



OPEN DAY  
2022



# Are we doing enough?

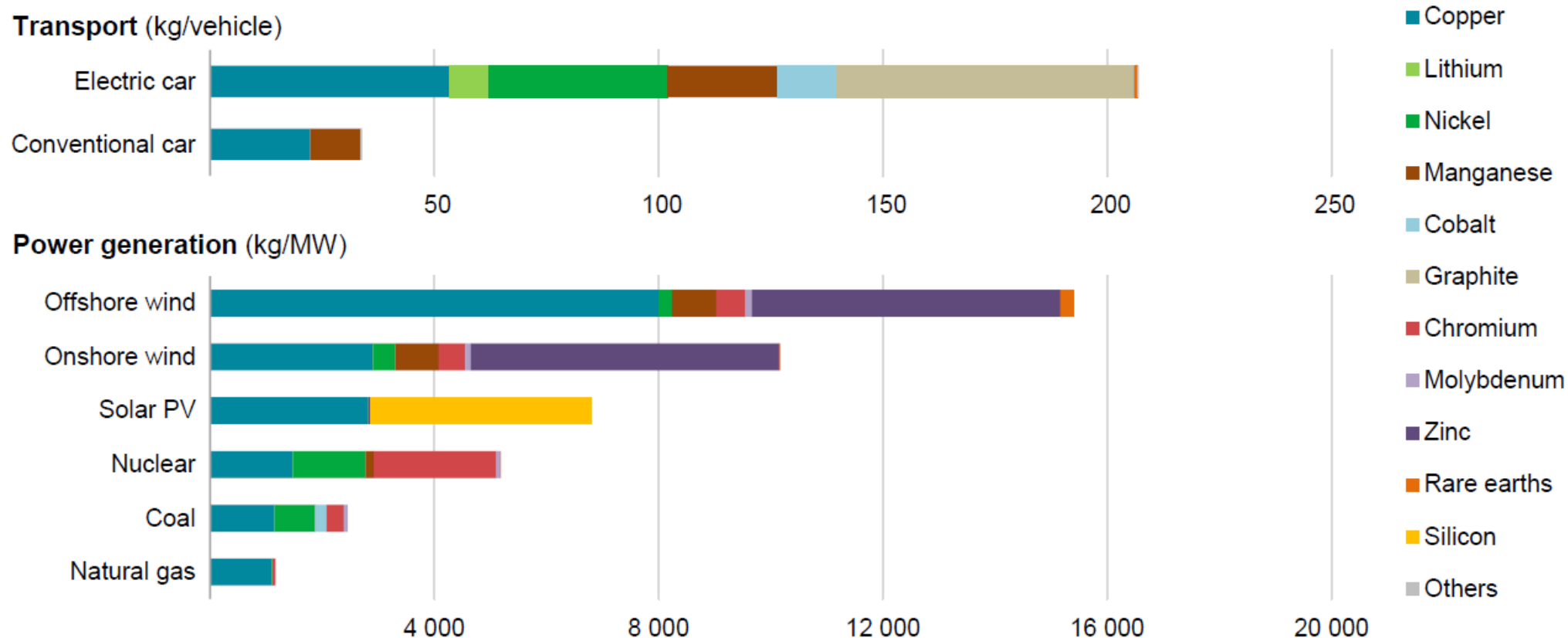
Nicole Roocke

25 November 2022



# Future Demand

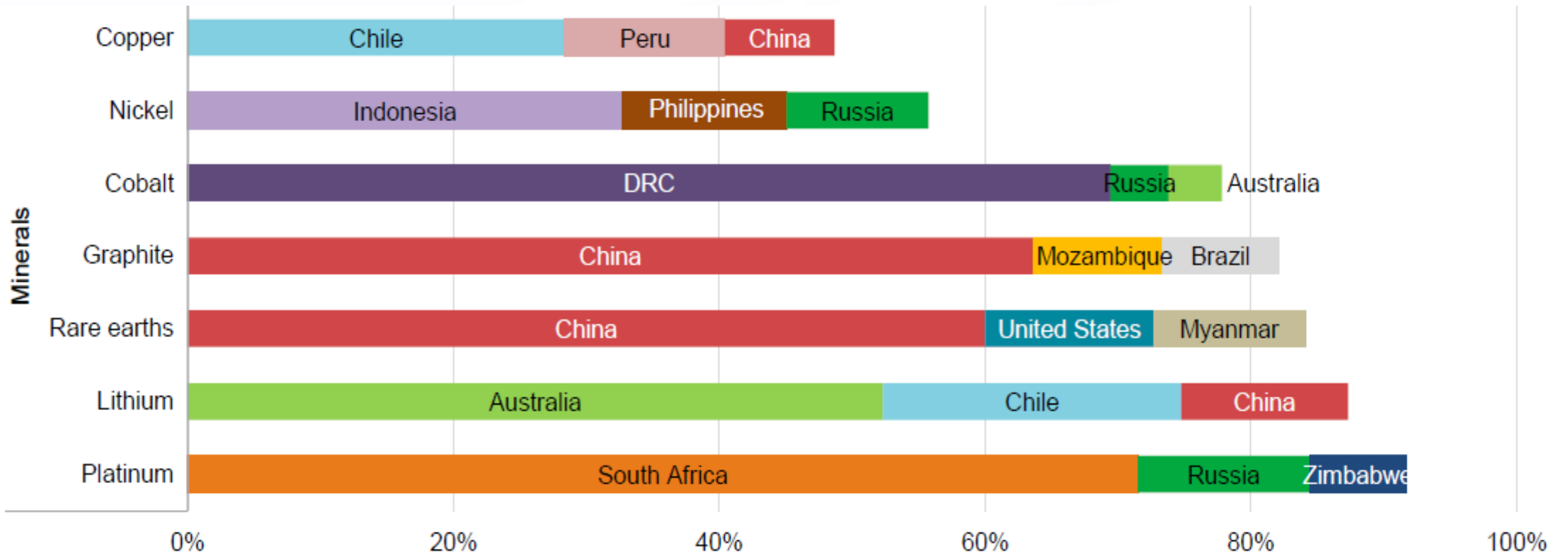
## Minerals used in selected clean energy technologies



