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Great Walls: Addressing Domestic Barriers to Climate Action Projects in India

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This report is part of the Observer Research Foundation's "Financing Green Transitions" series which aims to find potential linkages between private capital, in all its forms, and climate action projects. The series will primarily examine domestic and international barriers to private capital entry for mitigation oriented climate projects, while also examining potential avenues for private capital flow entry towards adaptation and resilience projects.

INTRODUCTION

After years of ignoring the warning signs, the stark effects of climate change have become apparent across the planet, as rising global temperatures spark drought, famine and disaster. The majority of the world has finally agreed to take action against the impending threat of climate change by signing on to the Paris Accords, which aim to limit the rise of global average temperature to two degrees Celsius over the next 83 years.

One of the keys to achieving the two degree goal is the clause within the Paris Agreement detailing the provision of funds for climate action projects in the developing world. Under the agreement, the developed nations of the world have agreed to provide $100 billion in annual funding to help catalyse low carbon transitions across the third world.

It seems, however, that the developed world has generally failed to hold to this promise, with current estimates showing approximately $57 billion in collective assistance flowing for climate action projects in emerging economies.[1] Bilateral agreements account for close to 40 percent of the $57 billion, but with decidedly isolationist sentiments contributing to the global zeitgeist, the scope for an increase in bilateral

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flows is limited.[2] Multilateral organisations make up a sizeable proportion of climate flows as well, yet remain susceptible to political pressures, as their funding mandates are dictated largely by the same developed nations that have curbed bilateral flows. The situation is exacerbated by the fact that the $100 billion goal undershoots the needs of developing countries by $200 billion in the eyes of some experts.[3] There is a dire need for increased global financing in order to battle climate change.

In spite of the seemingly alarming circumstances, there are alternative avenues of funding available. Institutional investors across the world are currently on the brink of crisis, despite having upward of a $100 trillion worth of long term capital at their disposal.[4] An increase in global life expectancy along with dismal returns on current investments have led to a projected shortfall of $28 trillion amongst pension systems worldwide,[5] leaving asset managers scrambling to fulfil their obligations while adhering to risk-averse investment mandates. The situation is expected to deteriorate even further with projected future returns for institutional investors ranging anywhere from 0.15 percent-3.45 percent, which is far below the historical range of 3.6 percent-8.6 percent.[6]

At the same time, recent leaps in technology have increased profit margins for climate action projects, with solar and wind projects specifically providing annualised returns of 10.3 percent and 17.5 percent, respectively.[7] With guaranteed long term contracts and predictable operating costs, the risk profile for renewable energy projects puts them well within the parameters of institutional investors. The parallel situations have created a seemingly perfect confluence of challenges and opportunities, with developing economies needing increased funding for renewable energy projects and institutional investors looking for better returns in future projects. Despite these synergies, however, only 0.4 percent of investments from the Top 500 global asset owners went towards renewable energy projects in 2015.

As sovereign funding for climate change recedes due to geo-political pressures, it is imperative that the gap between institutional investor funds and developing nation climate projects be bridged. A key priority to mobilise institutional investment to support climate action projects in developing countries, especially in low-carbon, green infrastructure, is to improve the risk-return profile of such infrastructure investment, and to strengthen the domestic policy and regulatory environment in which these investors operate. This issue brief, first in the Observer Research Foundation's *Financing Green Transitions* series will provide a brief overview of the domestic macro disincentives that exist for private capital in the developing world, using renewable energy investments in India as a proxy.

DOMESTIC ENVIRONMENT

One of the chief barriers to private capital investment for renewable energy projects in India is the risk associated with the domestic environment, with investors citing four main challenges – regulatory risks, executions risks, operational risks and financial risks within the power sector.

Regulatory Risks

Regulatory risk is best described as the risk that investors associate with provisional ambiguity, uncertain shifts in policy, and inconsistent enforcement of policies between

the federal and state levels. In the view of both domestic and international investors, India is inundated by a variety of such risks. A point of contention for many investors are the constantly shifting policies that affect India's economic and financial framework. Financers fear that renewable-friendly regulations such as accelerated depreciation, federal tax credits, and subsidised loans are subject to political expediency. The possibility of a change in said regulations adds a degree of uncertainty to the investment process, throwing off profitability metrics which dissuades investors from following through on potential projects.

