

Power Finance & Risk



PFR Solar ABS Roundtable 2020/21

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EDITOR'S NOTE

Since the first home solar securitization was issued by SolarCity in 2013, the asset class has grown into a market with several billions of dollars of primary issuance a year. Precise volumes are difficult to nail down because SEC-registered and 144A/Reg S offerings make up less than half of the total activity. Bonds issued in the public glare in 2020 amounted to some \$2 billion, but the true size of the market could be three times that.

That's still tiny when compared with major consumer asset-backed bond markets such as credit cards or auto loans, but it's not bad for an asset class that's been around for less than eight years. In the meantime, issuers and their investment banks have cultivated an enthusiastic following for solar ABS among investors with an increasing appetite for climate-friendly debt.

Until last year, however, some observers would still hesitate to describe it as a fully-fledged and mature bond product, noting that it had yet to face the test of major market disruption. How would all of these residential solar leases, power purchase agreements and loans stand up in a recession?

Unfortunately, we now appear to have an answer – unfortunately, because a catastrophic pandemic, widespread unemployment and a 3.5% contraction of the US economy are not good news for anyone.

But from the point of view of the solar ABS market, we can now at least say that these bonds seem to hold up pretty well.

Let's go right back to the beginning. That \$54 million debut from SolarCity? It was rated BBB+ by S&P Global Ratings when it was issued in 2013.

It is still rated BBB+.

In March and April, yields on solar ABS bonds rode the same rollercoaster as all other bonds, but by the end of the year, solar ABS issuers were looking at potentially their lowest cost of capital ever.

When Covid-19 hit the US, solar finance companies put in place hardship plans for customers who might be struggling with repayments. They were not widely used.

What happened? How did the market get through the pandemic?

To answer this question, PFR brought together a panel of market participants who witnessed it all first hand, from issuers to bankers to rating agency analysts to investors.

Enjoy!

Richard Metcalf
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PFR: The securitization market slammed shut in March when the Covid-19 pandemic hit the US, throwing a wrench in the works for both 144A and private placement offerings. Since then, the solar ABS market seems to have recovered and there has been a spate of new issuance. What has been the overall impact of the pandemic? Any lasting effects?

Spencer Hunsberger, Credit Suisse: It's a great question and certainly at the top of a lot of people's minds. You're right, the market shut quickly. It also opened very quickly. It was probably the fastest market-closed period that we've ever seen across ABS securitized products and, really, institutional capital markets generally. There are a few factors that make that the reality.

One, the credit quality was high, and I know we'll talk a bit more about that later on.

Two, there was a collective reckoning with what our habits are going to be going forward. More time in our house. Power independence is important. The backdrop to that is you have wildfires on the West Coast, storms on the South and East Coast, and people are thinking home energy independence makes a lot of sense. It's usually at the top of a homeowner's personal waterfall, in terms of how they prioritize their payments.

Then, when you look at market performance, we saw a real flight to quality. So, actually, when you think about who an investor is in this asset class, they're not just looking at solar infrastructure, wind, or ESG. They're looking at a variety of asset classes, some of which didn't do as well as solar and renew-

ables, generally, through Covid. When we saw some of the huge, oversubscribed transactions in the summer, that was a result of either attracting new investors or attracting more investment dollars from the same investors.

Alex Kaplan, Mosaic: I think there have been some interesting dynamics that are going to remain post-Covid, in terms of the way that folks in the industry do business. We've seen a huge shift towards remote sales rather than in-person, among our installer partners. In the long term, that's going to be a big driver of lower cost of acquisition.

The loan platforms out there, including Mosaic, have made lasting technology investments in the way that point of sales software operates and in the way that we integrate with partners to ensure that we can support

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that kind of remote selling. Another thing is supply-chain management, or ensuring durable supply chain partners.

It's always important, but especially in March, when there was talk of the factories in China shutting down – which, at the end of the day, never really had a big impact, as far as we've seen, on the availability of equipment – but I think there is value that we were able to provide, and that others in this space were able to provide, by partnering with equipment distributors, which we've done for the last couple of years, to offer installer-partners both financing and equipment in a packaged way.

Having those deep partnerships with the equipment distributors – we're making some of the disbursements directly to them, then they drop ship the equipment to the sites – these guys have warehouses all over the country with a lot of extra equipment, so even if there's a supply shock at the factory in China or wherever, the installer knows that they can get equipment and continue their jobs.

Robert Lane, Sunnova: We had not, up until this point, really seen an economic test of the solar industry. We've heard people say, "Yes, you're doing great, and your payments are coming in, but you've never hit an existential financial crisis." Well, we hit a pretty darned big one in March and across the board, with almost all of the large service and loan providers, what we saw was that default rates held up and delinquency rates held up as well, so that we did not see a spate of defaults that flew through the servicer reports.

Investors could see that we were passing the test and will, hopefully, continue to see that we're passing the test. It would be naïve to say we're out of the woods yet, but the other big test, and this goes to what Alex said, is that the industry has gotten to a maturity point where your large service providers and your large loan providers are able to adapt and give resources to our dealers to help them to adapt as well.

In 2020-2, we were able to pivot and continue to originate at a very healthy pace and continue to put assets into service at a very healthy pace.

Danny Seagraves, Willis Towers Watson: These are very interesting points about the defaults and delinquencies being stable

through Covid. The federal government, of all the things it has messed up, performed fairly decently as it quickly injected capital, a lot of capital, into the economy. How much of the default/delinquency results is due to that, versus just the basic quality of underwriting that's supporting the portfolio?

Lane, Sunnova: I'm going to say it's much more the latter. It's much more the underwriting. We focus not just on FICOs at Sunnova, but on a lot of other metrics as well, to ensure that we're getting customers who are going to pay their utility bill and don't really have a history of walking away from their financial obligations. The underwriting standards are very strong, and I certainly don't think we're alone in that.

