For professional investors - February 2024

INFRASTRUCTURE DEBT: FINANCING A SUSTAINABLE FUTURE

Private capital has a vital role to play in achieving net zero goals. Infrastructure debt is an attractive way for institutions to achieve long-term return and income goals while financing the assets urgently needed to support the transition to a low-carbon economy.

AN ESSENTIAL ASSET CLASS FOR AN URGENT CHALLENGE

Climate change is the defining issue of our time, and we are at a critical moment. Rising temperatures are already having a tangible impact on the global economy, on ecosystems and on society as a whole. The International Energy Agency estimates that investment in clean energy alone must reach USD 4 trillion annually by 2030[1] if we are to achieve net zero by 2050 and prevent catastrophic changes to health, livelihoods, water supply, food security, human security and economies.

These investment needs cannot be met by public funding alone: private capital has a huge role to play. One urgent challenge is to build the infrastructure that will be fundamental to the transition to a low-carbon economy – from clean energy production and storage capabilities to electric vehicle charging stations. As a result, infrastructure debt is an asset class at the forefront of the energy transition.

RESILIENCE OF THE ASSET CLASS

Infrastructure debt involves the financing of essential assets and services that benefit from high barriers to entry, predictability of cash flows, supportive regulatory framework, and strong contractual frameworks. These characteristics mean the asset class has displayed resilience through economic cycles and offers an attractive risk-return profile with inflation-linked features. For institutional investors with the ability to lock money away for longer periods, it can serve as a useful portfolio diversifier, offering low volatility, a low correlation with public markets, stable income, and access to an illiquidity premium.

1 IEA (2021), Net Zero by 2050

Following rapid growth in recent years, European infrastructure debt market totalled USD 185.1billion as of Q3 2023.[2] The increasing maturity of the asset class means investors can build portfolios that are diversified across sectors, themes, geographies and currencies, and access opportunities in junior as well as senior debt, depending on their risk appetite.

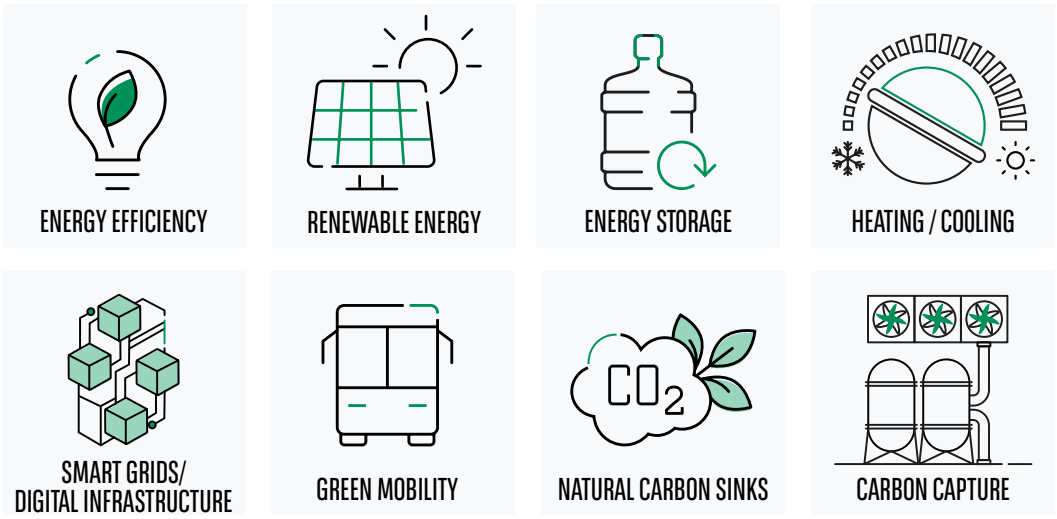
From utilities to mobility, major infrastructure debt sectors are closely related to the energy transition. Social infrastructure assets such as healthcare and education facilities have also been a core element of the opportunity set for many years, providing essential services that directly benefit local communities. As a result, the asset class is closely aligned with investors' Environmental, Social and Governance (ESG) preferences and has strong impact potential.

OPPORTUNITIES ALIGNED WITH INVESTORS' GOALS

Infrastructure debt investors in Europe and, increasingly, around the world are transitioning to low-carbon assets as recognition grows of the need for private capital to support net zero goals. Alongside financial performance, sustainability and climate change mitigation are becoming increasingly important criteria for investment. As a result, there is a strong and growing appetite for assets easily identified as 'green', such as solar plants and wind farms.

