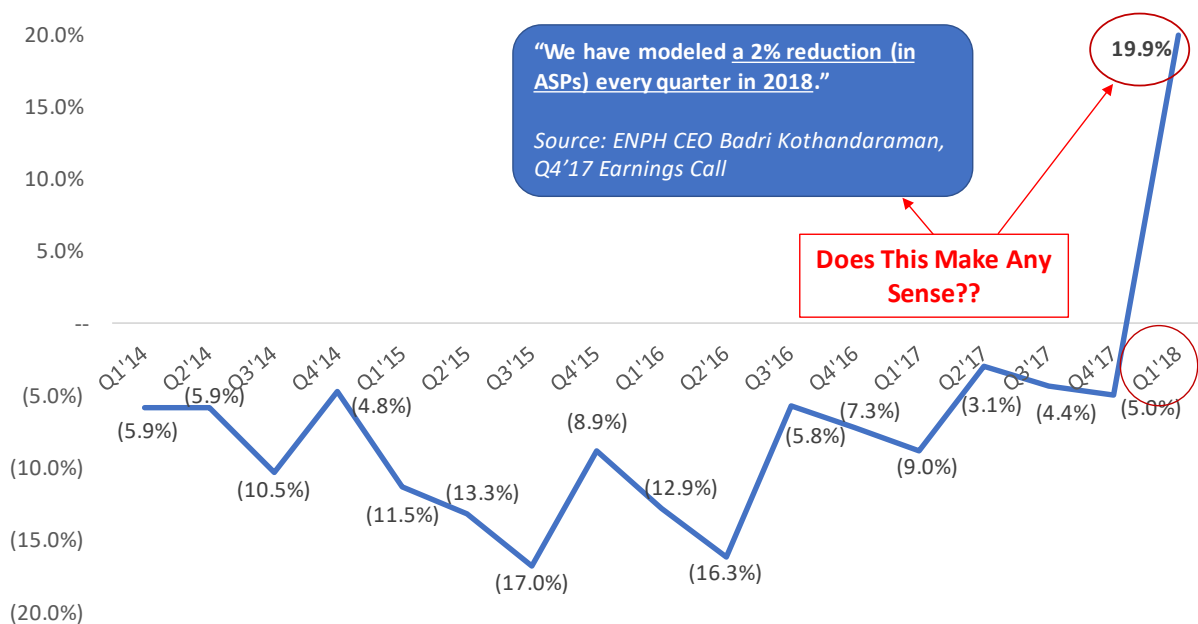


ENPHASE ENERGY, INC.

NASDAQ: ENPH

TARGET PRICE: \$1.01

ENPH Revenue Per Inverter - YoY Growth



Source: ENPH earnings reports and earnings calls.

THIS RESEARCH REPORT EXPRESSES SOLELY OUR OPINIONS. Use Prescience Point LLC's research opinions at your own risk. This is not investment advice nor should it be construed as such. You should do your own research and due diligence before making any investment decisions with respect to the securities covered herein. Forward-looking statement and projections are inherently susceptible to uncertainty and involve many risks (known and unknown) that could cause actual results to differ materially from expected results. You should assume we have a short interest in Enphase Energy stock and therefore stand to realize significant gains in the event that the price of such instrument declines. [Please refer to our full disclaimer located on the last page of this report.](#)

Prescience Point Research Opinions:

- ENPH shares are conservatively worth \$1.01 per share, implying 84.7% downside
- ENPH's turnaround under its new CEO Badri Kothandaraman is a sham
- The 43.7% or 804 bps expansion in ENPH's gross margin from 18.4% in Q2'17 to 26.5% in Q1'18 was almost entirely attributable to manipulative and potentially fraudulent accounting practices
- ENPH is far more levered than reported and only has a cash runway of ~8 months. A dilutive equity raise will be necessary.
- ENPH's auditor, its audit committee, and the SEC should launch a full investigation into the company's accounting practices

Research Highlights:

- ENPH's massive gross margin expansion from Q2'17 to Q1'18 defies logic. It occurred in the absence of any apparent catalysts (e.g. a game-changing new product, restructuring of manufacturing operations, etc.) and during a time period when its quarterly inverter volume declined by 21.2% (i.e. lower fixed cost absorption)
- ENPH's Q3'17, Q4'17 and Q1'18 gross margin was inflated by an estimated 11.5% (224 bps), 16.1% (336 bps), and 40.7% (765 bps), respectively, from accounting shenanigans initiated during Mr. Kothandaraman's tenure as CEO, based on our analysis
- An anomalous 19.9% YoY increase in Q1'18 revenue per inverter amounts to proof, in our view, that ENPH's Q1'18 results were significantly overstated. This massive increase is far out of line with the decline in revenue per inverter reported in each of the 16 quarters prior, and does not reconcile with management's projection of a 2% ASP decline per quarter in FY'18
- Large, irreconcilable discrepancies in ENPH's disclosures and financial statements indicate that it egregiously violated GAAP by improperly recognizing \$6.3m of deferred revenue in Q1'18 at, or close to, a 100% margin
- In Q4'17, ENPH significantly accelerated the amortization of its deferred revenue by making a questionable decision to reduce the estimated service period of its Envoy monitoring system
- In Q3'17, ENPH's warranty expenses amounted to just \$0.2m or 0.3% of sales, almost 90% lower than its historical average
- Since FY 2014, ENPH has used a questionable discounted method of warranty accounting, using an egregiously high discount rate of 16%-17%, which we estimate has artificially depressed its ongoing warranty expenses by an avg. of 63.0% since adoption. ENPH is the only public company we are aware of which uses discounted warranty accounting
- Due to discounted accounting, ENPH has under-accrued an estimated total of \$57.1m of warranty liabilities since FY'14
- (Former) CFO Bert Garcia was unable to provide credible explanations for the severe red flags we uncovered in ENPH's financial reports. He suddenly left the company in June. New CFO Eric Branderiz is ENPH's fourth CFO in 6 years
- Investor optimism over the SPWR deal is misplaced. Our analysis indicates that ENPH paid 34.4x annual EBIT for a limited five-year supply agreement – an incredibly value destructive transaction. We believe ENPH engaged in this questionable deal to artificially boost its future gross margins
- After a 496.4% increase in ENPH's share price since his promotion, the value of Mr. Kothandaraman's generous options package has grown to ~\$10.8m (*See Appendix for calculation*)
- Wall St estimates are severely inflated as their EPS targets are derived in large part from ENPH's reported gross margin and guidance

SHARE PRICE
\$6.62

52-WK HI / LOW
\$7.55 / \$0.76

AVG DAILY VOLUME
3.1m

FULLY DIL. SHARES
117.5m

MARKET CAP
\$778.0m

DEBT + WARRANTY LIAB.
\$138.5m⁽¹⁾

ENTERPRISE VALUE
\$775.4m

AUDITOR
DELOITTE & TOUCHE, LLP

(1) Prescience Point estimate.

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Introduction

We believe shares of Enphase Energy ("the company" or "ENPH") could fall more than 85 percent once investors realize its purported turnaround is a sham. In fact, ENPH appears to exhibit many of the hallmarks of past accounting scandals including Celadon Group ("CGI"), a company which we exposed early last year and is now under [criminal investigation](#) by the DOJ. ENPH's recent performance defies logic, and its books do not seem to reconcile.

Our months-long investigation into ENPH included a forensic analysis of its accounting practices and public filings, interviews with several industry consultants and solar distributors and a conversation with ENPH's former CFO, who recently left the company. Based on our research, ENPH's massive gross margin expansion over the last three quarters is fiction, its recent SPWR transaction is value-destructive and the company has materially misrepresented its financial condition to investors.

ENPH initially caught our attention when we learned of the inexplicable and dramatic improvement in its financial performance, and in particular its gross margin, since appointing Badri Kothandaraman as its new CEO in September 2017. From Q2 2017 to Q1 2018, the company's reported gross margin expanded a whopping 43.7% or 804 bps from 18.4% to 26.5%. Yet, on the surface, this large and rapid increase in margin did not add up when considering the following:

- ENPH did not release any game changing new products, restructure its manufacturing operations, or undertake any other initiatives which would have dramatically improved its margin profile.
- ENPH's revenue and inverter volume declined by 6.3% and 21.2%, respectively, from Q2 2017 to Q1 2018. Historically, when revenue and volume have declined, its gross margin has come under pressure due to the lower absorption of fixed costs. But, somehow, that did not happen this time around.

Further drawing our attention was ENPH's announcement that its then CFO Bert Garcia was suddenly resigning (and apparently without having lined up another job), effective at the end of June 2018. In light of the company's inexplicable gross margin expansion, his sudden and unexpected resignation was a significant red flag.