And while the government stimulus certainly did help, we weren't seeing a lot of folks say: "Hey, I need to hold off on my payment because I'm waiting for government stimulus."

We saw almost none of that, and we didn't give forbearance. Our collections success has a lot to do with the quality of the customer base.

Now, as we continue to see opportunity to expand solar service beyond just high FICOs, there are going to be additional criteria that we're going to have to put in place to ensure that folks are paying their bill. But, by and large, if you're at home and you rely on your home to be powered, you're going to pay that bill. And you'd rather pay the cheaper solar bill than the more expensive bill to your local utility.

Seagraves, Willis: What is your typical customer? I've read all the Kroll reports and their comments regarding the portfolios' very high credit scores. Are they typically a white-collar customer or blue collar; front line; or is that demographic known?

Lane, Sunnova: We don't really slice it along those demographic lines. What we're looking for is those who have proper credit profiles, and while there certainly are a lot of folks who would fit a white-collar definition, there are a lot of folks in the middle class who have been able to build up, be responsible with their finances in the past, and show a very responsible credit history. We see a lot of folks who may have smaller incomes, but are prioritizing their payments.

Now, yes, we are going to see opportunities where government assistance does help. And we're certainly not going to tell the government not to go ahead, because we think, for the sake of the broader economy, if for nothing else, we do need to make sure that there is government support when there are crises like the ones that we're experiencing right now. But as it pertains to solar, we have gone through the wringer enough in past lives to know that we need to make sure that we have proper credit standards regardless.

Richard Mauro, Wunder Capital: At Wunder, we focus on the C&I space more so than the residential space. And, arguably, commercial businesses have been hit harder during this pandemic than your traditional residential customer. Residents have stayed home, they've been more reliant on their own individual utilities and power bills. Whereas a lot of commercial businesses were forced to shut down during this pandemic.

But the comments about the recession testing ring true, even for C&I. Within our own portfolio, we've seen hardly any defaults, hardly any payment delinquencies, because customers just fundamentally treat their power bills differently, even on the commercial side, than other costs. Even with vacancies, buildings still need to be conditioned, properties still need to have their utilities, power, lights, refrigeration, in a lot of instances, and those costs add up.

And so, for a business that has the option to choose to pay less by going solar or to default and pay more by pulling power from the utility, they're going to make the rational economic decision.

Stephen Henne, KPMG: Community solar serves as a bridge between traditional residential and commercial solar. We've seen a lot of interest both in modeling potential projects and securitization of existing community solar developments, because investors are starting to become more comfortable with the credit-positive aspects of the solar contracts and the oversubscribed natures of some of the community projects, where folks are waiting in line to take part in these and obtain their power from another source that, frankly, is cheaper than the typical utility.

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Hunsberger, Credit Suisse: Just to jump back into things that changed as a result of Covid, what Alex and Rob were talking about on the business side is actually directly mirrored on the capital markets side as well. The tools changed. The way that we got into the equivalent of people's homes, talking to people like Michael. And I'd like to get his perspective on how many virtual or non-deal roadshows he took part in this year. And maybe it was because everyone was at home and their kids were crying and they wanted to go lock themselves in a room and listen to Zoom non-deal roadshows for ten hours a day, but we just had tremendous attention from the investor base. I never thought that we would go through nine months of a calendar year without doing in-person roadshows and in-person touch-ins. To some extent, I still think we're living on borrowed time there, and it has to resume. I don't think it's a perfect substitute. But those same translations to how transactions are marketed, how

you speak to investors, how you educate people, occurred just as Alex and Rob and others were making changes on the business development side as well.

Joseph Lau, Lord Capital: I'd certainly agree with that. Giving some perspective from the investor side, first of all, we're private investors, so we tend not to buy Cusips. A lot of the product that's come through has, frankly, been disappointing to us, because we'd rather be getting it whenever it's a little richer and still in private markets where our structuring skills add value. But to Spencer's point about the market closing quickly and opening back up, even during that interim period, we were getting a tremendous number of calls.

This was a very interesting period for us. Prior to moving over to my current firm, I was a banker for more than 20 years. And if I compare this to other crisis periods, it was always: Everyone de-risk. You weren't going to get banks giving out more warehouse mon-

ey. You weren't going to get private investors looking to focus on putting capital to work. We saw everyone go home in March and then, immediately, our firm started to get calls, as many other people did, about how we can deploy private capital to this and a certain number of other spaces.

We focus on energy efficiency and renewables, primarily, so a lot of calls about solar projects, both residential and commercial. And that's continued since then as a lot of folks have had access to the capital markets. And we're pleased to see performance continue to be strong. We do have a view on why that's the case, and it echoes all of the things that have already been discussed. There have been a lot of different opportunities, whether it's a chance to partner up with banks on increasing warehouse lines, as folks continue to outperform their expectations across different executions, to a lot of different private ways to deploy capital, to at least seeing the capital markets deals that are getting done.



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It's worth noting, too, that there are so many legislative mandates to address, especially on the commercial side. Carbon zero, net zero, depending upon the jurisdiction. We have continued to find opportunities and meet investment needs throughout this pandemic. Covid makes that harder. We have to do everything virtually right now, but I think we now have adopted better tools to help us achieve transparency with both existing and new investors. We have the communication tools to showcase the value of what we are creating. Our commitment to what we do never wavered and we all pivoted where we had to with these newly accepted tools. Now we are continuing to build real momentum in investor confidence, which is both positive and exciting. As Spencer pointed out, the pandemic hasn't slowed down the education of an expanding investor base, and I think that's why all of the panelists are participating in very attractive deal flow despite the pandemic ongoing.

