

SUMMARY OF THE PROJECT IN DESIGN * (*)

DREX: Energy for All (Green Hub)

PITCH ELIGIBILITY DATE		COUNTRY(IES)
05/16/2023		Ecuador
ALIGNED WITH COUNTRY STRATEGY?		
Yes		
PARTNER(S)		
DREx Energy		
PRELIMINARY CLASSIFICATION ENVIRONMENTAL AND SOCIAL IMPACT		
C (**)		
TOTAL BUDGET	IDB Lab	LOCAL COUNTERPART AND COFINANCING
US 1,000,000	US 500,000	US 500,000
DESCRIPTION		

The problem Climate change poses an existential threat to humanity due to its irreversible damage to the planet, including rising sea levels and extreme weather events, which will have devastating consequences for the human population.

The transition to renewable energy sources, such as solar power, can help to slow and eventually stop the progression of climate change by reducing our reliance on fossil fuels, which are the primary culprits of greenhouse gas emissions. Solar energy technology is currently the most mature and widely available among all renewable energy options, making it a cost-effective and practical solution for reducing carbon emissions and combating climate change. Furthermore, the price of solar power has dropped by over 82% since 2010 (STATISTA, 2021).

On the other hand, despite the benefits of investing in clean energy sources, we have observed that Small to Medium Businesses (SMEs) and Industries in Latin America have limited ability to do so. SMEs are hesitant to invest upfront in solar infrastructure, and instead prefer to allocate their funds towards their own production processes, as there is no real incentive for them to deploy their own solar panels. Even fewer SMEs are willing to finance their clean energy transition with debt.

A report by the Black Rock Institute indicates that to reach globally agreed climate goals, there needs to be a 50% reduction in emissions by 2030. Unfortunately, emerging markets are responsible for an increasingly large share of global emissions, accounting for 34%, or 65% including China. This means that emerging markets will require at least \$1 trillion per year to achieve net-zero emissions by 2050 (BLACKROCK, 2021). However, current investment is falling far short, and while private capital is theoretically plentiful, current strategies to attract it are not working at the necessary scale and speed. The emerging markets investment landscape is viewed as high risk, to the point that many private investors are either deterred or prohibited from investing in regions such as Latin America. Existing measures to mitigate this risk have not been effective in bringing in the private finance needed at the necessary scale because they do not address the root causes of the issue (Bodnar

et al., 2022).

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**The IDB categorizes all projects into one of six E/S impact categories. Category A projects are those with the most significant and mostly permanent E/S impacts, category B those that cause mostly local and short-term impacts, and category C those with minimal or no negative impacts. A fourth category, FI-1 (high risk) Financial Intermediary (FI)'s portfolio includes exposure to business activities with potential significant adverse environmental or social risks or impacts that are diverse, mostly irreversible or unprecedented, FI-2 (medium risk) FI's portfolio consists of business activities that have potential limited adverse environmental or social risks or impacts, FI-3 (low risk) FI's portfolio consists of financial exposure to business activities that predominantly have minimal or no adverse environmental and social impacts.

According to different authors, the biggest remaining obstacle that inhibits to allocate \$250 Trillion, of the global available capital for the clean energy transition, in emerging markets is policy uncertainty and lack of transparent data (CFA INSTITUTE, 2021), (AMELI, 2021), (DBU, 2021). Investors are aware of the economic potential and better financial returns of emerging markets, but often perceive the opportunity as asymptotically risky, remaining cautious with their portfolios in the face of these overarching challenges. Instead, they choose to allocate capital primarily in the Global North. The urgency of the climate change challenge has created a strong demand for investment in the clean energy transition.