Throughout our investigation, we found ENPH to be even worse than we initially suspected:

- Based on our research, we believe that ENPH's large gross margin expansion from Q2 2017 to Q1 2018 was almost entirely attributable to manipulative and potentially fraudulent accounting practices which were initiated during Mr. Kothandaraman's tenure as CEO and which became increasingly severe with each passing quarter
- We estimate that these accounting shenanigans inflated ENPH's Q3 2017 and Q4 2017 gross margin by an estimated 11.5% (224 bps) and 16.1% (336 bps), respectively, and inflated its Q1 2018 gross margin by an astounding 40.7% (765 bps)
- An anomalous 19.9% YoY increase in Q1 2018 revenue per inverter amounts to proof, in our view, that ENPH's Q1 2018 results were significantly overstated. This massive increase is far out of line with the decline in revenue per inverter reported in each of the 16 quarters prior, and does not reconcile with management's projection of a 2% ASP decline per quarter in FY 2018
- Since FY 2014, ENPH has used a questionable discounted method of warranty accounting, using an egregiously high discount rate of 16%-17%, which we estimate has artificially depressed its ongoing warranty expenses by an avg. of 63.0% since adoption. ENPH is the only public company we are aware of which uses discounted warranty accounting
- After fully adjusting its results for the accounting shenanigans initiated under both its former and current CEO, ENPH's 'actual' Q3 2017, Q4 2017 and Q1 2018 gross margin was an estimated 15.6%, 16.9% and 15.1%, respectively. To compare, SEDG's reported Q1 2018 gross margin was 38.4%.

- ENPH is far more levered than reported. Due to discounted accounting, ENPH has under-accrued an estimated \$57.1m of warranty liabilities since FY 2014. Pro forma for this amount, its 'actual' total debt balance is \$138.5m, 70.2% higher than reported
- Investor optimism over the SPWR deal is misplaced. Our analysis indicates that ENPH paid 34.4x annual EBIT for a limited five-year supply agreement – an incredibly value destructive transaction. We believe ENPH engaged in this questionable deal to artificially boost its future gross margins

We are not the only ones who struggle to reconcile ENPH's numbers. Recently departed CFO Bert Garcia seems to struggle as well. During a call, Mr. Garcia was asked to provide an explanation for the severe discrepancies and irregularities we uncovered in ENPH's financial reports, such as the anomalous 19.9% YoY increase in the company's Q1 2018 revenue per inverter. Alarming, he could not provide credible answers – Yet another glaring red flag suggesting that ENPH significantly overstated its results.

We believe that ENPH's future is bleak. The company's accounting shenanigans appear to have diverted attention from the fact that its revenue continues to contract, declining yet again in FY 2017 by 11.3% YoY. Given the recent entrance of Huawei and other well-capitalized competitors into the space, as well as a projected slowdown in growth for MLPE providers, we believe that further organic revenue declines are likely. We also see a heightened risk of a liquidity crisis or dilutive equity raise within the next 8 months given ENPH's small cash cushion, weak cash flow generation and considerable near-term obligations, including \$25m of term loan principal payments over the next four quarters

Meanwhile, since Mr. Kothandaraman was promoted to CEO on 9/6/2017, ENPH's share price has increased by 496.4% from \$1.11 to \$6.62, and its market capitalization has exploded to near all-time highs from \$106.2m to \$778.0m – inflating the value of Mr. Kothandaraman's generous options package to an estimated \$10.8m in the process. But for all of the reasons outlined above, we believe this exponential increase in share price was entirely unjustified. **Based on our analysis, ENPH stock is worth ~\$1.01 on a fundamental basis.** However, given the outsized risk of financial restatements and enforcement actions by the SEC and other regulatory bodies, even this valuation is likely too generous.

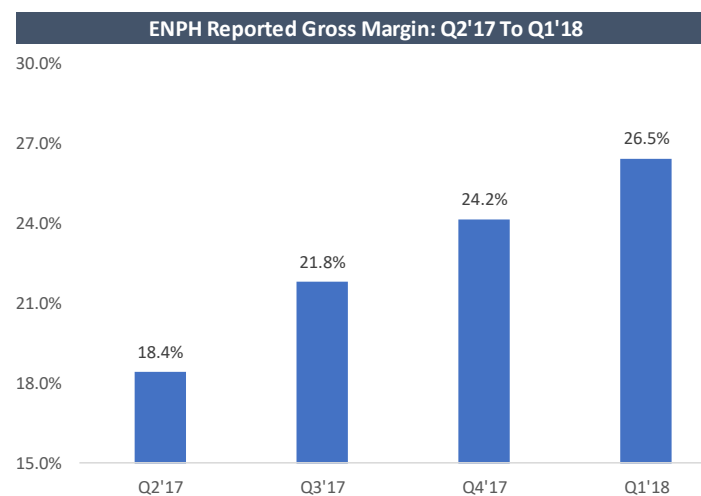
We hope that current and future investors and creditors familiarize themselves with the risks we have addressed and take immediate action to preserve the value of their holdings. We also hope that the NASDAQ, regulatory agencies, and ENPH's auditor take necessary precautions in protecting investors.

