

Tapping into the nexus of energy transition metals and rare earth miners

Published April 9, 2024

Aneeka Gupta

Director, Macroeconomic Research, WisdomTree Europe

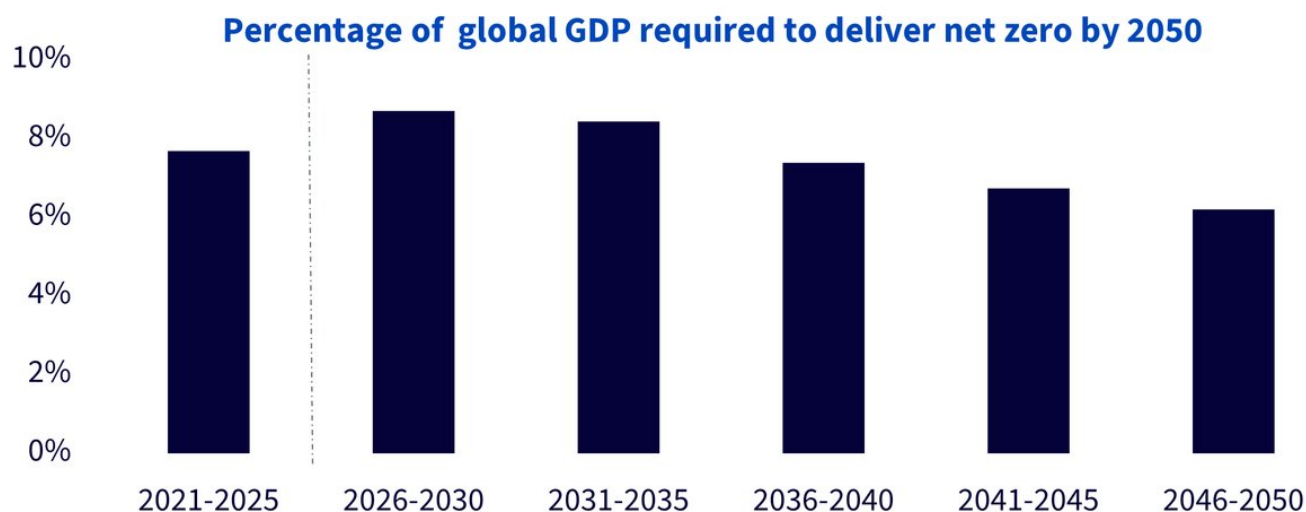
Key Takeaways

- Delivering net zero requires a significant step up in investments
- The energy transition is creating a source of structural demand for metals and minerals critical to the transition
- Mining companies involved in the extraction of critical metals and minerals will play a key role in the transition towards net zero by 2050
- Related Products WisdomTree Strategic Metals and Rare Earths Miners UCITS ETF - USD Acc, WisdomTree Strategic Metals UCITS ETF - USD Acc, WisdomTree Strategic Metals UCITS ETF - GBP Hedged Acc, WisdomTree Strategic Metals UCITS ETF - EUR Hedged Acc Find out more

The energy transition is a pathway towards transforming the global energy sector from fossil-based to zero carbon by the second half of this century¹. The coming decade will be critical in limiting the impact of global warming.

More than US\$200trn investment required by 2050

Be it the 'Fit for 55' plan in the European Union, The European Green Deal or the US Inflation Reduction Act, governments and commissions expect 25 years of investment in clean energy, electrification of transportation and reductions of non-carbon dioxide climate pollutants to deliver net zero. The higher rate environment has certainly challenged the energy transition infrastructure, technology, and adoption. Yet the need to step up investment to deliver net zero is universal. Forecast costs on the global amount required to deliver the 1.5°C target by 2050 vary from US\$200trn to US\$275trn². McKinsey estimates, on average, 7.5% of the global GDP would need to be invested every year for the next 27 years, with a peak in 2026-2031, to achieve net zero by 2050.



