

Tesla, Inc. (TSLA)

Enduring a Slow Model 3 Production Ramp

January 25, 2018

Contents

2018 Preview	2
Troubled Autopilot	10
Financials	15
Accounting Policies	19
Appendix A: EV Sales	20
Disclaimers	21

Investment Highlights

- *Tesla's operating results have materially worsened as deliveries increased*
- *Tesla is struggling to produce the Model 3, meaning the majority of reservation holders will not receive the \$7,500 Federal tax credit*
- *Incremental SG&A per Model 3 will exceed gross profit dollars*
- *We believe Tesla has manufacturing capacity for only 100,000 Model 3's/year*

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Executive Summary

We rate shares of Tesla, Inc. with a 'Sell' rating and a \$12.00 target

What could very well be the last chapter in the Tesla bull case is finally being written as their 'mass market' compact sedan has (barely) entered production. As the year progresses, rightly-or-wrongly, investors will judge Tesla's potential for long-term success by two metrics: Apparent Model 3 demand and Automotive Segment gross margins. We expect both metrics to be rather mediocre individually, but in context they will paint a quite negative picture of Tesla's long-term prospects.

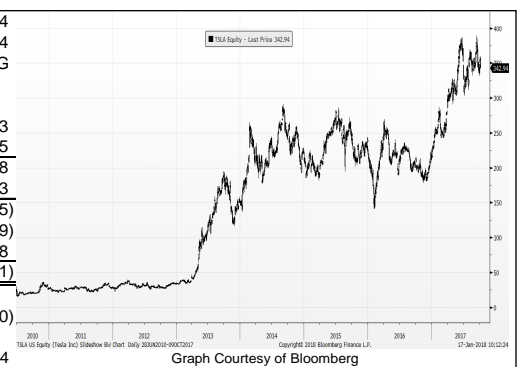
Early demand indicators are progressing poorly - with 13,000 employee reservations turning into an estimated 1,500 deliveries - but as we show this can be entirely explained by price: Hourly workers expecting a \$25,000 compact car (net of incentives) are being asked to buy a \$41,000 car.

On the gross margin front, due to Tesla's 'unique' accounting, we forecast gross margins of 15% to 20% for the Model 3 at average sales prices \$46,500 per copy - but this will merely be an accounting mirage: If we apply traditional automaker accounting to our Model 3 forecasts - reducing the sales price by 10% to re-allocate SG&A (19.41% at Tesla versus 7% for Ford and GM) as well as include expensed R&D in COGS, the \$46,500 Model 3 would generate gross margins of -7.48%.

The irony is that Tesla's bull case (a mainstream car) is finally here, quite possibly bringing about their downfall (via massively flawed business model).

Financial Summary and Statistics

Current Price:	\$344	Book Value/Share:	\$	28.04
Price Target:	\$12	Sales/Share (ttm):	\$48.54	
Mkt Cap(mln):	\$57889	Forward PE (e):	NEG	
(x1,000)	2016	2017	2018e	
Revenues	\$ 7,354,795	\$ 11,932,149	\$ 15,007,033	
Cost of Sales	\$ 5,400,875	\$ 9,633,033	\$ 11,912,515	
Gross Profit	\$ 1,953,920	\$ 2,299,116	\$ 3,094,518	
SG&A + R&D	\$ 2,266,597	\$ 3,837,791	\$ 4,767,873	
Operating Income	\$ (312,677)	\$ (1,538,675)	\$ (1,673,355)	
Interest/Other	\$ (79,008)	\$ (289,069)	\$ (678,609)	
Taxes	\$ 26,698	\$ 79,085	\$ 141,118	
Net Income	\$ (418,383)	\$ (1,906,829)	\$ (2,493,081)	
EPS (Diluted)	\$ (2.11)	\$ (11.49)	\$ (13.10)	
Shares outstanding	151,897	165,900	173,234	



Unit Economics LLC

Tesla 2018 Preview

What could very well be the last chapter in the Tesla bull case is finally being written as their ‘mass market’ compact sedan has (barely) entered production. As the year progresses, rightly-or-wrongly, investors will judge Tesla’s potential for long-term success by two metrics: Apparent Model 3 demand and Automotive Segment gross margins. We expect both metrics to be rather mediocre individually, but in context they will paint a quite negative picture of Tesla’s long-term prospects.

Model 3 Production Capacity

As recently as their second quarter earnings call (August 2nd), Tesla indicated Model 3 production would reach 5,000 units per week by year end and 10,000 per week by the end of 2018, implying sufficient production capacity was already in place (Tesla went on to produce 793 Model 3s “in the last seven working days of the quarter” - which is arguably a week and a half or longer). Given the certainty with which CEO Elon Musk discussed his 10,000 per week goal, we were shocked by the following language from their third quarter shareholder letter (November 1st):

With respect to the timing for producing 10,000 units per week, it has always been our intention to implement that capacity addition after we have achieved a 5,000 per week run rate. That will enable us to make the next generation of automation even better while making our capex spend significantly more efficient.

Wait - what? Tesla’s above disclosure appears to indicate a second production line will be built (‘next generation automation’) rather than temporarily shuttering and upgrading the current one (which may even be unused). Frankly we doubt Tesla will ever build out additional Model 3 production capacity, instead waiting to build a Model Y production line under the guise of building a “combined Model 3/Y line.”

We continue to believe Tesla has built a 2,000 vehicle per week, single shift Model 3 production line at a likely cost of \$800 mln to \$1,000 mln (\$40,000 to \$50,000 per annual vehicle output). We believe Tesla hopes to ramp production to fully utilize a single shift ([96,000 Model 3s per year](#)) and utilize a second shift if demand warrants.

Model 3 Demand from Employees

While most investors are aware [Tesla had received 518,000 Model 3 reservations as-of early August, 63,000 of which had been cancelled \(12.16%\)](#), few know the problems Tesla has faced trying to get their own employees to convert Model 3 deposits to reservations. Tesla and SpaceX employees placed [an estimated 13,000 Model 3 reservations](#) and Tesla was counting on this army of employee beta testers, bound by NDAs and the threat of being fired (or worse, losing their stock option grants) to beta-test the Model 3 without leaking details to the public. Quite surprisingly, [on November 15th](#) Tesla sent out the first batch of Model 3 configuration invitations to non-employees ([Electrek reported non-employee configurations on November 21st](#)) with the first known non-employee VIN assigned November 22nd and the earliest confirmed non-employee delivery on December 20th. Based on Tesla’s fourth quarter production and delivery press release, a total of 1,892 Model 3s had been produced prior to December 21st - indicating the estimated 13,000 employee Model 3 reservations translated into perhaps 1,500 firm orders (11.5%).



Model 3 Demand from Previous Tesla Owners

The Tesla Motors Club forum hosts a [poll which shows](#) 59% of previous Tesla owners located in California (273 respondents) have been asked by Tesla to configure their Model 3s. The survey does not allow members to change their answers, making it likely users who initially stated they had not been invited to configure have now been invited. Case-in-point: At the beginning of January, Tesla began inviting previous Tesla owners outside of California to configure their Model 3s - indicating California demand (for purchases by previous owners) had been satisfied.

An [online Google Sheet](#) (e-mail us for a copy if it has been taken offline and please don't share the link or it will be!) shows 79.6% of all previous Tesla owners who placed Model 3 reservations have been invited to configure their Model 3s, regardless of the state they live in. This includes the 33.2% of owner+reservation holders who have already received their Model 3s. Equally interesting, the Google sheet shows 110 of 416 surveyed Model 3 reservation holders (26.4%) chose to 'defer' their orders. Keep in mind these are Tesla owners (read 'fanatics'), roughly half of which waited in line to place first-day reservations. By definition, they have also purchased a \$100,000 car in the past, so the initial Model 3 price was less of a deterrent than for most potential buyers (such as Tesla employees).

As-of January 17th, the highest assigned Model 3 VIN was 38XX (don't forget Tesla routinely skips VIN numbers). With an estimated 1,500 Model 3 sedans being delivered to employees, VIN data suggests an additional 1,500 to 2,000 deliveries likely satisfied more than half of demand from 122,000+ previous owners. This is really not going well for Tesla.

Price Matters

Tesla's low reservation conversion rate likely results from a combination of the \$1,000 refundable deposit (too low!) and the fact Tesla is only shipping the 'Long Range' Model 3 loaded with mandatory options: Not only are there very few \$51,000+ compact sedans in the world (for good reason), reservations holders initially believed they were purchasing a \$35,000 vehicle (\$25,000 net of Federal and State tax credits) with \$5,000 to \$10,000 of potential options. The shift in pricing likely explains our estimated 11.5% conversion rate on Tesla's 13,000 employee Model 3 reservations - these are primarily hourly workers, after all!

Updating our previous research on U.S. passenger car sales by price segment to reflect recent share declines (passenger car sales have declined from 50% of U.S. light vehicle sales in 2013 to just 33.2% in recent months) we can create a table (presented on the following page) which shows 2.91 mln passenger cars were sold in the U.S. in the \$20,001 to \$30,000 MSRP range over the past year, falling to .99 million in the \$30,001 to \$40,000 range and .56 mln in the \$40,001 to \$50,000 price range. In broad terms, sales in the \$30,001 to \$40,000 range are roughly 1/3 of those in the \$20,001 to \$30,000 range while sales in the \$40,001 to \$50,000 range would be roughly 1/6 of those in the \$20,001 to \$30,000 range.

Keeping in mind the current \$51,000+ MSRP Model 3 is effectively \$41,000+ net of tax credits, we would expect 13,000 employee reservations for a \$25,000 car (net of tax credits) to translate into 4,333 reservations for a \$35,000 car and 2,166 for a \$41,000 car. These estimates show Tesla does not necessarily have a Model 3 demand problem, they have a cost problem!



