Deutsche Bank
Markets Research

Rating
Buy

North America
United States

Industrials
Clean Technology

Company
Vivint Solar

Reuters	Bloomberg	Exchange	Ticker
VSLR.N	VSLR US	NYS	VSLR

Date
26 October 2014

Initiation of Coverage

Price at 23 Oct 2014	13.07
Price target	20.00
52-week range	16.01 - 10.47

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Initiating Coverage with a BUY

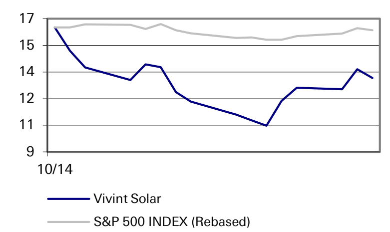
Initiating Coverage with BUY rating, $20 PT
VSLR is one of the top residential solar installers in the country and is poised to benefit from accelerating growth of retail customers switching to solar as an increasing number of states reach grid parity across the US. We expect the company's differentiated sales model and flexible supply chain will enable 100% YoY growth of installations through 2016. Vivint's door-to-door sales model should enable lower customer acquisition costs and we expect the introduction of additional innovative financing structures to act as catalysts to help lower the cost of capital and drive additional growth.

Asset Light, Differentiated Sales Model
Vivint differentiates itself from peers through differentiated sales model, 10-20% lower customer acquisition costs, and asset-light sourcing strategy. The company is well positioned to continue gaining share as industry consolidation continues into 2017+, and remains technology agnostic with no manufacturing base existing or planned. Door to door sales techniques help the company efficiently utilize resources to install efficiently, generate leads, and achieve high penetration rates in targeted neighborhoods.

Robust Expansion Opportunities
VSLR currently operates in only 7 states vs SCTY's ~15 currently, and has not yet participated in the asset backed security market, yieldco, or retail loan markets for additional financing mechanisms. We believe the company will likely announce additional strategic financing initiatives and channel partners over the next several quarters which should act as positive catalysts for shares. Additionally, further expansion into extra states should drive TAM expansion, MW deployment, and potential retained value expansion. Furthermore, the company is exploring options in the commercial business and we do not believe VSLR will experience demand constraints for the foreseeable future.

Valuation/Risks
We use a sum of the parts valuation with an 18% discount rate to value current and future leasing business cash flows and arrive at our $20 PT. We apply a higher discount than SCTY due to smaller platform and younger business. Risks include: 1) Adverse regulatory shifts on the state or federal level which could impact net metering, or other solar incentives 2) Changes in input prices 3) Headline risk from increased scrutiny of large utilities and lawmakers; 4) Inability to acquire project financing at attractive rates. 5) Competitive dynamics from new entrants or large incumbents 6) Widespread Customer defaults or bookings cancellations

Price/price relative



Performance (%)	1m	3m	12m
Absolute	–	–	–
S&P 500 INDEX	-1.6	-1.8	11.7

Source: Deutsche Bank

Forecasts And Ratios

Year End Dec 31	2013A	2014E	2015E	2016E
FY EPS (USD)	0.07	0.15	-0.40	-1.32
Revenue (USDm)	6.2	25.1	66.4	139.2

Source: Deutsche Bank estimates, company data

Vivint Solar

Initiating Coverage

We are initiating coverage on VSLR with a BUY rating, $20 target price target. We believe risk-reward is attractive and shares are not fully discounting the long term contracted cash flow potential of the company. Vivint solar is the second largest installer in the highest-margin residential segment, with a primary focus on power purchase agreements and leases. We believe more than 10 US states are currently at grid parity and nearly all 50 states would be at grid parity by 2016 timeframe. We expect VSLR's installations for solar customers to double in 2014 and believe growth could accelerate in the 2015/16 timeframe and will likely at least double each year. VSLR differentiates itself from competition by maintaining supplier flexibility, although strategically important acquisitions will be key to lowering cost of installs and driving base of installations higher. Declining system costs, customer acquisition costs, financing costs and rising volumes should drive significant scale benefits and operating leverage in the model. While competitive pressures, risks associated with assessment of the ITC, rising interest rates and potential utility surcharge could likely impact underlying business model economics, some of these concerns are largely discounted in valuation, in our view. Vivint Solar's unique business model, low customer acquisition costs, and relationship with Vivint, Inc should allow the company to continue gaining share in the residential market. Moreover, the company has considerable potential to improve financing structures and expand into asset backed securities, solar leases, yieldco, and retail bonds.

We apply sum of parts discounted cash flow valuation framework to arrive at our base case $20 price target. For existing installed base of solar systems and new installations, we calculate the NPV of cashflows over 30 years in order to calculate leasing business value. Our assumptions include: an installed base of ~1.1 GW by 2016, current blended average PPA of ~14-15c/kwh decreasing to 13.8c/kWh by 2020 with 2.5% annual contract escalator. We use a 1% terminal growth rate after 2020 and assume an 18% discount rate. See our valuation section for a more in depth look at other assumptions in our valuation model.

Downside Risks:

1) State level regulatory decisions and any adverse changes to net metering or electricity prices; 2) Changes in input prices (panels/labor/racking); 3) Headline risk from increased scrutiny of large utilities and lawmakers; 4) Inability to acquire project financing at attractive rates. 5) Competitive dynamics from new entrants or large incumbents

Investment Positives

Largest Pure Play on Residential Leasing/PPA's

Unlike some of its peers, Vivint does not offer to serve as an installer only and it focuses all efforts on the residential segment (no commercial or utility. Residential is typically the highest margin segment, and a focus on PPA's enables the company to capture the greatest margin over the life of the contract.

Relationship with Vivint, Inc.

Vivint Solar was originally a subsidiary of Vivint, Inc. which is a home security company with over 825K customers. Using relatively conservative assumptions (25% eligible, 50% high FICO, 25-75% penetration of remaining customers) the company could have access to ~500+MW of installations at a relatively low customer acquisition cost. As financing innovations evolve and eligibility approves, we expect potential customer acquisitions from Vivint could prove to be notable higher than initial estimates.

Differentiated Sales Model

Vivint Solar built on the successful model of Vivint, Inc. and often uses door-to-door sales techniques to canvas entire neighborhoods, lowering customer acquisition costs and helping to facilitate high solar penetration rates in Vivint-neighborhoods. While SolarCity and others have traditionally focused on cold calling, business-partners, and online platforms, Vivint has demonstrated that door to door sales can be a strong driver of sales with direct benefits to customer acquisition, installation, and salesforce efficiency.

Figure 1: Competitive Landscape

	Vertically Integrated with Channel Partners	Downstream Integrated	Downstream Channel Partnership	Marketplace	Installer
Manufacturing	✓	Supply Chain	Supply Chain	Supply Chain	Supply Chain
Sales	Channel Partners	✓	Direct & Channel Partners	Channel Partners	✓
Installation	Channel Partners	✓	Channel Partners	Channel Partners	✓
Long-term System Ownership	✓	✓	✓	Fund Investors	Owner/Investor
Financing	✓	✓	✓	Channel Partners	Channel Partners
Billing, Monitoring & Maintaining	✓	✓	✓	Channel Partners	
Examples	Sunpower	Vivint & Solarcity	Sunrun	Clean Power Finance	Veregno, REC

Source: Company Reports

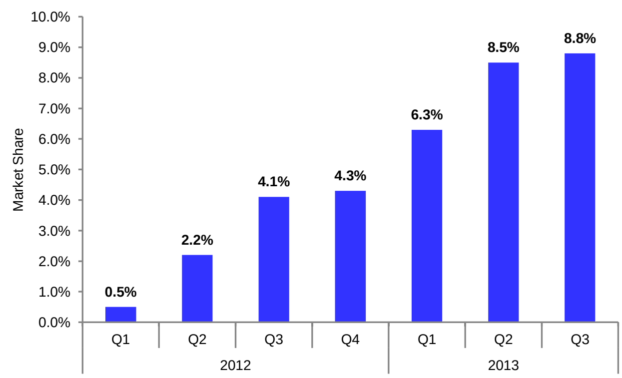
Asset-Light

While foregoing upstream investment in panel manufacturing could provide some long-term uncertainty for panel supply, we believe Vivint's current flexible, relatively capital-light business model is preferable in an emerging-industry context.

Beneficiary of ongoing industry consolidation

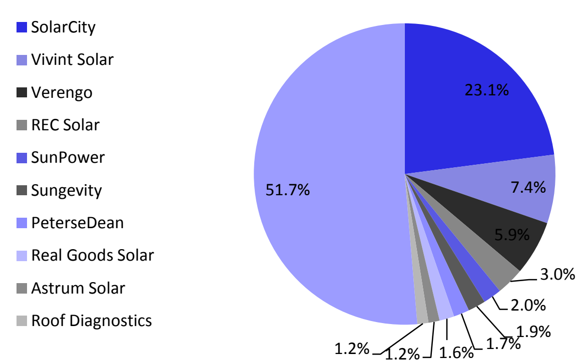
The US solar installer market is still highly fragmented, and we expect this to shift dramatically over the next 3-5 years as the companies with the necessary scale to facilitate tax equity funds, asset backed securities, and economies of scale in a post-ITC environment.

Figure 2: VSLR Market Share Trends



Source: GTM Research

Figure 3: The US Solar Market is highly fragmented



Source: GTM Research
Note: 1H '13 data

Recent Residential Electricity Price Trend Supports 2.9% PPA Escalator…

Vivint PPA agreements include a ~2.9% escalator, which is not unreasonable considering starting PPA prices are often 15-30% below the utility price and the 10 year trailing CAGR for the average residential electricity price in the US has been ~3.1%. We have seen price increases slow over the last several years as marginal fuel costs (generally natural gas) have moderated, but believe the longer term trend should continue on an upward trajectory. Furthermore, Vivint tends to operate in high priced, high growth (for electricity price) environments.

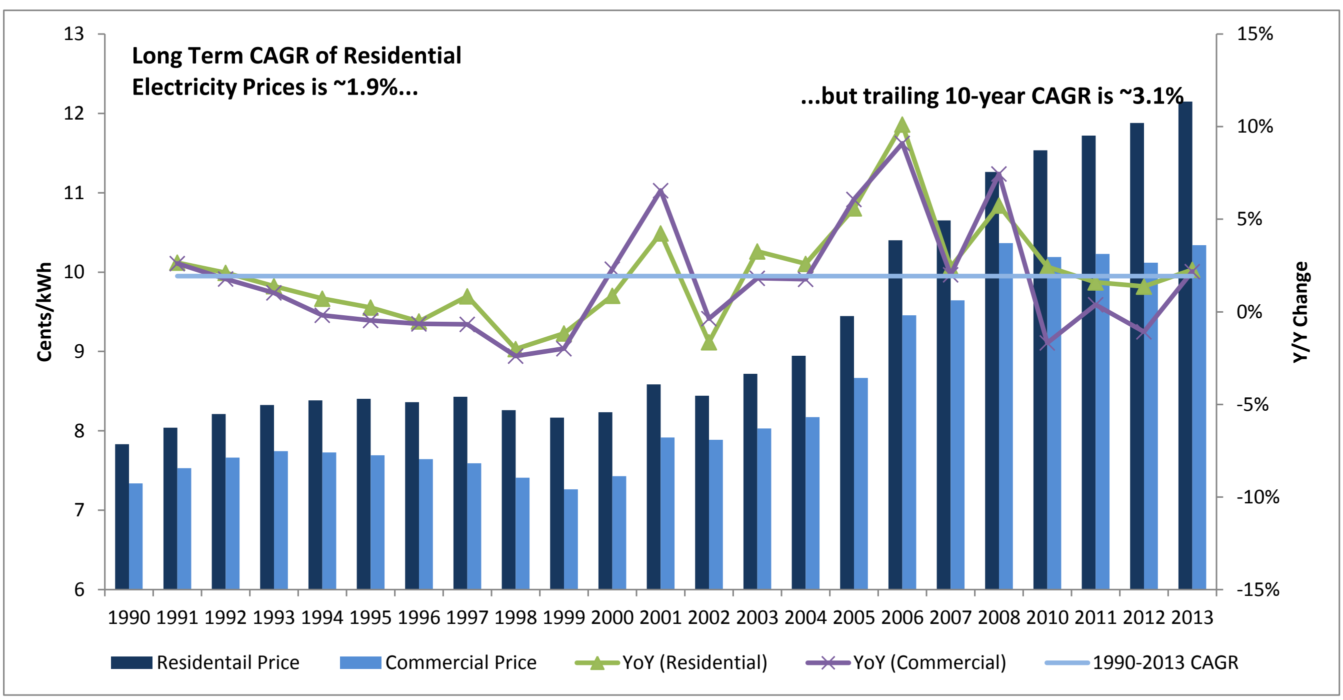
Figure 4: Average Retail Price of Electricity, 2012-2013 (cents/kwh)

cents/kWh Census Divisionand State	2013	2012	YoY	*cents/kWh* Census Divisionand State	2013	2012	YoY
New England	16.23	15.74	3.1%	East South Central	10.42	10.25	1.6%
Connecticut	17.61	17.38	1.3%	Alabama	11.28	11.29	-0.1%
Maine	14.41	14.72	-2.1%	Kentucky	9.71	9.34	3.9%
Massachusetts	15.74	14.91	5.5%	Mississippi	10.75	10.23	5.0%
New Hampshire	16.37	16.12	1.5%	Tennessee	10.07	10.06	0.1%
Rhode Island	15.58	14.40	8.2%	West South Central	10.68	10.35	3.1%
Vermont	17.52	17.29	1.3%	Arkansas	9.49	9.27	2.4%
Middle Atlantic	15.65	15.31	2.2%	Louisiana	9.27	8.39	10.5%
New Jersey	15.64	15.77	-0.8%	Oklahoma	9.66	9.48	1.9%
New York	18.67	17.62	6.0%	Texas	11.32	11.08	2.2%
Pennsylvania	12.82	12.83	-0.1%	Mountain	11.22	10.83	3.6%
East North Central	12.03	12.04	-0.1%	Arizona	11.56	11.10	4.2%
Illinois	10.39	11.48	-9.5%	Colorado	11.81	11.33	4.2%
Indiana	10.84	10.46	3.7%	Idaho	9.27	8.49	9.2%
Michigan	14.56	14.10	3.3%	Montana	10.43	10.15	2.8%
Ohio	11.91	11.67	2.0%	Nevada	11.96	11.94	0.2%
Wisconsin	13.72	13.30	3.2%	New Mexico	11.59	11.31	2.5%
West North Central	10.92	10.51	3.9%	Utah	10.32	9.86	4.7%
Iowa	11.14	10.85	2.7%	Wyoming	10.24	9.93	3.2%
Kansas	11.50	11.09	3.7%	Pacific Contiguous	13.50	13.07	3.3%
Minnesota	11.91	11.37	4.7%	California	16.15	15.48	4.3%
Missouri	10.47	9.97	5.0%	Oregon	9.95	9.88	0.7%
Nebraska	10.31	9.98	3.3%	Washington	8.70	8.56	1.5%
North Dakota	9.35	9.22	1.4%	Pacific Noncontiguous	28.52	28.84	-1.1%
South Dakota	10.34	10.04	3.0%	Alaska	18.09	17.90	1.1%
South Atlantic	11.34	11.36	-0.1%	Hawaii	36.94	37.29	-1.0%
Delaware	13.13	13.64	-3.8%	U.S. Total	12.08	11.88	1.7%
District of Columbia	12.51	12.28	1.8%				
Florida	11.39	11.55	-1.4%				
Georgia	11.14	10.89	2.3%				
Maryland	13.18	12.87	2.4%				
North Carolina	10.91	10.85	0.5%				
South Carolina	11.81	11.62	1.6%				
Virginia	10.95	11.14	-1.8%				
West Virginia	9.60	9.89	-2.9%				

= Vivint State

Source: EIA

Figure 5: Long Term Residential Electricity Prices in the US



Source: EIA, Deutsche Bank

Rapid Expansion and Options

Vivint currently operates in less than half the number of states that its main competitor, SolarCity, does but has stated plans to increase breadth both in number of states and within current markets. In the LTM as of the end of 2Q, the company added 21 new sales offices (on top of 16 existing as of June 30, 2013) and plans to open 20 new offices during 2014. Additionally, the company is considering expansion into the commercial segment.

