

Sustainability has long been a focus of the owners and managers of infrastructure assets, as they make investment decisions impacting cash flows and profitability decades into the future. And whilst ESG concerns are not particularly new for the industry, they are becoming an increasingly important consideration.

Similar factors are today receiving increased attention from market participants, with the considerable growth in ESG-dedicated funds. Further, investment managers are increasingly recognizing the need to incorporate analysis of these risks in their investment approach, and they are taking more active roles in their interactions with company management teams and boards. Approaches vary, with negative screening still popular among many managers, and more integrated methods seeing a stronger take-up.

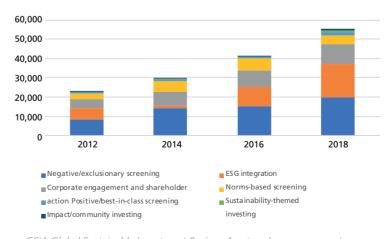
It is not surprising that the critical nature of ESG for the infrastructure sector has received additional emphasis from the UN following the publication of the

Sustainable Development Goals (SDGs). Specifically, goal nine states: "Investment in infrastructure and innovation are crucial drivers of economic growth and development. With over half the world population now living in cities, mass transport and renewable energy are be-

it comes to assets owned by global listed infrastructure (GLI) companies given their fixed nature and long lifespan, in addition to these assets' centrality to economic growth and the smooth running of society.

> coming ever-more important, as are the growth of new industries and information and communication technologies." The UN also acknowledges there is substantial work to be done by many assets' operators to ensure their actions meet stakeholders' expectations on how >

Graph1: Growth of dedicated socially responsible investments



Source: GSIA Global Sustainable Investment Review. Asset under management values are expressed in billions of US dollars.





































they actively manage their ESG opportunities and challenges.

Moreover, many of the other 16 SDGs are related to, or rely on, infrastructure, highlighting the importance of such assets that represent the backbone of any economy. This is evidenced by the so-called 'infrastructure gap' observed across almost all regions; emerging economies needing to invest in new infrastructure networks in order to support their rising standards of living and urbanization; and developing economies facing the challenges of replacing and upgrading existing aged infrastructure. Addressing these gaps, and preventing new ones from emerging, will require substantial investment in many different infrastructure assets, alongside a keen focus on embedding a suitable ESG approach in their management.

Given all the above, in order to deliver

superior risk-adjusted returns, infrastruc-

A fully integrated approach to ESG

Working in collaboration with the global ESG team, our GLI strategy has incorporated ESG in the investment process since its original design in 2010. We feel strongly that in order to achieve successful long-term outcomes, we require a full integration of sustainability and ethical drivers in the way we define our investment universe, analyse and evaluate our opportunity set, and build and manage our portfolio.

ture investors cannot neglect a thorough analysis of sustainability drivers in terms of ESG criteria. ESG factors and issues that barely received a mention a decade or so ago are now commonplace for infrastructure companies, increasingly having an impact on both the operations and financial results of their assets.

> Overlaying a qualitative assessment

Recognizing that valuation by itself cannot capture all the risks in relation to an investment, the decision-making process considers a qualitative assessment of the investable universe, including GLI-specific ESG factors (25%

 Adopting the relevant valuation methodology

As infrastructure assets have a long duration, we believe that the most appropriate valuation methodology must take into account all the cash flows generated by the assets themselves throughout their life cycle (i.e. initial capital deployment, recurring revenue and operating expenses, growth and maintenance expenditures and decommissioning). Our long-term approach to valuation includes the assessment of various ESG drivers, as a key part of the analysis. The cash flows used in the valuation are assessed for future environmental impact (i.e. decarbonization and climate change), social (i.e. regulatory changes and affordability for customers) and governance (i.e. capital allocation and majority/minority shareholders' considerations) requirements.

· Identifying the appropriate investment universe

Defining the opportunity set represents a key step of any investment process,

and this is particularly important in GLI given the emerging and fragmented nature of the industry. Our strict core infrastructure approach (i.e. brownfield assets with monopolistic characteristics, high barriers to entry and contracted/regulated cash flows) focuses on GLI companies that generate attractive and sustainable risk-adjusted returns. ESG

factors and risks play an important role

in this philosophy, and they help identify assets and sub-sectors that have the potential to meet these requirements and form part of our GLI universe.