Background: ENPH Replaces Its CEO And Reports A Large Increase In Gross Margin, Shares Go Parabolic

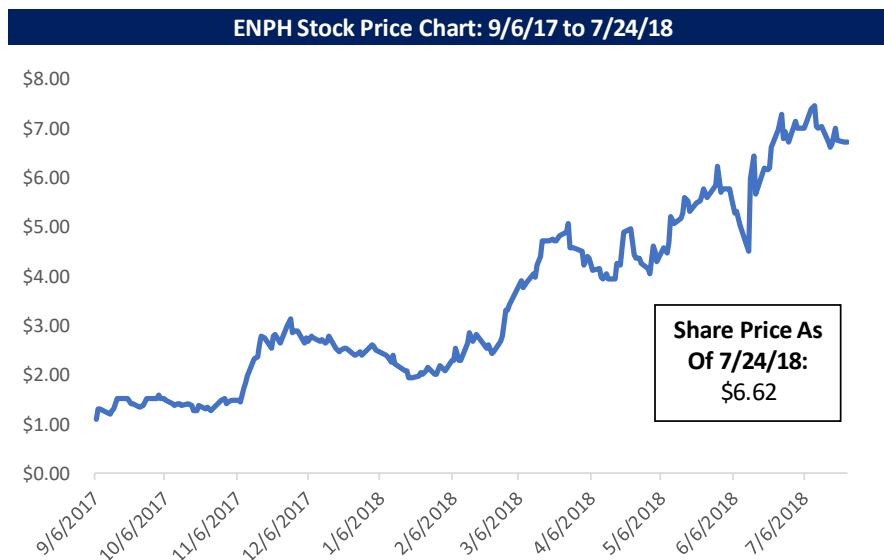
On 8/8/2017, ENPH [announced](#) that Paul Nahi was stepping down as its CEO after 10 years at the helm. Almost one month after the ouster of Mr. Nahi, the company [announced](#) that it had selected Badri Kothandaraman to serve as its new President and CEO. Prior to his promotion, Mr. Kothandaraman had served as COO of the company.

Under Mr. Nahi's leadership, the company had struggled to grow sales and turn a profit due to increasingly intense competition from rivals like SolarEdge ("SEDG"). Upon taking over as CEO, Mr. Kothandaraman announced his intention to return the company to profitability by cutting costs during the first 18 months of his tenure. With this in mind, he told investors that he expected the company to reach 30% gross margins, reduce OpEx to 20% of revenue, and reach 10% operating margins by Q4 2018. ENPH dubbed this goal as its 30-20-10 plan.

Fast forward to today, and on the surface it appears that ENPH is well on its way to achieving its 30-20-10 target. Since Mr. Kothandaraman took over as CEO, ENPH's gross margin has increased an astonishing 43.7% or 804 bps in just three quarters from 18.4% in Q2 2017 to 26.5% in Q1 2018:



Due in large part to this huge increase in gross margin, as well as its recently announced deal with SPWR, investors have frantically bid up ENPH's share price by 496.4% since Mr. Kothandaraman's promotion:



We present evidence which, in our opinion, indicates that the reported increase in ENPH's gross margin over the past three quarters is fiction, and that the recent euphoria of investors is grossly misplaced.

Gross Margin Improvement From Q2'17 to Q1'18 Appears To Be Almost Entirely Attributable To Accounting Shenanigans

During its recent earnings calls ([here](#), [here](#) and [here](#)), ENPH management claimed that the significant gross margin improvement reported from Q2'17 to Q1'18 was due to revenue and cost efficiencies, driven by pricing management, supply chain optimization and increased sales of its latest generation microinverter.

However, our research tells a different story. The reality, in our view, is that ENPH's gross margin expansion over the past three quarters was not achieved operationally as claimed; instead it was almost entirely attributable to manipulative and potentially fraudulent accounting practices which were initiated during Mr. Kothandaraman's tenure as CEO. ENPH's accounting shenanigans started out small in Q3 2017, but as investors bought into the charade of improving performance, it appears the company was emboldened to push them significantly further in the subsequent quarters.