Valuation is Compelling

At current market cap of ~$1.4B, VSLR is less than 30% the size of Solarcity, despite a growth trajectory which we believe could grow at a faster rate over the next several years. Furthermore, company-reported retained value per watt is notably higher than SCTY and Vivint has multiple catalysts in the near future (financing options, potential acquisitions, new state expansion) and stands to add significant capacity over the next several years. Implied market cap of ~$2.4B at our $20 price target is less than 27% of SCTY's implied market cap of ~$9B on our $90 price target, despite possibility to achieve 1/3 or more MW deployed in 2015 timeframe at a higher retained value and lower current opex per watt.

Figure 6: VSLR Vs SCTY

	VSLR	SCTY
Retained Value ($/W)	2.39*	1.72*
Nominal Contract Payments Remaining ($M)	648	3300
Ests / Guidance		
2014 MW Deployed	150**	500-550
% Y/Y	*159%*	*88%*
2015 MW Deployed	300**	900-1000
% Y/Y	*100%*	*81%*
Metrics		
Opex/W	0.64*	0.91*
Installation Cost/W	NA	2.29*

* 2Q14, ** DB estimates

Source: Deutsche Bank, Company Reports

Concerns

Net Metering is Necessary Before Batteries Are Economic

Net energy metering, which allows a producer of solar power to sell unused power back to the grid, is key to the economics of solar until battery technology improves. Currently, 43 states and D.C. have implemented net metering policies although some are more favorable than others. However, several states - including Arizona, California, New Mexico, Idaho, Louisiana, Wisconsin – have discussed revisions to their net metering policies. Potential policy shifts such as lower compensation (for electricity sold to the grid) or fixed monthly charges would make solar less competitive if implemented. However, if low cost battery systems are developed and successfully implemented we view this to be less concerning. Longer term, Vivint would need to demonstrate high quality supply relationships with battery makers to offset concerns here, particularly because SCTY has a business relationship with Tesla.

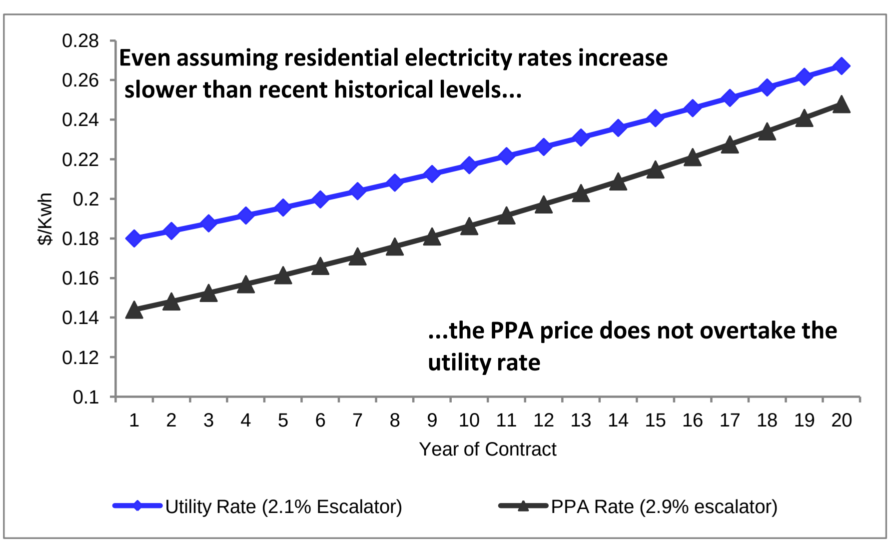
2016 ITC Step Down Could Impact Current Financing Model

VSLR's current business model utilizes significant amounts of tax equity financing which require extensive use of the federal ITCs and other State/Local incentives. We believe the ITC step-down from 30% to 10% after 2016 could pose a risk to the company's current strategy. While SCTY has laid groundwork for other financing models, VSLR has yet to execute on ABS transactions or other financial innovations (crowdfunding, solar loan, yieldco, etc). Furthermore, the company will have to implement aggressive cost cutting/efficiency measures to maintain attractive system economics beyond 2016, which will require a notable scale increase, capital investment, and strategy shift for capital priorities. That said, we do believe that even in a post ITC environment, solar will be competitive in 40+ states within the US due to lower system and financing costs.

Utility Rate Cases Across the Country Could Likely Affect Overall Economics

Given the structure of rate cases in the United States in regulated electricity markets, VSLR could find itself at a disadvantage in the future for legacy PPA contracts with an escalator. In the event that the PPA rose faster than the utility rate over the medium to longer term, the company risks pricing itself out of the market for customers who choose to make the comparison. This is largely a theoretical risk and unlikely to happen for a decade or more given that the company generally prices initial contracts 15-30% below the utility rate. Utility rates have trended up over time but in the event that rates dropped in a given area while VSLRs escalators kicked in, this situation could take place. We view this as relatively unlikely on a large scale but the possibility exists. In that event, the company would likely renegotiate the contract.

Figure 7: Sample PPA/Rate progression over 20 year contract



Source: Deutsche Bank
Note: Assumes 20% starting discount to 18 cent starting utility pricet

Model Highly Sensitive to Interest Rates, PPA Prices, Treatment of DG by Utilities and ITC Monetization:

While our base case valuation approach takes a conservative view towards all of the above factors, we expect headline risk and continued volatility from these 4 factors. We do not expect electricity prices to decrease in the near term, but even flattish prices in the near term could impact the longer term perception of electricity pricing and make it difficult for SCTY to negotiate customer contracts with high escalators. Moreover, interest rate headline risk exists as the tapering discussion takes place in early 2014. We do not expect a significant impact on financing costs in a moderate rise in interest rates as we expect financing structures such as ABS and yieldcos to help drive overall financing costs down.

ITC Calculation Rules Could Likely Impact Investor Sentiment and Drive Near Term Share Price Volatility

VSLR likely benefits from a favorable fair market value treatment of system costs which is currently allowed under the ITC law but has been examined by the US treasury. We believe the company currently benefits from ~$5/W total system price to calculate ITC of 30% whereas we believe overall system costs have the potential to decline to $2-3/W or lower over the next few years. The company realizes ~$1.40/W positive impact on retained earnings by using a higher fair market value, according to our calculations. That said, our base case price target calculation takes this risk into consideration and assumes a reasonable fair market value of $5/W in 2014E reducing to $4/W in 2016E.

Company Overview

Business Overview

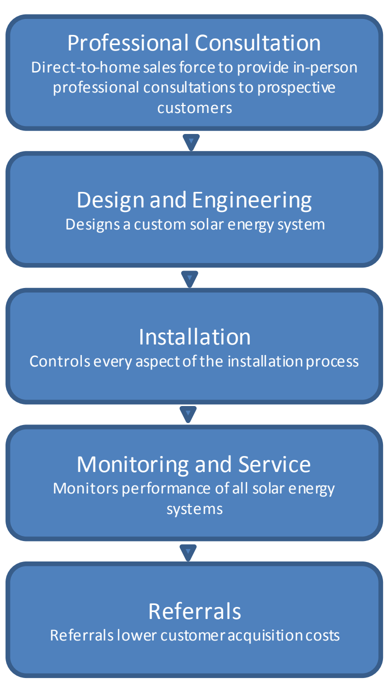
Vivint Solar installs residential solar panels and offers solar energy to residential customers in 7 US states, currently: Arizona, California, Hawaii, Maryland, Massachusetts, New Jersey and New York. Customers typically enter into 20-year contracts with the company (at prices below their current utility rates) and pay little or no upfront fees. Prior to 1Q14, all of the company's long-term contracts were structured as PPAs. In 1Q14, VSLR started offering leases as well, because the legal framework in Arizona required it and the company was entering the Arizona market at the time.

- **PPA:** Customers are charged a fee per unit of electricity use (kWh) based on the amount the solar system produces.

- **Leases:** In the lease structure, customers are charged fixed monthly payment based (assuming certain generation parameters). The company typically guarantees a certain level of production.

Both types of contract are structured for 20 years with an escalator (most of the current contracts contain price escalators of 2.9-3.9% annually). The company also sees further potential cross sell opportunities from the 20 year relationship.

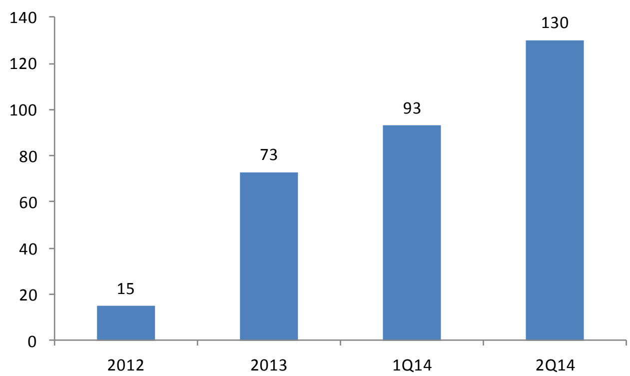
Figure 8: Vivint's Business Model



Source: Deutsche Bank, Company Data

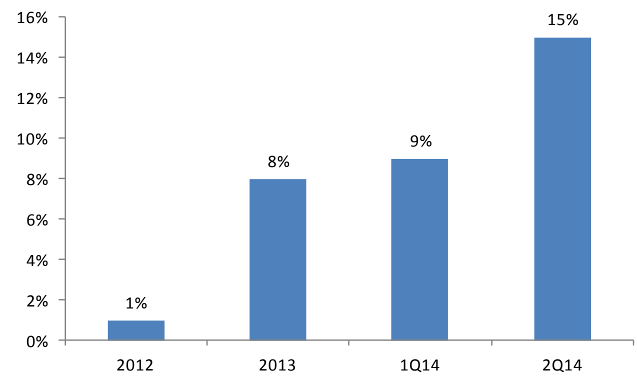
As of June 2014, Vivint had ~130MW under contract at ~21,900+ homes. Market share has shown a steady uptick over the last several years.

Figure 9: Cumulative MW Deployed



Source: Company Data

Figure 10: US Residential Market Share



Source: Company Data, GTM Research

Tax Equity

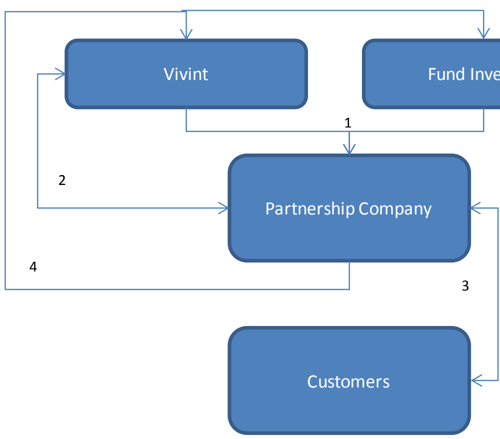
Vivint finances solar system installations by monetizing investment tax credits (ITCs), accelerated MACRS depreciation and other incentives through tax equity partnerships. Tax equity investors provide cash upfront in exchange for a share of the tax attributes and cash flows from a portfolio of systems. As of Sep 17, 2014, Vivint had 10 funds with committed investments of ~$543M, which will enable the company to install solar energy systems with a market value of ~$1.3B ($913M of this has already been installed). Net tax equity is expected to provide ~81MWs of capacity. Furthermore, the company has an additional ~$300M or ~133MW of commitments for future funds.

Typically, the funds own the portfolio of solar arrays and pay out cash flows to investors. Since the tax equity partners are able to achieve a large portion of their required IRR from tax benefits, Vivint retains the majority of the cash flows over the lifetime of the system.

The company has different types of funds with fund investors, including partnership flip funds and inverted lease structures.

- **Partnerships:** Under partnership structures, Vivint and fund investors contribute cash into a partnership company. The partnership uses this cash to acquire solar energy systems from VSLR and collects payments from customers. The investor is typically paid first until their required return is satisfied, at which point the ownership flips to Vivint (and the associated cash flows). Six of the ten established funds are partnerships.

Figure 11: Partnership Structure

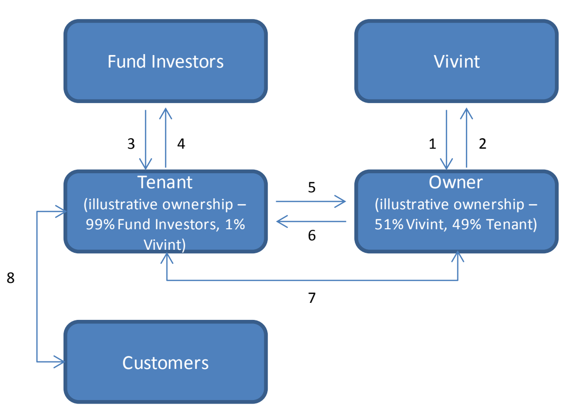


1. Vivint and fund investors contribute cash into a partnership company
2. Partnership acquires solar energy systems developed by Vivint
3. Partnership sells energy/ leases solar energy systems to customers; and receives recurring long-term payments
4. Prior to the fund investor receiving its contractual rate of return, the fund investor receives substantially all of the long-term recurring customer payments and other incentives. After that, Vivint receives substantially all of the long-term recurring customer payments and the other incentives

Source: Deutsche Bank, Company Data

- **Inverted Lease/Lease Pass-through:** There are several partnerships within the structure, and this essentially allows VSLR to use half of the depreciation and potentially benefit from a higher fair market value (to use in the assessment of the investment tax credit)

Figure 12: Inverted Lease Structure



1. Vivint contributes solar energy systems to an owner partnership
2. In return, Vivint gets a share in the owner partnership
3. Fund investors contribute cash to a tenant partnership
4. In return, fund investors get an interest in the tenant partnership
5. Tenant partnership makes an investment in the owner partnership
6. In return, tenant partnership gets an interest in the owner partnership
7. Owner partnership leases solar energy systems to the tenant partnership (under a master lease), and the tenant partnership pays the owner partnership rent for those systems
8. Tenant partnership sells energy/ leases solar energy systems to customers; and receives recurring long-term payments

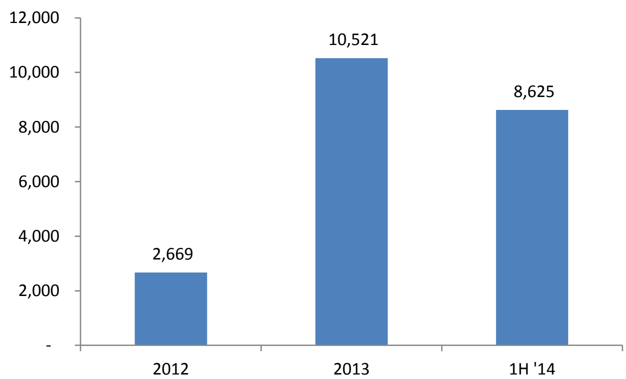
Source: Deutsche Bank, Company Data

Key Operating Metrics

- **Solar Energy Systems Installed:** Vivint had ~22k systems as of June 2014 (~8.6k installed in 2Q alone). The company installed 10.5k and ~2.7k systems in 2013 and 2012 respectively.

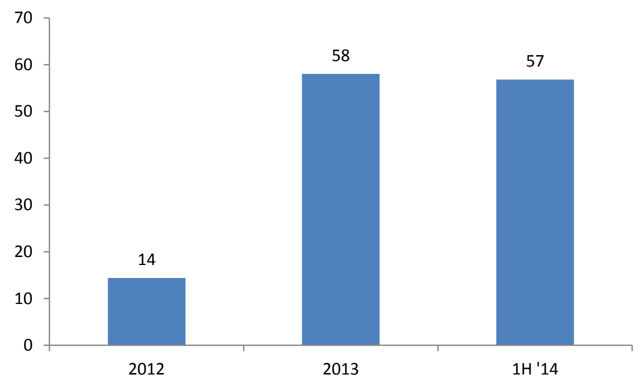
- **MW Installed:** Vivint has ~130MW under as of June 2014 (~57MW installed in 1H). In the year 2013, the company installed 58MW of systems, which was an increase of 303% over 2012 when the company installed just ~14MW of systems.

Figure 13: Systems Installed



Source: Company Data

Figure 14: MW Installed

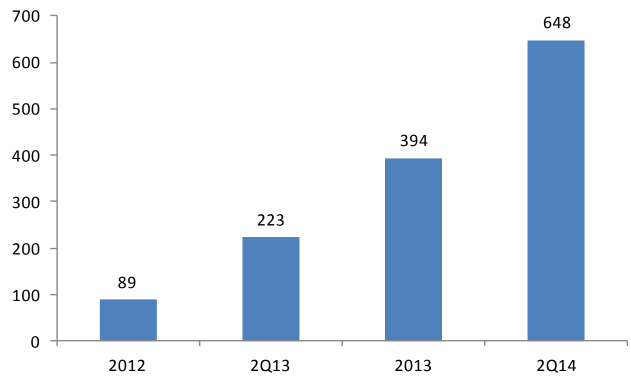


Source: Company Data

- **Estimated Nominal Contracted Payments Remaining:** Estimated nominal contracted payments remaining equals the sum of the remaining cash payments that customers are expected to pay over the term of their agreements. However, the metric does not reflect potential customer defaults/ cancellations. The company calculates this metric in the following ways for a PPA and a lease – **1) PPA:** For a PPA, contract price/kWh is multiplied by the estimated annual energy output of the associated solar energy system to determine the estimated nominal contracted payments. **2) Lease:** For a customer lease, the company includes the monthly fees and upfront fee (if any), as set forth in the lease. As of June 2014, estimated nominal contracted payments remaining totaled ~$648M.

