



Investors Should Remain Confident in Young Yield-Cos

One of the most salient distinctions between the fossil fuel and renewable energy industries is the contrast in investment-raising capabilities. Four years ago, in an attempt to overcome barriers to raising capital, financial instruments known as Yield-cos were introduced that provided renewable energy developers access to cheaper capital.

Yield-cos are adaptations of well-known vehicles such as Real Estate Investment Trusts (REITs), that own and operate real estate properties, and Master Limited Partnerships (MLPs),¹ that funnel public capital to the energy transport and mineral extraction industries. Previous lobbying attempts to convince Congress (MLPs) and the Treasury Department (REITs) to incorporate renewable assets proved too difficult, resulting in the birth of Yield-cos.²

This article aims to:

- Demystify Yield-cos; and
- Illuminate what structural changes are necessary to maintain the attractiveness of these investments

Yield-what?

Yield-cos have provided a tremendous boost to renewable energy pursuits³ by separating fixed assets that generate revenue from the more risky developmental stage of construction.⁴ This is achieved through parent companies, often developers of the renewable projects, selling down electricity-producing assets to a publicly traded company – known as a Yield-co - that continues to own the operating asset while carrying the rights to long-term (generally 20 years) power purchase agreements (PPAs) guaranteeing buyers for produced electricity.

PPAs are relatively low-risk future cash flow streams, similar in functionality to mortgage-backed securities, credit card receivables and car loan payments. Similar to securitization, in Yield-cos PPAs are bundled up across numerous renewable projects (predominantly solar to date) providing investors a more diversified renewable industry risk exposure. Through strict assessment of asset pools (PPAs) investors choose the Yield-co that offers their desired risk exposure.

Yield-cos are a great way to attract new investor classes who may otherwise perceive unacceptable risk or lack of appropriate channels to invest capital in

¹ PETER F VARADI. 2015. *The Yieldco: the solar revolution meets Wall Street* [Online]. *Reneweconomy*: Reneweconomy. Available: <http://reneweconomy.com.au/2015/the-yieldco-the-solar-revolution-meets-wall-street-74957> [Accessed 23 April 2016 2016].

² JULIA PYPHER. 2015. *Solar Stocks Continue to Plummet in a 'Bizarre Confluence of Contradictory Events'* [Online]. *Reneweconomy*: Reneweconomy. Available: <http://reneweconomy.com.au/2015/solar-stocks-continue-to-plummet-in-a-bizarre-confluence-of-contradictory-events-47433> [Accessed 25 April 2016 2016].

³ SUSTAINABLE ENERGY FOR ALL. 2015. *Progress Towards Sustainable Energy 2015. Global Tracking Framework Report*. Sustainable Energy For All.

⁴ CHRISTIAN ROSELUND. 2014. *Solar goes public: The rise of yieldcos*. *PV Magazine*. PV Magazine.



renewables.⁵ History demonstrates investors are eager to consider a wide range of securitizations, signaling the potential for large investment in renewable asset-backed securities,⁶ as can be seen in Figure 1 below.⁷ The distinguishable and noteworthy difference between securitizations that involve mortgages, credit cards and cars is that they do not simultaneously mitigate climate risks as does renewable assets.

