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Energy Transition Whitepaper



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Welcome to CAMRADATA's Energy Transition Whitepaper

Clean energy is boosting global economic growth, according to the International Energy Agency, which boasted that it accounted for nearly one-third of the European Union's GDP upswing in 2023.

Yet, in March, the agency also noted that the world's reliance on fossil fuels – and oil in particular – is not abating, and it will be decades yet until the taps on these commodities can be turned off completely.

While pursuing net-zero targets and setting objectives to purge carbon from portfolios seems to be an investment theme du jour, the road to clean energy is long and will have many forks and U-turns along the way.

The energy transition theme, once a footnote in an equity strategy, is also becoming a larger part of corporate strategy more broadly, meaning it plays into many – if not all – asset allocation debates.

Equally, the economic environment (and how well policymakers can control it) will increasingly feed into and impact the outcome of energy transition investments – and that's before the three elements of ESG are thoroughly dug into and fiduciary duty is satisfied.

For investors, their journey is just beginning, given the timeline to unwind centuries of fossil fuel dependence and infrastructure, but there are opportunities to be seized if the challenges can be managed.

Meet the Team



Natasha Silva
Managing Director,
Client Relations



Amy Richardson
Managing Director,
Business Development



Orin Ferguson
Associate, Business
Development



Sarah Northwood
Marketing and Events
Coordinator



Dorota Madajczyk
Senior Associate, CRM &
Circulation Administrator

Energy Transition Roundtable

The CAMRADATA Energy Transition Roundtable took place in May 2024

Navigating the energy transition: Investment opportunities amid urgent challenges

Global investment in the energy transition hit \$1.8trn last year according to Bloomberg New Energy Finance (BNEF).¹

However, investment in the transition from fossil fuel-dependence towards a cleaner, multi-fuel model still falls drastically short. To meet net zero by 2050, BNEF estimated energy transition investment will need to average \$4.8trn per year from 2024 to 2030 – nearly three times the total investment seen in 2023.²

Evidently, the road to clean energy is long and will have many forks and U-turns along the way. For this reason, opportunities in the sector are vast, spanning both transitioned assets (building a new solar farm, for instance) and the transition of existing assets (retrofitting a coal-fired powerplant with carbon capture technologies).

If the associated challenges can be managed, investors can seize these opportunities and play a vital role in steering the world towards a cleaner economic future.

In May, CAMRADATA hosted a roundtable with industry experts to explore the complexities of the energy transition against the backdrop of a rapidly evolving investment landscape.

Drivers of the transition

The energy transition denotes the shift from fossil fuel-reliance towards a multi-fuel, multi-technology system. As one of the driving forces of our time, it is front of mind for many investors, shaping investment

strategies and capital allocations globally.

Helpfully and unusually, as noted by Mark Watts, Partner and Energy Transition Investment Lead at LCP, this investment mega-trend has been explicitly signposted in the zeitgeist.

“There are a few megatrends out there – demographic changes and artificial intelligence (AI), for instance,” Watts said.



The energy transition is rare in that it's been exceptionally well signposted. Typically, investors look in the rear-view mirror and say, Wow, that was a megatrend. This time, we're witnessing one in action.

“The energy transition is rare in that it's been exceptionally well signposted. Typically, investors look in the rearview mirror and say, ‘Wow, that was a megatrend’. This time, we're witnessing one in action.”



For consumers and regulators, the transition may stem from a desire for a cleaner and more sustainable environment. Investors, however, may also be motivated by the promise of attractive returns.

Indeed, clean energy is boosting global economic growth, having accounted for nearly one-third of the EU's GDP growth in 2023, according to the International Energy Agency³

The sector also received a boost after Russia's invasion of Ukraine in 2022, which made painfully clear the reality of Western energy insecurity, accelerating the demand for more localised and cleaner energy production.⁴ However, that same event caused the profits of many fossil fuel companies to soar,⁵ indicating fossil fuel reliance has far from abated.

Jonathan Waghorn, Fund Manager at Guinness Global Investors, said: It's important to note that economics is the driver behind this transition; policy is the accelerant that makes it go faster or slower. My primary objective is to maximise capital returns, which means I invest in energy of all kinds – both green and fossil fuelled, in separate specialist energy funds.

“Clean energy is an exciting arena, marked by lots of growth and booming potential. Recent geopolitical forces have tempered enthusiasm, leading to fluctuating valuations, but that is also an opportunity once the market stabilises. Energy is a cyclical sector that offers opportunities for diversification and, often, high returns.”

Crucially, the current energy transition is not unprecedented, though it is distinguished by its urgency and scale.

“Historically, an energy transition takes place over 100 years or so – when we moved from wood to coal and then coal to oil and gas, for instance,” said Mohammad Asad Rashid, Senior Investment Consultant at Hymans Robertson.

“Those transitions took place due to market forces and technological changes, just like the transition we're witnessing today. The primary difference is that now we're facing a 25-year timeline to reach net zero. If we have any realistic chance of achieving that, investors need to invest in the energy system.”

Evidently, there is a lot of work to be done, and the first step is to take action. As noted by Watts, a more sustainable business model is a requirement for a more sustainable world.

“A key question of risk management is, how do you future-proof your portfolio?” he said.

“One solution is by investing in new technologies. To unlock the opportunities of a changing world, we need to consider investment in the forces that are changing it – the energy transition is a clear example of that.”

Investment opportunities

The scale of the energy transition means it offers investment opportunities across a range of asset classes and subsectors, allowing for diversification both within the energy sector and at the portfolio level.

These opportunities can broadly be categorised into the technologies that enable clean energy, the materials that feed the system and the infrastructure required to deliver outputs where they are needed.

Technologies

Perhaps the most salient investment opportunities in the energy transition lie with the technological advancements that have shaped the industry.

“When it comes to the transition to a low carbon economy, investors typically think of renewable technologies like wind farms and solar panels,” said Yasmin Meissner, Portfolio Manager at BlackRock.

“These energy-producing technologies are front-of-mind for a reason. They are the backbone of the energy transition because, without them, clean energy literally would not exist.”

John A. Cook, Portfolio Manager and Co-Lead at Mackenzie Investments Greenchip Team, said it was important to consider which of these technologies will be most influential in the transition.

“There’s an ongoing debate about which technologies are essential for the energy transition,” Cook said.

“For example, digital semiconductors, which are components in AI technologies and large data centres, are receiving a lot of attention right now and are commonly included in some investor’s green revenue taxonomy. Our focus, however, is on analogue semiconductors and the role they play in regulating and minimizing power consumption, which aligns with our own green revenue definitions.