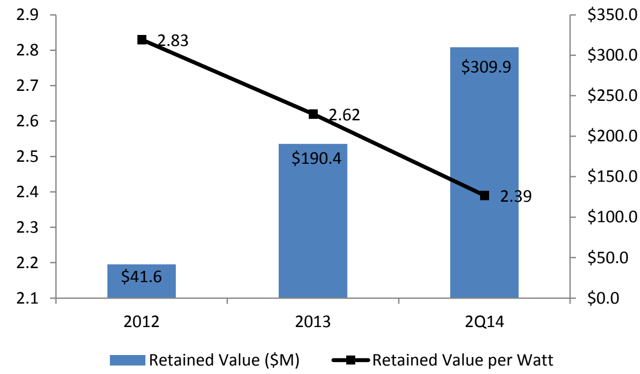
- **Estimated Retained Value:** Estimated retained value represents the cash flows, discounted at 6%, that the company expects to receive from customers pursuant to long-term contracts net of estimated cash distributions to fund investors and estimated opex for systems installed. For calculating this metric, the company aggregates the estimated retained value from the solar energy systems during the typical 20-year term of the contracts, and the estimated retained value associated with an assumed 10-year renewal term. As of June 2014, estimated retained value was ~310M.

Figure 15: Estimated Nominal Contracted Payments Remaining



Source: Company Data

Figure 16: Estimated Retained Value



Source: Company Data

VSLR vs. SCTY

We expect investors will likely focus on the similarities and differences between VSLR and SCTY given the similar business models and direct competition between the companies.

Business Model

The key differences between SCTY's and VSLR's business models are – 1) SCTY's plans to manufacture panels ; 2) VSLR only offers PPA's and leases to residential customers, while SCTY derives ~20% of its business from commercial installations, as well as completing work as a traditional (non-owning) solar installer.

SCTY recently broke ground on its 1GW manufacturing facility in Buffalo, New York, which is expected to complete by 2016. VSLR has expressed no interest in following suit, and typically sources from Chinese suppliers like TSL/YGE/CSIQ

SCTY has also announced its first home solar loan option (called MyPower). Under SCTY's loan option, customers are allowed to pay for their solar loan in a similar way to the way that they'd pay for a solar PPA, along with providing them the ownership of the panels. However, Butterfield noted that VSLR would continue to focus on its existing business model (i.e. PPAs and leases) for the time being, but could consider introducing a loan option in the future.

States of Operation

VSLR currently operates in 7 states - Arizona, California, Hawaii, Maryland, Massachusetts, New Jersey and New York. However, SCTY currently operates in 9 other states – Colorado, Connecticut, Delaware, Washington DC, Nevada, Oregon, Pennsylvania, Texas, and Washington.

Figure 17: States of Operation

States of Operation	VSLR	SCTY
Arizona	√	√
California	√	√
Colorado		√
Connecticut		√
Delaware		√
Hawaii	√	√
Maryland	√	√
Massachusetts	√	√
Nevada		√
New Jersey	√	√
New York	√	√
Oregon		√
Pennsylvania		√
Texas		√
Washington		√
District of Colombia		√

Source: Deutsche Bank, Company Data

We expect this to narrow over time as VSLR enters additional markets.

Key Metrics

As shown below, VSLR is currently reporting higher retained value and higher growth off a smaller deployment base. The company also has comparatively lower opex/w.

Figure 18: States of Operation

	VSLR	SCTY
Retained Value ($/W)	2.39*	1.72*
Nominal Contract Payments Remaining ($M)	648	3300
Ests / Guidance		
2014 MW Deployed	150**	500-550
% Y/Y	*159%*	*88%*
2015 MW Deployed	300**	900-1000
% Y/Y	*100%*	*81%*
Metrics		
Opex/W	0.64*	0.91*
Installation Cost/W	NA	2.29*

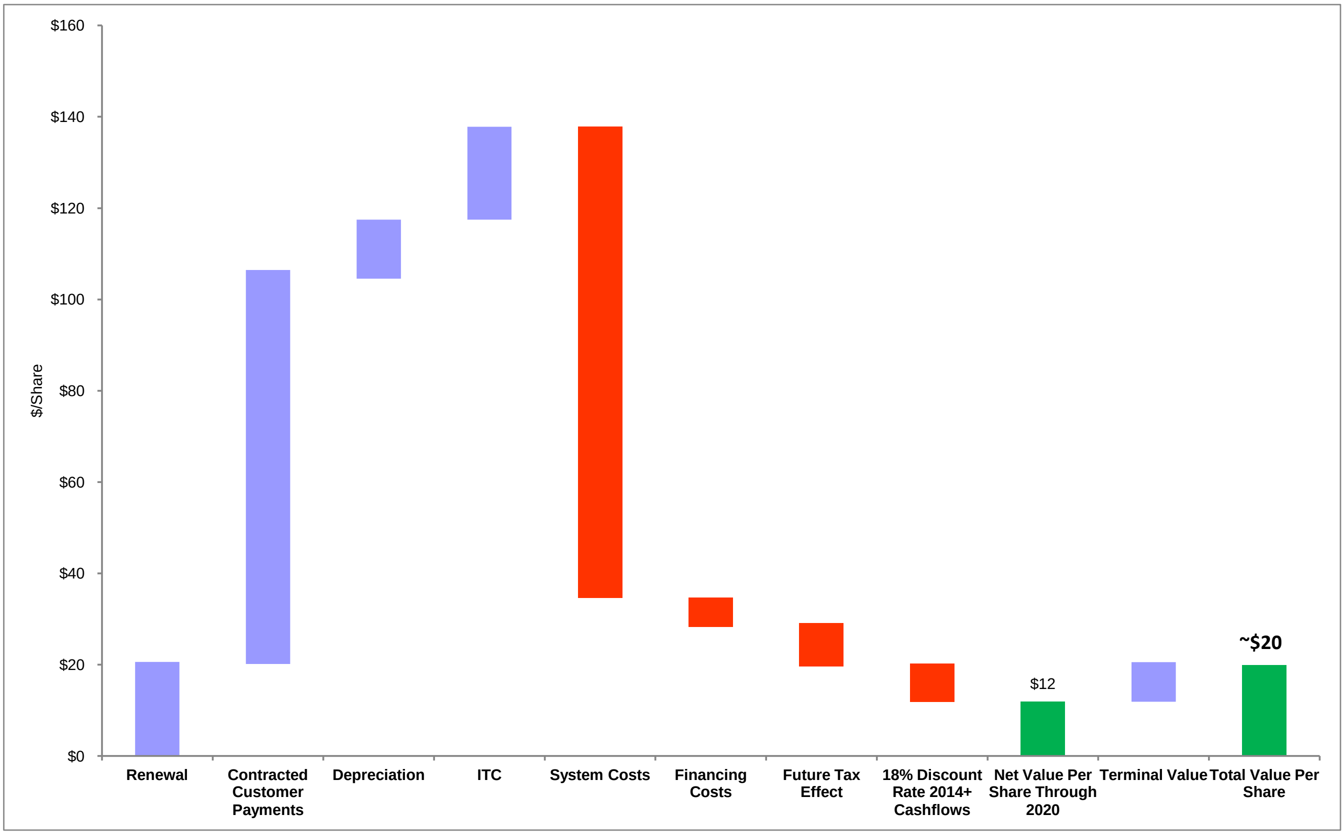
* 2Q14, ** DB estimates

*Source: Deutsche Bank, Company Data, * 2Q14*

Valuation

We apply a sum of the parts valuation framework to arrive at our $20 price target.

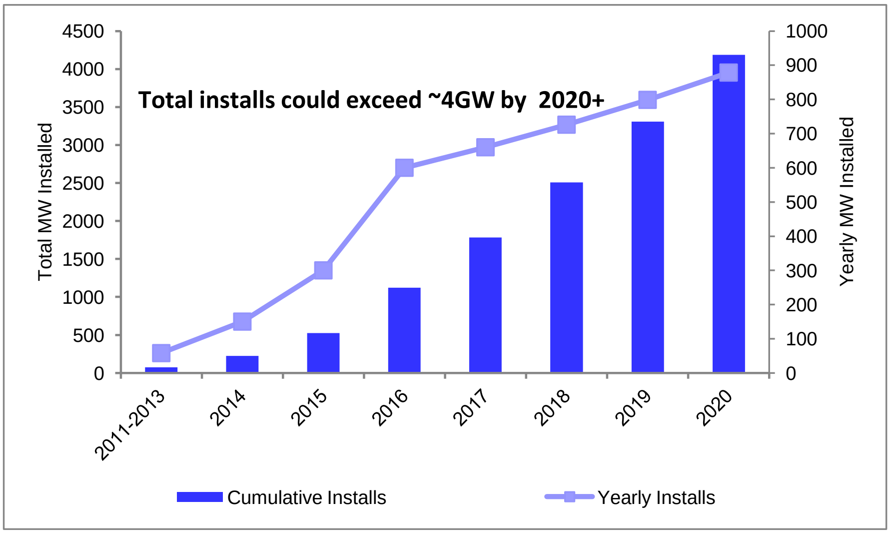
Figure 19: Value Per Share Walk



Source: Deutsche Bank

1) We assume 2Q '14 installed base of ~130MW grows to ~1.1GW by end of 2016 and ~4.1GW by end of 2020. We expect annual installations to increase by 65% in 2015 (from current 2014 guide) to ~800MW and 55% in 2016 to ~1200MW. We then assume ~10% annual installations growth from 2017-2020 timeframe and a 1% terminal growth rate after 2020. We also assume that after 2021, the company starts paying 35% taxes.

Figure 20: VSLR Installs



Source: Deutsche Bank

2) We assume blended average PPA prices decrease from ~14-15c/kWh rate to 13.6c/kWh by 2016 and reach 13.8c/kWh by 2020 timeframe. Although VSLR is able to get an average 2.9% escalator in its current contracts, we assume an average 2.5% escalator over the next few years.

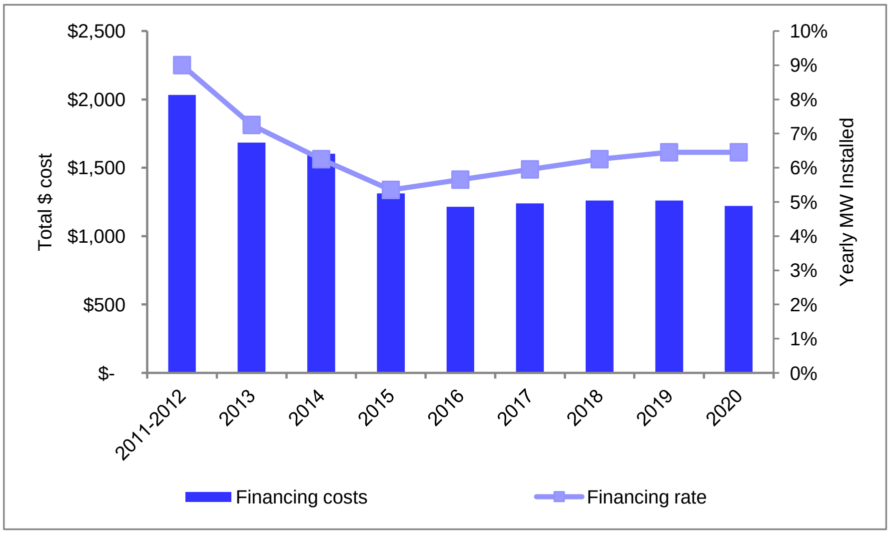
Figure 21: PPA Vs Sun Hours

		Average Sun Hours Per Year								
	$21	1200	1250	1300	1350	1400	1450	1500	1550	1600
PPA Price	0.13	$11	$14	$16	$18	$21	$23	$25	$28	$30
	0.135	$13	$16	$18	$21	$23	$26	$28	$31	$33
	0.14	$16	$18	$21	$23	$26	$28	$31	$33	$36
	0.145	$18	$20	$23	$26	$28	$31	$33	$36	$39
	0.15	$20	$23	$25	$28	$31	$33	$36	$39	$42

Source: Deutsche Bank
Note: 2016+

3) We assume financing costs decrease from past ~7-9% rate to ~5.4% by 2015 and stabilize at ~6.5% by 2019+ timeframe. We expect current mode of tax equity financing to evolve and VSLR to take advantage of additional financing sources such as yieldco, ABS, solar loans, and potential retail bond offerings in the future in order to lower overall cost of capital in a rising interest rate environment.

Figure 22: Financing Costs

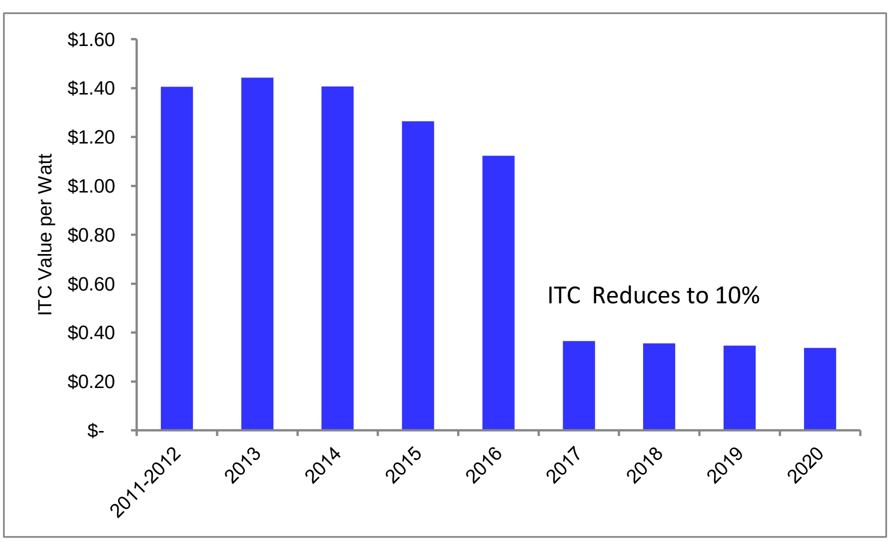


Source: Deutsche Bank

4) Our model incorporates a small monthly utility surcharge of $~58/customer/year on ~20% of the new customer base (increasing to ~30%+ by 2020)- primarily based on the Arizona utility model where solar customers are required to pay ~$0.7/Kw/month in order to access the grid. Our model does not include any state incentives which typically tend to be an average of 2-4c/kWh. As such, even in a scenario where utility rates were to decline more than expected, VSLR would be able to maintain cash inflows/W by using the state level incentives.

5) We assume that the 30% ITC expires at the end of 2016 and solar project investors are still able to take advantage of accelerated depreciation as well as 10% ITC from 2017 timeframe.

Figure 23: ITC Benefit



Source: Deutsche Bank

6)We assume the fair market value the company is able to claim for the federal ITC decreases from ~$5/W today to ~$4.50/W in 2015, ~$4/W in 2016, and reduces at the same $ value as system costs through 2020, to ~$3.60/W.7) We assume 120M shares outstanding to value the company.