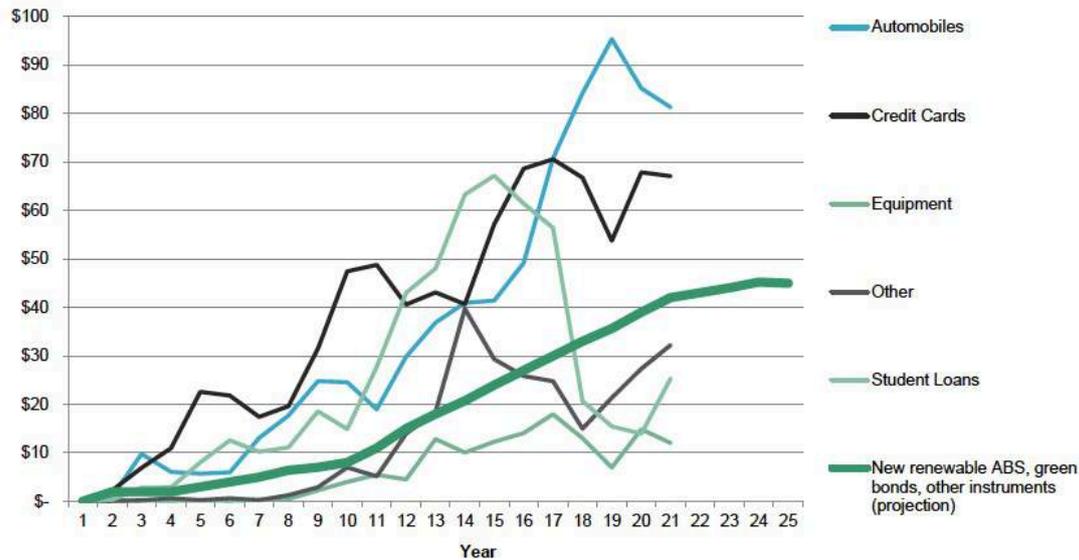


Figure 1: The Potential Lift: Asset-Backed Security Issuances vs. A Projection for Global New Renewables ABS (\$Bn): Figure 1 charts the rate at which investment poured into each sector from its initial year as an investable option⁸

Institutional Investors Should Not Withdraw - Everyone Goes Through Puberty

Institutional investors form one of the largest pools of private capital in the world and are leading policymakers to consider whether tapping these money pools overcomes the renewable energy funding challenge.⁹ The primary objective of institutional investors, a group that includes pension funds and insurance companies, is to provide important life services at reasonable costs with a very high degree of certainty. This level of certainty requires institutional investors to look long-term, a similar approach to the global response for climate change.¹⁰

Bank debt from project finance lenders has been essential for clean energy to date and it will continue to be. However as the sector matures and seeks alternative debt sources, the Banks' share of overall debt provided to the sector is projected to fall up to 31% by 2036-2040, as can be seen in Figure 2 below. As pension funds and other institutional investors take greater interest in the

⁵ ROHAH SINGH 2015. India's renewable energy targets: How to overcome a \$200 billion funding gap. *Renewable Energy Focus*, 16, 2.
⁶ STEFAN LINDER, M. D. C. 2012. Re-imagining US solar financing. *New Energy Finance*, 28.
⁷ ETHAN ZINDLER AND KEN LOCKLIN 2016. Mapping the Gap: The Road from Paris. *Finance Paths for a 2-Degree Future*. Bloomberg New Energy Finance & Ceres.
⁸ Ibid.
⁹ DAVID NELSON, B. P. 2013. The Challenge of Institutional Investment in Renewable Energy. Climate Policy Initiative.
¹⁰ Ibid.



sector, predictions show that direct debt from institutional infrastructure investors is capable in helping to bridge this investment gap by providing up to 15% of all debt.¹¹ For this to occur however, the Climate Policy Initiative argues for the importance of relaxing financial regulation to institutional investors regarding the liquidity constraint, and the allowable size of pooled investments, as it is estimated this would increase the potential project debt investment by a whopping 52%¹² - ultimately reducing the financing costs significantly for renewable projects.

