The Lab

Brasil Innovation Lab for Climate Finance

Green Receivables Fund

Instrument Analysis
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The Brasil Innovation Lab for Climate Finance identifies, develops, and supports implementation of transformative climate finance instruments that can drive funds for Brazil's national climate priorities.

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Green FIDC

DESCRIPTION —

The Green FIDC is an asset-backed security used to finance climate relevant projects. It builds on a Brazil-specific instrument, the Fundo de Investimento em Direitos Creditórios (FIDC) – used by companies in Brazil to raise capital by securitizing receivables. The proposed instrument is a new type of “Green” FIDC that combines existing FIDC regulatory frameworks, green certification criteria, and a financial model tailored to the needs of renewable energy and energy efficiency projects. In a two-stage process, the instrument would provide finance for new projects and once a project is operational, the vehicle will be refinanced in Brazilian Capital Markets. This is an efficient structure to allocate risks to investors best suited to handle them, helping transition riskier greenfield projects into bankable ongoing businesses with stable cash flows that are well suited for institutional investment.

GOAL —

To scale up and increase the availability of long-term private finance for green projects in Brazil.

SECTOR —

Renewable Energy and Energy Efficiency

PRIVATE FINANCE TARGET —

Institutional investors, family offices, high net worth individuals, endowments and seed/angel investors, renewable energy equipment providers, and project developers.

2. CONTEXT

Renewable energy and energy efficiency are very important to achieving Brazil's Nationally Determined Contributions (NDCs). By 2030, the country aims to reach a share of at least 23% non-hydro renewables in the electricity sector and 10% gains in efficiency (EPE, 2016). While significant gaps remain, there has been steady progress towards these targets. In 2016, almost 9 GW of wind and 3 GW of solar PV were in the process of development and construction, as well as an additional 3-4 GW expected to be contracted annually through auctions (Andalaft, 2016). For this pipeline to be fulfilled, access to long-term, low cost finance is critical.

Historically, the Brazilian Government, through the Brazilian National Development Bank (BNDES), played a disproportionate role in the financing of infrastructure, borrowing money from credit markets and relending it at a discount. While this has been beneficial to projects, the practice has been detrimental to both Brazilian Credit Markets and the Brazilian Treasury – costing as much as 5% of government expenditures per year between 2014-2017 (Wagner et al., 2014). At the same time, private credit has been crowded out with investors preferring to invest in safer Brazilian Treasuries.

The renewable energy sector relies heavily on BNDES much like other types of Brazilian infrastructure. For example, since 2003 BNDES has financed more than 90% of the total investment in wind power generation, according to estimates based on data from Brazilian energy agency ANEEL; being virtually the sole source of debt financing (Andalaft, 2016).

Figure 1.

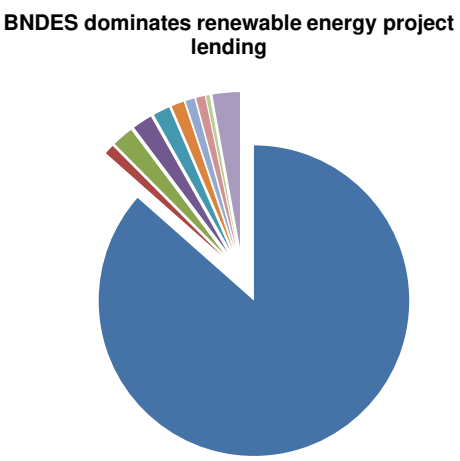
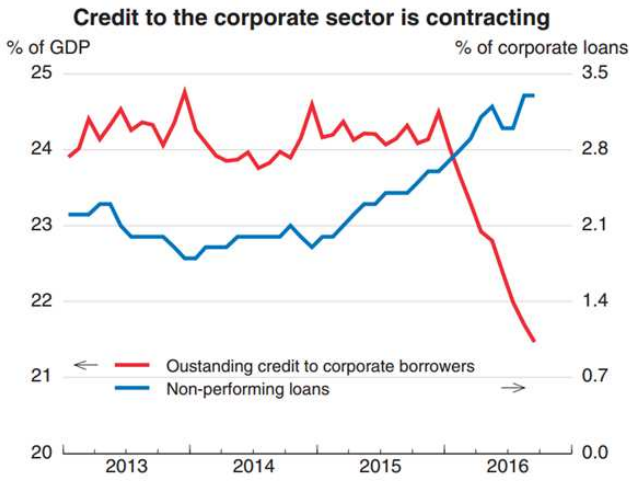


Figure 2.



