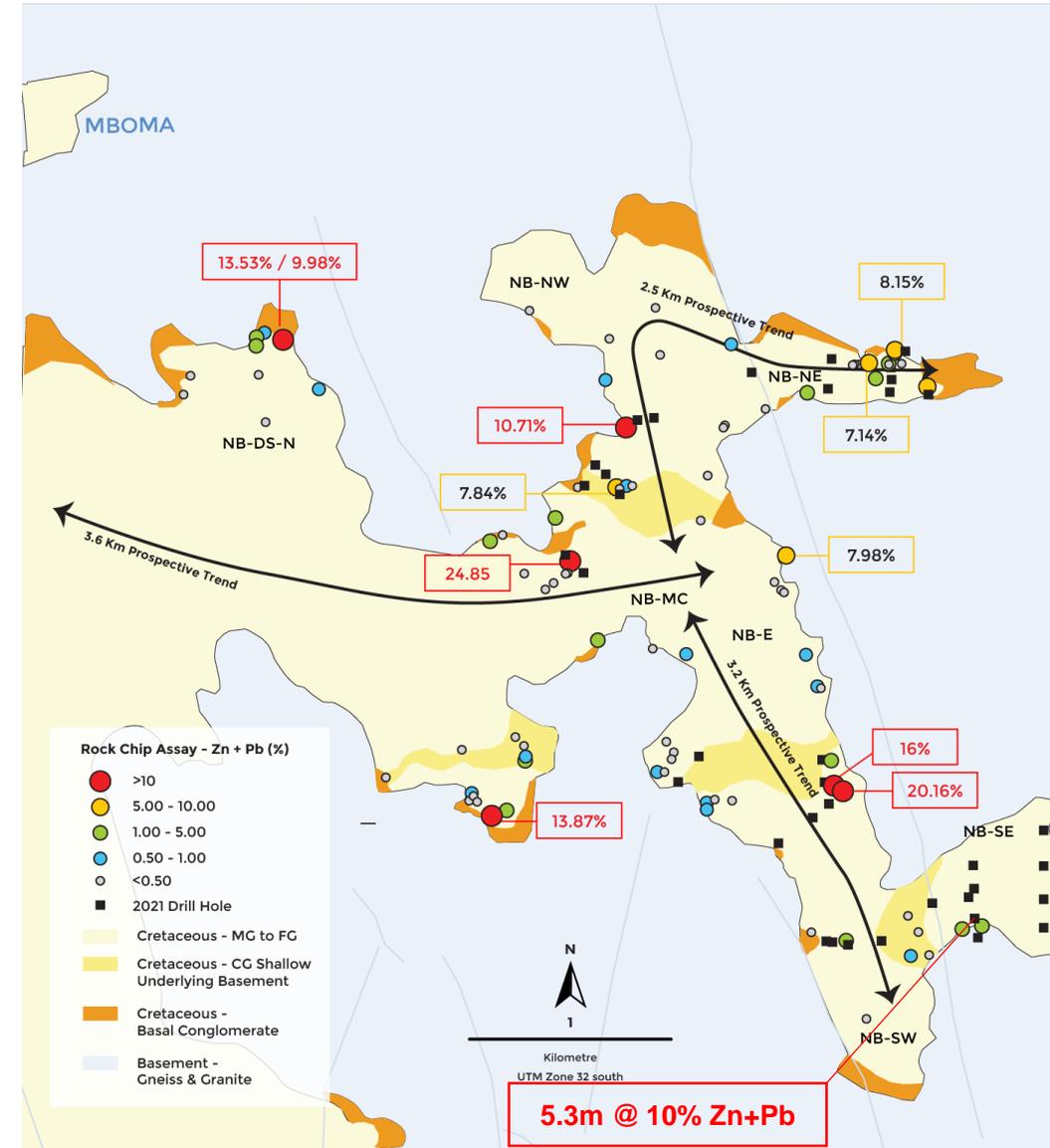
Sphalerite and galena mineralisation in hole DKDD121 (at 22.5m) – 50m to the north of DKDD094.