IEA. All rights reserved.

Notes: kg = kilogramme; MW = megawatt. Steel and aluminium not included. See Chapter 1 and Annex for details on the assumptions and methodologies.

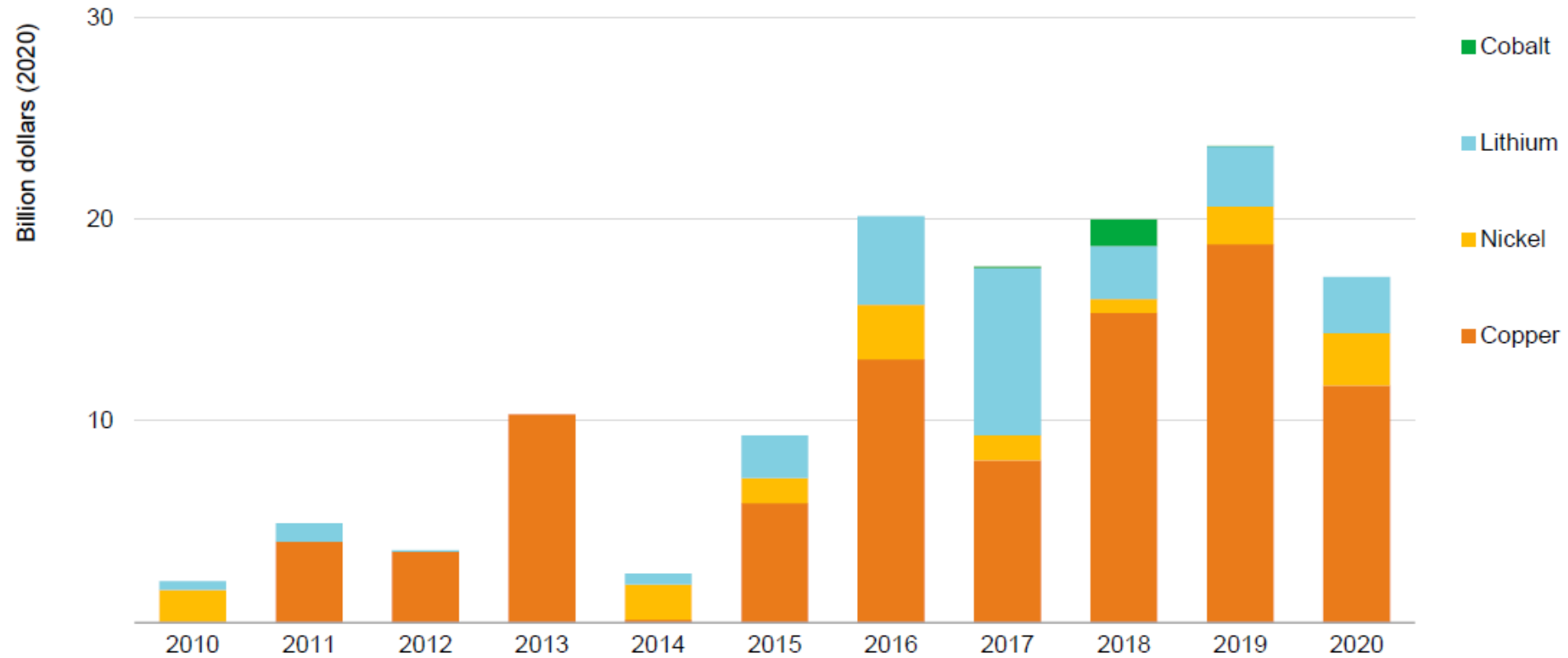
# Current production



IEA. All rights reserved.