U.S. Light Vehicle Sales by Type and Price Point

	All Vehicles		Passenger Cars		Non-Convertible Passenger Cars		Minivan/SUV/Wagons	
Up to \$15,000	5,480	45,484	2,553	206,793	2,543	205,983	384	3,149
\$15,001 to \$20,000	272,013	2,257,708	130,794	1,046,352	130,710	1,045,680	10,509	86,174
\$20,001 to \$30,000	946,188	7,853,360	363,940	2,911,520	361,147	2,889,176	221,101	1,813,028
\$30,001 to \$40,000	448,042	3,718,749	124,894	999,152	118,454	947,632	204,694	1,678,491
\$40,001 to \$50,000	253,825	2,106,748	69,613	556,904	64,703	517,624	119,509	979,974
\$50,001 to \$75,000	143,355	1,189,847	41,180	329,440	35,730	285,840	66,445	544,849
\$75,001 to \$100,000	23,190	192,477	8,570	68,560	7,421	59,368	7,199	59,032
\$100,000 to \$125,000	6,975	57,893	3,617	28,936	2,789	22,312	569	4,666
\$125,000+	1,482	12,301	782	6,256	530	4,240	170	1,394
Total	2,100,550	17,434,565	745,943	6,153,913	724,027	5,977,855	630,580	5,170,756

Cars.com, TrueCar, the WSJ, GoodCarBadCar.com, Unit Economics Calculations

For reference, the Mercedes C class is the best-selling passenger car series in the U.S. in the \$40,000 to \$50,000 MSRP range, selling 77,447 copies last year (\$42,775 average MSRP), followed by the BMW 3 series with 59,449 copies (\$41,745 average MSRP).

The Loss of the Federal EV Tax Credit

Another problem Tesla faces is that the \$7,500 Federal EV buyer tax credit begins to be phased out after Tesla sells 200,000 total vehicles in the United States (the credit continues the following quarter, then declines to \$3,750 for two quarters then \$1,875 for two quarters before going away). We calculate Tesla had sold 164,466 vehicles in the United States as-of the end of the fourth quarter, increasing to 185,052 at the end of the first quarter assuming 9,000 Model 3 deliveries and 33,511 total global deliveries.

Tesla will likely reach 200,000 total U.S. sales in May, causing the \$7,500 Federal tax credit to decline to \$3,750 for deliveries during the fourth quarter of 2018 and the first quarter of 2019, before declining to \$1,875 in the second and third quarters of 2019 and then disappearing altogether. As the above table suggests, as well as sales data from Norway and Denmark pre and post import tax credit changes, a \$7,500 change in effective MSRP can result in a roughly 30%+ change in vehicle sales. While it is possible Tesla will be able to temporarily move the effective Model 3 sales price into the sub-\$40,000 range in mid-2018 (<\$47,500 MSRP and \$10,000 in total tax credits), we believe it will be very challenging for Model 3 prices to remain there without the Federal tax credit. The Model 3 is doomed to be a \$40,000+ compact passenger car.

Model 3 Production Costs and Gross Margins

GM famously-stated [they will lose up to \\$9,000 on the \\$37,495+ Chevy Bolt](#) before emission credit revenue. Keeping in mind that the Bolt is sold to independent dealers for a roughly 10% discount to MSRP and GM reports SG&A equaling 7% of revenue and expensed R&D of 5% of revenue, this indicates the Bolt costs \$29,696 to manufacture - roughly inline with the [UBS estimate of \\$28,700](#). If Tesla were to manufacture and sell the Bolt, receiving full MSRP on the revenue line while ignoring pesky COGS items such as expensed R&D, Tesla would claim gross margins of 27.08% (versus an estimated 12% for GM).

Contrary to the claims of Tesla bears, due to Tesla's 'unique' accounting, we forecast gross margins of 15% to 20% for the Model 3 at average sales prices \$46,500 per copy - but this will merely be an accounting mirage: If we apply traditional automaker accounting to our Model 3 forecasts - reducing the sales price by 10% to re

Registration-Based Sales Data

Estimated Model S Deliveries by Region and Country

Estimated North American Model S Deliveries

	2017	2016	2015	2014	2013	Q4 17	Q3 17	Q2 17	Q1 17	Q4 16	Q3 16	Q2 16	Q1 16	Q4 15	Q3 15	Q2 15	Q1 15
United States	30,439	27,056	25,171	16,364	17,837	7,939	8,041	7,202	7,257	6,896	9,151	4,988	6,021	9,175	5,692	5,383	4,921
Canada	1,707	1,466	2,012	898	638	484	444	382	397	272	388	346	460	466	562	587	397
Total	32,146	28,522	27,183	17,262	18,475	8,423	8,485	7,584	7,654	7,168	9,539	5,334	6,481	9,641	6,254	5,970	5,318

Estimated European Model S Deliveries

	2017	2016	2015	2014	2013	Q4 17	Q3 17	Q2 17	Q1 17	Q4 16	Q3 16	Q2 16	Q1 16	Q4 15	Q3 15	Q2 15	Q1 15
Norway	3,299	2,051	4,039	4,039	1,984	1,275	1,170	372	482	350	460	536	705	796	569	1,142	1,532
United Kingdom	2,598	2,617	1,470	700	-	725	674	413	786	559	641	655	762	800	321	144	205
Netherlands	1,917	1,721	1,882	1,474	1,201	583	507	381	446	437	402	351	531	580	409	473	420
Germany	2,097	1,497	1,568	815	191	447	437	499	714	281	460	360	396	489	383	402	294
Switzerland	1,379	1,325	1,558	493	140	427	381	270	301	216	318	362	429	407	513	440	198
Denmark	32	83	2,664	460	112	12	11	8	1	26	9	11	37	1,826	335	284	219
Belgium	643	658	820	521	148	135	127	144	237	126	150	144	238	180	192	248	200
Sweden	723	849	996	289	16	135	142	163	283	217	279	154	199	276	288	294	138
France	774	790	714	326	19	195	185	190	204	176	204	203	207	204	184	206	120
Austria	534	591	492	137	48	105	107	133	189	78	151	166	196	116	163	134	79
Finland	134	100	146	94	2	26	28	34	46	21	21	19	39	30	61	36	19
Italy	262	216	111	48	8	66	53	62	81	44	69	54	49	37	40	32	2
Iceland/Spain/Other	224	96	28	48	7	72	63	37	52	31	41	13	11	4	13	3	8
Total	14,616	12,594	16,488	9,444	3,876	4,203	3,885	2,706	3,822	2,562	3,205	3,028	3,799	5,745	3,471	3,838	3,434

Estimated Asian/Australian Model S Deliveries

	2017	2016	2015	2014	2013	Q4 17	Q3 17	Q2 17	Q1 17	Q4 16	Q3 16	Q2 16	Q1 16	Q4 15	Q3 15	Q2 15	Q1 15
China	6,318	5,824	4,569	2,298	-	1,939	2,048	1,614	717	1,240	1,956	1,276	1,352	1,545	1,344	883	797
Hong Kong	995	1,469	2,136	88	-	10	15	8	962	150	322	507	490	920	746	430	40
Australia	350	297	375	21	-	50	75	75	150	75	72	90	60	48	220	72	35
Japan	230	239	646	200	-	40	60	60	70	35	39	85	80	92	74	280	200
Total	7,893	7,829	7,726	2,607	-	2,039	2,198	1,757	1,899	1,500	2,389	1,958	1,982	2,605	2,384	1,665	1,072

	2017	2016	2015	2014	2013	Q4 17	Q3 17	Q2 17	Q1 17	Q4 16	Q3 16	Q2 16	Q1 16	Q4 15	Q3 15	Q2 15	Q1 15
Tesla Reported Totals	54,752	49,560	50,452	31,655	22,462	15,209	14,052	12,038	13,453	11,369	16,047	9,764	12,380	17,272	11,603	11,532	10,045
Totals on Above Tables	54,655	48,945	51,397	29,313	22,351	14,665	14,568	12,047	13,375	11,230	15,133	10,320	12,262	17,991	12,109	11,473	9,824
Variance	97	615	(945)	2,342	112	544	(516)	(9)	78	139	914	(556)	118	(719)	(506)	59	221



Registration-Based Sales Data

Estimated Model X Deliveries by Region and Country

Estimated North American Model X Deliveries

	2017	2016	2015	2014	2013	Q4 17	Q3 17	Q2 17	Q1 17	Q4 16	Q3 16	Q2 16	Q1 16	Q4 15	Q3 15
United States	18,844	15,583	206	-	-	5,459	4,531	4,017	4,837	5,741	4,888	4,226	2,400	206	6
Canada	1,817	1,672	-	-	-	550	507	388	372	405	1,111	156	-	-	-
Total	20,661	17,255	206	-	-	6,009	5,038	4,405	5,209	6,146	5,999	4,382	2,400	206	6

Estimated European Model X Deliveries

	2017	2016	2015	2014	2013	Q4 17	Q3 17	Q2 17	Q1 17	Q4 16	Q3 16	Q2 16	Q1 16	Q4 15	Q3 15
Norway	3,907	1,430	-	-	-	1,214	1,187	780	726	631	792	7	-	-	-
United Kingdom	2,247	42	-	-	-	587	599	434	627	42	-	-	-	-	-
Netherlands	1,269	425	-	-	-	402	381	252	234	195	230	-	-	-	-
Germany	1,215	445	-	-	-	258	287	366	304	212	217	16	-	-	-
Switzerland	935	372	-	-	-	236	232	229	238	202	167	3	-	-	-
Denmark	44	86	-	-	-	25	14	4	1	39	16	31	-	-	-
Belgium	503	202	-	-	-	108	107	138	150	103	99	-	-	-	-
Sweden	486	280	-	-	-	101	98	135	152	149	130	1	-	-	-
France	552	153	-	-	-	168	160	125	99	111	42	-	-	-	-
Austria	392	128	-	-	-	84	95	117	96	59	69	-	-	-	-
Finland	94	31	-	-	-	19	24	30	21	16	15	-	-	-	-
Italy	140	23	-	-	-	16	26	50	48	16	7	-	-	-	-
Iceland/Spain/other	230	7	-	-	-	70	69	53	38	6	1	-	-	-	-
Total	12,014	3,624	-	-	-	3,288	3,279	2,713	2,734	1,781	1,785	58	-	-	-

Estimated Asian/Australian Model X Deliveries

	2017	2016	2015	2014	2013	Q4 17	Q3 17	Q2 17	Q1 17	Q4 16	Q3 16	Q2 16	Q1 16	Q4 15	Q3 15
China	4,964	4,059	-	-	-	2,933	2,944	2,412	905	2,821	1,137	101	-	-	-
Hong Kong	2,363	6	-	-	-	6	9	5	2,357	6	-	-	-	-	-
Australia	60	-	-	-	-	40	60	60	60	-	-	-	-	-	-
Japan	80	-	-	-	-	30	45	35	80	-	-	-	-	-	-
Total	7,467	4,065	-	-	-	3,009	3,058	2,512	3,402	2,827	1,137	101	-	-	-

	2017	2016	2015	2014	2013	Q4 17	Q3 17	Q2 17	Q1 17	Q4 16	Q3 16	Q2 16	Q1 16	Q4 15	Q3 15
Tesla Reported Totals	46,494	26,695	212	-	-	13,045	11,863	9,988	11,598	10,883	8,774	4,638	2,400	206	6
Totals on Above Tables	44,656	26,616	212	-	-	12,306	11,375	9,630	11,345	10,754	8,921	4,541	2,400	206	6
Variance	1,838	79	-	-	-	739	488	358	253	129	(147)	97	-	-	-



