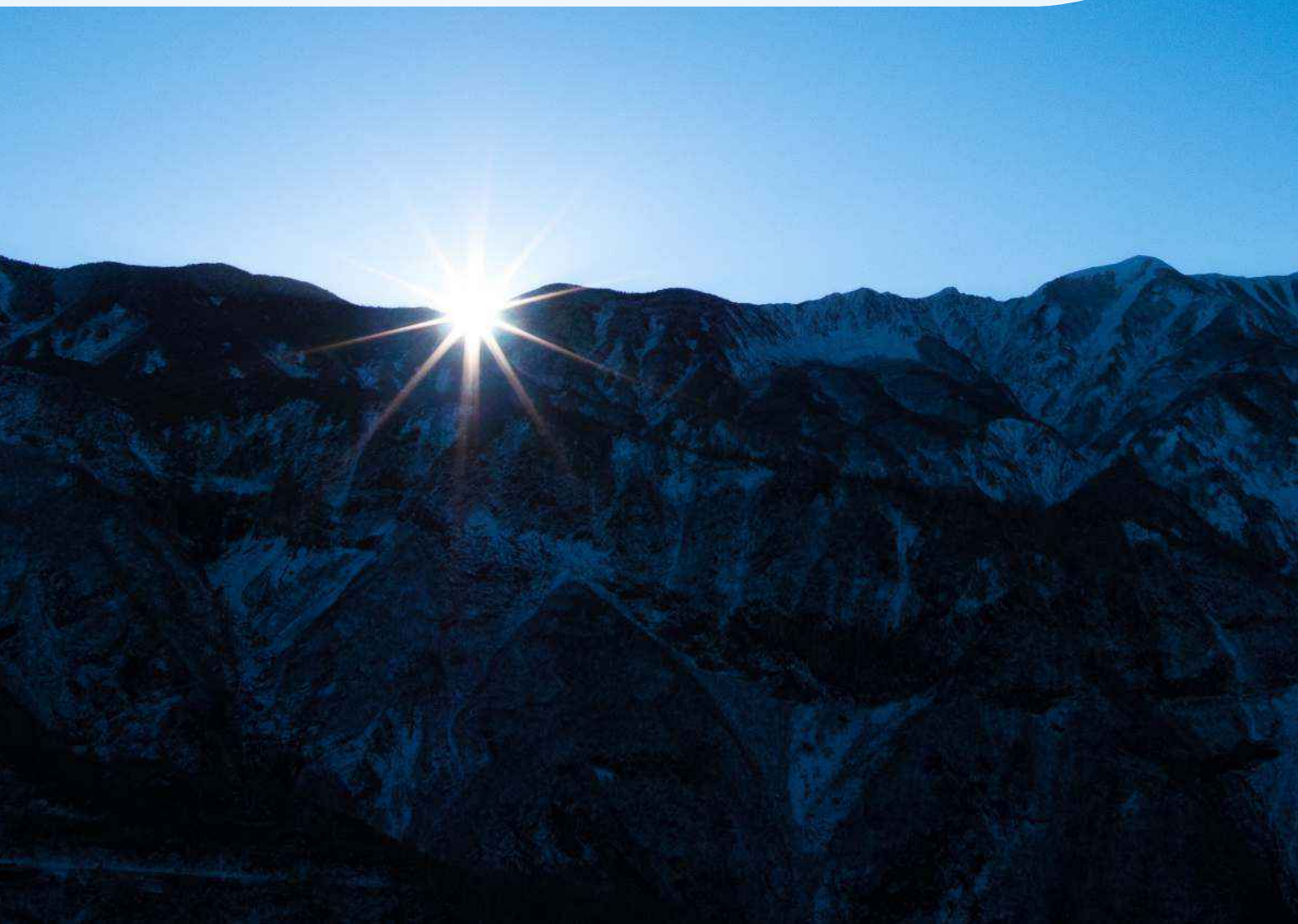




India Innovation Lab
for Green Finance

Solar Investment Trusts

Instrument Analysis
October 2017



The India Innovation Lab for Green Finance is a public-private initiative in India that brings together experts from government, financial institutions, renewable energy, and infrastructure development to identify, develop, and accelerate innovative investment vehicles for green growth in India.

AUTHORS AND ACKNOWLEDGEMENTS

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Solar Investment Trust (SEIT)

DESCRIPTION —

A Solar Investment Trust (SEIT) is a dividend yielding instrument that can lower the cost of capital for industrial and commercial rooftop solar developers, while helping them monetize their existing assets.

GOAL —

To raise new capital at a cheaper cost while providing additional avenues to monetize existing assets in the rooftop solar sector in India

SECTOR —

Rooftop solar

PRIVATE FINANCE TARGET —

Corporations, institutional investors, high net-worth individuals, small and medium enterprises (SMEs), family offices

1. CONTEXT

A capital investment of approximately USD 40-50 billion is required to meet India's target of 40 GW of rooftop solar capacity by 2022 (Business Standard, 2016). As of March 31, 2017, India's rooftop solar capacity stood at just 1.4 GW. In order to achieve its rooftop solar target, India must increase its pace of deployment, but access to finance stands as a key barrier (Economic Times, 2017).

Most individual projects don't have the required scale to raise debt, and are financed solely through equity. Not only is equity generally more expensive, there are also limited avenues of raising equity of the required magnitude. Additionally, absence of financing vehicles that meet the needs of long-term institutional investors further restricts investor participation.