Eric Neglia, Kroll: I'm in agreement with what mostly everybody has said so far, but would like to touch upon the last part of your question regarding the overall and lasting impact of the pandemic. I think part of the reason the market rebounded so quickly was due to certain measures that many originators put in place. For example, originators updated their credit models over time based on historical performance and implemented tighter credit overlays. In response to Covid-19, we've seen increases in minimum FICO cutoffs for certain installers as well as higher minimum income requirements and increased income verifications for certain FICO segments. Some of these changes were planned prior to the pandemic, as originators manage the risk within their portfolio, but the virus accelerated their implementation. Across our rated portfolio, we have generally observed that originators regularly review and adjust their models, underwriting criteria and credit cutoffs depending on credit performance, economic trends, risk tolerance and return hurdles. I expect this tightening to ease as the virus is contained and the economy improves.

Hunsberger, Credit Suisse: And in addition, Eric, to adjusting their criteria, where everyone on this call and other peers in

the market did an exceptional job in March through May was in providing you and your team with data, saying, "Let's go through this proactively. Here's how many requests for forbearance or hardship allowance that we're getting. Here's what we're doing." I was extremely impressed with the proactivity of all the sponsors and developers in this space in putting together hardship programs that, again, were not widely used. That was one of the things that we spent a ton of time on, but then we actually only had a minority of customers that took that up. And in addition to the criteria and how that evolved, just the quick cutting of data and sharing of information allowed the market and your team, specifically, to think through whether any of the watches that were hitting other asset classes, based on uncertainty, were appropriate, to let us work through this successfully.

Neglia, Kroll: Absolutely, I agree. We had frequent, detailed calls with our clients to discuss many topics including their Covid response, loan originations and liquidity as well as performance trends regarding defaults, enrollment in hardship programs and delinquency rates.

Seagraves, Willis: It is amazing how quickly we've pivoted as an industry. When I give talks, I usually tell folks, we're not really an energy business, we're in the technology, finance and legal business. And the way the industry responded, as a tech, it was just astounding.

PFR: Back in March, PFR reported that the forced selling of ABS bonds, driven by margin calls, redemptions, and so on, had pushed credit spreads wider. Where do spreads stand now?

Hunsberger, Credit Suisse: The round trip on spreads this year, and, obviously, that's a round-trip that's magnified in the junior tranches, was remarkable to watch. Rob, I think you were the last transaction pre-Covid, and I believe your double-B bond was mid-high fours spread. At the end of March, 28 calendar days later, we were seeing double-B bond prints on Trace at 30% yields, or about 40 cents on the dollar. And now, with the benefit of some time, we've looked back

and talked to some of the people who were buying and selling in that time, and the reason people sold solar at the end of March is because it works. They didn't sell it because they had a concern. They sold it because they owned solar and they owned a bunch of other sub-investment grade investments, where the market was closed.

And so, when you have to meet a margin call in an environment when we have these bids wanted in competition, BWICs, that happen – on our trading desk, there was a weekend in late March where we were seeing BWICs on Sundays. Even in the depths of 2008 and 2009, that wasn't how the market was performing – people were raising liquidity wherever they could find it, and when you have an asset class that performs like solar, unfortunately, you're going to find liquidity there. You're going to get the print there. Whereas in an asset class where there is no liquidity, where there's no buyer, it never prints. So you never set the yield that much higher.

But it does cause a real peak. Because once you have that print there, that's a new mark. Most of these investors in this part of the asset class are on a mark-to-market holding basis. And so, when someone sells even a small piece of a bond and it hits Trace, all of a sudden, everyone's going to mark the rest of their book down, and that's going to create more sellers, more margin calls, more liquidity needs. It becomes, as we all know from the last financial crisis, a self-fulfilling cycle. But it only takes a little bit of confidence to reverse that.

That is an area where the government measures were undoubtedly the main cause for a rebound. So, while there was never a major issue on the credit quality, this was a liquidity point. And the Treasury stepping into the market around that time was some of the most dramatic action we've ever seen in the financial markets, and it's impossible to overstate that. But what that means is people can go back to focusing on credit quality. And when people focus on credit quality, they look and say, "These bonds never stopped performing." They're paying down maybe even faster than anticipated.

Long story short, there's a transaction in the market this week. It's premature to talk about pricing right now, but the last prints

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that we saw in primary BB- issuance were back to high 400s. Now, with the base rate a point and a half lower than it was in February, you're at record low coupons. So, it's been a wild nine-month round trip that ended with the lowest cost of capital ever.

Neglia, Kroll: We saw secondary market spreads on a class A, AA-rated bond at 900 basis points over the benchmark in March. That same bond has recently traded in the 100 bp to 120 bp range. Going from 900 bp to 120 bp is a significant change for the same risk. In June, KBRA rated the Mosaic 2020-1 deal which was announced with expected coupons in the 4% to 5% range. However, based on strong investor demand and tighter spreads for the deal, Mosaic was able to reduce that coupon to 2% to 3%. There was an overall improvement of 150 bp between initial announcement and closing.

As a result of the higher excess spread, Mosaic was able to increase their issuance amount by about \$9 million, and lower the yield supplement overcollateralization (YSOC) discount rate without impacting the ratings. While there was uncertainty at the time, the spread tightening was indicative of the investor's acceptance of the transaction.

Hunsberger, Credit Suisse: I was so focused on the double-B round trip, I forgot to go through the rest of the capital stack.

I think AA- level right now is in the low 100s – real low 100s.

A- is high 100s, if it's subordinate, meaning if it's not the most senior in the deal. Maybe it's a bit back of that, but not materially.

BBB is mid-high 200s, and the BB- is mid-high 400s.

