

**Greenbank**

**The role of gold in responsible  
investment portfolios**



 [greenbankinvestments.com](https://greenbankinvestments.com)

 [Greenbank Investments](#)

 [@greenbankinvestments](#)



## Contents

|  |    |
|--|----|
| Introduction   | 4  |
| Commodities: building blocks of the global economy   | 6  |
| Gold: a multifunctional commodity  | 8  |
| The challenges responsible investors face  | 11 |
| Considerations for investors and Greenbank's approach to screening gold                    | 12 |
| The evolution of responsible gold guidance: the London Bullion Market Association (LBMA)   | 14 |
| Testing the investment screen: The Royal Mint Responsibly Sourced Physical Gold ETC (RMAU) | 16 |
| Resource efficiency: a circular economy for precious metals                                | 19 |
| Certifying responsible sourcing: LBMA's "Good Delivery" standards                          | 20 |
| Key takeaways  | 22 |



Written by  
**Charlie Young**  
Ethical, Sustainable and Impact Researcher

# Introduction

Gold plays a vital role in the global economy and modern investment portfolios. While it is valued as a tangible asset and a key material in technological innovation, behind its appeal lies a complex supply chain with significant environmental and social risks.

As sustainable investing continues to evolve, investors are increasingly called upon to scrutinise the origins and impacts of the commodities they engage with.

This paper explores the role of gold in the global economy, the challenges of responsible sourcing, and the screening approaches Greenbank use to align gold exposure with sustainability goals.

---

This document has been prepared by Greenbank and reflects the general view of the research team. It should not be taken as a recommendation, nor advice as to how a specific market is likely to perform. The value of investments and the income from them may go down as well as up, and you could get back less than you originally invested. Past performance is not a reliable indicator of future performance.

**“Gold plays a vital role in the global economy and modern investment portfolios.”**



# Commodities: building blocks of the global economy

Commodities are raw material inputs fundamental to the production of almost every good and service in global demand. They play an extremely important role in the global economy, serving as a major source of national revenues and a foundation for domestic and regional economic growth.

The trade in commodities connects countries and industries across the globe, generating shared economic benefits, stimulating job growth and fostering global cooperation.

Commodity prices are often viewed as an indicator of overall economic health and can be used as a hedging tool by investors tracking inflation and other economic risks.

While commodities can be used to diversify investment portfolios, the variety of factors affecting prices can make them highly volatile: extreme weather events, geopolitics and rapid changes in supply and demand can significantly impact global economies, making the interpretation and management of commodity markets key considerations for the maintenance of economic stability.

The four major traded commodity types – metal, energy, agriculture, and livestock and meat – are all heavily reliant on the availability and robustness of natural resources. Extraction processes can lead to significant environmental damage, habitat loss, and land and water pollution.

Work conditions are often dangerous, unregulated and exploitative, particularly in developing economies, and expanding production can result in the displacement of local communities and the loss of traditional land rights.

Many commodities are also finite resources, raising questions about their long-term availability and sustainable management.

**“Commodities are raw material inputs fundamental to the production of almost every good and service in global demand.”**



# Gold: a multifunctional commodity

The importance of gold to the global economy is evidenced by its dual functionality as a physical commodity with industrial and technological applications, and as a financial asset held by central banks, financial institutions and investors for its historical reputation as a reliable and resilient store of value.