A Solar Investment Trust (SEIT) focused on rooftop solar can:

- a) Enhance the flow of capital and partly bridge the investment gap.
- b) Help developers raise equity at a lower cost of financing.
- c) Be a reliable exit option for a developer, while simultaneously fetching premium valuations.
- d) Recycle existing capital, which means developers can build more projects with the same amount of capital.
- e) Increase the level of debt in the rooftop solar space, since SEITs will help in aggregation of assets and eventually issue bonds for refinancing.

2. INSTRUMENT MECHANICS

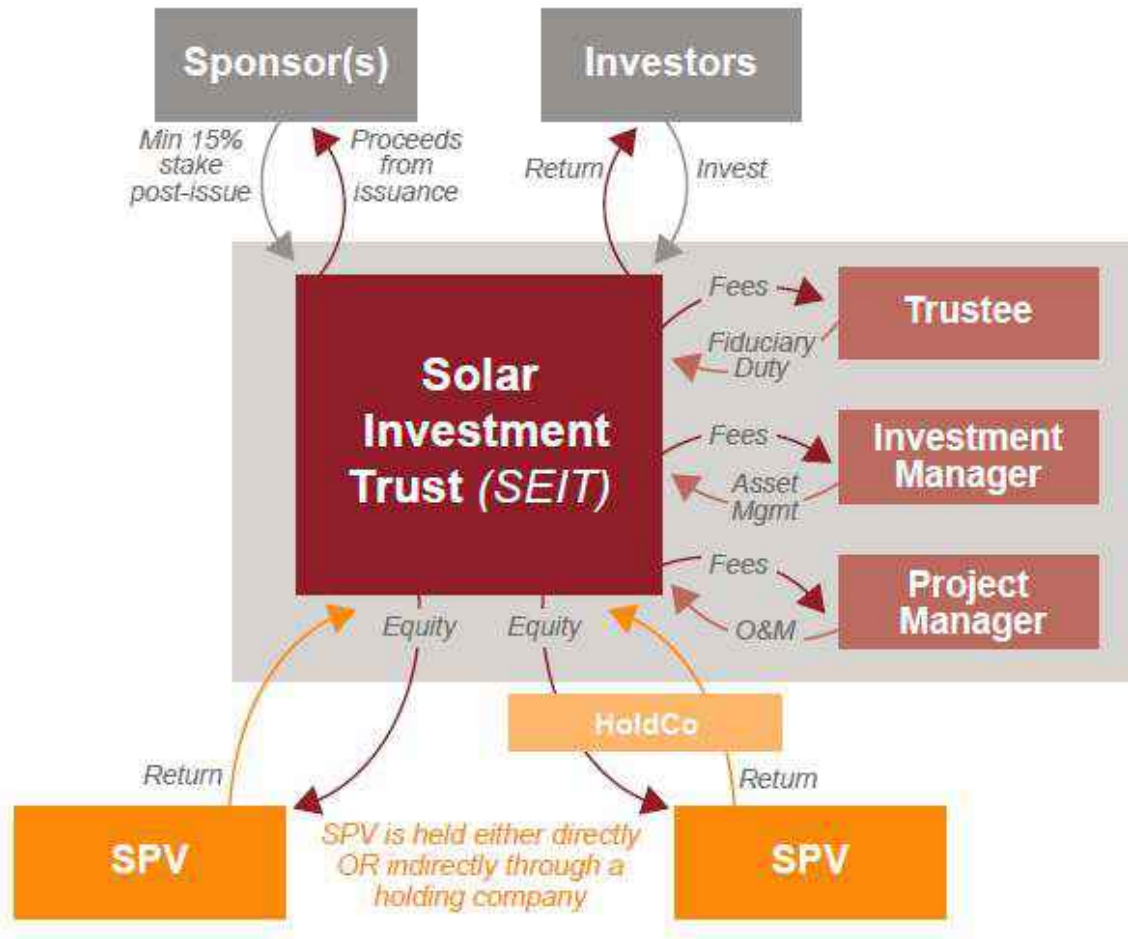
A Solar Investment Trust is an instrument similar to a mutual fund, which can help small-scale rooftop solar developers in India raise capital at a lower cost of financing.

A Solar Investment Trust is an instrument similar to a mutual fund, which can help small-scale industrial and commercial rooftop solar developers in India raise equity capital at a lower cost of financing. The major difference from mutual funds is that an SEIT will have a direct holding of the project special purpose vehicles (SPVs), while mutual funds usually hold the shares of the company at corporate level and not at the project SPV level.

An SEIT would be set up as an Infrastructure Investment Trust (InvIT), which is a dividend yielding vehicle in India that is focused on the infrastructure sector. Legally speaking, it is to be set up as a trust, and must abide by the guidelines laid out by Securities and Exchange Board of India (SEBI).

Similar to an Initial Public Offering (IPO) for corporations, the listing of an InvIT will be used to raise equity. Part of the proceeds may be used to pay off debt in order to meet SEBI's guidelines on leverage limits.

Figure 1: SEIT Instrument Mechanics



Cleanmax Solar, who is the proponent of this idea, would act as the sponsor of the instrument. It would float the SEIT and appoint the trustee, investment manager and the project manager. The SPV(s) held by Cleanmax would contain a number of projects that include both debt and equity.

