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**SUSTAINABLE  
INFRASTRUCTURE:  
THE FINANCING  
CHALLENGE**



**— THOUGHT LEADERSHIP**

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## SUSTAINABLE INFRASTRUCTURE: THE FINANCING CHALLENGE

The recently published IPCC special report on the impact of global warming predicts that an unprecedented level of sustainable infrastructure investment will be needed every year until 2050 and beyond to limit global warming to the Paris Climate Agreement's target of 1.5 °C. Here we explore the challenges facing infrastructure investment and the potential role of the 'green finance' market, governments and multi-laterals in achieving this objective.

### Sustainable Infrastructure – What, Why, How?

What do we mean by "Sustainable Infrastructure"? Sustainable development was defined over thirty years ago as: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987) Whilst sustainable infrastructure has no universally agreed meaning, it is generally taken to encompass infrastructure in the broadest sense (transport, energy generation and transmission, buildings, water and marine resources, recycling, pollution prevention) which is economically, socially and environmentally sustainable. Focussing on environmental sustainability, this may mean in practice that the infrastructure has a low carbon footprint, is constructed from sustainable materials, is powered by or generates renewable energy, or is resilient to, or has been adapted to, the changing climate.

### Why is it important?

The existing stock of global infrastructure and its use accounts for more than 60 per cent of greenhouse gas emissions, and we are set to triple the global infrastructure stock by 2030, and around 70% of the new infrastructure needs are in the developing economies. If the new infrastructure mirrors the existing stock, there will be distinct challenges to the reduction of emissions and provision of sufficient protection from the impact of the changing climate, including rising sea levels, increasing temperatures and more extreme weather events. More positively, sustainable infrastructure can be a driver for achieving the UN Sustainable Development Goals and, according to the

Global Commission on the Economy and Climate, presents an economic opportunity of US\$26 trillion to 2030. How to secure the necessary investment in sustainable infrastructure? One of the key challenges to realising this rapid change to global sustainable infrastructure is unlocking the investment required to make it happen fast enough and across all geographies. There is potential for 'green finance' to play a significant role, and there are steps that governments and multilaterals can take to support and enable the necessary investment.

### What are the challenges?

In order to limit climate change within the Paris Climate Agreement targets, there are multiple challenges to be met including:

- The speed with which capital needs to be mobilised and sustainable infrastructure constructed if the global temperature rise is to be kept below 1.5 °C above preindustrial levels.
- The need to ensure the development of sustainable infrastructure in all regions where it is needed, but particularly in developing countries where the need for infrastructure is most acute and whose peoples are most vulnerable to the changing climate.
- It is not only new infrastructure that is required; existing infrastructure needs to be modified to become resilient to the changing climate. The benefits of modifications to increase resilience, and the additional costs of climate change adaptation for new projects, can be difficult to quantify and therefore less attractive to investors.

Whilst the need for rapid investment in sustainable infrastructure is evident and

presents opportunities for investors and developers as well as those who stand to benefit from its construction, there are also significant hurdles to accessing the financing needed to effect this change, including:

- Sustainable infrastructure is perceived as being more expensive than higher-carbon equivalents.
- Investment in infrastructure during construction and before the asset starts to generate revenue can be more difficult and more expensive to finance.
- The changing climate, particularly the ability to tolerate extremes of temperature and rainfall at both ends of the spectrum, can be difficult to model with precision and introduces an additional layer of uncertainty for infrastructure assets that typically have a long lifespan and investor return profile.
- Some types of infrastructure investment required to meet the Paris Climate Agreement target do not have an obvious revenue stream; for example, the upgrade of distribution networks required to cope with fluctuations caused by renewable energy and the increasing use of electric vehicles. New and unproven technologies, or technologies for which the rate of public uptake is unpredictable, such as electric car charging infrastructure, can also struggle to attract investment.

## Green finance

There is no shortage of private capital which could be tapped into to fund sustainable infrastructure, with an estimated US\$120 trillion under management in global pension funds, insurance companies and other institutional investment firms (though less than 2 per cent of these funds are currently invested in infrastructure). Investor appetite for clean investments is demonstrated by the strong market for renewable energy projects and the growth of the green bond market, but more well-structured, bankable opportunities are required.

Solar and wind are well-established technologies that easily tick the “green” box. It is important now that the green

finance market grows to fund other areas, such as modifications to electricity grids, improvements to make new and existing building stock more energy efficient and the electrification of transport. It has been suggested that market-recognised labels will assist with this scaling up of investments. There are a number of projects in this regard globally, including the Climate Bonds Initiative, the Green Bond standards in China, and various development bank projects. More detail is provided on market-led green finance initiatives and the current EU legislative proposals below.

## Green Bond Principles and Green Loan Principles

The Green Bond Principles, and related Green Loan Principles, are a set of voluntary process guidelines, published by ICMA and the LMA respectively, recommending transparency, disclosure and reporting on the use of proceeds to encourage capital flow to environmentally sustainable projects. They have been widely adopted by market participants.

The standards, though they do refer to categories of green investment, are relatively flexible, and this has arguably supported the relatively fast growth in these new products (albeit still a small proportion of the overall bond and loan markets).

