

# Tesla & SolarCity

## Deal Synergies Still Cloudy

### Equities

North America

Utilities

#### What's New?

TSLA announced details of its agreement to acquire SCTY in an all-stock transaction (see our note on the initial offer, [Driving Off into the Sunset](#)). TSLA provided expected synergy targets of \$150m (\$150-200m mentioned on call, albeit with 'upside') within one year, adjusted offer price to \$25.37 (\$26.70 last close), and said the deal would close in Q4 assuming SEC and majority shareholder approval. There is a 45 day go-shop period during which SCTY can solicit and/or accept a higher offer. We continue to remain cautious on the deal given lack of compelling synergies (most could seemingly be achieved through a JV), and the fact this is an unneeded distraction for TSLA management which already faces challenges with the Model 3 launch and significant production targets. We note that a lack of any quantitative assessment of the storage prospects -- outside of (well articulated) prospects in Hawaii -- emphasize the lack of clarity in terms of TSLA's ability to execute. The deal would appear 'too early' for its time given the infancy of the resi solar sector (with net metering still largely in place).

#### Synergies Remain Vague

The company provided limited financial quantification of the \$150m cost synergies. Qualitatively, the synergies will come from lower customer acquisition costs by leveraging TSLA's retail footprint (foot traffic of 3m per year), savings from combined installation/service of solar & storage, savings from supply chain efficiencies (e.g. both companies source inverters), and leveraging TSLA's manufacturing expertise. Ultimately, TSLA envisions combining vehicle, charger, and storage delivery/installation in "a one truck and one trip" solution. Given investor caution around the SCTY deal, we are surprised by the lack of quantitative details on the solar/storage combo.

#### SCTY: Cutting 2016 Guidance Again, Cost Improvements Marginal

Despite beating quarterly guidance, SCTY has cut 2016 install expectations again, implying only ~9.4% YoY growth in total installations on updated midpoint of 950MW. Further, we estimate total sales cost per watt (on flat cost structure) would yield ~76 cents on a per unit basis -> 44% above the 53 cents disclosed in Q2'15 but consistent with management's previous comments suggesting ~20% cost improvement over Q1 customer acquisition cost of 97 cents. While this is still an improvement vs recent high of 97 cents last quarter, it doesn't appear sufficient to dispel concerns of more serious issues at the company. Our initial impression remains biased towards loan products and direct cash sales, which would not favor SCTY's current focus on PPAs.

#### Few Details on New Products and Cost Savings

We are increasingly cautious on resi solar fundamentals but note a number of questions remain unanswered today. The two new products focused on integrated solar+storage and another focused on new roof construction. The offerings weren't fleshed out, but management could provide more compelling details later. However, this lack of clarity on new products was combined with vague cost savings goals and lackluster cost improvements from SCTY, making for a generally cloudy outlook. [Current disclosures](#) in the merger agreement suggest cost savings will come from lower hardware, reduced installation, improved manufacturing, and reducing customer acquisition costs, though we are unsure how much of that would come from *synergies* versus previously planned cost reduction. Furthermore, SCTY's 45 day go-shop period could yield further offers, but we note the failed VSLR acquisition provides poor precedent here and we do not assume a bidding war occurs.

#### Valuation: Maintain Sell rating and \$160 price target on TSLA; Updating SCTY

Our \$160 price target is based on our 3-stage DCF for TSLA. We are updating our SCTY valuation which is now adjusted to reported deal value of \$25.37.

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## SCTY Beat the quarter and cut guidance: further deceleration in 2H

SolarCity's [preannouncement](#) of 201MW installed was above the quarterly guidance of 185MW and implies 26% growth into the back half on existing guidance (vs previous implied growth of 49% into the back half on old guidance midpoint of 1,050). This compares to Q1 installs of 214MW and Q2'15 installs of 189MW (~9.5% YoY Growth). Midpoint of yearly guidance would yield a total increase of only 9.4% total installs versus 2016.