After the formation of the trust, Cleanmax would swap shares of SPVs with units of the SEIT. During the listing process, Cleanmax will continue to hold a certain proportion of units, while the rest will be sold off to investors via public or private placement.

Technically an SEIT could include SPVs of utility-scale solar projects as well. It can even include SPVs from both utility-scale and rooftop solar projects. However, in our analysis, we have primarily focused on rooftop solar, while continuing to explore and being on the lookout for opportunities beyond this particular subset.

2.1 FINANCIAL SUSTAINABILITY: INVESTORS TARGETED AND STRATEGY TO PHASE OUT PUBLIC FINANCE

An SEIT is a listed and trading instrument, and targets the participation of institutional investors, high net-worth individuals (HNIs), and corporate entities. It may not be suitable for smaller investors such as retail investors.

Since an SEIT is a listed, tradable and a self-sustaining financial instrument, it does not require public finance support or continual government interventions to make it work. However, grant support or financial interventions through public capital that can crowd-in commercial capital are highly welcome. They can be in the form of:

- Fully or partially subsidizing transaction costs related to listing process, which can be typically in the range of 2-3% of the issue size. This is because developers in the rooftop solar sector have limited financial strength.
- Providing credit guarantees to enhance the credit rating of the debt held by an InvIT. We talk more on the need for a credit rating of at least AA in the subsequent sections.
- Intervention as soon as the dividend yield falls below a pre-specified level to ensure a minimum level of dividend yield for unitholders.

Once the rooftop solar industry matures and acquires scale, the need and role of public capital to catalyze commercial capital will be diminished.

Based on previous InvIT listings, an SEIT is likely to attract capital from sovereign wealth funds, infrastructure/energy focused funds, foreign pension funds, domestic mutual funds and HNIs. The level of participation may vary depending on the issue size and the type of placement.

3. INNOVATION

By addressing the investment barriers associated with small-scale unlisted rooftop solar projects, SEITs can increase the supply of capital and lower the cost of capital for developers, thereby contributing to the overall growth of the rooftop solar sector.

3.1 AN SEIT ADDRESSES BARRIERS ASSOCIATED WITH SMALL-SCALE UNLISTED PROJECTS

By addressing the barriers associated with unlisted projects, SEITs can increase the supply of capital while lowering the overall cost of capital for solar developers, thereby contributing to the overall growth of the clean energy sector. We explain how SEITs address specific barriers:

a) Limited investor participation: By widening the investor base, SEITs increase the supply of capital, resulting in greater capital mobilization in the clean energy sector.

b) Lack of diversification in renewable energy projects: By pooling multiple projects, SEITs reduce the unsystematic risk through diversification. This would lower the cost of capital for developers.

c) Limited information about the projects: SEITs fall within the ambit of SEBI, thus ensuring corporate governance and mandatory information disclosures. This reduces investors' return expectations, thereby further lowering the cost of capital for developers.

d) Low liquidity: Mandatory listing of SEIT increases the instrument's liquidity and simplifies the process of entry/exit, thereby lowering the return expectations of investors even further.

3.2 AN SEIT ADDRESSES THE SHORTCOMINGS OF EXISTING INSTRUMENTS

There is currently no financial instrument in India that can be directly compared with an SEIT. In international markets, an SEIT can be compared to a YieldCo, which is a publicly trading investment vehicle that bundles long-term renewable energy projects. A YieldCo is supposed to deliver predictable income to investors in the form of periodic payouts derived from revenues from power agreements.

YieldCos have had a volatile journey; they became immensely popular initially but the valuation of a number of YieldCos significantly collapsed in 2015. There were flaws in the inherent structure of YieldCos that left them vulnerable to certain risks. On the other hand, the legal structure of an SEIT bestows it with the ability to mitigate these risks:

- a) An SEIT is a distinct legal entity, and not a subsidiary of the sponsor. A trustee is responsible for maintaining the trust's fiduciary duties to the unit holders. This ensures no conflict in the interests of sponsors and unit holders.
- b) At least 90% of the distributable cash flows has to be mandatorily disbursed to the unit holders. This reduces the reinvestment risk.
- c) For publicly placed SEITs, more than 80% of the projects have to be completed and revenue generating. This renders stability to the investment vehicle.

3.3 CHALLENGES TO INSTRUMENT SUCCESS

SEITs have certain guidelines that are designed to add stability and predictability to their cash flows and sustenance. However, these features may also discourage their proliferation as they might act as barriers for certain developers. Some of these are:

Scale/Issue Size: As per the SEBI guidelines, the value of assets proposed to be part of an InvIT must be at least INR 500 crore, with a float size of at least INR 250 crore. However, even the largest rooftop solar developer in India, Cleanmax Solar, does not have assets of INR 500 crore value. Most developers also sell down rooftop assets to third party investors so the notional value of assets held by developers on their respective balance sheets is even lower. Therefore, even for the largest developer, SEIT remains a future project. It will take a while, at least a few years, before multiple rooftop solar developers can float an SEIT.

While multiple developers could pool their assets and act as co-sponsors, this is unlikely, based on the conversations we have had with developers.

Leverage Ratio: As per SEBI guidelines, an SEIT cannot have a leverage level of more than 49% (that is, debt to equity can be a maximum of 49:51). In fact, this level is unlikely to be more than 35-40% at the time of listing to account for price fluctuations post listing. Certain utility-scale developers that have the required asset base might not find it economically valuable to launch an SEIT since it allows limited leverage. In contrast, the typical debt to equity ratio is 70:30 for unlisted projects. Therefore, the weighted average cost of capital (WACC) for unlisted projects can, at times, be comparable or even lower than what it is through an SEIT. In short, even though SEITs can lower the cost of equity, they might not always push down the overall cost of capital, due to a higher proportion of expensive equity.