Notes: New sources of low cost, long-term finance are needed in Brazil to finance green projects as BNDES steps back and corporate lending contracts. Data from Buchner et al.,(2015) and OECD, (2017).

Given the recent economic recession in Brazil and new fiscal constraints[1], BNDES is scaling back – dropping disbursements by more than 35% in 2016, to reach its lowest level since 2007 (Bonds & Loans, 2017). This leaves a large gap that could be filled with private capital. However, several barriers keep the private sector from taking a larger role. This is especially the case with long-term debt. Banks are reluctant to provide long-term debt due to their own funding costs and stringent liquidity requirements, partly explaining why commercial banks only provided around 10% of the total in the market. Equity is also scarce. In Brazil, renewable energy projects are not normally financed using project finance – with recourse to the project and not the sponsor – as in many

[1] Implied by recent austerity measures passed by Congress

other countries. This ties up equity in projects that cannot be reinvested and results in unnecessarily high costs of capital. Increasing access to long-term capital by developing appropriate risk-sharing mechanisms could greatly increase the role of the private sector, helping meet renewable energy targets and deploy green infrastructure at scale in Brazil.

CONCEPT

3. INSTRUMENT MECHANICS

The Green FIDC adapts an existing financial structure in Brazil to renewable energy and energy efficiency projects. It is a tailored framework for securitizing project receivables, helping scale investment and provide lower-cost, long-term capital to projects.

The Fundo de Investimento em Direitos Creditórios (FIDC being the Portuguese acronym) is a well-established legal framework for securitization through Asset Backed Securities, regulated by the Brazilian Securities Commission (CVM) and designed for investing in receivables. There is a sizable market for FIDC shares in Brazil, denominated in Brazilian Reais (BRL) and indexed to inflation or to the local interbank interest rates. Issuance totaled USD 9 bn in 2015 with significant room for expansion.

While the FIDC structure has not yet been used for green projects, renewable energy and energy efficiency project receivables are well-suited to raising finance through FIDCs. These projects have limited operational risks and revenues are often guaranteed by long-term offtake agreements, creating steady, long-term cashflows that hold strong potential for securitization.

The Green FIDC will bring together existing FIDC legal and regulatory frameworks, a tailored financial model for renewable energy and energy efficiency projects, and specific investment criteria that govern the investment decisions, reporting and auditing over the life of the vehicle. This is a private sector driven solution to tap capital markets and provide projects with a large pool of long-term, local capital and investors with stable long-term returns.

3.1 OVERVIEW OF OPERATION

In a two-stage process, the instrument would first provide construction and development finance for new construction (greenfield) projects through an asset-backed vehicle (the FIDC). Once the project is fully operational, it would be refinanced through the sale of new senior shares of the FIDC in Brazilian Capital Markets. The structure uses risk-appropriate public and/or concessional funds to efficiently and cost effectively mitigate development risk during early stages when private capital is most scarce. Once projects transition into bankable ongoing businesses with stable cash flows, public capital would be repaid or recycled.

The Green FIDC would operate as follows:

Pre-operational phase

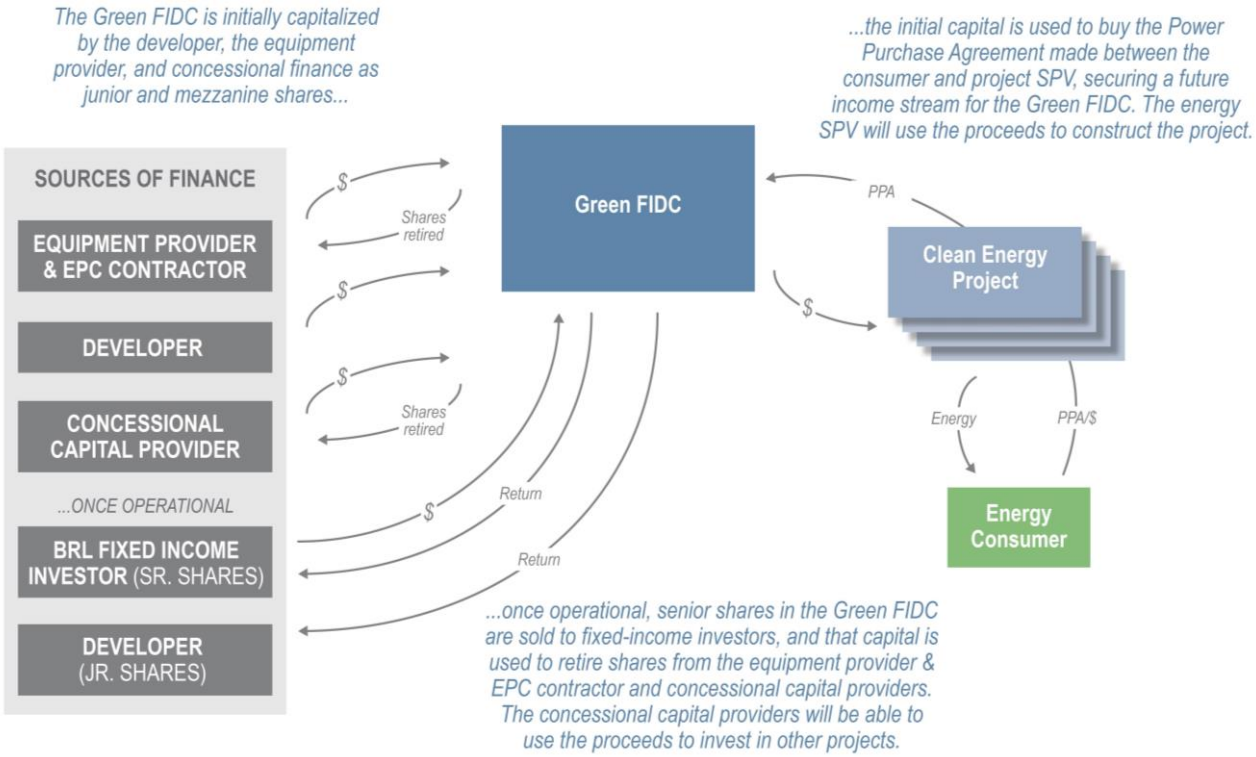
1. A new FIDC would be set up as a tax advantaged, close-ended fund, raising capital through the issuance of different classes of shares. At the pre-operational and riskier phase of the project(s), the FIDC would be capitalized by the developer; the engineering, procurement, and construction contractor; the equipment providers acting as junior shareholders; and public/and or concessional investors providing mezzanine finance where the risks involved dictate it is appropriate.
2. The FIDC would purchase the receivables (PPAs or rental contracts) – against a credit worthy energy offtaker – from a project special purpose vehicle(s) (SPV) that seeks to

develop renewable energy or energy efficiency project(s), potentially in an off-balance transaction. The project SPV would pledge its project assets as collateral to the FIDC.
3. The SPV would use the funds to develop the project and deliver energy to the offtaker.

Operational phase

4. Once the project(s) are built and operational, the FIDC would issue new senior shares to Brazilian fixed income investors. With these proceeds, the FIDC would retire junior shares from equipment providers and EPC contractors, as well as mezzanine shares from public and/or concessional investors as required. The developer would remain invested as junior/equity in the FIDC.
5. The energy off-taker would pay the FIDC directly for the energy delivered by the project. With these proceeds, the FIDC would pay principal and interest to the Brazilian fixed income (senior) investors and any residual value to the junior shareholders.

Figure 3. Simplified operating structure of a Green FIDC

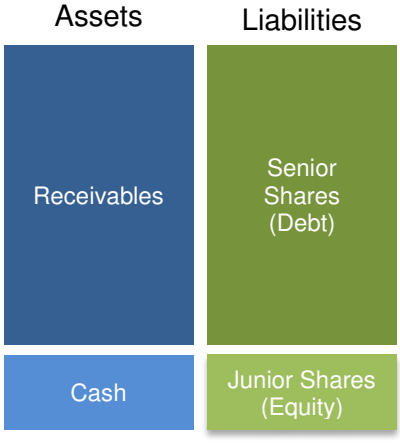


3.2 CAPITAL STRUCTURE

Once greenfield projects are operational, the Green FIDC would issue new securities and sell to senior investors in order to arrive at a risk-efficient cost of capital for projects. Senior investors like pension funds have lower costs of capital but are risk averse and not likely to invest in projects before they are operational. The FIDC would then have a balance sheet consisting of assets in long-term project receivables and cash, and liabilities consisting of senior and junior shares.

Senior shares would have an established return rate, typically indexed as a percentage of the domestic interbank rate or as a coupon above inflation. Senior shareholders would mainly be Brazilian Institutional Investors.

Figure 4. Simplified Balance Sheet of a FIDC



Junior shares would have a variable rate of return, calculated as a residual value after the senior shareholders are fully paid. The sponsors would remain as junior shareholders, sharing risks to align incentives and protect the investment of senior shareholders.

