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Solar securitisation and beyond- addressing the financing needs of the Industry



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The world is making increasing efforts to reduce the carbon footprint and bring about sustenance in the ecological balances; this has prompted more and more people towards using renewal sources of energy thereby creating increasing demand for solar power instruments – the new asset class in vogue for the financial markets.

In the last few years, installation of solar power instruments (photovoltaic systems or PV systems) has grown manifold and U.S topping the list in growth of solar industry. As per an S&P report¹ in 2013, total installed capacity for residential and non-residential buildings in 2010 topped 600 MW, an increase of more than 200% when compared with 2008. In 2012, in U.S photovoltaic installations grew by 76% over 2011 with an estimated market value of \$11.5 billion². Based on DOE-established targets, the solar and wind energy industries' need for capital will double and approach \$70 billion by 2020 and as per another U.S research, revenues from PV assets are forecasted to reach USD 123.6 billion by 2022 clearly indicating that solar energy financing shall soon become the mainstream focus for the industry players.

Typically solar leases or power purchase agreements (PPA) contracts would run for 20-25 years. The PPA is between developer of solar energy and the user who purchases the solar power at an agreed price in a long-term contract. The developer retains ownership of the solar facility (earns renewable energy credits) and the user pays for the power generated by the facility and not the cost of the equipment. In case of leases, end of the lease term the users have the option to renew the lease, upgrade to a new PV system or have the panels removed at no additional costs, while in case of PPA agreements the option to buy the asset is provided to the user after a specified tenure. In turn, under these contracts, solar equipment providers offer PV system monitoring and maintenance and repairs during the term of the contract at no additional cost. Sometimes solar providers also guarantee minimum level of energy production. The users receive solar electricity for a pre-determined price for certain number of years.

Securitisation: obvious choice for funding

With the increasing growth in demand, the solar instrument providers are now on a look out for alternate financing options, which has opened up securitisation as an obvious choice. Typically in securitisation in solar context would mean aggregating pool of cashflows arising from solar instruments financed by home-owners and businesses and issuing securities backed by these revenue streams either on public offering or private placement.

¹ http://www.cleanenergyfinancecenter.org/wp-content/uploads/WillSecuritizationHelpFuelTheUSSolarPowerIndustry_Jan2012_tsr-copy.pdf

² <http://www.alt-energy.com/reports/U.S.Solar%20Mkt%20Insight%202012%20Year%20in%20Review%20ExecSum%20Mar2013.pdf>



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Some of the obvious benefits that developers see in securitisation is access to more funds through capital markets and at a lower cost³, which has been the forte of securitisation always. Securitisation also allows developers to broad base the investors from existing bank lenders and tax equity investors incentivised by the current regulatory benefits offered in investment in solar sector. From investors' perspective, solar securitisation as an asset class looks appealing as there is diversification of underlying asset risks due to geographical diversification possible in the solar sector.

Apart from these, there are regulatory incentives also on the offering. U.S Department of Energy (DOE) has created a fund which is called "SunShot" Initiative which shall fund the securitisation of solar PV assets. DOE through its National Renewable Energy Laboratory (NREL) has established a Solar Access of Public Capital (SAPC) Working Group which shall focus on standardization of power purchase agreements, lease documents with regard to residential and commercial deployment of the assets to enable evaluation of asset performance and credit default risks. Standardisation will allow minimizing the due diligence requirements for investors and is necessary for wide scale investments.

Opening up capital markets for financing solar providers seems to be the new eye-candy for securitisation industry players where hordes of solar leases or power purchase agreements (PPAs) are packaged as asset backed securities and sold to investors. Access to capital markets to deepen the capital pools have led to a tremendous growth in the solar energy market as well.

While securitisation seems to be the obvious choice for the investors, industry and solar providers alike, securitisation does not come clean hands as a viable financing option. The past association of securitisation with the financial crisis and the lurking fear of things going wrong with securitisation has not been done away with completely. Apart from the sentiment driven risks in securitisation, solar instruments as an asset class also have inherent risks which we shall discuss below.

Risks in solar sector

While demand for solar instruments and growth of the sector is soaring new heights in the recent times, it cannot be forgotten that the sector is also vulnerable to its own set of risks. There is uncertainty with regard to long term cashflows, need for large scale service providers for the industry, non-correlated geographic diversity, historical performance data for the sector, unclear default scenario, standardisation of the documents, ghosts of sub-prime mortgages from the financial meltdown of 2007 are some of the risks and impediments for solar securitisation.

³ As per National Renewable Energy Laboratory's (NREL) study, securitisation could lower the levelized cost of energy (LCOE) of best-quality solar projects up to 16%.



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As the technology for solar panels improve, the existing panels may become outdated and obsolete are high. So there is a high risk of pre-termination of the leases or PPA or updation of the panels or re-negotiation of the lease terms are also a prominent risk. This also increases the risk of default and recovery from such obsolete assets. On the other hand, along with the demand for solar instruments, the cost of the PV systems has been falling sharply as well.

As the scaling up and growth of the solar industry is recent hence default rates are difficult to determine. Solar leases or PPA are long term agreements and the industry has been growing at a constant pace in a last couple of years only. So to be able to determine the default rates the past data existing may not be enough. Further, finding an alternate servicer to replace the original servicer in case of bankruptcy of the original servicer may be difficult in this sector.

To top all of these, last two years have seen bankruptcies in the solar industry also raising concerns on the sustenance of the solar generating instrument providers. In US several solar manufacturers like Solyndra have filed for bankruptcy. Also not to mention that the regulatory incentives that the industry has enjoying may become ephemeral considering the bankruptcy risk posed by the sector, hence long term viability of the industry is yet to be put to test in absence of the incentives offered so far.