The main objective of the invest-

ment process is to build a port-

combination of valuation and quality.

ESG considerations play a critical role in

infrastructure

that demonstrate the best

compa-

· Aiming to build the best

both valuation and quality.

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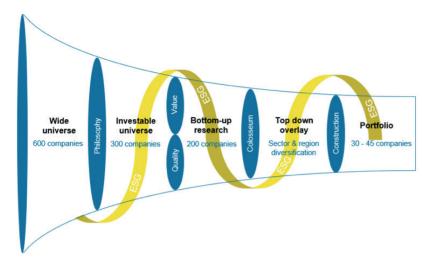
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Table 1: Why ESG is important for infrastructure

						(5G)	
	Extreme weather events	Rising environment and health standards	Aging infrastructure	Terrorist and security risks	Data and privacy	5G & technology disruption	Evolving privatization & regulation
COMMUNICATIONS	5	/		/	/	/	/
TRANSPORTATION	V	/	V	/		/	/
UTILITIES	V	V	/	/	V	/	V
ENERGY INFRASTRUCTURE	/	V	V	/		V	V



Graph 2: ESG infrastructure investment process - building the portfolio



Graph 3: Infrastructure investment process – quality score



of the total quality score). Regarding the ESG assessment, due to the lack of infrastructure-specific metrics and poor quality and comparability of the data available, our team has collaborated with the global ESG team in order to identify the most relevant sustainability drivers for the infrastructure sector (see Graph 4).

Each E, S and G quality score has different sustainability drivers, and the scores are determined on a relative basis while considering similarities across industries and regions. Through this approach, companies with higher/ lower E, S, and G quality scores are more/less likely to be included in the portfolio. It is important to highlight that through this framework, we look to reward positive action and 'direction of travel' as opposed to a passive screening approach using set quantitative criteria.

This approach to ESG has evolved over the years, and this now represents a much bigger component of the decision-making process.

Monitoring our investments

A critical part of the approach to sustainable investing is continuous engagement with the various stakeholders of the infrastructure investments in order to tackle ESG-related issues and further promote ESG awareness. Central to this is meeting regularly with management teams, as well as undertaking site visits to interact with the employees operating the asset. Other forms of engagement includes active participation in proxy voting as well as advocating for positive change by liaising with the respective Boards of Directors. In addition, engaging (where appropriate) with government representatives, regulators, and other industry players ensures full assess to the entire value chain of infrastructure sectors.

Climate change

Given the importance of climate change to the environment, managing their impact over the long term is critical to the longevity of almost all infrastructure assets.

Example of positive change: Electric utilities replacing coal-fired generation with renewables are directly reducing their contribution to climate change.

Increase in transparency

Transparency is an important aspect of GLI company governance because it improves visibility and trust in the service being provided and the company's strategy.

Example of positive change: Toll roads that provide visibility of tariffs and payment methods improve the user's experience, whilst assets won through a transparent bidding process improve trust from government and society as well as investors.

Human and environmental health and safety impacts

Graph 4:

Sustainability drivers

Infrastructure assets that closely interact with their location and society can minimise any adverse impacts, contributing to a healthier and safer environment for users, employees and the community.

Example of positive change: Gas utilities replacing old and unstable pipelines reduces the risk of leakages and improves safety, whilst continuing to provide a valuable resource.



Security risks

In recent years, security concerns have become more prevalent and infrastructure assets have been targeted as a means of causing disruption.

Example of positive change: Airports that ensure the safety and security of passengers whilst providing a smooth and enjoyable travel experience.

Minimising the cost to governments & society

The development of new, or the enhancement of existing, infrastructure can help reduce bottlenecks in the economy, improve the service for users, and often result in lower costs for government and society.