Even if investors disregard the uncertainty associated with policy shifts, they are faced with the possibility of provisional ambiguity in the form of inconsistent policies across various States. While certain policies are nationally applicable, state governments have autonomy in formulating and implementing other policies, leading to additional layers of complexity which can deter investors. An example of this can be seen in the deciding of tariffs for renewable energy producers. Certain states have a fixed feed-in-tariff which, in essence, amounts to a guarantee by the state to pay a rate based on operating costs plus an additional agreed upon profit margin percentage. Other states have implemented a bid auction system, where energy producers place bids allowing the state government to choose the most cost efficient firms. Accounting for differing procurement systems adds unnecessary red tape for investors, which is the antitheses of what good policy should aim to do. Even worse, certain states have changed their tariff systems without warning, essentially forcing investors to go through administrative processes, due diligence, and analysis twice over. It is easy to see why investors would be reluctant to commit to a renewable energy investment in India.

If investors are willing to navigate policy uncertainty on the Central level and policy inconsistency across the State level, they are still faced with the inconsistent enforcement of Central policies on a State level. As noted earlier, the Indian constitution provides States with a great deal of autonomy. Jurisdiction over resources such as land, water, etc. falls under the State government's purview, and as such, the success of a project is often contingent upon buy-in from local authorities. While local authorities cannot overtly flout federal policy, they can use other methods to significantly delay any investment such as the utilisation of bureaucratic red tape to delay clearances. Any significant delay in construction can be costly and at times untenable for investors, especially given the significant amount of debt (and the ensuing interest payments) that investors must take on to facilitate renewable energy projects.

Operational Risks

Operational risk can be defined as risk associated with a breakdown in internal procedures, people and systems. It is seen as a significant barrier to private capital flow for emerging economies and has historically been an Achilles heel for India. The blame lies largely in the weak governance and regulatory systems that have led to excessive bureaucracy and red tape within the judicial system. The often convoluted litigation processes has led to ineffective enforcement of domestic contracts, allowing Indian vendors to flaunt contractual regulations.

Indian businesses have taken advantage of weak contract enforcement over the years, and

have consequently developed an uncertain reputation amongst investors. Statistics show that India ranks 172nd in the legal enforcement of contracts, with average sales of goods disputes taking close to four years to reach resolution.[8] These time delays often times leads to investors acquiescing to demands by vendors for extra payment or contract renegotiation. As a result, investors are wary of large investments in Indian renewable energy projects, as the effects of delays or cost overruns can lead to an accumulation of debt and interest which cut into profit margins and could cause the foreclosure of a project.

Construction Risks

Construction risk can be defined as the risk associated with the construction phase of a project, and is once again considered a significant barrier in emerging economies, more so in India than most countries. Construction risks are prevalent across all aspects of a project in India, starting with land acquisition. Investors have noted that as soon as any surveying activities of potential areas are initiated, purchase prices tend to double or triple. Additionally, it is not unheard of for district organisations to instigate protests, barricades, and other nuisances in order to coerce investors into providing off the book fees or guaranteed employment for locals.[9]

The risks continue along the supply chain, with the acquisition of raw materials. Indian vendors have a reputation for providing materials that do not meet the specifications of the project or do not meet minimum quality standards. There is also the additional risk of materials being damaged upon arrival. Even if investors ignore the systematic contract enforcement problems prevalent in India, the inconsistency associated with the quality and delivery of materials can significantly impact the profitability of a project. The reputation of poor execution on the part of vendors has contributed to investor uncertainty, which has helped discourage future investment in Indian renewable energy projects.

Financial Risks in the Power Sector

Perhaps the most significant area of concern for investors is the state of the Indian power sector. The primary customer for renewable energy in most developing economies is the government, and India is no different, with procurement and distribution monopolised by public sector companies. Unfortunately, public-sector distribution companies (DISCOMS) have been operating at a loss for the better part of two decades and have had to be bailed out three times in the past thirteen years by the Indian government.

There are a number of reasons for the continued failures of Indian DISCOMs, with the largest issue being the determination of pricing for end consumers. The regulations governing the electricity rates charged to the Indian populace are overseen by state governments and are thus largely motivated by political gamesmanship. Electricity rates often favour certain politically powerful constituencies, such as the agricultural sector, who receive fully subsided electricity in many states. These regulations lead to dire consequences for the DISCOMS who end up having to pay power generators between 30-50 percent more than what is charged to end users.[10]

There are additional contributors to the poor financial health of DISCOMS, chief among them large scale distribution inefficiencies. As recently as 2012, 23 percent

of electricity generated by the Indian sector did not reach the end user, either because of power theft or grid instability.[11] Operational issues also play a factor in exacerbating the inefficiencies within the power sector, with DISCOMS often overloaded with redundancies and governed by ineffectual management.

These loss generating activities have led to most DISCOMS operating at a deficit over the years, and needing to take out sizeable loans in order to run day-to-day operations. The loans only serve to further exacerbate the issue, as interest payments are added to the list of annual expenses, leading to a debt spiral for the companies and a scenario where the government is forced to bailout the industry en masse.