The net zero transition is also creating a wealth of less immediately apparent opportunities for sustainable investors. All infrastructure assets need to be decarbonised, from transportation to the phase-out of fossil fuels in the utility mix. New technologies such as gigafactories for electric vehicle battery production and energy storage are creating significant infrastructure needs, while huge capital expenditure is required to harness the potential of emergent technologies such as green hydrogen and carbon capture and storage (CCS). Natural carbon sinks such as forests are another new and developing frontier for real asset investment.

Climate change mitigation opportunities across sectors: For illustrative purposes



Beyond climate, the preservation of biodiversity and natural capital is becoming increasingly important in the analysis of new projects. Emphasis is also growing on the circular economy and recycling, both in project design, which seeks to minimise the use of raw materials and optimise reuse of materials at the end of the asset's life, and as a source of investment opportunity. More development related to the social aspect of Environmental, Social and Governance (ESG) is expected too, particularly if the plan for a European Union social taxonomy is revived.

2 Inframation News, September 2023

NEW VALUE CHAINS ARE EMERGING

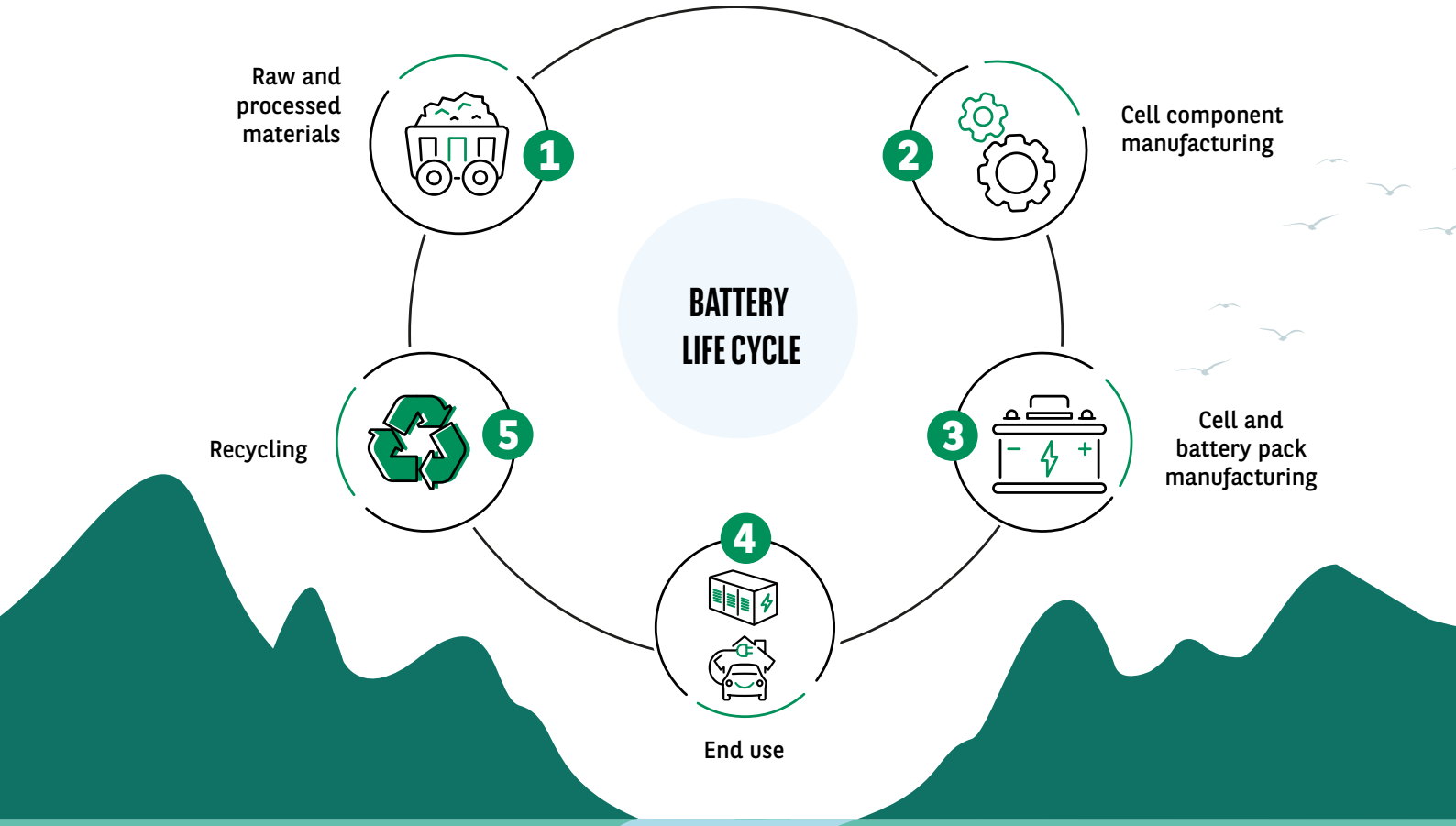
Innovation to address climate change is driving the emergence not only of new asset types, but also of new ecosystems that span sectors. Below, we look at two examples.