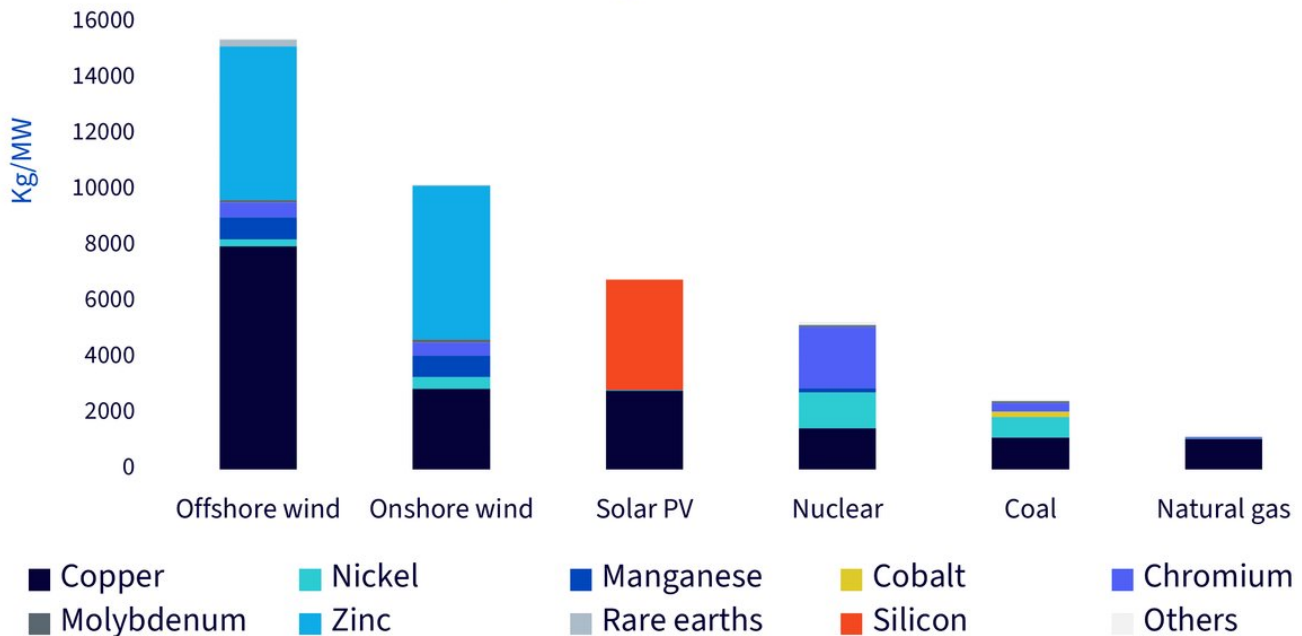
Source: Network for Greening the Financial System 2021 (Net Zero 2050 scenarios) REMIND-MAg-PIE Model, Vivid Economics, McKinsey Sustainability Insights, WisdomTree as of 16 January 2024. **Forecasts are not an indicator of future performance, and any investments are subject to risks and uncertainties.**

Energy transition bolsters demand for metals and minerals

Metal demand into energy transition-related sectors has soared, and the transition is already driving the fortunes of numerous metals. Over 85% of lithium is now consumed in batteries, up from 45% in 2015³. The energy transition is creating a source of structural demand for metals and minerals critical to the transition. In a scenario that meets the Paris Climate Agreement goals (as in the IEA Sustainable Development Scenario [SDS]), the share of clean energy technologies of total demand over the next two decades is expected to rise to over 40% for copper and rare earth elements, 60-70% for nickel and cobalt and almost 90% for lithium².

Low-carbon technologies, especially solar photovoltaic, wind and geothermal, are more mineral and metal intensive than fossil fuel technologies. This is because 1 megawatt (MW) of wind or solar energy does not reflect like-for-like replacements for existing natural gas power generation, which remains available on demand. Renewable forms of energy must be supplemented by additional storage infrastructure, which is metal intensive, to smooth out the gaps in energy generation. Since 2010, the average amount of minerals needed for a unit of power generation capacity has increased by 50% as the share of renewables in new investment has increased².