“Each new technology must be evaluated according to its merits to determine which is the most effective for producing, storing and deploying clean energy.”

Materials

These technologies rely on a wealth of critical minerals, from the silver and tin inside solar panels to the uranium that fuels nuclear power stations, investment in which is crucial for the energy transition.

Perhaps the most essential is copper, which transmits clean energy from its source to its end destination. Achieving net zero by 2050 would likely cause annual copper demand to more than double to 53 million metric tons according to S&P – a quantity that outstrips all the copper consumed in the past century combined.⁶

“We are facing looming deficits across all of these essential metals, which are borne out of the chronic underfunding of the mining sector for the past 10-15 years,” said James Hayter, Chief Investment Officer of Orion Resource Equities, a strategy managed by Orion Resource Partners.

“As an industry, we have not done nearly enough exploration, so we do not have nearly enough mines ready to be built to meet the demand requirements we expect to have.”

Hayter attributed this mining deficit to an “image problem” that has limited investors’ appetite for the sector. However, he said this presented a distinctive opportunity for proactive managers to identify high-quality investments.

“For new mines to get built, one of two things needs to happen. Either commodity prices need to go up a lot so mining companies generate more cash, or investors need to put money into the sector, leading to a multiple rerate and shareholders rewarding growth,” he said.

“The mining sector is still cheap and overlooked. It presents an opportunity for investors who are willing to do the work and understand the risks. In our view, this is best done by specialists.”

However, Hayter also described this need for new mines as largely a “one-time event” given, once enough materials to support the energy transition have been mined, many can then be recycled.

“Recycling is certainly part of the solution, but we have to mine first because there aren’t nearly enough of these critical materials in the system today,” he said.

“Copper is the perfect example – yes, we can recycle some from scrap metal, but we simply do not have the capability to produce the 50 million tons a year we will need in 20 years’ time.

“Once we have achieved that level of production, then some will come back at the end of the life. We have seen this done successfully in the platinum industry, when to prevent acid rain the world increased its platinum production 10-fold but now a large proportion of demand is met by recycled metal



“As an industry, we have not done nearly enough exploration, so we do not have nearly enough mines ready to be built to meet the demand requirements we expect to have. Hayter attributed this mining deficit to an “image problem” that has limited investors’ appetite for the sector.”

Infrastructure

While clean energy production is essential, an equally important investment opportunity lies in delivering this energy efficiently to consumers.

Doing so requires a complex network of infrastructure that must be upgraded and expanded to accommodate renewable sources, including a shift from a centralised to a decentralised energy grid to enhance efficiency and resilience.

“Historically, we’ve relied on large-scale energy production, centralised around a few sources. That model is now being broken up,” Watts at LCP said.

“The landscape is becoming more decentralised which leads to new technologies and new solutions. That presents an opportunity for investors to participate in a new, forward-looking global economy.”

Waghorn noted that continued staggering levels of energy poverty meant the grid will also need to be

expanded, with a focus on energy efficiency.

“This is going to be complex and expensive, and a lot of capital will need to be deployed to make it happen,” he said.

“More than one billion people still live in energy poverty⁷ and combatting that will mean an increase in demand. Energy efficiency is key, because it reduces the amount of energy that needs to be produced and supplied. That’s an area where policy may play a very important role.”

Exclusion vs. engagement

While many of these opportunities involve the addition of solution-oriented companies to a portfolio, there remains the challenge of managing companies that do not have sustainability at the core of their business models.

Several experts on our panel advocated for engaging with these companies, with the aim of driving corporate behaviour towards sustainability.

Cook described exclusion as “like a hammer, when what we need is a set of tweezers to delve into companies and understand their activities.”

“There can be unintended consequences of exclusion, particularly if it happens en masse,” he said.

“It can drive capital towards banks, healthcare companies and large tech, and away from energy transition solutions.

“If we divest from these companies, there’s usually someone else willing to buy their shares. If no one is willing to do that, then ‘dirty’ divisions can be spun out to private investors and avoid the investor scrutiny faced by public companies.”

Waghorn agreed, saying even clean energy-focused companies may not fit the criteria of emissions-based exclusion strategies.

“Some of the companies in which we invest emit carbon because they build wind turbines or solar panels,” he said.

“Ideally, those companies are also taking steps to reduce their emissions. Most importantly, though, they help others to decarbonise because they are involved in the development of clean energy solutions.”

Katrina Brown, Director of Responsible Investment at Evelyn Partners, noted that even energy intensive companies have benefits to reap from adopting cleaner business models – and leaders in the sphere have already begun doing so at pace.

“We find that increasingly, the highest emitters are

taking steps to transform their business models and be part of the solution. Shell, for example, is one of our biggest holdings and one that is absolutely powering ahead with the energy transition,” Brown said.

She added: “We’re in the process of engaging with our highest emitters and we look at their temperature alignment to help. Shell has an Implied Temperature rise of 2.1 degrees, according to MSCI’s temperature alignment methodology.⁸”

Challenges

The foremost challenge of investing in the energy transition is that of measurement, to ensure that capital is deployed meaningfully.

Meissner suggested investors take a forward-looking approach to measurement that considers not just the sustainability credentials of an opportunity today, but also how it may contribute to the energy transition in the future.

“We suggest our clients consider how the carbon emissions of a company will evolve, based on our view of how the transition to a low carbon economy will evolve,” she said.

“To do that, we use a proprietary model that allows us to project the expected emissions profile of a portfolio based on the underlying securities. For example, we assume the power sector could decarbonise fastest, and developed markets will decarbonise faster than emerging ones.

“Taking those assumptions, we model our expectations of how a portfolio will decarbonise over 20-30 years. We believe that helps clients think more holistically about their exposures.”

The asset management sector has also seen an influx of regulation in recent years, such as the European Union’s Sustainable Finance Disclosure Regulation (SFDR) and its associated Article 8 and 9 funds.

Nick Coogan, Senior Investment Associate at Cardano, said he believed these changes had been a net positive, in that they “brought sustainable investing to the mainstream”, but also expressed concern that regulation had stifled growth.

“The aspiration of regulation was to create a level playing field for investors... That’s made sustainable investing easier for clients,” he said.

“However, it’s also led to challenges and frustration. Many asset managers have been slowed from entering the sector because the regulation can make it difficult

to operate.

“At Cardano, we try to take a more holistic approach focused less on labels and more on the fundamentals of the portfolio – is the portfolio working towards the energy transition, and does it produce the financial returns that we need to deliver for clients?”

According to Coogan, another challenge of the sector was a lack of awareness among legacy clients, requiring asset managers to act as educators.

