

Insights into responsible investing

CREATE A POSITIVE IMPACT



Wealth
Management

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ESG TRENDS FOR 2024

A recap of RBC Capital Markets Key ESG (environmental, social and governance) themes for 2024

1. Language matters: more precision, more clarity, more impact

In recent years, the term ESG has been increasingly conflated with other concepts, which has distorted the term's original meaning and increased politicization of the term, particularly in the U.S. Much of this ESG backlash stems from a fundamental lack of understanding or misrepresentation.

In late 2023, three influential organizations—the CFA Institute, the Global Sustainable Investment Alliance (GSIA) and the Principles for Responsible Investment (PRI)—published a set of unified definitions to help ensure consistency of understanding and usage across different **responsible investment** approaches.

The five responsible investment approaches are:

- Screening
- ESG integration
- Thematic investing
- Stewardship
- Impact investing

Language and defining this space are also of the utmost importance to avoid greenwashing. Though some progress has been made toward addressing the challenges associated with greenwashing—for example, many jurisdictions have requirements in place that address sustainability-related disclosures—greenwashing still remains a concern for many.

As the market continues to mature, more precision and consistency in the language will help to remove ambiguity and return the focus to the original intention of using ESG data for investing: understanding the factors that drive opportunity, risk and value creation.

2. Pragmatic and credible solutions accelerate real-economy decarbonization

Despite a broader slowdown in the global sustainable debt market last year, 2023 saw an overall increase in issuers in hard-to-abate sectors (such as energy, industrials and materials).

2024 is also shaping up to be a big year for carbon markets. Even in the most aggressive net-zero scenarios there will be at least seven billion tons of residual emissions from sectors with limited options to decarbonize that need to be addressed annually.¹ This will require vast amounts of carbon dioxide removal (CDR), which can come from both nature-based climate solutions (e.g., reforestation) and engineered or technology-based solutions (e.g., direct air capture).

Scaling up CDR to meet this demand represents an enormous economic challenge and opportunity, requiring \$130 billion in investment every year from now until 2050.² A scalable way to achieve this is through the carbon markets as they will play a critical role in facilitating the shift to a net-zero economy.

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A recap of RBC Capital Markets Key ESG themes for 2024, continued from page 1



3. A new era for sustainability-related disclosure

In 2024, an increase in the regulatory adoption of mandatory sustainability-related disclosures is anticipated. The finalization of the International Sustainability Standards Board's (ISSB) inaugural set of sustainability disclosure standards (the ISSB Standards), represented a major developmental milestone for the global sustainable finance market.³

The ISSB Standards came into effect for reporting periods beginning on or after January 1, 2024, which means investors can expect to see the first reports aligned with the ISSB Standards published in 2025.

In July 2023, the International Organization of Securities Commissions (IOSCO), the global standard setter for the securities sector for over 95% of world's financial markets, endorsed and encouraged its members to adopt the ISSB Standards.⁴

Why this data matters to the responsible investing space?

As investors seek more information about risks and opportunities embedded in supply chains, and consumers seek to understand the footprints and lifecycles associated with the products they purchase and the companies they invest in, data matters.

Increased disclosure expectations will continue to heighten in 2024 and beyond. For example, specifically pertaining to the supply chain—investors will look for more information with regard to Scope 3 greenhouse gas emissions (an organization's emissions from its

value chain), responsible sourcing of critical metals, biodiversity and land use and working conditions.

A growing focus on accurate data collection, tracking and performance measurement will require companies to invest in new tools and establish deeper engagement with partners throughout the supply chain.

Growing pains and challenges may lie ahead with the integration of sustainability and financial reporting information, specifically with the underlying infrastructure—data, systems, processes and controls. As corporates work toward making sustainability reporting assurance-ready, some types of information, especially pertaining to the value chain, may be initially limited. The sustainability data from a corporate's own operations may be assurance-ready at an earlier stage as the supply chain information gathered from partners will likely take more time.

1. Buck, H.J., Carton, W., Lund, J.F., et al. Why residual emissions matter right now. *Nature Climate Change*. 13, 351–358 (2023). <https://doi.org/10.1038/s41558-022-01592-2>; IPCC AR6 – Limited or No Overshoot 1.5°C Pathway. The projected range of residual emissions is 6.79 GtCO₂e to 11.87 GtCO₂e.

