US IPPs & Power Utilities

The C&I Solar Opportunity: Risks vs. Returns (Includes Call Transcript)

Equities

Americas
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Solar presents ~$50 billion opportunity in the next five years; ~1/3rd maybe C&I

We hosted our latest conf call with Yuri Horwitz, CEO of Sol Systems, a C&I solar project financier and investment management group. Yuri highlighted that the solar industry is growing upwards of 30% per year, and presents an estimated ~$50 billion opportunity in the next five years. Sol Systems' estimates the C&I and small utility segment to represent one third of the overall market with ~2,000MW build out in this segment in 2014. Assuming an estimated $3/W build out cost; that would mean ~$6bn spent in the C&I space in 2014; and we largely expect similar yearly amounts to be allocated to this space over the next couple of years.

What's the main risk impeding C&I growth? Credit quality of the off-taker

As we have highlighted earlier, growth in the C&I space has lagged behind the rest of the sector; mainly due to the relatively riskier credit quality of the off-taker (in most cases no existing or consistent credit rating metrics exist for the smaller C&I customers, making each project more challenging to evaluate). In turn this also does not support easy securitization, which, in contrast, is readily available in the resi market as a consequence of widely available FICO scores. There are also substantial transaction costs with these projects because they aren't very large in size either. Sol System addresses this issue by developing internal credit review processes that allows it to analyze non-payment scenarios and isolate default probabilities. The "secret sauce" here it would seem, is that downside is limited because they can take control of the projects and sell electricity back onto the grid and price that into a credit floor.

C&I space remains fragmented; standardized PPA, EPC and O&M required

One of the other biggest risks and challenges in the C&I space is fragmentation of origination; vs high concentration in resi (eg, SolarCity controls ~37% of the resi market). This makes scaling up investments into a vehicle with critical mass challenging especially for vertically integrated entities. The fragmentation and localized nature of the developer market is further predicated by the industry's inability so far to offer a standardized C&I offer for developers to build upon – for example, commercial PPAs are not available for 50-400 KW systems. The introduction of standardized PPAs, EPC and O&M contracts would make one-off negotiations quicker and effective; and further steepen the growth trajectory for C&I solar.

Higher risks in C&I = premium on returns; interest from traditional players

According to Sol Systems' unlevered after tax returns in C&I are in the 8-9.5% range (can be higher for really small deals that are noninvestment grade). This compares to lower returns for utilities because of higher competition (~7% for large utility projects). Higher returns should attract more capital into this space. We expect strong growth over the 2015-17 period, highlighted by several recent announcements showcasing increasing interest. SCTY announced a $1 billion this spring to fund its plans for more than 300 MW of new commercial solar projects, including battery storage systems, over the next two years. Sungevity (mostly so far focusing on residential installations too) recently partnered with Sol Systems which finances commercial-scale solar projects and Vivint has also announced intentions to potentially partner up to enter the C&I segment as well. We expect more traditional utilities to also increasingly get involved in this space.

ITC step down will be short term pain

We have written in the past about our expectation for significant solar slowdown in 2017 as the ITC is revised down; but growth to resume with traction coming out into 2018/19 and further out. Sol Systems' analysis concurs this view – Yuri expects the ITC stepdown to bring some pain, but not wholesale destruction to the market. Countervailing forces that should soften the ITC blow include decreasing WACC, a reduction in build cost and a simplified capital stack. The stepdown in ITC means more cash flow upfront for sponsor and for debt which means a move towards lower IRR yields; this would mean a weighted-average cost of capital that comes down slightly – according to Sol Systems' this can mean a 50-100 basis points improvement via this route alone. Investors can also be expected to demand a lower risk premium as they get more comfortable with the asset class in the coming years.

As investors become comfortable with the asset class, expect higher debt, lower tax equity

According to Sol Systems' data, the overall sources of funds currently for a project are generally 40% tax equity, 40% debt and 20% sponsor. However, we expect this to change as the ITC drop down comes into effect. Assuming the tax equity is willing to invest for a 10% ITC, Yuri expects about 15% of the capital stack coming from tax equity in the post-ITC world. Generally with tax equity being relatively expensive, their share in the overall capital stack has a propensity to decline anyway (except for say a sale leaseback or a flip structure where the tax equity is paying more for its investment). The remaining 85% of the capital stack will be split between sponsor and between debt; with debt becoming an increasing proportion of solar in general as the asset class becomes more accepted and understood: Sol Systems' estimates the remainder could potentially even be split 15-20% sponsor and 60-70% debt.

Generally the debt service coverage ratio is in the 1.25-1.35 range depending on the asset class in solar; but this come down too with time, as lenders become more comfortable with the asset class.

Low double digit PPA pricing for California C&I

According to Yuri, PPA prices are generally 10-15% discounts off electricity prices, with a 0-2% escalator. This translates into low double digit PPA prices (~10-12 cents) as pretty common in C&I. This is lesser than what is available in resi; largely because resi retail rates are higher too. Nonetheless C&I pricing is still higher than wholesale electricity prices; and the investment can be made more compelling in case SRECs and other local incentives are layered on. Moreover, C&I consumers typically pay meaningful fixed tariffs as well, for which solar can help clip their peak consumption (that said, the more fixed the tariff, the less valuable the net metering benefits of selling back into the grid are).

What happens when the C&I counterparty defaults?

Among the most critical questions in the C&I space given the higher risk profile remains what happens to the solar system in the event of default? Critically, the system can typically take advantage of net metered rates, even if consumption at the local site is lower. On occasion, economics can be tied back to sales into the grid at the wholesale rates, rather than net metered (at the full retail rate). That

said, there is further ambiguity on bankruptcy process in terms of access to panels and maintenance.

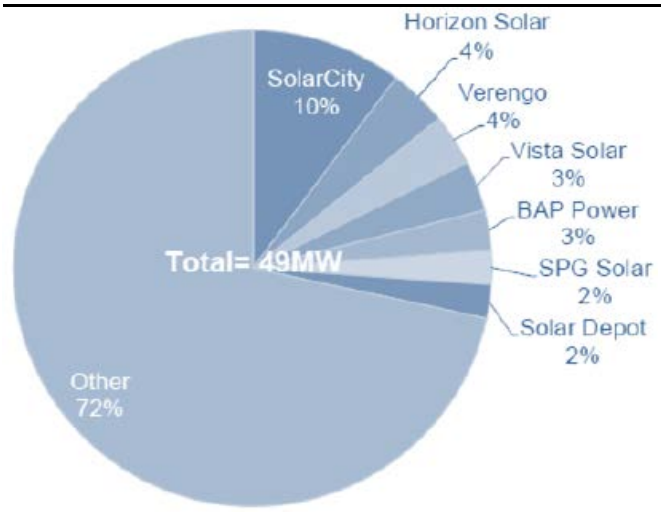
Second Tier, smaller C&I customers represent steepest growth opportunity

So far most of the C&I growth has happened for the big customers – Walmart, Walgreens etc. Growth in standalone malls, for example, hasn't taken off - a C&I provider targeting a mall would need to negotiate with *each* store owner within the mall, thus bringing heterogeneous credit risk issues to the fore again. That said, the advantage of targeting second tier and smaller players from a developer's perspective, will be their ability to negotiate PPAs at more advantageous terms; which isn't possible while negotiating a contract with Walmart. We think the largest chunk of so-far untapped future opportunity may indeed lie with this tier-2 stand-alone C&I customers.