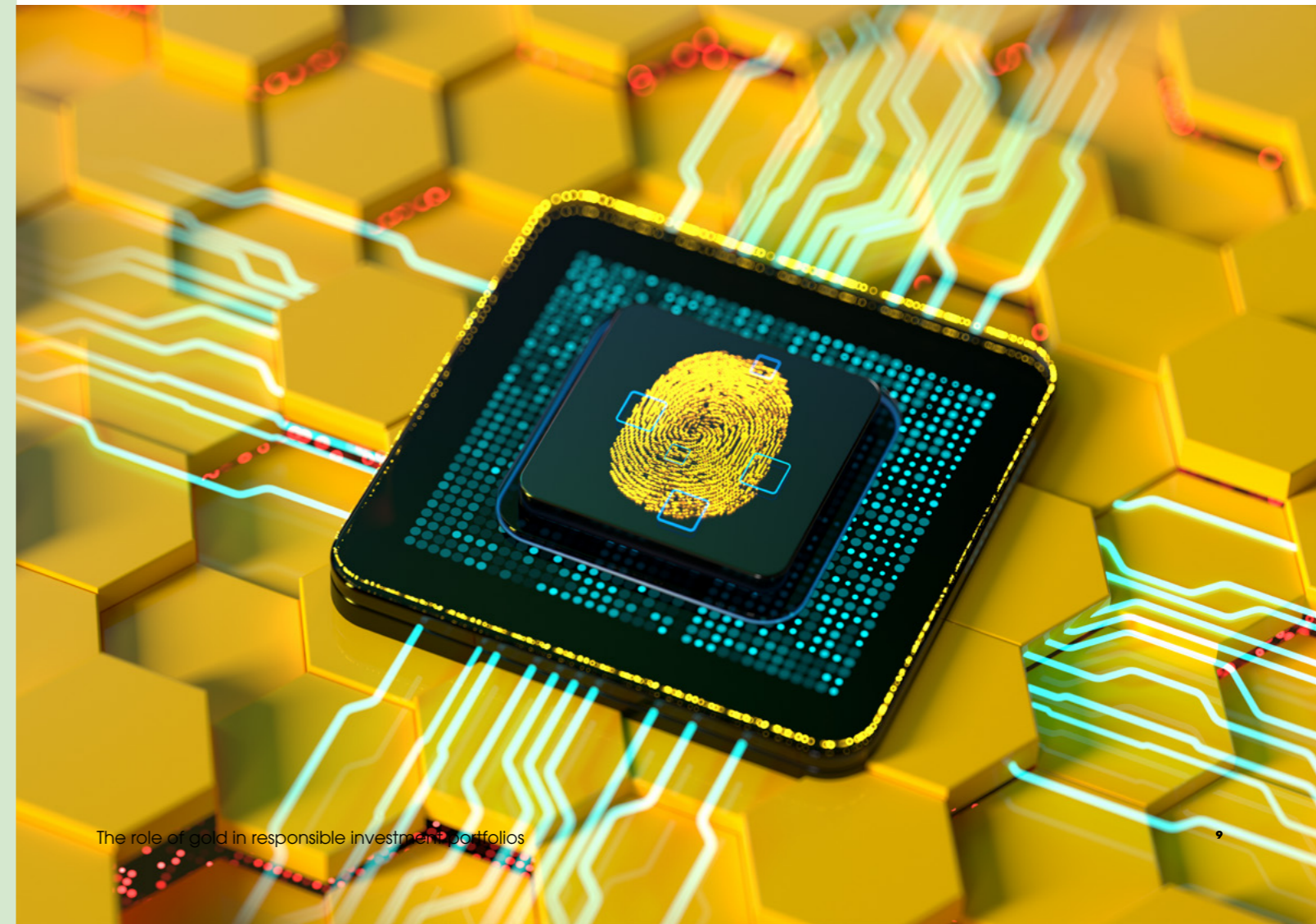
Gold underpins the credibility of currencies, provides additional support and security for banking systems during financial crises, and enhances trust among global trading partners. Investors often turn to gold as a safe haven during periods of market turmoil as it tends to be less correlated with other financial assets – while the values of traditional investments fluctuate, gold retains and sometimes increases its value.

Unlike other commodities, gold can be recovered and reused indefinitely without significant loss of value or purity. Gold is the most non-reactive of all metals and is benign in all natural and industrial environments. Its resistance to corrosion ensures that electronic components maintain reliable and durable connections, while excellent conductivity allows for rapid and efficient signal transmission.

The electronics industry is currently the largest industrial consumer of gold. The World Gold Council reported that the technology sector used over 320 tonnes of gold in 2024, largely to meet increased demand for high-end artificial intelligence (AI) infrastructure. The circuit board in an average smartphone contains around 30 to 40 milligrams of gold.

The biocompatibility and bacterial resistance properties of gold also make it invaluable to the medical sector. Gold nanoparticles are even being considered for targeted drug delivery systems and for use as contrast agents for diagnostic imaging.

**“The World Gold Council reported that the technology sector used over 320 tonnes of gold in 2024, largely to meet increased demand for high-end artificial intelligence (AI) infrastructure.”**





## The challenges responsible investors face

Despite gold's considerable value and utility, the mining and processing of most of the world's supply carries significant environmental and social risks. Habitat destruction is a common consequence of mining operations and the use of chemicals like cyanide and mercury in large-scale extraction processes threatens the integrity of ecosystems and risks the long-term contamination of proximate land and water resources. The energy-intensive nature of mining also contributes to climate change and risks increasing the output of atmospheric pollutants.