Registration-Based Sales Data

Estimated Model 3 Deliveries by Region and Country

Estimated North American Model 3 Deliveries

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>Q4 17</u>	<u>Q3 17</u>	<u>Q2 17</u>	<u>Q1 17</u>	<u>Q4 16</u>	<u>Q3 16</u>	<u>Q2 16</u>	<u>Q1 16</u>	<u>Q4 15</u>
United States	-	-	-	-	-	1,550	222	-	-	-	-	-	-	-
Canada	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	1,550	222	-	-	-	-	-	-	-

Estimated European Model 3 Deliveries

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>Q4 17</u>	<u>Q3 17</u>	<u>Q2 17</u>	<u>Q1 17</u>	<u>Q4 16</u>	<u>Q3 16</u>	<u>Q2 16</u>	<u>Q1 16</u>	<u>Q4 15</u>
Norway	-	-	-	-	-	-	-	-	-	-	-	-	-	-
United Kingdom	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Netherlands	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Germany	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Switzerland	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Denmark	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Belgium	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sweden	-	-	-	-	-	-	-	-	-	-	-	-	-	-
France	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Austria	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Finland	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Italy	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iceland/Spain/Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Estimated Asian/Australian Model 3 Deliveries

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>Q4 17</u>	<u>Q3 17</u>	<u>Q2 17</u>	<u>Q1 17</u>	<u>Q4 16</u>	<u>Q3 16</u>	<u>Q2 16</u>	<u>Q1 16</u>	<u>Q4 15</u>
China	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hong Kong	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Australia	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Japan	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>Q3 17</u>	<u>Q3 17</u>	<u>Q2 17</u>	<u>Q1 17</u>	<u>Q4 16</u>	<u>Q3 16</u>	<u>Q2 16</u>	<u>Q1 16</u>	<u>Q4 15</u>
Tesla Reported Totals	-	-	-	-	-	1,550	222	-	-	-	-	-	-	-
Totals on Above Tables	-	-	-	-	-	1,550	222	-	-	-	-	-	-	-
Variance	-	-	-	-	-	-	-	-	-	-	-	-	-	-



-allocate SG&A (19.41% at Tesla versus 7.3% for Ford and GM) as well as include expensed R&D in COGS, the \$46,500 Model 3 would generate gross margins of -7.48%. This will be one of the key discussion points for Tesla bulls *and* bears: Gross margin dollars will be at record levels as Model 3 production scales, as will cash burn and losses.

Tesla Competitors

Before we discuss our 2018 earnings forecasts, there is another important development that Tesla bulls may be ignoring: Several premium EVs expected to be released over the next two years utilize batteries and charging systems that make Tesla's newly-introduced cell technology look obsolete: The Model S and X can charge roughly 80% of capacity in 40 minutes - adding approximately 200 to 240 miles of range (depending on the battery pack size). The Enverge EV, [introduced by Chinese manufacturer Guangzhou Automobile Group \(GAC\) at the Detroit Auto Show](#) last week utilizes a 71 kWh battery, providing an alleged 370 miles of range (likely the highway range) which can recharge 240 miles of range (65%) in just 10 minutes. Yes, ten. The new [Fisker Emotion](#) will utilize a solid-state graphene battery with a 400 mile range which can allegedly recharge 125 miles of range (31%) in just nine minutes. Samsung has also joined the fray, recently introducing their [new SDI cells](#) (due in volume in 2021) which can fully recharge in 20 minutes, while [Honda claims](#) that by 2021 they will produce a series of long-range EVs which will fully recharge in 15 minutes. By the time Tesla's 'Gigafactory One' is complete, the cells being produced will already be dated!

2018 Earnings Forecasts

Based on VIN assignment data, we believe Tesla is on track to produce 2,000 Model 3 sedans this month - which frankly is about as far into the future as anyone (including Tesla) can accurately predict. That said, we anticipate Tesla will go on to deliver 9,000 Model 3 sedans in the first quarter, rising to 26,200 in the fourth quarter - for a total of 74,150 in 2018. We forecast Model S and X deliveries will be essentially unchanged - with 52,589 Model S deliveries in 2018 (versus 54,752 in 2017) and 45,053 Model X deliveries (versus 46,494 in 2017). As a result, we forecast Tesla's total deliveries will increase from 103,018 vehicles in 2017 to an estimated 171,792 in 2018.

With Model 3 sales prices expected to average \$47,250 in 2018 (and Model S and X sales prices basically unchanged at \$91,984 and \$106,587 respectively), 2018 GAAP revenue should total \$15,588 mln (cons \$19,738 mln). Despite the Model 3 comprising an estimated 43.2% of 2018 vehicle deliveries, we calculate Model 3 revenue will only account for 28.4% of Automotive segment revenue.

Utilizing a fixed cost absorption model, we estimate Model 3 production costs will average \$43,300 per sedan in 2018 (\$33,950 per sedan plus \$1,000 mln of effectively fixed overhead), resulting in an average gross margin of 8.4% (by the fourth quarter we anticipate Model 3 gross margins will be 14.7%). Despite our relatively low Model 3 gross margin forecast, due Tesla's dreadful gross margin performance in the second half of 2017 (15.2% 2H 17 versus 24.3% 1H 17), we anticipate Tesla's headline gross margins will actually increase from an estimated 19.41% in 2017 to 21.06% in 2018. In hindsight, Tesla may have intentionally reduced gross margins in the second half of 2017 to allow management to claim the Model 3 is earning 'industry-leading' gross margins and bringing up Tesla's overall average in 2018. Keep in mind that in 2016, headline gross margins averaged 26.57% (still short of their 30% target).



The key to Tesla's long-term profitability won't be Model 3 unit sales or gross margins, it will be their potential to leverage operating expenses (SG&A and expensed R&D). At Unit Economics, analysts (especially young ones) are not allowed to think or talk in percentages. Tesla provides an excellent example: It would be easy to say Tesla is on the road to profitability given rising deliveries and increasing gross margins. Looking at the 'Unit Economics' however, we forecast Tesla's gross profit dollars per delivery will decline from \$22,546 in 2017 to \$19,107 in 2018.

Tesla's SG&A per delivery, however, has been quite stable even as Tesla has grown and introduced additional models - ranging between \$18,000 and \$19,100 per delivery from 2014 through 2016. In 2017, however, SG&A ramped to \$23,942 per delivery - which we believe resulted from a combination of rising costs (a massive expansion sales centers, superchargers and the service fleet) and pre-Model 3 expansions. Looking at 2018, we forecast SG&A per delivery will partially normalize to \$20,150 - a healthy decline of \$3,792 per delivery - but as we noted in the previous paragraph, gross profits per delivery will decline by a similar amount.

Tesla also faces expensed R&D, which is effectively the development and refinement of vehicles currently in production. On a per-delivery basis, expensed R&D has increased from \$10,492 in 2016 to an estimated \$13,282 in 2017. In 2018, we anticipate expensed R&D will decline to \$8,866 per delivery. While that sounds impressive, combined SG&A and expensed R&D will total \$29,016 per delivery. While this shows significant operating leverage (they averaged a combined \$36,895 per delivery over the past four quarters), these operating costs show the absurdity of focusing on 15% gross margins on \$46,000 cars...

Conclusions

We expect 2018 to bring everything Tesla bulls ever wanted: Nearly 100% unit growth resulting from the introduction of a mass market car, a recovery in gross margins above 20% and positive operating cost leverage. Tesla bears will also delight as operating costs overwhelm Tesla's small gross profit growth and sink the company into a spiral of worsening cash burn. Tesla's growing list of distractions (Powerwall, Powerpack, Solar roof, electric trucks, the Model Y and the new Roadster) should also work to keep capital expenditures at dizzying levels. Fortunately, the Tesla Board has a solution: Incentivize the CEO with a multi-billion dollar pay package to ensure he is 'aligned' with the company and successfully issues millions of new shares!



Tesla's Troubled Autopilot Program

AutoPilot 1.0

With much fanfare, from September, 2014 onward all new Tesla vehicles were equipped with 'partial autonomous drive' dubbed 'Autopilot 1.0.' The Mobileye systems utilized by Tesla incorporated four primary functions: Autosteer, auto lane change, autopark and side-collision warning - in addition to a more commonly available adaptive cruise control system. These functions were not available immediately, however - they were gradually rolled out through software updates, reaching full functionality in Tesla OS version 7.0 which was widely released in October, 2015 (although self-parking was not available until January, 2016).

On May 7th, 2016 Tesla driver Joshua Brown was killed when his Tesla Model S - driving in 'Autopilot mode' - crashed into (and under) the side of a tractor trailer crossing U.S. 27 near Williston, Florida. The incident brought national attention to the limitations of autonomous vehicles, as well as the fatal flaw in the Mobileye solution as implemented by Tesla: The forward radar utilized the Doppler effect and was intentionally programmed to ignore stationary objects - or objects moving perfectly perpendicular to the vehicle - in order to avoid reacting to fixed objects such as road signs and overhead bridges. Tesla reportedly planned to overcome the stationary object limitation by incorporating input from cameras, but based on [other collisions](#) with fixed objects it appears Tesla never developed this capability. Regardless of fault, Mobileye's relationship with Tesla was severed and Tesla rushed to create an alternative hardware and software suite.

Autopilot 2.0 is Born

On October 19th, 2016 [Tesla announced](#) the seemingly-impossible: A new Autopilot solution using Nvidia processors - sufficient to enable Level Five 'full autonomous driving' - was already in production. In their press release, Tesla claimed "All Tesla cars being produced now have full self driving hardware." For reference, the commonly defined vehicle autonomy levels are:

- Level One: In some environments, the vehicle and either automate either steering or speed control
-Adaptive cruise control
- Level Two: In some environments, the vehicle can automate both steering and speed control
-Tesla Autopilot
- Level Three: Fully automated driving in most environments, driver ready to retake control
-Most automakers trying to skip due to liability, Tesla embracing it
- Level Four: Fully automated driving in most environments, vehicle can park itself in emergency
-Traditional looking interior by virtually self-driving
- Level Five: Fully automate driving in all environments, including with no humans onboard
-'Steering wheel optional' travel

Tesla's new Autopilot (dubbed 'Enhanced Autopilot' at the time and 'Full Self Driving' today) upgraded the hardware suite from version 1.0 (a single forward camera, a forward radar and twelve ultrasonic sensors with a range of sixteen feet) to version 2.0 (three front-facing - and eight total - cameras, a forward radar and twelve ultrasonic sensors with a range of twenty four feet). At the release event, Tesla conceded their new



Autopilot system was in ‘shadow mode’ and would not be operational until December, but by ‘early 2017’ it would be more capable than the previous system by a wide margin and by the end of 2017, fully-autonomous driving from coast-to-coast would be possible.