# Niamabimbou– Emerging Discovery

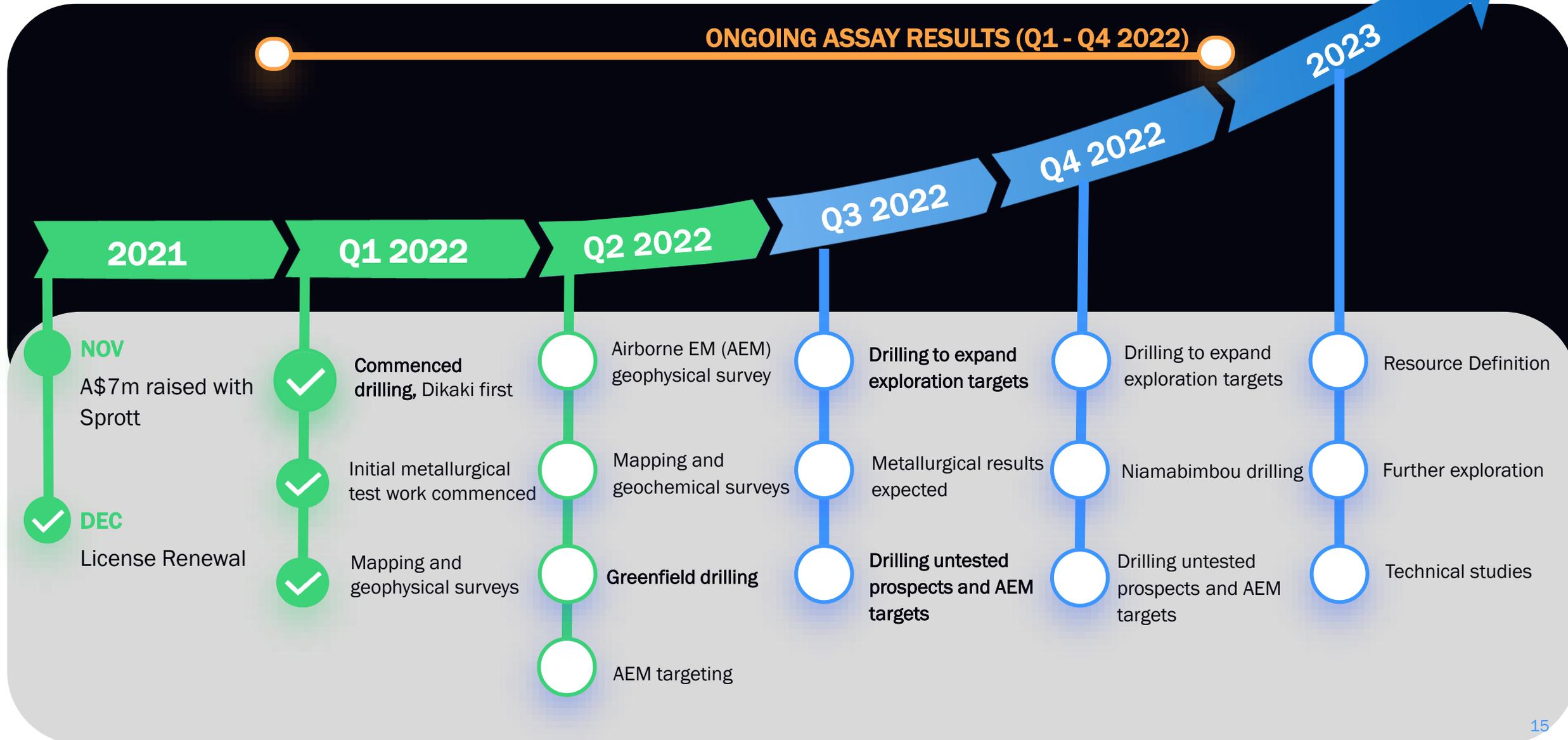
## High grade mineralisation in 2021

- Maiden, broad-scale, drilling completed in 2021 for 2,170m
- Base metal sulphides identified in multiple zones
  - 5.3m @ 10.3% Zn+Pb and 3g/t Ag from 54.7m within a broader zone of 27.1m @ 2.9% Zn+Pb from 33.8m - open to the east and along section;
  - 3.5m @ 4.6% Zn+Pb and 2g/t Ag from 63.8m within a broader zone of 21.0m @ 2.0% Zn+Pb from 46.2m;
  - 5.7m @ 3.0% Zn+Pb from 22.2m within a broader zone of 19.9m @ 1.6% Zn+Pb from 8.0m; and
  - 4.5m @ 2.8% Zn+Pb from 27.4m within a broader zone of 19.9m @ 1.6% Zn+Pb from 13.5m.
- **Multiple, untested and mineralised outcrops** extending over wide areas and >9km of strike
- >20km of prospective contact within the broader > 9km strike



