

Leveraging private investments for renewable energy infrastructure

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This short article presents several mechanisms for reducing investor risk in green infrastructure investments, which should enable more financing from potential investors. These different schemes are certainly not the only possible ones in response to the challenges of financing renewable energy, but they represent concrete examples of leveraging private investments.

Background

Significant new investments in the development and deployment of clean-energy technologies and infrastructure are needed to promote sustainable development, limit global warming to 2°C (3.6 °F) and, consequently, reduce the risks of climate change.¹ The 2°C scenario can generate \$100 trillion in fuel savings but requires \$36 trillion (35%) more in investments until 2050, as compared to a scenario in which reducing carbon emission is not a priority.² In 2011, despite the challenging economic environment, worldwide investments in renewable power increased by 17% to a new record of \$257 billion. In the same year, 44% of new generation capacity added came from renewable sources, up from 34% in 2010.³ Even if the progress is encouraging, a financing gap of \$250 billion per annum remains.⁴ Attracting private investors is essential to close the gap and public intervention is equally vital for accelerating and leveraging private financing.⁵

Green projects have characteristics that differentiate them from more traditional greenhouse gas (GHG) emitting infrastructure projects that create additional challenges for private investors. Renewables projects necessitate front-loaded capital expense and, in many cases, long payback periods. By contrast, GHG emitting plants have lower upfront fixed costs but incur higher marginal costs over their useful lives. For this reason, the decision of whether to build a new clean-energy plant is closely linked to the cost of available capital. In addition, clean-energy projects, though generally smaller than traditional projects, generate similar administrative, transactional and due-diligence costs.

Renewables are highly dependent on a stable and predictable policy framework, particularly in developed countries, and suffer from the fact that tariffs from traditional energy sources often do not include externality costs. Furthermore, given the immaturity of green capital markets, investors may lack adequate expertise or even confidence in the green energy market. Most institutional investors do not invest in sectors that do not provide years of track record on performance data. These factors influence the “hurdle” rate used by private

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¹ Global surface temperature, linked to GHG emissions, is likely to rise a further from 1.1 to 2.9 °C (2 to 5.2 °F) in the lowest-emissions scenario and from 2.4 to 6.4 °C (4.3 to 11.5 °F) in the highest. See IPCC ‘AR4’ (2007).

² International Energy Agency, ‘Energy Technology Perspectives 2012 - how to secure a clean energy future’ (2012).

³ Frankfurt School of Finance and Management, UNEP collaborating centre for climate change & sustainable energy finance, Bloomberg New Energy Finance, ‘Global trends in renewable energy investments’ (2012).

⁴ World Economic Forum, ‘Green Investing 2011, Reducing the Cost of Financing’ (2011).

⁵ See for example UNFCCC, ‘Investment and Financial Flows to Address Climate Change’ (2007).

sponsors to assess the financial viability of a project, particularly in developing countries where investors look for higher rates of return to offset higher risks.⁶ However these risks are in many cases perceived higher than what they are in reality. Investments in renewable sources in developing markets are actually likely to benefit from a robust economic growth and a strong and increasing demand of energy. Performance data over investments are becoming available thanks to pioneer investors and are contributing to narrow the gap between reality and risk misperception.⁷

In response to these challenges, many public policies and finance mechanisms have been designed to try to improve the general policy framework for green investments. Depending on the specific political and economic circumstances, these schemes include support for equity or debt investments, new rules for the energy markets, tax incentives and the pricing of carbon in markets.⁸

Considering that, at least in the short term, many governments, utilities and banks are experiencing capital constraints, these mechanisms should enable lower cost-of-capital financing, particularly from institutional investors, and create a scale effect. The investor community has expressed interest in climate-related assets and has created several groups such as the Institutional Investors Group on Climate Change,⁹ Investors Network on Climate Risk,¹⁰ Investor Group on Climate Change,¹¹ P8 Group¹² and Long-term Investors Club¹³ to engage in a dialogue with governments and explore means to increase investments in clean energy. Lowering the cost of capital is crucial for the success of these green projects at both the equity and debt levels, but the mechanisms to achieve this are different for each level. This short article focuses on the equity side.