Our analysis, excluding the impact of these accounting shenanigans on ENPH's reported financials, reveals that,

- ENPH's reported gross margin in Q3 2017, Q4 2017 and Q1 2018 was inflated by 11.5% (224 bps), 16.1% (336 bps), and 40.7% (765 bps), respectively
- ENPH's gross margin expanded by just 39 bps over the past three quarters from 18.4% in Q2 2017 to 18.8% in Q1 2018. This is in stark contrast to the 804 bps expansion ENPH reported. (Note: 'past three quarters' refers to Q3 2017, Q4 2017 and Q1 2018. Q2 2017 is provided for comparison purposes)

- ENPH's revenue and gross profit were also significantly inflated: For example, Q4 2017 and Q1 2018 revenue was inflated by an estimated 3.4% and 11.9%, respectively, while Q3 2017, Q4 2017 and Q1 2018 gross profit was inflated by an estimated 11.5%, 20.1% and 57.5%, respectively
- Wall St estimates are severely inflated as their EPS targets are derived in large part from ENPH's reported gross margin and guidance

The table below summarizes our adjustments to ENPH's reported financials from Q3'17 to Q1'18, the details of which will be thoroughly discussed in the sections to follow:

| Prescience Point Adjusted Q3 2017 to Q1 2018 Financials | | | |
|--|----------------|----------------|----------------|
| <i>(\$ in millions)</i> | Q3 2017 | Q4 2017 | Q1 2018 |
| Reported Revenue | \$77.0 | \$79.7 | \$70.0 |
| (-) Benefit From Accelerated Amortization Of Deferred Revenue | \$0.0 | (\$2.6) | (\$1.2) |
| (-) Benefit From Improper Deferred Revenue Recognition | \$0.0 | \$0.0 | (\$6.3) |
| PP Adjusted Revenue | \$77.0 | \$77.1 | \$62.5 |
| Revenue, % Overstatement in Reported Financials | 0.0% | 3.4% | 11.9% |
| Reported Non-GAAP Gross Profit | \$16.8 | \$19.3 | \$18.5 |
| (+) Reduction From Over-Accrual Of Warranty Expenses | \$0.0 | \$0.0 | \$0.7 |
| (-) Benefit From Under-Accrual Of Warranty Expenses | (\$1.7) | (\$0.6) | \$0.0 |
| (-) Benefit From Accelerated Amortization Of Deferred Revenue | \$0.0 | (\$2.6) | (\$1.2) |
| (-) Benefit From Improper Deferred Revenue Recognition | \$0.0 | \$0.0 | (\$6.3) |
| PP Adjusted Non-GAAP Gross Profit | \$15.1 | \$16.0 | \$11.8 |
| <i>PP Adjusted Non-GAAP Gross Margin</i> | <i>19.6%</i> | <i>20.8%</i> | <i>18.8%</i> |
| <i>Reported Non-GAAP Gross Margin</i> | <i>21.8%</i> | <i>24.2%</i> | <i>26.5%</i> |
| Gross Profit, % Overstatement in Reported Financials | 11.5% | 20.1% | 57.5% |
| Gross Margin, % Overstatement in Reported Financials | 11.5% | 16.1% | 40.7% |

Source: ENPH filings with the SEC, Prescience Point estimates.

Q3 2017: Inflation Of Results Begins (GM Inflated By 11.5% Or 224 Bps)

In Q3 2017, ENPH reported that its gross margin had expanded to 21.8%. This appeared to be a significant achievement for Mr. Kothandaraman in his first quarter as CEO, as it was the first time since Q4 2015 that gross margin had exceeded 20%.

But, upon close examination of ENPH's [Q3 2017 10Q](#), we discovered that the majority of the reported increase in margin was not due to actual operational improvements. Instead, this increase was mostly artificial and was primarily attributable to the under-accrual of warranty expenses.

In Q3 2017, ENPH's warranty expenses totaled just \$0.2m or 0.3% of sales. This was almost 90% lower than its average quarterly warranty expenses from FY 2014 to Q2 2017 of \$2.1m or 2.5% of sales:

Q3 2017 Warranty Expenses: Discount To Historical Average

(\$ in millions)

| | Average FY'14 - Q2'17 | Q3'17 |
|---|--------------------------|----------------|
| Quarterly Revenue | \$82.4 | \$77.0 |
| Quarterly Warranty Expenses | \$2.1 | \$0.2 |
| % of Sales | 2.5% | 0.3% |
| Warranty Expenses As % Of Sales, Discount To Average | | (88.1%) |

Source: ENPH 10Ks and 10Qs.