Tesla buyers were surprised to learn many basic features previously available (and listed on the new vehicle order page) were temporarily disabled, including automatic windshield wipers, Automatic Emergency Braking (AEB), collision warning and adaptive cruise control. Tesla owners were modestly hostile about the lack of promised features on Tesla forums, but most conceded two to three months was a short time to wait and by early 2017 their new Model S and X vehicles would be more capable than previous versions.

Tesla’s Autopilot Program Director Departs

In December, 2016 Autopilot Program Director Sterling Anderson left to start his own company (Aurora Innovation) with Chris Urmson, the former head of Google’s self-driving program - a fact only disclosed when [Tesla filed a lawsuit](#) against Mr. Anderson. Tesla later [withdrew their allegations without damages](#) in exchange for a third party audit of Aurora, searching for proprietary information from Tesla. Alexander Haag, Senior Program Manager of the Autopilot team [left around the same time as Mr. Anderson](#).

Early 2017 - Tesla Begins Enabling ‘AutoPilot 2.0’ Functionality

In [January, 2017 Tesla enabled limited \(or was it useless\) Autopilot 2.0 functionality](#), enabling the system for highway driving at speeds less than 45 MPH. Some features still available on ‘Autopilot 1.0’ cars were still not available, including Automatic Electronic Braking - a widely-available feature on vehicles costing in excess of \$50,000. Months passed and other promised features were not activated. In our view, this was due to the fact that not only was Tesla trying to catch up with Mobileye’s years of development, they were attempting to make the switch from radar-based speed management with video-based lane tracking to a fully video-based solution which utilized the radar as a backup feature. To our knowledge, no other auto maker has been able to make this shift, either: Autonomous driving solutions successfully utilized by companies such as Google utilize LiDAR (Light Detection And Ranging) - effectively laser-based radar systems which can provide very high resolution real-time maps at a theoretical range of thousands of feet. The key advantage of LiDAR is that the images create monochrome terrain and obstacle maps without necessitating object identification and color processing, making them both accurate and easy to process.

Mid-2017 - AutoPilot 2.0 is Enabled

On February 28th, 2017 Electrek reported the [Autopilot 2.0 system was only utilizing only the main forward-facing camera](#) - which by our calculations would take up effectively all of the onboard processing power running at a rate of 20 frames per second. At the end of March, with the rollout of Tesla OS 8.1, Electrek reported Tesla also enabled the long-range, narrow focus camera - allowing two of the eight cameras to become functional. By our calculations, Tesla would have had to restrict the frame rates of both cameras to under 10 frames per second in order to process both video inputs with the installed AutoPilot 2.0 hardware. With the 8.1 OS update, Tesla increased the maximum speed of Autopilot functionality on the 2.0 vehicles from the recently-introduced 55 MPH limit to 80 MPH and finally provided owners promised features (available in Autopilot 1.0) such as automated lane change and vehicle summons. That said, Automatic Emergency Braking (AEB) was disabled, leading us to question the safety of the Autopilot 2.0 functionality. Not surprising-



ly, initial user reports of the upgraded AutoPilot 2.0 functionality were mixed - with [at least one driver reporting a serious accident](#) and another [slowly rolling over a police motorcycle](#).

In March, 2017 Tesla's Vice President of AutoPilot Vision, David Nister, left to Join Nvidia. In June, the highly-acclaimed Chris Lattner, Head of Autopilot Software, left after just [six months on the job](#) - tweeting "Turns out that Tesla isn't a good fit for me after all. I'm interested to hear about interesting roles for a seasoned engineering leader!" In May and June, [three additional vision experts at Tesla departed](#), including Minwoo Park, the head of the Visual Perception Team and Yekeun Jeong, head of the Geometric Vision Team. [Satish Jeyachandran](#), the former director of hardware engineering for Tesla's Autopilot team, and Berta Rodriguez-Hervas, a former machine learning manager also left the company in June.

In April, 2017 [Consumer Reports lowered their rating on the Tesla Model S](#) due to the lack of AEB functionality, prompting Tesla to immediately [introduce AEB 'at speeds up to 28 MPH'](#) (although most owners did not receive the software release until late May). This was technically sufficient to meet the IIHS active safety standard of AEB up to 25 MPH, but still a much less capable system than was available from other manufacturers. Tesla's AEB functionality [received mixed reviews](#) from drivers and Tesla disclosed the system would only reduce the speed of the vehicle by a maximum of 25 MPH - making it inferior to competing systems. The late May AEB update also increased the maximum highway speed for Autopilot functionality to 90 MPH and the maximum off-highway speed from 35 MPH to '5 MPH faster than the speed limit.'

Musk promised the next update would be 'smooth as silk,' but videos show [Autopilot 2.0 vehicles still struggling to find and maintain lanes](#) and frequently disengaging.

Does Tesla's Autopilot Controller have Sufficient Processing Power?

While history shows Musk's bet that software-based solutions can replace hardware-based solutions is a good one, it may be several years before image processors can provide the cost-effective solution Tesla seeks: Some of the most advanced PC video cards - such as NVidia's industry-leading GTX Titan X card (\$1,499+) can only process rich 2K images (2048 pixels) at a rate of [68 frames per second](#). Benchmarks for 4K frame rates are generally closer to 30 or 40 frames per second. Why does this matter?

Roughly [50 pixels per horizontal foot of vision](#) is necessary to read a license plate (providing a quite rough picture), meaning an 8.8 MegaPixel (4K resolution) camera can read a license plate at 82 feet, by our calculations (the linked article says 5 MP needed to read a license plate at 51 feet). A vehicle travelling 65 MPH travels 95 feet per second and generally takes 140 to 170 feet to stop - clearly the range of an 8.8 MP camera is not sufficient. Move up to 20 MP and a license plate can be read at 124 ft - still not sufficiently useful to drive a car at highway speeds. To read a license plate at 200 feet, a massive 53 MP resolution is needed. The previously-mentioned GTX Titan X video card would likely process less than two frames per second at 53 MP resolution - processing one image every 47 feet travelled at 65 MPH. While narrow-focus lenses can cut the resolution required roughly in half, our point is that a massive amount of processing power is required to drive a vehicle using cameras.

Tesla states on their [Autopilot webpage](#) the range of their various cameras for the current Autopilot hardware and we can estimate the MP required to read a license plate at each distance (some cameras we assume



based on Tesla's graphics have a more focused field of view and thus a longer range than their resolution would suggest):

1X Rear View Camera	=	164 ft (50m)	=	35 MP X 1
2X Forward Looking Side Camera	=	262 ft (80m)	=	96 MP X 2
2X Rearward Looking Side Camera	=	328 ft (100m)	=	151 MP X 2
1X Wide Forward Camera	=	197 ft (60m)	=	56 MP X 1
1X Main Forward Camera	=	492 ft (150m)	=	96 MP X 1
1X Narrow Forward Camera	=	820 ft (250m)	=	151 MP X 1

If we assume 20 frames per second are acceptable for front-facing cameras - processing one image every 4.75 feet travelled at 65 MPH - and 10 frames per second for other cameras, can crudely estimate the Tesla Auto-pilot system would need the equivalent of 43 GTX Titan X processors (each processing an estimated 308 MP per second) - or roughly 172 TOPS (Trillion Operations per Second) in Nvidia-speak.

Since October, 2016 Tesla vehicles have utilized a modified version of Nvidia's Drive PX2 AutoChauffeur board, which normally features two discrete GPUs and processing power "[similar to about six Titan X video cards](#)" - or a reported 24 trillion operations per second (or 24 Deep Learning Tera Operations per Second - or 'TOPS' - per Nvidia's terminology). Despite the processing power, Nvidia shied away from stating their PX 2 system could enable the level five autonomy (which Tesla promises) - instead stating "multiple PX 2 systems" could be linked for more advanced features. SeekingAlpha author [Mark Hibben wrote](#) "Tesla had "customized" the Nvidia Drive PX 2 by essentially cutting it in half, reducing its complement of four processors to a single Tegra X2 ARM SOC and a GP106 Pascal architecture discrete GPU" making Tesla's solution was significantly less powerful than Nvidia's PX2 platform. In fact, in October Nvidia introduced their [new "Drive PX Pegasus" system](#), stating the 10X improvement in processing power over the PX 2 system (to 320 TOPS) would make the PX system "theoretically capable of autonomous Level 5" driving. With performance equal to approximately 80 GTX Titan processors, our rudimentary calculations agree. Unfortunately for Tesla, they installed what we believe is inadequate hardware on 121,000 vehicles through the Fall of 2017.

Autopilot 2.5

In August, Tesla confirmed all new vehicles were being shipped with an updated computer featuring a second Graphics Processing Unit (GPU), quite likely doubling the graphics processing power from a likely 12 to 18 Trillion Operations Per Second (TOPS) to 24 to 36 or more (the processors are still unknown). Despite the increase, we believe the new processors are still well short of the roughly 172 TOPS of processing power necessary for an eight camera autonomous driving system based on our previous calculations. Again point out that Nvidia's introduction of the new "Drive PX Pegasus" system in October was said to be sufficient to enable fully autonomous driving based on the 10X improvement over the PX 2 system (to 320 TOPS). In fact, in their third quarter shareholder letter, Tesla confirmed they are having difficulties with the lack of capabilities of their current processors, stating "now that the foundation of the Tesla vision neural net is right, which was an exceptionally difficult problem, as it must fit into far less computing power than is typically used, we expect a rapid rollout of additional functionality over the next several months."

The Prospects for AutoPilot in 2018

Despite an estimated 66,800 customers paying \$5,000 for the new ‘Enhanced Autopilot’ (\$334 mln in total) and 38,200 customers paying \$3,000 for ‘Full Self-Driving Capability’ (\$115 mln) through the end Q3 2017, by our calculations (similar to those [reported by Electrek](#)), Tesla is only beginning to deliver ‘Enhanced Autopilot’ functionality - which their website defines as having the vehicle “match speed to traffic conditions, keep within a lane, automatically change lanes without requiring driver input, transition from one freeway to another, exit the freeway when your destination is near, self-park when near a parking spot and be summoned to and from your garage.” Tesla’s website also discloses “Tesla’s enhanced Autopilot software has begun rolling out and features will continue to be introduced as validation is completed, subject to regulatory approval.” The introduction of the Model 3 likely further complicates the Autopilot rollout, adding a new hardware suite and taking time from developers. In response, Tesla has quietly turned from positioning themselves as the leading producer of Autonomous vehicles to being a producer of pretty much everything else (trucks, sports cars, roofs, solar cells, battery packs, etc)!