Equity and the “fund-of-funds” model

Raising equity in addition to the amount project sponsors are themselves bringing to the project can be very challenging, particularly in developing countries. In light of this problem, governments and financial institutions have established initiatives such as the Global Energy Efficiency and Renewable Energy Fund (GEEREF) and the Climate Public Private Partnership Fund (CP3).

GEEREF¹⁴ is a public-private partnership fund-of-funds providing risk capital for energy efficiency and renewable-energy project developers and SMEs in developing and emerging markets outside the European Union. It invests in private-equity funds that focus on equity financing for projects requiring up to €10 million of equity. GEEREF aims to leverage private investments in renewable-energy assets, while accelerating transfer of technology and improving access to clean and affordable energy sources for local communities.

The fund-of-funds structure consists of three levels: a top tier that pools patient capital of public and private investors in a fund-of-funds; an intermediate tier of regional sub-funds, which attracts co-investors; and a

⁶ For more details on green infrastructure characteristics see, for example: A. Baietti, A. Shlyakhtenko, R. La Rocca, and U. Patel, World Bank, ‘Green Infrastructure Finance’ (2012); or R. Della Croce, OECD, ‘Pension Funds Investment in Infrastructure: Policy Actions’, Working Papers on Finance, Insurance and Private Pensions’, No. 13, OECD Publishing (2011), <http://dx.doi.org/10.1787/5kg272f9bnmx-en>.

⁷ See also Roland Berger Strategy consultants ‘Misperception of Risk and Return in Low Income Countries’, G20, Los Cabos, Mexico (2012).

⁸ The World Economic Forum Report ‘Green Investing 2010’ analyzed approx. 40 different types of mechanisms ranking them in terms of scale, efficiency and their multiplier effect.

⁹ The Institutional Investors Group on Climate Change (IIGCC) counts over 75 members, including some of the largest pension funds and asset managers in Europe, representing around €7.5 trillion, <http://www.iigcc.org>.

¹⁰ Including 100 members worldwide, mainly from USA, managing nearly \$11 trillion in assets, coordinated by Ceres, a non-profit organization, <http://www.ceres.org>.

¹¹ Collaboration of Australian and New Zealand investors, <http://www.igcc.org.au>.

¹² 12 of the world’s largest sovereign wealth funds and pension funds representing over \$3 trillion.

¹³ Mainly public sector financing institutions, <http://www.ltic.org>.

¹⁴ <http://geeref.com>.



bottom tier of investment projects financed by equity finance and debt. In short, the fund-of-funds makes investments in other funds, rather than making investments directly in projects. This approach is seen to be more catalytic than a simpler structure since it can attract capital in the fund-of-funds itself as well as in the subordinated regional funds, and it also leverages more equity and debt at the project level. Current experience with GEEREF shows that for €1 invested by GEEREF into a fund, €47 are invested in debt and equity in final projects.

Created in 2008 for a period of 15 years, GEEREF is a Luxembourg SICAV fund¹⁵ advised by the EIB Group¹⁶ with a budget of about €112 million. The European Commission is the biggest contributor with €80 million, including €5 million in technical assistance. Other contributors are Germany (€24 million) and Norway (NOK 110 million). The fund aims to attract an additional €112 million through fundraising in 2013 and 2014.

GEEREF has a hybrid nature and multiple objectives that adhere to the triple bottom line “People, Planet, Profit”. It is both a fund seeking attractive financial returns and a development cooperation instrument, registered as Official Development Assistance (ODA). It uses ODA to support private investors which in turn provide a strong multiplier effect to ODA budget.

Its target is to create 1 gigawatt of clean-energy capacity in recipient countries, provide sustainable energy services to 3 million people and save up to 2 million tonnes of carbon dioxide emissions. Preferred technologies are wind farms as well as solar power, small hydropower, biomass and energy efficiency technology.