Because warranty expenses are estimates which are based largely on the discretion of management, they can be used as a lever to inflate or manage earnings. Given how unusually low its warranty expenses were in Q3 2017, it appears that ENPH may have pulled this lever.

We believe that ENPH's Q3 2017 results should be adjusted to include a level of warranty expenses which is in-line with its historical average. By doing so, we can paint a clearer picture of the company's true financial performance in the quarter.

Accordingly, in the table below, we have adjusted its warranty expenses to be equal to 2.5% of sales (i.e. its historical average from FY 2014 to Q2 2017). By making this adjustment, we calculate that ENPH's adjusted gross margin in Q3 2017 was 19.6%. Thus, we estimate that the company's reported Q3 2017 gross margin was inflated by 11.5% or 224bps. We also estimate that its reported Q3 2017 gross profit was inflated by the same %.

Prescience Point Adjusted Q3 2017 Financials

(\$ in millions)

Q3 2017

| | |
|---|---------------|
| Reported Revenue | \$77.0 |
| Reported Non-GAAP Gross Profit | \$16.8 |
| (-) Benefit From Under-Accrual Of Warranty Expenses | (\$1.7) |
| PP Adjusted Non-GAAP Gross Profit | \$15.1 |
| PP Adjusted Non-GAAP Gross Margin | 19.6% |
| Reported Non-GAAP Gross Margin | 21.8% |
| Gross Margin, % Overstatement in Reported Financials | 11.5% |
| Gross Profit, % Overstatement in Reported Financials | 11.5% |

Source: ENPH 10Qs. Prescience Point estimates.

Q4 2017: Accounting Shenanigans Increase (GM Inflated By 16.1% Or 336 Bps)

ENPH's gross margin in Q4 2017 was even more inflated than it was in Q3 2017.

In Q4 2017, ENPH reported that its gross margin had further expanded to 24.2%. However, our research indicates that this margin improvement, just as it was in the prior quarter, was mostly a mirage.

Based on our analysis, the company's results in Q4 2017 were significantly inflated by,

1. a questionable decision to accelerate the amortization of its deferred revenue; and
2. the under-accrual of warranty expenses

When excluding the impact of these accounting manipulations and distortions, we calculate that the company's adjusted Q4 2017 gross margin was 20.4%. Thus, we estimate that its reported Q4 2017 gross margin was inflated by 16.1% or 336 bps.

Q4 2017 Results Artificially Inflated By Accelerated Deferred Revenue Amortization

A common accounting gimmick that companies can and have used to temporarily inflate their revenue and profits is to accelerate the amortization of deferred revenue. In Q4 2017, ENPH used this accounting gimmick.

As disclosed in its [FY 2017 10K](#), on October 1st, ENPH reduced the amortization period of its deferred Envoy software revenue from 10 years to 6.5 years. The company justified this change by claiming that sufficient data had become available which allowed it to more accurately determine the service period of its Envoy system. This change increased ENPH's reported Q4 2017 revenue and gross profit by \$2.6m:

During the fourth quarter of 2017 the Company determined historical user data was available to adequately assess the period over which the service obligation was met. As a result, the Company shortened the estimated service period of the Enlighten from 10 years to 6.5 years effective October 1, 2017. **The impact of the change is estimate was an increase to revenue and earnings in the fourth quarter of 2017 of approximately \$2.6 million...** (Source: ENPH FY 2017 10K, Pg. 58)

While it is hard to say whether reducing the amortization period was justified, we view the timing of this change as quite suspicious. That being said, what is beyond dispute is that this \$2.6m boost to revenue and gross profit was artificial in nature and should have been excluded from Non-GAAP results.

One more thing: Our research indicates that this accelerated deferred revenue was recognized at an inflated margin. Based on disclosures provided in its [Q1 2018 10Q](#), ENPH's deferred software costs appear to have amounted to 20% of its deferred revenue balance as of 3/31/2018. This suggests that the company should have recognized the \$2.6m of accelerated deferred revenue at an 80% margin, rather than the 100% margin reported. *(Note: We used 3/31/2018 data because ENPH did not provide a breakout of its deferred software costs prior to Q1 2018)*

Q4 2017 Results Further Inflated By Under-Accrual Of Warranty Expenses

In Q4 2017, ENPH's warranty expenses amounted to \$1.4m or 1.8% of sales. This level of warranty expenses, while not as egregiously low as it was in Q3 2017, was still meaningfully lower than the company's historical average.