## Is Sales Cost Improving? Not That Substantially

MW booked in Q2 was ~224MW implied from the announced 40% growth off 160MW bookings in Q1. This suggests sales cost could be in the 70-80 cent range assuming similar cost structure to Q1. However, this is consistent with management expectations of 20% customer acquisition cost improvement suggested on the Q1 call.

**Implied Q2'16 cost per watt of \$0.76 would be up ~44% YoY and 36% higher than Q4'15 low of \$0.56/w**

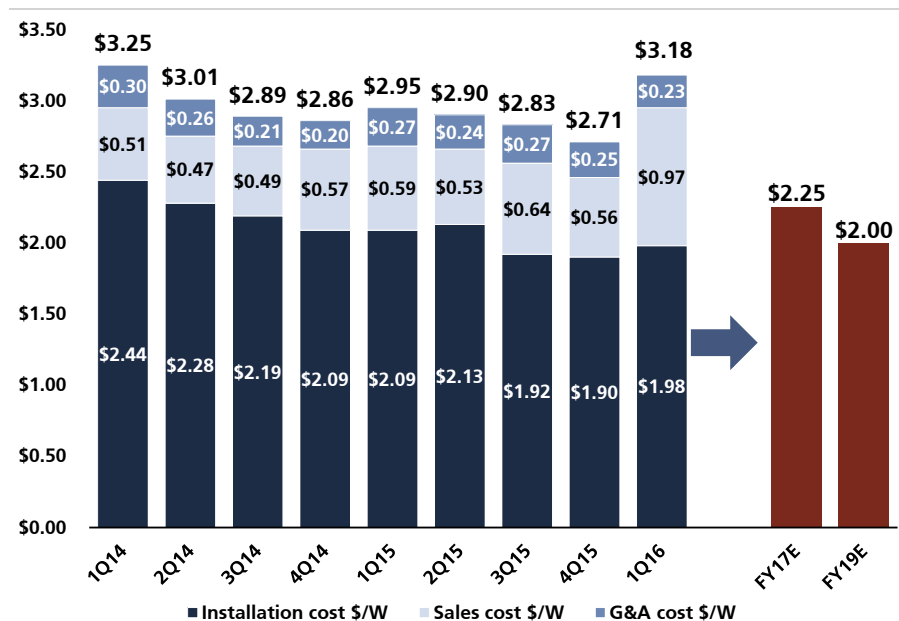
Figure 1: Implied Cost Per Watt

	Q1'16	Implied Q2	
Q1 Sales and Marketing (ex non-cash, \$M)	115		Flat cost structure would imply a 44% sales cost/watt increase year over year
MW Booked	160	224	
=Sales/Mkting Cost Per Watt	\$0.72	\$0.51	
+ Capitalized Sales Cost Per Watt	\$0.25	\$0.25	
=Total Cost Per Watt	\$0.97	\$0.76	
QoQ Change		21%	
Q2'15 Cost Per Watt YoY Change			
	\$0.53	44%	

Source: Company Disclosures, UBS

Compared to previous cost per watts, this still appears relatively unfavorable.

Figure 2: Previous SCTY Cost Per Watt + Targets



Source: Company Filings

## Valuation: Shifting SCTY to \$25.37 due to Proposed Deal

We are shifting our valuation methodology to account for the merger announcement, which initially valued SCTY between \$26.50 and \$28.50, but now values the company at \$25.37. Recent comments from some of the largest shareholders have been [interpreted as deal-supportive](#) and TSLA management has been vocally [advocating in favor of the deal](#). We are consequently shifting our price target from \$18 to \$25.37, in line with the announced value.