Minerals used in clean energy technologies compared to other power generation sources



Source: International Energy Agency, WisdomTree as of 31 December 2023. **Historical performance is not an indication of future performance and any investments may go down in value.**

Miners are key enablers of the energy transition

Green energy generation, being infrastructure intensive, requires more metals and minerals and, thus, more mining. Enabling clean energy technologies to grow at the pace and scale needed to meet global climate targets, will depend on the rate at which critical minerals can be found and mined. This is why the mining industry will play a focal role in supporting the energy transition.

A report from the think tank, the Energy Transition Commission, warned that mining “will need to expand significantly” to supply enough metals to support the transition. If critical minerals supply is forecast to grow by three and half times by 2030 to meet energy needs, mining will need to expand, but in a sustainable and responsible way. There are supply challenges for many of these metals. Some are hard to find and extract. In some cases, existing mines are mature, making it difficult to grow production, while new mines take time to be operational, thereby creating a risk of supply bottlenecks for certain metals.

Attempting to forecast the timing of the potential recovery in the markets for commodities and mining equities would be unrealistic. For example, nickel, despite its critical importance in lithium-ion batteries for electric vehicles and energy storage systems, experienced high supply growth from Indonesia which resulted in its weak price performance in 2023. However, over the long term, the global nickel market is expected to face a supply deficit by 2030. Herein lies the opportunity for investors prepared to look beyond the short term towards the long-term potential. Mining companies involved in extracting critical metals and minerals are key in the transition towards net zero by 2050.

Sources of demand for Metals and Rare Earth Elements across the Energy Transition Value Chain

Source: World Bank, The Growing Role of Minerals and Metals for a Low Carbon Future, CRU, Wood Mackenzie, WisdomTree. Forecasts are not an indicator of future performance, and any investments are subject to risks and uncertainties.

WisdomTree Energy Transition Metals and Rare Earth Miners UCITS ETF (RARE)