C&I largely a fragmented and localized market with many developers

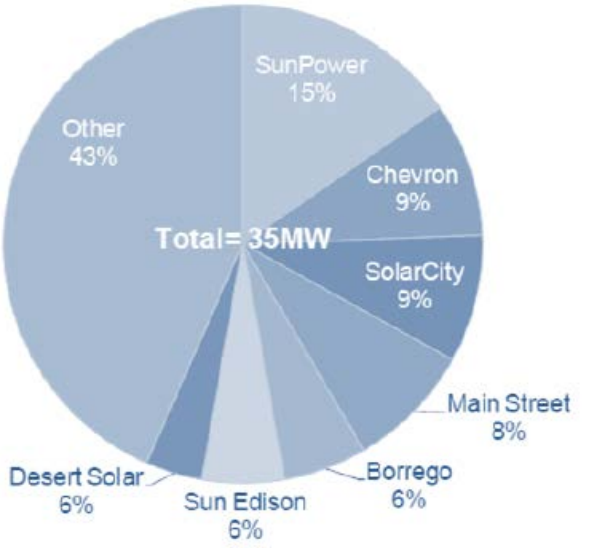
The chart below shows how fragmented the C&I market is. This means that to be able to scale investments in this space, an originator needs to be able to transact with multiple localized parties. Although Solar City is the leader in the first chart below, its share was only ~10%; this compares to their ~37% market share in the resi market. Although the charts below are for California, according the Sol Systems' they are broadly also a true reflection of the overall market too. Notably, Sol Systems' is the financing partner for Sungevity's efforts in the sector.

Figure 1: California Solar Initiative commercial installer market share by installed MW (1H 2013)



Source: BNEF; California Solar Initiative (taken from Sol Systems Slides used on UBS Conf Call)

Figure 2: California Solar Initiative govt/non-profit installer market share by installed MW (1H 2013)

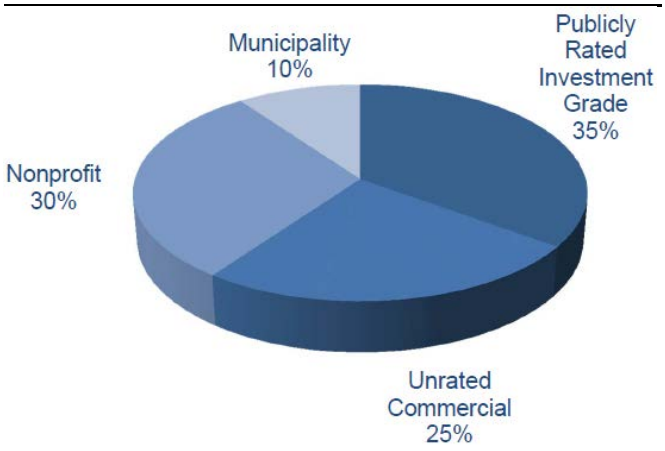


Source: BNEF; California Solar Initiative (taken from Sol Systems Slides used on UBS Conf Call)

Sol Systems' attempt at taming the host default risk

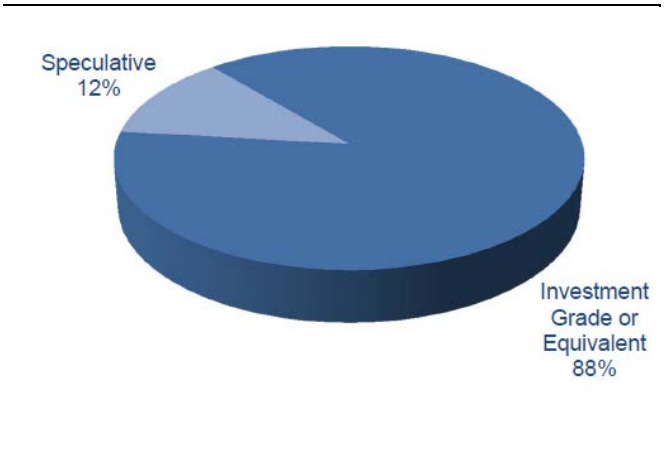
Below we show a breakup of Sol Systems' off takers and their overall portfolio on the basis of credit quality. It reflects the typical risk in the C&I segment: The majority of potential solar offtake customers in the space do not possess a publicly available credit rating; and this has served to limit growth as most investors including tax equity providers want to deal with investment grade credit ratings.

Figure 3: Sol Systems' Offtakers by number of projects



Source: Sol Systems

Figure 4: Sol System' portfolio by ultimate credit finding; installed capacity basis



Source: Sol Systems

Sol Systems' methodology to get comfortable with specific C&I credit follows the following internal vetting process:

- Extrapolating shadow 20 year credit rating from audited financials, payment history, and credit equivalent performance
- Adjustment of pro forma cashflows to reflect likelihood of nonpayment
- Inclusion of likely revenues in non-payment scenario
- Credit enhancement tools for weaker customers

We think ability to vet individual credit profiles isn't necessarily a competitive advantage. Like we said, the "secret sauce" here it would seem is the ability backstop all analysis and by taking control of the projects and sell electricity back onto the grid and price that into a credit floor.

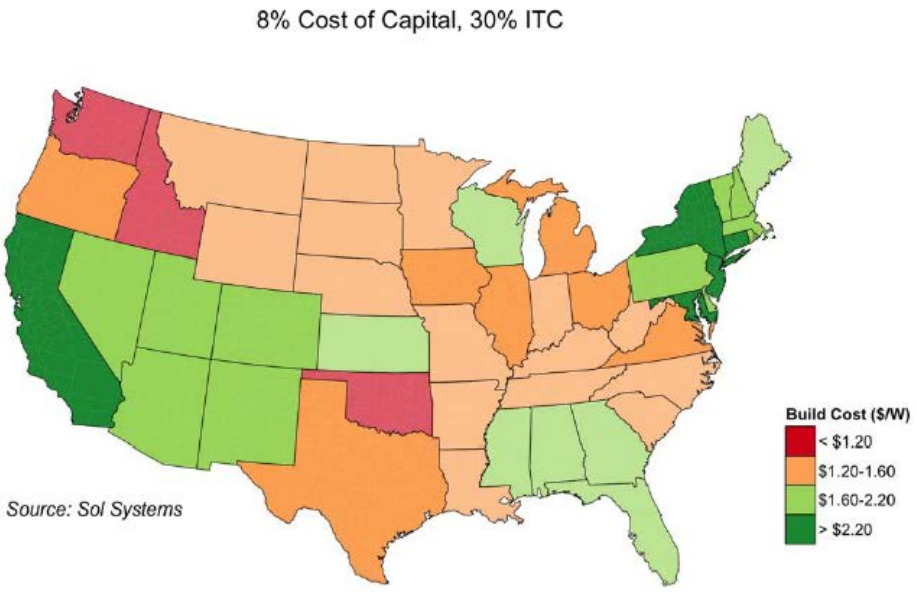
Forecasting the C&I markets in 2017 under varying build-cost, WACC and ITC assumptions: base case for ~138GW as addressable market

We expect the ITC reduction to lead to significant overall solar dip in 2017. Below we show Sol Systems' estimates for the *addressable market* (i.e, potential max) based on current economics and future economics – and different assumptions as to what happens to ITC in 2017. In the maps below, the green are the most attractive markets in the US.

The first chart below looks at the current C&I market – best-in-class build cost is ~$2.10/W (based on a SolarCity announcement). Sol Systems' estimates cost of capital for C&I between 8-9.5%. The smaller and more complex the deal is, the higher is the transaction cost and the cost of capital. The chart shows an addressable C&I market of around 258 GW at current 30% ITC.