# Work Program and News Flow Going Forward

Results to date demonstrate the province-scale potential at Kroussou



# ESG Highlights

Apollo Minerals puts health and safety first with a key focus on safety and environment preservation and community support



## PLANET

### Environment

- ✓ Low impact exploration with rehabilitation
- ✓ Minimise waste
- ✓ Conservative footprint
- ✓ Supply chain integrity



## PEOPLE

### Social

- ✓ Safety and security
- ✓ Gabon community engagement
- ✓ Local Employment
- ✓ Culture, care and respect initiatives



## PROSPERITY

### Governance

- ✓ Committed to transparency
- ✓ Leadership development
- ✓ Board and Management diversity
- ✓ Critical Risk Management control standards in place
- ✓ Hazardous risk identification, legal and compliance training

# Executive & Management

Extensive development and mining experience across Africa

## John Welborn

Non-Executive Chairman



Mr Welborn is a highly accomplished and internationally respected resource company Director with significant African experience. This French speaking Director has operated extensively in West and Central Africa, including the successful development and/or operation of mining projects in Mali, Cote D'Ivoire, Burkina Faso, Ghana, Senegal, Gabon, Cameroon and the Republic of Congo.

## Neil Inwood

Managing Director



Mr Inwood is a Geologist with over 25 years' international experience in the exploration and mining industry, particularly in base metals, gold and speciality metals. He has had significant management, consulting, and venture capital experience, and was previously Managing Director of Berkut Minerals Limited, Executive Geologist with Verona Capital, Principal Resource Geologist with the international mining consultancy Coffey Mining, and spent nine years with Barrick Gold.

## Ian Middlemas

Non-Executive Director

Mr Middlemas was a Senior Group Executive for Normandy Mining for more than ten years, which was Australia's largest gold miner before merging with Newmont Mining. He is currently Chairman of a number of ASX listed resource companies and was previously Chairman of Papillon Resources Limited and Mantra Resources Limited.



## Hugo Schumann

Non-Executive Director

Mr Schumann has more than 15 years' experience in the development of mining and energy projects globally across a range of commodities. Named as a Rising Young Star in Mining by Mines & Money in London. Currently the CFO of a US-based copper technology company backed by BHP, Freeport McMoRan and Teck. Mr Schumann holds an MBA from INSEAD and is a CFA Charterholder.



## Robert Behets

Non-Executive Director

Mr Behets is a geologist with over 28 years' experience in the mineral exploration and mining industry in Australia and internationally. Mr Behets was instrumental in the founding, growth and development of Mantra, an African-focused uranium company, through to its acquisition by ARMZ for approximately A\$1 billion in 2011.