But it's a market that's moving quickly right now. Liquidity is driving a lot of that, because the credit quality is there, so now it's more a matter of where people are investing money and when they're in the market or out of the market.

So we've seen that the time when you're in the market this year will not decide whether you're getting a deal done or not, but it's going to shave 20 bp, 30 bp off your blended cost of capital.

Going through the summer, with this rapid deployment of capital, because people weren't deploying capital at their run rate in

Q2, we had oversubscribed deals with massive tightening later in the year.

As with most markets, going into the election, there was a pullback of liquidity from the market. That's certainly come back in post-election, and now with the one or two transactions that are yet to get done this year, you're seeing a very positive impact. Credit quality is there, markets are supportive, people are thinking about fiscal policy appropriately. And for people who still have money to deploy this year, there's only a few things they can go after, and that's usually good for issuers.

Michael Fine, Doubleline: To share some color on the deal that's in the market, it actually priced this morning. Just to emphasize your point on the round trip, it's pretty amazing, because the single-A senior priced at 180 bp, which is exactly where Sunnova's deal priced in February. The double-B is at 425 bp here, and their double-B was 410 bp.

So, really, it is a complete round trip for spreads, going from March, where we saw 1,000 bp on a single-A, and double-Bs probably went to 2,000 bp over.

One important point is swaps are lower, so now all-in yields are really at historic lows and bonds are trading at all-time highs.

Neglia, Kroll: Is that the **Loanpal** deal that priced?

Fine, DoubleLine: Yes, that's the Loanpal deal. The subscription was amazing. Double-digit subscription levels on the mezz and the sub, and the senior was very well subscribed. So it definitely seems like there are a lot of new investors coming into the space, from my perspective.

Neglia, Kroll: Focusing on the senior bond, that price is even tighter than their October deal, which priced around 200 bp over, an improvement of 20 bp within a month.

Hunsberger, Credit Suisse: Yes. That one was one where you saw them going into a quiet market right before the election. So, that's a little bit of that timing point that we were talking about.

Fine, DoubleLine: And it's still pretty impressive, given that there was the Sunnova

deal in between that deal and this deal, so Q4 has seen a decent amount of issuance, but it seems like there's a lot of appetite for it.

PFR: Sunnova kickstarted the solar securitization market in February 2020 with a \$412.5 million dual-tranche offering, returning again after the first Covid wave had passed with an offering led by Credit Suisse, and a third transaction at the end of November. How do you see the year closing out?

Lane, Sunnova: We're very grateful for the market opportunity. The November deal came back in at spreads that were very, very similar to where we had done that February transaction, just with lower base rates. We ended up having a 95% advance rate and 3.24% blended weighted average cost of capital, both of which were milestones for the company.

We're unique in this space in that we issue both PPA and lease ABSs and loan securitizations, so we get to see both sides of it. It gives us the opportunity to meet many more people at Kroll, since they have their queues bifurcated. We also get a good look into the dynamics between both of those and the different education processes.

I would think the solar side is probably spun down for the rest of the year. Maybe there'll be another transaction. But given how well we've been able to originate throughout the entire year and the fact that all of us in this space have been designated as essential services, we've been able to continue installing. I would expect to see a very strong first quarter of 2021. We've already indicated that we plan to be in the market. I can't see Mosaic staying out of the market with that high quality paper that they have as well.

When you get to the end of the year, some folks might have certain gaps where they can't take any more of a certain name or a certain asset class, but just speaking for us, we were gobsmacked by the amount of demand that we had, especially on our high yield piece of the stack. We even saw folks stepping down who were traditional investment grade players, recognizing the quality of the paper and stepping down to grab a little bit of that yield in the high yield space. So, that was certainly very gratifying there as well.

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Kaplan, Mosaic: In terms of the timing of our transactions this year and just generally, we don't try to game the market. We seek to be a regular issuer. We've done two ABS deals a year since program inception back in 2017. That number may grow, but, within reason, we're just trying to create a consistent issuance pattern here.

The two things that, obviously, did affect our thinking this year, were, firstly, we weren't going to issue in March when spreads were going crazy, that's a bit outside of the realm of reason. But when we saw things coming back to normal, we started the process with Eric and his team, and we had a strong feeling that spreads were going to continue to improve through that process. We've built in the ability to upsize the notes on the basis of better-than-expected execution, which was a new feature to our deals. That was pretty much directly related to the fact that we saw continued improvement in spreads, even throughout the deal process.

The other milestone of the year was the election. Given the cadence of our originations, we knew we were going to have enough assets for a second deal before November if we turned quickly and started working again, which we did. So it was a busy summer for us, but we did that deal as well. Obviously, we hit a much stronger market in October, when we closed that deal. But it was a similar dynamic, which was that we aggregated assets, we had them available, the market wasn't going haywire, so it was a good opportunity to be an issuer.

That's just generally how we're going to view this. We've built a significant amount of warehouse capacity, conservatively, with the express intention of not having to be a forced issuer in markets that are severely unfavorable. But we don't view ourselves as the ones with the crystal ball as to where rates or the market are going to go. We view ourselves as a solar financing platform that wants to have a respected program of regular issuances.

PFR: Someone else who also was put off by the spreads in March and didn't have a crystal ball was Vivint. They were on the cusp of closing an ABS deal but at the last minute pivoted to the private credit market and obtained a loan from Brookfield. Meanwhile, another residential solar investor, Spruce Finance, seems to have to-

tally sidelined the ABS market in favor of loans from a group of relationship banks. Both of these approaches demonstrate the availability of bank and direct lender financing for residential solar assets. Might these sources of capital compete with ABS issuance in the 144a market?

Hunsberger, Credit Suisse: This question comes up a lot lately. Do you have a bilateral bank market or an institutional market?