**Figure 3: Updating SolarCity Price Target**

	Previous Estimate		Announced Deal
TLSA/SCTY Analysis	Low	High	Current
Exchange Rate	0.122x	0.131x	0.110x
TSLA Share Price	\$233.63	\$233.63	\$233.63
Value of SCTY Offer	\$28.50	\$30.61	\$25.70
Stated Range	\$26.50	\$28.50	\$25.37
Current SCTY Price	\$25.45	\$25.45	\$25.45
Upside/(Downside)	4%	12%	0%
Solar City Basic Shares Outstanding	98.3	98.3	100.3
SCTY Estimated Options	9.8	9.8	*
Total Est. Diluted SCTY Shares (Mn)	108.1	108.1	100.3
Purchase Price to TSLA (\$Bn)	\$3.1	\$3.3	\$2.6

We are updating our Price Target to the proposed deal value

SCTY is trading at the implied deal value soon after the market open on 8/1/16

\*SCTY Options will be converted to equivalent in TSLA shares

Source: Company Filings, Factset, UBSe. Prices as of 7/31/16

## Previous Valuation Methodology Yields \$17 on updated guidance

Our previous methodology yielded an \$18 PT assuming midpoint of the existing 1,000-1,100MW 2016 guidance for installations. Updated guidance of 900-1,000MW implies ~9.5% YoY growth, well below the initial guidance of 1,250MW provided during the Q3 call.

**Figure 4: 2016 Guidance Changes**

2016 Guidance Shifts	Low	High	Mid	Growth off 2015
Q3'15 Call Guidance			1,250	44.0%
Q1 Call Guidance	1,000	1,100	1,050	21.0%
Current 2016 Guidance	900	1,000	950	9.4%
	1H'16 Installs		Implied 2H	Implied Growth
	421		529	26%

Source: Company Filings, UBSe

Our previous valuation methodology is included below, which would imply TSLA shareholders will either 1) generate enough ongoing synergies to justify the implied premium or 2) are comfortable with more optimistic projections than we had in our model.

TSLA shareholders would be paying nearly a 50% a premium based on our old valuation methodology