Financials

	Q4 2018e	Q3 2018e	Q2 2018e	Q1 2018e	Q4 2017e	Q3 2017	Q2 2017	Q1 2017	Q4 2016	Q3 2016	Q2 2016	Q1 2016
Tesla Motors, Inc (TSLA)												
Model Inputs												
Total Deliveries	52,633	47,402	38,246	33,511	29,804	26,137	22,026	25,051	22,252	24,821	14,402	14,780
Model S Deliveries	14,418	13,469	11,650	13,052	15,209	14,052	12,038	13,453	11,369	16,047	9,764	12,380
North American Deliveries	7,665	7,721	7,129	7,195	8,423	8,485	7,584	7,654	7,168	9,539	5,334	6,481
European Deliveries	4,963	3,984	2,760	4,143	4,866	3,906	2,706	4,271	2,451	3,204	3,028	3,799
Asian Deliveries	1,790	1,764	1,761	1,714	1,920	1,661	1,748	1,528	1,750	3,304	1,402	2,100
Model S Lease Deliveries	2,884	2,694	2,330	2,610	3,042	2,951	2,287	3,498	2,842	5,135	1,758	4,333
Estimated Model S Average Price	\$ 91,984	\$ 91,984	\$ 91,984	\$ 91,984	\$ 91,984	\$ 91,645	\$ 92,537	\$ 93,188	\$ 88,163	\$ 88,606	\$ 91,347	\$ 88,935
Estimated Model S COGS	\$ 68,330	\$ 68,330	\$ 68,330	\$ 68,330	\$ 68,330	\$ 68,404	\$ 68,837	\$ 67,480	\$ 70,900	\$ 63,905	\$ 68,780	\$ 67,146
Model X Deliveries	12,015	11,183	10,396	11,459	13,045	11,863	9,988	11,598	10,883	8,774	4,638	2,400
North American Deliveries	5,348	4,484	3,920	5,001	6,009	5,038	4,405	5,209	6,146	5,999	4,382	2,400
European Deliveries	3,733	3,834	3,610	3,435	4,052	4,240	2,713	2,734	1,910	1,785	250	-
Asian Deliveries	2,935	2,865	2,866	3,024	2,984	2,585	2,870	3,655	2,827	990	6	-
Model X Lease Deliveries	1,070	897	784	1,000	1,202	1,058	837	1,354	1,537	2,808	1,227	360
Estimated Model X Average Price	\$ 106,140	\$ 106,507	\$ 107,043	\$ 106,659	\$ 105,719	\$ 98,091	\$ 106,098	\$ 106,714	\$ 100,107	\$ 100,610	\$ 108,183	\$ 120,001
Estimated Model X COGS	\$ 81,800	\$ 81,800	\$ 81,800	\$ 81,800	\$ 81,864	\$ 81,879	\$ 82,381	\$ 80,827	\$ 78,046	\$ 83,210	\$ 88,500	\$ 109,455
Model 3 Deliveries	26,200	22,750	16,200	9,000	1,550	222	-	-	-	-	-	-
North American Deliveries	24,000	22,400	16,200	9,000	1,550	222	-	-	-	-	-	-
European Deliveries	2,200	350	-	-	-	-	-	-	-	-	-	-
Asian Deliveries	-	-	-	-	-	-	-	-	-	-	-	-
Model 3 Lease Deliveries	9,170	7,963	5,670	-	-	-	-	-	-	-	-	-
Estimated Model 3 Average Price	46,500	46,500	46,500	49,500	49,500	53,200	-	-	-	-	-	-
Estimated Model 3 COGS	39,675	40,543	43,209	61,728	219,790	725,626	-	-	-	-	-	-
SolarCity MW Deployed (energy generation systems)	140	145	145	135	150	109	176	150	201	189	211	205
Battery MWh Installed (energy storage systems)	200	200	200	200	150	110	97	60	98	-	-	-
	TSLA/SCTY	TSLA/SCTY	TSLA/SCTY	TSLA/SCTY	TSLA/SCTY	TSLA/SCTY	TSLA/SCTY	TSLA/SCTY	TSLA/SCTY	TSLA	TSLA	TSLA
	Q4 2018e	Q3 2018e	Q2 2018e	Q1 2018e	Q4 2017e	Q3 2017	Q2 2017	Q1 2017	Q4 2016	Q3 2016	Q2 2016	Q1 2016
Income Statement												
REVENUES												
Automotive sales	3,014,636	2,774,312	2,375,808	2,521,467	2,447,982	2,050,326	1,889,874	2,009,334	1,692,981	1,746,737	1,455,049	1,405,993
Automotive leasing	406,615	372,395	342,068	318,187	303,449	286,158	272,764	254,540	254,674	231,285	(292,693)	(454,678)
ZEV and GHG credit sales	69,758	65,220	51,357	39,947	30,121	26,405	123,978	25,726	46,468	166,509	19,496	74,749
Automotive segment revenues	3,491,009	3,211,927	2,769,233	2,879,602	2,781,553	2,362,889	2,286,616	2,289,600	1,994,123	2,294,240	1,270,017	1,147,048
Energy generation and storage	416,425	414,477	406,763	388,049	381,117	317,505	286,780	213,944	131,385	-	-	-
Services and other	439,901	416,937	391,405	361,973	334,979	304,281	216,161	192,726	159,123	149,709	88,165	120,984
Total Revenues	4,347,335	4,043,341	3,567,402	3,629,624	3,497,648	2,984,675	2,789,557	2,696,270	2,284,631	2,443,949	1,358,182	1,268,032
COST OF REVENUES												
Automotive sales	2,359,164	2,177,211	1,878,074	2,124,541	2,142,296	1,755,622	1,472,578	1,496,649	1,372,604	1,355,102	1,113,517	1,145,536
Automotive leasing	251,181	230,039	211,296	196,526	187,438	175,224	175,433	166,026	171,818	161,959	(204,235)	(366,220)
Automotive segment cost of revenues	2,610,345	2,407,251	2,089,370	2,321,068	2,329,734	1,930,846	1,648,011	1,662,675	1,544,422	1,661,701	995,241	894,580
Energy generation and storage	295,662	294,279	288,802	275,515	270,593	237,288	203,762	151,773	127,779	-	(14)	(0.6462)
Services and other	470,694	446,122	418,803	387,312	358,427	367,401	271,169	213,876	177,152	-	-	-
Total Cost of Revenues	3,376,701	3,147,652	2,796,975	2,983,894	2,958,754	2,535,535	2,122,942	2,028,324	1,849,353	1,661,701	995,227	894,580
Gross profit	970,634	895,689	770,426	645,730	538,894	449,140	666,615	667,946	435,278	782,248	362,955	373,452
Gross margins	22.33%	22.15%	21.60%	17.79%	15.41%	15.05%	23.90%	24.77%	19.05%	32.01%	26.72%	29.45%
Automotive segment gross margins	25.23%	25.05%	24.55%	19.40%	16.24%	18.28%	27.93%	27.38%	22.55%	27.57%	21.64%	22.01%
New automotive sales gross margin (ex ZEV and GHG)	21.74%	21.52%	20.95%	15.74%	12.49%	14.37%	22.08%	25.52%	18.92%	24.42%	23.47%	18.52%
Automotive leasing gross margin (ex ZEV and GHG)	38.23%	38.23%	38.23%	38.24%	38.23%	38.77%	35.68%	34.77%	32.53%	29.97%	30.22%	19.46%
Energy generation and storage gross margin	29.00%	29.00%	29.00%	29.00%	29.00%	25.26%	28.95%	29.06%	2.74%	-	-	-
OPERATING EXPENSES												
Research and Development	403,469	387,951	373,030	358,682	344,887	331,622	369,774	322,040	245,960	214,302	191,664	182,482
Selling, general and administrative	1,030,915	907,956	800,937	721,703	672,258	652,998	537,757	603,455	456,016	336,811	321,152	318,210
INCOME (LOSS) FROM OPERATIONS	(463,750)	(400,218)	(403,541)	(434,655)	(478,251)	(535,480)	(240,916)	(257,549)	(266,698)	231,135	(149,861)	(127,240)
Interest income	3,443	4,214	4,693	5,502	4,731	5,531	4,785	3,090	2,179	2,858	2,242	1,251
Interest expense	(164,556)	(160,534)	(156,840)	(153,404)	(150,126)	(117,109)	(108,441)	(99,346)	(65,104)	(46,713)	(46,368)	(40,625)
Other income (expense), net	(10,242)	(13,071)	(18,699)	(18,579)	9,382	(24,390)	(41,208)	(18,098)	121,224	(11,756)	(7,373)	9,177
Income (loss) before taxes	(635,104)	(569,609)	(574,387)	(601,135)	(614,264)	(671,448)	(385,780)	(371,903)	(208,399)	175,524	(201,360)	(157,437)
Provision for income taxes	38,106	34,177	34,463	36,068	36,856	(285)	15,647	25,278	11,070	8,133	3,649	3,846
Net earnings (loss)	(673,210)	(603,786)	(608,850)	(637,203)	(651,119)	(671,163)	(401,427)	(397,181)	(219,469)	167,391	(205,009)	(161,283)
Net earnings (loss) attributable to non-controlling interest	(56,339)	(55,925)	(56,753)	(55,098)	(58,409)	(51,787)	(65,030)	(66,904)	(98,132)	-	-	-
Net earnings (loss) attributable to common shareholders	(616,871)	(547,861)	(552,097)	(582,105)	(592,711)	(619,376)	(336,397)	(330,277)	(121,337)	167,391	(205,009)	(161,283)
Net earnings (loss) per share	(3.508)	(3.147)	(3.203)	(3.411)	(3.508)	(3.702)	(2.036)	(2.037)	(0.783)	1.124	(1.465)	(1.216)
Net earnings (loss) per diluted share	(3.508)	(3.147)	(3.203)	(3.411)	(3.508)	(3.702)	(2.036)	(2.037)	(0.783)	1.067	(1.465)	(1.216)
Basic share count	175,828	174,087	172,363	170,657	168,967	167,294	165,212	162,129	155,024	148,991	139,983	132,676
Fully diluted share count	175,828	174,087	172,363	170,657	168,967	167,294	165,212	162,129	155,024	148,991	139,983	132,676
EBITDA	119,748	190,240	181,789	142,052	99,526	(50,385)	111,832	104,045	183,644	502,705	28,240	39,648