The solution DREx has developed a technology that allows for the tokenization of energy in real-time (MWh), and for these tokens to be disbursed to solar infrastructure investors as a way to measure the economic output of their investment while at the same time regulating their interactions with energy consumers. Under DREx's business model, these energy tokens regulate the relationships amongst stakeholders without intermediation and in an autonomous way. Aligning through DREx's platform the deployment of solar projects alongside expert local solar developers on the rooftops of SMEs and Industries in Latam as energy consumers of clean energy over the duration of a PPA contract in a pay-to-own-model, in which by the end of the agreement SMEs will own their own solar energy sources.

How does the platform work? The DREx platform works by first identifying and evaluating potential solar PV projects in emerging markets. Once a project has been selected and solar panels have been installed by experts, the platform utilizes oracle feeds for tokenizing solar energy production using IoT and blockchain technology, which allows for real-time monitoring of the project's performance. Projects grouped under SPVs are managed through the platform and start accruing tokenized energy upon solar installation completion. This is done using DREx e-tokens, which are pure traceability tokens representing energy production in real-time, accruing in the capital provider's (debt-equity) wallets. SMEs pay their monthly energy bill to the fiat treasury.

The fiat treasury represents real currency depending on the jurisdiction of SMEs, i.e., for Ecuador, the dollar. The e-tokens can be redeemed against the fiat treasury, based on energy fees resulting from long-term power purchase agreements, stored at the oracles. In this sense, they act as a decentralized and trustless market maker between capital providers and energy consumers. The platform manages the distribution of payments and transactions among the different stakeholders involved in the project, using on-chain technology to ensure transparency, decentralization and traceability.

What is the target environmental impact? DREx's platform can help accelerating the clean energy transition of 87 thousand companies in emerging markets by 2050. This ambitious milestone would translate to a record of 1 gigaton of CO2 emissions avoided in the next 25 years and 1000 MWp of solar installed capacity in the first 5 years of operations, starting with a 200 kWp pilot plant. The issuance of IoT based REC certificates would also help to accelerate the financial closing of project finance with capital providers, using these funds on a separate hedge collateral account covering warranties for new clean energy projects. Achieving this stage of the project would represent a significant step towards scaling up a financial alternative based on clean energy, which would enhance the transparency and effectiveness of finance in combating climate change in emerging markets. The vision is to embed sustainable impact and traceability in the platform, addressing concerns around greenwashing and meeting the expectations of ESG investors. By establishing a more robust and reliable framework for clean energy investment, the project aims to make a tangible contribution to the global effort to reduce greenhouse gas emissions and transition towards a more sustainable energy system.

The beneficiaries

a. Small and Medium Enterprises (SMEs) would benefit from the approval and creation of DREx because it would provide them with access to affordable and clean energy sources, which would help to reduce their operating costs and reduce their dependency on diesel-based electricity, increasing their competitiveness in the market.

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b. Institutional investors would benefit from the approval and creation of DREx, as it would provide them with access to a new and potentially high-return investment opportunity in the clean energy sector.

c. Solar project developers would benefit from the approval and creation of DREx because it would provide them with access to liquidity to install more projects.

In 5 years, this project could contribute to the following results indicators from Green Hub initiative:

- 1230 SMEs getting access to low clean energy emissions in Ecuador, Colombia, Mexico and Brazil.
- \$1 Billion debt-equity allocation for clean energy projects in LatAm. Contribute with 0.5% of demanded cumulative solar investment in LatAm to achieve net zero transition by 2050. 1000 MWp of solar Installed capacity.
- 40000 GWh of energy savings over the 25-year lifetime. 24600 net new direct jobs created.

The partner DREx is a climate fintech platform focused on overcoming the risk associated with emerging economies via the use of trustless innovations. In this way, the platform becomes a technological escrow based on IoT and Blockchain technologies specific to finance renewable energy projects in emerging markets. DREx is using Web3 and blockchain-based solutions to accommodate the challenges of a real and proven business model related to the deployment of solar projects.

The IDB Lab's contribution IDB Lab contribution will be a mobilization of US\$500,000 of Contingent Recovery Investment Grant from Green Hub initiative.

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