Indeed, we have recently seen Innogy, as issuer of a green bond, utilise the flexibility afforded by its green framework to reallocate the proceeds of its 2017 green bond issuance from the refinancing of onshore and offshore wind parks to works on the electricity grid for the connection of renewables (and other changes required to enable the grid to cope with fluctuations caused by renewable electricity and facilitate the charging of electric vehicles), as well as the financing of smart metering to enable consumers to monitor (and reduce) energy consumption. In doing so, Innogy provided disclosure and comfort to the market by explaining the change and providing a second opinion from Sustainalytics (a provider of ESG and corporate governance research and ratings), confirming that the new projects were in line with Innogy’s green bond framework and the Green Bond Principles.





As mentioned, this flexibility can drive growth, but some fear that the market may suffer from “green-washing”, where investments are labelled green but are not “green enough”.

### **EU Sustainable Finance Action Plan**

In part to counter this concern, the EU Commission has published legislative proposals (within the Sustainable Finance Action Plan) aimed at establishing an EU sustainability taxonomy, formalising investor duties and disclosure obligations and the creation of low carbon and positive carbon impact benchmarks.

The bar for an activity to be sustainable under these proposals is set relatively high, requiring the activity to contribute substantially to one or more of six environmental objectives. This has raised concerns around activities that do not meet this bar being deemed to be unsustainable and therefore failing to attract financing, as well as questions around the relationship between the EU’s proposed taxonomy and that already in place under the Green Bond and Green Loan Principles. These issues are discussed in more detail in our client briefing *The EU’s Sustainable Finance legislative proposals – What you need to know*.

### **Converging standards?**

It remains to be seen how widely adopted these standards, and others set by ASEAN and even individual countries, will become and whether there will be a global convergence of standards. But regulators and other market participants are reacting quickly to offer investors a range of standards and disclosure obligations in a bid to attract the vast amounts of capital needed if the Paris Climate Agreement targets are to be met.

### **What is the Role of Governments and Multilaterals?**

There are various challenges in attracting private finance to sustainable infrastructure, including the perception that sustainable infrastructure is more

expensive than higher-carbon equivalents (therefore offering lower returns to investors), or that it is too risky, either because of the use of new, unproven technology, the rate of uptake of the technology being unpredictable, increased uncertainty associated with the changing climate and rising sea levels, or simply the long-term nature of many infrastructure assets that exposes them to changes in government policy.

Governments are incentivised to take action to facilitate sustainable infrastructure development both to ensure their own commitments under the Paris Climate Agreement are met and to ensure the required infrastructure is put in place to mitigate the effects of climate change at a national level. Governments can level the playing field and encourage private investment in many ways, including the following:

- Identifying a clear pipeline of infrastructure investment and providing a stable regulatory regime. The renewable energy market shows what a combination of government policy and private sector investment can achieve. Government incentive schemes have provided support to that pipeline of investments, which in turn has allowed for investment in design and manufacturing, which has driven down the cost of the technologies, so that offshore wind and solar can now more easily compete with fossil-fuelled power generation.
- Considering alternative concession structures to help attract investment. This could include structures which provide for payments during the construction phase of the infrastructure, similar to that used for the Thames Tideway project in London, which in turn attracted a wider range of investors for debt and equity.
- Funding or guaranteeing revenue streams for projects where the revenue would otherwise not be obvious or sufficiently certain. In some cases, governments may see a saving elsewhere in the budget by doing this. For example, funding distributed solar power schemes may mean lower demand on (and therefore reduced



need for government investment in) power grids or subsidised power.

- Emphasising the need for participants in the financial system to consider the environmental impact and resilience of their investment decisions, which may be done through regulators. The EU's sustainable finance legislative proposals are an example of regulatory intervention of this type, and apply to asset managers, insurance undertakings, pension funds and investment advisers. Recommendations from the Taskforce on Climate-related Financial Disclosures (TCFD) have a similar impact if adopted on a voluntary, or mandatory, basis.
- Putting a price on carbon, as is currently in place or planned by 70 countries or jurisdictions. Carbon taxation, in some cases alongside emissions trading systems, will generally make sustainable infrastructure look better value when compared to higher-carbon options, once the costs of aggregate emissions over the life of the asset are considered. The effectiveness of this approach depends on the rate at which such taxes are set, which can vary widely, and how such taxation is applied.
- Taking, or encouraging or funding multilaterals to take, certain risks which "crowd-in" private sector investment. This could involve taking more risk during the construction or development phase of projects, including risks of new technologies, or taking specific risks which the private sector cannot (or cannot at an efficient price) bear, such as change of law, regulatory or certain currency risks.

The final point can be particularly relevant to ensuring the development of sustainable infrastructure in developing nations, where around US\$1.2-1.5 billion is needed in annual infrastructure investment to close the development gap. In such regions, political instability coupled with a dependence on government support for subsidies, poor investment environments and currency risks are additional barriers to infrastructure investment. Yet some of these countries are those most exposed to the effects of climate change in the

short and longer term and unless infrastructure need is met with investment in low-carbon, sustainable and resilient infrastructure, there is a risk that carbon reduction achievements in more developed regions are counteracted by increasing infrastructure-related emissions in developing countries.

In such locations, multilateral funds including the Green Climate Fund and Global Environment Facility as well as national funds such as the UK's International Climate Fund can be utilised to reduce the risk profile of projects to a level that becomes competitive to private capital, to support domestic financial institutions and to foster in-country expertise in financial instruments, sustainability standards and reporting and improving the bankability of the sustainable infrastructure pipeline.

In addition, developing infrastructure which is truly sustainable from a social and economic, as well as environmental, perspective arguably reduces political risk, as the projects will be supported by the communities they serve.

The scale of the challenge is significant, but ensuring investment in sustainable infrastructure is a global necessity.



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