High proportion of completed/operational projects: The current SEBI guidelines cap investments into under-construction projects to up to 10% of the value of the SEIT if capital is raised through the public placement route. As of now, no single rooftop developer has enough completed and revenue generating projects to launch an SEIT. Those rooftop solar developers that prefer to raise an SEIT via the public placement route are unlikely to possess a portfolio of operational projects that have the required scale to meet SEBI's guidelines.

We have proposed a few recommendations to the Ministry of Finance (MoF) and SEBI that can partially resolve these barriers and create an environment that is more conducive to the launch of an SEIT. A detailed description of these proposals can be found in Appendix 3.

4. PILOT AND BEYOND

4.1 ACTIONABILITY: IMPLEMENTATION PATHWAY AND REPLICATION

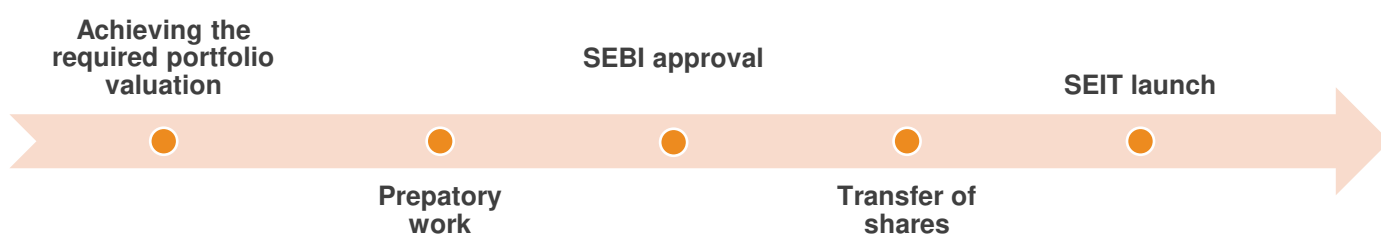
Although rooftop solar developers currently lack scale to launch an SEIT right away, we believe an SEIT can be launched in the next one or two years, given the rate at which the sector is growing.

Cleanmax Solar, the Lab proponent for SEIT and the largest rooftop solar developer in India, plans to set up an SEIT. However, before the actual listing process can begin, Cleanmax would have to reach a number of milestones. The time taken to reach these milestones will vary – depending on whether Cleanmax decides to raise capital via public placement route or via private placement route.

As highlighted before, the investment vehicle is self-sustaining and does not require public capital for its rollout, although grants or donations that can subsidize transaction costs or crowd-in commercial capital would be highly welcome.

A detailed description of the milestones needed for implementation, as well as the estimated timeline, is given below:

Figure 2: Key Milestones for an SEIT Launch



- **Achieving the required portfolio valuation:** This is one of the prerequisites to be able to launch an SEIT. To meet SEBI's guidelines, Cleanmax will need to possess a minimum portfolio size of INR 500 Crores.
- **Preparatory work:** Cleanmax will have to perform a number of steps before it can get the SEBI approval for launching an SEIT. These include:
 - **Formation of a trust:** To form a trust, Cleanmax will have to identify assets and nominate a trustee, an investment manager and a project manager for the SEIT. After proper due diligence, in consultation with merchant bankers and lawyers, a trust deed can be drafted.

- **Registration of the trust with SEBI:** In this step, Cleanmax will submit an application, along with the required documents, to receive a grant of certification of registration by SEBI. This also ensures mandatory listing of SEIT as a trust with SEBI.
- **Transfer of assets to the trust by Cleanmax:** Once the trust is registered with SEBI, shares of project SPVs will be swapped with units of the trust.
- **SEBI approval:** Cleanmax will file the Draft Offer Document with SEBI along with due diligence certificate given by its merchant bankers. Once all the necessary reviews are performed by SEBI, Cleanmax will file the Final Offer Document with SEBI and the stock exchanges, in order to get their approval for issuance of units in the market.
- **SEIT launch:** After SEBI's approval for listing and placement, SEIT will hold a market issue (either public or private) for eventual trading by investors.

As highlighted earlier, depending on whether Cleanmax Solar decides to raise capital publicly or privately, the timeline to the launch as well as the issue size of the SEIT can vary. As of now, the proponent is inclined towards public issues of SEITs. We have provided tentative timelines for both in the next section.

Table 2: Timeline for a Private Placement of SEIT

Timeline	Oct'17-Mar'18	Apr'18	May'18	Jun'18	Jul'18	Aug'18	Sep'18	Oct'18	Nov'18	Dec'18
Minimum portfolio of INR 500 crore										
Preparatory work										
SEBI approval										
Transfer of shares										
SEIT launch										

Table 2: Timeline for a Public Placement of SEIT

Timeline	Oct'17-Dec'17	Jan'18-Mar'18	Apr'18-Jun'18	Jul'18-Sep'18	Oct'18-Dec'18	Jan'19-Mar'19	Apr'19-Jun'19	Jul'19-Sep'19	Oct'19
Minimum portfolio of INR 800 crore									
Preparatory work									
SEBI approval									
Transfer of shares + public issue									
SEIT launch									

As shown above, public and private placements will follow different timelines. This is because of the following reasons:

Operational projects: At least 80% of the projects (by value) should be operational if an SEIT raises capital through the public placement route. As per SEBI guidelines, only those projects

that have been revenue generating for at least 12 months are considered operational. Since Cleanmax Solar plans to achieve a portfolio size of INR 500 crore by March 2018, it will take another 12 months before they can be considered as 'operational'. This will naturally shift the timeline by at least 12 months.