Figure 24: Valuation

	Year In Which Systems Are Installed				
	2011-2012	2013	2014	2015	2016
Present Value Per Watt at Time of Installation (Assumes 6% Discount Rate on Cash Flows)					
Sources of Cash/Funding/Value					
Renewal/W	$0.61	$0.65	$0.63	$0.60	$0.57
Contracted Customer Payments/W	$2.54	$2.71	$2.64	$2.51	$2.40
Depreciation/W	$0.45	$0.46	$0.47	$0.44	$0.38
ITC/W	$1.41	$1.44	$1.41	$1.27	$1.12
Uses of Cash/Funding					
System Costs/Watt (Includes inverter replac	($3.53)	($3.63)	($3.77)	($3.50)	($3.07)
Financing Costs/W	($0.32)	($0.26)	($0.24)	($0.19)	($0.17)
Total Cost/Watt	($3.85)	($3.89)	($4.01)	($3.69)	($3.24)
Average Residential System size (kW)	6,400	6,400	6,800	7,000	7,000
MW installed	15	58	150	300	600
% Change			159%	100%	100%
NPV of Sources of Cash/Funding/Value					
Renewal	$3,877	$4,136	$4,275	$4,190	$4,011
Contracted Customer Payments	$16,256	$17,340	$17,923	$17,567	$16,819
Depreciation	$2,902	$2,935	$3,211	$3,046	$2,676
ITC	$9,000	$9,238	$9,565	$8,856	$7,865
Assumptions: Sources of Cash/Funding					
PPA Price (Initial Contracted)	$0.150	$0.150	$0.147	$0.141	$0.136
Escalator (Yearly PPA)	2.5%	2.5%	2.5%	2.5%	2.5%
Renewal (% of Price in Year 20)	85%	85%	85%	85%	85%
Implied Base Case Renewal PPA (assuming e	$0.20	$0.20	$0.20	$0.19	$0.18
% ITC	30%	30%	30%	30%	30%
FMV for ITC Calc ($/W)	$5.30	$5.10	$4.97	$4.47	$3.97
ITC/W	$1.59	$1.53	$1.49	$1.34	$1.19
NPV of Uses of Cash/Funding					
System costs	($22,589)	($23,215)	($25,635)	($24,524)	($21,486)
Financing costs	($2,033)	($1,683)	($1,602)	($1,312)	($1,214)
Total System Cost	($24,622)	($24,899)	($27,237)	($25,836)	($22,700)
Assumptions: Uses of Cash/Funding					
Total System cost/Watt	$3.45	$3.32	$3.44	$3.17	$2.71
Fixed Cost/Watt	$0.90	$0.90	$1.00	$0.87	$0.62
Variable Cost/Watt (Ex Module)	$1.65	$1.72	$1.70	$1.60	$1.40
Module Cost/Watt	$0.90	$0.70	$0.74	$0.70	$0.69
Financing rate	9.0%	7.3%	6.3%	5.4%	5.7%
Utility Surcharge Applied (Assumes 70 cents p	0%	0%	20%	22%	24%
Retained Value					
Vivint NPV Value Per System Installed	$7,414	$8,749	$7,736	$7,822	$8,671
Vivint NPV/W	**$1.16**	**$1.37**	**$1.14**	**$1.12**	**$1.24**
Valuation					
Leasing business value ($M)					
Nominal Value	$17	$79	$171	$335	$743
Taxes	$4	$20	$46	$94	$217
Nominal Value - Taxes	$13	$59	$125	$241	$527
($/Share)	$0.1	$0.5	$1.0	$2.0	$4.4
Discounted ($M)			$125	$205	$378
($/Share)	**$0.11**	**$0.49**	**$1.04**	**$1.70**	**$3.15**
2014+ Leasing Business Discount Rate	18%				
Terminal Growth Rate	1.0%				
Terminal Tax Rate	35%				
Year to StartTaxes	2021				
Tax Rate	35%				
Pre 2013 Leasing business value ($M)	$13				
2013 Leasing Business Value ($M)	$59				
Future leasing business value ($M)	$1,351				
Terminal Value	$960				
Fully Diluted Shares (M)	120				
Implied Share Value	$19.85				

Source: Deutsche Bank

Figure 25: Valuation Model Continued

	2016	2017	2018	2019	2020
Present Value Per Watt at Time of Installation (Assumes 6% Discount Rate on Cash Flows)					
Sources of Cash/Funding/Value					
Renewal/W	$0.57	$0.57	$0.57	$0.57	$0.57
Contracted Customer Payments/W	$2.40	$2.39	$2.39	$2.41	$2.39
Depreciation/W	$0.38	$0.37	$0.36	$0.35	$0.34
ITC/W	$1.12	$0.37	$0.36	$0.35	$0.34
Uses of Cash/Funding					
System Costs/Watt (Includes inverter replac	($3.07)	($2.98)	($2.88)	($2.79)	($2.70)
Financing Costs/W	($0.17)	($0.18)	($0.18)	($0.18)	($0.17)
Total Cost/Watt	($3.24)	($3.15)	($3.06)	($2.97)	($2.88)
		1124	4187.910510		
Average Residential System size (kW)	7,000	7,000	7,000	7,000	7,000
MW installed	600	660	726	799	879
% Change	100%	10%	10%	10%	10%
NPV of Sources of Cash/Funding/Value					
Renewal	$4,011	$3,996	$3,995	$4,024	$3,995
Contracted Customer Payments	$16,819	$16,755	$16,750	$16,872	$16,750
Depreciation	$2,676	$2,602	$2,527	$2,453	$2,373
ITC	$7,865	$2,556	$2,490	$2,424	$2,358
Assumptions: Sources of Cash/Funding					
PPA Price (Initial Contracted)	$0.136	$0.137	$0.138	$0.139	$0.138
Escalator (Yearly PPA)	2.5%	2.5%	2.5%	2.5%	2.5%
Renewal (% of Price in Year 20)	85%	85%	85%	85%	85%
Implied Base Case Renewal PPA (assuming e	$0.18	$0.19	$0.19	$0.19	$0.19
% ITC	30%	10%	10%	10%	10%
FMV for ITC Calc ($/W)	$3.97	$3.87	$3.77	$3.67	$3.57
ITC/W	$1.19	$0.39	$0.38	$0.37	$0.36
NPV of Uses of Cash/Funding					
System costs	($21,486)	($20,832)	($20,178)	($19,545)	($18,911)
Financing costs	($1,214)	($1,239)	($1,261)	($1,261)	($1,220)
Total System Cost	($22,700)	($22,071)	($21,439)	($20,805)	($20,131)
Assumptions: Uses of Cash/Funding					
Total System cost/Watt	$2.71	$2.61	$2.51	$2.41	$2.31
Fixed Cost/Watt	$0.62	$0.59	$0.55	$0.52	$0.49
Variable Cost/Watt (Ex Module)	$1.40	$1.37	$1.33	$1.30	$1.27
Module Cost/Watt	$0.69	$0.66	$0.62	$0.59	$0.56
Financing rate	5.7%	6.0%	6.3%	6.5%	6.5%
Utility Surcharge Applied (Assumes 70 cents p	24%	26%	28%	30%	32%
Retained Value					
Vivint NPV Value Per System Installed	$8,671	$3,837	$4,323	$4,967	$5,345
Vivint NPV/W	**$1.24**	**$0.55**	**$0.62**	**$0.71**	**$0.76**
Valuation					
Leasing business value ($M)					
Nominal Value	$743	$362	$448	$567	$671
Taxes	$217	$110	$141	$185	$227
Nominal Value - Taxes	$527	$252	$307	$382	$444
($/Share)	$4.4	$2.1	$2.6	$3.2	$3.7
Discounted ($M)	$378	$153	$158	$167	$164
($/Share)	**$3.15**	**$1.28**	**$1.32**	**$1.39**	**$1.37**

Source: Deutsche Bank

Model

Figure 26: Drivers

Numbers in Millions	2013				2014E				2015E				2016E									
FYE: Dec 31	Q1	Q2	Q3	Q4	Q1	Q2	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E						
CY	March	June	Sept	Dec	March	June	Sept	Dec	March	June	Sept	Dec	March	June	Sept	Dec	2011	2012	2013	2014E	2015E	2016E
Revenues																						
PPA Revenue							7.0	4.8	7.9	15.2	17.6	12.1	17.7	33.5	37.0	25.1					52.9	113.2
SREC Revenue							1.0	0.7	1.4	2.7	3.2	2.2	3.3	6.3	7.0	4.8			0.3		9.6	21.3
Rebate Amortization							0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					0.1	0.1
Operating Leases/Incentive Rev	0.6	1.2	2.1	1.9	2.9	5.8	8.0	5.5	9.4	18.0	20.9	14.4	21.0	39.8	44.0	29.8				22.2	62.6	134.6
Solar energy systems sales					0.0	0.0														0.1	0.0	0.0
Solmetric Revenue							0.75	0.75	0.88	0.93	0.98	1.03	1.08	1.13	1.18	1.23					3.8	4.6
Solar Energy System and Product Sales	0.0	0.1	0.2	0.0	0.6	0.8	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2				2.9	3.8	4.6
Total	**0.6**	**1.3**	**2.3**	**2.0**	**3.5**	**6.6**	**8.8**	**6.3**	**10.3**	**18.9**	**21.8**	**15.4**	**22.1**	**40.9**	**45.1**	**31.1**				**25.1**	**66.4**	**139.2**
Q/Q Revenues																						
PPA Revs								-31%	66%	91%	16%	-31%	46%	89%	10%	-32%						
Total							**33%**	**-29%**	**64%**	**84%**	**15%**	**-29%**	**43%**	**85%**	**10%**	**-31%**						
MW Deployed Leasing							39	54	30	54	84	132	60	90	168	282				150	300	601
Cumulative MW Deployed Leasing (End of Q)							169	223	253	307	391	523	584	674	842	1124				223	523	1124
Average PPA							0.143	0.142	0.140	0.139	0.137	0.136	0.135	0.134	0.133	0.132						
Yearly Average Sun Hours							1346	1344	1340	1336	1333	1330	1325	1322	1319	1316					1336	1322
% of Sun Hours in Quarter							28%	15%	19%	33%	31%	17%	19%	33%	31%	17%						
Implied Capacity Factor							17.2%	9.2%	11.6%	19.8%	19.1%	10.4%	11.5%	19.6%	18.9%	10.3%						
Quarterly Sun Hours							377	201	255	434	419	229	252	430	414	226					1336	1322
Revenue From PPAs and Leases							$ 7.0	$ 4.8	$ 7.9	$ 15.2	$ 17.6	$ 12.1	$ 17.7	$ 33.5	$ 37.0	$ 25.1				$ 11.80	$ 52.91	######
SREC Rev/Kwh (blended)							$0.02	$0.02	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03						
							$ 1.0	$ 0.7	$ 1.4	$ 2.7	$ 3.2	$ 2.2	$ 3.3	$ 6.3	$ 7.0	$ 4.8				$ 1.66	$ 9.62	$ 21.30
Revenue from legacy Rebates ($M)							$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03						
Cost of Revenues																						
Operating Leases/Incentives	3.6	4.4	4.8	6.2	11.2	16.5	17.5	19.2	23.8	25.9	29.9	36.4	40.8	46.9	51.8	57.6			19.0	64.3	116.0	197.0
Solar Energy System and Product Sales	0.0	0.1	0.0	0.0	0.4	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.1	1.3	0.0	0.0
Solmetric							0.40	0.40	0.44	0.44	0.44	0.44	0.52	0.52	0.52	0.52						
Total	**3.6**	**4.5**	**4.8**	**6.2**	**11.6**	**16.9**	**18.4**	**19.6**	**24.3**	**26.3**	**30.4**	**36.8**	**41.3**	**47.4**	**52.3**	**58.2**			**19.1**	**66.5**	**117.8**	**199.1**
Cost of Revenues (% of Revenue)																						
PPA's	637%	359%	227%	317%	391%	284%	250%	400%	300%	170%	170%	300%	230%	140%	140%	230%						
Solar Energy System and Product Sales	63%	56%	21%	65%	62%	64%	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%						
Total	**614%**	**334%**	**213%**	**314%**	**330%**	**258%**	**210%**	**313%**	**236%**	**139%**	**139%**	**239%**	**187%**	**116%**	**116%**	**187%**						
Gross Income	**-3.0**	**-3.1**	**-2.6**	**-4.2**	**-8.1**	**-10.4**	**-9.6**	**-13.3**	**-14.0**	**-7.4**	**-8.5**	**-21.4**	**-19.2**	**-6.5**	**-7.1**	**-27.1**				**-41.4**	**-51.4**	**-59.9**
Operating Lease GM	-537%	-259%	-127%	-217%	-291%	-184%	-119%	-249%	-154%	-44%	-44%	-153%	-94%	-18%	-18%	-93%					-119%	-74%
Overall Gross Margin							-110%	-213%	-136%	-39%	-39%	-139%	-87%	-16%	-16%	-87%				-165%	-77%	-43%
Residential																						
Megawatts deployed					20	37	39	54	30	54	84	132	60	90	168	282			58	150	300	601
% of Yearly Installs in Q					13%	25%	26%	36%	10%	18%	28%	44%	10%	15%	28%	47%						
Q/Q						85%	6%	39%	-45%	80%	56%	57%	-55%	50%	87%	68%						
Y/Y %									50%	46%	115%	144%	100%	67%	100%	114%				159%	100%	100%
Cumulative megawatts deployed (end of period)				73	93	130	169	223	253	307	391	523	584	674	842	1124		15	73	223	523	1124
New System Size (kw)					6.8	6.8	6.8	6.8	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0						
Incremental Systems					2,941	5,441	5,744	7,965	4,292	7,726	12,018	18,885	8,584	12,876	24,035	40,345				22,091	42,920	85,840
Cumulative Systems Installed				#####	16,237	21,678	27,422	35,387	39,679	47,405	59,422	78,307	86,891	99,767	#####	#####			13,296	35,387	78,307	######
Cumulative System Size (Kw)				5.5	5.7	6.0	6.2	6.3	6.4	6.5	6.6	6.7	6.7	6.8	6.8	6.8				6.3	6.7	6.8
Opex																			17.5	56.6	90.9	145.9
Sales and Marketing	1.2	1.7	2.1	2.4	5.2	5.8	9.8	11.3	11.9	12.2	12.6	13.0	17.9	21.5	22.2	24.4			7.3	32.2	49.7	86.0
% Change		37%	26%	12%	122%	11%	70%	15%	5%	3%	3%	3%	38%	20%	3%	10%				338%	55%	73%
General and Administrative	1.8	3.0	5.1	6.5	12.4	13.8	15.0	15.6	19.7	21.7	23.9	25.8	31.4	34.6	38.0	41.8			16.4	56.7	91.0	145.9
% Change		69%	69%	26%	91%	11%	9%	4%	27%	10%	10%	8%	22%	10%	10%	10%				245%	61%	60%
R&D Expense	0	0	0	0	0.47	0.50	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95			0.0	2.0	2.7	3.5
Amortization of Intangible Assets	3.6	3.6	3.6	3.6	3.7	3.7	3.79	3.79	3.33	3.33	3.33	3.33	0.13	0.13	0.13	0.13				15.0	13.3	0.5
Total Opex	6.7	8.4	10.9	12.5	21.8	23.7	29.1	31.2	35.5	37.9	40.5	42.8	50.3	57.1	61.2	67.3				105.9	156.8	235.9
Opex/Watt							$0.75	$0.58	$1.18	$0.70	$0.48	$0.32	$0.84	$0.63	$0.36	$0.24				$0.70	$0.52	$0.39