Financials

Balance Sheet	Q4 2018e	Q3 2018e	Q2 2018e	Q1 2018e	Q4 2017e	Q3 2017	Q2 2017	Q1 2017	Q4 2016	Q3 2016	Q2 2016	Q1 2016
ASSETS												
Current assets												
Cash and cash equivalents	1,418,604	1,946,273	2,157,227	2,671,255	2,990,287	3,530,030	3,035,924	4,006,593	3,393,216	3,084,257	3,246,301	1,441,789
Short-term marketable securities	-	-	-	-	-	-	-	-	-	-	-	-
Restricted cash	138,181	138,181	138,181	138,181	138,181	138,181	118,369	88,946	105,519	23,711	24,525	23,980
Accounts receivable	786,868	731,845	645,700	656,962	633,074	607,734	453,539	440,349	499,142	326,895	178,594	318,056
Inventory	2,840,757	2,591,230	2,342,395	2,351,079	2,577,650	2,471,382	2,438,111	2,220,336	2,067,454	1,604,571	1,609,607	1,301,961
Prepaid expenses and other	410,205	390,671	372,068	354,350	337,476	321,406	313,501	271,665	194,465	132,978	144,678	153,757
Total current assets	5,594,614	5,798,200	5,655,570	6,171,828	6,676,669	7,068,733	6,359,444	7,027,889	6,259,796	5,172,412	5,203,705	3,239,543
Operating lease vehicles, net	5,432,487	5,091,053	4,782,140	4,514,127	4,201,916	3,834,234	3,600,821	3,452,595	3,134,080	2,949,297	2,533,726	2,244,210
Solar energy systems, leased and to be leased - net	7,467,715	7,236,715	6,997,465	6,758,215	6,535,465	6,287,965	6,218,504	6,085,990	5,919,880	-	-	-
Property and equipment	9,696,953	9,838,259	9,988,584	9,988,930	9,829,723	9,394,397	8,399,229	7,016,551	5,982,957	4,309,048	3,993,250	3,593,014
Goodwill and intangibles - net	417,474	417,474	417,474	417,474	417,474	417,474	424,613	429,592	376,145	-	-	-
MyPower customer notes receivables, less current	463,878	463,878	463,878	463,878	463,878	463,878	472,663	486,350	506,302	-	-	-
Restricted cash	408,544	408,544	408,544	408,544	408,544	408,544	358,445	330,223	268,165	90,994	71,621	47,783
Other assets	243,676	241,263	238,874	236,509	234,167	231,849	209,986	224,536	216,751	70,646	66,650	67,152
Total assets	29,725,342	29,495,386	28,952,530	28,959,505	28,767,836	28,107,074	26,043,705	25,053,726	22,664,076	12,592,397	11,868,952	9,191,702
LIABILITIES AND SHAREHOLDERS' DEFICIT												
Current liabilities												
Accounts payable	3,194,109	2,957,613	2,579,748	2,855,034	2,863,141	2,385,778	2,359,316	2,075,333	1,860,341	1,606,284	1,114,878	1,013,486
Accrued liabilities	1,477,784	1,477,784	1,477,784	1,477,784	1,477,784	1,477,784	1,510,744	1,460,367	1,210,028	695,018	558,212	438,522
Deferred development compensation	-	-	-	-	-	-	-	-	-	-	-	-
Deferred revenue	1,218,480	1,088,794	1,021,388	921,774	908,851	951,734	913,398	841,494	763,126	625,899	558,816	516,620
Capital lease obligations, current portion	-	-	-	-	-	-	-	-	-	-	-	-
Resale guarantees, current portion	543,336	543,336	543,336	543,336	543,336	543,336	342,824	248,536	179,504	204,054	227,838	192,423
Customer deposits	783,493	791,927	780,673	776,280	755,386	686,084	603,540	616,398	663,859	690,364	679,834	391,363
Convertible debt	-	-	-	-	-	-	-	-	-	-	-	-
Long-term debt and capital leases, current portion	424,224	424,224	424,224	424,224	424,224	424,224	816,533	1,003,311	1,150,147	260,771	-	-
Total current liabilities	7,641,425	7,283,678	6,827,153	6,998,432	6,972,722	6,468,940	6,546,355	6,245,439	5,827,005	4,082,390	3,766,404	3,187,699
Common stock warrant liability	-	-	-	-	-	-	-	-	-	-	-	-
Convertible preferred stock warrant liability	-	-	-	-	-	-	-	-	-	-	-	-
Capital lease obligations	-	-	-	-	-	-	-	-	-	-	-	-
Long-term debt and capital leases	10,838,951	10,546,189	10,278,064	10,031,775	9,802,680	9,584,197	7,122,862	7,148,416	5,860,049	2,443,420	2,620,002	2,484,329
Solar bonds issued to related parties, net of current	-	-	-	-	-	-	100	100	99,164	-	-	-
Convertible senior notes issued to related parties	-	-	-	-	-	-	2,444	10,440	10,287	-	-	-
Deferred revenue, less current portion	1,428,511	1,260,191	1,170,677	1,047,960	1,016,285	1,082,870	1,035,579	955,078	851,790	581,202	533,253	496,997
Automotive Resale value guarantee	3,259,492	3,054,632	2,869,284	2,708,476	2,521,149	2,410,220	2,493,024	2,444,058	2,210,423	2,056,068	1,779,509	1,583,075
Other long-term liabilities	2,630,837	2,579,252	2,528,678	2,479,096	2,430,487	2,382,830	2,259,538	2,081,822	1,891,449	737,559	612,344	426,611
Total liabilities	25,799,216	24,723,941	23,673,857	23,265,739	22,743,324	21,929,057	19,459,902	18,885,353	16,750,167	9,900,639	9,311,512	8,178,711
Redeemable noncontrolling interests in subsidiaries	402,943	402,943	402,943	402,943	402,943	402,943	367,377	364,296	367,039	-	-	-
Convertible senior notes	357	357	357	357	357	357	1,688	7,283	8,784	-	-	-
Common stock (\$.001 par)	168	168	168	168	168	168	163	161	161	150	148	134
Additional paid-in capital	9,932,549	10,104,658	10,008,100	9,814,343	9,507,887	9,010,272	8,774,212	8,330,745	7,773,727	5,556,238	5,417,924	3,561,256
Accumulated deficit	(7,473,128)	(6,799,918)	(6,196,132)	(5,587,283)	(4,950,079)	(4,298,960)	(3,668,623)	(3,343,187)	(3,020,977)	(2,875,900)	(2,897,778)	(2,591,025)
Total stockholders' equity	2,459,588	3,304,908	3,812,136	4,227,229	4,557,975	4,711,480	5,105,752	4,987,719	4,752,911	2,680,488	2,520,294	970,365
Noncontrolling interests in subsidiaries	1,063,237	1,063,237	1,063,237	1,063,237	1,063,237	1,063,237	1,108,986	809,075	785,175	-	-	-
Total liabilities and stockholders' deficit	29,725,342	29,495,386	28,952,530	28,959,505	28,767,836	28,107,074	26,043,705	25,053,726	22,664,076	12,592,397	11,868,952	9,191,702
	(0)	(0)	(0)	(0)	(0)	(0)	-	-	-	-	-	-
Working Capital	843,720	756,133	780,414	507,358	685,060	1,014,744	845,835	857,017	900,720	458,160	818,001	760,288
Working Capital Analysis												
Days Sales Inventory (DSI)	76.56	74.91	76.21	71.70	79.28	88.70	104.51	99.61	101.73	104.00	130.12	98.76
Days Sales Receivables (DSO)	16.47	16.47	16.47	16.47	16.47	18.53	14.80	14.86	19.88	16.69	11.96	21.02
Days Sales Payable (DSP)	86.08	85.51	83.93	87.07	88.06	85.63	101.13	93.11	91.54	87.97	101.94	103.10
Cash Conversion Cycle	6.95	5.88	8.75	1.10	7.69	21.60	18.17	21.37	30.07	32.72	40.13	16.69
Days COGS in Prepaid Expenses	11.05	11.29	12.11	10.81	10.38	11.54	13.44	12.19	9.57	8.62	11.70	11.66
Total PP&E	9,696,953	9,838,259	9,988,584	9,988,930	9,829,723	9,394,397	8,399,229	7,016,551	5,982,957	4,309,048	3,993,250	3,593,014
PP&E per TTM Vehicles Delivered	62,888	71,889	85,951	93,596	99,157	95,607	89,430	78,754	78,460	60,282	68,531	64,857
Average Years to Depreciate PP&E	4.11	4.10	4.17	4.23	4.36	4.66	5.40	4.66	4.57	3.84	5.45	5.74