The issues afflicting India's power sector invariably spill over to potential power generators, who face the risk of delayed payments or in certain cases, no payment at all for their services. Investors, sensibly enough, are wary of moving forward with renewable energy projects when there is such a sizeable payment risk in the financial environment. Even with Central government guarantees acting as a backstop against the risk of non-payment, any delays in payment can be costly for investors who have to consider debt repayment schedules and interest payments when making decisions about projects.

DOMESTIC FINANCIAL MARKETS

A second macro hindrance for investments in renewable energy projects in India centres on the lack of developed financial markets within the country. The three major hurdles affecting India's financial markets are the underdeveloped nature of Indian institutional investment bodies, the lack of viable project financing instruments and the immature debt capital markets.

Institutional Investments in India

The unfortunate reality in India is that institutional investment bodies within the country are woefully underdeveloped. Any discussion pertaining to the state of Indian institutional investors starts with the absence of financial firepower available to the bodies. Indian institutional investors currently have $583 billion worth of assets under management,[12] with only one Indian institutional investor appearing on the list of top global managers.[13] In comparison, institutional investors from the two countries ahead of India in terms of real GDP - China and the United States - have $2 trillion and $31.7 trillion worth of assets under management.[14] Irrespective of all other factors affecting renewable energy investments in India, there is simply not enough money available within the Indian financial markets to jump start a nascent industry.

Putting the availability of funds aside, there are still a number of issues affecting institutional investors in India. Institutional investors, by nature, do not get involved with in depth analysis of investment projects, relying rather, on financial intermediaries to provide the needed expertise. The Indian financial market, regrettably, is also underdeveloped in this area, especially with regards to renewable energy project capabilities. As a result of the dearth of reliable advisors, Indian institutions unvaryingly turn to what they view as less risky investment opportunities.

Once a renewable energy project is up and running, it provides steady, guaranteed revenue and predictable operating costs. Contract lengths vary, but the standard length of Indian power purchase agreements are 15-20 years which allows for a high degree of projectability for institutional investors. In essence, an investor can project with a high degree of certainty that they will receive an annualised return of 10 percent-17 percent for the next 15 years from a renewable energy project, which is appealing when contrasted with a 2.5 percent return on a 15-Year U.S. Treasury Bond or a 20 percent return from shares of a technology firm that might be bankrupt in 5 years.

The institutional investor aversion to risk is well known, and can be managed by developing financial instruments that mitigate many of these risks. Financial instruments can also provide liquidity which is important to Indian institutional investors due to the particularities of the domestic savings and investment sector. However, the Indian financial sector is distinctly lacking in any such financial instruments at the moment - the exception being Green Bonds and Masala Bonds, both of which have only recently been introduced to the marketplace.

Indian Project Finance Instruments

The propensity of institutional investors to shy away from anything they regard as precarious is well known and the risks associated with both India and the renewable energy sector are not unique. Other countries and industries have been able to overcome the risk averse nature of investors by using project finance instruments to provide the liquidity and stability desired by institutional investors across the world. Unfortunately, project finance instruments have yet to emerge as a viable solution for renewable energy projects in India.

Box 1: The Appeal of Renewable Energy Projects

To best explain how project finance instruments can be used to tap into institutional investor funds, it is important to first illustrate why renewable energy projects are attractive investments. As has been mentioned, institutional investors have a low tolerance for exposure in their ventures, and one of the key ingredients that makes renewable energy projects attractive, in theory, is their low risk profile.

As is the case with most infrastructure and energy related projects, the majority of the risk associated with renewable energy projects comes during the pre-construction and construction stage (known the Greenfield stage). Once the project has become fully function (the Brownfield stage), it becomes an attractive investment, well suited to the risk appetite of institutional investors as illustrated in Box 1. The challenge lies in bridging the Brownfield and Greenfield gap, and this is where project finance instruments come in.

A possible way to bridge this gap is through the use of specialised infrastructure investment funds. Infrastructure investment funds are mutual fund like institutions that raise money by offering shares to investors. The fund then uses the cash raised from investors to invest in a multitude of infrastructure projects across various sectors.

Due to the fact that the fund is investing in multiple projects, the risk factor is greatly reduced. Infrastructure investment funds also allow investors to bypass the headache of actually building a solar plant or wind farm while offering them the desired liquidity that they want, as shares in the funds can be easily traded in financial markets.