**Figure 5: SCTY: Previous Valuation Methodology Yields \$17**

SolarCity Valuation UBSe							
DevCo	2016	2017	2018	2019	2020	2021	2022
ITC (%)		30%	30%	30%	26%	22%	10%
Annual Additions (MW)		1,045	1,150	1,264	1,391	1,474	1,504
Gross Project Cash Flow (\$/W)		\$0.19	\$0.19	\$0.18	\$0.16	\$0.15	\$0.15
Tax Equity (\$/W)		(\$0.07)	(\$0.07)	(\$0.07)	(\$0.06)	(\$0.05)	(\$0.02)
Bad Debt Expense							
Unlevered CAFD \$/W		\$0.12	\$ 0.12	\$ 0.11	\$ 0.10	\$ 0.10	\$ 0.13
Monetization IRR (From Unlevered NPV of PowerCo)		7.56%	7.56%	7.56%	7.56%	7.56%	7.56%
Translating from IRR to Cash Yield (very ~similar on Year-1)		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Unlevered Cash-on-Cash Yield Applied		9.6%	9.6%	9.6%	9.6%	9.6%	9.6%
Installed Cost (\$/W) - Start w/ Guidance	\$2.73	\$2.52	\$2.14	\$1.96	\$1.82	\$1.69	\$1.57
YoY Change (%)			15.0%	8.7%	7.3%	7.1%	6.9%
Base Exit Valuation for Unlevered Project--Post-TE (\$/W)		\$1.28	\$1.27	\$1.12	\$1.08	\$1.04	\$1.34
Bull Exit Valuation for Unlevered Project--Post-TE (\$/W)		\$1.62	\$1.60	\$1.42	\$1.36	\$1.31	\$1.70
FMV (\$/W) Tied to % Change in Installed Cost (50% Weight)		\$3.62	\$3.07	\$2.81	\$2.60	\$2.42	\$2.25
FMV (\$/W) SCTY Disclosure (50% Weight)		\$4.55	\$4.55	\$4.55	\$4.55	\$4.55	\$4.55
FMV (\$/W)		\$4.08	\$3.81	\$3.68	\$3.58	\$3.48	\$3.40
Tax Equity (\$/W)		\$1.57	\$1.46	\$1.41	\$1.19	\$0.98	\$0.44
Base Total System Sale Price (\$/W)		\$2.85	\$2.73	\$2.53	\$2.27	\$2.02	\$1.78
Bull Total System Sale Price (\$/W)		\$3.18	\$3.07	\$2.83	\$2.55	\$2.29	\$2.14
Base Implied Margin (\$/W)		\$0.32	\$0.59	\$0.57	\$0.45	\$0.33	\$0.21
Base Implied Margin (%)		13%	27%	29%	25%	20%	13%
Bull Implied Margin (\$/W)		\$0.66	\$0.92	\$0.87	\$0.74	\$0.61	\$0.57
Bull Implied Margin (%)		26%	43%	44%	41%	36%	36%
Base Gross Margin (\$M)		338	675	726	630	490	315
Bull Gross Margin (\$M)		691	1,061	1,101	1,027	895	850
R&D/Opex - NOT Reflected in Cost Build Up (\$/W)		\$0.04	\$0.04	\$0.04	\$0.04	\$0.04	\$0.04
R&D/Opex (\$M)		(42)	(46)	(51)	(56)	(59)	(60)
Base EBITDA (\$M) per Annum		296	629	676	574	431	255
Base EBITDA (\$/W)		\$0.28	\$0.55	\$0.53	\$0.41	\$0.29	\$0.17
Bull EBITDA (\$M) per Annum		650	1,015	1,051	971	836	790
Bull EBITDA (\$/W)		\$0.62	\$0.88	\$0.83	\$0.70	\$0.57	\$0.53
Bull EV/EBITDA (For Terminal Value)							4.0x
Base Implied Value		296	629	676	574	431	1,020
Bull Implied Value		650	1,015	1,051	971	836	3,159
				Bear	Base	Bull	
NPV (\$M)				0	2,161	5,185	
Execution Risk - Discount Rate on DevCo					15%	10%	
Shares Outstanding (M), 2016e					118.3		
				Bear	Base	Bull	
Value of DevCo to SCTY				\$0	\$18	\$44	
Other HoldCo Liabilities (Netting Against DevCo)				As of March 31, 2016			
Converts				909			
Vehicle/Other Loans				28			
Solar Bonds				214			
Revolver				370			
Cash				(362)			
Total Net Parent Debt				1,160			
Value of Liabilities to DevCo				-\$10			
Net DevCo				\$0			
PowerCo				Bear	Base	Bull	
Beta				1.22			
Risk Prem				7%			
Rf				2%			
CAPM Cost of Equity				10.5%			
NPV				893	893	1,206	
Levered (Equity) Discount Rate				10.5%	10.5%	7.5%	
Value of PowerCo to SCTY - NPV				\$8	\$8	\$10	
Silevo				Bear	Base	Bull	
Value of Silevo to SCTY				\$0	\$1	\$8	
SCTY Equity Value Per Share				\$17			
				\$52			

Source: Company Disclosures, UBSe

## Updating Our SCTY projections for Guidance Shift

SolarCity also provided updated guidance for 2016MW installed of 900-1,000MW, which we now reflect in our estimates for the company. Our previously published MW installed estimate of 1,042MW is revised to 950MW for 2015, which also shifts MW installed projections for future years on an assumed 10% growth rate. This drives a meaningful change in GAAP EPS estimates. Specifically, 2016 and 2017 EPS decreases due to lower cost absorption on a reduced MW basis, while 2018 EPS increases marginally as the company adjusts the cost structure accordingly for the new lower growth assumptions, in our view.