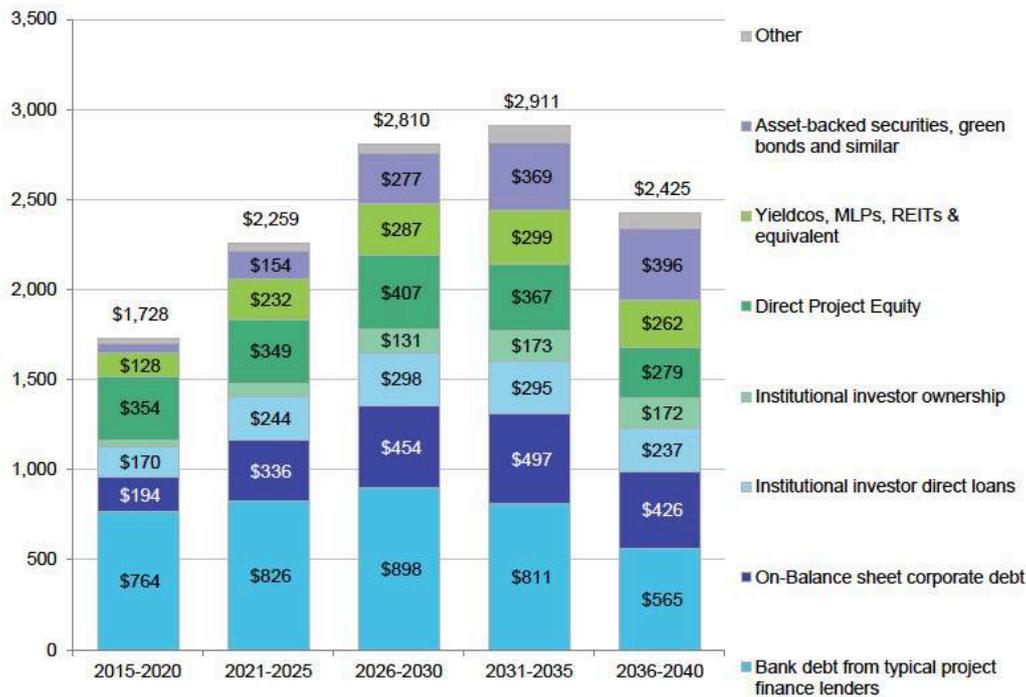


Figure 2: Potential Investment in New Renewables by Asset Class, New Energy Outlook 2°C Scenario (\$Bn, REAL)¹³

As the low risk/reliable return opportunity of clean-energy assets becomes more apparent, investment via public-market vehicles - Yieldcos, MLPs and REITs - appears likely to spread.¹⁴ Also, as clean energy becomes mainstream it could find a home in the portfolios of the largest institutional infrastructure investors via direct investment.¹⁵ *And why shouldn't it?* In theory, attracting institutional investors should be relatively easy given their long-term investment horizons and patient investment practices matching those for

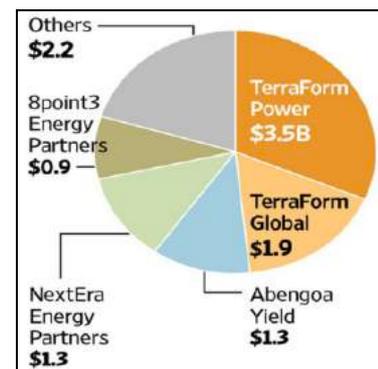


Figure 3: Investment in yield-cos in 2015 (\$Bn) (Hoffman, 2016)

¹¹ ETHAN ZINDLER AND KEN LOCKKLIN 2016. Mapping the Gap: The Road from Paris. *Finance Paths for a 2-Degree Future*. Bloomberg New Energy Finance & Ceres.

¹² DAVID NELSON, B. P. 2013. The Challenge of Institutional Investment in Renewable Energy. Climate Policy Initiative.

¹³ ETHAN ZINDLER AND KEN LOCKKLIN 2016. Mapping the Gap: The Road from Paris. *Finance Paths for a 2-Degree Future*. Bloomberg New Energy Finance & Ceres.

¹⁴ Ibid.

¹⁵ Ibid.



renewable energy investments.¹⁶ But considering Figure 3, revealing a relatively small \$11.1 billion equity investment across Yield-cos in 2015¹⁷, it would seem a bigger carrot than ‘climate action’ needs to be dangled to unleash the full potential of institutional equity investment.

Similar to teenagers terrifying parents, industry immaturity is having the same effect on investors. Immaturity is the biggest barrier denying attraction from institutional investment. Unavoidably, an absence of historical data, an inadequate technical familiarity, and limited industry experience is presently giving rise to uncertain risk evaluations for renewable projects,¹⁸ also limiting desirable large-scale investments. For instance, regarding project bonds, institutional investors require large issuance sizes between \$350 and \$700 million for the greater liquidity benefits to outweigh financing costs.¹⁹ Uncertain risk coupled with strict federal limits on the allowable size of investment pools, might infer that new policies are needed that encourage institutional investor’s demands meeting developers’.

Credit Enhancement and the Quality of Asset Pools – Quality, not Quantity

Combining a lack of historical data with a low quality asset pool (PPAs) swells the inaccuracy of credit rating agencies (CRAs). Low quality PPAs generally result in higher rates of early contract termination (sub-prime loans for example), requiring higher credit enhancement levels needed to attract investors. One-way to offset the riskiness of poor underlying PPAs is for CRAs to incorporate the setting aside of future streams of cash flows – in case a substantial amount of PPAs are terminated early (GFC for example). Less quality PPAs require more money to be set aside, generating less attractive investments.²⁰

A quantitative peer-reviewed financial securitization model revealed that reductions in credit enhancements have a significantly larger impact on security prices when credit enhancement is low than when it is high. Results indicated that when the quality of each PPA is improved, reducing the default rate by 1% could reflect a 6% increase in capital raised from an issuance.²¹ Consequently, there are benefits even to increasing the class of already high-quality asset pools, implying that renewable developers have strong incentive to implement and adhere to strict credit evaluation procedures when issuing PPAs.²²

In 2007, prior to the global financial crisis (GFC), clean investments could get AAA ratings with around 7% credit enhancement. In 2011 however, the required

¹⁶ DAVID NELSON, B. P. 2013. The Challenge of Institutional Investment in Renewable Energy. Climate Policy Initiative.