3.3 GOVERNANCE

Aligning interests, and preventing moral hazard are central in the governance mechanism of this security. The Green FIDC would employ the following entities and roles to protect shareholders:

- **Investment advisor:** Provides independent advice to the Fund Administrator on cash management, purchase of revolving receivables and issuance of new shares. The advisor is also responsible for the strategic relationship with shareholders, the monitoring of performance and the financial forecasts to be submitted to the credit rating agency (CRA) and to the Environmental/Technical Advisor (ETA). The independent advisor role helps to provide assurance that all financial shareholders' interests are equally protected.
- **Environmental/Technical Advisor (ETA):** Responsible for the independent review on the technical/engineering project during the construction period; prepares a technical/engineering report during the operational phase (quarterly); and provides an annual reassessment of the environmental impact and on the compliance with the Green FIDC criteria.
- **Administrator:** Responsible for the preparation of Balance Sheets; the calculation of daily NAV's; and the relationship with tax authorities, regulatory authorities and shareholders.
- **Custodians:** Two separate banks would be responsible for 1) the custody of the FIDC's bank accounts (cash and financial instruments), and 2) the specialized custody of the documents associated with the PPAs.
- **Bank agent:** Collects payments on behalf of the FIDC – directly to the FIDC's account in the custodian bank.
- **Auditors:** In charge of the annual verification of financial data and legal documents which are associated with the portfolio of receivables.
- **Credit rating agency:** Annual reassessment of the FIDC's financial conditions and confirmation of the FIDC's outstanding shares credit rating.

4. INNOVATION

The key innovation of this instrument is in its structure that can transition riskier greenfield projects into bankable ongoing businesses with stable cash flows.

4.1 BARRIERS ADDRESSED

The main barriers to financing green infrastructure in Brazil include the following:

- **Early stage equity financing is scarce**, especially for smaller projects which due to transaction costs, don't draw interest from common sources like private equity funds.
- **Project finance transactions are rare** in Brazil, and lenders require recourse from sponsors as well as projects. The balance sheet of the sponsor thus limits their ability to scale up when in true project finance transactions, project risks are assessed independently.
- **Investment costs are high due to local content requirements,** especially for solar PV projects, which face up to 40% higher CAPEX when using locally manufactured equipment. Projects that receive BNDES financing must meet local content rules.
- **BNDES' strategic priorities are shifting**, decreasing the pool of available capital for green projects. BNDES provided 88% of the total debt financing for renewable energy projects in Brazil in 2014 so it will leave a large gap as it steps away from the market.

- **International investors prefer offshore issuances** so they are not exposed to FX risk. However, this is very disadvantageous to projects because their liabilities will be in a foreign currency and revenues in local currency.

If these barriers could be addressed, the benefits would be significant in terms of lowering the cost and increasing the availability of financing. The Green FIDC offers a solution to many of these barriers in the following ways:

- **Transition to a private sector solution in regular capital markets:** Once the financed green company is fully operational and de-risked, it can issue shares in a consolidated fixed-income market in Brazil.
- **Incorporation of a project finance approach:** Allocating risks to investors best suited to manage them and lowering the overall cost of capital.
- **Size of the market and ability to scale:** There is a sizable market for FIDC shares in Brazil, denominated in Brazilian Reais (BRL) with significant opportunities for growth.
- **Diversification and liquidity benefits:** As a tradeable security, the Green FIDC creates market liquidity and allows investors to invest at smaller scales, promoting diversification.
- **Local currency solution:** FIDCs would be traded in Brazilian Capital Markets. This would decrease the need to hedge and the currency risks involved. FIDCs can be indexed to inflation or to the local interbank interest rates (CDI) mitigating global macro risks.
- **Less limitations in the types of projects financed:** Because it is not tied to BNDES lending, FIDC financed projects don't need to meet local content requirements. This is especially important in PV solar where equipment costs from local manufacturers are high and panel efficiency is low.
- **Builds on a proven instrument with existing and transparent regulatory structures:** FIDCs are already used, with proven governance and regulatory structures and the market is developed. This lessens the perceived risks for investors.
- **Replicability:** The knowledge created in the structuring process of a FIDC becomes public as all relevant information is available at the Offering Memorandum. Therefore, any green company or public agent will be able to replicate the same model to finance other climate-aligned greenfield projects.