Example of positive change: A toll road providing greater access to their infrastructure through road widening reduces congestion and improves travel times

Technology disruption

Technology plays a role in our day-to-day lives and, as it continues to evolve, it impacts how we use and interact with the infrastructure around us.

Example of positive change: Communication infrastructure companies that support 5G mobile networks, which will facilitate technologies such as internet of things, artificial intelligence, autonomous vehicles, and virtual reality.



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ESG: Examples of taking an active role

We have been interacting extensively with the management team of one of the largest

natural gas pipeline companies in North America over the last few years, also co-hosting a liquified natural gas (LNG) seminar with a selected group of investors in 2017.

Our goal was to highlight the longterm investment opportunity in North American natural gas infrastructure (e.g. pipelines and LNG export facilities), driven by population growth and rising living standards in emerging markets, as well as the need to meet overall growing demand through less carbon-intensive sources (coal to natural gas switching).

Furthermore, we recently held a dedicated meeting on ESG with their sustainability management team, discussing the latest changes to their Health Safety and Environmental Committee, improved climate-related financial disclosures as well as plans to mitigate business risk materiality through pipeline integrity and maintenance spending.

Engagement with multiple stake-holders is core to theresponsibilities of an investment

manager. In this regard, we took part in an airport regulatory consultation process.

The airport operator, which has formed a part of our fund for a number of years, was subject to an unexpected regulatory intervention by a body who was relatively inexperienced in the area of economic regulation. Had the proposals been carried out, it was likely to result in undesirable levels of airport traffic, and a substantial reduction in investment in the airport.

Our response to the regulator brought together our experience from different countries and industry sectors, including suggestions of how incentives could be shaped to drive behavior which would be in the best interests of all stakeholders, rather than a skew towards or away from particular stakeholder groups (i.e. a win-win, rather than a win-lose situation).

We held an investment position in
a listed financing
vehicle of one of the
largest North American energy infrastructure companies.

Following the sector's shareprice correction triggered by the Federal Energy Regulatory Commission (FERC) ruling in March 2018, the holding company proposed to roll-up the financing vehicle at no premium, launching the transaction at a time. in our view, when the stock price was depressed due to uncertainty. We decided to interact with various stakeholders, including the Board of Directors, describing the near and long-term benefits of the transaction, which were not reflected in the monetary consideration of the initial proposal.

Ultimately, the definite agreement included a more balanced outcome regarding the majority and minority shareholders' interests.

Integration of ESG factors may offer better performance

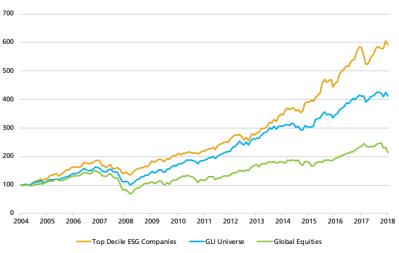
Investing in global listed infrastructure offers investors the opportunity to gain exposure to a differentiated set of financial characteristics:

- Long-life assets important to society and the economy
- Strong monopolistic characteristics with high barriers to entry
- Stable cash flows with inflation protection due to regulation or long-term contracts
- Liquidity, transparency and geographic/sector diversification

We hold a firm conviction that the attractive risk-adjusted returns of the asset class can be enhanced with the implementation of an investment process, with sustainability drivers representing one of the pillars of decision making. As the vast majority of infrastructure investors are making investment decisions

for the long term, we also believe the same long-term investment outlook applies equally to the listed infrastructure asset class, irrespective of short-term market fluctuations in share prices. The underlying asset fundamentals remain the same whether listed or not.

Graph 5: Performance comparison



Source: AMP Capital, Bloomberg, as at December 31, 2018 Past performance is not a reliable indicator of future performance.