Sources: IEA (2020b); USGS (2021).

# Investment in new mineral supply

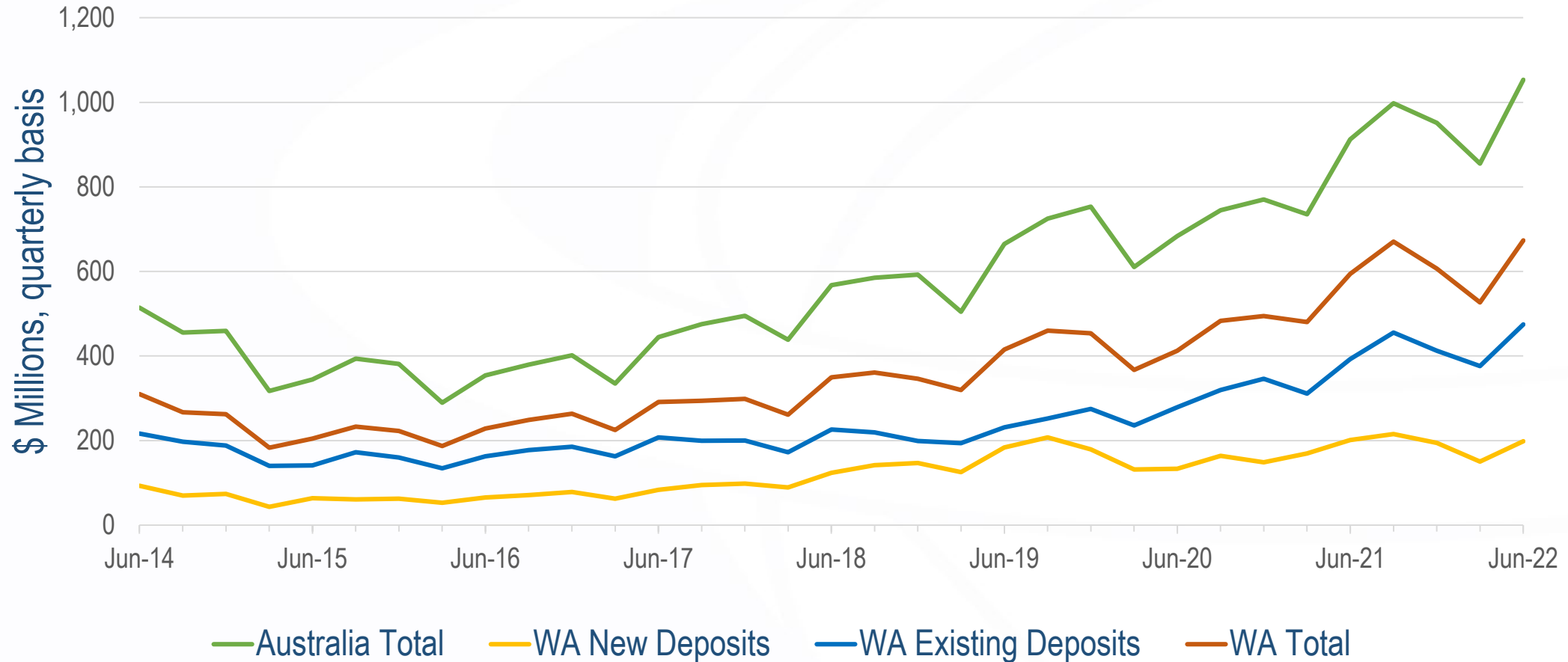


IEA. All rights reserved.

Notes: Capital cost for cobalt includes only those projects whose primary commodity is cobalt. The figures do not include sustaining capital expenditure.

Source: S&P Global (2021).