**Figure 6: Updating SCTY Estimates for Guidance**

Previous UBSe					
	2016	2017	2018	2019	2020
MW	1,042	1,146	1,260	1,386	1,525
GAAP EPS	(\$4.28)	(\$2.38)	(\$2.27)	(\$2.24)	(\$2.16)
Updated UBSe					
MW	950	1,045	1,150	1,264	1,391
% Change	-9%	-9%	-9%	-9%	-9%
GAAP EPS	(\$4.92)	(\$2.89)	(\$2.12)	(\$1.96)	(\$1.94)
% Change	-15%	-21%	6%	12%	10%

Source: UBSe

*Please see our previous notes on the transaction below:*

[Driving Off Into the Sunset](#)

[Merger Puts Battery Strategy Front and Center](#)

[A Quick Look at SCTY Board: The Lonely One](#)

# SolarCity Corp

## Deal Synergies Still Cloudy

### What's New?

TSLA announced details of its agreement to acquire SCTY in an all-stock transaction (see our note on the initial offer, Driving Off into the Sunset). TSLA provided expected synergy targets of \$150m (\$150-200m mentioned on call, albeit with 'upside') within one year, adjusted offer price to \$25.37 (\$26.70 last close), and said the deal would close in Q4 assuming SEC and majority shareholder approval. There is a 45 day go-shop period during which SCTY can solicit and/or accept a higher offer. We continue to remain cautious on the deal given lack of compelling synergies (most could seemingly be achieved through a JV), and the fact this is an unneeded distraction for TSLA management which already faces challenges with the Model 3 launch and significant production targets. We note that a lack of any quantitative assessment of the storage prospects -- outside of (well articulated) prospects in Hawaii -- emphasize the lack of clarity in terms of TSLA's ability to execute. The deal would appear 'too early' for its time given the infancy of the resi solar sector (with net metering still largely in place).

### Revising EPS Estimate for 2016-2020

SolarCity also provided updated guidance for 2016MW installed of 900-1,000MW, which we now reflect in our estimates for the company. Our previously published MW installed estimate of 1,042MW is revised to 950MW for 2015, which also shifts MW installed projections for future years on an assumed 10% growth rate. This drives a meaningful change in GAAP EPS estimates. Specifically, 2016 and 2017 EPS decreases due to lower cost absorption on a reduced MW basis, while 2018 EPS increases marginally as the company adjusts the cost structure accordingly for the new lower growth assumptions, in our view. We are adjusting our 2016/2017/2018/2019/2020 EPS estimates from -\$4.28/-2.38/-2.27/-2.24/-2.16 to -\$4.92/-2.89/-2.12/-1.96/-1.94 respectively.

### Updating Price Target To Reflect the Deal Price

We are shifting our valuation methodology to account for the merger announcement, which initially valued SCTY between \$26.50 and \$28.50, but now values the company at \$25.37. Recent comments from some of the largest shareholders have been [interpreted as deal-supportive](#) and TSLA management has been vocally [advocating in favor of the deal](#). We are consequently shifting our price target from \$18 to \$25.37, in line with the announced value.

### Valuation: Based on the Deal Price

Our updated valuation is based on the publically announced deal price of \$25.37.

### Equities

Americas  
Electric Utilities

12-month rating **Neutral**

12m price target **US\$25.37**  
Prior: **US\$18.00**

Price **US\$26.70**

RIC: SCTY.O BBG: SCTY US

### Trading data and key metrics

52-wk range	US\$60.17-16.67
Market cap.	US\$2.58bn
Shares o/s	96.5m (COM)
Free float	56%
Avg. daily volume ('000)	6,103
Avg. daily value (m)	US\$137.9
Common s/h equity (12/16E)	US\$3.14bn
P/BV (12/16E)	1.0x
Net debt / EBITDA (12/16E)	NM

### EPS (UBS, diluted) (US\$)

	12/16E			
	From	To	% ch	Cons.
Q1	(0.48)	(0.25)	NM	(2.56)
Q2E	(0.26)	(1.00)	NM	(2.47)
Q3E	(1.12)	(1.29)	NM	(2.32)
Q4E	(2.41)	(2.42)	NM	(2.41)
12/16E	(4.28)	(4.92)	NM	(10.04)
12/17E	(2.38)	(2.89)	NM	(9.63)
12/18E	(2.27)	(2.12)	NM	(9.71)