Workers can face low wages, unsafe working environments and health risks from extended exposure to chemical and heavy metal toxins. In some high-risk regions, gold mining can contribute to social instability and conflict, particularly where operations are unregulated and engaged in illicit trading activity: control and rivalry over gold has been a major driver of the civil war in Sudan since 2023 where production and illegal trade has been a key source of revenue for warring factions.

Overall, the risks associated with international gold mining highlight the need for responsible sourcing and production processes to mitigate environmental and social impacts, protect key resources and workers' rights, and ensure long-term sustainable development.

**“There is a need for responsible sourcing and production processes to mitigate environmental and social impacts, protect key resources and workers' rights, and ensure long-term sustainable development.”**

# Considerations for investors and Greenbank's approach to screening gold

Investors have indirect exposure to commodities through the activities of investee companies. In the case of gold, that exposure is primarily through its industrial and technological applications. Outside of direct gold ownership, more direct exposure to generate returns and diversify portfolios is typically achieved through investment vehicles like exchange-traded funds (ETFs) or exchange-traded commodity products (ETCs).

Investors should prioritise gold industry actors with established and measurable environmental, social and corporate governance policies, and companies evidencing a high degree of supply chain transparency. They might also consider independent ethical gold certification standards which certify gold of responsible origin and guarantee sustainable extraction, full traceability, human dignity, and the support of artisanal and small-scale mining communities.

With any prospective investment, Greenbank assesses the risks and opportunities that environmental, social and corporate governance issues present. We look beyond financial aspects to examine the wider impacts of our investments, and we've established a series of robust minimum standards that those investments must initially meet.

Commodities are not explicitly outlined in our minimum standards framework, but the principles we apply to our assessment of other asset classes still broadly apply. Assessing the whole suite of activities and operations associated with a product or service, we seek to avoid investments that have an overall negative impact on people and planet and prefer those delivering measurable social and environmental benefits.

**“With any prospective investment, Greenbank assesses the risks and opportunities that environmental, social and corporate governance issues present.”**

When considering gold-related investments, our sustainability assessment requires that the following conditions are met:

- 1.** That gold producers and traders demonstrate comprehensive supply chain transparency with third-party audits or other forms of verification to ensure the traceability of their gold from responsible sources.
- 2.** That producers and traders evidence policies safeguarding workers' rights and demonstrate high environmental and social standards throughout their supply chains.
- 3.** That there is no evidence of negative impacts related to labour rights, human rights or environmental degradation throughout supply chains.
- 4.** That there is evidence of positive alignment with the principles of sustainable development – for example, the inclusion of local co-operatives in production aiming to generate sustainable and equitable economic growth.

So far, we have excluded direct gold investments from our investment universe because none have fully met the conditions outlined. However, we have not excluded the asset class entirely as we believe that an investment that aligns with our sustainability criteria could be included in a sustainable portfolio.



# The evolution of responsible gold guidance: the London Bullion Market Association (LBMA)

In recent years, independent authorities have developed responsible gold and mineral sourcing programmes requiring mining operators and refiners to conduct risk-based due diligence on material sourcing, sustainability standards and human rights. Since its inception in 2012, the LBMA's Responsible Gold Guidance (RGG) has become the most widely adopted guidance programme for global gold investments.

The initial launch of the RGG was in response to the 2011 Organisation for Economic Co-operation and Development Due Diligence (OECD) Guidance for Responsible Supply Chains which focused on combatting serious abuses related to the gold industry, preventing money laundering and financing for terrorism and conflict, and encouraging refiners to conduct risk-based supply chain due diligence.

Since then, the RGG has evolved through feedback from gold industry participants, regulators and non-governmental organisations (NGOs). Early iterations expanded guidance on mined gold sourcing and gold recycling, clarified definitions of risk, and established audit frameworks to verify compliance by refiners. Later versions aligned more closely with global principles of best practice including stronger governance and oversight, requirements for refiners to perform annual due diligence reviews and provide more detailed supplier risk assessments, and increased reporting and disclosure obligations.

The most recent version of the RGG – Version 9 released in 2021 – integrated feedback from two multi-stakeholder consultations. Key enhancements to the guidance included a more granular breakdown of origin of material and supply chain risks, a requirement for refiners to conduct real-time monitoring, and more stringent measures to identify, address and remediate environmental and human rights risks.