Source: Deutsche Bank

Figure 27: Income Statement

Numbers in Millions	2013				2014				2015								
FYE: Dec 31	Q1	Q2	Q3	Q4	Q1	Q2	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E					
CY	March	June	Sept	Dec	March	June	Sept	Dec	March	June	Sept	Dec	2012	2013	2014E	2015E	2016E
Revenue																	
PPA Revenue							$7.0	$4.8	$7.9	$15.2	$17.6	$12.1		$5.5		$52.9	$113.2
SREC Revenue							$1.0	$0.7	$1.4	$2.7	$3.2	$2.2		$0.3		$9.6	$21.3
Amortization of Deferred Rebate Incentives							$0.0	$0.0	$0.0	$0.0	$0.0	$0.0		$0.0		$0.1	$0.1
Operating Leases and Incentives Revenue	$0.6	$1.2	$2.1	$1.9	$2.9	$5.8	$8.0	$5.5	$9.4	$18.0	$20.9	$14.4	$0.3	$5.9	$22.2	$62.6	$134.6
Solar Energy System Sales																$0.0	$0.0
Solmetric Revenue							$0.8	$0.8	$0.9	$0.9	$1.0	$1.0				$3.8	$4.6
Solar Energy System and Product Sales	$0.0	$0.1	$0.2	$0.0	$0.6	$0.8	$0.8	$0.8	$0.9	$0.9	$1.0	$1.0	$0.2	$0.3	$2.9	$3.8	$4.6
Total Revenue	**$0.6**	**$1.3**	**$2.3**	**$2.0**	**$3.5**	**$6.6**	**$8.8**	**$6.3**	**$10.3**	**$18.9**	**$21.8**	**$15.4**	**$0.4**	**$6.2**	**$25.1**	**$66.4**	**$139.2**
QoQ		*$1.3*	*$0.7*	*($0.1)*	*$0.8*	*$0.9*	*$0.3*	*($0.3)*	*$0.6*	*$0.8*	*$0.2*	*($0.3)*					
YoY					*$4.9*	*$3.9*	*$2.8*	*$2.2*	*$1.9*	*$1.9*	*$1.5*	*$1.5*		*1274.2%*	*306.4%*	*165.0%*	*109.6%*
Cost of Revenue																	
Cost of Revenue - Operating Leases & Incen	$3.6	$4.4	$4.8	$6.2	$11.2	$16.5	$17.5	$19.2	$23.8	$25.9	$29.9	$36.4	4.3	19.0	64.3	116.0	197.0
Cost of Revenue - Solar Energy System Sale	$0.0	$0.1	$0.0	$0.0	$0.4	$0.5	$0.5	$0.0	$0.0	$0.0	$0.0	$0.0	0.1	0.1	1.3	0.0	0.0
Cost of Revenue - Solmetric Revenue														0.0	0.0	0.0	0.0
Total Cost of Revenue	($3.6)	($4.5)	($4.8)	($6.2)	($11.6)	($16.9)	($18.4)	($19.6)	($24.3)	($26.3)	($30.4)	($36.8)	(4.4)	(19.1)	(66.5)	(117.8)	(199.1)
Gross Profit	**($3.0)**	**($3.1)**	**($2.6)**	**($4.2)**	**($8.1)**	**($10.4)**	**($9.6)**	**($13.3)**	**($14.0)**	**($7.4)**	**($8.5)**	**($21.4)**	**($4.0)**	**($13.0)**	**($41.4)**	**($51.4)**	**($59.9)**
% margin	*($5.1)*	*($2.3)*	*($1.1)*	*($2.1)*	*($2.3)*	*($1.6)*	*($1.1)*	*($2.1)*	*($1.4)*	*($0.4)*	*($0.4)*	*($1.4)*	*(883.3%)*	*(210.0%)*	*(165.1%)*	*(77.3%)*	*(43.0%)*
Sales and marketing	($1.2)	($1.7)	($2.1)	($2.4)	($5.2)	($5.8)	($9.8)	($11.3)	($11.9)	($12.2)	($12.6)	($13.0)	(2.0)	(7.3)	(32.2)	(49.7)	(86.0)
Research and Development	$0.0	$0.0	$0.0	$0.0	($0.5)	($0.5)	($0.5)	($0.6)	($0.6)	($0.7)	($0.7)	($0.8)	0.0	0.0	(2.0)	(2.7)	(3.5)
General and administrative	($1.8)	($3.0)	($5.1)	($6.5)	($12.4)	($13.8)	($15.0)	($15.6)	($19.7)	($21.7)	($23.9)	($25.8)	(8.8)	(16.4)	(56.7)	(91.0)	(145.9)
Amortization of Intangible Assets	($3.6)	($3.6)	($3.6)	($3.6)	($3.7)	($3.7)	($3.8)	($3.8)	($3.3)	($3.3)	($3.3)	($3.3)	(1.8)	(14.6)	(15.0)	(13.3)	(0.5)
Operating Expenses	**($6.7)**	**($8.4)**	**($10.9)**	**($12.5)**	**($21.8)**	**($23.7)**	**($29.1)**	**($31.2)**	**($35.5)**	**($37.9)**	**($40.5)**	**($42.8)**	**($12.6)**	**($38.4)**	**($105.9)**	**($156.8)**	**($235.9)**
Gross Cost + Opex	($10.3)	($11.5)	($13.5)	($16.7)	($29.9)	($34.1)	($38.7)	($44.6)	($49.5)	($45.3)	($49.0)	($64.2)	(16.6)	(51.9)	(147.3)	(208.1)	(295.7)
Operating Income	**($9.7)**	**($11.5)**	**($13.5)**	**($16.7)**	**($29.9)**	**($34.1)**	**($38.7)**	**($44.6)**	**($49.5)**	**($45.3)**	**($49.0)**	**($64.2)**	**(16.6)**	**(51.3)**	**(147.3)**	**(208.1)**	**(295.7)**
Non operating expense:																	
Interest Expense	($0.4)	($0.6)	($1.0)	($1.2)	($1.4)	($2.7)	($3.1)	($2.2)	($2.6)	($4.7)	($5.5)	($3.9)	-1.0	(3.1)	(9.3)	(16.6)	(34.8)
Other Expense	($0.2)	($0.4)	($0.5)	($0.8)	($0.9)	($0.3)	($0.3)	($0.3)	($0.3)	($0.3)	($0.3)	($0.3)	(0.3)	(1.9)	(1.8)	(1.2)	(1.2)
Non operating expense:	**($0.6)**	**($0.9)**	**($1.5)**	**($2.0)**	**($2.3)**	**($3.0)**	**($3.4)**	**($2.5)**	**($2.9)**	**($5.0)**	**($5.8)**	**($4.2)**	**(1.3)**	**(5.0)**	**(11.1)**	**(17.8)**	**(36.0)**
Income (loss) before taxes	**($10.3)**	**($12.4)**	**($15.0)**	**($18.7)**	**($32.1)**	**($37.1)**	**($42.1)**	**($47.1)**	**($52.4)**	**($50.3)**	**($54.8)**	**($68.4)**	**(17.8)**	**(56.3)**	**(158.4)**	**(225.9)**	**(331.7)**
Income Tax Expense	($0.5)	$0.4	($0.0)	($0.0)	($4.4)	($2.5)	($1.8)	($1.3)	$0.0	$0.0	$0.0	$0.0	1.1	-0.1	(9.9)	0.0	0.0
Net Income	**($10.8)**	**($12.0)**	**($15.0)**	**($18.7)**	**($36.5)**	**($39.6)**	**($43.8)**	**($48.3)**	**($52.4)**	**($50.3)**	**($54.8)**	**($68.4)**	**($16.7)**	**($56.5)**	**($168.3)**	**($225.9)**	**($331.7)**
Net income attributable to non-controlling in	**$2.1**	**$0.0**	**$37.8**	**$22.0**	**$43.6**	**$45.1**	**$45.1**	**$45.1**	**$45.1**	**$45.1**	**$45.1**	**$45.1**	**$2.5**	61.9	178.9	180.4	180.4
% of Net income attributable to non-contr	*20%*	*0%*	*252%*	*117%*	*119%*	*114%*	*103%*	*93%*	*86%*	*90%*	*82%*	*66%*	**15%**	**110%**	**106%**	**80%**	**54%**
Net Income (Loss)	**($8.7)**	**($11.9)**	**$22.9**	**$3.2**	**$7.0**	**$5.5**	**$1.3**	**($3.2)**	**($7.3)**	**($5.2)**	**($9.7)**	**($23.3)**	**($34.3)**	**$5.5**	**$10.6**	**($45.5)**	**($151.3)**
Basic income (loss) per share	($0.14)	($0.16)	($0.20)	($0.25)	($0.49)	($0.53)	($0.52)	($0.46)	($0.50)	($0.48)	($0.52)	($0.65)	(0.2)	(0.8)	(2.0)	(2.1)	(3.2)
Diluted income (loss) per share from Operati	($0.14)	($0.16)	($0.20)	($0.25)	($0.48)	($0.52)	($0.44)	($0.42)	($0.46)	($0.44)	($0.48)	($0.60)	(0.2)	(0.8)	(1.9)	(2.0)	(2.9)
Non-GAAP EPS	**($0.12)**	**($0.16)**	$0.30	$0.04	**$0.09**	$0.07	$0.01	($0.03)	($0.06)	($0.05)	($0.08)	($0.20)	**($0.46)**	**$0.07**	**$0.15**	**($0.4)**	**($1.3)**
Weighted average basic shares used (M)	75	75	75	75	75	75	84.7	105.3	105.3	105.3	105.3	105.3	75.0	75.0	85.0	105.3	105.3
Avg Shares - Fully Diluted (M)	75.2	75.2	75.2	75.2	76.2	76.2	98.8	114.6	114.6	114.6	114.6	114.6	75.0	75.2	91.5	114.6	114.6
Percent of Sales																	
Gross Margin	(513.5%)	(234.4%)	(113.0%)	(214.3%)	(230.3%)	(158.4%)	(109.6%)	(213.4%)	(136.4%)	(39.1%)	(39.2%)	(138.8%)	(883.3%)	(210.0%)	(165.1%)	(77.3%)	(43.0%)
Sales and marketing	205.6%	125.5%	92.6%	119.4%	148.8%	88.3%	112.4%	181.0%	115.7%	64.7%	57.8%	84.2%	(446.3%)	(119.1%)	(128.3%)	(74.8%)	(61.7%)
General and administrative	303.4%	227.8%	225.8%	328.3%	352.3%	209.7%	171.2%	249.3%	191.9%	114.7%	109.3%	167.1%	(1951.0%)	(266.4%)	(226.1%)	(137.0%)	(104.8%)
Sales and marketing	(205.6%)	(125.5%)	(92.6%)	(119.4%)	(148.8%)	(88.3%)	(112.4%)	(181.0%)	(115.7%)	(64.7%)	(57.8%)	(84.2%)	(2397.3%)	(385.5%)	(354.4%)	(211.9%)	(166.5%)
Operating Income	(1638.9%)	(861.3%)	(591.8%)	(847.1%)	(851.4%)	(520.3%)	(442.3%)	(713.1%)	(482.2%)	(239.4%)	(224.7%)	(416.6%)	(3686.9%)	(832.1%)	(587.5%)	(313.2%)	(212.4%)
Net Income	(1462.7%)	(895.9%)	1005.1%	163.2%	200.8%	83.8%	14.5%	(51.7%)	(71.2%)	(27.6%)	(44.4%)	(151.0%)	(7634.3%)	88.7%	42.1%	(68.5%)	(108.7%)
Tax Rate	81.9%	(33.0%)	1.4%	2.4%	125.3%	38.8%	20.0%	20.0%	0.0%	0.0%	0.0%	0.0%	(237.6%)	2.0%	39.6%	0.0%	0.0%
Interest Expense	71.8%	42.5%	42.3%	60.4%	39.9%	40.8%	35.0%	35.0%	25.0%	25.0%	25.0%	25.0%	217.6%	51.0%	37.2%	25.0%	25.0%

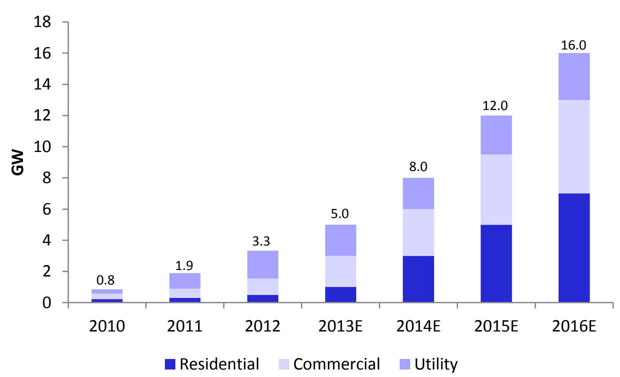
Source: Deutsche Bank

Industry Overview: US Residential Solar

1) Grid parity in 10+ states currently

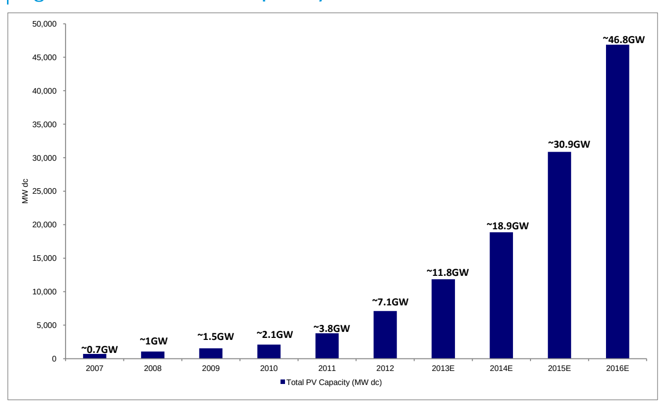
We believe solar is currently competitive in more than 10 states in the U.S without additional state subsidies. Solar LCOE in these states ranges from 11-15 c/kWh and compares to retail electricity price of 11-37 c/kWh in these markets. These grid parity states currently have a cumulative installed capacity of ~6GW as of 2012. However, considering the improved economics of solar in these markets along with other growth enablers such as solar leasing, availability of low cost financing, we expect installed capacity growth of ~400-500% over the next 3-4 years.

Figure 28: US Total PV Installations



Source: Deutsche Bank, SEIA

Figure 29: Total PV Capacity



Source: Deutsche Bank

2) Potential for further cost reductions and solar growth in additional states over the next 18 months

Assuming solar system prices decline from sub $3/W currently to sub $2.50/W over the next 12-18 months, solar LCOE in existing grid parity states could decrease further to 9-14 c/kWh driving further acceleration in solar shipments in these markets. At these system price levels, solar has the potential to reach grid parity in 12 additional states as LCOE approaches 11-14 c/kWh in these states.

Figure 30: States Currently at Grid Parity

Grid Parity at $3.00 ($2.10 w/ ITC)	LCOE ($/KWh)	Average Cost of Electricity ($/KWh)
Arizona	$0.11	$0.11
California	$0.12	$0.16
Connecticut	$0.15	$0.17
Hawaii	$0.12	$0.37
Nevada	$0.10	$0.12
New Hampshire	$0.15	$0.16
New Jersey	$0.15	$0.16
New Mexico	$0.11	$0.11
New York	$0.15	$0.18
Vermont	$0.16	$0.17

Source: Deutsche Bank

Figure 31: Additional States Poised to Reach Grid Parity

Grid Parity at $2.50 ($1.75 w/ ITC)	LCOE ($/KWh)	Average Cost of Electricity ($/KWh)
Colorado	$0.10	$0.12
Delaware	$0.12	$0.13
Washington, DC	$0.12	$0.12
Florida	$0.11	$0.11
Kansas	$0.11	$0.11
Maryland	$0.12	$0.13
Massachusetts	$0.13	$0.15
Michigan	$0.14	$0.14
Pennsylvania	$0.13	$0.13
Rhode Island	$0.13	$0.15
South Carolina	$0.11	$0.12
Wisconsin	$0.13	$0.13

Source: Deutsche Bank

3) Lower financing costs could provide additional growth kicker

We believe the broader acceptance of yieldco type structures has lowered solar financing costs by ~200-300 bps in addition to providing significant amount of liquidity within the solar sector. Every 100 bps reduction in financing costs results in 1 c/kWh reduction of LCOE, in our view. We believe solar LCOE could potentially decrease from 10-16 c/kWh to 8-14 c/kWh as a result of wider acceptance of yieldco type structures. Wider availability of financing options could provide project developers some cushion in a rising interest rate environment.

Figure 32: Shift in LCOE for 100bps Reduction

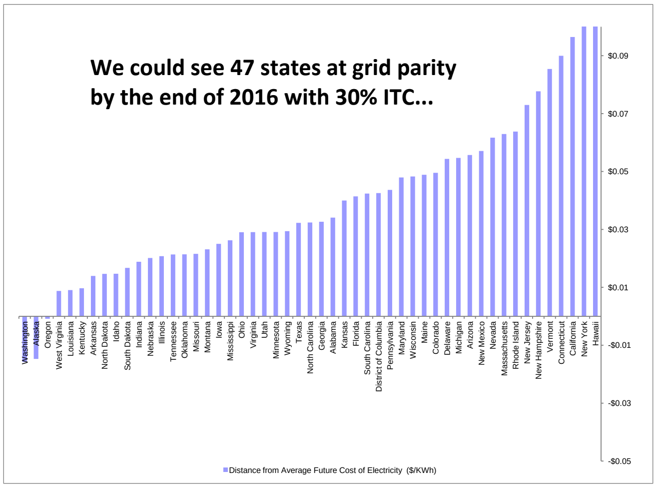
Cost of Debt / Discount Rate	Average LCOE ($2.10 w/ITC)	Reduction per 100bps
7.50%	$0.15	
6.50%	$0.14	$0.008
5.50%	$0.13	$0.008
4.50%	$0.12	$0.008
3.50%	$0.12	$0.008
2.50%	$0.11	$0.007

Source: Deutsche Bank
Note: Average of all 50 states and DC for current net system LCOE (with ITC)

4) ITC expiration could act as another catalyst

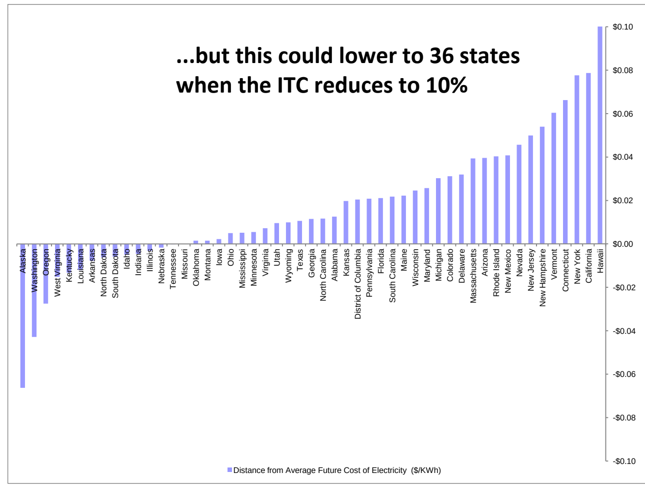
Current forms of federal investment tax credits are set to expire in 2016. Without any ITC, solar LCOE increases from 10-16 c/kWh to 15-21c/kWh and only 1 state (Hawaii) screening at grid parity states vs ~10 states currently. In a 2017+ 10% ITC environment, solar would be at grid parity in ~36 states (vs ~47 states with 30% ITC), assuming system prices and financing costs decline although the economics for solar would not be as attractive. Consequently, we expect to see a big rush of new installations ahead of the 2016 ITC expiration.