If ENPH had accrued a more normalized level of warranty expenses – the 2.5% of sales it accrued on average from FY 2014 to Q2 2017 – then we calculate that its warranty expenses in Q4 2017 would have amounted to \$2.0m. Based on this, we estimate that ENPH's Q4 2017 gross profit was further inflated by \$0.6m from the under-accrual of warranty expenses.

| Q4 2017: Est. Gross Profit Inflation From Under-Accrual Of Warranty Expenses | |
|---|----------------|
| <i>(\$ in millions)</i> | Q4 2017 |
| Reported Revenue | \$79.7 |
| (*) Avg Warranty Expenses From Q1'16 to Q2'17 | 2.5% |
| Normalized Warranty Expenses | \$2.0 |
| (-) Reported Warranty Expenses | (\$1.4) |
| Estimated Gross Profit Inflation | \$0.6 |

Source: ENPH 10Ks and 10Qs. Prescience Point estimates.

PP Estimates That ENPH's Q4 2017 Gross Margin Was Inflated By 16.1% Or 336 Bps

In this section, we have provided evidence which indicates that ENPH's Q4 2017 revenue and gross profit were both inflated by \$2.6m from the accelerated amortization of deferred revenue. We have also provided analysis which indicates that its gross profit in the quarter was further inflated by \$0.6m from the under-accrual of warranty expenses.

As shown in the table below, after adjusting ENPH's results to exclude the impact of these items, we calculate that its adjusted Q4 2017 gross margin was 20.8%. Thus, we estimate that its reported Q4 2017 gross margin was inflated by 16.1% or 336 bps. We also estimate that its reported Q4 2017 revenue and gross profit were inflated by 3.4% and 20.1%, respectively.

| Prescience Point Adjusted Q4 2017 Financials | |
|---|----------------|
| <i>(\$ in millions)</i> | Q4 2017 |
| Reported Revenue | \$79.7 |
| (-) Benefit From Accelerated Amortization Of Deferred Revenue | (\$2.6) |
| PP Adjusted Non-GAAP Revenue | \$77.1 |
| Revenue, % Overstatement in Reported Financials | 3.4% |
| Reported Non-GAAP Gross Profit | \$19.3 |
| (-) Benefit From Under-Accrual Of Warranty Expenses | (\$0.6) |
| (-) Benefit From Accelerated Amortization Of Deferred Revenue | (\$2.6) |
| PP Adjusted Non-GAAP Gross Profit | \$16.0 |
| <i>PP Adjusted Non-GAAP Gross Margin</i> | <i>20.8%</i> |
| <i>Reported Non-GAAP Gross Margin</i> | <i>24.2%</i> |
| Gross Profit, % Overstatement in Reported Financials | 20.1% |
| Gross Margin, % Overstatement in Reported Financials | 16.1% |

Source: ENPH 10Ks. Prescience Point estimates.

Q1 2018: Accounting Shenanigans Reach Extreme And Potentially Fraudulent Heights (GM Inflated By 40.7% Or 765 Bps, Revenue Inflated By 11.9%)

It gets much worse.

In Q1 2018, ENPH reported that its Non-GAAP gross margin had expanded yet again to 26.5%. This represented an astounding 43.7% or 804 bps increase from its reported gross margin of 18.4% in Q2 2017, the last quarter prior to Mr. Kothandaraman's promotion to CEO.

On the surface, the massive increase in gross margin ENPH reported in Q1 2018 simply did not add up. Consider that from Q2 2017 to Q1 2018, ENPH's revenue declined by 6.3% from \$74.7m to \$70.0m, while during that same timeframe its inverter volume also declined by 21.2% from 775K to 611K. Historically, when revenue and volume have declined, ENPH's gross margin has come under pressure due to the lower absorption of fixed costs. This is exactly what happened last year in Q1 2017:

Total revenue for the first quarter of 2017 was \$54.8 million, a decrease of 40% sequentially and a decrease of 15% compared to the first quarter of 2016...GAAP gross margin was 12.9% and non-GAAP gross margin was 13.3%. **Gross margin was lower than expected in the first quarter, primarily as a result of cost absorption on decreased revenue volume.** (Source: [ENPH Q1 2017 earnings call](#))

We see two possible explanations for ENPH's inexplicable margin improvement: Either Mr. Kothandaraman is an operational magician capable of generating financial results which defy logic, or ENPH's results were once again inflated by accounting shenanigans. We believe it is the latter.

Our research indicates that ENPH used manipulative and potentially fraudulent accounting practices which inflated its Q1 2018 results far beyond recognition.