Additionally, it mandated third-party audits, heightened scrutiny on artisanal and small-scale mining and community engagement, and specific measures regarding the responsible sourcing of recycled gold. Despite wide adoption of the LBMA's initial guidance, few gold investment vehicles have kept pace with the progress of newer iterations.

**“We believe that the evolution of responsible sourcing guidance has been effective in encouraging gold refiners to process gold from legitimate and more responsible sources.”**

In May 2025, the LBMA advanced the implementation of additional transparency requirements for refiners originally scheduled for 2027. As part of the LBMA's Refiner Transparency Roadmap, refiners must disclose the identity and location of suppliers located in 'red flag' territories as stipulated in RGG Version 9. To date, these disclosures were not made public, but from 2026 refiners will be required to publicly disclose the identity of refiners and exporters in red flag territories, the identities of all World Gold Council (WGC) mines and miners who provide them with materials, and the identities of all locations from where mined material is received. Public consultations for the development of RGG Version 10 also commenced in 2025.

We believe that the evolution of responsible sourcing guidance has been effective in encouraging gold refiners to process gold from legitimate and more responsible sources. Our focus on LBMA is driven by its common adoption by gold investment vehicles, but similar responsible mining frameworks, such as the WGC's Responsible Gold Mining Principles, are also welcomed to drive increased sustainable development across the gold mining sector. Other developing industry initiatives are also focused on "raising the bar" – such as the increased use of blockchain for supply chain traceability – and we will continue to monitor how the market responds to these.





## Testing the investment screen: The Royal Mint Responsibly Sourced Physical Gold ETC (RMAU)

RMAU is a gold-backed exchange-traded commodity launched in 2020 offering investors exposure to gold while ensuring ethical sourcing and sustainability. Its gold is sourced exclusively from LBMA Good Delivery List refiners, with all bars being produced post-2019 to align with updated responsible sourcing standards.

Our initial screening of RMAU agreed that while it took a “best in class” approach to gold sourcing through its adoption of updated LBMA guidance and its unique ambition to use 100% recycled gold by 2030, there was not enough evidence to prove a positive alignment with sustainable development beyond impact mitigation. The infancy of the ETC and a lack of evidence to support sustainability commitments regarding recycled gold also contributed to our decision to reject it at the time.

Revisiting it in February 2025, we discovered that RMAU had further raised the bar by continuing to align with evolving LBMA guidance and by evidencing steady progress towards its 2030 sourcing goal.

The increasing use of recycled gold as a secondary source is positively aligned with sustainable development as it tracks circular economy principles, avoids the environmental and social risks of virgin mining, and results in a 90% reduction in carbon intensity.

The Royal Mint publishes a biannual external audit of the bars in its vault, the latest of which confirmed that over half were produced from verifiable 100% recycled sources. It also screens suppliers in alignment with broader ethical and sustainability expectations beyond gold-specific guidance – in 2022, RMAU removed its exposure to Russian-refined bars in response to the country’s invasion of Ukraine, a move not matched by all the ETC’s competitors.

**“The increasing use of recycled gold as a secondary source is positively aligned with sustainable development as it tracks circular economy principles, avoids the environmental and social risks of virgin mining, and results in a 90% reduction in carbon intensity.”**





## Resource efficiency: a circular economy for precious metals

As the only sovereign mint offering 100% recycled gold products and as the only provider of an ETC with a recycled gold mandate, The Royal Mint is leading the market with a circular approach. It recognises the global transition to digital currencies and is subsequently focusing on the recovery and repurposing of precious metals as demand for physical currency declines.

In 2024, The Royal Mint opened an industrial recycling plant in Wales in partnership with Canadian clean tech company Excir. The plant recycles printed circuit boards found in everyday electronic devices to remove precious-group metals, including gold, silver and other recyclable commodities. According to the facility's operators, a tonne of e-waste contains 20 times more gold than a tonne of gold ore. The Royal Mint has also developed other methods of recycling precious metals, including one for extracting silver from NHS X-ray films.

Extracted gold is initially to be used in The Royal Mint's 886 jewellery brand and personal collectors' coins. In the medium-term, as supply and demand for both printed circuit boards and the recycled metals scales up, the additional flow of recycled gold will likely be added to RMAU.

**“According to the The Royal Mint facility’s operators, a tonne of e-waste contains 20 times more gold than a tonne of gold ore.”**

## Certifying responsible sourcing: LBMA's "Good Delivery" standards

Gold bars sourced from refiners on LBMA's Good Delivery List are typically a mixture of virgin-sourced and recycled gold. LBMA does not mandate a fixed ratio of virgin to recycled gold in Good Delivery bars, but refiners certified on the Good Delivery List must prove ethical and sustainable sourcing of both types under the RGG.

