Invest Green… A Closer Look at Infrastructure Debt Investments

Why invest Green?

A growing number of global pension plans, endowment funds and other institutional investors have been addressing the challenge of aligning their portfolios with the principles for responsible investing.

Since 2006, more than 1,750 signatories, representing more than US$70 trillion of assets under management have become part of the United Nations Principles for Responsible Investment's (UNPRI's) efforts to encourage investors to use responsible investment to enhance returns and better manage risks[1]. Green investment fits well within these principles. Reasons to invest green are numerous but include:

— Ethical considerations

Simply put, we believe that it is the right thing to do. According to the World Economic Forum, the world's fast degrading environment now represents a major threat to the global economy. In 2010 world governments agreed to limit the increase in global temperature to 2 °C above pre-industrial levels, to avoid the worst impacts of climate change. To have an 80% chance of maintaining this 2 °C limit, the Independent Energy Agency estimates an additional $36 trillion investment is needed through 2050 in sustainable businesses involved in energy efficiency, clean fuels and low-carbon transportation.[2]

— Advantageous return profiles

Investing green does not necessarily mean sacrificing returns. Green infrastructure debt investments provide diversification benefits, and earn a higher yield than benchmark provincial bonds while often times being underpinned by stable contracted cash flows from a provincial entity. The attraction of renewables to investors is growing significantly, as falling costs in the sector coincide with governments looking to phase out coal fired power stations and thus backing rich contracts.

— Responding to legal or regulatory pressures

Making environmental, social and governance (ESG) factors and responsible investing an integral part of the investment decision and process as a response to or in anticipation of more stringent legal and regulatory constraints is a growing trend across the global investment industry. Increasing green investments in anticipation of increased regulation, protects investors from having to scramble to invest with less favourable terms later on when there is likely to be increased competition/demand.

[1] https://www.unpri.org

[2] http://www.worldenergyoutlook.org/media/weo2010.pdf

— **Improving stakeholder relations by making a public showing of concern for the environment**

We believe that fiduciaries, trustees and investment committees will increasingly prioritize their stakeholder needs as it relates to the environment. Getting ahead of the trend and being able to show how one's investment dollars are helping combat climate change and other environmental concerns is an important step.

Intuitively, it might be more obvious what a "Green" investment looks like in the context of an equity portfolio, but what about the fixed income component? As responsible investment awareness increases, it will be increasingly important that institutional investors and their consultants consider the best approach to increasing allocations to "green" investments.

How to invest Green?

It should be acknowledged upfront that there is no single, agreed-upon definition for "green" investments. However, they can generally be viewed as those investments in companies or projects that exist to, or develop/utilize technologies specifically to conserve natural resources or reduce the carbon footprint of the businesses that they operate in.

In the fixed income world, there are in fact certified "Green bonds". These bonds are independently certified or rated for their "greenness". In Canada, this market remains small relative to the fixed income universe and the "Green Bond" market is largely still in its infancy. To-date there are 14 outstanding Canadian-denominated, certified "green" bonds.

CURRENT CAD OUSTANDING GREEN BONDS		
ISSUER NAME	MATURITY	AMOUNT ISSUED (CDN $)
Province of Ontario	9-Oct-18	500,000,000
European Investment Bank	5-Nov-20	500,000,000
International Bank for Reconstruction & Development	9-Aug-21	10,000,000
European Investment Bank	16-Sep-21	500,000,000
Province of Quebec	3-Mar-22	500,000,000
Export Development Canada	1-Sep-22	500,000,000
International Bank for Reconstruction & Development	17-Jan-23	1,000,000,000
European Investment Bank	18-Jan-23	700,000,000
Province of Ontario	27-Jan-23	1,550,000,000
Province of Quebec	1-Mar-23	500,000,000
Province of Ontario	2-May-25	1,000,000,000
500 Georgia Office Partnership	22-Jul-25	225,000,000
THP Partnership	31-Oct-45	231,523,000
City of Ottawa	10-Nov-47	102,000,000

As shown above, these issues have predominantly been sovereign/sub-sovereign government securities where the use of proceeds have been committed to "green" purposes including the Government funding of "green" projects. While we support the continued development of a domestic Green bond market, the size and global distribution of these issues can make it difficult for domestic bond investors to truly grow their "green" fixed income portfolios.

As the proceeds from these Green bonds are typically invested in "green" projects to fund the public share of costs, it is interesting to consider that investors can also invest directly in the infrastructure debt of these projects. Understandably, the environmental benefits differ by project type, and similarly, the ESG risk factors differ and require specialized consideration. For reference, certain environmental considerations by project type are included below.