# Trends in exploration – expenditure



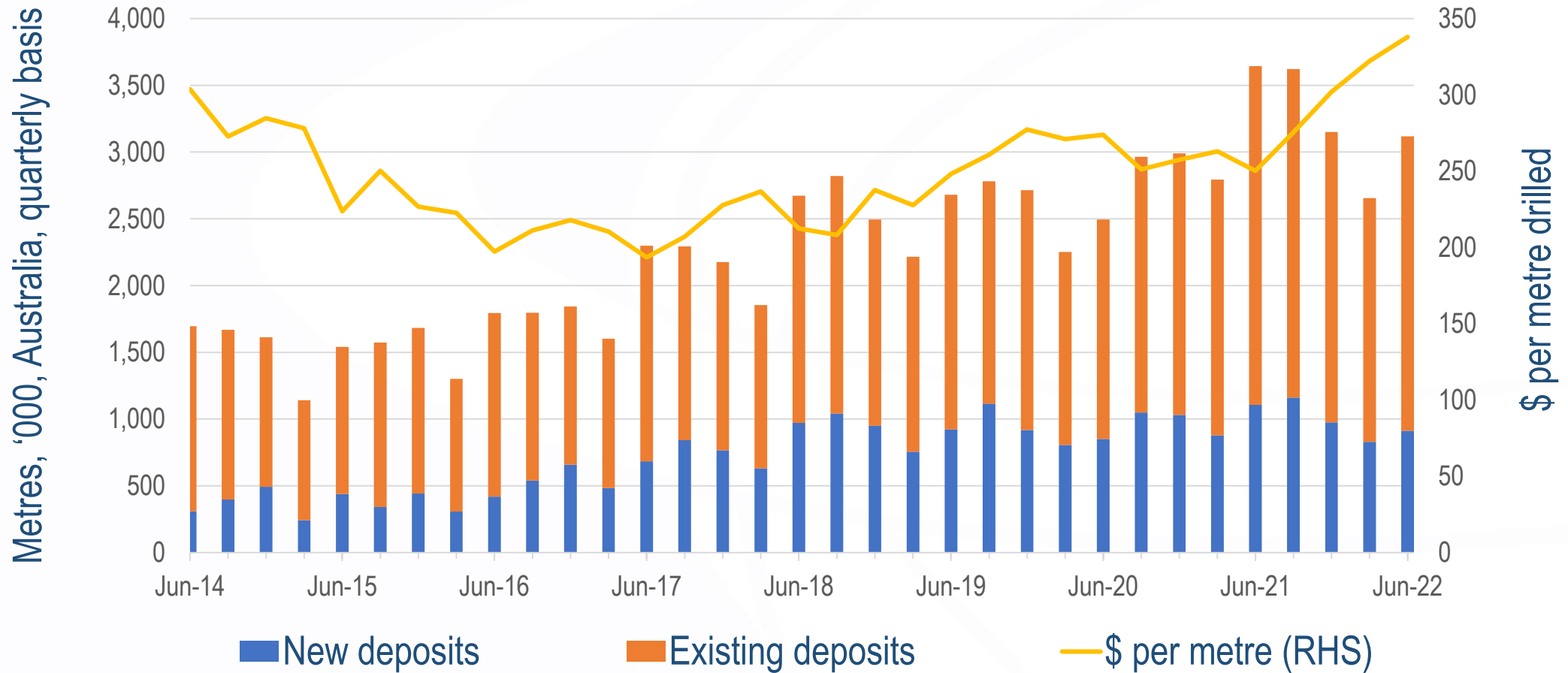
Source: ABS, Mineral and Petroleum Exploration, Australia June 2022

# Trends in exploration – commodities



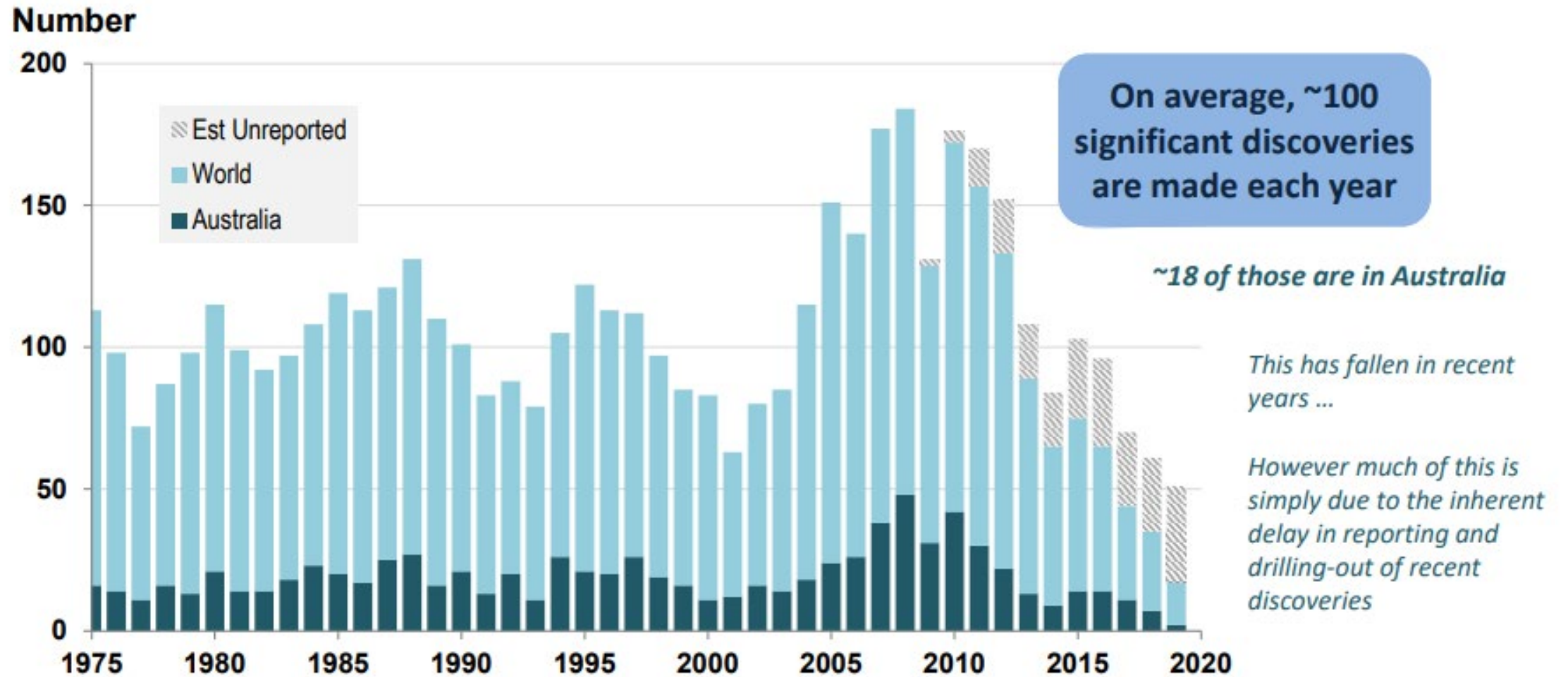
Source: ABS, Mineral and Petroleum Exploration, Australia June 2022

