



Climate Infrastructure – A crucial asset class

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Introduction

A joint paper published by UNOPS, UN Environment Programme and the University of Oxford was submitted to the COP26 conference in Glasgow in November 2021. One of the key findings was that our global infrastructure makes up 79% of all greenhouse gas emissions. Therefore, the priority in combating Climate Change is to radically transform our built environment and alter how households and companies consume energy. This paper will go through the benefits and challenges that lay ahead as well as the opportunities for investors to be a part of the solution.

Climate change is impacting the regions of our planet in different ways. While some places will experience more intense heatwaves, others will see greater snowstorms. While some places will experience greater flooding, others will be seeing more persistent droughts. Thus, addressing this urgent and complex problem will require a variety of infrastructural solutions. These solutions are categorised in 2 ways, Adaptation and Mitigation.

Adaptation and Mitigation

Adaptation involves minimising the disruption caused by climate related events. Examples of this include raising bridges to account for rising water levels, roads that drain easily to account for increased rainfall or fitting buildings with air conditioning to keep buildings cool during a heatwave.

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Mitigation involves sustainable building such that existing and future projects are either carbon neutral or even better, act as net carbon sinks. These include Passivhaus construction, buildings that receive their energy from renewable sources as well as green buildings and vertical farming. There are even companies that employ technology to remove carbon dioxide from the atmosphere and turn it into carbon and then diamonds.

Current Market

The most urgent projects in the global south are to do with adaptation. These countries are already experiencing increased flooding as well as dangerous heatwaves. Creating climate resilient infrastructure in these regions is paramount to sustain their societies in the short to medium term.

The global north can help in more ways than one. Decarbonising existing infrastructure does seem to be the obvious one as Europe, North America and Oceania emit more per capita than the global average. We can also see in the below table that Asia alone emits more than Europe, North America and Oceania put together but this is because Asia has 59.4% of the total human population. Thus creating sustainable infrastructure in China and India will also be key to decarbonisation the global economy.

Emissions	Total	Tonnes CO₂ per capita
Africa	7.8%	2.89
Asia	55.1%	5.78
Europe	12.9%	8.33
North America	16.0%	13.12
Oceania	1.7%	19.40
South America	6.4%	7.27
World	100.0%	6.26

Thus, there needs to be an appropriate balance between these two types of solutions across all regions. This would involve refitting existing homes and offices, ensuring power grids get their energy from renewable energy sources. The scale and variety of solutions are immense, and this provides investors a way to get involved and use their finances to be part of the effort in combating climate change.

Benefits

Future returns are attractive when compared to current real estate market. This is because both public and private funding for these projects has increased dramatically over the last 10 years. It is also safe to say that given the severity of climate related events, that in order to avoid disruption to businesses and global trade, this funding is set to rise even further. Given the nature of this asset class the increase in demand provides a lower level of risk to the investor than it would've done in the past as the technology is now more reliable.

Challenges

Measuring performance on infrastructure is notoriously difficult as it is difficult to value property. Projects are long term and are paid for upfront. Thus, the investor will need to be fully committed if they want to be exposed to such an illiquid investment. While there is certainty over the long-term benefit to society, there is uncertainty over the rate of return on such projects as there isn't much historical data to help analyse what the key characteristics are that determine monetary success for the investor.

Opportunities

One of the easiest ways to benefit from the returns gained from climate infrastructural projects is an indirect one; Green Bonds. These are government issued debt that which are used to fund projects that have positive environmental and/or climate benefits. Thus, they are a climate freindly version of traditional government bonds so have the same return/risk characteristics and stability of a fixed income to the investor, with the added benefit of funding climate infrastructure. This is suitable for any investor, whether they want safe access to this asset class or looking for a climate friendly way to hedge their pension liabilities.

Another way to invest, to buy shares in publicly listed companies whose primary business is providing climate friendly infrastructural projects. As an example, Tetra Tech is a provider of consulting and engineering services worldwide where one of their many projects has helped establish 70 new marine sanctuaries covering 1,500 hectares of coral reef and seagrass habitat off the coast pf the Philippines. This is suitable for traditional equity investors looking to gain returns over the long term whilst ensuring their investments are as green as possible.

It is also possible to invest directly in renewable infrastructural projects and reap the market benefits. This could be investing in eco-friendly buildings or sustainable transport projects. While

this type of investment has the tangible climate impact that can be reported for the portfolio, the downsides are two fold; term structure and illiquidity. Infrastructural projects take years and reporting on returns is once a quarter at best. The nature of these projects also mean the portfolio won't see returns and be able to access their gains for quite some time. Therefore such investments are therefore only suitable for schemes that are both very large and have a long term view as they can absorb the illiquidity risk and are only looking to withdraw investments for their beneficiaries several years in the future.

“Green Bonds are a low risk route with guaranteed income for investors”

Conclusion

Investing in Climate Infrastructure is the most impactful way we can contribute to mitigating and even perhaps reversing the effects of climate change. Whilst there are many challenges that lay ahead for this asset class, the necessity of growth of this asset makes it a compelling opportunity. The good news is that there are ways for investors of all sizes and risk appetites to reap the potential rewards that this asset class brings.