Figure 5: Commercial markets in 2015

Build costs	$2.10
Cost of Capital	8%
ITC	30%
Addressable Market	258 GW

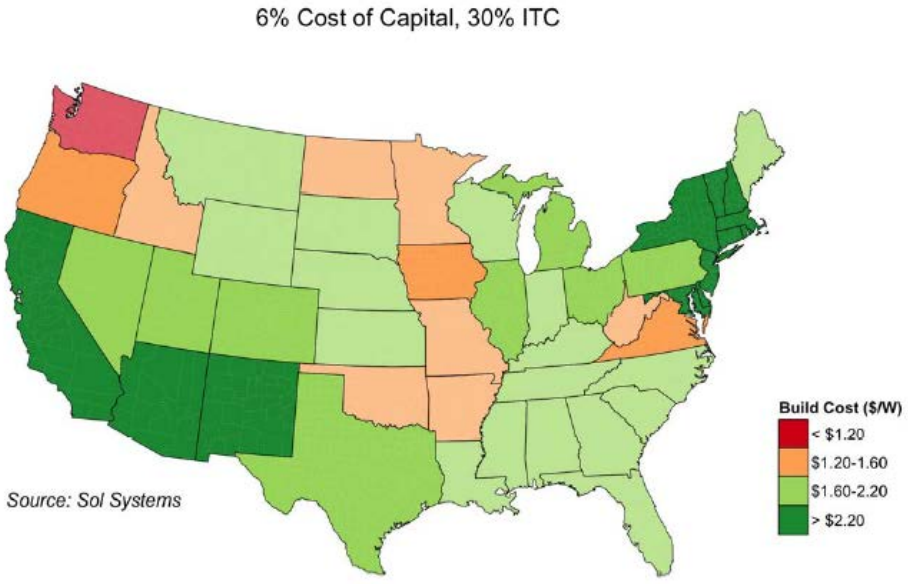


Source: Sol Systems: Slides used on UBS Conf Call

The next slide shows Sol Systems' "aggressive scenario" - a best case scenario for solar with build cost lowered to $1.80/W, cost of capital lowered to 6%, and an assumption that ITC is maintained at 30% - this produces an addressable market of 437 GW. This isn't a very likely scenario of course but set a ceiling of sorts.

Figure 6: Commercial markets in 2017: Aggressive Scenario

Build costs	$1.80
Cost of Capital	6%
ITC	30%
Addressable Market	437 GW

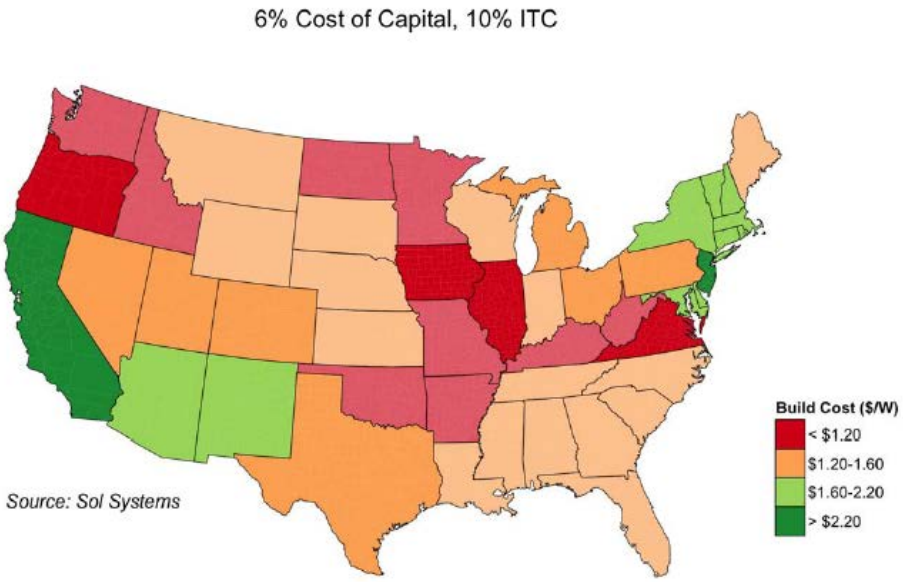


Source: Sol Systems: Slides used on UBS Conf Call

The next slide looks at Sol Systems' "positive case" – something they categorize as "the positive side of realistic". Here, assuming a build cost of about $1.90/W (very achievable; utility side projects are currently getting built at a $1.30-1.60/W. Overall even if module costs may flatten out a bit we think significant cost savings may yet be possible via inverters and scale efficiencies). This scenario assumes ITC of 10%. The addressable market under these assumptions is ~239 GW.

Figure 7: Commercial markets in 2017: Positive Case

Build costs	$1.90
Cost of Capital	6%
ITC	10%
Addressable Market	239 GW

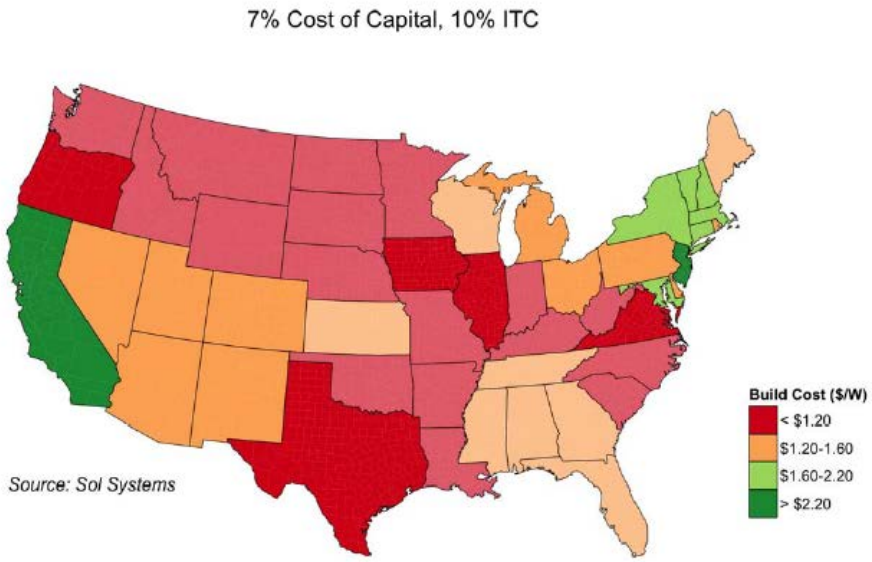


Source: Sol Systems: Slides used on UBS Conf Call

Further in the 2017 base case, Sol Systems' shows a drop in the number of states which will be attractive for solar. Here the assumptions are for a build cost of $1.90/W and cost of capital of 7%; and an ITC at 10% - the addressable market in the base case is ~138GW.

Figure 8: Commercial markets in 2017: Base Case

Build costs	$1.90
Cost of Capital	7%
ITC	10%
Addressable Market	138 GW



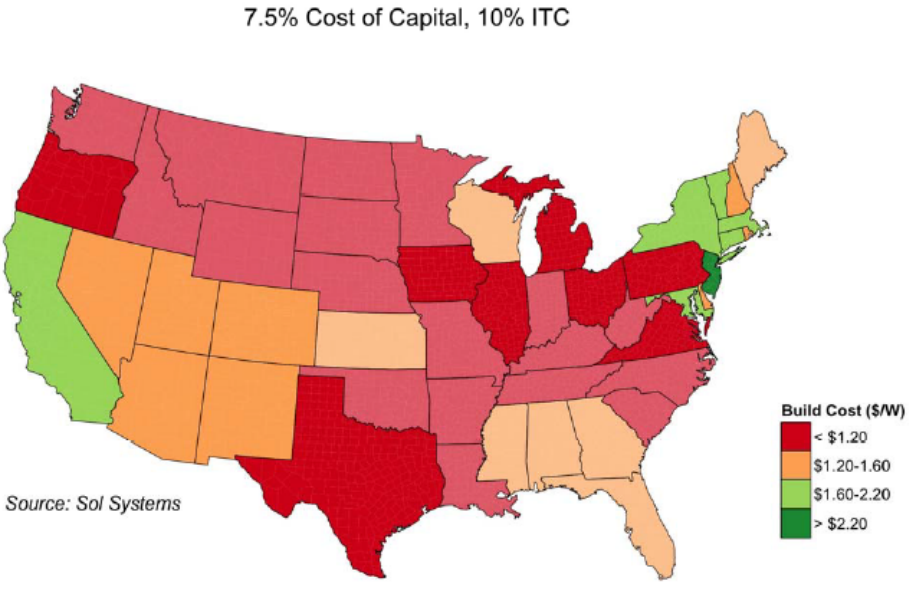
Source: Sol Systems: Slides used on UBS Conf Call

The worst case scenario below:

Figure 9: Commercial markets in 2017: Worst Case - Plateau

Build costs	$1.90
Cost of Capital	8%
ITC	10%
Addressable Market	138* GW

* Same market size under 7-8% CoC and $1.90-$2.10 build cost, illustrating the importance of bringing build costs down.