# Trends in exploration – metres drilled

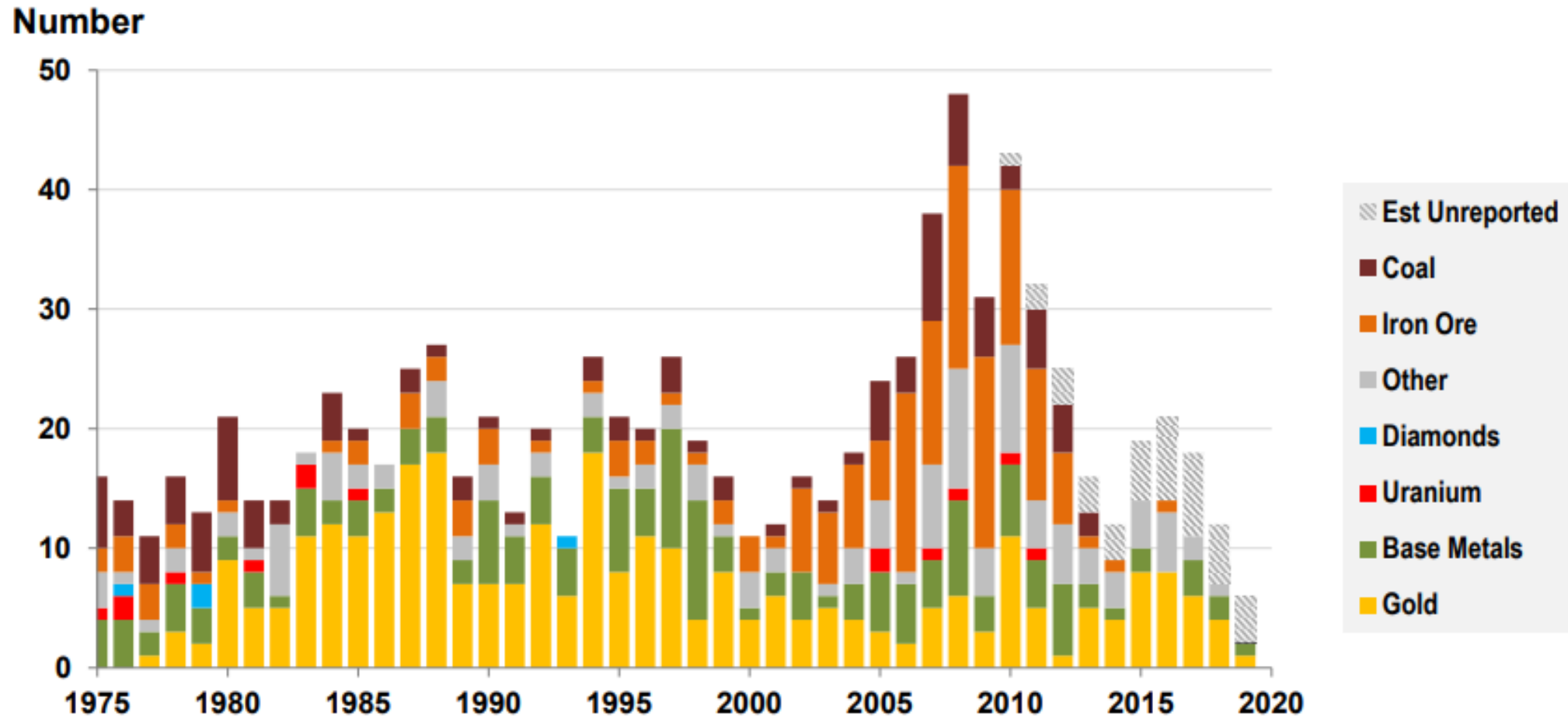




# Discoveries



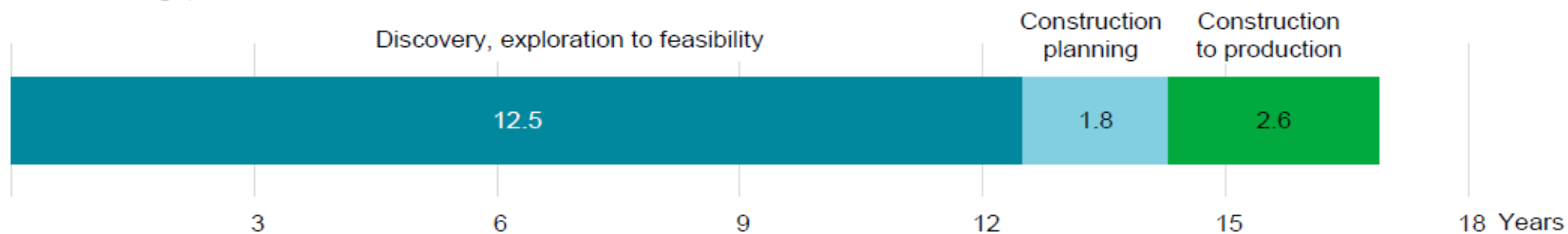
# Discoveries



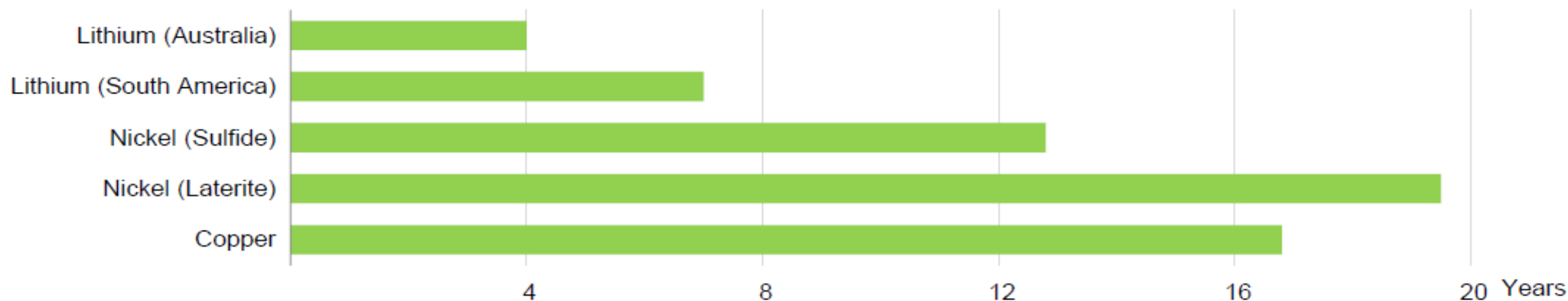


# Project Lead Times

Global average, 2010-2019



Average observed lead time for selected minerals (from discovery to production)