Financials

Balance Sheet	Q4 2018e	Q3 2018e	Q2 2018e	Q1 2018e	Q4 2017e	Q3 2017	Q2 2017	Q1 2017	Q4 2016	Q3 2016	Q2 2016	Q1 2016
ASSETS												
Current assets												
Cash and cash equivalents	1,418,604	1,946,273	2,157,227	2,671,255	2,990,287	3,530,030	3,035,924	4,006,593	3,393,216	3,084,257	3,246,301	1,441,789
Short-term marketable securities	-	-	-	-	-	-	-	-	-	-	-	-
Restricted cash	138,181	138,181	138,181	138,181	138,181	138,181	118,369	88,946	105,519	23,711	24,525	23,980
Accounts receivable	786,868	731,845	645,700	656,962	633,074	607,734	453,539	440,349	499,142	326,895	178,594	318,056
Inventory	2,840,757	2,591,230	2,342,395	2,351,079	2,577,650	2,471,382	2,438,111	2,220,336	2,067,454	1,604,571	1,609,607	1,301,961
Prepaid expenses and other	410,205	390,671	372,068	354,350	337,476	321,406	313,501	271,665	194,465	132,978	144,678	153,757
Total current assets	5,594,614	5,798,200	5,655,570	6,171,828	6,676,669	7,068,733	6,359,444	7,027,889	6,259,796	5,172,412	5,203,705	3,239,543
Operating lease vehicles, net												
Solar energy systems, leased and to be leased - net	7,467,715	7,236,715	6,997,465	6,758,215	6,535,465	6,287,965	6,218,504	6,085,990	5,919,880	-	-	-
Property and equipment	9,696,953	9,838,259	9,988,584	9,988,930	9,829,723	9,394,397	8,399,229	7,016,551	5,982,957	4,309,048	3,993,250	3,593,014
Goodwill and intangibles - net	417,474	417,474	417,474	417,474	417,474	417,474	424,613	429,592	376,145	-	-	-
MyPower customer notes receivables, less current	463,878	463,878	463,878	463,878	463,878	463,878	472,663	486,350	506,302	-	-	-
Restricted cash	408,544	408,544	408,544	408,544	408,544	408,544	358,445	330,223	268,165	90,994	71,621	47,783
Other assets	243,676	241,263	238,874	236,509	234,167	231,849	209,986	224,536	216,751	70,646	66,650	67,152
Total assets	29,725,341	29,495,386	28,952,530	28,959,505	28,767,836	28,107,074	26,043,705	25,053,726	22,664,076	12,592,397	11,868,952	9,191,702
LIABILITIES AND SHAREHOLDERS' DEFICIT												
Current liabilities												
Accounts payable	3,194,109	2,957,613	2,579,748	2,855,034	2,863,141	2,385,778	2,359,316	2,075,333	1,860,341	1,606,284	1,114,878	1,013,486
Accrued liabilities	1,477,784	1,477,784	1,477,784	1,477,784	1,477,784	1,477,784	1,510,744	1,460,367	1,210,028	695,018	558,212	438,522
Deferred development compensation	-	-	-	-	-	-	-	-	-	-	-	-
Deferred revenue	1,218,480	1,088,794	1,021,388	921,774	908,851	951,734	913,398	841,494	763,126	625,899	558,816	516,620
Capital lease obligations, current portion	-	-	-	-	-	-	-	-	-	-	-	-
Resale guarantees, current portion	543,336	543,336	543,336	543,336	543,336	543,336	342,824	248,536	179,504	204,054	227,838	192,423
Customer deposits	783,493	791,927	780,673	776,280	755,386	686,084	603,540	616,398	663,859	690,364	679,834	391,363
Convertible debt	-	-	-	-	-	-	-	-	-	-	626,826	635,285
Long-term debt and capital leases, current portion	424,224	424,224	424,224	424,224	424,224	424,224	816,533	1,003,311	1,150,147	260,771	-	-
Total current liabilities	7,641,425	7,283,678	6,827,153	6,998,432	6,972,722	6,468,940	6,546,355	6,245,439	5,827,005	4,082,390	3,766,404	3,187,699
Common stock warrant liability												
Convertible preferred stock warrant liability	-	-	-	-	-	-	-	-	-	-	-	-
Capital lease obligations	-	-	-	-	-	-	-	-	-	-	-	-
Long-term debt and capital leases	10,838,951	10,546,189	10,278,064	10,031,775	9,802,680	9,584,197	7,122,862	7,148,416	5,860,049	2,443,420	2,620,002	2,484,329
Solar bonds issued to related parties, net of current	-	-	-	-	-	-	100	100	99,164	-	-	-
Convertible senior notes issued to related parties	-	-	-	-	-	-	2,444	10,440	10,287	-	-	-
Deferred revenue, less current portion	1,428,511	1,260,191	1,170,677	1,047,960	1,016,285	1,082,870	1,035,579	955,078	851,790	581,202	533,253	496,997
Automotive Resale value guarantee	3,259,492	3,054,632	2,869,284	2,708,476	2,521,149	2,410,220	2,493,024	2,444,058	2,210,423	2,056,068	1,779,509	1,583,075
Other long-term liabilities	2,630,837	2,579,252	2,528,678	2,479,096	2,430,487	2,382,830	2,259,538	2,081,822	1,891,449	737,559	612,344	426,611
Total liabilities	25,799,216	24,723,941	23,673,857	23,265,739	22,743,324	21,929,057	19,459,902	18,885,353	16,750,167	9,900,639	9,311,512	8,178,711
Redeemable noncontrolling interests in subsidiaries												
Convertible senior notes	402,943	402,943	402,943	402,943	402,943	402,943	367,377	364,296	367,039	-	-	-
Convertible preferred stock warrant liability	357	357	357	357	357	357	1,688	7,283	8,784	-	-	-
Common stock (\$.001 par)												
Additional paid-in capital	168	168	168	168	168	168	163	161	161	150	148	134
Accumulated deficit	9,932,549	10,104,658	10,008,100	9,814,343	9,507,887	9,010,272	8,774,212	8,330,745	7,773,727	5,556,238	5,417,924	3,561,256
Total stockholders' equity	(7,473,128)	(6,799,918)	(6,196,132)	(5,587,283)	(4,950,079)	(4,298,960)	(3,668,623)	(3,343,187)	(3,020,977)	(2,875,900)	(2,897,778)	(2,591,025)
Total liabilities and stockholders' deficit	29,725,342	29,495,386	28,952,530	28,959,505	28,767,836	28,107,074	26,043,705	25,053,726	22,664,076	12,592,397	11,868,952	9,191,702
	(0)	(0)	(0)	(0)	(0)	-	-	-	-	-	-	-
Working Capital	843,720	756,133	780,414	507,358	685,060	1,014,744	845,835	857,017	900,720	458,160	818,001	760,288
Working Capital Analysis												
Days Sales Inventory (DSI)	76.56	74.91	76.21	71.70	79.28	88.70	104.51	99.61	101.73	104.00	130.12	98.76
Days Sales Receivables (DSO)	16.47	16.47	16.47	16.47	16.47	18.53	14.80	14.86	19.88	16.69	11.96	21.02
Days Sales Payable (DSP)	86.08	85.51	83.93	87.07	88.06	85.63	101.13	93.11	91.54	87.97	101.94	103.10
Cash Conversion Cycle	6.95	5.88	8.75	1.10	7.69	21.60	18.17	21.37	30.07	32.72	40.13	16.69
Days COGS in Prepaid Expenses												
	11.05	11.29	12.11	10.81	10.38	11.54	13.44	12.19	9.57	8.62	11.70	11.66
Total PP&E	9,696,953	9,838,259	9,988,584	9,988,930	9,829,723	9,394,397	8,399,229	7,016,551	5,982,957	4,309,048	3,993,250	3,593,014
PP&E per TTM Vehicles Delivered	62,888	71,889	85,951	93,596	99,157	95,607	89,430	78,754	78,460	60,282	68,531	64,857
Average Years to Depreciate PP&E	4.11	4.10	4.17	4.23	4.36	4.66	5.40	4.66	4.57	3.84	5.45	5.74



Annual Financials

	2021e	2020e	2019e	2018e	2017e	2016	2015	2014	2013	2012
Roadster Deliveries	-	-	-	-	-	-	-	-	25	289
Model S Deliveries	54,500	51,905	49,433	52,589	54,752	49,560	50,452	31,655	22,462	2,663
Model X Deliveries	52,333	47,576	43,251	45,053	46,494	26,695	212	-	-	-
Model 3 Deliveries	64,550	78,720	96,000	74,150	1,772	-	-	-	-	-
Total Deliveries	171,384	178,201	188,684	171,792	103,018	76,255	50,664	31,655	22,487	2,952
Vehicles on Lease	169,209	141,287	106,354	64,954	44,888	34,296	24,299	10,393	5,169	-
SolarCity MW Installed	842	787	667	565	585	806	870	503	-	-
Income Statement	2021e	2020e	2019e	2018e	2017e	2016	2015	2014	2013	2012
REVENUES										
Automotive sales	12,842,408	12,975,056	13,947,491	10,686,224	8,397,516	6,300,760	4,818,196	3,376,508	2,267,551	372,756
Automotive leasing	2,046,129	1,708,488	1,286,062	1,439,265	1,116,911	(261,412)	(1,245,518)	(400,185)	(464,166)	-
ZEV and GHG credit sales	171,384	178,201	188,684	226,283	206,230	-	168,294	216,400	194,400	40,500
Automotive service and other	-	-	-	-	-	358,858	305,052	5,633	15,711	27,557
Automotive segment revenues	15,059,922	14,861,745	15,422,238	12,351,771	9,720,658	6,705,428	4,046,024	3,198,356	2,013,496	440,813
Energy generation and storage	991,775	936,706	816,700	1,625,715	1,199,346	131,385	-	-	-	-
Services and other	1,919,387	1,447,676	1,203,572	1,610,216	1,048,147	517,981	-	-	-	-
Total Revenues	17,971,084	17,246,127	17,442,509	15,587,702	11,968,150	7,354,794	4,046,024	3,198,356	2,013,496	440,813
COST OF REVENUES										
Automotive sales	8,422,210	8,968,439	10,436,890	8,538,990	6,867,145	4,986,759	3,759,304	2,627,373	1,940,291	371,657
Automotive leasing	3,540,377	2,956,163	2,192,523	889,043	704,121	(236,678)	(936,003)	(317,558)	(386,289)	-
Automotive service and other	-	-	-	-	-	345,863	299,220	6,870	13,357	11,531
Automotive segment cost of revenues	11,962,586	11,924,602	12,629,414	9,428,033	7,571,266	5,095,944	3,122,521	2,316,685	1,567,359	383,188
Energy generation and storage	922,351	871,137	759,531	1,154,258	863,416	127,779	-	-	-	-
Services and other	2,053,744	1,549,013	1,287,822	1,722,932	1,210,873	177,152	-	-	-	-
Total Cost of Revenues	14,938,681	14,344,751	14,676,766	12,305,222	9,645,555	5,400,875	3,122,521	2,316,685	1,567,359	383,188
Gross profit	3,032,403	2,901,376	2,765,743	3,282,480	2,322,595	1,953,919	923,503	881,671	446,137	57,625
Gross margin	16.87%	16.82%	15.86%	21.06%	19.41%	26.57%	22.82%	27.57%	22.16%	13.07%
Automotive segment gross margins	20.57%	19.76%	18.11%	23.67%	22.11%	24.00%	22.82%	27.57%	22.16%	13.07%
New automotive sales gross margin (ex ZEV and GHG)	33.53%	29.92%	24.14%	18.36%	16.17%	16.80%	19.15%	16.86%	6.41%	-11.86%
Automotive leasing gross margin (ex ZEV and GHG)	-42.21%	-42.21%	-41.34%	61.89%	58.62%	10.45%	33.07%	26.02%	20.16%	-
Energy generation and storage gross margin	7.00%	7.00%	7.00%	29.00%	28.01%	-	-	-	-	-
Research and development	2,119,438	1,926,762	1,751,601	1,523,132	1,368,323	834,408	717,900	464,699	231,976	273,978
Selling, general and administrative	5,722,311	4,975,922	4,326,889	3,461,511	2,466,468	1,432,189	922,232	603,659	285,568	150,371
Other expenses	-	-	-	-	-	-	-	-	-	-
Income (loss) from operations	(4,809,345)	(4,001,308)	(3,312,748)	(1,702,163)	(1,512,196)	(312,678)	(716,629)	(186,687)	(71,407)	(366,724)
Interest income	16,293	16,797	17,317	17,852	18,137	8,530	1,508	1,127	209	-
Interest expense	(1,097,857)	(914,881)	(762,401)	(635,334)	(475,022)	(198,810)	(118,851)	(100,886)	(32,955)	-
Other income (expense)	(4,503)	(4,502)	(4,501)	(60,590)	(74,314)	111,272	(41,652)	1,812	22,603	(4,500)
Income (loss) before taxes	(5,895,412)	(4,903,894)	(4,062,333)	(2,380,235)	(2,043,395)	(391,686)	(875,624)	(284,634)	(81,550)	(371,224)
Provision for taxes	294,771	245,195	203,117	142,814	77,496	26,698	13,039	9,405	2,588	103
Net earnings (loss)	(6,190,183)	(5,149,089)	(4,265,449)	(2,523,049)	(2,120,890)	(418,384)	(888,663)	(294,039)	(84,138)	(371,327)
Net earnings (loss) attributable to non-controlling interests	(282,321)	(261,408)	(242,045)	(224,116)	(242,130)	(98,132)	-	-	-	-
Net earnings (loss) attributable to common shareholders	(5,907,862)	(4,887,680)	(4,023,405)	(2,298,933)	(1,878,761)	(320,252)	(888,663)	(294,039)	(84,138)	(371,327)
Net earnings (loss) per diluted share	(20.37)	(19.85)	(19.36)	(13.27)	(11.32)	(2.11)	(6.93)	(2.37)	(0.69)	(3.46)
Fully diluted shares outstanding	290,087	246,202	207,837	173,234	165,900	151,897	128,185	124,283	121,781	107,336
EBITDA	(2,607,411)	(1,810,270)	(1,134,761)	633,829	265,018	754,237	(334,183)	48,183	57,488	(354,053)
Capital Expenditures	(1,800,001)	(1,800,000)	(2,000,000)	(2,250,000)	(3,627,692)	(1,280,802)	(1,634,850)	(969,885)	(264,224)	(239,228)
Likely Cash Burn	(4,407,412)	(3,610,270)	(3,134,761)	(1,616,171)	(3,362,674)	(526,565)	(1,969,033)	(921,702)	(206,736)	(593,281)
SG&A as % total revenue	31.84%	28.85%	30.61%	31.72%	28.67%	20.56%	17.43%	16.78%	11.53%	34.11%
R&D Expense as % total revenue	11.79%	11.17%	10.04%	9.77%	11.43%	11.35%	17.74%	14.53%	11.52%	62.15%