In case of solar securitisation, unlike traditional asset backed securities, cashflows arising from the securitisation of solar receivables are lesser dependent on the obligors and more on the technology of the solar equipment and expected quantities and intensity of sunlight. The utility of the solar panel is dependent on the sunlight which can in turn result in volatile cashflows in securitisation. Hence geographical diversity is important.

Apart from typical credit enhancements offered in securitisation structures which include subordination, cash reserves, over-collateralisation etc, in case of solar securitisation, having a geographically diverse collateral pool may act like a risk mitigant in such transactions. This reduces the transaction's operating risk profile because the securitization the does not depend on one geographical location for most of its future cash flows. Another factor critical in solar securitisation would be availability of backup servicer to act as a backstop and ensure continued serving of the solar systems, which shall act as a credit enhancement reducing investment risks.

Ofcourse, government's initiatives on standardisation the PPAs and lease agreements to bring about transparency in the process incentivises the investors and instills confidence to invest in ABS backed by solar receivables.

If the risks can be managed well, in that case the cost of capital can be lowered for future transactions and solar securitisation may act as a catalyst for the growth of the sector.

Currently there are financing options available to the industry apart from clichéd bank funding some of these are discussed below briefly.



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Property Assessed Clean Energy (PACE) Municipal Bonds

In U.S, PACE municipal bonds are popular in context of solar instruments. The difference between a typical securitisation of solar receivables and PACE municipal bonds is that while in case of securitisation an SPV issues ABS, here the government issues municipal bonds to investors. The funds raised from the issuance are lent to property-owners to cover upfront costs of solar installation and other energy efficiency improvements and the investors in these municipal bonds are paid coupons from the stream of cashflows arising from the property-owners through a special property tax assessment that stays with the property even if it is sold.

While PACE has been successful in U.S, the Federal Housing Finance Agency (FHFA) has blocked PACE projects in residential sector, as PACE property tax lien is senior to other mortgages and in case mortgagor defaults, the claims of mortgage lenders would be subordinated. Hence mortgage lenders are no longer purchasing mortgages on properties which have PACE outstanding loans. Currently FHFA's move is under litigation.

Surety Bonds

Surety Bonds or performance bonds can be issued in such cases. In case of a surety bond, the EPC firm would obtain a performance guarantee from a surety/ guarantor by way of purchase of surety bonds. While the bonds will be purchased by the EPC firm, the beneficiary of the bonds/ guarantee is the investors. This means in case of failure to complete the solar project in time or non-performance of the contract, the surety shall compensate the investors equivalent to the bond amount. Typically in case of solar equipments, the manufacturers do not provide for construction of the plant, it would be the EPC firms that would provide the turnkey services to the investors. Hence, while, selection of good EPC firms is necessary to ensure that the project is completed on time, surety bonds can act as a comfort for the investors.

Alternate sources of financing to be tapped

While securitisation seems to the current obvious choice for the industry the burnt fingers from the past have also put the solar sector put on thinking caps to explore alternative options for financing beyond securitisation. Very briefly we would discuss these hereinbelow.

Covered Bonds

While securitisation is getting acceptance with solar as the asset class, covered bonds as an alternative option are also being explored not just for solar as an asset class but for other traditional asset classes of securitisation. Covered Bonds are not new to the financial system and their existence can be traced 200 years back in time. Covered Bonds



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have been popular instruments in Europe, with origins in German *Pfandbriefe* and have a glorious history of no defaults. During the U.S subprime crisis, Covered Bonds got recognition with the rest of the world as well and was much talked about as an alternative to securitisation.

Covered Bonds are similar to securitisation with certain variations where the investors have an advantage of dual recourse, one, on the issuer and two on the cover pool (in the same order). The assets remain on the balance sheet of the issuer and the primary recourse that the investors have is on the issuer's cashflows. Covered Bonds enjoy similar advantages as securitisation and the transactions are capable of achieving higher ratings above the rating of the issuers as there is ring-fencing of the assets by way of creating a cover pool. This means that the assets are clearly available to the investors (are ring-fenced) in case the issuer cannot meet its obligations to the issuers. Hence, Covered Bonds have found great acceptance among the investors as in terms of security it is one notch above securitisation.

Like other asset classes have been opened to Covered Bonds, solar cashflows can also be refinanced through Covered Bonds route.

Real Estate Investment Trusts (REITs) and Master Limited Partnerships (MLPs)

REITs and MLPs aren't recent innovations of the market, however these structures are been looked at for financing the needs of the solar instrument providers. Both REITs and MLPs are funds inviting pools for specific investment purposes. REITs may be available to solar property if bundled with real assets or are specifically rules as real property. MLPs⁴, on the other hand, can make investments through there operating companies into solar projects. MLPs hold investment from public at large and are managed by specialists in the sector. Both MLPs and REITs are generally not taxed at the corporate level as long as distribution criteria are met.

Unlike securitisation, MLPs and REITs represent equity ownership shares in projects held by the financial vehicle and managed by the vehicle's managers. Shares of MLPs and REITs have equal value and cannot be sliced to provide credit enhancement as in case of securitisation. Currently, both these options have not been explored for solar industry but can be alternative financing options that may be availed by the industry provided regulatory opportunities are made available.

⁴ MLP structures are currently available to energy and mineral extraction and transportation concerns, but are currently not open to solar and wind technologies.



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Conclusion

While there is a certain momentum towards achieving low-carbon economy, this may get severally impacted if the momentum in the solar market is not given an impetus and the challenges of the nascent age are not addressed.