Larger issue size: For the public placement, the issue size may be larger. Companies usually like to have an issue size large enough to generate enthusiasm among investors. Our conversations with investment bankers also suggest that it is advisable to have a portfolio size of at least INR 700-900 crores, with an issue size of at least INR 400-500 crores, for an IPO. This means Cleanmax Solar will have to build a much larger portfolio and then begin the listing process. This will further push back the timeline.

Longer approval process: SEBI's registration process for public placement usually takes longer, compared to the private placement route.

Key Implementation Challenges

While we highlighted the reasons for variation in the expected timelines for public and private placements in the previous section, we also want to emphasize some of the factors that can potentially affect Cleanmax's timeline, irrespective of the type of placement it opts for:

Achieving the desired portfolio size can take longer than intended

The aforementioned timelines assume that Cleanmax will achieve the required portfolio size within the stated timeframes and will continue to grow at a rapid pace. Any slowdown in the expansion plans can push back the timeline and naturally delay the launch of an SEIT.

Moreover, the aim is not to merely achieve the minimum asset size requirement, but to have a total portfolio large enough for the company to be able to diligently select those SPVs that fit within the overall objective of the SEIT.

For instance, there could be a possibility that Cleanmax derives a high proportion of the revenues from very few customers. This would increase the equity risk as well as the credit risk of the investment vehicle. Alternatively, the contract quality for some of the SPVs might not be robust enough to be legally enforceable.

It would not be advisable to keep these projects in the SEIT. In such a scenario, Cleanmax is better off waiting till the time its total portfolio size is large enough for it to select and include only high-quality projects in the SEIT, while meeting the minimum size requirements.

Credit quality may not be good enough

To better the chances of investor participation, the debt held by SEIT should be credit rated AA or above. This is because the investment guidelines of certain investor classes, such as Indian pension funds and insurance companies, debar and discourage them from investing in SEITs with credit ratings below AA (Financial Express, 2017).

This is even more crucial in the case of a private placement, since another important class of investors - HNIs, are not allowed to invest in the private placement route. Thus, Cleanmax can realistically target participation of very few investor classes in case the credit rating of the SEIT is below AA.

Therefore, for all practical purposes, it is imperative that the debt held by SEIT achieve a credit rating of at least AA. Failure to do so can force Cleanmax to wait out and garner a much larger portfolio, out of which it can judiciously pick the higher quality projects to achieve an AA rating.

Additionally, since most rooftop solar developers are small and medium enterprises, their own credit rating is usually below AA. For instance, Cleanmax’s credit rating is BBB. To delink the credit rating of the debt held by SEIT from its own credit rating, Cleanmax will have to be very diligent in selecting the projects or use credit enhancing mechanisms to achieve the desired credit rating.

All this can potentially delay the launch of the SEIT.

Note: Please note that we do not intend to imply that Cleanmax Solar is plagued with the highlighted issues. We merely want to emphasize some of the factors that could slow down the rollout of an SEIT, irrespective of the sponsor.

4.2 IMPACT

SEITs can easily push down the cost of equity by 300 to 350 basis points from the current levels, and mobilize capital worth USD 1 billion within the next five years.

4.2.1 QUANTITATIVE MODELLING

The high cost of financing is a major deterrent to the growth of the renewable energy sector in India. High financing costs can add up to 30% to the cost of renewable energy in India, compared to that in the U.S. or Europe (CPI, 2014). An SEIT can partially resolve the issue of the high cost of capital in India. Moreover, a reduction in the cost of financing will also lower the levelized cost of energy (LCOE) and improve rooftop solar adoption in India.

As there are no financial instruments similar to SEITs in India, we do not have historical data to accurately estimate the cost of equity for such a financial instrument. However, we have used different approaches to arrive at ballpark figures for the expected cost of financing through an SEIT. We have used three approaches, based on certain assumptions. Please refer to Appendix 1 for further details.

As per our estimations, we expect the cost of marginal equity raised through an SEIT would be 300-350 basis points lower than through conventional sources (which we assume to be ~15% post-tax for a typical rooftop solar project). Table 3 shows the cost of equity financing of a privately placed SEIT.

Table 3: Cost of financing using SEIT

Approach*	Cost of Equity via SEIT
1. Using Capital Asset Pricing Model (CAPM) approach	~12%
2. Assuming SEITs will provide proportionate reduction in cost of financing similar to that provided by comparable instruments (such as US YieldCos).	~11.6%
3. Adding India’s country risk premium to US YieldCos	~11.6%

Please note that the cost of financing mentioned in the table is for a privately placed SEIT. It can be ~50-100 bps lower if the SEIT is publicly placed on account of lower liquidity risk.

The lower cost of equity financing through an SEIT can be attributed mainly to:

- Reduction in the non-systematic risk due to diversification achieved by pooling of assets under SEIT.
- Improved transparency in governance due to mandatory information disclosure.
- Less volatility in cash-flows as a significant proportion of assets pooled will be operational.
- Increased liquidity as SEIT units are listed and tradable.