They're both needed, right? They're all part of a good program. Alex was talking about this. You don't want to get wedded to just having a capital markets program that leaves you with no bank capacity if the market turns for a minute. So, certainly, we encourage everyone we work with to have a variety of tools available. You've got good bank capital with plenty of capacity for when you need it. You have a good capital markets program, if that's how you're positioning yourself, as a public or private equity story. And if you're more of a dividend-focused asset owner, then maybe you have a good long-term fully amortizing capital program as well. They're all a part of the toolkit and it's not just a binary "This is always best/This is always bad."

Henne, KPMG: One thing we see when we deal with issuers going to market for the first time is that the process is a little bit more intensive, but subsequent transactions are much easier. And the other big benefit of doing that type of program is that the investor base grows over time. Folks get more and more comfortable with your transactions. The spreads improve, the execution improves. That's one of the main benefits of being able to tap the ABS market – diversification of funding sources. It is important to have strong bilateral relationships with banks for those types of deals, and also be able to tap the 144a market.

Neglia, Kroll: I agree. Accessing both 144a and bilateral bank or insurance company funded deals is important for a diversified funding strategy. The benefits of bilateral deals include dealing directly with the investor, being able to negotiate terms when putting the facility in place and even amending terms if situations change. Some bilateral deals rated by KBRA include revolving peri-

ods which allow the borrower to lock in longer-term financing, compared to most 144a ABS in the solar loan that amortize from day one.

Lau, Lord Capital: A lot of what we've done in the private markets in recent years has become a lot more sophisticated. Many people, whenever they think of the private market, they just think you're working with your bank on your warehouse. The banks have gotten much more sophisticated in terms of bringing private capital into their transactions and working directly with private investors. You may have revolving periods with private capital, because we can be flexible in some ways that a 144a transaction may not be. But, effectively, we are just another source of funding. From our perspective, we avoid being one order in a 15-times subscribed deal, so we might be more flexible about some terms, or we're providing capital when other types of capital are simply not there when needed.

PFR: Since we touched on first-time issuers, let's bring in Richard Mauro at Wunder Capital, which focuses on the C&I solar space. Back in June, Wunder closed an investment from Ares, Cyrus and Keyframe. Is the company also looking at tapping into the public securitizations market?

Mauro, Wunder Capital: Yes, certainly. It's definitely on the horizon of things that we're looking at as we plan our future capital sources for 2021 and beyond. I would echo a lot of what other folks have said around the table here, insofar as a healthy mix of financing sources is necessary to have a robust issuing platform. Historically, we've tapped the private markets quite a bit, just given the nascency and perceived nuances of the commercial solar market. We've found better traction in the private markets, including the deal you just touched upon. But as our pipeline continues to grow and as the C&I market continues to grow – we're slated for over 2 GW in C&I to be installed next year – the need for diversified capital sources is only going to grow. As that occurs, and the scale of opportunity grows, it's inevitable that C&I becomes a securitizable product, in the way that residential solar has.

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PFR: To what extent is the ESG wave drawing in new investors?

Seagraves, Willis: Our team is constantly exploring risks of all types and their current and long-term impact on capital. ESG is an intriguing subject in so many ways. Have we created mechanisms to value an ESG audit score? For example, if you have a score of X, it delivers Y to your enterprise value. Can we proactively measure the enterprise value impact of changes in ESG audit scores? What prevents a firm from achieving that target score of X?

A cornerstone of my industry is identifying and quantifying risk and subsequently developing creative risk mitigation and risk funding solutions that optimizes a firm's value. We envision an environment in which a single renewable/ alternative energy asset enhances the ESG audit score of multiple stakeholders, if it's structured properly. Some of those stakeholders may initially be hesitant to make such an investment as they may have a more conservative position, especially on new technologies. That's where we get involved. Once we uncover the core risk which is causing the hesitancy, i.e. performance risks for new technologies, we develop solutions to alleviate the core risks and to fund any remaining potential negative financial consequences. In developing these solutions, we treat reinsurance as a capital source such that a \$1 investment yields a \$1+ hard return.

We're on a precipice of the world's greatest generational wealth transference. The recipients of this wealth are very socially conscious and their business decisions are driven by this social consciousness. Renewable and alternative energy assets are excellent ESG-qualifying investments and as these technologies and their uses continue to evolve, our practice will continue de-risking the long-term performance and in doing so greatly accelerate their deployment. We work closely with the capital markets to identify these core risks and craft solutions to resolve them, thus enabling the flow of cost-efficient capital.

Mauro, Wunder Capital: One thing that benefits solar, relative to other asset classes on the ESG side, is that it's pretty easily quantifiable. If you're looking at production data coming off of a system, you know how many kilowatt-hours or megawatt-hours are pro-

duced that are offsetting the potential energy that would be purchased from your traditional utilities, and all of the more carbon-intensive sources that that might come from.

That's in opposition to a lot of other energy efficiency asset classes, where it's less quantifiable how the impact of those investments is felt. Think about more traditional energy efficiency products, whether it's LED lightbulbs, low-flow toilets, things like that. Tracking the energy consumption relative to your investment isn't as direct as solar, where you can literally just pull up the data and say, "This is how many kilowatt-hours, megawatt-hours were produced by my system."

"In the United States, in every annual report they have somebody who says they're responsible for ESG matters, yet you can't quite figure out what Americans really want to do."

From an asset class perspective, solar has a really easy way to look at the impact that it's having. However, to your question about how we credit people for that on the investment side, that's going to take more time as the market figures out exactly what benefits ESG lending or ESG financing has, relative to traditional financing.

Lau, Lord Capital: ESG is still trying to figure itself out, to some extent. When we talk to our investors in Europe and Asia, it's the first thing they want to talk about, regardless of what you're calling to discuss. Everything is ESG.