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Highlights (US\$m)	12/13	12/14	12/15	12/16E	12/17E	12/18E	12/19E	12/20E
Revenues	164	255	400	822	1,145	1,839	2,101	2,428
EBIT (UBS)	(149)	(336)	(648)	(747)	(584)	(377)	(294)	(221)
Net earnings (UBS)	(56)	(56)	(58)	(583)	(364)	(284)	(270)	(271)
EPS (UBS, diluted) (US\$)	-	(0.60)	(0.60)	(4.92)	(2.89)	(2.12)	(1.96)	(1.94)
DPS (US\$)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net (debt) / cash	(80)	(1,025)	(2,028)	(3,248)	(5,285)	(6,791)	(8,144)	(9,400)
Profitability/valuation	12/13	12/14	12/15	12/16E	12/17E	12/18E	12/19E	12/20E
EBIT margin %	-91.2	-131.6	-162.1	-90.9	-51.0	-20.5	-14.0	-9.1
ROIC (EBIT) %	(22.4)	(20.4)	(18.5)	(12.8)	(7.1)	(3.6)	(2.3)	(1.5)
EV/EBITDA (core) x	-	-29.3	-14.8	-12.1	-33.5	>100	45.2	27.1
P/E (UBS, diluted) x	-	NM	(82.7)	(5.4)	(9.2)	(12.6)	(13.6)	(13.7)
Equity FCF (UBS) yield %	(8.9)	(23.3)	(43.7)	(93.1)	(95.1)	(81.1)	(77.4)	(76.1)
Net dividend yield %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: Company accounts, Thomson Reuters, UBS estimates. UBS adjusted EPS is stated before goodwill-related charges and other adjustments for abnormal and economic items at the analysts' judgement. Valuations: based on an average share price that year, (E): based on a share price of US\$26.70 on 29 Jul 2016 19:36 EDT

## **SolarCity Corp Investment case**

The key to success for SCTY's residential solar business lies in reducing upfront installation costs (which include direct install costs, as well as associated sales and G&A costs). With mgmt guiding for total install cost reduction to \$2.25/W exiting 2017e (from \$2.71/W in 2015), we remain focused on execution.

## **Valuation Method and Risk Statement**

Our TSLA price target is based on a DCF. An overall slowdown in the global economy and discretionary spending remains a key risk to automotive production and, as such, to TSLA stock. Other major risks include a slower rate of electric vehicle adoption, inability to deliver on battery cost reduction and performance, supply risks related to battery active materials (cobalt and nickel), failure to expand capacity rapidly, regulatory risks related to safety, warranty and disputes with franchised dealers, and above-average overall execution risk.

Solar sector risks include : 1) Solar panel and other input pricing is subject to ongoing price deflation, which affects economics of downstream projects and margins of upstream producers. 2) Government incentives being added or removed have had a disproportionate effect on demand in the past, and may continue to 3) reliance on power purchase agreements in electricity markets could make future contracts more difficult to sign 4) solar power is directly competing with other traditional generators as well as other renewables like wind, which creates uncertainty as wholesale power markets shift 5) Headline risk and policy risk continue to shift economics in countries as trade policies and changes to other key policies affect solar economics.

SCTY Valuation is based on the announced deal price, TSLA is based on a DCF

## Required Disclosures

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### UBS Investment Research: Global Equity Rating Definitions

12-Month Rating	Definition	Coverage <sup>1</sup>	IB Services <sup>2</sup>
Buy	FSR is > 6% above the MRA.	47%	32%
Neutral	FSR is between -6% and 6% of the MRA.	38%	25%
Sell	FSR is > 6% below the MRA.	15%	21%
Short-Term Rating	Definition	Coverage <sup>3</sup>	IB Services <sup>4</sup>
Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%
Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%

Source: UBS. Rating allocations are as of 30 June 2016.

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.