SOCIAL

- Hospitals
- Schools
- Courthouses
- Detention centers
- Defense

Social projects are constructed such that they are energy efficient or otherwise environmentally friendly, with majority of Canadian modern government accomodation projects designed to a minimum LEED Silver certification.

Leadership in Energy and Environmental Design® (LEED) is a rating system that is recognized as the international mark of excellence for green buildings in over 160 countries. LEED focuses on encouraging a more sustainable approach to the way buildings are designed, constructed and operated.[3]

Each LEED rating system consists of prerequisites (required elements, or green building strategies that must be included in any LEED certified project) and credits (optional elements, or strategies that projects can elect to purse to gain points toward LEED certification). There are four possible levels of LEED certification (certified, silver, gold and platinum); making it a flexible system to accommodate a wide range of green building strategies that best fit the constraints and goals of a particular project.

Green buildings create a healthier indoor environment for occupants through better indoor air quality, less harmful products, and more natural daylight. They also reduce waste, conserve energy, and decrease water consumption.

POWER GENERATION

- Wind
- Solar
- Hydro
- Natural gas

Globally, power generation and heat production remain the largest source of greenhouse gas emission. For some time, pressures have increased to phase coal and other fossil fuels out of Canada's energy supply. In turn, this has created numerous opportunities to invest in renewable power projects. The criticism of fossil fuels primarily comes from the harmful greenhouse gases that are released into the atmosphere during combustion. Increased concentrations of these gases in the atmosphere are widely accepted as the primary contributor to climate change.

Renewable energy power projects are designed to reduce the carbon footprint of Canada's energy production. Other than the manufacture, installation and maintenance of the technology itself, renewable energy projects produce no greenhouse gases. It is estimated that for every KWh of green power produced, approximately one less pound of greenhouse gas carbon dioxide is released into the atmosphere.[4] Furthermore, renewable energy helps to conserve water. The operation of wind turbines and solar panels only require water for periodic cleaning, whereas each KWh of generation via coal requires withdrawal of 25 gallons of water.[5]

[3] Canadian Green Building Council https://www.cagbc.org/

[4] https://www.parliament.uk/documents/post/postpn_383-carbon-footprint-electricity-generation.pdf

[5] http://energy.sandia.gov/climate-earth-systems/energy-water-nexus/

TRANSPORTATION

- Roads
- Bridges
- Transit
- Airports
- Ports
- Rail

Transportation projects can include public transportation or new road projects.

The transportation sector is currently responsible for almost a quarter of Canada's greenhouse gas emissions and offers tremendous opportunities for significant emissions reduction.[6] Public transportation and transit projects help to increase transit ridership and reduce traffic congestion. This reduces the adverse impacts of private automobile use, such as air pollution and carbon emissions, and contributes significantly to better health and a more sustainable environment.

Good public transportation infrastructure also allows for high-density urban development, which lessens the economic and environmental costs of suburban sprawl, and promotes more cohesive and sustainable communities.

Construction of new roads and highways intended to reduce traffic congestion benefit drivers, emergency services and businesses that transport goods, all of which translates into greater economic competitiveness and efficiency. In addition, often times as part of the project scope, green space and trails are incorporated into the design of new roads or highways, adding further societal benefits.

It should be noted, that for a transportation project to be considered "green" one must consider its environmental risks and mitigation strategies. Typically, before a project is approved by government, an environmental assessment report is created to assess environmental effects, outline mitigation measures and to enable governmental review and public consultation.

Some of the environmental risks include habitat fragmentation, species-at-risk issues, water pollution as it relates to urban runoff, protection of related fisheries, existing contamination issues, and soil remediation needs.

In the case of a P3 approach, the project agreement typically specifies the environmental monitoring that must be completed during construction and throughout the operations term. Projects frequently retain an environmental consultant to report on and to ensure that environmental conditions are being met.

UTILITIES

- Transmission
- Distribution
- Essential communications systems
- Wastewater

For utility projects, the "green" benefits are often more difficult to ascertain. Certain utilities may develop/utilize technologies specifically designed to conserve natural resources or reduce the carbon footprint of the businesses that they operate in.

Such a utility project might include investments in wastewater treatment plants or in the management of biosolids. It may also include projects where the technology is such that it has been recognized for its leadership role in decreasing the harmful environmental impacts or by-products in what would otherwise be traditionally considered "non-green" sectors.

Wastewater treatment plants are designed to remove solids, chemicals and other undesirable materials in a reliable, cost-effective and environmentally friendly manner, producing clean water that translates into less pollution in our lakes, waterways, the water table and drinking water sources. Wastewater treatment processes operate under strict regulations and meet or exceed standards set by the province and federal government to protect public health and the environment.