The EU taxonomy is being finalized by the end of the year, and it will be front and center on every investment decision a European investor makes. And if you're speaking to someone in Asia, it has become a major talking point.

In the United States, in every annual report they have somebody who says they're responsible for ESG matters, yet you can't quite figure out what Americans really want to do. It doesn't help that a lot of the rules, really, are contradictory, in terms of how

ESG matters or doesn't matter in investment decisions. But for everyone that says it's important, data is the key. And Rich's point is extremely valid.

As an asset management shop that focuses on alternative investments and the ESG space, we had to create scorecards, data products and data templates that address every investment that we make, because our investors require it. And even though a lot of firms – Kroll's been on the forefront of this, with ESG scorecards, information about transactions – investors are still trying to figure out how they're able to tabulate all of that and determine what things really are green or qualify under ESG criteria.

So, it's important. Every investor will tell you differently whether it's the first or the fifth thing that they're worried about, or somewhere in that mix, and whether they're getting a good return. How ESG risk-related returns factor into things is very individual, but getting data is so important, and solar's been great for that, because it is much easier to quantify. But getting that data, being able to disseminate it, and being able to articulate the benefits, is the most important factor in any of these conversations.

Hunsberger, Credit Suisse: I would agree with Joseph on there being different perspectives on what the market wants, and sometimes, those contradict each other. But I disagree a bit on the data as the most important factor. In the asset class we're all talking about, which is the asset-based world, I completely agree with that. But if you put green ABS investments, green conduit paper investments, sustainability bonds in one bucket, and then you put green bonds in another bucket – true green bonds – the size of the green bond market dwarfs everything else combined, the last time I checked. And if you look at the Green Bond Principles, they can allow self-certification of use of proceeds. That is not a highly traceable market. Everyone has to talk about and report on what the funds are going towards, but when you think about actually quantifying carbon offset, or sustainable impact, or behavior, I think that the markets are different, that people want different things. For good or for bad, there's a subset of the investor world that will put an ESG label on something because they have to

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deploy that capital, even if there isn't perfect data behind it. It just seems to be the reality right now.

I'm stuck between two thoughts. One is, is the focus on ESG too broad or too big? Certainly, the E, the S and the G need to be considered separately. Because if you're knocking it out of the park on environmental sustainability, but there's a question on governance, does that mean you can't invest in that company, because it's a start-up and you don't have the same controls as a large company that's doing something different? That's tough. You do need to separate that a little bit. So, on the one side, maybe we've taken this very, very far in terms of a broad ESG focus, and we need to clarify what we're looking at, whether it's the data or separating out the three letters of the acronym.

On the other side, I think we're just at the tip of the iceberg in terms of where this goes.

A client was interviewing us the other day and saying, "We need your ESG principles if you're interested in this mandate."

And that was the first time I'd heard it that way.

You might be the best at what you do in something, but unless you can speak to what your views are on this and back that up, it's going to be a roadblock to doing business.

And so, it's a long answer. It's a confused topic, in terms of where it goes from here. What's the importance of it? Is that importance going to grow? Is it going to narrow? I think they're all the right questions, and I think it is more of a discussion than a definitive answer at this point.

Seagraves, Willis: I would ask Robert. He just closed the last securitization at a 95% advance rate, in the threes. How much more gain do you have if you bump up ESG audit scores? Is it more of a long-term play from your perspective?

Lane, Sunnova: Obviously, we're in the equity markets as well. We have a publicly-traded currency in our common stock, so that's where it makes more of an impact, and where we expect to see some of the uplift. We'll get equity investors who come in and we get on the radar first because of an ESG, and second because we'll pass a certain scorecard that's out there. And then, third, because they like

the way that we do business – the fact that we hold on to our cashflows and we're focused on long-term recurring cashflow generation off of our asset base.

So, it can be an *entrée* into the story for us. We do not see it nearly as much on the debt side, having gone through three non-deal roadshows this year, as well as three marketed deals this year. I have yet to get a question on the ESG side where folks are asking about it. To Spencer's earlier point, though, about a green bond, that would be something where we think maybe there is some opportunity. Could we package up our residual cashflows? And there are different ideas about how you create value there. For some of our competition, they package them off to a **Hannon Armstrong** or someone else who then takes those residual cashflows. We hold onto them. But part of the reason is that we think there is a bond opportunity out there. After the securitization, we might ask whether there is something we could put behind that that's a green bond. I do think there's some real opportunity for some margin compression on the spreads there.

Henne, KPMG: KPMG's clients are dealing with a lot of the challenges that Spencer and Joseph have mentioned. It can be a lot to deal with at once. But one of the things we are seeing is the issuer saying, "Our business seems to fit this mode well." It goes back to the beginning of the year, with **BlackRock** CEO **Larry Fink's** letter to other CEOs, saying that "this is something that we, as the largest asset manager in the world, are really taking a hard look at when making investment decisions."

Folks who are interested in their money, whether it's ABS folks, or folks who have equity in public markets, are asking themselves: "How do we take what we're doing and market that better? And does that benefit us?"

The answer is yes, but trying to figure out how you fit into that space, whether it's just E, or whether it's E, S, and G, is something a lot of folks are trying to deal with.