4.2 COMPARABLE INSTRUMENTS

In assessing the market potential of the instrument, we looked at the benefits and drawbacks of the Green FIDC compared to existing solutions. Table 1 shows some of the most prominent alternatives, and provides an assessment of their current status and limitations.

Table 1. Comparable instruments for financing green projects in Brazil

Alternatives	Status	Limitations
BNDES project lending	BNDES is the key player financing renewables, with 88% of all projects financed through its various programs. To be eligible, projects must meet local content requirements – a large barrier for solar PV.	Changes in strategy and budgetary concerns will limit BNDES' role. The bank dropped renewable energy project lending by 35% from 2015 to 2016.
Commercial bank lending	Private banks provided $691m or 10% of total project lending in 2014. Commercial lending is expensive and concentrated amongst three large banks. Due to the recession, scaling up lending will be a challenge as banks clear bad loans, and gain their risk appetite	Bank capital requirements and other barriers prevent banks from reaching larger shares and offering lower cost loans.

Green Bonds	Green bonds are growing in Brazil and have high potential. A recently launched BRL 500m Green Bond Fund was backed by BNDES and managed by Vinci, a private manager.	The larger size of a green bond issue is a barrier for smaller projects/issuers.
Multilateral Develop-ment Banks (MDBs) lending	MDBs provide about 2% of all project lending in Brazil.	Very limited ability to scale. MDBs have limited human resources locally, hence they can't access smaller transactions. However, MDBs can play an important catalytic role using concessional financing to leverage private investment.

Green Bonds are often compared to the Green FIDC. While both instruments will offer dedicated facilities to finance green projects, there are some key differences.

Table 2. Key differences between a Green FIDC and a Green Bond

	Green FIDC	Green Bonds
Legal/Financial framework	Brazilian infrastructure asset backed security	Brazilian infrastructure debentures
Investors status	Investors acquire the economic value of the project SPV – potentially in an off-balance sheet transaction – until the end of the FIDC term	Investors are creditors of the developer and/or the project SPV
Issuer	Green FIDC	Developer and/or Project SPV
Risk Mitigation	Risk mitigated by project assets. FIDC owns the PPAs, collateralized by operational assets. Senior investors are protected by junior shareholders. Possibility of embedding credit enhancements for pre completion risks provided by state-sponsored & MDBs guarantee funds (e.g., FGIE and BNDES/World Bank)	Risk mitigated by issuer balance sheet for use-of-proceeds bonds (more common) or operational assets for project bonds (less common). Possibility of embedding credit enhancements for pre completion risks provided by state-sponsored & MDBs guarantee funds (e.g., FGIE and BNDES/World Bank) as collaterals.
Liquidity	Higher expected liquidity of a FIDC if the size is USD 30m or above	Generally liquid for issues of USD 300m and above
Structuring and operational costs of instrument	High. Requires FIDCs to be larger than USD 30m to be economically attractive.	Low
Governance structure	At the FIDC level, and at the project SPV level. Allows for ongoing monitoring of financial and ESG criteria.	At the issuer level. Minimum creditor's oversight over ESG criteria on an ongoing basis.

Expectation of interest rate discount	No	No

PILOT AND BEYOND

5. IMPLEMENTATION PATHWAY AND REPLICATION

The Green FIDC team is exploring two concrete pilot opportunities: a street lighting securitization and a solar PV project. These will be developed over the next months and will be ready for financing in late 2017 or early 2018.

5.1 PIPELINE

5.1.1 Efficient municipal street lighting in Rio de Janeiro

One pipeline opportunity currently being explored is to establish a Green FIDC that would finance the retrofitting of street lamps with more efficient light-emitting diode (LED) versions in Rio de Janeiro and other Brazilian cities, helping to bring large amounts of private capital to a sector with strong financing needs, and significant social and climate benefits.

Public street lighting accounts for more than 4% of Brazil's electricity consumption, and more than 90% of the street lighting comes from inefficient lamps, such as mercury vapor and high-pressure sodium lamps. LED lights currently account for only 0.1% of the Brazilian pubic lighting system, but have a very strong potential to increase energy savings in public spaces. The World Bank estimates that the use of LED technology for public street lighting can lead to energy savings in the range of 40% to 70%, or even up to 80% when LED lamps are combined with "smart" control systems (The World Bank, 2016). Additionally, LED lighting brings other socioeconomic benefits, such as better security, and a more dynamic local economy as well as better lighting quality. Moreover, the prices of LED lighting are falling at a rate of 10% annually.