“Our UK defined benefit (DB) pension clients don’t tend to have impact at the forefront of their minds. It’s been a journey for us to teach them,” he said.

“However, many of these DB schemes are de-risking as they reach maturity, so we’ve taken that as an opportunity. If they’re no longer able to invest in their traditional allocations as they de-risk, we encourage them to look at responsible investments – renewable energy or social and affordable housing, for example – as alternatives.”

Rashid agreed and called on industry experts to make sustainable investing simpler and more accessible for clients.

“As an industry, we need to take a much simpler line when speaking with our clients,” he said.

“By framing it in terms of higher returns, we can help clients better understand how it fits into their portfolios. If we define the opportunity sets more clearly, it’s easier for them to understand, but as soon as we start talking about complex themes and technologies, it becomes difficult because they are not energy experts and they shouldn’t have to be.”

Cause for optimism

Evidently, the energy transition investment universe is vast and there is a great deal of work to be done on the journey towards a cleaner energy system.

However, there are reasons for hope. The International Energy Agency, for instance, found government policies meant global energy-related CO2 emissions may have peaked last year. While this doesn’t put us on track for 1.5C of warming by 2050, it is an important step in the right direction.⁹

Brown pointed to lessons from history that illustrated humanity’s capacity for innovative change.

“If you look back 20 or 30 years, our lives looked vastly different. They look vastly different compared even to five years ago, in the wake of Covid-19,” she said. “We are transformative beings when we want to

be, and it’s absolutely incredible what we can achieve. There is transformative change going on all over the place if you care to see it, and, frankly, that makes me very excited.”

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Roundtable Participants



Jonathan Waghorn
Fund Manager

Personal Profile

Jonathan is portfolio manager on the Guinness Global Energy strategy and the Guinness Sustainable Energy strategy. Prior to joining Guinness, Jonathan has 20 years' experience in the energy sector. He was a Shell drilling engineer in the Dutch North Sea and worked as an energy consultant with Wood Mackenzie before becoming co-head of Goldman Sachs energy equity research in 2000.

He joined Investec as co-manager on the Investec Global Energy Fund in 2008 where he helped grow the energy franchise at Investec to a peak of nearly \$3.5bn in 2011. Jonathan then joined Mercuria in 2012 to build an equities and fund management business based around the provision of external funds before joining Guinness Global Investors in 2013.

Company Profile

Guinness Global Investors is an independent active fund manager specialising in long-only equity funds and private equity investments and established in 2003 by founder and chairman, Tim Guinness.

Our specialist disciplines of equity income, energy, innovation and Asia offer exposure to key themes to help investors achieve their investment goals. Active management, high conviction, value and stewardship are central to our philosophy and they are delivered through concentrated, equally weighted portfolios.



John A. Cook, CIM
Senior Vice President, Portfolio Manager
Co-Lead Mackenzie Greenchip Team

Personal Profile

John's career in the investment industry began in 1991. He was President of Greenchip Financial Corp. since it was founded in 2007 and became part of Mackenzie Investments in 2021.

Prior to Greenchip, John led corporate development at one of Canada's largest innovation hubs. He has also held a number of executive positions at Canadian mutual fund companies.

John holds a BA from Queen's University and the Chartered Investment Manager (CIM) designation.

Company Profile

Mackenzie Investments is a leading investment management firm with \$203.7 billion in assets under management as of March 31, 2024.

Mackenzie provides investment solutions and related services to more than one million retail and institutional clients through multiple distribution channels. Founded in 1967, Mackenzie is a global asset manager with offices across Canada as well as in Boston, Dublin, London, Hong Kong and Beijing.

Mackenzie is a member of IGM Financial Inc. (TSX: IGM), one of Canada's premier financial services companies with approximately \$252.2 billion in total assets under management and advisement as of March 31, 2024. For more information, visit mackenzieinvestments.com



Roundtable Participants



James Hayter
Chief Investment Officer

Personal Profile

Mr. Hayter is the Chief Investment Officer for Orion Resource Equities and has over a decade of experience investing in critical materials equities.

Mr. Hayter previously managed the Electrum Fund with Baker Steel from its inception in March 2019 to March 2023. Prior to that, he worked for Rosspoint Investments as Portfolio Manager (3 years) and as an Analyst for 5 years. He has also worked in various roles in the mining industry, most notably helping to develop one of the world's largest lithium deposits.

James is a CFA Charterholder, has a BA in Economics and Social History from the University of Liverpool and CFA Certificate in ESG Investing.

Company Profile

Orion Resource Partners is a global investment firm specialising in trading with and providing capital to the global metals and materials supply chain. Since its inception in 2013, Orion has transacted on over \$9 billion worth of mineral assets and has shipped over \$3 billion worth of physical metals. Today the Group manages over \$8 billion in assets and has a globally situated team of 80+ professionals across six offices.

Over the past 10 years, Orion has built an institutional framework including endowments, pension plans, and sovereign wealth funds by providing investment strategies built around its sector expertise from mine production to refining and warehousing, onto materials shipping and trading (including all the related hedging and financing) and finally providing all the delivery logistics required.

Orion offers its investors complementary investment strategies across the liquidity spectrum, finding and capturing strategic financing opportunities driven by the long-term trends of global decarbonisation, the constrained supply of critical resources, and advancements in industrial technologies. Risk management is integral to our overall investment philosophy. Orion employs advanced technical capabilities to manage and mitigate complex environmental, social and governance risks in a responsible manner. The Group is a signatory to the UN PRI and the IFC Performance Standards on Environmental and Social Sustainability.



Yasmin Meissner
Portfolio Manager

Personal Profile

Yasmin Meissner is a portfolio manager on the Diversified Strategies team and co-Head of Sustainable Investing for Multi-Asset Strategies and Solutions group (MASS) along with Esther Perkins.

Within Diversified Strategies, Yasmin's responsibilities include being a co-Portfolio Manager on the BGF Climate Action Multi Asset Fund, along with the Armed Forces Charities Growth & Income Fund, Catholic Charities Growth & Income Fund and the Charities Growth & Income Fund.

As co-Head of Sustainable Investing for MASS, she is accountable for ESG research, integration and implementation efforts.

Yasmin earned a BA degree in Politics, Philosophy and Economics from the University of Oxford, holds the Investment Management Certificate (IMC), and is a CFA Charterholder. She joined BlackRock in 2013 as a portfolio manager in Client Portfolio Solutions and moved to the Diversified Strategies team in July 2021. Before joining BlackRock, Yasmin was a telecoms analyst at Perella Weinberg Partners.