Lane, Sunnova: Solar is very clearly something you can measure on the E side, but the battery has been the biggest way that we've been able to get it there and make a difference on the social side as well, to be able to create reliable power in areas where power is not reliable. For us, specifically, being in several

hurricane-ravaged states and territories, our solar plus battery systems help keep the power on after a hurricane comes through. And places like New York, after Superstorm Sandy, recognize this as well, and they're implementing incentives for battery storage. If you take a look at the impacts of the wildfires in California over the past few years, there have been millions of people who have lost their power for weeks at a time. This is due to the fact that in order to prevent additional fires, the local utilities will shut down the grid to prevent sparking. What impact did that have in 2019? It meant that folks would have to go to shelters to gain access to electricity. I don't think anybody wants to go to a shelter in a Covid world. Especially those who might have other needs, where they need to keep people isolated at home. The battery completely transforms the world of power outages and creates a huge social grid that way.

One of our strongest markets has been Puerto Rico. After Hurricane Maria and Irma, we do not put a system into service in Puerto Rico without a battery. And as **PREPA** continues to find ways to improve its grid, we're already there, providing the solid power for what has historically been a less-than-reliable grid, compared to other grids within the mainland US. So it is very strong on the social side.

To the G side, that really has to do with who you are as a company regardless of the industry that you're in. For us, it's been something where we have looked to improve diversity, but also the strong independence of our board at the corporate level. For us, it's not a matter of checking the box. It's a matter of instilling good practices, frankly. For a lot of companies, G should be the easiest one to hit, as long as you are adopting best practices.

Hunsberger, Credit Suisse: Steve, your earlier comment made me think of this. With the exception of one large private equity firm, I have never had an investor tell me definitively how a certain ESG score impacts their risk appetite. For example, if you're looking at a solar investment, does that mean the investor can take FX risk that they couldn't otherwise? Those are questions that I don't think people have fully thought through yet – how does my risk appetite, how does my normal business practice change as a result of a certain ESG outcome?

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If you believe that, ESG is actually much more of a binary filtering process. There are trillion-dollar asset managers. Are they going to own companies that don't have a modicum of ESG credentials? That's becoming increasingly challenging.

When you look at the pronouncements that large banks have made publicly, on how they want to both support the growth of low carbon initiatives and move away from traditional high-carbon or carbon-intensive fuels; at the business roundtable, the big open letter the business roundtable wrote over the summer that got a lot of attention on how it's a company's responsibility to look at ESG matters; I think that all means that it becomes much more of a binary filtering process versus something that there are scores on. The score impacts your price of capital, or what it will take to invest in your piece of the asset class.

PFR: A question for Eric Neglia. Investors seem to be paying closer attention to the credit fundamentals of residential solar customers. Kroll has also increased its base-case default assumptions because of rising unemployment. Has the experience of the pandemic played into any adjustments of your models?

Neglia, Kroll: We didn't adjust our models or methodologies, but did introduce an adjustment to our base case default assumptions to address potential credit degradation in the wake of Covid-19. At the outset of the pandemic, we observed that solar loan delinquencies rates remained stable, or even decreased, but enrollment in hardship extensions and payment deferrals increased. Enrollment in deferral programs started to increase around March/April and declined in early summer to the 1% to 5% range, depending on the month and originator.

Deferral periods typically lasted up to 90 days and could be extended if the borrower was able to demonstrate continued hardship and a willingness to work with the servicer. When that deferral period ended, borrowers could either add those missed payments to the end of the loan term or agree to a payment plan to pay down the deferred amount. Most borrowers exiting their deferral program have resumed making their payments and have not rolled into a delinquent status.

These early data points indicated that the solar loan asset class was performing well through the first phase of the crisis. In fact, we performed a portfolio-wide review of our ratings in the sector in May which utilized our adjustment factor, which did not result in any watch placements or downgrades. We put out a publication to that effect.

While credit performance has remained resilient in 2020, we have continued to apply an adjustment factor to our base-case default assumptions in our ratings process to help ensure that the rating perform in accordance with our published definitions. At this time, we believe it is needed, as the historical data used to develop our base-case assumptions were generated during a favorable, stable economic environment. To determine the adjustment factor, we analyzed delinquency rates, charge-off rates and unemployment rates on similar loan products through the last recession.

PFR: Finally, What are some predictions for 2021?

Hunsberger, Credit Suisse: On the capital markets side, it's really hard at this point in time to say it's anything other than more of the same, when you look at the Treasury and how we think policy under the new administration is going to work.

Contrarian bets are fun, but right now, it feels like a continued grinding down in overall discount rates across all asset classes, since that's what we've seen for the past 50 years.

In terms of assets coming in, I think we've hit all of the key topics.

ABS – and this is something that we all need to do a better job of – ABS still sounds like a three-letter word to people. It sounds complicated. It's an acronym full of other acronyms, whether it's ARD [anticipated repayment date], or ADSAB [aggregate solar discount asset balance]. We've already hit on three acronyms just in the letter A itself. We need to get investors and issuers to understand that this is actually a very flexible, very liquid pool of capital that is an efficient way to drive down the cost of renewable energy. And the more we do that for this group and for the other asset classes that this group is thinking about, the better off we're all going to be.

Neglia, Kroll: I think we'll see increased loan origination volume and ABS issuance due to improving technology, broader product offerings such as batteries, and growing desire for home energy independence resulting from natural disasters, wildfires or related rolling black-outs. I also think that the loan product is becoming more cost-effective compared to traditional energy bills, due to investment tax credits, low interest rates, lower overall system costs and longer loan terms.

I would expect credit performance to normalize back to pre-Covid levels. We've seen stable loan performance so far, in terms of delinquency rates, but I'd expect to see those eventually normalize back to where it would be without the federal assistance. With a Democratic administration coming in, it will be interesting to see if there are other incentives to spur investment in green energy, whether it's an extension of the ITC or if additional programs will be introduced to further drive demand.