2. McKinsey & Company: Global Energy Perspective 2022 “Achieved Commitments Scenario”

3. By consolidating the previous work of market-led investor-focused reporting initiatives, including the Sustainability Accounting Standards Board (“SASB”) Standards and the Task Force for Climate-related Financial Disclosures (“TCFD”) Recommendations, the ISSB Standards were designed to help companies disclose sustainability-related information to investors in a way that is consistent, comparable, and decision-useful.

4. OICU–IOSCO media release: “IOSCO endorses the ISSB’s Sustainability-related Financial Disclosures Standards,” July 25, 2023

Nuclear getting the push it needs

The nuclear industry is experiencing a rebirth amid the global energy transition, a time of economic and energy security uncertainty and a generational shift of preferences. However, medium-term challenges still persist as the industry navigates significant capital costs and construction difficulties. We highlight some opportunities for exposure in this space.

Change is afoot in the nuclear energy sector. After decades of underinvestment going back to the 1980s, nuclear energy is garnering increased attention from investors and the public alike. Sustainability-focused investment funds are starting to allocate capital towards nuclear. While public perception has historically been influenced by past accidents like Chernobyl and Fukushima, there is a gradual thawing in attitudes as the industry addresses safety concerns and emphasizes sustainable development.

Nuclear power is the use of sustained nuclear fission to generate heat and electricity and is well-positioned to grow, supported by clean energy demands. Around the world, 60 new reactors are being built with 100 more planned. As countries navigate a challenging energy transition and rising geopolitical tensions, nuclear stands out as a source of reliable, low-carbon baseload power. The technology has been advancing, significantly improving safety and minimizing waste. All this is leading to positive change and a potential rebirth of the sector.

The need to decarbonize

Nuclear energy—like solar, wind, geothermal and hydro—generates low direct carbon emissions. With the urgent need to achieve global net zero targets, policymakers are embracing nuclear as a complement to renewables and abated natural gas-fired power plants. The International Energy Agency (IEA) suggests that nuclear power output

would need to double by 2050 to achieve net zero goals.¹ Renewables alone may not get us there in a timely and cost-efficient manner, despite their lofty growth expectations over the coming decades.

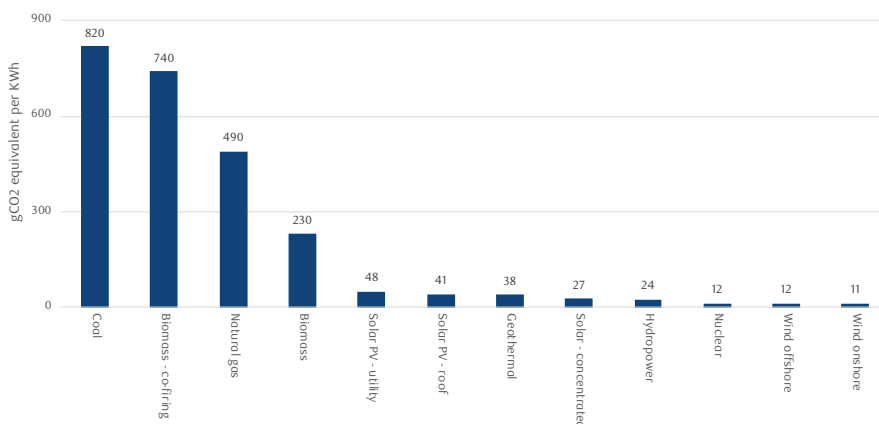
From a lifecycle emissions perspective, i.e., taking into account indirect emissions associated with plant construction and disposal, nuclear compares well with other sources. This is because nuclear requires less construction material, has a longer operational lifespan (lasting 40–100 years while solar panels and wind farms are replaced every 20–30 years), and occupies less land (solar plants and wind farms require 75x and 360x more land to produce the same amount of electricity, respectively).²

Delivering to net zero goals will be harder and more expensive without nuclear. The IEA notes that without nuclear, there will be a need for \$500B more investment and customer electricity bills will rise by \$20B/year to 2050.³ Clearly, a balanced mix of low-emission energies that includes nuclear power will be needed to achieve climate targets.