## Ajay Kejriwal

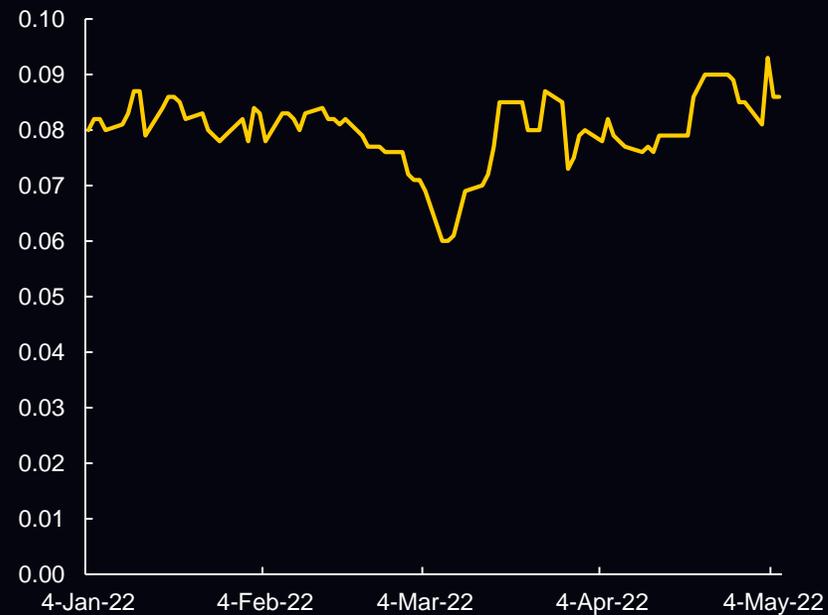
Non-Executive Director

Mr Kejriwal has over 25 years' experience in finance and commerce, and is currently a consultant to Juniper Capital, a natural resource investment and advisory business. Prior to Juniper Capital, he was a banker leading many investment transactions across oil and gas, mining, real estate and asset management sectors.

# Corporate Overview

ASX: AON – Apollo Minerals

YTD Share Price



477 M

Ordinary Shares on Issue



A\$0.086

Share price 04-May-22



AU \$41.0M

Market Cap 04-May-22



\$5.9 M

Incl. Cash at 31-Mar-22 and  
\$0.5M in shares

# Thank you



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**APOLLO**  
MINERALS LIMITED

# Appendix

# Strong Local Infrastructure

Good access for exploration and excellent optionality for potential future transport solutions

## ✓ Site Access

- Robust road and forestry tracks to project site
- Enables good access to exploration targets across large areas



## ✓ Exploration Access

- Supports strong logistical flow of equipment and staff between capital and site
- Sealed N1 road access from Libreville to nearby town of Yombi

## ✓ Road, Rail, River Transport Options

- <370km by road to Libreville Port
- Rail siding 240km from site at Ndjole Town
- Yeno river port ~65km on good roads



# Libreville – April 2022

Mining Ministry Buildings



Downtown



Banking



AON Executives and Gabonese Minister of Mines



Libreville Port



# Excellent Metallurgy From Initial Test Work

The Dikaki prospect has demonstrated high grade concentrates and high recoveries

- First pass metallurgical test work program completed (2018)
- Outstanding recoveries and concentrate grades demonstrated
- High lead concentrate grade (even before process optimisation):  
>70% Pb concentrate grade and >90% recovery
- Highest individual concentrate grade of 79% Pb
- Zinc concentrate: up to 58% Zn individual concentrate grades,  
with 90% recovery at 53% Zn across zinc rougher-cleaner
- Process refinement likely to increase both grade and recovery of  
zinc and lead in future test programs



*Images from Initial Test Work Program of Dikaki Mineralisation*

# Significant ASX Recent Zn+Pb Discoveries



<b>Market Cap (A\$m)<sup>1</sup></b>	<b>42.9</b>	<b>232.7</b>	<b>76.1</b>
<b>Project</b>	Kroussou	Earaheedy	Iroquois
<b>Location</b>	Gabon	Western Australia	Western Australia
<b>Stage</b>	Exploration (no resource)	Exploration (no resource)	Exploration (no resource)
<b>Ownership</b>	100%	75%	80%
<b>Style</b>	MVT	SEDEX	SEDEX
<b>Prospective Strike</b>	80Km	45km	30km

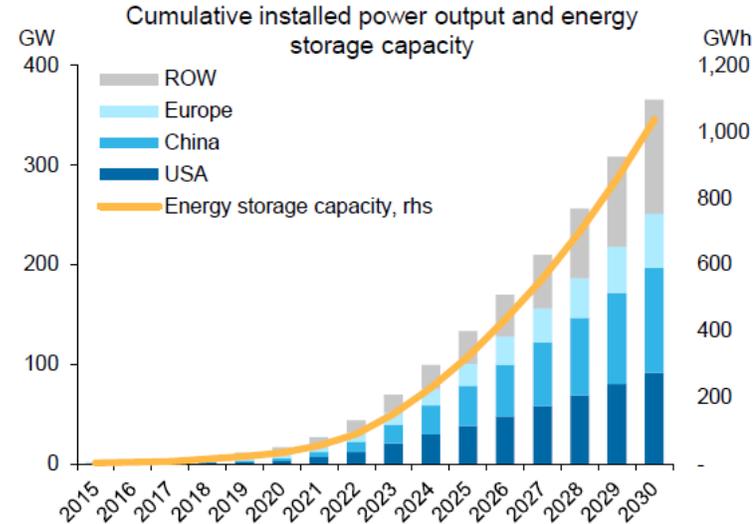
<sup>1</sup>All market capitalisations have been recorded at the closing price on 26-Apr-22; <sup>2</sup><https://rumblresources.com.au/>; <sup>3</sup><https://www.stricklandmetals.com.au/>