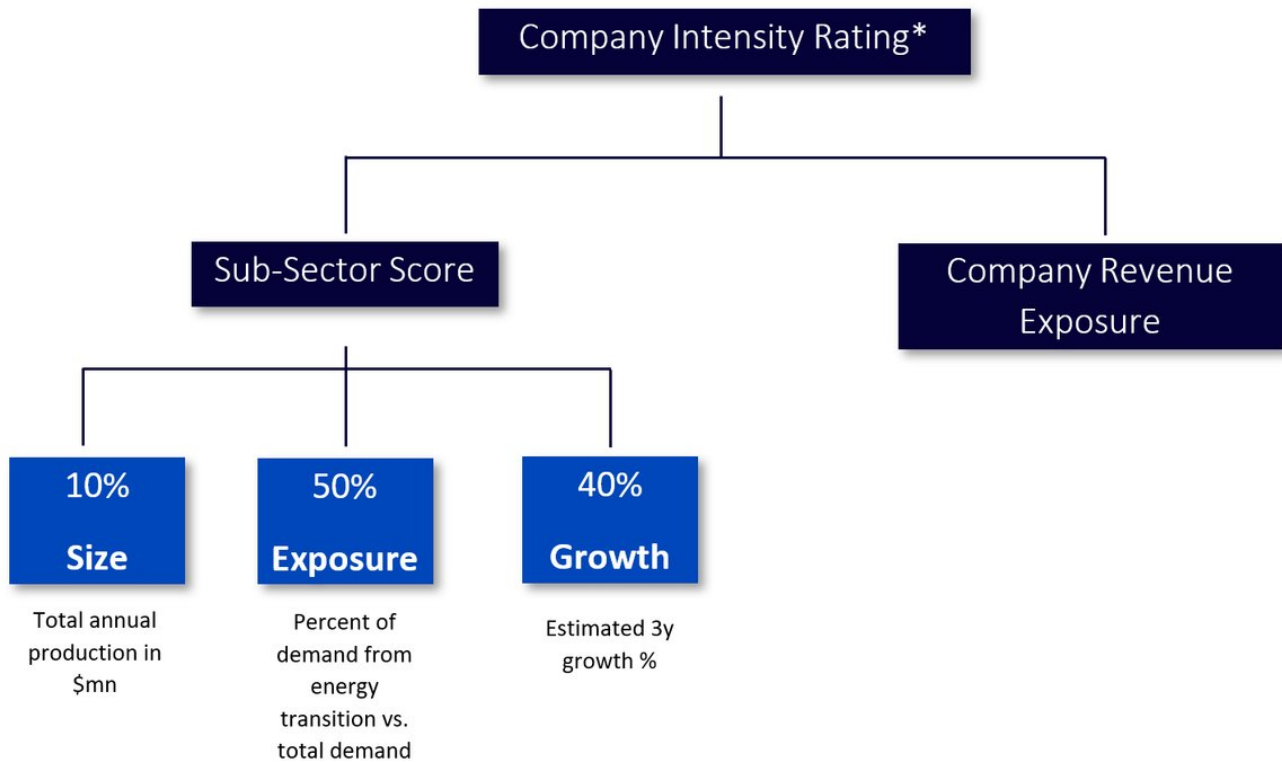
Assessment of the criticality of metals and minerals is dynamic and continuously changing, owing to economic, geopolitical and technological factors. WisdomTree has leveraged its leadership in research on commodities and its deep expertise in thematic equities to offer an exciting avenue of growth. We have built on our strong partnership with Wood Mackenzie in the energy transition to identify investment opportunities across the Energy Transition Metals Value Chain (**ETMVC**).

ETMVC includes the exploration and processing of metals (including rare earth elements) used in technologies associated with the energy transition such as electric vehicles, transmission, charging, energy storage, solar, wind and hydrogen. We aim to provide investors with a solution to investing in the ETMVC via the [WisdomTree Energy Transition Metals and Rare Earth Miners UCITS ETF \(RARE\)](#). The [WisdomTree Energy Transition Metals and Rare Earth Miners UCITS ETF](#) seeks to track the price and yield performance, before fees and expenses, of the WisdomTree Energy Transition Metals and Rare Earth Miners Index (the Index).

The Index is designed to identify globally listed companies from developed and emerging markets involved in the ETMVC. Companies that belong to the ETMVC are identified and classified into 11 metal categories (aluminium, cobalt, copper, iridium, lithium, nickel, platinum, silver, tin, zinc, and rare earth elements (REE)) and subsequently up to 22 subsectors (chemicals, conversions, industry, mining, refining, smelting).

Each energy transition metal has a target weight based on subsector scores, which is a composite measure of the metal's importance in energy transition, in terms of the metals' size, exposure and forward-looking demand growth estimates. Each company's inclusion and weighting in the index depends on its 'intensity rating', which is based on each of the metal's sub-sector scores and the company's revenue exposure to those metal's subsectors.

The Index tilts towards pure-play companies that produce the most important metals for the energy transition theme and is rebalanced twice a year. These companies are then subjected to the ESG screening criteria defined within the WisdomTree Environmental, Social and Governance (ESG) framework.