Nick Coogan
Senior Investment Associate

Personal Profile

Nick is a Senior Investment Associate on the Manager Research team, primarily focusing on research in illiquid strategies.

Prior to joining Cardano, he worked at Mercer as an Investment Associate in the Alternatives team.

Nick holds an Economics (with a year in industry) degree from the University of Kent and also holds the Investment Management Certificate.



Roundtable Participants



Katrina Brown
Director of Responsible Investment

Personal Profile

Katrina joined Evelyn Partners as the new Director of Responsible Investment in October 2023. She is working to further the integration of ESG factors into the investment process as well as helping to develop our commercial approach.

On graduating from the University of Oxford in 1994, Katrina joined Morgan Grenfell Asset Management (later Deutsche Asset Management) where she was ultimately a Director of Global Equities.

Katrina has pursued a consulting career since 2002 with a focus on charities and pension funds. This allowed her to develop a specialism in responsible investment and, more recently, climate change.

evelyn
PARTNERS



Mohammad Asad Rashid
Senior Investment Research Consultant

Personal Profile

Asad leads our research on investment opportunities in the energy transition and across private equity and infrastructure. He has extensive experience in researching and rating funds and helps guide investment committees through various portfolio options. Asad is responsible for carrying out due diligence on investments and researching the trends, market drivers and industry news within his research areas. He often represents the firm at various roundtable discussions and conferences.

Asad is a member of our Net Zero Working Group, which helps clients understand their own emissions pathway and develop a net zero journey plan with achievable targets. He was involved in developing the net zero emissions model portfolio and regularly helps clients to understand the levers they can use to achieve net zero. Asad is also involved in evaluating the ESG credentials of investment funds across all asset classes.

Prior to joining Hymans Robertson, Asad was part of a start-up business focussed on building a fleet of electric vehicles for the private hire market. Asad started his financial career at KPMG, splitting his time between providing investment strategy advice to institutional clients and developing new investment ideas and products.

HYMANS 
ROBERTSON



Mark Watts, CFA
Partner, Energy Transition Investment lead

Personal Profile

As a partner in LCP's investment team, I support the provision of solutions for our clients as they grapple with the energy transition and the path to net zero. I am working closely with the LCP Delta team to ensure that we offer seamless advice to our clients in this area and are able to help them navigate the critical issues and deploy their capital effectively. Over the years, I have worked with a wide range of clients around the world including pension funds, Sovereign Wealth Funds, Central Banks, Family Offices, Insurance Companies, Endowments and Corporates. Although I have a technical background, I enjoy busting through the jargon to explain complex financial issues in a digestible manner. Having managed money over a number of economic cycles globally, my advice to clients is based on first-hand experience of managing money in rising rate environments.

During my career I have had the pleasure of living and working in both the US and the Middle East and have held CIO and CEO roles in a number of firms. I have served on a number of Boards and have also chaired the Risk and Audit Committee and the Responsible Investment Working Group of the FCA's DB and DC Pension Plans. I am a CFA Charter holder, and a Chartered Fellow of the Securities Institute. I also hold the CFA Certificate in ESG Investing and the Islamic Finance Qualification. Outside of finance I am a qualified Non-Executive Director (FT NED Diploma) and have advised tech companies on scaling their businesses.

LCP  **powering possibility**

Moderator



Elizabeth Pfeuti
Chief Client Officer

Personal Profile

Former Dow Jones staffer Elizabeth Pfeuti is Rhotic's Chief Client Officer and a member of the Rhotic Media executive leadership team. A highly-decorated journalist, Elizabeth has been in financial journalism for around 15 years. At Dow Jones, she covered the asset management, investment banking and investor services beats for Financial News, where she also wrote on a wide range of regulatory themes

She was previously the European Editor for CIO Magazine and boasts an exceptional contact book of buy-side and in-house institutional CIOs and asset management executives. More recently she has worked on corporate briefs for pension consultants, investment banks and asset management groups.

 **RHOTIC**



Diversity for asset managers is at a critical tipping point.

CAMRADATA now hosts the Asset Owner Diversity Charter within CAMRADATA Live, making it free to access for both asset owners and asset managers alike.

The Asset Owner Diversity Charter was formed with an objective to formalise a set of actions that asset owners can commit to improve diversity, in all forms, across the investment industry. It seeks for signatories to collaborate and build an investment industry which embodies a more balanced representation of diverse societies.

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 WS Guinness Sustainable Energy Fund

About Us

- Guinness Global Investors was established 20 years ago
- We take a broadly equally weighted approach to portfolio construction
- We are independent, intelligent, insightful long-term investors

About the Fund

- Sustainable energy will soon meet the world's rising energy demands more cheaply than incumbent energy sources
- The Fund benefits from the many opportunities presented by this energy transition

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Risk: Past performance is not a guide to future performance. The value of this investment and any income arising from it can fall as well as rise as a result of market and currency fluctuations. You may not get back the amount you invested. Guinness Global Investors is a trading name of Guinness Asset Management Ltd., which is authorised and regulated by the Financial Conduct Authority. Calls will be recorded.

Investing in the breadth of the Energy Transition



“As the word ‘transition’ implies, inherent to the energy transition is the continuation of the conventional energy system for years to come”

The Specialist Team at Guinness Global Investors has managed energy strategies for over 25 years. While the team has managed the Guinness Global Energy strategy since 1998, since the end of 2018 my co-manager Will Riley and I have also managed the Guinness Sustainable Energy strategy, meaning we consider the full breadth of the energy transition. As the word ‘transition’ implies, inherent to the energy transition is the continuation of the conventional energy system for years to come – and certainly a period longer than many equity investors’ investment horizons. Not only is this essential for an orderly transition, but it reflects the fact that this systemic change to the way we obtain and consume energy is ultimately demand-led. As investors, we find the management of both strategies complementary; our dual responsibilities allow us to confront key behavioural biases and hopefully avoid much of the wishful thinking often seen in thematic portfolios.

Our different mandates require different investment universes, reflected in a different outlook and valuation for each strategy. For the Guinness Global Energy strategy, the supply and demand balance for oil and gas is key to our portfolio companies’ prospects.

Only in 2024 are COVID-related distortions fading away in determining the path for oil demand. The IEA estimate demand growth of 1.0m b/day (to 103.2m b/day) with China expected to deliver the largest oil demand growth of 0.5m b/day and India in distant second. Even with electric vehicles approaching 20% sales penetration this year, we continue to see global oil demand growing until around 2030, reaching a peak of somewhere between 105-110m b/day.