Private shareholders in GEEREF have priority on reflows and benefit from a preferred return. The preferred return is structured in two steps whereby private investors receive initial preferential reflow; further reflows go then to public investors until they have received their invested capital back. Additional returns are exclusively distributed to private investors until a pre-established threshold. After this point, final reflows are then distributed pari-passu among all investors. At the intermediate level, the first five deals with regional funds focusing on Sub-Saharan Africa, Latin America and Asia have attracted considerable concurrent investments from several different investors (in addition, information on a new recent sixth deal is expected soon). In these first five funds, GEEREF invested a total of around €55 million, “crowding-in” additional resources from private and public sources.¹⁷ Participation of private capital at regional fund level ranges between 25% and 50% depending on the regional fund considered and more private capital is also brought in at the project level. The result is that, as previously anticipated, for each €1 invested by GEEREF into a fund, €47 are invested into

¹⁵ SICAV is a type of open-ended investment fund in which the amount of capital varies according to the number of investors. Shares in the fund are bought and sold based on the fund's current net asset value. SICAV funds are some of the most common investment vehicles in Europe.

¹⁶ EIB Group consists of the European Investment Bank (EIB) and the European Investment Fund (EIF).

¹⁷ See below a snapshot of the GEEREF portfolio (first five deals). Please see links for more details, especially on closing size and co-investors in regional funds.

€12.5 million in the Renewable Energy Asia Fund (REAF), which focuses on projects in India, Nepal and Philippines, <http://www.eib.org/about/press/2009/2009-252-geeref-pumps-eur12-5-million-into-renewable-energy-in-asia.htm> and <http://www.berkeley-energy.com/>;

€10 million in the Evolution One Fund, investing in clean energy in Southern African Development Community (SADC) countries, <http://www.savca.co.za/news/item.aspx?id=177> and <http://inspiredevolution.co.za/>;

€10 million in the DI Frontier Market Energy and Carbon Fund, a private equity fund concentrating on renewable energy infrastructure, rural electrification and carbon credit projects in Eastern Africa, <http://www.frontier.dk/>;

€12.5 million in the CleanTech Latin America Fund II (CTLAF II), a private equity fund investing in renewable energy infrastructure and, in growth stage clean-tech companies in Latin America and the Caribbean, <http://www.experiacapital.net/news/> and <http://www.emergingenergy.com/>;

€10 million in Armstrong Asset Management, a Singapore fund management firm pitching for a South East Asia Clean Energy Fund, <http://www.armstrongam.com/>.

projects. It is important to add that all the capital available could have been exhausted for proposals coming from India and China alone, but a more balanced geographic distribution better reflects the development objectives of GEEREF.¹⁸

Besides GEEREF, there are other interesting fund-of-fund cases. For example, the Asian Development Bank (ADB), the International Finance Corporation (IFC)¹⁹, the Department for International Development (DFID)²⁰ and the P8 Group are in the design phase of the Climate Public Private Partnership Fund (CP3), a ‘fund of intermediaries’ aimed at providing early-stage equity to low-carbon infrastructure. Similarly to GEEREF, the CP3 model implies a top-level fund-investment platform investing in equity and infrastructure funds, which in turn invest in projects and early-stage companies developing innovative technologies and helping reduce climate change. The public equity provided should make up only a small share of all financing. At the project level, the development banks involved in CP3 may provide technical assistance, debt financing, loan guarantees, political and credit risk guarantees where necessary. The mechanism is meant to attract institutional investors at each of the three tiers, including small-size pension funds, which may be able to invest only in specific projects due to their asset oversight limitations.²¹

Overseas Private Investment Corporation (OPIC) is also undertaking initiatives following similar models by investing in renewable-resources investment funds.²²

Key take-aways

The vehicles described above are part of the possible solutions for leveraging financing and attracting institutional investors into green infrastructure and renewable-energy projects.

On the equity side, the fund-of-funds or ‘cornerstone’ fund scheme²³ has interesting leveraging potential by attracting capital at the top-tier, at the lower-tier and then at the project level in the form of equity or debt.²⁴ A fund-of-funds can represent an inventive scheme to improve the investment landscape in target countries and support equity risk-taking with low market distortion.²⁵ In the case of GEEREF, it has been written that its strengths do not relate to its “current financial volume”, but to “the innovative nature of the instrument”.²⁶

¹⁸ Thanks to Cyrille Arnould, Head of GEEREF team, for the information provided, reported throughout these last pages over GEEREF. Sources also include: GEEREF Workshop, European Parliament, 15 March 09 –GEEREF presentation, An Overview and Status Gunter Fischer, European Investment Bank Group (contained in the document ‘The financing of the Global Energy Efficiency and renewable energies fund (GEEREF)’, Policy Department, Budgetary Affairs, European Parliament (2009), http://www.europarl.europa.eu/committees/en/budg/studiesdownload.html?languageDocument=EN&file=25415_a and EC Communication, ‘Mobilising public and private finance towards global access to climate-friendly, affordable and secure energy services: The Global Energy Efficiency and Renewable Energy Fund’ (2006).