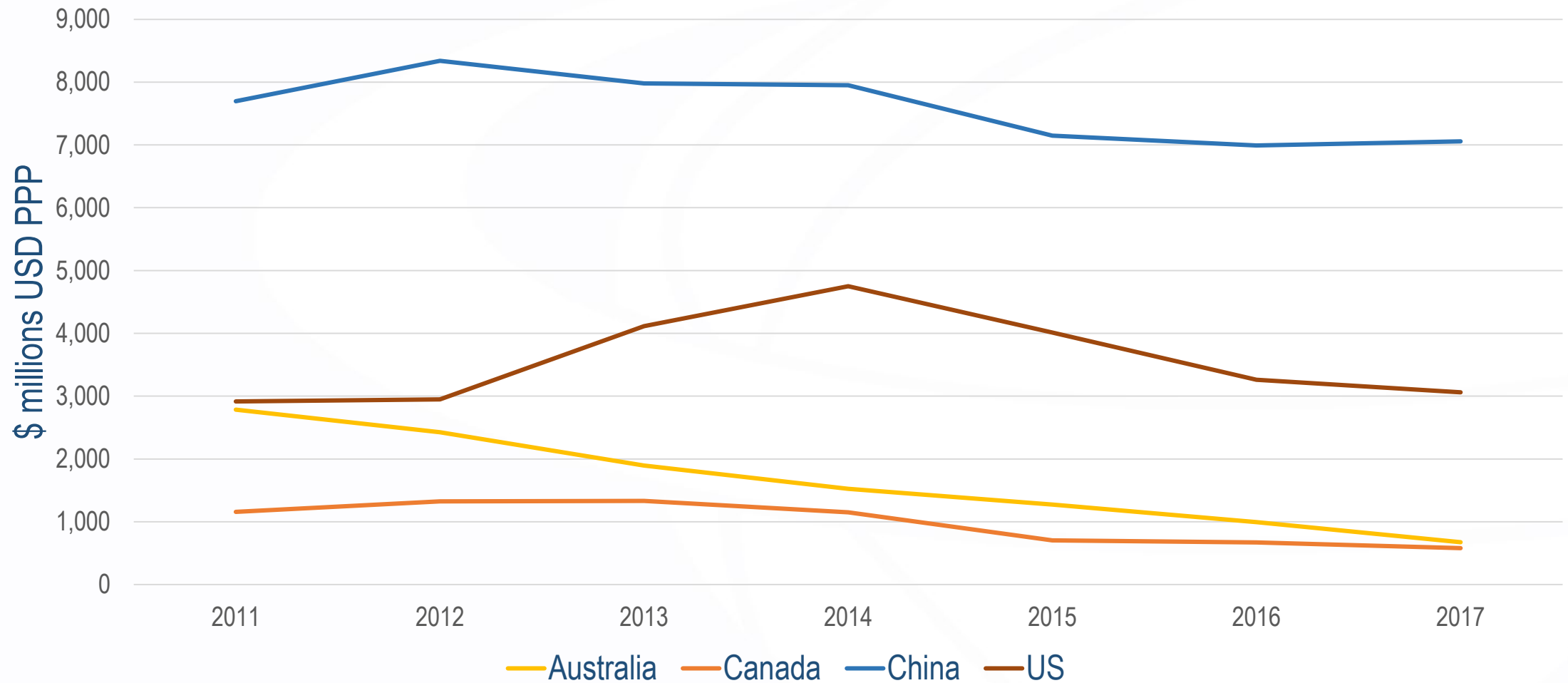


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Note: Global average values are based on the top 35 mining projects that came online between 2010 and 2019.

Source: IEA analysis based on S&P Global (2020), S&P Global (2019a) and Schodde (2017).