Low-cost alternative

Nuclear’s reliability as a baseload power makes it a useful energy source. Nuclear plants generate power 93% of the time, whereas intermittent renewable resources like wind and solar generate power 35% and 25% of the

Nuclear among lowest emissions energy available



Source: IEA, RBC Capital Markets

Nuclear getting the push it needs, continued from page 3

time, respectively.⁴ Not only is extra capacity needed for renewables, they also need a backup source or batteries to store energy. This raises the cost and emissions profiles of these sources.

While industry research suggests nuclear can be cost-competitive when considering total system costs, this differs from practice in many cases. Nuclear power projects have frequently experienced substantial cost overruns and delays during construction, causing actual costs of nuclear electricity to greatly exceed initial estimates. However, there are arguments that nuclear projects may be better positioned for success moving forward. New plant designs using modular construction techniques have the potential to lower complexity and risks, while technological know-how and experience will bring efficiencies. Additionally, governments can help reduce costs by providing long-term commitments, financing and regulatory clarity in the licensing and construction processes.

One of the most straightforward and inexpensive ways to increase nuclear capacity is through the extension of existing nuclear plants. The IEA noted that reactors designed for 40-year lifespans can be extended by 20–40 years. This offers countries the opportunity to retain the economic benefits of carbon-free baseload power at low marginal costs and with lower construction costs/risks.⁵ This also makes nuclear energy extensions competitive with solar and wind in many regions.

Government and regulatory momentum

In the wake of the Russia/Ukraine War and ensuing surge in energy prices, there has been a shift in policy for nuclear to meet energy security and independence. Governments are rethinking the value of having a diverse mix of energy sources and suppliers, and having a portfolio that can provide short term flexibility and adequate capacity during high demand periods.⁵ The graph below shows that so far, global capacity growth has been flat for the U.S. and Western Europe, with capacity increase mostly coming from East Europe and Asia.

Recent initiatives by governments worldwide highlight both their willingness to de-risk nuclear projects, and the strategic importance of the technology to their net zero goals.⁵ For example, in the U.S., the Inflation Reduction Act included a tax credit for nuclear while the CHIPS Act supports the development of advanced reactors. Canada recently committed to tripling nuclear energy production capacity by 2050. See the appendix for more examples of recent policy support for nuclear in different regions.

Nuclear energy decisions extend beyond economics to matters such as national resource strategy, non-proliferation, and geopolitical relationships. Among Western nations, collaboration on nuclear has supported

cooperation among governments for technology transfers and economic integration which can help broader political alignment. Russia and China have been more active in exporting nuclear tech; their dominance in the sector has also brought integration and political cooperation.⁵

Public and investor acceptance

Perceptions of nuclear has been tainted by past nuclear plant accidents, such as Three Mile Island (U.S., 1979), Chernobyl (Ukraine, 1986) and Fukushima (Japan, 2011), as well as the use of the technology to create nuclear weapons. However, there has been evidence of increasing acceptance amongst the public and politicians on both sides of the aisle.

RBC Capital Markets believes the industry and governments have done a decent job of informing (and perhaps convincing) the public of the benefits of nuclear technology. Still, a well-informed public need to be convinced that the benefits outweigh the risks, centered around operational safety, management of spent nuclear fuel, and the prevention of weapons proliferation. Public opinion should continue to inflect positively as the industry builds a record of safety, reliability, and environmental sustainability.⁵

The reality is that major reactor accidents are rare, and nuclear has a relatively safe record versus many electricity production technologies. Living next to a nuclear power plant for a year gives less radiation than a dentist's X-ray. And all the spent fuel waste produced by the U.S. over the last 60 years could fit on a football field at a depth of 10 meters, to say nothing of additional recycling opportunities.⁵ As the public better understands the facts, interest in this space should continue to rise.

Headwinds still remain

One of the biggest impediments to nuclear development has been construction difficulty—many global projects have been overbudget and delayed. Such pitfalls add to the overall cost of nuclear energy, hindering adoption and investor perception. Nuclear projects can take close to a decade to complete which adds to complexity and risk. Comparatively, wind and solar projects have much better track records and are thus less risky for investors.