In terms of **supply**, OPEC continues to signal a high degree of flexibility in 2024 to adjust their production, thereby attempting to put a ‘soft’ floor under oil prices should the supply/demand balance falter. We believe the oil price desired by OPEC is at around \$80/bl, though they will accept a higher outcome if it does not destabilise the global economy. We expect slower growth from US shale production, with average production up by around 0.4m b/day versus 2023. Improving capital efficiency continues to be promoted over growth by shale oil producers. Non-OPEC (ex US shale) supply will move moderately higher in 2024, led by Brazil, Guyana and Canada.

Despite the recent strength of the energy sector, **energy equity valuations remain attractive**. The MSCI World Energy Index now trades on a price to book ratio of 1.9x, versus the S&P500 at 4.8x. The relative P/B of energy vs the S&P500 remains more than two standard deviations below the long-term relationship. Most oil and gas companies continue to promote **capital discipline over organic growth**, manifested in lower levels of debt and a return of free cash to shareholders. Assuming a \$80/bl Brent oil price, we forecast an average free cashflow yield for our portfolio in 2024 of around 11%.

Author:



Jonathan Waghorn
Co-Manager



Energy equities offer good upside if our oil price, profitability and free cashflow scenarios play out. We believe energy equities currently discount an oil price of around \$68/bl. Adopting \$80/bl Brent as a long-term oil price (consistent with the bottom end of OPEC’s desired range), we see 30-35% upside across the conventional energy complex.

In the world of sustainable energy, we expect further acceleration of the transition:

Renewable power generation is expected to grow at around 7-8%, displacing some coal and gas power, which would result in the electricity sector’s CO2 emissions declining. Grid investment will increase to support the growth, growing at twice its historic rate from \$300bn in 2022 to over \$800bn pa in the 2040s.

Building efficiency and electrification will see sharply greater investment, increasing from \$340bn in 2022 to \$600bn pa from 2026-30 (10%pa growth versus a historic rate of 5%pa) driven by energy security, economics and tightening building standards.

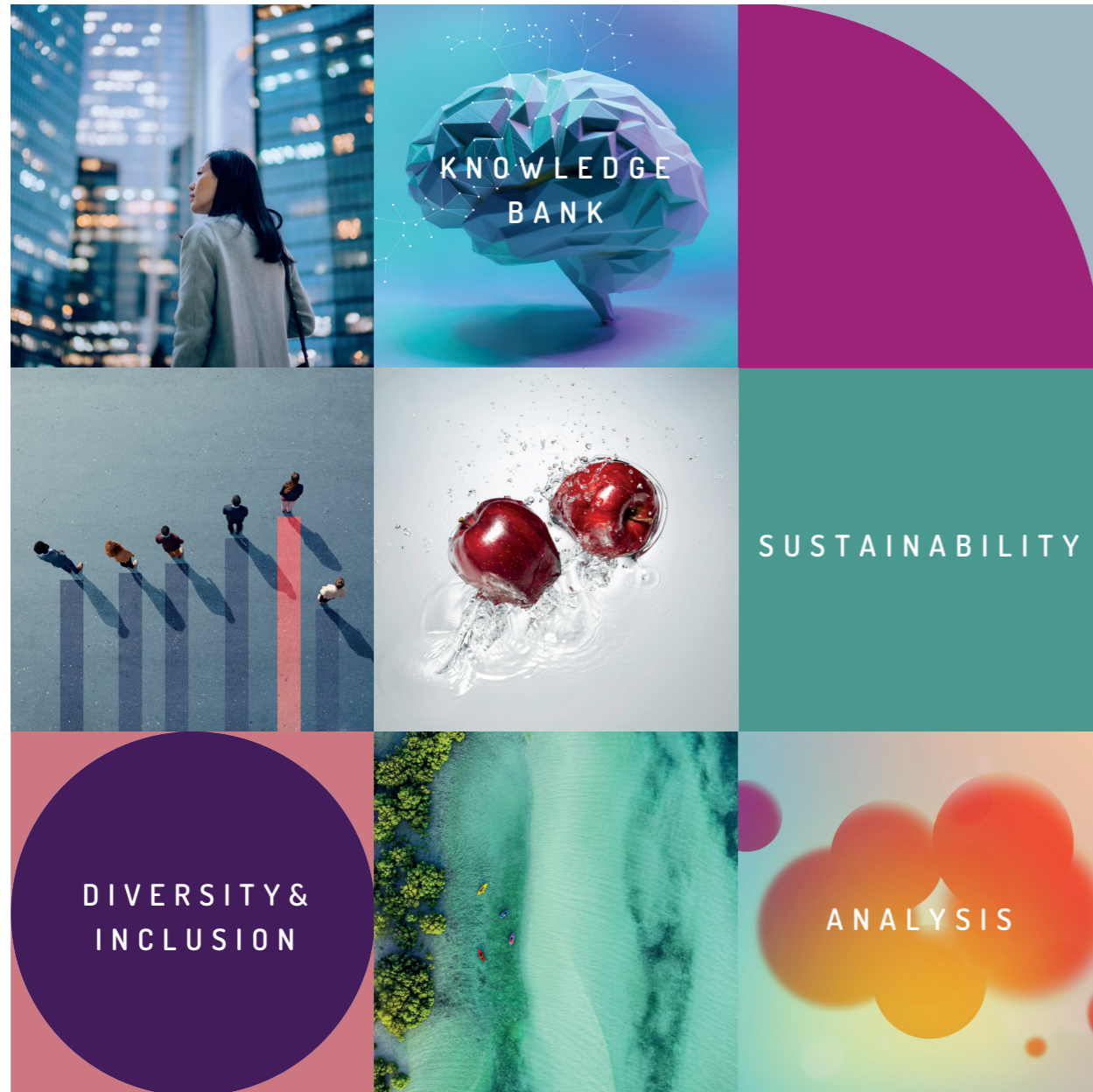
EV sales should exceed 16 million in 2024, representing around 20% of total passenger vehicle sales and coming in one year earlier than our long-held target of 20% EV penetration by 2025. Improved economics (lower lithium-ion battery prices in 2024) as well as better range and quicker charging times are the key drivers of improved EV sales. We expect the EV/ICE parity benchmark of \$100/kWh battery prices to come in 2027.

Solar remains the cheapest form of new electricity supply. We expect record low module prices at the end of 2023 to spur growth in all major geographies, with full-year global installations likely topping 500 GW in 2024. Global **wind** installations will grow in 2024 to a new record of 115 GW, driven by policy support in China, Europe and the US. Beyond 2025 many of the current bottlenecks will dissipate, allowing installations to grow to around 170 GW, a growth rate of 7%pa.