However, replacing the existing 18 million light points in the country with LEDs would require large scale investments, estimated to be over USD 8.6 billion. With restricted municipal and national budgets, cities need to find alternative sources of financing for this transition.

As tools that securitize flows of infrastructure projects, FIDCs can be shaped to provide funding for public street lighting. In this case, a FIDC may purchase debentures issued by SPVs such as municipal PPPs or Energy Service Companies or may purchase the "public illumination fees" (COSIP by its initials in Portuguese) payable by households to energy distribution companies.

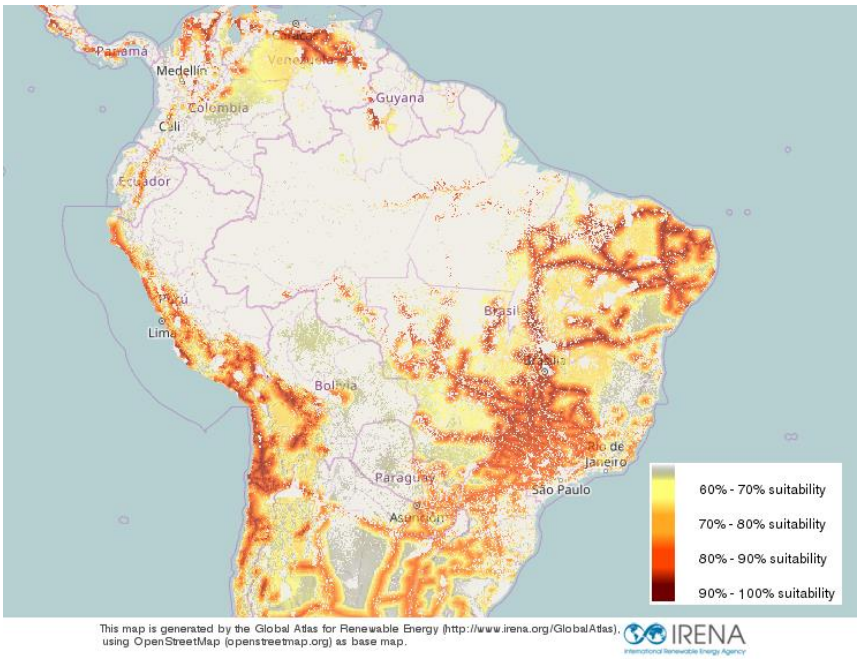
5.1.2 Solar PV – 90MW project in State of Ceará

Another pipeline opportunity being explored is a 90 MW Solar PV project in the State of Ceará. The project has a 20-year PPA with the national system operator, and is currently being developed. The size and financial characteristics are well suited for a Green FIDC.

Brazil has an enormous potential for solar PV projects that is not being tapped. Its solar irradiation is between 4,500 and 6,100 Wh/m^2 – twice as much as Germany. The country also has high electricity prices, a fast growing population, and favorable policies. Because of the BNDES local content requirements and the lack of financing alternatives, Solar PV has a miniscule share of the market compared to other sources. In February 2017, there were only 90MW installed compared

to 10,527MW for wind. However, Solar PV is expected to be the largest growing renewable energy source in Latin America and a USD 1.8 trillion market opportunity in Brazil. Green FIDCs structured to the needs of Solar PV projects could play a major role in the market.

Figure 5. Suitability score map of grid-connected solar PV projects in Brazil and neighboring countries



Notes: The score combines six dimensions – solar resource, grid distance, population density, topography, landcover and protected areas. Brazil has very strong potential for solar PV around its densely populated areas. Total potential is estimated at 819GW and USD 1.8 trillion in investment (IRENA, 2016).

5.2 DEPLOYMENT AND APPROACH TO COMMERCIAL VIABILITY

The two pipeline opportunities are currently undergoing detailed due diligence. Once this is completed, the proponent team will complete the legal and financial structure, and relevant documentation for the offerings. Concurrently, the team will seek to raise project preparation funding and anchor investment to secure pipeline opportunities. The Green FIDC would be launched as follows with the aim to launch in late 2017 or early 2018:

1. **Register FIDC with CVM** (Brazilian Securities Commission) and comply with legal and regulatory requirements.
2. **Raise mezzanine capital** from concessional/pubic investors to act as bridge financing in the pre-operational phase of the projects. This will be co-invested with capital from junior shareholders and equipment providers.
3. **Build and commission projects** and undertake necessary financial structuring to match the risk and return profile for the respective share classes.
4. **Sell senior shares in fixed income market** and repay some of the junior and mezzanine tranches. Concessional/and public investor shares may be repaid and retired at this point. Junior shareholders would maintain a stake to align incentives.
5. **Replicate model with new projects and sectors** once one or more pilot FIDCs have been launched.
6. **Adapt model and reduce its need for public finance –** the Green FIDC will reduce its need for public capital over time as commercial viability is proven.