Only bars that meet LBMA's Good Delivery standards are acceptable in the settlement of contracts on the Loco London Precious Metals Market. A Good Delivery-listed bar must satisfy stringent checks for fine ounce weight, purity and physical appearance (incorporating marking and surface quality). To be certified on the Good Delivery List, refiners undergo checks on their market history, financial standing, minimum levels of production, and ability to produce Good Delivery-standard bars. Certified refiners must adhere to LBMA's Responsible Sourcing Programme, produce only Good Delivery-standard bars, and ship to approved vaults in London. Annual checks are made to ensure certified refiners continue to meet the minimum requirements for production and tangible net worth.

Full traceability of recycled gold to its origin can be difficult considering its lifecycle and the probability of historical re-refining with less reputable sources. The Royal Mint's sole re-refiner of recycled gold bars is Sempsa JP, the first European refiner to be certified by the Conflict Free Sourcing Initiative. Sempsa processes and recycles Royal Mint scrap bullion originally procured as Good Delivery bars, producing 100% recycled gold bars. Sempsa does not deal in virgin-mined gold, ensuring that bars are not contaminated with new or recycled gold from irreputable origins.

The Royal Mint claims this sourcing technique avoids the risk of "gold laundering" where unscreened or illegally obtained gold is melted and recast into another form.

## "Using sustainability-aligned refiners adhering to LBMA's guidance and auditing frameworks is the best approach to minimise the traceability risks associated with gold sourcing."

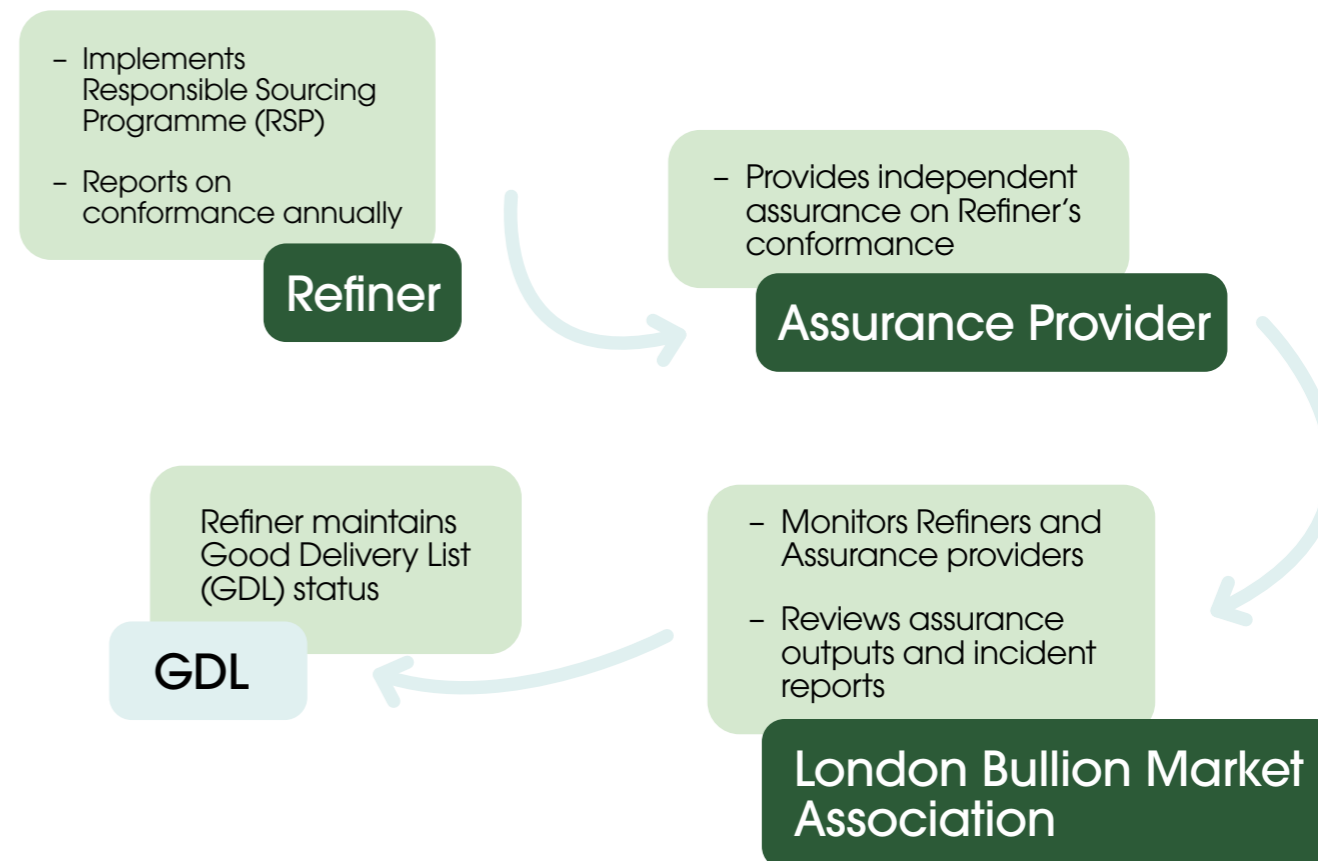
Despite its due diligence and the steps it's taken to address risks and exposures across its value chain, The Royal Mint does not have full transparency of its gold to every mine of origin.