Critical Accounting Policies and Accounting Analysis

From 2016 10-K:

Revenue Recognition - Tesla recognizes revenues from the sales of vehicle and options, accessories, destination charges, vehicle services, sales of Zero Emission Vehicle (ZEV) credits and powertrain components when (i) persuasive evidence of an arrangement exists; (ii) delivery has occurred and there are no uncertainties regarding customer acceptance, (iii) pricing or fees are fixed or determinable; and (iv) collection is reasonable assured. When development revenues are paid based on specific milestones, revenue is recognized based on the achievement of the contractually-defined milestones. Amounts collected in advance of meeting all revenue recognition criteria are not recognized in the consolidated statement of operations and are instead recorded as deferred revenue on the consolidated balance sheet. Vehicles which are sold on lease by Tesla are classified as operating leases and thus Tesla recognizes revenues on a straight-line basis on these vehicles over the term of the lease. In cases when customer retains ownership of the vehicle at the end of the guarantee period, the resale value guarantee liability and any remaining deferred revenue balances related to the vehicle are settled to automotive revenue and the net book value of the leased vehicle is expensed to costs of automotive revenue. In cases when customers return the vehicle back to us during the guarantee period, we purchase the vehicle from the customer at an amount equal to the resale value guarantee and settle any remaining deferred balances to automotive revenue and we reclassify the net book value of the vehicle on our balance sheet to pre-owned vehicle inventory. As of December 31, 2015, \$136.8 million of guarantees are exercisable by customers within the next twelve months. In the fourth quarter of 2014, we also began offering residual value guarantees in connection with automobile sales to certain bank leasing partners. As we have guaranteed the value of these vehicles and as the vehicles are leased to end-customers, we account for these transactions as interest bearing collateralized borrowings as required under *ASC 840 - Leases*.

Inventories - Inventories are stated at the lower of cost or market. Cost is computed using standard cost, which approximates actual cost on a first-in, first-out basis. Tesla records inventory write-downs for excess or obsolete inventories based upon assumptions about on current and future demand forecasts. If inventories on hand are in excess of their future demand forecast, the excess amounts are written off. Tesla also reviews inventory to determine whether its carrying value exceeds the net amount realizable upon the ultimate sale of the inventory. This requires Tesla to determine the estimated selling price of our vehicles less the estimated cost to convert inventory on hand into a finished product. Once inventory is written-down, a new, lower-cost basis for that inventory is established and subsequent changes in facts and circumstances do not result in the restoration or increase in that newly established cost basis. Should estimates of future selling prices or production costs change, additional and potentially material increases to this reserve may be required. A small change in our estimates may result in a material charge to their reported financial results.

Warranties - Tesla provides a manufacturer's warranty on all vehicles, production powertrain components and systems, and Tesla Energy products. At the time of delivery, Tesla accrues for a manufacturer's warranty which includes estimates of the projected costs to repair or to replace items under warranty. These estimates are based on actual claims incurred to-date and an estimate of the nature, frequency and costs of future claims. These estimates are inherently uncertain and changes to historical or projected warranty experience may cause material changes to warranty reserves in the future. The portion of the warranty provision expected to be incurred within 12 months is classified as a current liability. Our warranty reserves do not include projected warranty costs associated with our vehicles accounted for as operating leases or collateralized debt arrangements. Costs to repair these vehicles are expensed as incurred. Warranty expense is recorded as a component of cost of automotive revenue.



Appendix A: InsideEVs.com Monthly U.S. Plug-In Sales Scorecard

(Tesla deliveries are estimates, retroactively adjusted to match Tesla Financials after each earnings release)

2017-US	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Tesla Model S*	900	1,750	3,450	1,125	1,620	2,350	1,425	2,150	4,860	1,120	1,335	4,975	27,060
Chevrolet Bolt EV	1,162	952	978	1,292	1,566	1,642	1,971	2,107	2,632	2,781	2,987	3,227	23,297
Tesla Model X*	750	800	2,750	715	1,730	2,200	1,650	1,575	3,120	850	1,875	3,300	21,315
Toyota Prius Prime	1,366	1,362	1,618	1,819	1,908	1,619	1,645	1,820	1,899	1,626	1,834	2,420	20,936
Chevrolet Volt	1,611	1,820	2,132	1,807	1,817	1,745	1,518	1,445	1,453	1,362	1,702	1,937	20,349
Nissan LEAF	772	1,037	1,478	1,063	1,392	1,506	1,283	1,154	1,055	213	175	102	11,230
Ford Fusion Energi	606	837	1,002	905	1,000	707	703	762	763	741	731	875	9,632
Ford C-Max Energi	473	639	662	720	950	936	844	705	683	569	523	436	8,140
BMW i3	382	318	703	516	506	567	601	504	538	686	283	672	6,276
Fiat 500e**	752	590	785	541	473	359	395	290	285	310	215	385	5,380
BMW X5 xDrive40e	262	275	397	291	433	488	463	317	333	329	929	832	5,349
Chrysler Pacifica Hybrid**	12	0	0	335	705	355	125	425	475	875	570	720	4,597
BMW 330e	129	144	365	260	475	496	387	409	329	307	477	363	4,141
BMW 530e				13	147	239	343	345	511	596	872	706	3,772
VW e-Golf	332	293	342	307	381	232	308	317	187	203	289	343	3,534
Audi A3 Sportback e-tron	387	400	414	301	294	324	218	129	85	17	38	270	2,877
Hyundai Sonata PHV**	190	175	295	280	220	255	205	185	190	210	135	195	2,535
Volvo XC90 T8 PHEV	96	83	103	145	146	202	174	265	236	174	204	368	2,196
Kia Soul EV	117	152	171	167	129	100	145	300	255	210	207	204	2,157
Ford Focus Electric	56	228	407	125	132	110	148	131	131	115	121	113	1,817
Tesla Model 3*							30	75	117	145	345	1,060	1,772
Porsche Cayenne S-E	177	121	126	185	174	195	160	178	124	73	38	23	1,574
Kia Optima PHV	10	61	70	86	85	78	130	182	228	235	213	134	1,512
Honda Clarity BEV							34	15	52	34	459	527	1,121
Honda Clarity PHEV											5	898	903
Mercedes C350e	210	51	17	3	7	0	112	212	126	49	16	14	817
Mercedes B250e	53	56	50	66	46	46	81	58	87	59	31	111	744
BMW 740e	18	35	42	123	33	52	80	39	43	55	120	67	707
Mercedes S550e	55	51	60	81	83	81	124	32	35	16	22	26	666
smart ED	15	22	13	3	1	3	0	94	123	73	68	129	544
Volvo XC60 PHEV							13	65	97	100	82	174	531
BMW i8	50	58	49	23	18	22	55	29	27	33	44	80	488
Mini Countryman S E PHV						10	75	86	80	56	96	72	475
Mercedes GLE 550e	52	59	47	36	33	41	27	23	14	8	41	82	463
Hyundai IONIQ Electric			5	19	75	58	43	66	36	28	23	79	432
Cadillac CT6 PHV				8	16	20	22	23	27	27	29	35	207
Volvo S90 T8 PHEV									5	28	32	52	117
Mitsu Outlander PHEV												99	99
Chevrolet Spark EV	4	4	3	1	0	1	1	0	0	0	7	2	23
Porsche Panamera S-E	2	1	3	2	1	0	0	1	1	2	5	0	18
Cadillac ELR	3	0	2	2	0	7	2	1	0	0	0	0	17
Mitsubishi i-MiEV	0	1	3	2	0	0	0	0	0	0	0	0	6
InsideEVs	11,004	12,375	18,542	13,367	16,596	17,046	15,540	16,514	21,242	14,315	17,178	26,107	199,826
2016 Results	6,221	7,763	13,857	10,531	11,467	14,863	13,067	14,592	17,224	11,007	13,237	24,785	158,614
Worldwide*	41,372	53,561	94,650	71,762	91,417	102,130	92,835	103,408	121,323	121,720	145,810		1,039,988



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