¹⁷ HOFFMAN, L. 2016. Inside the Fall of SunEdison, Once a Darling of the Clean-Energy World. *The Wall Street Journal*, 14 April 2016.

¹⁸ ALAFITA, T. & PEARCE, J. M. 2014. Securitization of residential solar photovoltaic assets: Costs, risks and uncertainty. *Energy Policy*, 67, 488-498.

¹⁹ DAVID NELSON, B. P. 2013. The Challenge of Institutional Investment in Renewable Energy. Climate Policy Initiative.

²⁰ ALAFITA, T. & PEARCE, J. M. 2014. Securitization of residential solar photovoltaic assets: Costs, risks and uncertainty. *Energy Policy*, 67, 488-498.

²¹ Ibid.

²² Ibid.



rate was over 25%, making these transactions unfeasible.²³ A suggested way around this was by introducing a third party insurer providing protection against early contract termination,²⁴ loosely resembling Credit Default Swaps that are notoriously known for giving rise to moral hazard prior to the GFC. If third-party insurers are widely adopted, PPAs should be regularly reviewed to avoid another crisis.

Standardizing Contracts and Agreements - The Danger of Copy and Paste

Attempts to circumvent the paucity of historical data by extrapolating from other securitized industries – mortgage-backed securities, credit card receivables, and car loans for instance – falls dangerously short of understanding and incorporating renewable-specific technological risk into current investment models.²⁵ Alternatively, a more evidenced-based approach to this quandary would be to standardize documentation and system performance assessment, as well as establish public entities to insure assets. This will help public capital markets feel comfortable with and better understand the risk-profiles of emerging renewable assets.²⁶

Unlike residential solar assets, which tend to be geographically concentrated, commercial and industrial assets are likely dispersed. State-to-state inconsistencies limit market expansion by increasing the legal and analytical expertise required for market participation, driving up the costs while reducing developer interests. It has been argued that a warehouse facility is needed to aggregate loans to renewable developers until a critical mass is reached.²⁷ Policies and procedures need to avoid favoring conventional centralized electricity generation and distribution.²⁸ Apple Inc. is a good example of enjoying unfettered global success largely attributed to its ability to provide consistency across all products. Regardless of geography their consumers are familiar with their products and what they offer – this same principal needs to be applied within the renewable space.

It has been estimated that by aggregating assets to issue solar asset-backed securities reduces financing anywhere between 5 and 13%,²⁹ providing significant incentive for all firms to adopt standardization.

Boosting Yield-co Investment

It is worth noting that in 2015, the world invested more in photovoltaic cells than in coal- and gas-fired power generation combined.³⁰ These recent global

²³ MORGAN HERVÉ-MIGNUCCI, G. F., VALERIO MICALE, FEDERICO MAZZA, 2013. Risk Gaps: First-Loss Protection Mechanisms. Climate Policy Initiative.

²⁴ ALAFITA, T. & PEARCE, J. M. 2014. Securitization of residential solar photovoltaic assets: Costs, risks and uncertainty. *Energy Policy*, 67, 488-498.

²⁵ Ibid.

²⁶ ENERGY INITIATIVE, M. I. O. T. 2015. The Future of Solar Energy. *An Interdisciplinary MIT Study*. MIT.

²⁷ ALLISON BISBEY 2015. *Solar Deal. Asset Securitization Report*.

²⁸ ALAFITA, T. & PEARCE, J. M. 2014. Securitization of residential solar photovoltaic assets: Costs, risks and uncertainty. *Energy Policy*, 67, 488-498.

²⁹ Ibid.

³⁰ THE ECONOMIST. 2016. Blinded By The Light. *The Economist*.



shifts in investment expose the direction this nascent industry is headed regardless of some current shortfalls that need addressing:

- Relaxing financial regulation to institutional investors
- Renewable developers adhering to strict credit evaluation procedures when issuing PPAs
- Introducing third-party insurers to provide protection against early PPA termination
- Standardizing documentation and system performance assessment

The message to investors is that patience is a virtue. As the fossil fuel industry can attest, 'you need money to make money,' and Yield-cos are young with their day yet to come.



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