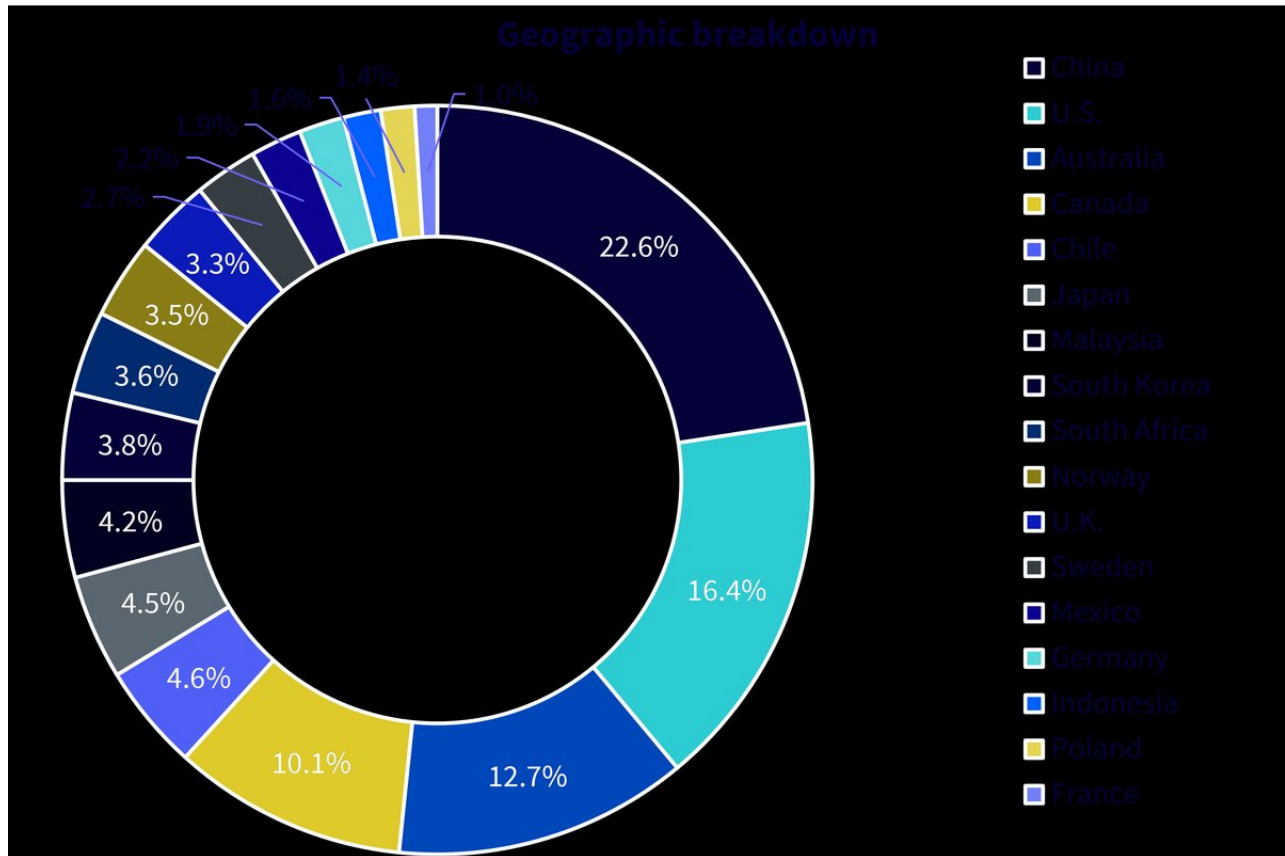


Source: Wood Mackenzie, WisdomTree. *Company Intensity Rating represents a product of the sub-sector scores to which a company is exposed and the company's share of ETMVC revenue from those sub-sectors.

A closer look at WisdomTree's Energy Transition Metals and Rare Earth Miners ETF

The portfolio of companies resulting from this process represents a diversified allocation across the ETMVC, tilting towards the highest growth metal categories.

The final selection of companies includes a diverse exposure across sizes, with 53% in midcap stocks, 24% in large cap stocks and 23% in small cap stocks. The revenue exposure of the companies remains geographically diversified across both developed and emerging markets. The table below illustrates the portfolio weighting across geographies.