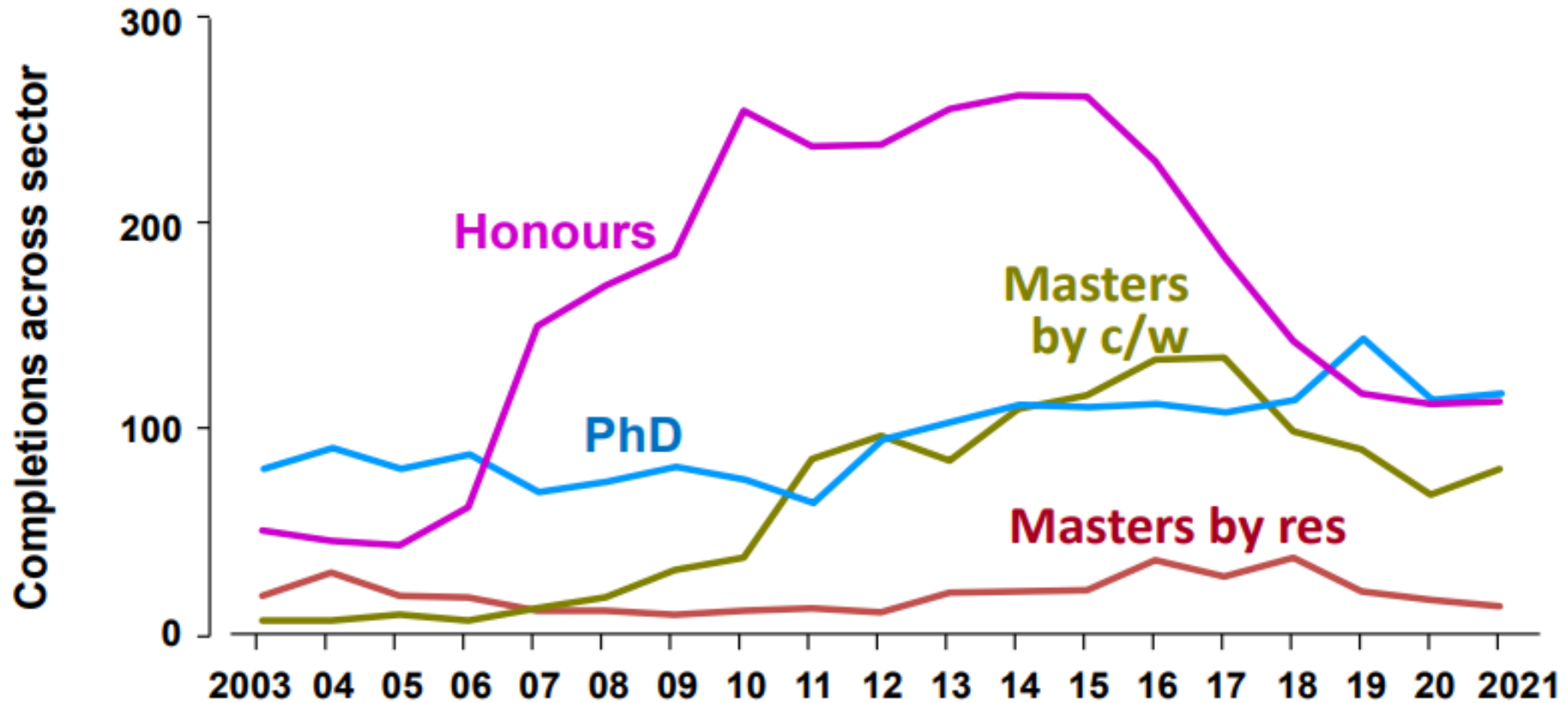
# R & D – mining and quarrying



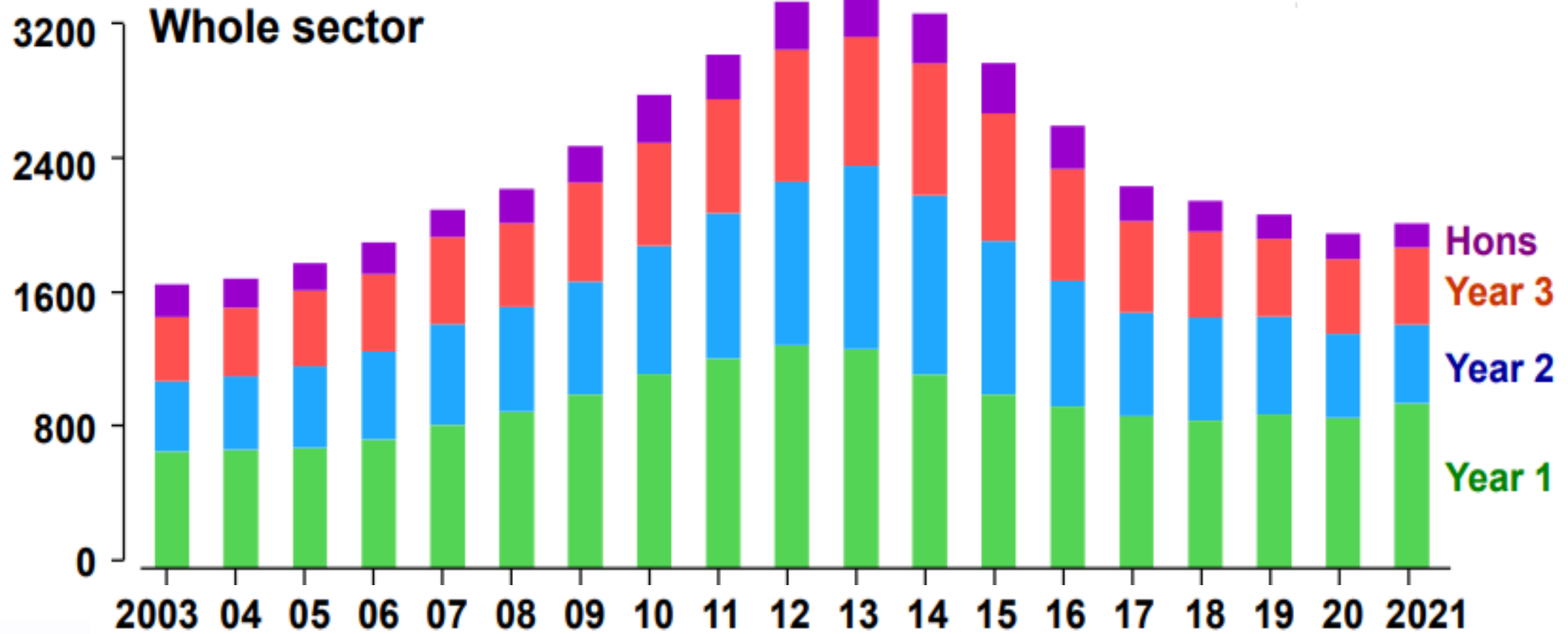
Source: OECD Research and Development  
Expenditure in Industry 2020



# National completions in higher degrees



# Student enrolments





# Find More Viable Resources



- MinEx CRC
- UWA - Centre for Exploration Targeting (CET)
- Curtin - The Institute for Geoscience Research (TIGeR)
- CSIRO
- Murdoch University

The logo graphic for ExAMP features a central vertical line with a small square at its base. To the left of this line, there are two concentric grey semi-circles. To the right, there are five concentric green semi-circles. The text 'ExAMP' is positioned to the left of the vertical line, with the 'x' in a lighter blue color and 'AMP' in a dark blue color.

# **ExAMP**

1. Accessing and promoting exploration research outcomes to increase their adoption and implementation
2. Supporting ongoing long-term foresight regarding future research and education needs around mineral exploration
3. Stimulating partnership opportunities in exploration research and education
4. Generating awareness of, and enthusiasm for, career pathways in exploration and geosciences.



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