5.3 CHALLENGES TO INSTRUMENT SUCCESS

Some of the challenges in piloting and scaling up the instrument include:

- **Developing a pipeline:** As this is a new instrument, the team will need to demonstrate to the developers and investors that the instrument is commercially viable. More time and resources will need to be spent building up a pipeline, but, once some demo FIDCs are in place, the market could be replicated and scaled. This is why raising capital for pipeline development project preparation and anchor funding is important and catalytic.
- **Legal and financial structuring:** There are specific legal and financial structuring needs for each type of asset financed. Some additional resources will be needed for initial structuring but once each model is developed, new FIDCs could be launched with relative ease. Because the offering documentation of a FIDC is public, the market as a whole will be able to benefit from the innovations developed.
- **Developing approaches to finance multi-project FIDCs are more challenging due to the coupling of risks:** Multi-project FIDCs can still be advantageous though, in reducing transaction costs and diversifying the portfolio of projects. New approaches are needed to achieve this. The FIDC team will start with single project securitizations to prove the concept and move into more complex multi-project structures as appropriate in order to scale the market.

6. IMPACT

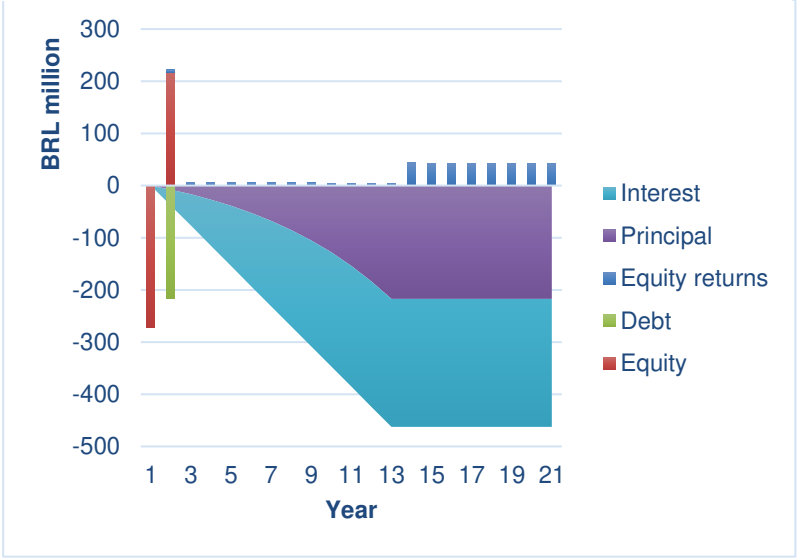
The proponents are considering an investment program where up to USD 1 bn in investment could be leveraged, and up to 1 GW of renewable energy projects deployed. If all was invested in renewable energy, this would lead to 10 million tCO_2 avoided and the creation of 12,000 jobs.

6.1 COMMERCIAL VIABILITY

To test the financial feasibility of the Green FIDC, we assessed a Brazilian solar PV project with a 20-year PPA from energy auctions that is currently being evaluated for a pilot. A financial model was built assuming a FIDC with three tranches – a junior, mezzanine and senior tranche. The assumed rates for the FIDC tranches are comparable to recent corporate bond issues in local currency (13% for the senior tranche and 9.50% for the mezzanine in real terms).

Key ratios were assessed, including the project's Internal Rate of Return (IRR) and Debt Service Coverage Ratio (DSCR) in a P90 scenario – a common measure used in project finance denoting production and revenue expected to be surpassed 90% of the time. Minimum parameters were established under which a FIDC was financially viable (1.3 minimum DSCR and 15% real equity returns in local currency) which correspond to the upper bound of DSCR needed to attain investment grade by credit rating agencies. The FIDC was commercially viable for this project within a range of sensitivities in CAPEX and PPA prices. Sensitivities in risk sharing between the junior, mezzanine and senior tranches were

Figure 6. Indicative cash flows of a solar PV project financed through a FIDC with a 12 year term



also tested as well as coupon rates for the senior and mezzanine tranche. The real IRR was above 15% under all scenarios and would compare favorably to a baseline scenario where the project was financed using BNDES long-term interest rate (TJLP for its initials in Portuguese) but with 40% higher CAPEX due to local content requirements.