Regrettably, the Indian financial market has failed to foster such solutions, with infrastructure funds making up less than half a percent of domestic investment mix in 2015.[15] Additionally, due to government policies, the vast majority of money dispensed by Indian infrastructure funds tends to go towards road and port projects. There also seems to be a distinct lack of capacity building with regards to renewable energy within the infrastructure funds, which is further exacerbated by the lack of domestic advisory expertise in the sector. Alternative methods to bridge the Greenfield-Brownfield gap such as specialised private equity firms, green investment banks, and Yield Co's have also been largely ignored by the Indian financial sector.

Indian Debt Capital Markets

In order to fully illustrate the challenges faced by institutional investors within the Indian financial framework, it is important to first understand how traditional renewable energy projects are financed. While this issue brief has elucidated many of the barriers facing institutional investment in India, it should be noted that the capital contributed by investors usually only accounts for 20-30 percent of the costs associated with starting a renewable energy project. Investors rely on loans to cover the remaining 70-80 percent of start-up costs. Unfortunately, accessing debt for renewable energy projects in India is also problematic.

Any discussion pertaining to the issues prevalent within the Indian debt market starts with the tenure of the loans offered by banks. The financial behavioural pattern of the Indian populace is uncommonly risk averse, with only 16 percent of India's savings deposited in financial instruments with a maturity greater than five years. This raises difficulties for the banking sector with regards to long term lending – a bank cannot issue a loan for 15 years if the money it is lending must go back to a customer in five years. This has led to banks restricting the amount of long term loans they can issue, which is problematic for investments with long lifespans. Investors looking for Indian debt financing have to resort to multiple short term loans through the life of the project which raises costs significantly and leaves the venture more liable to come under financial duress.

An additional impediment to securing debt financing comes from the sector exposure limits adhered to by banks. As was seen during the financial crises of 2007-2008, if a bank lends too heavily to a particular industry or sector, it can leave itself open to insolvency. To mitigate this risk, banks restrict the proportion of total capital that can be lent out to a particular sector. Renewable energy projects fall under either the energy or infrastructure classification, which leaves them vulnerable to being crowded out as a result of government policies that incentivise lending to DISCOMS and large road and port projects respectively.[16]

A common strategy used in global financial markets to bypass some of the restrictions within the banking sector is the use of debt instruments. Bonds issuances for specific projects or sectors allow banks to circumvent

Box 2: Real World Example

An anecdotal example volunteered by a discussant during the Observer Research Foundation's Private Capital for Climate Action roundtable held at Raisina 2017 encapsulates the problems with accessing debt for renewable energy projects perfectly. The discussant's firm was attempting to refinance a particular renewable energy project and approached a number of banks to gauge their interest. The range of interest rates for the loans were far higher than the firm expected and also unexpectedly disparate, varying in range by more than ten percent. In the end, the firm decided to not refinance the project. If the firm had been looking for start-up debt financing, the state of India's debt capital market would have acted as a deterrent for them.

sectoral lending caps and raise long term capital. India, however, currently lacks a strong bond market.[17] Green bonds have recently been introduced to the market, but again their success relies heavily on "common man" demand, which has yet to emerge in India's financial marketplace.[18]

Even if the risk management policies of banks are ignored, Indian debt markets still face the same issue that domestic institutional investors have to deal with – they don't have the expertise needed to evaluate the credit-worthiness of renewable energy projects. The unfamiliarity of banks with the sector invariably leads to them apportioning renewable energy projects with high risk ratings, making loans far more expensive for investors. Solutions to dealing with unfamiliarity within a sector or high perceptions of risk amongst investors exist within the global financial sector – collateralized debt obligations or asset backed securities, for example. The use of such instruments is limited in India, however, and the risk-appetite of the Indian populace makes it unlikely that they will be introduced to the financial markets in the foreseeable future.

THE WAY FORWARD

While the domestic issues that have been illustrated in this issue brief are in the context of the renewable energy sector in India, many of the situations can be applied across other parts of the emerging and developing world. The payment risk associated with the state owned distribution companies in South Africa[19] has dissuaded any further investment in renewable energy while Nigeria is struggling to attract institutional investments due to the lack of long tenured debt available within domestic banks.[20] In order to reach the goals set forth in the Paris Accords, the domestic disincentives for private capital investments across the developing world must be addressed.

The Observer Research Foundation over the next twelve months will release a set of reports as part of their *Financing Green Transition* series looking at potential methods to increase the flow of private capital investments for climate action projects in developing countries. The reports will include an examination of potential government policy measures to address regulatory, operational, and execution risks in

emerging economies; a case study detailing the lessons that can be learned from the profitable power sector in Gujarat; a detailed look at the tools that can be used to bring maturity to the Indian Financial Markets; and best practices for the applicability of project financing tools such as ToT's, Green Banks and Investment Funds to the Indian market. ORF

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