BATTERY TECHNOLOGY:
An essential element enabling green mobility and clean energy storage

Battery technology is vital to the energy transition, both as an important tool for the stability of the renewable energy supply and as the power source for electric vehicles. The market for battery cells is expected to grow by more than 20% a year on average until 2030, with further acceleration possible as costs fall.[3]

Demand for batteries is creating a complete ecosystem, from the sourcing and transportation of critical metals and minerals to battery production, grid enhancement and gigafactories for electrical vehicles. To date, the infrastructure debt opportunities in Europe have been limited, but the technology is an increasing focus in the region, with governments keen to secure local supply and production.

For illustrative purposes



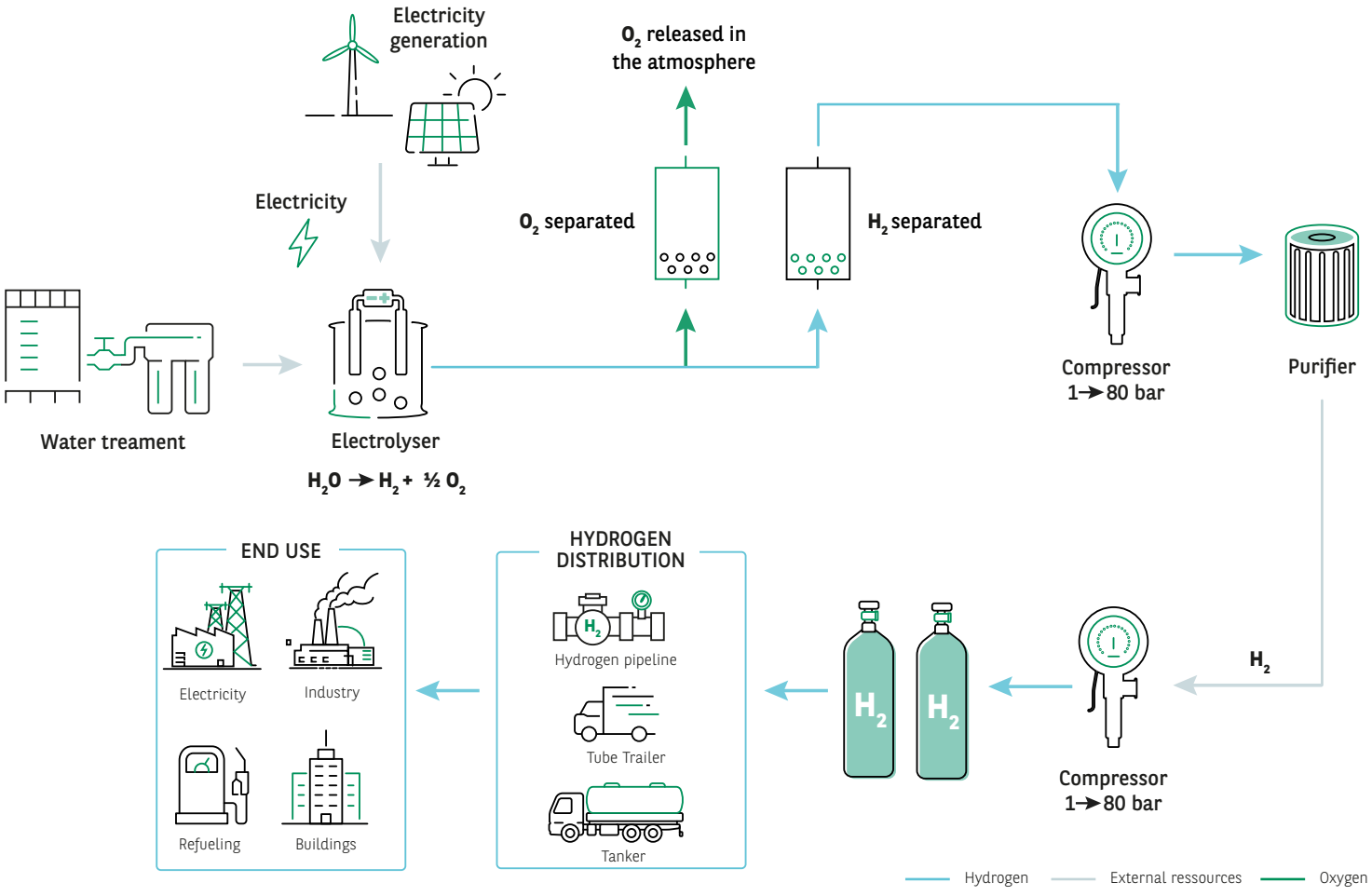
3 https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/capturing-the-battery-value-chain-opportunity