GLI companies¹ with a 360-degree approach on ESG has delivered better overall returns in the last 14 years (see Graph 5). These top decile ESG scoring GLI companies have also exhibited a favorable risk/reward ratio versus global equities in up/down markets; capturing 81% in up markets and only 30% downside capture in negative periods.²

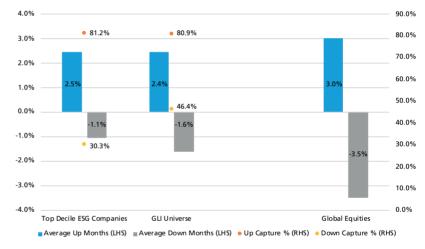
Listed infrastructure companies boosting their ESG credibility

The industry's response to rising ESG factors continues to evolve, but notably the approach from many listed companies is becoming more proactive than reactive. Infrastructure companies are increasingly ESG-aware, publishing ESG reporting and liaising with various stakeholders on these matters, including investment managers. With infrastructure companies now employing dedicated teams that focus on sustainability drivers, the engagement with them has noticeably increased, whether at a senior management or board level. There is a growing desire to raise and discuss these issues.

In this context, companies are also increasingly taking action to manage and avert ESG risks. This varies from increased collaboration with stakeholders such as communities, governments and investors, improved and more efficient operational processes, and further investments to achieve pre-set standards, targets or in-

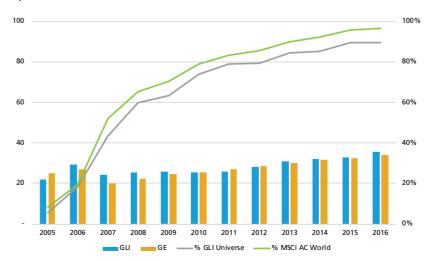
1.The GLI universe is based on AMP Capital Global Listed Infrastructure team's investable universe. 2 Past trends are not a reliable indicator of future

Graph 6: Up/down market capture



Source: AMP Capital, Bloomberg, as at December 31, 2018. Data period December 31, 2004 - December 31, 2018.

Graph 7: Disclosure of ESG factors on the rise



Source: Bloomberg, as at December 31, 2016



centives. In some cases, this has even involved selling or retiring certain assets due to the ESG challenges they face.

Disclosure of ESG factors has been improving also. More companies are now producing sustainability reports or similar documents on a more regular basis, with the quality and comparability of the data within these disclosures also increasing. This can be seen in Graph 7. showing the Bloomberg ESG disclosure score for GLI and global equities, with steady improvement in both the score and number of companies reporting.

It is reasonable to assume these disclosure and engagement trends will to continue, and we believe a broad range of stakeholders will continue to advocate for



them. Over the long term we expect those companies taking positive action on these issues to have the potential to realise improved risk-adjusted returns.

Conclusion

ESG risks are critical to the sustainability of assets owned by infrastructure companies. Whilst they are not particularly new, their significance and impact has been increasing in recent years, and various stakeholders including management, investors, regulators and end-users are becoming more aware of their relevance.

By incorporating sustainability drivers in our investment process, we strive to find the right combination of ESG factors which ensures we help minimize the impact on the planet, deliver essential services to those in need and contribute towards improving public trust in large corporations. In doing so, it is expected that over the long-term, those companies best positioned have the potential to generate superior risk-adjusted returns.





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Joseph Titmus is based in AMP Capital's Sydney office and as Portfolio Manager/ Analyst he is responsible for the analysis of utilities infrastructure companies in North and South America. He commenced in the financial industry in 2004 and was involved in the development of AMP Capital Brookfield's listed infrastructure capability. Titmus joined AMP Capital's Sydney office in February 2006 as an investment adviser within the Global Real Estate Securities Team. He moved over to the Global Listed Infrastructure Team in October 2008 and relocated to London in April 2010. After spending six years in the London office, Titmus moved back to Sydney in October 2016.



Giuseppe CORONA

Giuseppe Corona is the Head of AMP Capital's Global Listed Infrastructure Team, based in the London office. He joined the financial industry in 1999, and began portfolio management across long only and long/short products in 2008. Prior to joining AMP Capital, Corona spent two years at Exane-BNP Paribas as a senior equity analyst covering multi-utilities and infrastructure companies. Previously, he spent one year in Switzerland, managing a long/short market neutral portfolio at Swan, an investment boutique, and nine years at Bear Stearns Asset Management in the USA where he was appointed Managing Director in 2006.