# Zinc – Developing Technology for Large-Scale Battery Storage

## Cheaper zinc batteries can help deliver full potential of renewable energy<sup>1</sup>

- Stationary power storage market is expected to grow by 34% pa from 2021-2030.
- Li-ion batteries are currently the most commonly used technology in grid applications due to their combination of high energy density, high power density and cycle life.
- Li-ion batteries are expensive and require thermal management systems due to safety risks.
- It is expected that non-Li-ion batteries will start making inroads from 2025 as competing technologies are developed further and reach commercialisation.
- Zinc batteries are being commercialised for backup power for data centres, several companies developing zinc batteries for grid storage, microgrids, residential and commercial applications.
- The average zinc content of a zinc battery is around 2,000kg per MWh.

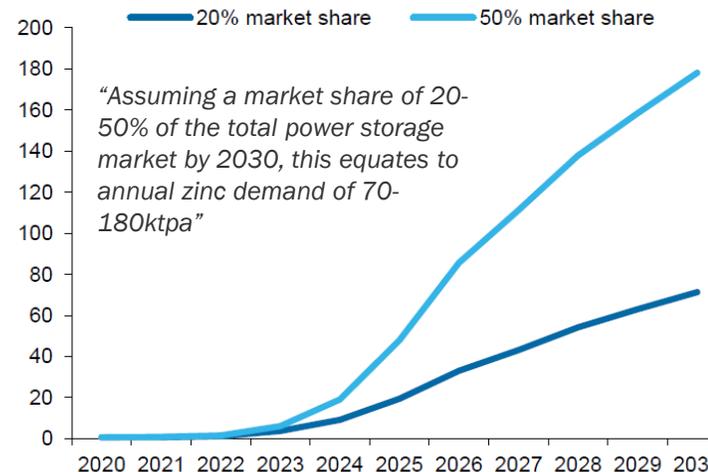
Cumulative installed power output and energy storage capacity<sup>1</sup>



Challenges with utility scale Li-ion batteries<sup>1</sup>

- ✗ Li-ion battery safety risks make them less suited for wide-scale use in homes, utilities and businesses.
- ✗ Regulations have been tightened after a utility battery storage facility exploded in 2019 due to a faulty Li-ion cell.
- ✗ Fire suppression systems are required, adding to the cost.
- ✗ Under extreme temperatures the cycle life of Li-ion batteries can deteriorate, may underperform in some climates.
- ✗ Growth in energy storage is most likely going to be focused on larger projects (GWh) and longer duration storage (>6 hours) versus the relatively small (MWh), short-term duration (2 to 4 hours) typically seen today.

Annual Zinc Demand, (kt)<sup>1</sup>



<sup>1</sup>Sources: Macquarie Strategy, April 2022

# Zinc – Multiple Battery Manufactures

The potential to capture the majority of the stationary energy storage market<sup>1</sup>



Eos Energy utilises a **zinc hybrid cathode**, and have recently announced plans to expand its production facilities to 800MWh pa to meet demand of the backlog of orders of nearly 1GWh for utility customers in the USA and India.



Redflow have developed a modular **zinc bromine flow battery**. Recently completed a 2MWh installation at a bioenergy facility in California. Up to 12 hours discharge duration with a 10kWh modular design.



E-Zinc have developed an electrochemical technology for **storing energy in zinc metal**. Recently raised US\$25M to commence pilot production. Up to 80% less costly than Li-ion and operate for up to five days in a range of climates. Applications include grid, off-grid and back-up power.



Zinc8 Energy Solutions have developed innovative battery technology that uses **zinc and air as fuel**. Zinc8 is at the pre-commercial stage with a pilot project to install a 1.5MWh battery in combination with solar panels at a residential facility in New York.



## Zinc vs. Li-ion batteries

- ✓ Recyclable/Reusable
- ✓ Fire Resistant
- ✓ Wide Operating Temperature Range
- ✓ Long Lifetime
- ✓ Flexible and Scalable
- ✓ Affordable