Biosolids are the nutrient-rich, organic materials resulting from the treatment of sewage in a wastewater treatment facility (i.e. treated sewage sludge). They are a beneficial resource, containing essential plant nutrients, organic matter and are recycled as a fertilizer and soil amendment which contributes to less dumping and filling of our landfill sites.

[6] https://www.canada.ca/en/environment-climate-change/services/climate-change/publications/2016-greenhouse-gas-emissions-case.html

Outside of increasing your Green impact, what else can infrastructure debt provide?

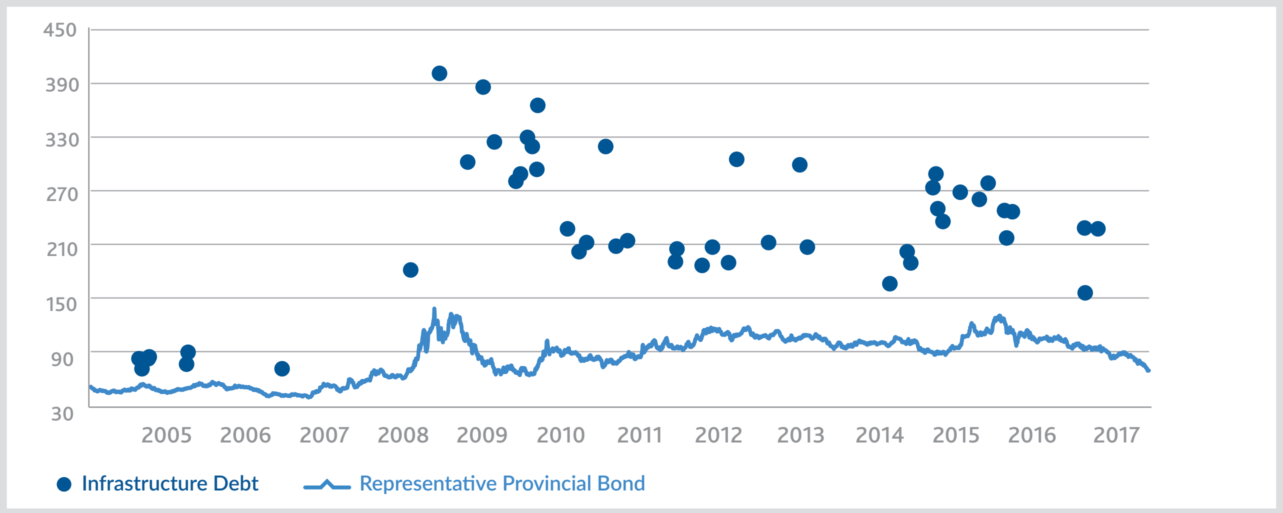
A common myth associated with responsible investing is that one needs to sacrifice risk-adjusted returns in exchange for ethical behaviour.

Some market participants might point to less liquid Green Bonds pricing equivalent to their more liquid counterparts as proof of this point. For this argument to be viable, however, one needs to assume that Green Bonds are in fact materially less-liquid enough to adversely influence price. They are generally sizeable issues with a robust buyers list from both domestic and foreign investors. One might also argue that there is a scarcity premium attached to these bonds given the limited supply potential of the sector. Add to that, the growing global appetite for Green Bonds issued by developed countries, they may indeed be a profitable investment which might explain why Ontario and Quebec Green Bonds trade on a technically rich basis relative to their non-Green counterparts.

Having said that, wouldn't it be nice to invest green while still enjoying materially better risk-adjusted returns? We believe that this can be achieved through Infrastructure Debt.

Infrastructure investments offer higher yields than provincial benchmark bonds, but in most cases are direct or indirect obligations of the Province (i.e. underlying project cash flows are derived from long-term contracts with a provincial or Crown Corporation). Due to the essential nature of the infrastructure projects, the projects themselves frequently have a special relationship with the Government.

The Spread Advantage is illustrated below:



Source: Fiera Capital and FTSE TMX

Infrastructure debt investments are characterized by:

- essential services resilient to economic cycles
- stable revenues derived from long-term offtake/concession contracts providing predictable cashflows
- natural monopolistic environment with low substitution risk
- high barriers to entry - capital intensive with a high degree of regulation
- less sensitivity than comparable corporate securities to event risk, re-financing risk, macroeconomic factors, and poor corporate management behaviors

• different drivers of risk than equities and corporate bonds, providing important portfolio diversification
• higher yields plus an "illiquidity" premium
• lower historical default rate and a higher recovery rate than corporate bonds

As investors and their consultants evaluate the best approach of aligning their portfolios with their responsible investment principles, we believe that infrastructure debt is a natural fit. Combining yield-enhancement with the numerous diversification benefits of the asset class and the natural "green" characteristics of modern infrastructure, the decision should be a simple one - Go green with infrastructure debt!

Fiera Capital's Infrastructure Bond Team