Please note that SEITs can also be used to raise debt but we expect no significant change in the cost of debt through this investment vehicle. Therefore, we have focused more on the equity financing via an SEIT.

4.2.2 CATALYTIC POTENTIAL: PRIVATE FINANCE MOBILIZATION AND REPLICATION POTENTIAL

Based on our estimates, SEITs can potentially mobilize more than USD 1 billion of commercial capital for the rooftop solar sector within the next five years. For the broader clean energy sector, the quantum of capital mobilized by SEITs could easily be in the range of USD 3-4 billion.

These are ballpark figures and there may be a high degree of variability to them, based on how SEITs fit in with the evolution of the industry and when the inflection point, in terms of scale and aggregation, is reached. Given that there are limited avenues of currently raising equity at a large scale, these are significant numbers.

4.2.3 ENVIRONMENTAL AND SOCIAL IMPACT

As highlighted earlier, SEITs have potential to mobilize capital of USD 1 billion in the next five years. More than 1 GW of rooftop solar capacity can be installed with this capital.¹ Assuming this replaces the next cheapest alternative power source, coal-fired power generation, we estimate the resulting abatement of CO₂, SO₂ and NO emissions as shown in Table 4. Please note that the numbers mentioned here denote the impact of SEITs once they are implemented at a larger scale.

Table 4: Environmental Impact of SEITs

Emission Parameters	Net emission reductions (million tons/year)
CO ₂	1.6
SO ₂	5.3
NO	7.4

In addition, rooftop solar capacity development will also have a positive impact on job creation. The installation of more than 1 GW of rooftop solar capacity via SEIT financing will help the economy by creating both short-term and long-term jobs (excluding jobs created in manufacturing segment) as mentioned in the Table 5:

Table 5: Social Impact of SEITs

Nature of Jobs	Number of Jobs
Short-term (<1 year)	14,000

¹ We have assumed that the projects have been funded by 100% of the capital mobilized by SEIT, which is USD 1 billion (per the estimation) in next five years. If the capital structure of the projects include the other modes of capital mobilized such as debt and equity, the capacity addition would be significantly higher.

Long-term (Jobs per year)	3,800
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For the broader clean energy sector, SEITs can catalyse capital worth USD 4 billion in the next five years, equivalent of a capacity addition of >4 GW, resulting in:

- Abatement of approximately 6 million ton of CO₂, 21 million ton of SO₂ and 29 million ton of NO per year over the lifetime of the projects.
- Short term (<1 year) job creation of 32,000 and long-term job creation of 12,200 per year.

5. KEY TAKEAWAYS

SEITs have the potential to provide the required momentum to the rooftop solar sector through increased investments, lower cost of finance and capital recyclability. They are listed instruments falling under the ambit of SEBI, and can therefore attract significant amount of additional capital from institutional investors.

Furthermore, they meet the four Lab criteria as summarized below:

- **Innovative:** By addressing the barriers and risks associated with unlisted projects, SEITs increase the supply of capital while lowering the overall cost of capital for developers.
- **Financially Sustainable:** Since an SEIT is a listed, tradable and a market driven instrument, it does not require public finance support or government interventions to make it work.
- **Catalytic:** By institutionalizing investments, SEIT ensures transparency and participation of institutional investors.
- **Actionable:** Cleanmax Solar is keen to implement this idea. The whole process would take 1 or 2 years, depending on whether Cleanmax decides to do a private or a public issue.

Additionally, we have also put forth a few recommendations to the MoF and SEBI that can improve the enabling environment for an SEIT. These recommendations, if accepted, can potentially advance the launch of an SEIT. To have a look at these recommendations, please refer to Appendix 3.

Lastly, in the broader clean energy space, only those developers that have the scale (particularly in solar and wind utility) are in a position to launch an SEIT as of now. However, this will only happen if floating such an investment vehicle fits in with their overall strategic plans.

6. APPENDICES

6.1 APPENDIX 1: ESTIMATION OF COST OF EQUITY FOR SEIT

An SEIT can be used to raise debt as well as equity. On the debt side, we assume that there will be no significant change in the cost of debt due to SEITs. Therefore, we have focused more on the equity side of the capital. We have compared the cost of equity raised through SEIT with that of a typical unlisted rooftop project.

In this section, we explain the three approaches we have used in estimating the cost of equity for an SEIT, and the steps followed under each approach.

Objective: To estimate the cost of equity for an SEIT.

Assumptions used for the calculations:

- i) **Cost of Equity of an unlisted rooftop solar project:** ~15% (post-tax).
- ii) **Capital Structure:** 49% debt, 51% equity post SEIT issue (extreme case).

Approach 1: SEIT's cost of financing using Capital Asset Pricing Model (CAPM)

SEITs should encapsulate lower risk compared to traditional equity stock of the sponsor, because the underlying portfolio of SEIT comprises mostly of operationally stable assets that are leveraged to a lower degree. In addition, an SEIT has to mandatorily disburse at least 90% of the distributable cash flows, which further reduces the reinvestment risk.

This means that the cost of equity of an SEIT should be lower than that of its sponsor's. In this approach, we have used CAPM to estimate the cost of equity for a publicly listed comparable firm, and assumed this figure to be higher or at most equal to the cost of equity for an SEIT. An SEIT's cost of equity should ideally be lower than this figure.