The outlook we summarise here is broadly consistent with current government activity and observable investment plans. To be clear, however, the growth described falls well short of the energy transition activity needed to achieve a **net zero / 1.5 degree** scenario in 2050, as targeted by the IPCC and reiterated at COP28. In a net zero scenario, the deployment of renewable generation capacity, penetration of EVs and battery storage, use of alternative fuels and implementation of energy efficiency measures will need to accelerate markedly.

At 31 May 2024, the Guinness Sustainable Energy Fund traded on 2024/25 price/earnings (P/E) ratios of 17.9x/14.5x, a 10% discount to the MSCI World Index on a 12mth forward basis; a level that seems extreme given the superior earnings growth expected by the analyst community. To the end of 2026, consensus expects our portfolio to deliver compound annual earnings growth of 16.2%; nearly double the rate of the MSCI World.

We expect further positive catalysts in the year ahead. The sector would be a beneficiary of looser monetary policy, lower inflation and lower US Treasuries while higher fossil fuel prices would further improve the relative economics of renewable technologies. In terms of policy, further clarity around IRA tax credits and actions related to the EU Net Zero Industrial Act will help to bring greater investment into the sector while the broader themes of energy security and electricity demand for Artificial Intelligence will increase demand for renewable power generation. We expect investor interest in sustainable energy equities to recover in 2024 reflecting these catalysts and we expect that the current attractive valuation level will act as a further catalyst.



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The energy transition: the opportunity of a lifetime.



The opportunity of a lifetime deserves a lifetime of experience. The Mackenzie Greenchip Team invests in companies that are powering a green future. Invest with an industry leader.

Contact us to learn more.



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Three forces impacting the energy transition



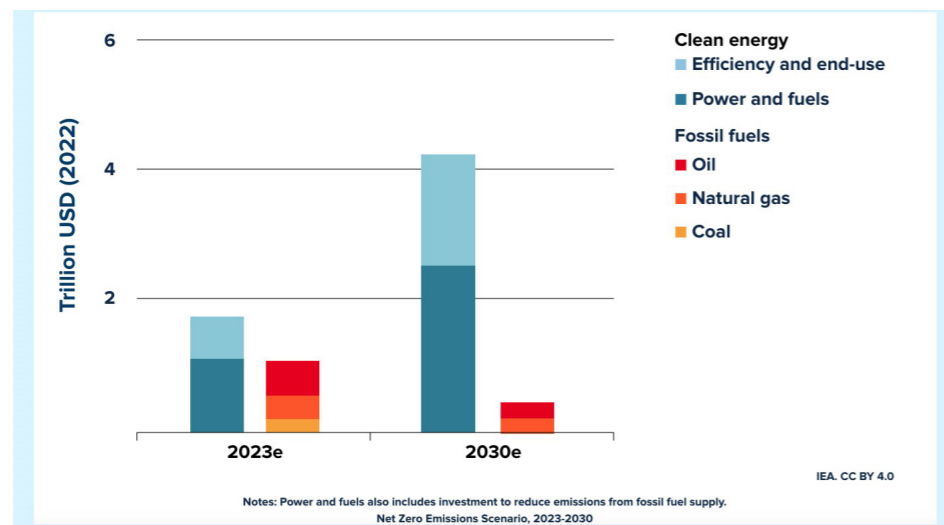
“We invest with the goal of building assets that will provide a productive return over decades. That means finding value, paying the right price, understanding risks and being patient.”

The shift to a low-carbon economy faces challenges – but for investors, these issues could bring new opportunities.

The world is inching ever closer to 2050, the target date set in Paris in 2015 for countries to reduce their emissions to net-zero. While some still believe that this goal is attainable, cutting carbon may be more gradual than many might expect. That’s especially true today as three new forces – inflation, deglobalization and changes in clean tech investments – are impacting the energy transition in new ways. That’s according to John Cook, senior vice president, portfolio manager and co-lead of the Mackenzie Greenchip Team, which runs the \$3.4 billion (CAD) portfolio¹. While we’re only at the start of the energy transition, with the International Energy Agency (IEA) saying that US\$4.5 trillion must be invested annually in clean energy by 2030².

Now’s the time for investors to take a close look at this market and turn these forces facing the shift to carbon-neutral into opportunities. “If we want to maintain our current way of life, we have to transition –fossil fuels will be increasingly hard to find and also increasingly costly – both in environmental and economic terms,” he explains. “Our future will increasingly be electrified.”

Global investment in clean energy needs to be 8x fossil fuels by 2030 to be on track for net zero targets (IEA)



1. Higher rates alter opportunities

There are some key challenges impacting the transition, but the most immediate issue is arguably the higher-for-longer interest rate environment. Until central banks started raising rates in 2022, energy investments were booming. Annual investments into clean energy nearly doubled over the past decade, while global sustainable bond issuance was on track to hit US\$950 billion in 2023³. “Low interest rates,” Cook notes, “accelerated the transition.” Not surprisingly, higher interest rates have had the opposite effect, causing write-downs, penalties and exits for renewable developers. One notable casualty of higher rates is Danish multinational energy company Orsted, which recorded a US\$5.6 billion write-down on two offshore wind developments last year. “Near-zero rates created economic distortions,” says Cook, adding that investors are fixated on low capital business models, pouring money into companies that don’t make physical things. “There was little interest in financing new mines or manufacturing capacity.” Cook believes that this will likely change. High rates encourage savings, which leads to greater capital formation and, in turn, more capital investment.

Author:



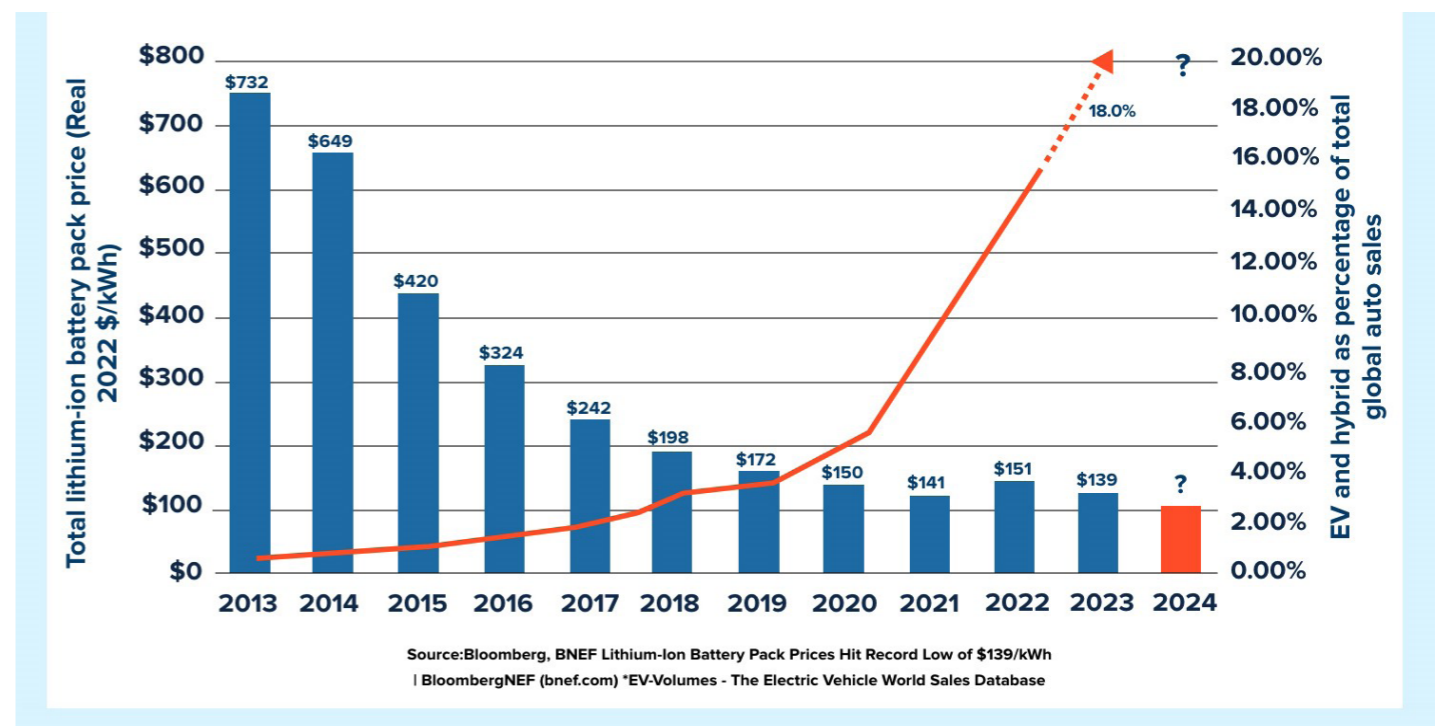
John Cook
Senior Vice President,
Portfolio Manager
and co-lead of the
Mackenzie
Greenchip Team

2. Reconsider supply chains

China’s near-total dominance over the electric vehicle (EV) market is another challenge, as protectionist attitudes are threatening to slow down the transition. Today, China manufactures 66% of all batteries sold in the world, and it has even more control over battery components. The country also controls between 60% and 95% of manganese, cobalt, graphite, lithium and nickel – critical minerals in the energy transition⁴.

North America needs these minerals and components if it’s going to meet its net-zero goals, but it can’t rely on China, which also faces high demand for these commodities. The solution? Deglobalization – at least when it comes to transition-related products. “This might help us rebuild more resilient supply chains and in time, create a more even transition,” says Cook. However, it will take time to build home-grown supply chains. In the meantime, North America may want to consider importing Chinese-made EVs, says Cook. Chinese EVs saw sales climb from nothing to 13% of the auto market in one year in Germany, largely because Chinese EVs are significantly lower cost compared to North American EVs. “The West could arguably transition faster by importing less-expensive Chinese cars,” says Cook.

Battery prices fell, and global EV adoption rates soared in 2023



3. Invest in incremental change

Over the years, the clean tech industry has made bets on disruptive technologies to help solve the climate crisis. But investors are now questioning whether they’ve put their time and money in the right places. In Cook’s opinion, “that’s a good thing, the sooner investors acknowledge a technology can’t work, the sooner capital can be allocated to solutions that do.”

While Cook thinks there is still a place for governments, academia and venture capital to fund grand projects, he’s found that the most powerful advances have been incremental rather than transformative. For instance, over the past decade, an estimated 80 billion incandescent lightbulbs have been replaced with LEDs, cutting lighting-related energy consumption by 80%. While incremental changes may seem exciting, allocating capital to the right projects will help speed up the transition.

Energy transition-related investments will likely be volatile as we continue on the path to net zero, but there will still be plenty of promising opportunities for patient investors. For Cook, taking a long-term perspective is key. “We invest with the goal of building assets that will provide a productive return over decades,” he says. “That means finding value, paying the right price, understanding risks and being patient.”

Source: ¹Mackenzie Investments, as of March 29, 2024, ²International Energy Agency, net zero roadmap, 2023, ³Bloomberg, July 2023 Sustainable Bond Issuance to hit \$950 Billion in 2023; Moody’s - Bloomberg, IEA’s Global EV Outlook 2023: Global EV Outlook 2023: Catching up with climate ambitions. The state of play – The Role of Critical Minerals in Clean Energy Transitions – Analysis - ⁴IEA China Hones Control Over Manganese, a Rising Star in Battery Metals

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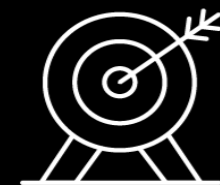
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No net zero without mining

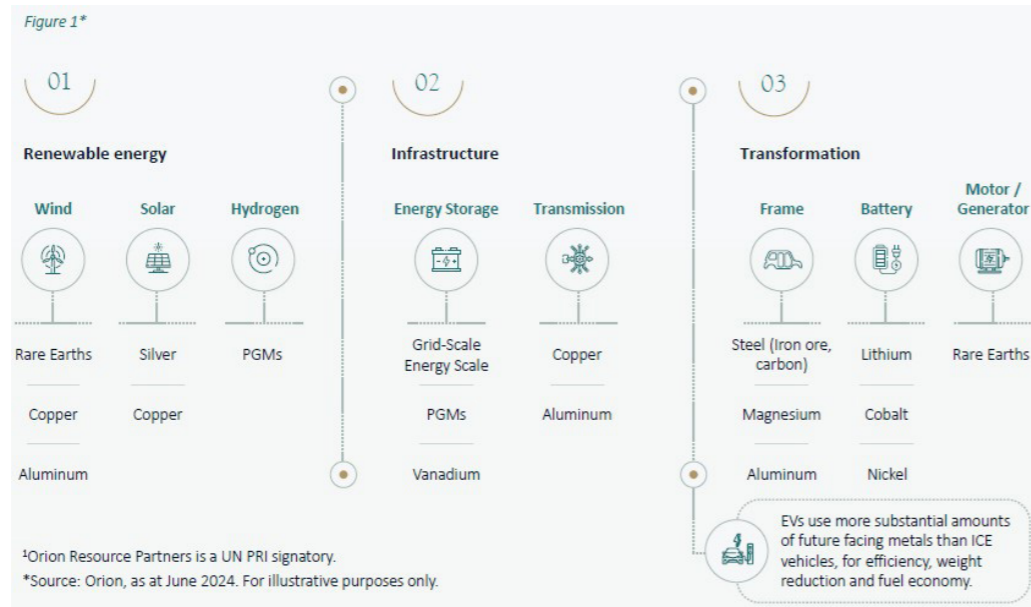
The last commodity super cycle was driven by rapid Chinese urbanization in the 2000s where an estimated \$10 trillion (inflation adjusted) was spent building roads, bridges and apartment buildings. This required a large quantity of steel and consequently significantly more iron ore and coal was needed. During that time period the iron ore price rose six-fold and the share price of producers even more so.