Figure 33: 2016 Grid Parity With ~30% ITC



Source: Deutsche Bank, EIA
Note: Both Graphs above show LCOE minus average electricity price in States

Figure 34: Grid Parity When ITC Steps Down to 10%



Source: Deutsche Bank, EIA

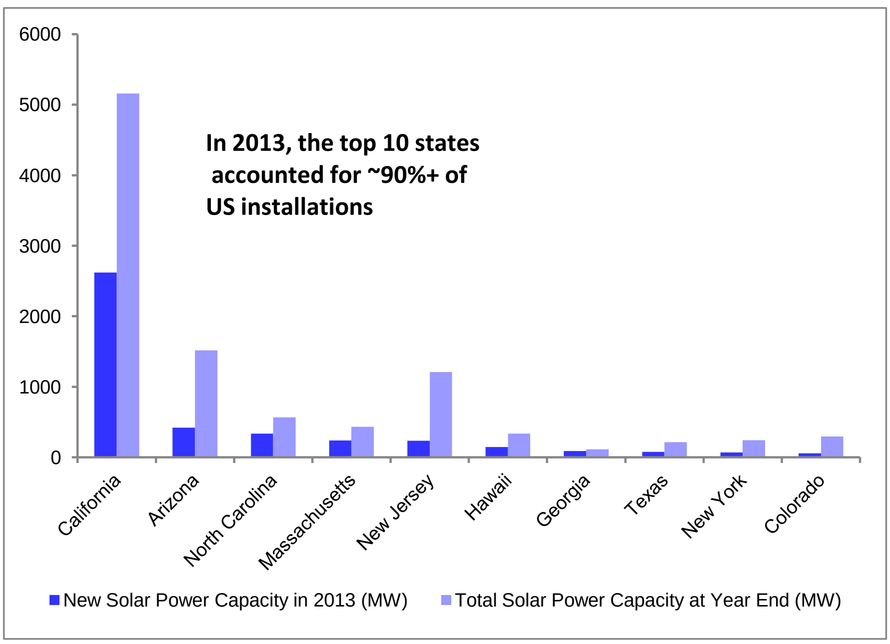
5) Leasing model could become mainstream

We believe the availability of residential leasing option would also act as a significant growth catalyst for the sector considering the fact that solar leasing companies are highly profitable and have strong incentive to maximize the number of leasing customers ahead of ITC expiration in 2016.

Background

The US market has over 16GW of installed capacity and nearly 5GW of solar capacity was added in 2013. While the data shows a focus on utility scale installations, distributed generation (both residential and commercial) has also been gaining ground recently. We estimate that ~800MW of residential systems were installed in 2013 and expect this number to reach 5GW as solar securitization increases and more states continue to reach grid parity. We believe regions within 10+ states are at grid parity already, while more states will follow suit as cost per watt continues to decline fueled by BoS cost reductions, making solar more competitive with rising electricity rates over the long term.

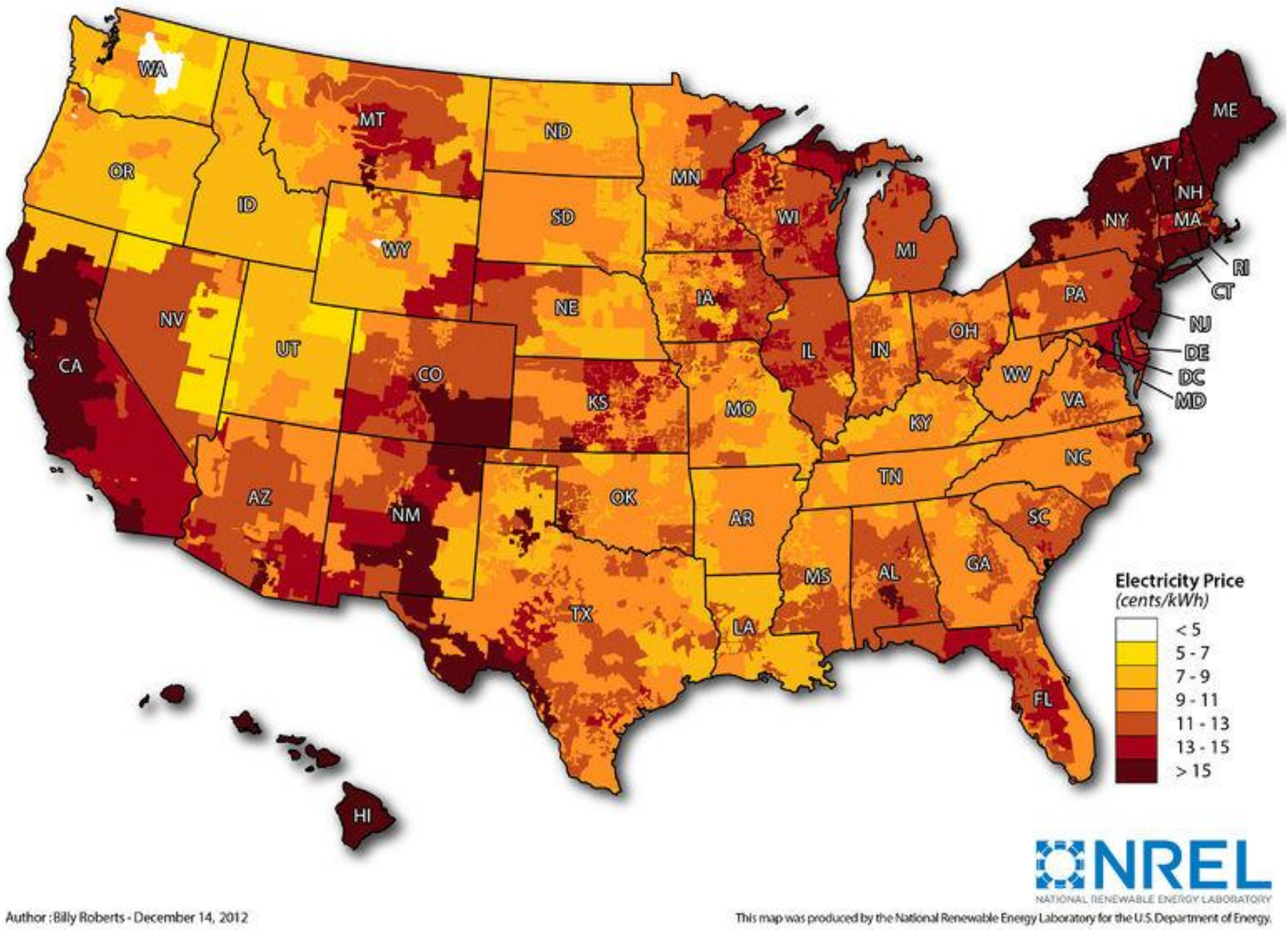
Figure 35: Total State Capacity/Installs



Source: Deutsche Bank

State Economics

Figure 36: Dispersion of Electricity Prices in the US



Source: National Renewable Energy Laboratory

As shown above, the electricity price within any given state is often highly variable (we estimate many states are +/- 3 cents from the mean), while the vast number of rate structures can provide for further complications (fixed or variable pricing, time of use, demand response, volume pricing, etc). We have compiled the average state electric prices on a monthly basis and used the LTM average for our model.

Figure 37: Most Expensive Electricity (Residential)

		12 Month Average Electricity Price		
Rank	State	Residential ($/W)	Commercial ($/W)	Industrial ($/W)
1	Hawaii	$0.37	$0.35	$0.31
2	New York	$0.18	$0.15	$0.07
3	Alaska	$0.18	$0.15	$0.16
4	Vermont	$0.17	$0.14	$0.10
5	Connecticut	$0.17	$0.15	$0.13
6	New Hampshire	$0.16	$0.13	$0.12
7	California	$0.16	$0.14	$0.11
8	New Jersey	$0.16	$0.13	$0.11
9	Rhode Island	$0.15	$0.12	$0.11
10	Massachusetts	$0.15	$0.14	$0.13
11	Maine	$0.15	$0.12	$0.08
12	Michigan	$0.14	$0.11	$0.08
13	Delaware	$0.13	$0.10	$0.09
14	Wisconsin	$0.13	$0.11	$0.07
15	Maryland	$0.13	$0.10	$0.08
16	Pennsylvania	$0.13	$0.09	$0.07
17	District of Columbia	$0.12	$0.12	$0.06
18	Nevada	$0.12	$0.09	$0.06
19	Ohio	$0.12	$0.09	$0.06
20	South Carolina	$0.12	$0.10	$0.06
21	Minnesota	$0.12	$0.09	$0.07
22	Colorado	$0.12	$0.10	$0.07
23	Florida	$0.11	$0.10	$0.08
24	New Mexico	$0.11	$0.09	$0.06
25	Kansas	$0.11	$0.09	$0.07

Source: Deutsche Bank, EIA

Figure 38: Least Expensive Electricity (Residential)

		12 Month Average Electricity Price		
Rank	State	Residential ($/kWh)	Commercial ($/W)	Industrial ($/W)
26	Arizona	$0.11	$0.10	$0.07
27	Alabama	$0.11	$0.11	$0.06
28	Texas	$0.11	$0.08	$0.06
29	Georgia	$0.11	$0.10	$0.06
30	Virginia	$0.11	$0.08	$0.07
31	Illinois	$0.11	$0.08	$0.06
32	Iowa	$0.11	$0.08	$0.05
33	North Carolina	$0.11	$0.09	$0.06
34	Indiana	$0.11	$0.09	$0.06
35	Mississippi	$0.10	$0.10	$0.06
36	Montana	$0.10	$0.09	$0.05
37	Missouri	$0.10	$0.08	$0.06
38	Tennessee	$0.10	$0.10	$0.07
39	Nebraska	$0.10	$0.08	$0.07
40	South Dakota	$0.10	$0.08	$0.07
41	Wyoming	$0.10	$0.08	$0.06
42	Utah	$0.10	$0.08	$0.06
43	Oregon	$0.10	$0.08	$0.06
44	West Virginia	$0.10	$0.08	$0.06
45	Kentucky	$0.09	$0.09	$0.05
46	Oklahoma	$0.09	$0.07	$0.05
47	Arkansas	$0.09	$0.08	$0.06
48	North Dakota	$0.09	$0.08	$0.07
49	Idaho	$0.09	$0.07	$0.05
50	Louisiana	$0.09	$0.08	$0.05
51	Washington	$0.09	$0.08	$0.04

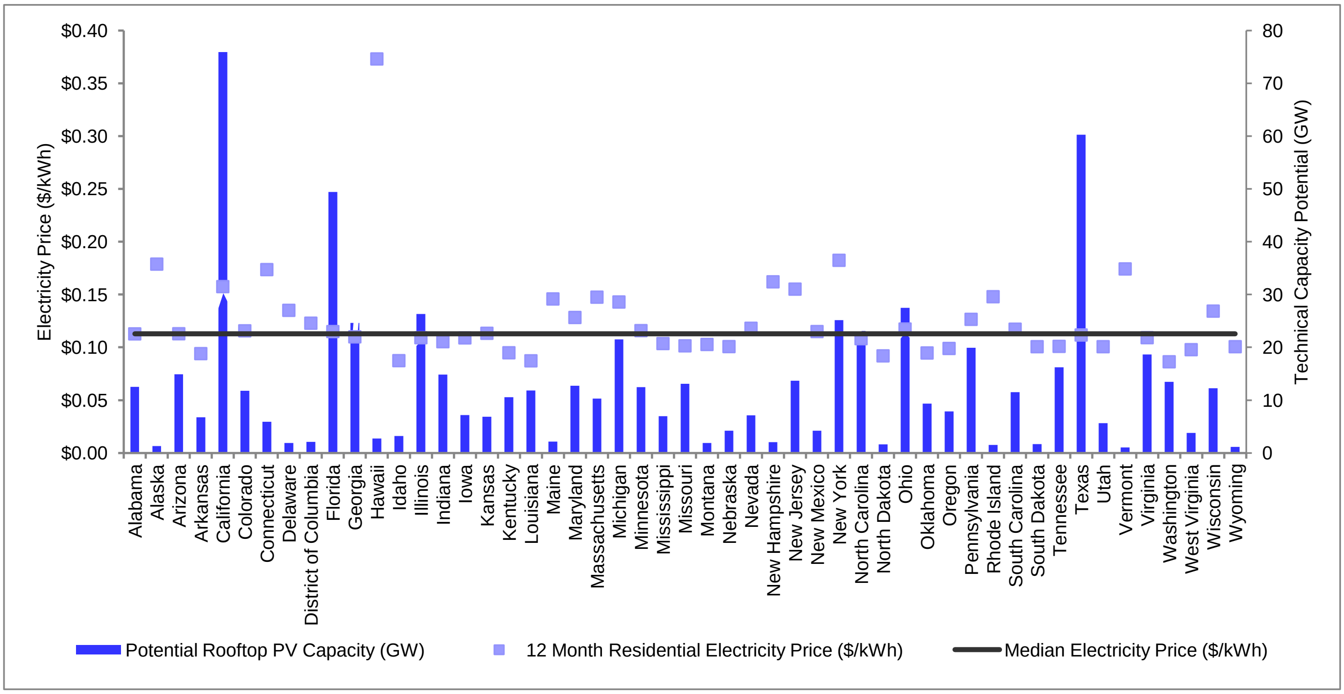
Source: Deutsche Bank, EIA

In the absence of outside incentives, utility electricity prices are the main form of competition a residential/commercial solar project must face. We believe the top 10-15 states provide the most compelling possibilities for unaided cost parity, particularly as fossil fuel based generation has been in relative oversupply and this environment begins to shift. For example, there are ~55GW of coal fired plant retirements planned through 2016 due in large part to the finalization of the Mercury and Air Toxics Standards (MATS) by the EPA. There will be incremental capacity additions to maintain adequate capacity in the electricity market, but the addition of large power plants increases the rate base of regulated utilities, which often allows them to raise rates on consumers over time. As higher electricity prices make solar more competitive, we view this as a positive

Theoretical Potential

In a 2012 paper (*U.S. Renewable Energy Technical Potentials: A GIS-Based Analysis*) the US National Renewable Energy Laboratory (NREL) conducted a study on the technical potential for various renewable energy technologies. Using data from the EIA, McGraw-Hill, and Denholm and Margolis, NREL concluded that ~664GW of potential capacity could be realized by the rooftop market alone, versus <1% penetration currently.

Figure 39: Technical Rooftop Capacity Vs Electricity Price



Source: Deutsche Bank, NREL, EIA, McGraw Hill, Denholm and Margolis,

From their analysis, we see that ~51% (343GW) of the technical potential lies in states with electricity prices above the median electricity price ($0.1128/kWh) while, ~19% of the potential (~128GW) lies in states with residential electricity prices already above $0.15/kwh – primarily California (~76GW), New York (~25GW), New Jersey(13.7GW), and Connecticut(5.9GW).

Grid Parity Increasing

We believe that the US is rapidly approaching grid parity in various regions where high electricity prices and the declining cost of solar has made investments increasingly attractive. By default our model takes into account the gross lifetime cost of the system and the lifetime electricity production, but we have assumed ITC inclusion (effectively 30% less system cost) in our LCOE analysis.