¹⁹International Finance Corporation, see IFC climate catalyst fund: <http://www.ifc.org/IFCExt/pressroom/IFCPressRoom.nsf/0/7C6F129C88D9CAED85257992003055EB>.

²⁰ UK’s department for international development.

²¹ For more information on CP3 see J. Brown, & M. Jacobs, ‘Leveraging private investment: the role of public sector climate finance’ (2011) <http://www.odi.org.uk/resources/docs/7082.pdf>.

²² See <http://www.opic.gov/press-releases/2011/opic-board-approves-nearly-500-million-five-renewable-resources-investment-funds>.

²³ The analysis and take-ways in this paper are meant to be a general consideration about the fund-of-fund model and not specifically about GEEREF or CP3, unless otherwise indicated.

²⁴ See for example N. Stern, ‘Section 4 – Spending public finance to leverage private investment: specific instruments for specific challenges’ (2009); or World Economic Forum, ‘Task Force on Low-Carbon Prosperity, Summary of recommendations’ (2009); or S. Gray, N. Tatrallyay, Climate Change Capital Think Tank, ‘The Green Climate Fund and private finance: Instruments to mobilise investment in climate change mitigation projects’ (2012).

²⁵ See J. Brown and M. Jacobs about the CP3 case, supra note 21.

²⁶ A. Behrens, CEPS, ‘The Financing of the Global Energy Efficiency and Renewable Energy Fund (GEEREF)’ (2009).

Investments in the top fund benefit from hedging risks and minimizing liability at the project level. Small-size clean-energy projects enable the formation of a well-diversified portfolio²⁷ with high granularity and low environmental and social risks. Public investors can make a more efficient use of taxpayer money because of the high multiplier between public money and final total money invested in projects. Private investors benefit from the experience and the credibility of public-sector bodies, such as the EIB and the EC, Germany and Norway in the case of GEEREF. Furthermore, as fund managers are specialists in their investment areas, funds-of-funds profit from the different specialist investment strategies employed.

New funds at the intermediate level benefit from the presence of international financial institutions in the top-tier fund. These institutions normally act as “anchor investors” as in the GEEREF example: they accompany the formation of a team in a new regional fund, introduce the fund to other potential investors and provide capacity building and assistance with structuring and documentation.²⁸ Thanks to the support received, the regional funds reach their financial close faster.

The fund-of-funds structure also entails some possible disadvantages. The better known is the layering of fees at fund-of-fund level and the regional fund level. Furthermore, potential lock-up periods, during which investors cannot exit the investment, may represent an additional drawback.

As for development aspects, technical assistance, as in the case of GEEREF and CP3, remains important particularly in developing countries to engage local and international expertise to help improve project proposals and business plans. It is also worth noting that funds, which have both development and climate-mitigation goals and financial return objectives, as GEEREF does, may face complex trade-offs in their investment decisions.²⁹

Governments and international financial institutions can improve the investment climate by providing selective risk mitigation and credit enhancement measures - such as the 2020 Europe project bonds³⁰ - and by offering policy risk insurance, building on the Multilateral Insurance Guarantee Agency, and currency risks insurance.

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²⁷ See for example D. Nassiry and D. Wheeler, CGD, ‘A Green Venture Fund to Finance Clean Technology for Developing Countries’ (2011).

²⁸ IFC, ‘Public Private-equity Partnerships: Accelerating the growth of climate related Private equity investment’ (2011).

²⁹ See N. Bird, Overseas Development Institute (ODI), ‘GEEREF: a model climate fund?’ (2009).

³⁰ http://ec.europa.eu/economy_finance/financial_operations/investment/europe_2020/index_en.htm.

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