That said, there are reasons to believe the cost issue can be overcome. Smaller and more modular designs allow for easier transportation and lower startup costs. There is room for larger reactor designs to reduce complexity and implement automation. Some projects completed in China took as little as five years, pushing the envelope on construction.⁵ Extensions, as discussed earlier, are another way to reduce costs. These factors should motivate more development to move forward.

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Another deterrent is regulation. Given the safety risks involved with nuclear energy, it makes sense that regulatory rules are strict. However, the rules are also constantly changing, including during the licensing and construction period which also happens to be long. It will be incumbent upon governments to enact a robust and stable framework, all the while prioritizing safety.⁵

As attractive as nuclear appears to us today, there are many energy industry participants that see any increase in nuclear energy as a threat to their business. Particularly if their slice of the energy transition pie becomes smaller. Amid affordability concerns, capital scarcity, and rising costs of capital, investors and governments may simply direct incremental investment dollars to the path of least resistance (wind, solar, gas) and forego the longer term merits of nuclear.⁵

As investors, we must weigh both pros and cons when accessing the viability for nuclear.

Opportunity for exposure

In North America, the primary ways to gain investment exposure to nuclear is through the Utilities, Industrials, and Materials sectors.

Utilities and independent power producers have an appetite to invest in nuclear power plants, from pre-construction to operational, as long as the risk profiles

of the projects are sufficiently attractive. That includes construction costs, revenue certainty, fuel supply, government policy and regulatory frameworks, and decommissioning/waste management.

Industrials companies are involved across the entire value chain to provide the necessary service/support to existing power stations. That said, the underinvestment from past decades have resulted in challenges in attracting new talent to the industry. Expect stronger project management, additional recruitment, and training of specialized labour to feature prominently going forward.

Uranium mining will be critically important in the future growth of the nuclear industry as the key fuel component for reactors, along with the processing required to turn uranium into nuclear fuel (conversion, enrichment, and fuel fabrication). RBCCM sees the uranium market in a moderate deficit through the 2020s before entering a potentially significant deficit by the 2030s. Growth will be driven by utilities moving away from relying on Russia, and the buildout of Western enrichment capacity. Uranium resources are not scarce, just undeveloped—expect utility customers to help fund production through long-term contracts.

Reach out to your RBC advisor to learn more about specific nuclear investment opportunities in your region.

1 IEA, Nuclear Power report, July 2023.

2 BofA Global Research, The RIC Report, The nuclear necessity, May 2023.

3 IEA, Nuclear Power report, July 2023.

4 BofA Global Research, The RIC Report, The nuclear necessity, May 2023.

5 RBC Equity Research, RBC Imagine, Climate of change for nuclear energy, November 2023.

Biodiversity

Investing in the world's most important asset

Investments in solutions that fight nature and biodiversity loss are a vital step in curtailing climate change and nature-related risks.

Governments, investors, corporations and other stakeholders are becoming more focused on the growing crisis of nature and biodiversity loss, which poses significant risks to societies, economies and the well-being of current and future generations.

The COVID-19 pandemic was a clear demonstration of the risks posed by human mismanagement of natural capital. The SARS-CoV-2 virus likely originated from nature and showed just how extensive and disruptive the risks can be.

But thriving biodiversity is also a key component of climate change solutions and presents sizeable economic opportunities. The United Nations regards biodiversity as the world's strongest natural defense against climate change.¹ Nature-positive projects and transitions could generate up to U.S. \$10.1 trillion in annual business value and create 395 million jobs by 2030, according to World Economic Forum estimates.²

It has become clear that as a society we cannot solve the climate crisis without addressing the nature crisis. As a result, understanding the financial materiality of nature and biodiversity is becoming increasingly important in the investments space.



Why is biodiversity important?

Biodiversity is the variety of all living species on Earth. It helps maintain healthy life-supporting ecosystems, including the provision of food and clean water, as well as the invisible functions necessary for life, such as flood protection, nutrient cycling, water filtration and pollination. It's fundamental to maintaining high-quality natural capital. A good example is a single English oak tree, which is estimated to support 2,300 different species of insects, fungi, plant life and birds.³

What is "natural capital"?

Natural capital is the world's stocks of natural assets, including geology, soil, air, water and all living things. Humans derive a wide range of services from this natural capital, such as food, water and plant materials used for fuel, building materials and medicines.