Below, we show the states which we believe have likely reached grid parity, depending on the region, electricity price, and type of consumption. Hawaii and California are consistently the top two markets due to high insolation (a measure of the sun's radiation) and high electricity prices, but different pricing schemes for types of electricity within state markets causes divergences thereafter.

Figure 40: States At or Near Grid Parity

	Type of Electricity		
Rank	Residential	Commercial	Industrial
1	Hawaii	Hawaii	Hawaii
2	California	California	California
3	New York	New York	Massachusetts
4	Connecticut	Connecticut	Connecticut
5	Nevada	Massachusetts	New Hampshire
6	Vermont	Arizona	Rhode Island
7	New Mexico	Vermont	New Jersey
8	Arizona	New Mexico	Arizona
9	New Hampshire	New Hampshire	Nevada
10	New Jersey	Nevada	New Mexico

Source: Deutsche Bank, EIA

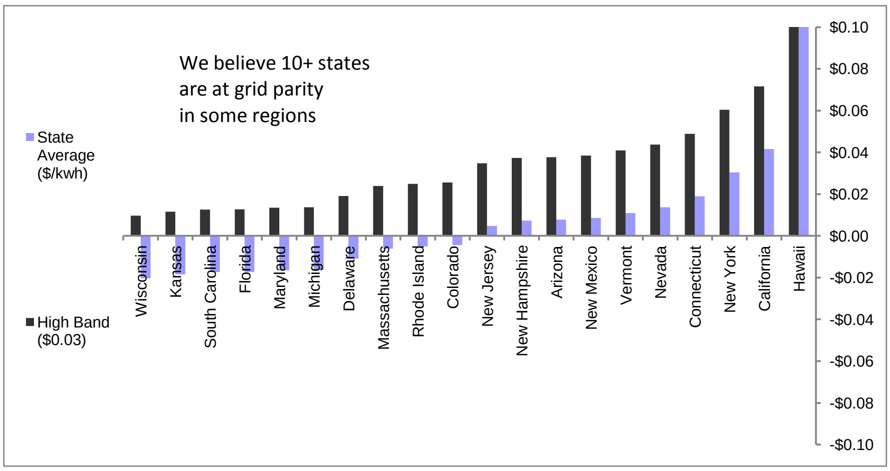
While Hawaii is an outlier due to drastically higher electricity prices, The next ten states closest to grid parity reinforce our view that high electricity prices provide the most compelling argument in favor of PV self generation. There is often a direct correlation between population centers and high electricity prices (more resources required to generate/transmit electricity equates to a higher rate base) which implies upside bias to our estimates as customer awareness increases and the financial viability of solar passes further into mainstream decision making.

Furthermore, we have conducted a similar analysis for Commercial and Industrial sectors with and with the ITC. While we assumed $2.10/w ($3/w ex ITC) for residential, we have used $1.75/w ($2.50/w ex ITC) and $1.58/w ($2.25/w ex ITC) for commercial and industrial systems (given economies of scale). Our analysis shows that despite lower electricity prices to compete with compared to residential prices, the commercial market appears particularly attractive and should continue to be a solid growth driver for the US market. The residential market retains the most markets at grid parity in the current ITC environment.

Based on our analysis we believe 10+ States in the US are at grid parity in certain regions (depending on the local electricity price). Our base case model uses the 12 month rolling average electricity price for each state. However, given notable volatility in electricity prices within states, we have also tested our assumptions compared to a high band (+$0.03) above average. Our analysis shows that 20-30% of US States appear to be at or near to grid parity. Industrial electricity prices are the most difficult to compete with (as they are lowest) but are likely biased to the upside if our analysis considered other incentives in the LCOE calculation.

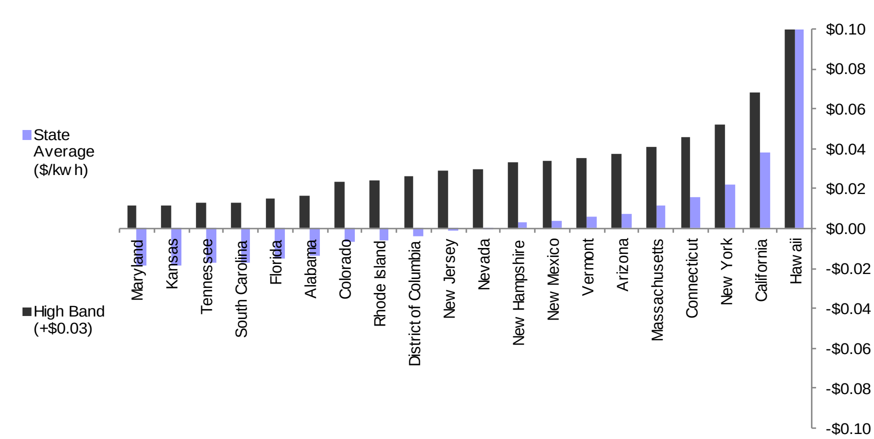
Key States – Distance from Grid Parity

Figure 41: Residential Parity @ $2.10 Net Cost (w/ ITC. $3.00/w Gross)



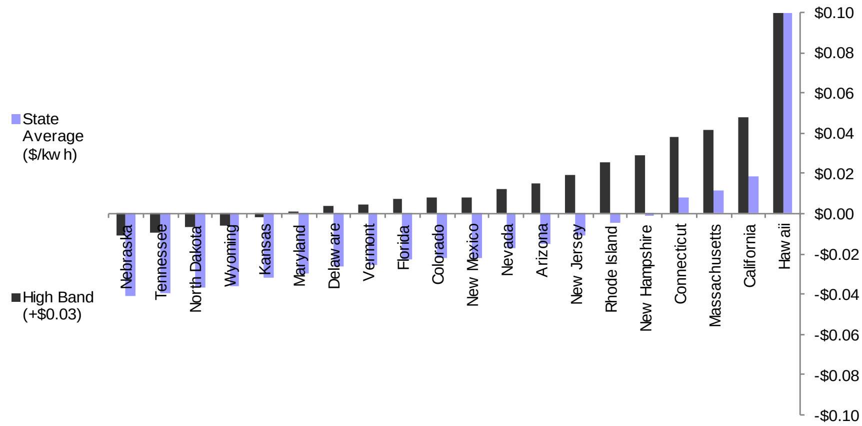
Source: Deutsche Bank, EIA
Note: These three successive graphs show LCOE minus electricity price (average and +3 cents)

Figure 42: Commercial Parity @ $1.75/w Net Cost (w/ITC. $2.50/w Gross)



Source: Deutsche Bank, EIA

Figure 43: Industrial Parity @ $1.58/w Net Cost (w/ ITC. $2.25/w Gross)



Source: Deutsche Bank, EIA

Model Overview

Inputs and Variables

For our US analysis we have considered medium to large DC systems using a traditional string inverter (replaced after 10 years). We assume a 0.70% production decrease every year, a 90% DC to AC efficiency conversion, and 364 days of electricity production. A yearly power price escalator (2%) is used to account for general inflation or rising fuel costs, and several switches (tax credit, FiT, SREC market, depreciation) are available in the model.

The costs of the system are broken into financing and the solar array itself. Module prices ($0.70/watt) are added to the inverter ($0.45), labor ($0.50/w), and other costs ($1.35) to arrive at a total gross cost per watt ($3.00) for residential systems. Commercial/Industrial systems are assumed to have economies of scale that allow for a 50-75 c/w reduction. Furthermore, debt levels are initially based on a spread (5%) to the local risk free rate (2.5%) and flowed through the model over a chosen payment period (20 years). This is also used as the discount rate. Operation and maintenance is considered an ongoing cost as a percentage (0.5%) of total system cost and is escalated (1%) annually. Lastly, the electricity production is assumed to be taxed if the system produces a net profit.

Methodology

Our base case assumes straight line 6 year depreciation, the federal 30% ITC, and $100 SREC's in existing markets are the only favorable policies in place. This implicitly assumes that a third party financier is used so we have used a cost per watt on the lower end of the likely range today for a residential system ($3/w gross). While in reality there will be variations in the $2.50-$4/w range for residential systems with variations between states, we have used a single cost/watt for simplicity.

Electricity production from the sample solar array was estimated using a point average insolation level from NREL's Solar Prospector (we have used levels for each State's most populous city) multiplied by the system size, the production days (364), and the conversion loss factor (90%). We use the total system cost, the yearly operation & maintenance, inverter replacement costs, and debt payments to arrive at total cost for a year. We apply a discount rate equal to the total financing cost in order to arrive at a discounted total costs and production. LCOE is calculated as gross total lifetime costs divided by total lifetime electricity production (both are discounted at the cost of debt). Our model spans a 20 year lifespan although we note that this may be conservative as most panels are expected to last 5-10 years longer.

Furthermore, we have modeled out the cash flows of each system to arrive at unlevered IRR's ranging from 0 to 47%. Our model assumes that the electricity is either self used (representing an avoided cost) or sold back into the grid at the prevailing electricity price. The Solar Energy Industries Association (SEIA) reports that 43 of the 50 states + DC currently have some form of net metering in place. Despite some recent challenges to policies, we believe that net metering policies are likely to stay in place for the foreseeable future. The table below represents an unlevered system.

Figure 44: LCOE and IRR in USA's Most Populous Cities (100% equity, ITC, SRECs in Select Markets)

City, State	Insolation (kWh/m2/day)	Cost of Electricity - $/kWh (12 month State average)	LCOE ($2.10/w Cost with ITC)	IRR
Honolulu, Hawaii	5.97	$0.37	$0.16	47.11%
Newark, New Jersey	4.67	$0.16	$0.21	15.11%
Los Angeles, California	6.06	$0.16	$0.16	13.68%
Boston, Massachusetts	4.57	$0.15	$0.21	13.32%
Wilmington, Delaware	4.81	$0.13	$0.20	12.97%
Baltimore, Maryland	4.85	$0.13	$0.20	12.14%
Washington, District of Columbia	4.87	$0.12	$0.20	11.39%
Philadelphia, Pennsylvania	4.72	$0.13	$0.21	11.08%
New York, New York	4.62	$0.18	$0.21	10.83%
Charlotte, North Carolina	5.19	$0.11	$0.19	10.73%
Las Vegas, Nevada	6.73	$0.12	$0.15	9.59%
Virginia Beach, Virginia	4.93	$0.11	$0.20	9.45%
Bridgeport, Connecticut	4.54	$0.17	$0.21	9.42%
Albuquerque, New Mexico	6.60	$0.11	$0.15	8.65%
Phoenix, Arizona	6.68	$0.11	$0.15	8.53%
Burlington, Vermont	4.30	$0.17	$0.23	8.42%
Columbus, Ohio	4.48	$0.12	$0.22	8.25%
Manchester, New Hampshire	4.54	$0.16	$0.21	8.06%
Providence, Rhode Island	4.59	$0.15	$0.21	6.57%
Denver, Colorado	5.85	$0.12	$0.17	6.50%
Louisville, Kentucky	4.70	$0.09	$0.21	5.77%
Detroit, Michigan	4.41	$0.14	$0.22	5.26%
Charleston, West Virginia	4.50	$0.10	$0.22	5.24%
Columbia, South Carolina	5.22	$0.12	$0.19	4.75%
Jacksonville, Florida	5.31	$0.11	$0.18	4.71%
Milwaukee, Wisconsin	4.54	$0.13	$0.21	4.70%
Wichita, Kansas	5.33	$0.11	$0.18	4.54%
Portland, Maine	4.04	$0.15	$0.24	4.13%
Birmingham, Alabama	5.00	$0.11	$0.20	3.42%
Atlanta, Georgia	5.09	$0.11	$0.19	3.30%
Cheyenne, Wyoming	5.53	$0.10	$0.18	3.21%
Salt Lake City, Utah	5.51	$0.10	$0.18	3.15%
Houston, Texas	4.96	$0.11	$0.20	3.14%
Jackson, Mississippi	5.11	$0.10	$0.19	2.43%
Minneapolis, Minnesota	4.56	$0.12	$0.21	2.40%
Des Moines, Iowa	4.72	$0.11	$0.21	1.99%
Oklahoma City, Oklahoma	5.41	$0.09	$0.18	1.93%
Billings, Montana	4.98	$0.10	$0.20	1.91%
Kansas City, Missouri	4.97	$0.10	$0.20	1.69%
Memphis, Tennessee	4.99	$0.10	$0.20	1.68%
Omaha, Nebraska	4.93	$0.10	$0.20	1.47%
Chicago, Illinois	4.50	$0.11	$0.22	1.30%
Indianapolis, Indiana	4.60	$0.11	$0.21	1.11%
Boise, Idaho	5.48	$0.09	$0.18	0.94%
Sioux Falls, South Dakota	4.75	$0.10	$0.21	0.91%
Fargo, North Dakota	5.16	$0.09	$0.19	0.80%
Little Rock, Arkansas	4.98	$0.09	$0.20	0.61%
Anchorage, Alaska	2.09	$0.18	$0.34	-
New Orleans, Louisiana	5.12	$0.09	$0.14	-
Portland, Oregon	4.04	$0.10	$0.17	-
Seattle, Washington	3.98	$0.09	$0.18	-

Source: Deutsche Bank, NREL, EIA
Note: Includes 30% ITC for all states and $100 SREC's for 6 years in markets in Delaware, Washington DC, Kentucky, Maryland, Massachusetts,New Jersey, North Carolina, Ohio, Pennsylvania, Virginia, and West Virginia

SREC Markets

State renewable energy certificates (SRECs) have helped to push New Jersey into one of the top solar markets in the country, and several other states have followed suit. While California does not currently utilize SREC markets the same way that other states do, we believe these market based instruments can be an effective means to increase ROI and enhance solar adoption rates.

Overview – Active Markets

New Jersey, Maryland, Delaware, Massachusetts, Ohio, Pennsylvania, North Carolina and Washington DC all employ active SREC markets currently. Indiana, Kentucky, West Virginia, and North Carolina also have marginal SREC markets because they have territory located within the PJM Regional Transmission Organization, which allows them to trade into active SREC markets like Ohio and Pennsylvania. Furthermore, California allows tradable renewable energy credits (TRECs) which are considerably different from SRECs and less likely to directly benefit distributed generation.

What is an SREC?

SREC's have been implemented to provide a partially market based incentive for solar capacity additions, particularly for distributed generation. 1 SREC is created for every 1 MWh of electricity generated from a solar installation. Using a Newark, NJ example, a 5kw system would generate ~6-8 SREC's per year. At current average wholesale prices, a residential system could generate incremental yearly income of ~$1,000-$1,500 per year.

SREC markets are primarily based on supply and demand, although the demand is essentially state mandated. The specifics vary across states, but there is generally a target renewable portfolio standard (RPS) with a specific carve out for solar generation over the next 10+ years as either a percentage of total electricity use or total GWh generated from solar. For example, the requirements for NJ are shown below, which have changed from absolute generation targets to % generation targets as shown.

Figure 45: New Jersey RPS Solar Mandate

Energy Year	Old Solar Carve-Out	New Solar Carve Out		Energy Year	OldSolar Carve-Out	New Solar Carve Out
EY 2011	306 GWh	306 GWh		EY 2020	2,164 GWh	3.38%
EY 2012	442 GWh	442 GWh		EY 2021	2,518 GWh	3.47%
EY 2013	596 GWh	596 GWh		EY 2022	2,928 GWh	3.56%
EY 2014	772 GWh	2.05%		EY 2023	3,433 GWh	3.65%
EY 2015	965 GWh	2.45%		EY 2024	3,989 GWh	3.74%
EY 2016	1,150 GWh	2.75%		EY 2025	4,610 GWh	3.83%
EY 2017	1,357 GWh	3.00%		EY 2026+	5,316 GWh	3.92%
EY 2018	1,591 GWh	3.20%		EY 2027	5,316 GWh	4.01%
EY 2019	1,858 GWh	3.29%		EY 2028 +	5,316 GWh	4.10%

*Note: Energy Year Begins June 1st of the prior calendar year in NJ

Source: NJ State Legislature Bills, DSIRE
Note: "Old Solar Carve Out" refers to A.B. 3520, while "New Solar Carve Out" refers to S.B. 1925

Eligibility and SACP

SREC's are generally designed to increase distributed generation market penetration and focus specifically on smaller system sizes more suited to residential or commercial scale. In some states, residential systems (<10-20kw) can use estimated generation for SREC credits but this is starting to change.

Solar Alternative Compliance Payments (SACPs) are effectively a price ceiling for SREC's, as they are the price a utility would pay if it cannot purchase SRECs for a lower price. The existence of this mechanism encourages market development but we believe it is unlikely that longer-term prices will rise above a certain discount to these levels, given the attractive economics from SRECs and relatively high prices for SACPs (~$300-400).