Source: WisdomTree, Wood Mackenzie, FactSet, Bloomberg as of 31 January 2024

Capitalising on our expertise in the energy transition, close to 60% of the portfolio weight is allocated to companies that have more than 75% revenue exposure to the energy transition metals and rare earth’s theme, highlighting a strong exposure to pure plays.

Source: WisdomTree, Wood Mackenzie, FactSet, Bloomberg as of 31 January 2024.

Conclusion

Amidst the evolving nature of the energy transition, the [WisdomTree Energy Transition Metals and Rare Earth Miners UCITS ETF](#) provides a unique equity solution for investors seeking to tap into the nexus of the critical metals and the mining value chain. RARE provides a unique tilt to pure-play mining companies linked to REE, which are often difficult to access owing to liquidity criteria. In addition, the [WisdomTree Energy Transition Metals and Rare Earth Miners UCITS ETF](#) also offers access to mining stocks linked to tin and zinc which tend to be overlooked for their role in the energy transition. Undoubtedly, the energy transition is a vast global project and the path to net zero by 2050 will likely be volatile. Our conviction rests firmly on the mining sector serving as a key enabler of the energy transition.

Sources

1 As defined by the International Renewable Energy Agency (IRENA)

2 Network for Greening the Financial System 2021(Net Zero 2050 scenarios) REMIND-MAg-PIE Model, Vivid Economics, McKinsey Sustainability Insights, WisdomTree as of 16 January 2024

3 Source: International Energy Agency (IEA).

4 IEA's net zero emissions by 2050 scenario.

Important Risks Related to this Article

IMPORTANT INFORMATION

Marketing communications issued in the European Economic Area (“EEA”): This document has been issued and approved by WisdomTree Ireland Limited, which is authorised and regulated by the Central Bank of Ireland.

Marketing communications issued in jurisdictions outside of the EEA: This document has been issued and approved by WisdomTree UK Limited, which is authorised and regulated by the United Kingdom Financial Conduct Authority.

WisdomTree Ireland Limited and WisdomTree UK Limited are each referred to as “WisdomTree” (as applicable). Our Conflicts of Interest Policy and Inventory are available on request.

For professional clients only. Past performance is not a reliable indicator of future performance. Any historical performance included in this document may be based on back testing. Back testing is the process of evaluating an investment strategy by applying it to historical data to simulate what the performance of such strategy would have been. Back tested performance is purely hypothetical and is provided in this document solely for informational purposes. Back tested data does not represent actual performance and should not be interpreted as an indication of actual or future performance. The value of any investment may be affected by exchange rate movements. Any decision to invest should be based on the information contained in the appropriate prospectus and after seeking independent investment, tax and legal advice. These products may not be available in your market or suitable for you. The content of this document does not constitute investment advice nor an offer for sale nor a solicitation of an offer to buy any product or make any investment.

An investment in exchange-traded products (“ETPs”) is dependent on the performance of the underlying index, less costs, but it is not expected to match that performance precisely. ETPs involve numerous risks including among others, general market risks relating to the relevant underlying index, credit risks on the provider of index swaps utilised in the ETP, exchange rate risks, interest rate risks, inflationary risks, liquidity risks and legal and regulatory risks.

The information contained in this document is not, and under no circumstances is to be construed as, an advertisement or any other step in furtherance of a public offering of shares in the United States or any province or territory thereof, where none of the issuers or their products are authorised or registered for distribution and where no prospectus of any of the issuers has been filed with any securities commission or regulatory authority. No document or information in this document should be taken, transmitted or distributed (directly or indirectly) into the United States. None of the issuers, nor any securities issued by them, have been or will be registered under the United States Securities Act of 1933 or the Investment Company Act of 1940 or qualified under any applicable state securities statutes.

This document may contain independent market commentary prepared by WisdomTree based on publicly available information. Although WisdomTree endeavours to ensure the accuracy of the content in this

document, WisdomTree does not warrant or guarantee its accuracy or correctness. Any third party data providers used to source the information in this document make no warranties or representation of any kind relating to such data. Where WisdomTree has expressed its own opinions related to product or market activity, these views may change. Neither WisdomTree, nor any affiliate, nor any of their respective officers, directors, partners, or employees accepts any liability whatsoever for any direct or consequential loss arising from any use of this document or its contents.

