Executive summary

Despite growing investment in renewable energy and energy efficiency, efforts to significantly scale up private investment in green infrastructure, including low-carbon and climate-resilient (LCR) infrastructure, continue to face challenges. Pricing signals often favour investment in unabated fossil-fuel intensive activities over LCR alternatives since the social costs of emissions are not adequately reflected and even commercially viable LCR projects can be associated with higher risks and transaction costs. As governments work to meet their pre- and post-2020 emission reduction pledges, they will need to make efficient use of public funding to mobilise much larger amounts of private investment in LCR infrastructure.

To overcome investment barriers and leverage the impact of available public resources, over a dozen national and sub-national governments have created public green investment banks (GIBs) and GIB-like entities in recent years. A GIB is a publicly capitalised entity established specifically to facilitate private investment into domestic LCR infrastructure and other green sectors such as water and waste management. These dedicated green investment entities have been established at national level (Australia, Japan, Malaysia, Switzerland, United Kingdom), state level (California, Connecticut, Hawaii, New Jersey, New York and Rhode Island in the United States), county level (Montgomery County, Maryland, United States) and city level (Masdar, United Arab Emirates).

While GIBs differ in name, scope and approach, they generally share the following core characteristics: a mandate focusing mainly on mobilising private LCR investment using interventions to mitigate risks and enable transactions; innovative transaction structures and market expertise; independent authority and a degree of latitude to design and implement interventions; and a focus on cost-effectiveness and performance. "GIB-like entities" refers to organisations that have a mandate to leverage private finance for domestic LCR infrastructure investment but which may not possess all of the core characteristics of GIBs and may pursue other activities or use other approaches.

Based on their unique national and local contexts, governments tailor their GIBs. GIBs and GIB-like entities have diverse rationales and goals, including meeting ambitious emissions targets, mobilising private capital, lowering the cost of capital, lowering energy costs, developing green technology markets, supporting local community development and creating jobs. These goals are reflected in the range of metrics GIBs use to measure and track their performance and demonstrate accountability: emissions saved, job creation, leverage ratios (i.e. private investment mobilised per unit of GIB public spending) and, in some cases, rate of return.

Governments are using GIBs to channel private investment, including from institutional investors, into low-carbon projects such as commercial and residential energy efficiency retrofits, large-scale onshore and offshore wind, rooftop solar photovoltaic systems and municipal-level, energy-efficient street lighting. Unlike grant-making public institutions, GIBs focus on financial sustainability and some are

required to be profitable. For example, the UK Green Investment Bank must invest on commercial terms and has to meet a minimum 3.5% annual nominal return on total investments, after operating costs but before tax. Through their interventions and investments, GIBs are demonstrating to private investors that commercially successful investments are possible and happening now.

Governments have capitalised GIBs using a variety of funding sources including: government appropriations and programmes (including reallocation of funds from existing programmes); revenue from carbon taxes, emissions trading schemes, renewable portfolio standards and energy efficiency resource standards; utility bill charges; and bond issuance. GIBs are typically smaller than national development banks and other public financial institutions that mobilise private investment in domestic LCR infrastructure. The size of the (currently) largest GIB is expected to be approximately USD 7 billion at final capitalisation, while Germany's KfW invested approximately USD 56 billion in 2015 in "domestic promotion", including but not limited to "special programmes to foster the use of renewable energy, to increase energy efficiency and to promote innovative technology companies". This smaller size is not preventing GIBs from mobilising significant private investment, however. Some GIBs like the UK Green Investment Bank, Australia's Clean Energy Finance Corporation and the Connecticut Green Bank are successfully targeting institutional investors – notably pension funds, insurance companies, sovereign wealth funds and mutual funds – for co-investment in funds and other transactions. These investors represent a large pool of capital and an increasingly important alternative source of financing for LCR infrastructure investment, as examined in other OECD reports.

This report also draws particular attention to the role of GIBs in attracting private investment in energy efficiency. This is relevant to the OECD's ongoing work on energy efficiency financing, including support to the G20 Energy Sustainability Working Group (ESWG). GIBs are designed to address a range of investment barriers to energy efficiency through a variety of interventions, such as creating funds; providing direct corporate loans, leasing and loan warehousing; and offering on-bill finance, where borrowers can repay an energy efficiency project through savings on their existing utility bills. Another approach is to link energy efficiency loan repayment to property tax payments through tax liens (e.g. "Property-Assessed Clean Energy" (PACE) in the United States). This approach facilitates investment by allowing energy savings to offset loan repayments, while making repayment effortless for borrowers and creating increased security for lenders. For example, the Connecticut Green Bank's C-PACE programme financed, in less than two years, nearly USD 54 million in energy upgrades for 89 buildings, accounting for about one-third of the commercial PACE market in the United States.

GIBs are a tool to mobilise private investment that can complement but not replace climate policies such as putting a price on carbon and reforming inefficient fossil-fuel subsidies. Well-designed climate policies create many of the conditions necessary to stimulate LCR investments. Within such a framework, GIBs can play a supportive role in overcoming remaining barriers and catalysing investment. In addition to GIBs, other institutional options are available to governments seeking to catalyse green investment, such as mainstreaming green investment in existing national development banks. Nevertheless, GIBs are making a case that centralising expertise in a new independent institution dedicated to mobilising green private investment can be an effective approach to unlocking larger flows of private capital.