GREEN HYDROGEN:
Early-stage technology with the potential to address decarbonisation challenges

While electric batteries can power cars and other small vehicles, decarbonising heavy transport is more challenging. Hydrogen fuel cells are an alternative power source with potential uses in freight haulage, shipping and aviation. Hydrogen is also widely used in heavy industrial processes that are challenging to decarbonise such as steel production.

More than 80% of hydrogen produced today comes from fossil fuels using steam reforming of natural gas and coal gasification.[4] However, an alternative process known as water electrolysis can be used to produce 'green' hydrogen.

In this process, electricity (often from renewable energy sources) is used to split water into hydrogen (H_2) and oxygen (O_2). The hydrogen produced is either employed as is or used in fuel cells to generate electricity.



4 BNP Paribas Asset Management, 2023

This is an early-stage technology and operational assets in Europe to date are small pilots and projects related to sustainable mobility. However, we expect the first utility-scale green hydrogen projects to come to market for infrastructure debt financing early in 2024. Some parts of Europe offer rich potential for the production of green hydrogen using low-cost, abundant renewable energy. We also see infrastructure debt opportunities further along the value chain, for example in green steel and transportation.

ARTIFICIAL INTELLIGENCE AS A FACILITATOR OF GREEN INFRASTRUCTURE

Digitalisation has long been a driver of the development of infrastructure assets. Artificial intelligence (AI) represents a significant step forward given its ability to act as an enabler for new solutions, optimising the design and use of infrastructure assets and the management of data.

There are many applications. In electricity networks, AI can optimise power supply based on consumption, realise economies of scale and identify efficiencies in the management of production of the grid. In green transportation, the technology can be used to optimise electric vehicle charging networks. Across the infrastructure asset class, AI is helping to build better, more efficient and greener assets as well as to optimise their use.

CAPTURING THE OPPORTUNITIES

With so many projects and business models relating to early-stage assets and ecosystems, capturing the infrastructure debt opportunities resulting from the net-zero transition while maintaining an adequate risk profile requires resources and specialist expertise to analyse complex projects.

Lenders, such as BNP Paribas Group, with the ability to assess the full value chain, from technology to market research to income generation, and to offer bespoke financing solutions that align with emerging business models, will have a greater capacity to invest proactively and take advantage of early-stage opportunities to capture the best risk-return assets.

The backdrop of higher capital costs means caution is required on the profitability of projects. For example, though now normalising, the cost of producing a wind turbine or a solar photovoltaic (PV) array had risen steeply. Lenders need to be highly selective and ensure projects can generate sufficient income and stable cash flows to mitigate the higher costs. A rich project pipeline makes such selectivity possible.

The rapid evolution of the opportunity set is accompanied by equally fast-paced regulatory developments. In-house sustainability expertise, legal capabilities and a robust ESG framework are vital when structuring long-term sustainable products, as is constant dialogue with regulators.

CONCLUSION

The challenges we face from the changing climate are huge and the investment needs vast. As a result, the opportunities are broad for institutional investors in infrastructure debt to drive impact while meeting their return, income and diversification goals. We strongly believe the asset class will continue to expand as an outcome of decarbonisation and the energy transition, alongside other megatrends such as digitalisation.

As investors in Europe and beyond align behind net zero goals, more managers are launching thematic funds that seek to address climate change by investing in sustainable assets related to renewable energy, clean mobility and other areas of innovation. Expertise and track record are key in an asset class in which depth of research and access to a strong pipeline of deals are important differentiators.

Private assets are investment opportunities that are unavailable through public markets such as stock exchanges. They enable investors to directly profit from long-term investment themes and can provide access to specialist sectors or industries, such as infrastructure, real estate, private equity and other alternatives that are difficult to access through traditional means. Private assets do, however, require careful consideration, as they tend to have high minimum investment levels and may be complex and illiquid.

VIEWPOINT

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