Steps:

1. Select listed comparable Independent Power Producers (IPPs) in the power generation sector. Since renewables focused IPPs are limited, we included other IPPs to have a significant sample size of IPPs.
2. Extract the levered betas of the selected IPPs.
3. Un-lever their respective betas and calculate the average of these unlevered betas.
4. Re-lever the averaged betas calculated in the step 3 assuming a D/E of an SEIT (49% debt, 51% equity).
5. Use the levered beta calculated in the step 4 in the CAPM equation to estimate the cost of equity: $K(e) = R(f) + \beta^*$ (equity risk premium). The cost of equity calculated in this step would be of a publicly placed SEIT.
6. To arrive at the cost of equity under the private placement route, add a liquidity premium of 1.25% to the number calculated in Step 5.

Approach 2: Assuming SEITs will provide proportionate reduction in cost of financing similar to that provided by comparable instruments (such as US YieldCos).

In certain ways, an SEIT is similar to the YieldCo structure present in developed markets, such as the U.S. and the UK. Market data reveals that the cost of raising equity for a developer is generally lower under the YieldCo structure, compared to that for a publicly trading equity stock.

Therefore, we assume that an SEIT can lead to reductions in the cost of financing that are comparable in levels as compared to those realized through US YieldCos.

For instance, suppose YieldCos help lower the cost of equity for a developer from 10% to 7%, which denotes a reduction of 30%. We assume this figure will remain constant in the Indian context as well. Therefore, if the cost of equity before an SEIT is 15%, then the cost of equity through an SEIT will be $15\% / (1 + 0.3) = 10.5\%$.

Steps:

1. Extract the data on the cost of equity of the US YieldCos and of their respective sponsors.
2. Calculate the difference in the costs of equity of the YieldCo and of the respective sponsors. This is the average reduction in the cost of equity realized through a YieldCo.
3. The proportionate percentage reduction calculated in step 2 is used to reduce the existing cost of equity of a rooftop solar developer (assumed to be 15% in the Indian context) to arrive at the cost of equity of SEIT.

Approach 3: SEIT's cost of financing by adding India's country risk premium to the US YieldCos' cost of equity

Since SEITs have similar risk-return profiles to those of YieldCos in the U.S., an investor should have similar return expectations from both the SEIT and YieldCo, if you discount the country risk premium. Therefore, in this approach, we have simply added India's country risk premium of ~3.13% (NYU Stern, 2017) to the US YieldCos' cost of equity to arrive at the SEIT's cost of equity. For example, if we add India's country risk premium of 3.3% to the average cost of equity of US YieldCOs, which is 7.63% (as of April, 2017), we arrive at SEIT's cost of equity of 11.60%.

Steps:

1. Take the average of the cost of equities of listed US YieldCos.
2. Add the country risk premium to the average cost of equity of US YieldCos to arrive at the cost of equity of a publicly placed SEIT.
3. Add the liquidity risk premium to compute the cost of equity under the private placement route.

6.2 APPENDIX 2: CAPITAL MOBILIZATION THROUGH SEITS

Different reports provide different estimations on how much capital can be raised via InvITs. According to a report by Assocham, InvITs and REITs combined can raise capital worth INR 50,000 crore in the near term (India Today, 2017). According to a slightly more conservative estimation by ICRA, InvITs should raise more than INR 20,000 crore within the (then) next 18 months.

For our computations, we assume the figure to be somewhere in the middle of the two figures. Thus we assume InvITs can raise ~INR 20,000 crore in the next 1 year. This is approximately \$3 billion per year or \$15 billion cumulative for the next 5 years.

We estimate about one-fourth of the infrastructure spending need is required for the clean energy sector. Assuming the same proportion of the capital for clean energy will be raised through InvITs, we get about \$4 billion (~\$15 billion/4) cumulative for the next five years.

Furthermore, we assume one-fourth of the clean energy spending needs will be dedicated to the rooftop sector. This translates to about \$1.3 billion (\$4 billion/4) cumulative capital raised for the rooftop solar sector.

However, we understand there could be a high degree of variability to these numbers and have therefore been conservative in our projections. We have thus lowered our estimates to about \$1 billion capital raised through SEITs in the rooftop solar sector.

6.3 APPENDIX 3: RECOMMENDATIONS

I. Allow HNIs (High Net-Worth Individuals) to participate in privately placed SEITs:

Existing provision:

As per current SEBI guidelines, HNIs can only invest in publicly placed InvITs, and not in privately placed SEITs. Only body corporates and QIBs (Qualified Institutional Buyers) can invest in a publicly placed InvIT.

Rationale for the proposal:

Allowing HNIs to invest through the private placement route can provide fillip to the sector, and would be in line with the spirit of the current guidelines:

- InvITs are meant for sophisticated investors, which is why retail investors are not allowed to participate. However, HNIs, having greater financial resources and sophistication compared to retail investors, are in a position to understand and invest in privately placed InvITs.
- Even a privately placed InvIT, like a publicly placed InvIT, has to be listed and disclose information mandated by SEBI guidelines. Since HNIs already invest in publicly placed InvITs, they should be allowed to do so in the privately placed InvITs as well.
- HNIs have been investing in rooftop solar assets so they already have comfort and familiarity with the sector.
- HNIs are already allowed to invest in the more sophisticated and less liquid vehicles, such as AIF (Alternative Investment Funds) and hedge funds. This can act as reference for gauging HNIs' capacity to understand sophisticated investment vehicles.