Source: Sol Systems: Slides used on UBS Conf Call

Another look at the Commercial Addressable Market

We look at the same analysis in a different representation below. The heat chart below shows a significant reduction in the number of states in which solar is viable for C&I. The first chart shows the cost of capital compared to electricity prices (think of PPAs at 10% to 15% discount to prevailing electricity rates); in the further two charts below Sol Systems' estimates the addressable market (i.e, potential max) based on current economics and future economics.

With ITC at 30% Sol Systems estimates a current addressable market of between 254 and 297 GW; and with ITC down at 10% + reductions in the cost of capital over the next two years, they estimate a 138 GW potential addressable market.

Figure 10: Comparing cost of capital with emerging build costs

10% ITC	Comparing Costs of Capital with Emerging Build Costs							
Cost of Capital / Electricity Price	$0.090	$ 0.095	$0.100	$0.105	$0.110	$0.115	$0.120	$0.125
5%	$ 1.48	1.57	1.67	1.76	1.86	1.95	2.04	2.14
6%	1.36	1.45	1.53	1.62	1.71	1.80	1.88	1.97
7%	1.26	1.34	1.42	1.50	1.58	1.66	1.74	1.82
8%	1.16	1.24	1.31	1.39	1.46	1.54	1.61	1.69
9%	1.08	1.15	1.22	1.29	1.36	1.43	1.50	1.57
10%	1.01	1.07	1.14	1.20	1.27	1.33	1.39	1.46
11%	0.94	1.00	1.06	1.12	1.18	1.24	1.30	1.36

Source: Sol Systems: Slides used on UBS Conf Call

Figure 11: Addressable commercial market under varying build-cost / WACC / ITC assumptions

Addressable Commercial Market (10% ITC, GW)	Cost of Capital				
Build Cost	6.0%	6.5%	7.0%	7.5%	8.0%
$1.50	321	321	297	293	261
$1.60	321	293	261	254	239
$1.70	293	261	254	237	212
$1.80	254	254	212	212	138
$1.90	239	212	138	138	138
$2.00	212	138	138	138	138
$2.10	138	138	138	138	138
$2.20	138	138	138	35	35

Addressable Commercial Market (30% ITC, GW)	Cost of Capital				
Build Cost	6.0%	6.5%	7.0%	7.5%	8.0%
$1.50	656	656	592	592	437
$1.60	592	592	437	437	437
$1.70	592	437	437	366	321
$1.80	437	437	366	321	321
$1.90	398	330	321	321	297
$2.00	321	321	321	297	268
$2.10	321	313	297	268	258
$2.20	313	297	261	254	254

Source: Sol Systems: Slides used on UBS Conf Call

Conference Call

We present below highlights from our call with Yuri Horwitz, CEO, and Eric Scheier of Sol Systems – a Washington, DC based solar project financier and investment management group, with a core focus in the C&I space. They have financed nearly 200MW of projects in the US to date, and operate at several areas of the value chain including project acquisition, tax equity, debt, asset management, and SREC aggregation and financing.

We have edited the text for improved clarity and context. Please let us know if you would like a copy of the slides used on the call.

To listen to a replay of the call, use the dial in details below:

Replay Information (available until 6/23)

Toll Free: 800 633 8284

Toll: +1 402 977 9140

Passcode: 21769817

Julien Dumoulin-Smith: Good afternoon everyone. Appreciate you all joining us on this call. We're joined by Yuri Horwitz and the team over at Sol Systems this afternoon to talk about the C&I space. They are involved in all aspects of the solar C&I sector; including the financing aspects associated with getting some of these more esoteric deals off the ground.

So with that I'll turn it to Yuri to go through some of the slides here. Good afternoon Yuri. How are you?

Yuri Horwitz: Good Julien. Thanks for having us. We appreciate the time and we're excited to be talking to you and other folks within the UBS network.

Our goal today it's to go through these slides in about 15-20 minutes. And then we'll talk through questions that you may all have. Eric Scheier is sitting next to me. He's the associate on our team that's done a lot of the research behind this and helped put all this together. This slide deck is based on the article that was published with Green Tech Media recently.

Sol Systems has been in the solar space since 2008. We are heavily involved with and focused on financing of projects and solar projects in the commercial/industrial space and also small scale utility.

One question that we have as many others do in the industry is what does the 2017 stepdown in the Federal Investment Tax Credit really mean for us and for the industry at large? How does it impact the markets that we're working in? How does it impact the economics of the deals we're working on?

In light of that Eric and I and others on our team have done a real deep dive taking our model and applying it across every single state in the country to analyze the impact of the 2017 stepdown on cost for installers or developers and also cost of capital for investors. Trying to paint a picture of how we succeed and also get a better understanding of how that success looks and how it changes.

So today we'll talk about the potential market for C&I, some of the issues surrounding C&I and why it hasn't scaled the way we think it will and currently we think it is. Evaluating the impact of the ITC stepdown in 2017 and then evaluating which states will continue to cater to C&I post-2017 and 2018 is, if the ITC stepdown occurs as the market overall stabilizes and recovers which we think it will.

So moving onto Slide 4, we have some background on Sol Systems. We've been around since '08. There's about 50 of us. We've got offices in DC and in San Francisco. We've financed hundreds of megawatts of deals. We're financing well over 200 Megawatts just this year.

We generally work with developers across the country so if you've seen public announcements, you'll see an announcement between us and Sungevity for example financing a portfolio of theirs. We work with folks like SunPower.

We provide both financing solutions but also acquisition solutions for the industry buying projects and also financing them through tax equity structures and debt structures.

We estimate **~$50 billion solar opportunity in the next five years or so at least. The industry is growing 30 plus percent. I think it was estimated to grow 37% last year.**

And actually a significant amount of the overall electricity generation capacity in the United States comes from solar which is very new and very exciting for those of us that are involved. I remember when we started in '07, '08, that the industry overall was producing about 300 Megawatts of solar a year. It was putting out on the market. Just in 2012 which is four years later it produced over 3000 Megawatts.

And of course this year we expect to produce between 7 and 8000 Megawatts which is 6 and 8 Gigawatts.

The interesting part about the solar market is it really is composed of three segments. The first are the residential 5 to 10 Kilowatt systems on homes. The second is the C&I space – this is commercial and industrial solar, where modules/systems are put on Walmart's or Walgreens or your local supermarket. And then thirdly, there are the utility scale solar systems – these are large solar plants that are out on farmlands or off rooftops and off an adjacent host; these last ones sell electricity directly to the utilities.

We focus as I said before on the **commercial, industrial** and on the utility. And **we think there's huge opportunity there even though the space isn't scaling as quickly as some of the others**. "In complexity is opportunity" - that's a tagline for us.

It is a very complex space - **C&I solar and small utility** – not the least because **you've got to address credit concerns**. And you've got developers of varying sophistication. There are **substantial transaction costs** with these projects **because they aren't massively huge** like a 100 Megawatt system out in California.

And they **aren't readily available to put into vehicles like a SolarCity does for securitization**. So you've got to fund new financing structures and new ways to evaluate credit all of which we've been very focused on.

But we think the opportunity is there because it's a $5 billion market. Very few others are really in it. Virtually nobody succeeded in it even folks like SolarCity who

have been in this space now for a while, just haven't been able to do what they wanted to do. We know that they're aggressively ramping up that part of their business.

Vivint recently announced a C&I fund. Certainly others have announced funds as well. As we noted we work with Sungevity. I'm working on C&I with them.

So it's a market that people are exploring and very focused on doing and doing well. But a market that has some challenges many of which we've built our company around addressing.

One of the biggest risks and challenges in the C&I space is fragmentation. Getting the type of scale that you need to build a real vehicle is very challenging especially for vertically integrated entities.

On the two charts no slide 8 you can see that there is really nobody that controls this market. SolarCity is the leader in the first chart with 10%. Compare that to 37% of the residential market which they control.

SunPower is the leader in the second with 15%. These are both specific to California but very representative of the overall market. SunPower controls vastly more than that of the residential market at this point.