This document may contain forward looking statements including statements regarding our belief or current expectations with regards to the performance of certain assets classes and/or sectors. Forward looking statements are subject to certain risks, uncertainties and assumptions. There can be no assurance that such statements will be accurate and actual results could differ materially from those anticipated in such statements. WisdomTree strongly recommends that you do not place undue reliance on these forward-looking statements.

WisdomTree Issuer ICAV

The products discussed in this document are issued by WisdomTree Issuer ICAV ("WT Issuer"). WT Issuer is an umbrella investment company with variable capital having segregated liability between its funds organised under the laws of Ireland as an Irish Collective Asset-management Vehicle and authorised by the Central Bank of Ireland ("CBI"). WT Issuer is organised as

an Undertaking for Collective Investment in Transferable Securities ("UCITS") under the laws of Ireland and shall issue a separate class of shares ("Shares") representing each fund. Investors should read the prospectus of WT Issuer ("WT Prospectus") before investing and should refer to the section of the WT Prospectus entitled »Risk Factors¼ for further details of risks associated with an investment in the Shares.

Notice to Investors in Switzerland – Qualified Investors

This document constitutes an advertisement of the financial product(s) mentioned herein.

The prospectus and the key investor information documents (KIID) are available from WisdomTree's website: <https://www.wisdomtree.eu/en-ch/resource-library/prospectus-and-regulatory-reports>

Some of the sub-funds referred to in this document may not have been registered with the Swiss Financial Market Supervisory Authority ("FINMA"). In Switzerland, such sub-funds that have not been registered with FINMA shall be distributed exclusively to qualified investors, as defined in the Swiss Federal Act on Collective Investment Schemes or its implementing ordinance (each, as amended from time to time). The representative and paying agent of the sub-funds in Switzerland is Société Générale Paris, Zurich Branch, Talacker 50, PO Box 5070, 8021 Zurich, Switzerland. The prospectus, the key investor information documents (KIID), the articles of association and the annual and semi-annual reports of the sub-funds are available free of charge from the representative and paying agent. As regards distribution in Switzerland, the place of jurisdiction and performance is at the registered seat of the representative and paying agent.

For Investors in France

The information in this document is intended exclusively for professional investors (as defined under the MiFID) investing for their own account and this material may not in any way be distributed to the public. The distribution of the Prospectus and the offering, sale and delivery of Shares in other jurisdictions may be restricted by law. WT Issuer is a UCITS governed by Irish legislation, and approved by the Financial Regulatory as UCITS compliant with European regulations although may not have to comply with the same rules as those applicable to a similar product approved in France. The Fund has been registered for marketing in France by the Financial Markets Authority (Autorité des Marchés Financiers) and may be distributed to investors in France. Copies of all documents (i.e. the Prospectus, the Key Investor Information Document, any supplements or addenda thereto, the latest annual reports and the memorandum of incorporation and articles of association) are available in France, free of charge at the French centralizing agent, Societe Generale at 29, Boulevard Haussmann, 75009, Paris, France. Any subscription for Shares of the Fund will be made on the basis of the terms of the prospectus and any supplements or addenda thereto.

For Investors in Malta

This document does not constitute or form part of any offer or invitation to the public to subscribe for or purchase shares in the Fund and shall not be construed as such and no person other than the person to whom this document has been addressed or delivered shall be eligible to subscribe for or purchase shares in the Fund. Shares in the Fund will not in any event be marketed to the public in Malta without the prior authorisation of the Maltese Financial Services Authority.

For Investors in Monaco

This communication is only intended for duly registered banks and/or licensed portfolio management companies in Monaco. This communication must not be sent to the public in Monaco.