**KEY DEFINITIONS:** **Forecast Stock Return (FSR)** is defined as expected percentage price appreciation plus gross dividend yield over the next 12 months. **Market Return Assumption (MRA)** is defined as the one-year local market interest rate plus 5% (a proxy for, and not a forecast of, the equity risk premium). **Under Review (UR)** Stocks may be flagged as UR by the analyst, indicating that the stock's price target and/or rating are subject to possible change in the near term, usually in response to an event that may affect the investment case or valuation. **Short-Term Ratings** reflect the expected near-term (up to three months) performance of the stock and do not reflect any change in the fundamental view or investment case. **Equity Price Targets** have an investment horizon of 12 months.

**EXCEPTIONS AND SPECIAL CASES:** **UK and European Investment Fund ratings and definitions are:** **Buy:** Positive on factors such as structure, management, performance record, discount; **Neutral:** Neutral on factors such as structure, management, performance record, discount; **Sell:** Negative on factors such as structure, management, performance record, discount. **Core Banding Exceptions (CBE):** Exceptions to the standard +/-6% bands may be granted by the Investment Review Committee (IRC). Factors considered by the IRC include the stock's volatility and the credit spread of the respective company's debt. As a result, stocks deemed to be very high or low risk may be subject to higher or lower bands as they relate to the rating. When such exceptions apply, they will be identified in the Company Disclosures table in the relevant research piece.



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**UBS Securities LLC:** Julien Dumoulin-Smith; Colin Langan, CFA; Jerimiah Booream, CFA; Eddie Hsieh; Paul Zimbardo.

#### Company Disclosures

Company Name	Reuters	12-month rating	Short-term rating	Price	Price date
<b>SolarCity Corp</b> <sup>13, 16</sup>	SCTY.O	Neutral	N/A	US\$26.70	29 Jul 2016
<b>Tesla Motors</b> <sup>16, 18</sup>	TSLA.O	Sell	N/A	US\$234.79	29 Jul 2016

Source: UBS. All prices as of local market close.

Ratings in this table are the most current published ratings prior to this report. They may be more recent than the stock pricing date

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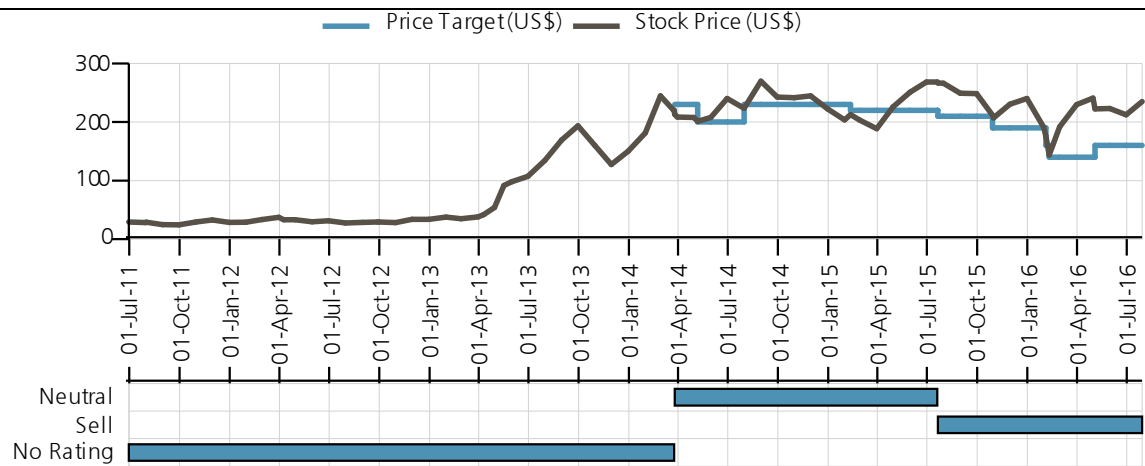
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#### SolarCity Corp (US\$)



Source: UBS; as of 29 Jul 2016

Tesla Motors (US\$)



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