So **there's nobody in the commercial and industrial space that actually owns it**. And part of it is because it's very fragmented in terms of actually originating in these deals.

And then on Slide 9, the **host default risk is just incredibly challenging to address**. **This is actually one of the most critical pieces to C&I financing**. If you have a solar system on a roof of a shopping mall or a large store, you need to ensure that store is going to be around for 20 years to pay the electricity bills.

And from our own experience when you look at the breakdown of the projects that we've done, a substantial number of those projects or the host related to those projects are non-investment grade (IG) which is interesting. Because it means that you have to develop credit processes to evaluate those non-IG entities. And

actually standardize and automate those credit processes as much as you can and which is what we've done for the last three years.

So moving onto Slide 10, when we look at our host we do a number of things. But one of the things that we do is **we extrapolate a 20 year shadow credit rating based on their audited financials, their payment history and equivalents in the market**.

And then we basically **build-out an equivalent credit rating for a 20 year PPA**. We also make adjustments in our pro forma for cash flows to reflect nonpayment to the extent we think there may be nonpayment. We include likely revenues and nonpayment scenarios for example selling into the wholesale market. And we also look for credit enhancement tools for weaker customers. This is a crux of how you do C&I and it's really important. Frankly it's a developing field for anyone who is in this space.

So now we want to talk about the C&I horizon. And this is really again reflected in further detail on a article that we just published in GTM on Friday and we'll give folks the full article after this as a follow-up.

But we wanted to understand from the industry perspective what the 2017 stepdown meant. So in other words what does that mean for a developer who's building a project?

What do they need to build that project and what does it mean for an investor given what we think are likely build rates in terms of a rate of return?

And what's the impact on the overall C&I market? Are we decreasing the market by 50%, by 10% or by 5% all of which we'll go into.

So first on Slide 13 we give you a window into what we think the current C&I market is. Best-in-class build cost is like $2.10/W. This is based on a SolarCity

announcement they made the other day but also based on systems that we see and finance every day.

Cost of capital for C&I between 8% and 9.5%, 8% is on the low end of that. Certainly the more complex credit, smaller the deal, the higher the transaction cost, the more the cost of capital goes up. A current Investment Tax Credit of 30% and an **addressable C&I market of around 258 Gigawatts**. We don't mean that 258 Gigawatts of solar is actually been built, only that at a very high level this is the addressable market for what potentially could be solar in the United States, a fairly large number.

Moving down to Slide 14, we use an aggressive scenario. In other words a **best case scenario for solar with build cost of $1.80/W, cost of capital of 6% which is a significant drop in the cost of capital in the next 18 months, and ITC of 30% which means the ITC is actually extended which produces an addressable market of 437 Gigawatts which is gigantic.**

So we think if everything in the world went right this is what we're looking at. We don't think this is the most likely scenario. But we think it's one that we can keep in mind and that compare to the following slides which is 2017 positive case. We think this is realistic although it's the bull case – the positive side of realistic. We'll show you the non-positive side of realistic in a moment.

With build cost of about $1.90, we think this is very, very doable. **On a utility side projects are currently getting built at a $1.30 up through $1.60**. Huge declines in modules that help that of course. We think there will be continued declines in modules but we also think there's significant reductions also from inverters and scaling.

Next we look at a scenario with **ITC of 10%** - so we assume the stepdown occurs in this instance. And what those produce is **an addressable market of 239 Gigawatts**.

In the maps on the slides, the green and specifically the dark green are the most attractive markets in the United States. The light green are still attractive markets

moving down to orange and then red which are unattractive markets.

The reason we think this analysis is important is because one, it helps direct solar companies, developers, investors etc into the right markets and pushes them to look at solar as a long term investment. And two, it helps policymakers evaluate what the true impact of the ITC stepdown is.

So **the 2017 base case, we see a significant drop in the number of states that still have solar**. **We think these states will recover but in the meantime no doubt about it, the ITC stepdown will have a negative impact on the industry at least from our perspective.**

Build cost of $1.90 we think are real, as we said before, slightly aggressive. Cost of capital of 7% we think is extremely reasonable. Taking out some of the tax credit equity in the deal simplifies the overall cap stack so you actually have a reduction right there; an ITC at 10% and the addressable market of 138 Gigawatts which is a drop from Slide 13 and which is a 2015 commercial market but not a killer drop.

The heat chart certainly represents the reality on the ground which is **a significant reduction in the number of states in which solar is viable for C&I**. We think Slide 18 is perhaps one of the most interesting ways to look at the market. What we do is price out the cost of capital on the left side then compare that to the electricity prices which we generally think of PPAs - 10% to 15% discount to prevailing electricity rates; so these are retail electricity rates and then below that mapping that out to actual states.

And so what we did was we went into EIA data, pulled prevailing average electricity rates for C&I customers or commercial customers specifically from all the states. Figured out how much load was actually being delivered to those customers in each one of those states. And then broke down the addressable market based on current economics and future economics.

And what you'll see is on to the right **a current addressable market for a 30% ITC of between 254**

and 297 Gigawatts to a future which is on the left with an IT - 10% ITC even assuming aggressive reductions in the cost of capital and the build cost down to 138 Gigawatts potentially. Best case scenario 254.

So in other words what we see is, in the best realistic scenarios, we don't see much of a shift down. But in much more realistic scenarios we see a shift down, a significant shift down over time what we estimate to be about 30%.

We think the **ITC stepdown will bring some pain. But not wholesale destruction to the market**. **Some countervailing forces are decreasing cost of capital overall, a reduction in build cost overall and the simplified capital stack**. That 10% ITC means more that can be brought into this - to the capital stack. And we think it reduces the WACC, just in and of itself by about 50 basis points.

Even so **we see a potential reduction in the overall market by 20% to 35% but a rebound in 2019 through 2020**. And we predict a start of construction bridge into 2017 to help soften this transition. Of course that's not legislative at this point but we assume that's where the market is going to go and where legislation is going to go.

So hopefully this analysis provides all of you with a framework to evaluate what's happening to commercial solar in 2017 and 2018. We're actually going to replicate this analysis with utility scale solar as well. And also for those developers on the line or folks that are involved in building solar hopefully it guides your mission in the future.

Thanks; happy to answer questions as you guys see fit.

Julien Dumoulin-Smith: Great. Appreciate it very much. Let's get going here first in terms of credit default - how do you think about, winning in this space on that front; what differentiates you guys versus others? Especially given the relative opaque credit and very specific discrete situations with each C&I customer.

Yuri Horwitz: Yes. So we differentiate ourselves in a number of ways in the C&I space. Part of that is our origination strategy. We're not vertically integrated and so we work with a number of different partners in the space to acquire their projects. With regard to credit specifically which is what you asked, I think what differentiates us, there's just a ton of work and effort in this space over the last years because being focused on this space means we had to solve this issue and we had to solve it quickly.

So one of the things I mentioned earlier was that we've **extrapolated 20 year credit rating on non-IG entities** which means folks that do not have an S&P rating, don't have a BBB minus right now. There's this binary outcome. You either do or you don't. And if you don't have an investment grade rating then you aren't able to be financed.

What we've done is gone back and actually worked with some of the credit rating agencies, pull a lot of their data to get default frequencies going out about five or ten years depending on who we work with.

And then we've actually built our own models taking that all the way out to 20 years. And matched it against a lot of what's already out there. So just that homework in and of itself is different than one most folks are doing out there.

We also adjust our pro forma based on that credit history. And we have a number of different pools that we pull from - a lot of which are available to the public on online platforms.

Pulling from that data and pulling it from our shadow rating we then can adjust the pro forma to take into account potential periods of nonpayment.

And finally the backstop to all of this, **we get control of the projects and ensure that we can actually sell electricity back onto the grid and then price that into a floor to our credit,** which is I guess some of our secret sauce. But I think anyone who works on this will

come to the same conclusion which is the floor isn't that you can't sell the electricity and there's no one to take it. The floor is electricity goes onto the grid and you just get less money for it.