SRECs in Perspective

One of the most obvious benefits of an SREC is a notable reduction in the payback time for a solar system. Given that 1 SREC is created for 1MWh, each $100 in SREC prices is effectively equal to 10 cents per kwh. The average US retail electricity price is only 12 cents per kwh, so we can see that the economics improve with a functioning SREC market which is not dramatically in oversupply. This has happened before (NJ specifically has been in relative oversupply recently) which can cause a precipitous decline in SREC prices and hurt the economics of legacy projects. However, state legislatures which choose to implement RPS with a solar carve out may be more likely than others to revise as needed.

SRECs in our Model

States with high insolation levels showed the greatest improvement in IRRs because they produced the most SRECs.

Figure 46: Theoretical $100 SREC Project IRR

City, State	Insolation (kWh/m2/day)	Cost of Electricity - $/kWh (12 month State average)	Base IRR (No SRECs)	$100 SREC IRR	Change
Birmingham, Alabama	5.00	$0.11	3.37%	10.45%	7.08%
Anchorage, Alaska	2.09	$0.18			0.00%
Phoenix, Arizona	6.68	$0.11	8.48%	20.43%	11.95%
Little Rock, Arkansas	4.98	$0.09	0.53%	7.06%	6.53%
Los Angeles, California	6.06	$0.16	13.57%	25.65%	12.08%
Denver, Colorado	5.85	$0.12	6.44%	15.94%	9.49%
Bridgeport, Connecticut	4.54	$0.17	9.39%	16.88%	7.49%
Wilmington, Delaware	4.81	$0.14	5.80%	12.97%	7.17%
Washington, District of Columbia	4.87	$0.12	4.37%	11.39%	7.02%
Jacksonville, Florida	5.31	$0.12	4.75%	12.61%	7.87%
Atlanta, Georgia	5.09	$0.11	3.23%	10.48%	7.25%
Honolulu, Hawaii	5.97	$0.37	47.20%	65.75%	18.56%
Boise, Idaho	5.48	$0.09	0.86%	8.31%	7.45%
Chicago, Illinois	4.50	$0.11	1.43%	7.08%	5.65%
Indianapolis, Indiana	4.60	$0.10	1.02%	7.02%	6.00%
Des Moines, Iowa	4.72	$0.11	1.99%	8.26%	6.27%
Wichita, Kansas	5.33	$0.11	4.44%	12.44%	8.00%
Louisville, Kentucky	4.70	$0.09		5.77%	5.77%
New Orleans, Louisiana	5.12	$0.09		6.49%	6.49%
Portland, Maine	4.04	$0.15	4.14%	9.64%	5.49%
Baltimore, Maryland	4.85	$0.13	5.06%	12.14%	7.08%
Boston, Massachusetts	4.57	$0.15	6.42%	13.32%	6.90%
Detroit, Michigan	4.41	$0.14	5.19%	11.61%	6.42%
Minneapolis, Minnesota	4.56	$0.12	2.31%	8.47%	6.16%
Jackson, Mississippi	5.11	$0.10	2.31%	9.46%	7.16%
Kansas City, Missouri	4.97	$0.10	1.59%	8.33%	6.74%
Billings, Montana	4.98	$0.10	1.88%	8.61%	6.73%
Omaha, Nebraska	4.93	$0.10	1.40%	7.99%	6.59%
Las Vegas, Nevada	6.73	$0.12	9.61%	21.94%	12.34%
Manchester, New Hampshire	4.54	$0.16	8.02%	15.22%	7.20%
Newark, New Jersey	4.67	$0.16	7.80%	15.11%	7.31%
Albuquerque, New Mexico	6.60	$0.11	8.61%	20.40%	11.78%
New York, New York	4.62	$0.18	10.71%	18.76%	8.05%
Charlotte, North Carolina	5.19	$0.11	3.30%	10.73%	7.42%
Fargo, North Dakota	5.16	$0.09	0.79%	7.58%	6.80%
Columbus, Ohio	4.48	$0.12	2.26%	8.25%	5.99%
Oklahoma City, Oklahoma	5.41	$0.09	1.80%	9.39%	7.59%
Portland, Oregon	4.04	$0.10		3.04%	3.04%
Philadelphia, Pennsylvania	4.72	$0.13	4.37%	11.08%	6.71%
Providence, Rhode Island	4.59	$0.15	6.53%	13.51%	6.98%
Columbia, South Carolina	5.22	$0.12	4.61%	12.49%	7.88%
Sioux Falls, South Dakota	4.75	$0.10	0.88%	7.02%	6.14%
Memphis, Tennessee	4.99	$0.10	1.64%	8.34%	6.71%
Houston, Texas	4.96	$0.11	3.08%	10.05%	6.97%
Salt Lake City, Utah	5.51	$0.10	3.06%	11.07%	8.01%
Burlington, Vermont	4.30	$0.17	8.30%	15.18%	6.89%
Virginia Beach, Virginia	4.93	$0.11	2.72%	9.45%	6.73%
Seattle, Washington	3.98	$0.09		0.71%	0.71%
Charleston, West Virginia	4.50	$0.10		5.24%	5.24%
Milwaukee, Wisconsin	4.54	$0.13	4.65%	11.17%	6.52%
Cheyenne, Wyoming	5.53	$0.10	3.19%	11.18%	7.99%

Source: Deutsche Bank, NREL

Effect of Leverage on Model

We conducted a basic scenario analysis and lowered the equity contribution from 100% to 50% in 10% increments using the same assumptions in previous iterations ($3/w gross cost, 6 Year $100 SRECs, 30% ITC, etc). We use a 7.5% cost of debt and 20 year payment term. Although some markets cannot sustain their own projects, we see returns increasing notably across the most important markets as leverage is added.

Figure 47: Debt on our Model

City, State	IRR (100% equity)	IRR (90% Equity)	IRR (80% Equity)	IRR (70% Equity)	IRR (60% Equity)	IRR (50% Equity)
Birmingham, Alabama	3.42%	2.69%	1.67%	0.15%	-	-
Anchorage, Alaska	-	-	-	-	-	-
Phoenix, Arizona	8.53%	8.72%	8.97%	9.38%	10.09%	11.74%
Little Rock, Arkansas	0.61%	-	-	-	-	-
Los Angeles, California	13.68%	14.80%	16.43%	19.08%	23.89%	34.23%
Denver, Colorado	6.50%	6.32%	6.08%	5.70%	5.06%	3.77%
Bridgeport, Connecticut	9.42%	9.76%	10.25%	11.00%	12.37%	15.50%
Wilmington, Delaware	12.97%	14.28%	16.41%	20.12%	26.61%	52.27%
Washington, District of Colun	11.39%	12.33%	13.89%	16.88%	21.74%	42.11%
Jacksonville, Florida	4.71%	4.22%	3.53%	2.49%	0.79%	-
Atlanta, Georgia	3.30%	2.56%	1.51%	-	-	-
Honolulu, Hawaii	47.11%	55.89%	71.09%	104.46%	243.33%	-
Boise, Idaho	0.94%	-	-	-	-	-
Chicago, Illinois	1.30%	0.18%	-	-	-	-
Indianapolis, Indiana	1.11%	-	-	-	-	-
Des Moines, Iowa	1.99%	1.01%	-	-	-	-
Wichita, Kansas	4.54%	4.02%	3.28%	2.18%	0.37%	-
Louisville, Kentucky	5.77%	5.33%	4.57%	3.01%	-	-
New Orleans, Louisiana	-	-	-	-	-	-
Portland, Maine	4.13%	3.54%	2.70%	1.44%	-	-
Baltimore, Maryland	12.14%	13.26%	15.10%	18.54%	24.12%	47.04%
Boston, Massachusetts	13.32%	14.68%	16.90%	20.69%	27.33%	52.97%
Detroit, Michigan	5.26%	4.87%	4.32%	3.48%	2.09%	-
Minneapolis, Minnesota	2.40%	1.49%	0.20%	-	-	-
Jackson, Mississippi	2.43%	1.53%	0.25%	-	-	-
Kansas City, Missouri	1.69%	0.65%	-	-	-	-
Billings, Montana	1.91%	0.91%	-	-	-	-
Omaha, Nebraska	1.47%	0.37%	-	-	-	-
Las Vegas, Nevada	9.59%	9.95%	10.48%	11.30%	12.79%	16.16%
Manchester, New Hampshire	8.06%	8.16%	8.30%	8.51%	8.89%	9.74%
Newark, New Jersey	15.11%	16.91%	19.80%	24.10%	32.87%	66.19%
Albuquerque, New Mexico	8.65%	8.85%	9.14%	9.59%	10.39%	12.24%
New York, New York	10.83%	11.42%	12.27%	13.61%	16.11%	21.23%
Charlotte, North Carolina	10.73%	11.53%	12.88%	15.55%	19.92%	39.78%
Fargo, North Dakota	0.80%	-	-	-	-	-
Columbus, Ohio	8.25%	8.43%	8.73%	9.31%	10.53%	8.96%
Oklahoma City, Oklahoma	1.93%	0.93%	-	-	-	-
Portland, Oregon	-	-	-	-	-	-
Philadelphia, Pennsylvania	11.08%	11.94%	13.35%	16.06%	20.57%	39.00%
Providence, Rhode Island	6.57%	6.41%	6.18%	5.82%	5.22%	4.02%
Columbia, South Carolina	4.75%	4.27%	3.59%	2.56%	0.87%	-
Sioux Falls, South Dakota	0.91%	-	-	-	-	-
Memphis, Tennessee	1.68%	0.63%	-	-	-	-
Houston, Texas	3.14%	2.37%	1.27%	-	-	-
Salt Lake City, Utah	3.15%	2.38%	1.29%	-	-	-
Burlington, Vermont	8.42%	8.58%	8.81%	9.16%	9.79%	11.23%
Virginia Beach, Virginia	9.45%	9.93%	10.74%	12.34%	15.15%	28.04%
Seattle, Washington	-	-	-	-	-	-
Charleston, West Virginia	5.24%	4.67%	3.69%	1.72%	-	-
Milwaukee, Wisconsin	4.70%	4.21%	3.51%	2.47%	0.75%	-
Cheyenne, Wyoming	3.21%	2.45%	1.37%	-	-	-

Source: Deutsche Bank estimates

Management

Greg Butterfield (CEO) - Gregory S. Butterfield is Vivint Solar's CEO and President since Sep 2013. He also became a member of the company's board in Mar 2014. Prior to joining Vivint Solar, Mr. Butterfield was a managing partner at SageCreek Partners (from 2008 to 2013). He has also served as a director for RES Software, Needle Inc., Omniture Inc., Utah Valley University and Utah's Technology Council. Mr. Butterfield was also the group president of Symantec Corporation, and CEO of Altiris Inc. He holds a bachelor of science degree in business administration and finance from Brigham Young University.

Dana C. Russell (CFO) - Dana C. Russell is Vivint Solar's CFO and Executive Vice President since Nov 2013. Prior to joining Vivint Solar, he was the CFO of Allegiance, Inc (Jan-Nov 2013). From May 2011 – Dec 2012, Mr. Russell was an independent contractor and provided financial services and business consulting to various organizations. He was the CFO of Novell, Inc. (from June 2006 to April 2011). He holds a master's degree in accounting from Weber State University and a CPA license in the State of Utah.

L. Chance Allred (Vice President of Sales) - L. Chance Allred is Vivint Solar's Vice President of Sales since Mar 2012. Prior to joining Vivint Solar, Mr. Allred served as a founding partner and vice president of sales for Platinum Protection (from Sep 2006 to Mar 2012). From Mar 2000 - Oct 2006, he served in various positions for Vivint, Inc. (a home automation and security company and Vivint Solar's sister company). He holds a bachelor's degree. in marketing from Southern Utah University.

Paul S. Dickson (Vice President of Operations): Paul S. Dickson is Vivint Solar's Vice President of Operations since Nov 2013. Prior to this, he served as the company's Vice President of Financing (from May 2011 to Nov 2013). Before joining Vivint Solar, he was the director of smart grid and energy management for Vivint, Inc. from Dec 2010 to May 2011. Mr. Dickson also co-founded and served as the president and CEO of Meter Solutions Pros, which was acquired by Vivint, Inc. Mr. Dickson holds a Bachelor of Arts degree from Brigham Young University.

Dwain A. Kinghorn (Chief Strategy and Innovations Officer) - Dwain A. Kinghorn has been Vivint Solar's Chief Strategy and Innovations Officer since Mar 2014. Prior to joinig Vivint Solar, he served as a partner for SageCreek Partners (from July 2008 to Mar 2014). From Apr 2007 to July 2008, Mr. Kinghorn served as a vice president for Symantec Corporation; and from Oct 2000 to Apr 2007, he was the chief technology officer for Altiris, Inc. He has also served as the CEO of Computing Edge (from May 1994 to Sep 2000). He holds a degree in electrical and computer engineering from Brigham Young University.

Appendix 1

Important Disclosures

Additional information available upon request

Disclosure checklist

Company	Ticker	Recent price*	Disclosure
Vivint Solar	VSLR.N	13.07 (USD) 23 Oct 14	1,7,8

*Prices are current as of the end of the previous trading session unless otherwise indicated and are sourced from local exchanges via Reuters, Bloomberg and other vendors . Data is sourced from Deutsche Bank and subject companies.

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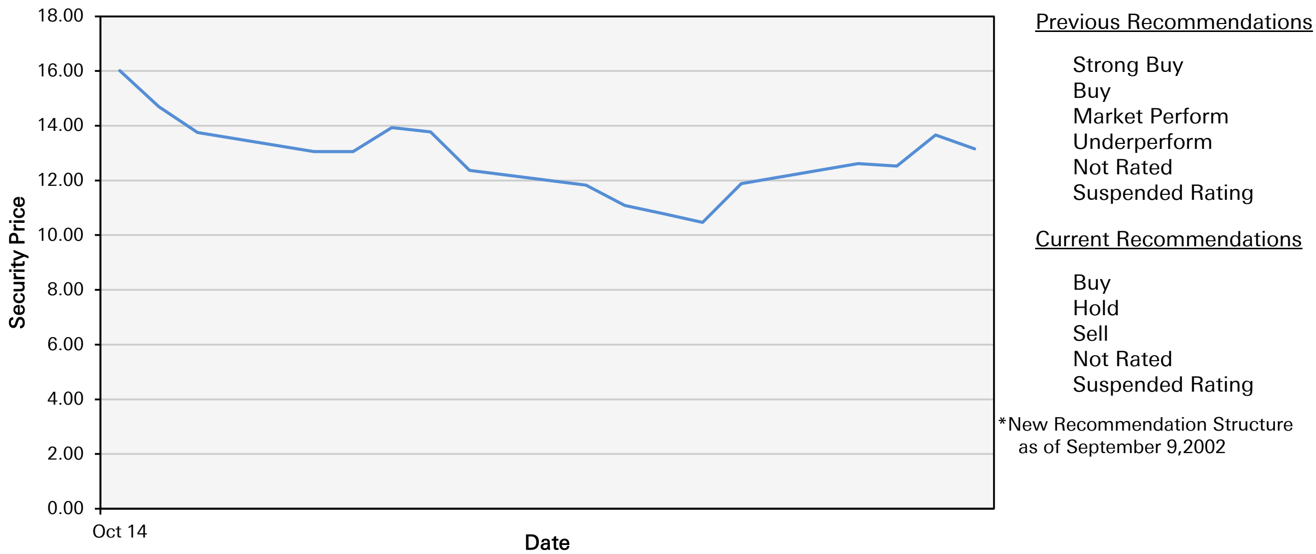
Historical recommendations and target price: Vivint Solar (VSLR.N)

(as of 10/23/2014)



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Sell: Based on a current 12-month view of total share-holder return, we recommend that investors sell the stock
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Notes:

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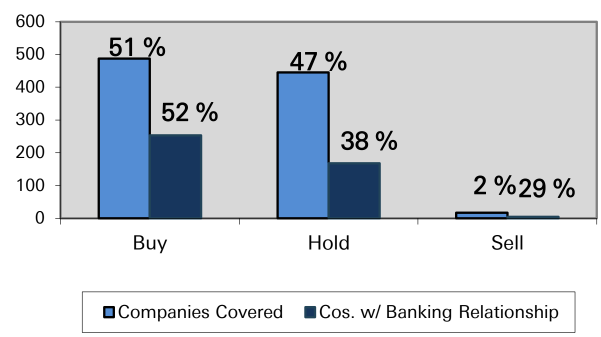
Equity rating dispersion and banking relationships



North American Universe

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