To decarbonize our world and meet the Net Zero targets as outlined in UN PRI commitments¹ for 2050, it is estimated that globally \$30 trillion will need to be spent. We need to build solar panels, wind turbines, nuclear power plants, carbon capture facilities and EVs. These will require significantly higher quantities of 'critical' materials such as cobalt, copper, lithium, nickel, platinum, and various rare earth elements.

After being largely shunned by investors for over a decade, we believe the mining industry is unprepared for the coming waves of demand driven by this global focus on energy transition and a sustained period of higher prices is needed to incentivize higher levels of production.

Despite impending shortages, mining equities currently still trade at a marked discount, and we believe now is a compelling time to invest in the leading developers and producers of these essential upstream commodities.

Orion Resource Equites (ORE) is a liquid long-only public equity strategy predominantly focused on mining companies and metals fabricators that produce those materials critical to the success of the world's energy transition from fossil fuels to renewables. Compared to a traditional mining strategy, ORE replaces investments in producers of low-grade iron ore and fossil fuels with companies that produce future facing metals (figure 1).



Why Orion

Orion Resource Partners, established in 2013, is a prominent and well-respected institutional asset manager dedicated to metals and materials.

The Group has over \$8bn in AUM (as at 31st March 2024) specialized in various investment strategies across the liquidity spectrum covering precious and energy transition metals and minerals. Today we have a global team of 80+ professionals with backgrounds in metals trading, mine finance, physical metals logistics, finance, and sales; industrial technology, public equities trading and research as well as an in-house group of six technical professionals responsible for operations research, risk assessment and portfolio management.

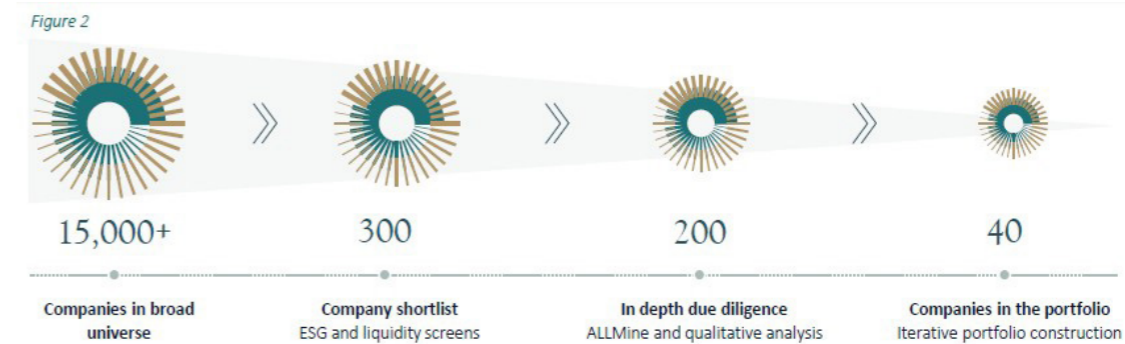
“Orion Resource Equites is a long-only equity strategy predominantly focused on producers of materials critical to the success of the world’s energy transition.”

Orion has successfully invested in private and public mining companies for over a decade. We utilize this unique skillset to assess commodity markets, development risks, operational performance and most importantly to manage risk at an asset, stock and portfolio level.

Managing risk for ORE means not only measuring and adjusting the statistical risks of the portfolio but also understanding the operational, environmental, social, and geological risks and opportunities of the assets themselves. As such, ESG risk factor analysis is a core pillar of our investment framework, not an afterthought.

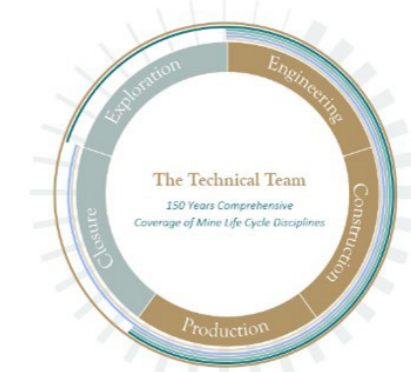
Investment Process

The bedrock of our valuation process is an asset-by-asset DCF model using a proprietary valuation tool (ALLMine). We will not invest where we don't see fundamental value in the shares of a company. The investable universe of ~300 companies is selected from a wider universe of >15,000 through a series of ESG risk factor analysis, liquidity and valuation filters (figure 2). Our broader commodity outlook leans heavily on the detailed work of the commodity hedge fund. As a result, while providing exposure to the secular theme of future facing metals we are also well positioned to tactically align the portfolio to the prevailing macro environment.



Technical Team

Responsible Investment principles are a key component to developing strong, resilient companies and assets that deliver long-term value for our investors. Orion's Technical Team uses international best practices and standards in assessing and evaluating companies, operations, and systems. The standards used include Equator Principles, IFC Standards, CDA and GISTM (tailings), engineering practices and principles, and other standards. The Technical Team includes an abundance of expertise in ESG, tailings, geology, mining operations, processing, and metallurgy.



Investment Team

The investment team is led by James Hayter as CIO along with Analyst Holly Andrews. Oskar Lewnowski, the Founder and Orion Group CEO, is the Chairman of the investment committee. The investment committee is also comprised of a senior member of each of the mine finance team and the commodity hedge fund. Mr. Hayter managed the Electrum Fund with Baker Steel for 4 years. Prior to that, Mr. Hayter worked for a private metals and mining fund in New York, first as an analyst and then as a portfolio manager. He also has direct experience in the lithium industry and is a CFA charter holder. Ms Andrews was an Investment Analyst at Baker Steel Capital Managers where she covered precious and future facing metals equities. Holly earned a First-Class Honours MSc degree in Geology from the Royal School of Mines, Imperial College London, and holds the CFA Certificate in ESG.

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