Julien Dumoulin-Smith: When you're thinking about the counterparty here, who is really going to be the counterparty in many of your instances? As you think about taking credit exposure, exposed against certain real estate like malls etc, how are you thinking about the specific store owner versus the realty who might be the counterparty?

And also, how do you think about selling back? It's not that you're selling necessarily at wholesale. It might even be really at the retail rate wouldn't it?

Yuri Horwitz: Yes. In that meter situation you could still sell it at retail for sure. Yes, great point. And depending on our modeling and depending on the state-by-state legislation, we're modeling that in. We're also modeling in worst case scenario which is you sell back at wholesale.

I think there's two levels of analysis you can do. One is to the extent that this particular host is not going to pay its electricity bill and net metered. Well first, in community net metered environments you can sell to just about anyone. In that metered environments you may have the ability to sell back at retail which is what you're selling to the host effectively.

And then even in non-net metered environments you can certainly secure the ability to sell back onto the grid. So you have a backstop there or, three-step backstop in terms of what you do with your solar.

To your point about selling to malls and selling to the stores in the malls it really depends on who the PPA is with of course. Generally speaking you're not going to enter into a PPA with a mall because the mall isn't actually paying for the electricity. It's the stores within that mall. The mall has common space and those stores share and paying for that common space electricity.

But generally speaking **you've got to enter into an agreement with those individual stores. And this is actually why malls haven't proved to be amazing counterparties on commercial solar**. And you see much more on big box like a Walmart or a Costco or a Walgreens or someone like that.

Julien Dumoulin-Smith: Great, excellent. Which have proven to be the best niches? When you think about the market share today, where do you see the most success?

Yuri Horwitz: Yes. So speaking outside of Sol Systems on a high level in the market, the most success has absolutely been with Walmart. I believe they're the largest procurer of solar out of any private company in the country.

But they're huge. Costco is huge. Walgreens is huge. We focus actually not on those stores. The challenging thing about working with those stores is when you negotiate with them they have got massive leverage over negotiating. And that flows through to solar as well. **Their PPAs are more challenging. In some cases less financeable and certainly the rates they're going to pay are more challenging**.

We're actually interested in some of the off the beaten path host because frankly in terms of standardizing your processes they're easier to work with in some cases and also because the projects themselves deliver higher returns.

So I would know say the industry has succeeded thus far with many of the big boxes and specifically with Walmart. **Where do we think the opportunity is for the future? Actually in many of the other C&I customers throughout the country where you potentially can get better deals and certainly higher returns for investors.**

Julien Dumoulin-Smith: The PACE Program - how does that fit into the opportunity set; and how can you take advantage of that?

Yuri Horwitz: Yes, great question. I love the PACE Program. For those of you that are on the line that don't know about it, it

effectively takes the cost of the system and folds it into a mortgage for either a commercial customer or residential customer.

We're not actually focused on deploying capital through PACE related entities. We focus on a third party PPA. If anything I guess the PACE Program may compete with us which we're perfectly happy to have. I think we're very focused on the industry succeeding overall. But it's a really, really solid program. Commercial PACE and residential PACE are generally different, different programs and are available to varying degrees in different states.

And so we haven't been tremendously involved in PACE. That may change in the future.

Julien Dumoulin-Smith: Got it, excellent. Okay. Well let's take that a step further. Where do you see PACE Programs working best? And I'd be curious a little bit more about market share there – and also how do you think that evolves?

Yuri Horwitz: Yes. So first question, full disclosure, I'm not an expert on PACE. In terms of market share very minimal at this point. And I think will likely be minimal in the future. I think we've seen some PACE out in California I believe and to varying degrees of success. We've seen it in some other states.

I continue to believe that **most of the success with solar will be third party financed through PPAs and lease products whether it's resi utility or commercial**.

In terms of the future I think your question Julien is who do we see as our competitors and how does the market share break down.

Certainly the largest C&I developer/owner in this space right now I believe is SolarCity. I believe they did about 70 Megawatts last year of just pure C&I. They were aiming to do about 100 or maybe it was 75.

So they, they've had their own challenges but certainly their own successes. And **those successes have been pinned primarily on large retail box stores like Walmart at least to my understanding**.

Others that have succeeded in this space include folks like SunEdison. This is certainly what they focused on initially when they started out. They are also refocusing on C&I from what I understand. And but I'll let SunEdison speak to their own strategies.

I think **taking C&I and placing it into a yield co is hard because it's just not a lot of bang for your buck in terms of transactions and yield cos are going to be extremely and focused on scaling massively to drive growth**.

I think that the folks involved in this industry will be folks like SolarCity. Vivint just announced a large fund. I think you'll see them scale out. SunPower will be involved in this. And certainly we may see some more effort from folks like Sunrun.

What I would also suggest though is that **those traditional players are going to have trouble getting non-IG, noninvestment grade assets into their funds and into their structures to securitize**. **And they're heavily reliant on that machine**. These large companies have a very well-oiled machine, lots of respect to them for building it. Those machines aren't necessarily as effective of breaking down off credit projects and certainly a lot of the banks aren't completely comfortable with those off credit projects at this point.

We think those funds will start to change. Our **understanding is that SunEdison I think is launching some C&I or middle market securitization later on this year**. We'll see how that goes.

But generally speaking it's been very challenging for them. Where we see folks have tremendous success in this area are some of the utility affiliates who

underwrite this stuff day in and day out. And we work with them quite a bit.

And they have generally softer, more malleable credit underwriting and are able to take a little bit more time with all this.

Julien Dumoulin-Smith: Great, excellent. When you think about the scalability in this industry, how do you make scale and cost work? Ultimately hasn't that always been the issue here with this C&I segment - the specific discrete cost of evaluating the credit and just in general the bang for the buck hasn't always been ideal. How do you address that?

Yuri Horwitz: Yes. That stuff gives us nightmares at night. **I think we fundamentally believe the industry hasn't had a clear C&I offer for developers to build upon. So there's not a commercially available PPA for 50, 100, 200 even 400 KW systems out there that's very real for many developers.**

And, stemming from that belief we think that providing that to the industry which is what we're focused on long term we can actually help drive the market's development itself.

So that is to say what's being produced right now is one-off spoke transactions. What needs to be produced over time and there are folks out there that focus on this as well. **What needs to be produced are basically projects that conform to a standardized PPA, EPC and O&M.**

And we certainly have all those forms and provide them to all of our developers who are conscious enough of the fact that right now however hosts are still negotiating those.

And so what it becomes is, **how do you deal with one-off negotiations as effectively as possible?** We basically priced out each transaction we do to estimate how much time can we spend on this transaction, **how do we price this project given the fact that the PPAs already been priced.**

So it's a balance between on one hand automatizing everything - there are platforms out there like Merkados and others that are focused on that. We fundamentally believe that's a thing that we have internally.

We think this segment of the industry needs focus, we're focused. We think it needs people that understand these projects inside and out and look at them through not just the lens of each PPA but through pattern recognition, something that occurs with focus and experience. We think it needs people that are very, very comfortable with credit and evaluating credit internally and can do so quickly which is why we focus on it so much.

And we think it needs people that are exposed to the industry at large so they can bring in real scale. And then behind that scale build-out funds and financing opportunities.

So obviously those all mirror our overall strategy in the industry. But we think that's how it scales because these are complex financing opportunities and they require a very nuance and sophisticated approach which we like to think we've developed and we'll continue to develop. Certainly some other folks in the industry have developed them as well.

Julien Dumoulin-Smith: Let me move forward a little bit to what you were talking about in terms of the market size opportunity.

The cost of capital coming down - clearly in this environment, I would argue for a rising interest rate environment perhaps that runs counter to what you're talking about, there's some specific trends about the higher cost of capital for solar there.

How do you think about those two forces going - the discreet premiums paid for solar coming down relative to interest rates rising?

And how do you come up with that 50 to 100 basis points decline that I think you have on the slide there?

Yuri Horwitz: Yes. So first and at a macro level as you point out Julien there are two countervailing forces. I would actually name three. One is generally speaking people - most people expect interest rates to rise. And if interest rates rise anything that competes with long term treasuries, securities, bonds, etc the returns on those less secure investments also have to rise.