Nonetheless, using sustainability-aligned refiners adhering to LBMA's guidance and auditing frameworks is the best approach to minimise the traceability risks associated with gold sourcing.

The scale of gold's importance to the global economy is matched by the significant challenges inherent in its manufacture and trade. While we are cognisant of the fact that LBMA's standards and sourcing guidance alone can't cover all the risks associated with gold investments, we believe that risk management is progressing to a point where we could consider an appropriate level of exposure.

The latest LBMA guidance has sufficiently robust checks in place regarding supply chain transparency and point of origin (among others) to reassure us that gold is sourced responsibly from ethical origins on a best practice basis.

### LBMA's Good Delivery List certification process



## Key takeaways

# 1

**Gold plays a unique dual role in both the global economy and investment portfolios:** Gold is not just an industrial commodity used heavily in electronics and medical devices but also a trusted financial asset and inflation hedge. Its durability, recyclability, and low correlation with other asset classes make it attractive for portfolio diversification, especially in times of market instability.

# 2

**Gold supply chains may carry major environmental and social risks:** Gold extraction is linked to habitat destruction, pollution, GHG emissions, poor labour conditions, and in some regions, conflict and illegal trade. These impacts challenge its inclusion in responsible investment portfolios, unless otherwise mitigated throughout the value chain.

# 3

**Responsible investors must prioritise traceability, transparency, and third-party verification:** Gold investments aligned with the principles of sustainable development require strict screening. Investors are encouraged to back stakeholders with strong ESG policies, third-party audits, and supply chain transparency. Initiatives like the LBMA's Responsible Gold Guidance (particularly Version 9 and upcoming Version 10) and other ethical gold certifications are vital tools for identifying responsibly sourced gold.

# 4

**Innovations in certification and recycling are raising the bar for responsible gold:** Efforts like The Royal Mint Responsibly Sourced Physical Gold ETC (RMAU) and its e-waste recycling plant are advancing circular economy goals. While full mine-to-market traceability remains difficult, the shift toward recycled gold, the evolution of LBMA and other certification standards, and the evolution of third-party auditing indicate a growing potential for responsible gold to be included in responsible investment portfolios.

# Greenbank

For further information on the services we provide, or to arrange a meeting, please contact us.

**Call**

0117 930 3000

**Email**

[enquiries@greenbankinvestments.com](mailto:enquiries@greenbankinvestments.com)

**For more information, please visit**

[greenbankinvestments.com](https://greenbankinvestments.com)

 Greenbank Investments

 @greenbankinvestments

**Our UK offices**

London  
Bristol  
Edinburgh  
Glasgow  
Liverpool

**Additional information**

Rathbones, Greenbank and Greenbank Investments are trading names of Rathbones Investment Management Limited.

Rathbones Investment Management Limited are authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. Registered office: Port of Liverpool Building, Pier Head, Liverpool L3 1NW. Registered in England No. 01448919.

Rathbones Asset Management Limited is authorised and regulated by the Financial Conduct Authority. Registered office: 30 Gresham Street, London EC2V 7QN. Registered in England No. 02376568.

Rathbones Group Plc is independently owned, is the sole shareholder in each of its subsidiary businesses and is listed on the London Stock Exchange.

No part of this document may be reproduced in any manner without prior permission.