The financial impact of biodiversity

Investors are recognizing biodiversity and nature loss as potential systemic risks to society, business and the economy. The World Economic Forum has estimated that more than half of the world's GDP, about U.S. \$44 trillion, is either moderately or highly dependent on nature and its services.⁴

An example of this dependency is the critical importance of more than 20,000 species of pollinators to global food production. We are partially dependent on these pollinators for more than 75% of global food crop types, and approximately 35% of total food production globally.⁵ Yet the main driver of biodiversity loss remains our use of land—primarily for food production.⁶

Our relationship with nature can be a delicate balance, and businesses that directly impact or depend upon nature are typically the most exposed to nature-related risks. These risks may create disruption in companies' activities or value chains, ultimately affecting their risk-return profile as investible assets and challenging their long-term survival.⁷

The agricultural sector is a good example of how being highly dependent—and having an impact—on nature can affect the financial performance of a business.

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Lower rainfall and increased vulnerability to pests are physical risks that could threaten crop yields and reduce land value. Increased costs from switching to alternative farming methods and new drought and disease-resistant crops highlight the risk associated with transitioning; whereas potential fines or damages due to fertilizer runoff impacting ground water quality could expose the business to liability risk.

The next frontier of sustainability

Significant investment in solutions to nature and biodiversity loss is required if nature-related risks are to be constrained. Yet the funding gap is seismic. As highlighted in the UN's State of Finance for Nature report, U.S. \$4.1 trillion in financing for nature protection must be bridged by 2050 to limit global warming, stop biodiversity loss and achieve land degradation neutrality.⁷

More commitment is needed from the private sector. Currently, only 17%— or U.S. \$26 billion per year—of total global investment in nature-based solutions comes from private industry.⁸ But there are signs of progress. Although only 10% of financial institutions currently

measure their portfolio impact for forests and water, an additional 30% plan to do so within the next two years.⁹

Solutions leveraging nature—such as reforestation, regenerative agriculture and wetland restoration—represent one of the most cost-efficient and effective tools to combat climate change. Equally, products and services that alleviate pressures on land and sea use, reduce demand for natural resources and lessen pollution are all key to maintaining our supply of natural capital.

Assessing the potential impacts of nature loss on expected returns across portfolios will become more important for investors. By supporting companies with robust biodiversity-management policies and practices, and prioritizing products that promote conservation and sustainable land use, investors can safeguard natural capital, contribute to sustainable development and mitigate financial risk.



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1. "Biodiversity – Our Strongest Natural Defense Against Climate Change." United Nations, www.un.org/en/climatechange/science/climate-issues/biodiversity.
2. "New Nature Economy Report II: The Future of Nature and Business." World Economic Forum, 14 July 2020, www.weforum.org/publications/new-nature-economy-report-ii-the-future-of-nature-and-business/.
3. Broome, Alice, et al. "Ecological Implications of Oak Decline in Great Britain." Forest Research, May 2021, cdn.forestresearch.gov.uk/2021/05/frnn040.pdf.
4. "Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy." World Economic Forum, January 2020, www3.weforum.org/docs/WEF_New_Nature_Economy_Report_2020.pdf.
5. Aizen, M. A. et al. "Global Agricultural Productivity Is Threatened by Increasing Pollinator Dependence Without a Parallel Increase in Crop Diversification." *Global Change Biology*, 25(10), 3516-3527, 2019.
6. "Biodiversity – Our Strongest Natural Defense Against Climate Change." United Nations, www.un.org/en/climatechange/science/climate-issues/biodiversity.
7. "NGFS Acknowledges That Nature-Related Risks Could Have Significant Macroeconomic and Financial Implications." NGFS, 24 Mar. 2022, www.ngfs.net/en/communique-de-presse/ngfs-acknowledges-nature-related-risks-could-have-significant-macroeconomic-and-financial
8. "State of Finance for Nature." United Nations Environment Programme, 20 June 2023, www.unep.org/resources/report/state-finance-nature.
9. "Financial Institutions Failing to Integrate Nature and Climate: New Report Warns Inaction on Nature Impedes Net-Zero Ambitions." CDP, 17 Aug. 2023, www.cdp.net/en/articles/media/financial-institutions-failing-to-integrate-nature-and-climate-new-report-warns-inaction-on-nature-impedes-net-zero-ambitions.

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