And so I think embedded in your question is well **if interest rates are going to rise then why wouldn't returns on solar rise?**

And I think the answer is twofold which is one - **financiers and others become more comfortable with the asset class such that the risk premium they're placing on each investment are lowered**. Whether that's a debt investment or whether that's lending or a tax equity investment or you're in sponsor position or you're in some levered position behind all of it - **those returns will come down** as people become both more aware of the industry at large which has certainly happened in the last three years and both more comfortable with the performance of the overall asset class.

When, you've got 300 Megawatts being produced every year in 2008 versus, 8000 in 2015, there's a very different level of security you can have as an investor in terms of okay, how has this asset performed and how has it performed over the last five years?

So for example our portfolio hundreds of megawatts are performing, well over 95% somewhere up towards 100%.

So those are two countervailing forces. The last countervailing force which I'd add is beyond solar itself which is overall what we see is **insurance companies, pension funds, etc, are unloading riskier, maybe more merchant types investment strategies, in exchange for more stable long term producing assets,** whether those are hydro facilities or solar. The range is wide. Really what people want is hard assets that have long term revenue streams.

And so that's why we think there's been huge success both in the yield cos and also in the launch of SolarCity which is basically a company and a yield co wound up together which is to say people are interested in solar because of these 20 year PPAs, extremely rare in this space with very little technology risk, no fuel risk and investment in the United States all of which, deserve a premium.

So I would say on one end you've got increasing interest rates. On the other what you have is an asset class that's maturing. A number of investors that are more aware of that asset class which means more demand for it. And overall a meta move towards long term assets and investing in those.

And we think that's going to drive returns down. The point that we make at the end just to add one last piece to it is that we think that **the stepdown in ITC from 30% to 10% means more cash flow upfront for sponsor and for debt which means a move towards lower IRR yields which means a weighted-average cost of capital that comes down slightly we think between 50 and 100 basis points just embedded in that change itself**.

Julien Dumoulin-Smith: Got it, that's great. Let me just follow-up here on the capital cost to build. So you guys are forecasting about $2.10/W; or rather you're agreeing with I suppose what SolarCity put out there?

Yuri Horwitz: We're just saying **best-in-class right now at $2.10/W**. This is like where we think the best folks are building it. Yes.

Julien Dumoulin-Smith: Got it. And then that's an all-in, right, just to be very clear.

Yuri Horwitz: Yes. That's all-in, exactly.

Julien Dumoulin-Smith: Okay. And then you're suggesting 10 cents a year and declining cost structure.

Yuri Horwitz: Aggressively. Yes, I guess we think **the best-in-class not only because of costs will come down but because actually you'll have to build to survive at about $1.90/W in 2017.**

Julien Dumoulin-Smith: Got it. Okay, excellent. And what's your sense of comfort around achieving that; in terms of the breakdown and ability?

Yuri Horwitz: Often times when people sell systems right now, they aren't necessarily acquiring them at $2.10/W. We're just suggesting that actually systems can be built here. So this is the baseline of the floor in which, we **think inevitably people will have to start selling systems closer to the cost that they actually build them at.**

In terms of cost of clients, what's our visibility on that and what do we think the future is? I'm not an engineer. We have tons of engineers on staff so will answer this better than I do.

But my understanding is that the **cost of clients and modules are starting to levelize**. **They probably just because of supply and demand won't come down tremendously in 2016. But we'll probably take a ratchet down in 2017, 2018 as the industry recovers from the transition of the ITC stepdown transition if it occurs.**

Where we think a lot of the gains will be are inverters. You know the micro inverters out there right now as they start to transition over to commercial. They're a little more expensive upfront but produce more value over time. So I guess that wouldn't impact the cost or the actual build cost as much. But scale is going to be huge.

And part of our thesis is if you give people the opportunity to build C&I and you finance it then they can actually start to scale because they've got a financing product behind them.

We think the industry is simultaneously scaling and also in some cases consolidating. And so the entities that are there have more resources to bear. And with that scale we think costs will come down so we've got modules, scale and then I think, in terms of build costs those are the two drivers we think are really there.

Eric Scheier: No. I'd say I agree. And I have been actually talking to some of those engineers on our team. And they seem to say a lot of the same things.

Julien Dumoulin-Smith: In general you've put out a worst case and a base case that looks similar. Could we tease something else out about your statement here in terms of what the downside is? What's the pace of deployment of C&I?

Eric Scheier: Yes. The **base case and the worst case are not that different because at the point at which you're at the 10% ITC that marginal change in the cost of capital is not too significant.**

And so I think, if we had played around with the build cost a little bit more we might have been able to show some results that were different than each other.

But in reality the difference between a reasonable market to be in and worst market is what investors want out of it and what they're willing to do when the reality changes. So that's why I think it's actually on purpose that those are similar.

Yuri Horwitz: I think that's right Eric. One of the things with the declining ITC is - the breakdown, it actually doesn't help that much to continue to drive down cost of capital at some point which is really interesting, because the breakdown is just more fundamental than that.

The pace of build-out right now depends on who you ask. But generally speaking, people break down the market, the C&I market is probably about a fourth to a fifth of the overall market.

We focus on C&I and small utility. **We think that about a third of the overall market is C&I and small utility**. So in 2014 there was about 6000 Megawatts of

projects that were built so you're talking about, a 2000 Megawatt build-out in 2014 of a small utility and C&I valued at, let's call it **$3 a watt** so you're talking about $6 billion. **We generally estimate the size of the market to be about $5 billion a year right now.**

Julien Dumoulin-Smith: Got it. What are the PPA prices that you're seeing today, especially in California? What discounts in the market price offered do you need to provide? And what is that PPA price generally ballpark today if you will?

Yuri Horwitz: Yes. So average commercial electricity prices in the United States are about $10.50 cents per kwh. PPA prices diverge from that because there other things going on. And often times within the systems, they're paying fees to be online, etc.

So **PPA prices we generally see are 10% to 15% of the electricity prices**, **with a 2% escalator down to a zero percent escalator**. You get three or four or five things get a little sketchy and your customers hate you after a while.

In terms of what that translates into, **low double digit PPA prices (~10-12 cents) are pretty common in C&I**. Certainly less than what you see in residential which is part of why people like residential, it's so cash rich because residential retail rates are so high. But still much higher than say for example wholesale electricity prices which can be down in the 4 or 5 cents sometimes 6 cents.

And then often times you couple that with a long term SREC deal, nice grants, other localized incentives and you have a very compelling investment.

Julien Dumoulin-Smith: Got you. And just to be clear the way that you're computing that is effectively to say you've got a 10 cents all-in average commercial rate but that doesn't necessarily take into account some of the fixed tariffs. Is that what you're getting at?

Yuri Horwitz: So now 10 cents last time I checked was EIA's estimate for the average commercial rate in the United States.

That may have changed. Not that long ago it was 12.5 cents.

Julien Dumoulin-Smith: Right. But that's probably - that's average for the U.S. relative to some of these other markets where it's economic and that's how you end up with 10 to 12.

Yuri Horwitz: Yes, exactly.

Julien Dumoulin-Smith: And then obviously there's probably a pretty meaningful fixed capacity charge that they're probably able to reduce in terms of the peak shaving, right?

Yuri Horwitz: Yes. And I'm glad you brought that up Julien. That's one area that we weren't able to integrate into this analysis that we're currently doing which is, how do capacity charges across the United States impact commercial solar? I think that the answer is actually beneficially because we can bring them down.

Julien Dumoulin-Smith: Right, although in theory that capacity charge is reflected in the average EIA rate I would think, right?

Yuri Horwitz: Yes, exactly. That's the other portion which is these capacity charges are actually embedded in these rates. So they aren't just electricity. They're also electricity and capacity.

Julien Dumoulin-Smith: Makes sense, excellent. What do you think about the tax equity in this space and the availability for it and just generally speaking, what is the appropriate capitalization that you see, between the various sources of equity, debt and tax equity today? Where is that going to go post ITC drop?