II. Allow InvITs to own SPVs/projects located in overseas territory:

Existing provision:

The current guidelines allow SEITs to invest only in projects in India.

Rationale for the proposal:

- Allowing overseas assets to be included in InvITs can help repatriate a portion of the capital already invested in overseas territories (in the form of periodic tariff payments).

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- Such a move will also not be the first of its kind. Similar situations already exist:
 - i. Overseas investment of up to 25% of the investible funds is allowed for AIFs (subject to a limit of USD 500 million).
 - ii. Indian publicly-listed companies have investments and operations in international markets.

These entail the same set of dynamics (i.e. both domestic and foreign investors investing in Indian securities having exposure to foreign currencies, with net returns in INR).

III. Increase the investment sub-limit to 20% in under-construction projects for publicly placed SEITs, akin to the revised guidelines for REITs.

Existing provision:

The current guidelines cap investments into the under-construction projects up to 10% of the value of the InvIT if capital is raised through the public placement route.

Rationale for the proposal:

- As per our understanding, the objective of current guideline is to keep the InvIT less risky because:
 - i. Higher proportion of under construction projects in the InvIT portfolio makes the cash flows and hence the returns for the investors uncertain.
 - ii. The guideline is specifically designed to address the risk concerns of less sophisticated investor class i.e. the retail investors who would invest in a public InvIT.
 - iii. Publicly placed InvITs should be stable investment vehicles and should not allow developers to transfer construction risks to investors beyond a reasonable limit.
 - iv. The class of investors targeted often seek high dividends and including a high proportion of completed/revenue generating projects will result in higher dividend yields.
- In our opinion, amending the guidelines to those suggested by us is unlikely to undermine the objective of the current guidelines because:
 - i. Rooftop solar projects encapsulate lower construction risks compared to those for typical infrastructure projects. For instance, developers usually do not have to battle risks related to land acquisition. Moreover, the construction period of 3-6 months is much lower than for capital intensive infrastructure, for which it can be easily 2-3 years.
 - ii. Since there is no change in the proportion of completed/revenue generating projects, dividend yields will remain unaffected.
 - iii. Retail investors are not allowed to participate even in publicly-placed InvITs. Even for public placement, only the more-sophisticated investors are allowed to participate (for instance, institutional investors, body corporates and HNIs). These investors have the capacity to understand and assess risks based on the quality of underlying projects.

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- iv. Identical guidelines in similar investment vehicles (REITs in this case) provide comfort to the possible repercussions of such a move.

IV. Allow entities other than body corporates and LLPs to be the sponsor of an InvIT. For instance, an entity such as an AIF (Alternative Investment Fund) can be the sponsor of an InvIT

Existing provision:

As per current SEBI guidelines, a sponsor has to be either a body corporate, a company or an LLP. Furthermore, a sponsor needs to meet the following eligibility criteria:

- i. Minimum net worth of INR 100 crore in case of a company or a body corporate, and net tangible assets of at least INR 100 crore in case of an LLP.
 - ii. Minimum experience of 5 years.
- The value of assets proposed to be part of an InvIT must be at least INR 500 crore, with a float size of at least INR 250 crore.

Rationale for the proposal:

As per our understanding, the objective of the current guidelines is to achieve the following:

- i. The listing should be large enough to attract institutional investors.
- ii. The listing should be large enough to make the InvIT economically feasible in terms of covering transaction costs (such as merchant bank and legal fee).
- iii. The interests of the sponsor and the unit holders should be aligned
- iv. The sponsor should be a trustworthy and an experienced entity, and should have the financial capacity to absorb unexpected shocks.

Expanding the range of entities that can set up InvITs will help overcome the barriers highlighted earlier, while maintaining the sanctity and intent of the existing guidelines.

Implementing the proposal can even help AIFs proliferate, since InvITs can be exit options for AIFs setting up these InvITs.

7. REFERENCES

Business Standard, 2016: Rooftop solar projects need additional \$50 billion to meet 40 GW by 2022 target. http://www.business-standard.com/article/economy-policy/rooftop-solar-projects-need-additional-50-billion-to-meet-40-gw-by-2022-target-report-116110100809_1.html

Economic Times, 2017: Half of 1,396-MW rooftop solar capacity added in FY17. http://economictimes.indiatimes.com/articleshow/59585801.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

Financial Express, 2017: IRDAI issues norms for REIT, InvIT; Here's what it means for investors, policy holders. <http://www.financialexpress.com/money/irdai-issues-norms-for-reit-invit-heres-what-it-means-for-investors-policy-holders/590940/>

CPI, 2014: Finance Mechanisms for Lowering the Cost of Renewable Energy in Rapidly Developing Countries. <https://climatepolicyinitiative.org/wp-content/uploads/2014/01/Finance-Mechanisms-for-Lowering-the-Cost-of-Clean-Energy-in-Rapidly-Developing-Countries.pdf>

NYU Stern, 2017: Country Default Spreads and Risk Premiums. http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html

India Today: REITs, InvITs could help raise Rs 50K crore: Assocham-Crisil <http://indiatoday.intoday.in/story/reits-invits-could-help-raise-rs-50k-crore-asso-cham-crisil/1/853946.html>

Business Standard, 2017: InvITs may raise Rs 20,000 cr over next 18 months: Icra http://www.business-standard.com/article/pti-stories/invits-may-raise-rs-20-000-cr-over-next-18-months-icra-116112400947_1.html