Lau, Lord Capital: A split congress with the Biden administration would probably be best for the structured capital markets. Because no enormous incentives, direct incentives, like extending the ITC, means growth in the product, but then access to all of us as public and private investors, to be able to participate in this. And for us, that's the most important part about this. It's great that this is continuing. We certainly expect that there's going to be ongoing growth in the products themselves. The question is how does it end up getting funded? And so long as there's still opportunities for private capital to participate in that in some form, then we're going to continue to have conversations about ABS for solar.

Fine, DoubleLine: When I look at the ABS deals I've seen, a trend that I'm expecting to continue is batteries. That's going to continue to show up more and more. I also would not be surprised to see more alt-A and sub-prime borrowers showing up in pools. You're starting to see it with Loanpal now. 3% of the pool is to that borrower cohort. As the prime market gets saturated, I would not be surprised to see more loans extended to people with lower FICO scores.

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On the deal front, we did ten 144a deals this year. We're doing more and more volume. I would not be surprised to see structures that have appeared in other areas of consumer finance. Kroll has rated some of these before, and marketplace lending, which is a two-tranche structure where the senior is rated and the thicker mezz sub is not rated. I think there is investor demand for that and it's a way for originators to do more volume, so I wouldn't be surprised to see that.

Lastly, in terms of credit performance for consumer finance, I think what you're going to see is a moderate recovery. We've come down off of a high peak in unemployment. I think that will continue to come down, but at a slower rate. There will be stimulus, but again, at a smaller rate. There will be a moderate recovery, but it will just be at a slower pace than we saw in the second half of 2020.

Mauro, Wunder Capital: I agree and echo everybody's sentiments, but looking forward to 2021, I do think the fundamentals of solar still look particularly good. You're in a rate environment right now that's near all-time lows. We talked about credit spreads plus base rates leading to lowest coupons perhaps ever. While we still have a continued increase in the general cost of power here in the US, at the same point in time, you're dealing with cheaper and cheaper systems, from an installation perspective, on a dollar-per-kilowatt basis. So the unit economics of solar continue to improve as we look forward, irrespective of the backdrop of what happens politically. Through that lens, certainly in the C&I market, and I'm sure also in the resi market, 2021 can be a very good year across the board for solar issuers.

Seagraves, Willis: C&I has been attractive to the ABS market because of the lumpiness of the pool's revenues and the lack of geographic and industry diversification. We are actively engaged with reinsurers to develop products that support the credit ratings and financial performance of these pools. Stephen's team at KPMG are pioneers in this research and analytics and have been an invaluable resource for my team's efforts.

On the utility-scale solar side, tax credit investors and debt providers are rightfully analyzing their aggregate cross-pool and in-

vestment portfolio exposure to delinquencies and defaults resulting from asset-level financial consequences of a single natural catastrophe event and the negative cash positions created by dramatically increasing insurance retentions. As a proactive countermeasure, our team is constantly modeling and monitoring these aggregations. For our larger clients, we are implementing portfolio-level funding tools that minimize the negative cash flow impact of these natural catastrophe events. For our middle market clients, we are combining their respective portfolios into a single theoretical portfolio and applying the same natural catastrophe analysis, which should allow us to create a multi-client funding mechanism.

If you have resi, by definition, if you do it well, you have a very broad, generic asset pool. But if you start layering those pools on top of each other, it would be interesting to study the resulting concentration aggregates in certain geographic locations and how these concentrations could potentially impact future valuations.

The remaining trend we anticipate for 2021 is the continued hardening of the insurance marketplace. The increasing premium costs are challenging the coverage ratio requirements for many projects. If a project is unfortunate to incur a natural catastrophe event, it could easily incur deductibles and retentions equal to or in excess of 12-month cash flows.

Lane, Sunnova: I think you're going to see some continuation of some natural trends that are very helpful for the solar industry: Continued adoption of the battery. More and more people seeing that working from home is an option. That will continue to drive both the credit quality of our customers and demand for residential and community solar as well. That, in addition to what Danny mentioned earlier about the transfer of wealth between generations, drives the power and the purse into a generation that wants to be responsible at the same time that it wants to be prudent with its finances. So all these macro trends continue to develop in this asset class.

One thing I'd really like to see is that we come through this and we can put a stamp on it and say, "Yes, solar has gone all the way through a down financial cycle at a time

where unemployment has gone up and certainty of income has gone down, and we see the asset class prove itself." I think being able to have folks see that in the rear view mirror is going to be very beneficial to the business as a whole.

Kaplan, Mosaic: Folks who have data, especially longer-vintage data, are going to continue to leverage that. They're going to be able to see performance through Covid, looking at different vintages at different points in a loan's life. They're going to be able to iteratively continue to back-test their own underwriting processes, and that is something that we've invested heavily in over the last couple of years, but particularly with Covid, we really focused on that. Building custom underwriting models, looking at risk segments that we can eliminate going forward, and having that data is a competitive advantage.

In terms of the industry itself, there are major volume tailwinds coming out of 2020. When the dust settles, we're going to see this was, despite Covid, a spectacular year for resi solar and it sounds like, from Richard's remarks, C&I as well. A very healthy year.

We see a positive feedback loop between financing efficiency and volume growth. There are so many markets in the United States that just have relatively low cost of power where, because retail rates have gone up and because financing for the industry is becoming more efficient, solar is becoming economically viable. We're seeing new land on a regular basis and some of the fastest growing markets today were not solar markets two or three years ago in any meaningful way. That is a beneficial cycle that I think we're going to continue to see over the course of not just next year, but the coming years.

Henne, KPMG: I share a lot of my colleagues' bullishness on the solar markets, due to strong fundamentals and growing investor appetite as they gain more comfort with the performance data, how the asset classes weathered the pandemic and also with a quest for increased yield in greener assets. Will this lead to new entrants?

And finally, will there be more M&A activity that consolidates some of the established players? That will be one of the more interesting things to see over the course of 2021. ■