Yuri Horwitz: Yes. So the capital stack which is the overall sources of funds for a project generally are **40% tax equity, 40% debt and 20% sponsor**.

So a little more complex than that because often times the sponsor is taking advantage of the step up in basis that you get with a structured finance. So they're contributing significantly less than 20%. But that's what's reflected in the overall transaction structure.

Generally tax equity for the solar space comes from two primary sources which is our banks and our insurance companies. What we've seen is a tremendous explosion of tax equity over the last three or four years.

But that's what you need and even though it's exploded the industry growing at 37% a year or 43% year-over-year, which it didn't a couple years ago – and therefore it still needs more.

So part of our business is very, very focused on bringing tax equity. We actually have a Structured Finance Team here. We've deployed over $100 million worth of tax equity in 2015 alone.

We think that **the space will continue to grow for the same reason the cost of capital will come down which is folks are increasingly more comfortable with the asset.** And I think are more experienced and frankly have more exposure to the asset class.

Where we haven't seen tremendous success is in bringing in corporate investments. That's somewhat limiting because of the geography of the benefits on the income statement. We've worked with a lot of corporations to get them comfortable but that's a more challenging space. We work quite a bit with insurance companies and banks and effectively help them deploy into this space. We think it's a tremendously compelling opportunity.

Julien Dumoulin-Smith: Got it, excellent. I've got a question around competition in this space, from utilities and other players. You spoke to it a little bit earlier. You've got pension money, basically money looking for long term capital or long term opportunities.

But what about other players, be it utilities or as you said Vivint and SolarCity getting larger into C&I. Is this the last frontier that hasn't really been fully exploited? How are the return profiles for C&I relative to the other niches in the space if you will?

Yuri Horwitz: Yes. So yes, in a way it is one of the last frontiers.

And yes, certainly a number of entities have jumped in here aside from, Vivint and SolarCity, entities like Duke who acquired REC, NextEra who acquired Smart Energy Capital, Southern California Edison who acquired SoCore and more recently the acquisition of Main Street Power by AES.

So you **see a lot of utility and utility affiliates getting active in this space** because they see the promise as well. And they want to keep these customers. And whether they want to keep them as just people or entities that buy electricity from them dirty or not or people that actually buy solar energy from them, it's in their interest to hold onto these customers because they're very challenging to secure long term.

So we think there'll be continued interest in this space. Frankly we welcome that because it benefits us as well. We think some of that interest will flow through us.

And we think that, overall it's not going to be about slicing up a set segment of the market that has no growth. We think the segment will continue to grow and we think the interest will help that growth. So we welcome other entrance.

Julien Dumoulin-Smith: Got you. And what is the return profile that you're seeing today?

Yuri Horwitz: Today we see **unlevered after tax returns in C&I between 8% and 9.5%**, **sometimes a bit higher for really small deals that are noninvestment grade**. Comparing that to utility, **you see significantly lower returns for utilities because of all the competition. So you see things like ~7% for large utility projects**.

So there's certainly a premium for investing in this space. And we think that's part of why there's, increasing interest and capital entering into this space.

Julien Dumoulin-Smith: And how does that compare to the residential space if you can comment?

Yuri Horwitz: Yes, so good question. We don't finance one-off resi projects the same way. It's a hard comparison. Those are all through structured funds.

But I think there are two things that are **challenging residential**. One is just **massive competition**. You've got $5 billion companies wrestling with one another over resi whether it's SunEdison or SolarCity or NRG or others.

The other is, **the assets have more cash but the returns on each part of the capital stack can be less challenging**. I think direct comparison between what you acquire resi projects at with C&I is not a great comparison because they're being acquired through more structured financings.

Julien Dumoulin-Smith: Got it, all right. Let me go back to what you were saying before around the declining cost structure and tax equity. Can you talk about what pro forma you think the new capital stack will look like in a post-ITC/10% ITC world? If you think about that 40/40/20, today.

Yuri Horwitz: Yes. I think what will happen is first of all there'll be a different supply-demand for tax equity where there'll be enough tax equity certainly immediately to provide to the industry assuming that tax equity is willing to invest for a 10% ITC which is a huge question. Frankly some of the investors we know are less willing to do that.

But assuming that's true **you can probably expect pricing to increase**. **So you might see something like 15% of the capital stack coming from tax**

equity. And then the remaining let's call it 85% of the capital stack will be split between sponsor and between debt. And fundamentally we believe that debt will be an increasing proportion of solar just in general because of the security in the asset class increasing and people being more comfortable with it.

I think we can expect remaining let's call it 15% to 20% sponsor and then, 60% to 70% will be debt.

Debt side, not on an LTV basis but on a debt service coverage ratio with, **usually a 1.25 to a 1.35 ratio depending on the asset class in solar**.

Julien Dumoulin-Smith: Got it. Okay, so basically the idea is it's still going to be a 1.3 debt service coverage ratio since obviously the aggregated cash flow has gone up.

Yuri Horwitz: Yes. The one thing I would say to that Julien is that the **debt service coverage ratio may come down with time as lenders become more comfortable with the asset class**. But right now that's the range 1.25 to 1.35. I think in 18 months it's probably unlikely to change dramatically.

Julien Dumoulin-Smith: Got it. So end of the day 60% to 70% debt, 15% to 20% parent sponsor and say the delta there would be what, 20ish percent would be still tax equity.

Yuri Horwitz: Yes. Depending on the structure. So **generally speaking what people have moved to do is to take tax equity and have them have a smaller proportion of the overall cap stack because their capital is the most expensive**. There are some exceptions like the sale leaseback or a flip in which the tax equity is paying more for its investment. And so it's taking a larger proportion of the cash flow coming off the deals.

But generally speaking where we think the industry is moving is instead of having a smaller proportion of the cash flow going to the tax equity, which means lower pricing and a smaller proportion of the cap stack being covered by them - which we think in the post ITC

stepdown world means something like 15% of the cash would come from them.

Julien Dumoulin-Smith: Got it, excellent. Well it being the top of the hour, I think we should end here. So thank you very much for taking the time this afternoon, Yuri, Eric, and the rest of the team over there. And thank you all for listening again.

So we'll talk to you all very soon.

Yuri Horwitz: Thank you.

END

Statement of Risk

Risks for Utilities and Independent Power Producers (IPPs) primarily relate to volatile commodity prices for power, natural gas, and coal. Risks to IPPs also stem from load variability, and operational risk in running these facilities. Rising coal and, to a certain extent, uranium prices could pressure margins as the fuel hedges roll off Competitive Integrateds. Further, IPPs face declining revenues as in the money power and gas hedges roll off. Other non-regulated risks include weather and for some, foreign currency risk, which again must be diligently accounted in the company's risk management operations. Major external factors, which affect our valuation, are environmental risks. Environmental capex could escalate if stricter emission standards are implemented. We believe a nuclear accident or a change in the Nuclear Regulatory Commission/Environment Protection Agency regulations could have a negative impact on our estimates. Risks for regulated utilities include the uncertainty around the composition of state regulatory Commissions, adverse regulatory changes, unfavorable weather conditions, variance from normal population growth, and changes in customer mix. Changes in macroeconomic factors will affect customer additions/subtractions and usage patterns.

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UBS Investment Research: Global Equity Rating Definitions

12-Month Rating	Definition	Coverage[1]	IB Services[2]
Buy	FSR is > 6% above the MRA.	45%	37%
Neutral	FSR is between -6% and 6% of the MRA.	43%	33%
Sell	FSR is > 6% below the MRA.	12%	20%
Short-Term Rating	**Definition**	**Coverage[3]**	**IB Services[4]**
Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	less than 1%	less than 1%
Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	less than 1%	less than 1%

Source: UBS. Rating allocations are as of 31 March 2015.
1:Percentage of companies under coverage globally within the 12-month rating category. 2:Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.
3:Percentage of companies under coverage globally within the Short-Term rating category. 4:Percentage of companies within the Short-Term rating category for which investment banking (IB) services were provided within the past 12 months.

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