The potential street lighting Green FIDC was not assessed for the purposes of this paper as this opportunity emerged later in the Lab process, but the proponents are carrying out further assessment.

6.2 THE CASE FOR PUBLIC & PHILANTROPHIC SUPPORT

Public and/or philanthropic support is needed in the initial stages of development, and to demonstrate to the market that the Green FIDC is commercially viable.

Development expenses will include pipeline development, financial and legal structuring and CVM registration. Estimates for preparation funding are in the range of USD 300,000. This funding is unlikely to be offered by private actors in light of the risks involved and more importantly, the ability to appropriate the benefits, as the Offering Memorandum and other key documents detailing the structure will become public once a Green FIDC is registered with the CVM. Other actors can then readily copy the concept, negating first-mover advantages for a potential private sector funder.

Anchor funding will also be required for initial Green FIDCs to help provide confidence to senior investors. The involvement of multilateral development banks, and donors would greatly decrease perceived risks for private investors due to their strong control mechanisms. Through their deep networks, these institutions can also help to bring in key private investors. Estimates of needs for a pilot are 15-20% of the value of the pilot in mezzanine finance. Extended discussions with developers, equipment providers, concessional sources of capital, and potential senior investors who have expressed strong interest, have indicated that **USD 15-20 million in anchor funding could have a strong catalytic effect that would help mobilize upwards of USD 100 million in climate finance in the short term and potentially billions in the long-term**. Expectations are that concessional finance would not be needed for renewable energy Green FIDCs once the market is well established, depending on overall macroeconomic conditions. Less mature technologies, such as LED lighting might need greater shares of concessional finance.

Public support would bring important climate and social benefits. Significant potential exists to scale up investments in Brazilian renewable energy and energy efficiency through Green FIDCs. For example, based on a review of auction data from the last two years, there are currently 1.4 GW of solar PV projects alone that could be viable to finance through a Green FIDC. In a scale-up scenario for the pilot envisioned by the proponents – **an investment program that would raise USD 300 million to invest in several Green FIDCs over a ten year time horizon could leverage up to USD 1 billion in investment**. If all was invested in renewable energy, **1 GW of renewable energy projects could be deployed leading to 10 million tons of CO_2 avoided and the creation of 12,000 jobs.**

Another objective will be to support replication in the market by other private actors. There is a strong potential for this and the impacts to the Brazilian economy would be significant. Besides supporting green infrastructure development, increasing private participation could substantially reduce the impact of funding on the country's fiscal account over the next ten years. A recent study from Oliver Wyman estimated that **due to the costs of subsidies of BNDES financing, each additional R$60 billion (~USD 20 billion) in private investment in infrastructure would reduce Brazilian Treasury fiscal transfers equivalent to 1.6 percent of GDP** (Wagner et. al 2014).

7. KEY TAKEAWAYS

The Green FIDC is a promising solution to increase private participation in the financing of renewable energy, and other types of green infrastructure. It creates an efficient structure to allocate risks to investors best suited to handle them. The instrument can help overcome many of the barriers that have prevented greater private participation, meeting the needs of large investors such as pension funds. The instrument meets all core Lab Criteria:

- **Innovative:** The Green FIDC is a major innovation both in terms of the types of investors it targets and in its risk transfer mechanism which is not typically used in infrastructure finance in Brazil. This framework could also be replicated/adapted in other Emerging Markets where there is a legal framework for securitization and liquid fixed income markets.
- **Catalytic:** Documentation on the design of the Green FIDC will be made public as part of its Offering Memorandum and registration with the Brazilian Securities Commission (CVM). Designing and demonstrating a Green FIDC could catalyze the market and demonstrate to other investors that this approach is feasible and profitable. USD 15-20 million in anchor funding could have a strong catalytic effect that would help mobilize upwards of USD 100 million in climate finance in the short term and in the long-term, the market in Brazil could be worth tens of billions of USD per year.
- **Actionable:** The proponents have established an experienced team to implement the pilot FIDCs and are engaged in advanced discussions with developers and investors. Two pilot opportunities are being pursued: the first is a 90 MW Solar PV project and the second is a project to retrofit thousands of urban street lamps with more efficient LEDs, and securitize the energy savings.
- **Financially sustainable:** Key technical barriers have been addressed. Our modeling assessment found that under current conditions, a FIDC would be commercially viable for a pilot solar PV project. There are over 1.4 GW of solar PV project with PPAs won through auctions that could benefit from the Green FIDC.

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