During our review of ENPH's latest 10Q, we discovered alarming discrepancies in its disclosures and financial statements which indicate that it improperly and prematurely recognized an estimated \$6.3m of deferred revenue in the quarter. Additionally, the company's results in Q1 2018 were further boosted by its questionable decision to accelerate the amortization of its deferred Envoy hardware revenue upon adopting ASC 606.

When excluding the impact of these accounting shenanigans, we calculate that ENPH's adjusted Q1 2018 gross margin was just 18.8%. Thus, we estimate that its **reported Q1 2018 gross margin was inflated by a whopping 40.7% or 765 bps!**

ENPH Changes Its Envoy Hardware Revenue Accounting, Creating A Large Cookie Jar For Financial Inflation

Like warranty expense accounting, deferred revenue accounting is prone to manipulation. Over the years, numerous public companies have been exposed for using deferred revenue reserves as a cookie jar to juice their earnings. We believe ENPH is another such company.

As we already discussed, in Q4 2017, ENPH dipped into its deferred revenue cookie jar by accelerating the amortization of its deferred software revenue. Rather than stop there, it appears that the company's deferred revenue shenanigans continued and only became more severe in the following quarter.

In Q1 2018, ENPH instituted a major accounting change which we believe opened the door for it to take its deferred revenue shenanigans to another level. More specifically, on January 1, 2018, ENPH adopted the new ASC 606 accounting standard. Prior to adopting ASC 606, ENPH deferred only the software portion of its Envoy revenue, while the hardware revenue was recognized at the time of sale. However, with the adoption of ASC 606, the company is / was now deferring both the hardware and software portion of its Envoy revenue:

Under ASC 605 the Company's Envoy communications device and Enlighten service were considered two units of accounting, and the portion of the consideration related to the hardware was recognized at the time of sale with the remaining consideration deferred and recognized over the estimated service period. Under ASC 606 the full consideration for these products represents a single performance obligation and is deferred and recognized over the estimated service period. (Source: ENPH Q1 2018 10Q, pg. 8-9)

Due to this change in accounting treatment for its Envoy hardware revenue, ENPH had to make significant adjustments to its financial statements. These adjustments included the addition of \$77.5m of deferred Envoy hardware revenue liabilities to its balance sheet on January 1, 2018.

Results for reporting periods beginning after January 1, 2018 are presented under Topic 606...This treatment resulted in **an increase to deferred revenue of \$77.5 million**, an increase in deferred costs of \$43.4 million and an increase in accumulated deficit of \$34.1 million upon adoption of ASC 606. (Source: ENPH Q1 2018 10Q, pg. 9)

With this addition, ENPH's deferred revenue balance almost tripled from \$45.6m as of 12/31/2017 to \$123.1m as of 1/1/2018 (\$45.6m of deferred Envoy software revenue + \$77.5m of deferred Envoy hardware revenue). As we will detail below, our research indicates that the company took advantage of its now much more sizable deferred revenue cookie jar to inflate its Q1 2018 results far beyond reality.

Accounting Irregularities Indicate That ENPH Improperly Recognized \$6.3m Of Deferred Revenue In Q1 2018

In its latest 10Q, ENPH reported that deferred revenue recognition accounted for \$10.6m of the \$70.0m of total revenue it generated in Q1 2018. However, based on accounting irregularities we uncovered in its financial statements and disclosures, we believe that deferred revenue actually accounted for \$16.9m – \$6.3m more than what was reported – of its total revenue in the quarter. We believe this additional \$6.3m of deferred revenue which ENPH seemingly hid from investors was improperly recognized in violation of GAAP.

- **ENPH reported that deferred revenue amounted to \$10.6m or 15.2% of its total revenue in Q1 2018:** Because ENPH was now deferring both its Envoy software and hardware revenue, the company reported a sizable amount of deferred revenue recognition in Q1 2018. As highlighted in the below table, on pg. 10 of its latest 10Q, the company disclosed that it recognized \$10.6m of deferred revenue during the quarter:

| | March 31, 2018 |
|------------------------------|----------------|
| Contract Liabilities | |
| Balance on January 1, 2018 | \$ 116,830 |
| Revenue recognized | (10,601) |
| Increase due to billings | 9,444 |
| Balance as of March 31, 2018 | \$ 115,673 |
| Deferred revenue, current | 37,408 |
| Deferred revenue, noncurrent | 78,265 |

- **We calculate that deferred revenue should have amounted to \$16.9m or 24.2% of ENPH's total revenue in Q1 2018:** The amount of deferred revenue recognized in a given period can be derived as follows:

Beginning deferred revenue balance + Billings – Ending deferred revenue balance

In its Q1 2018 10Q, ENPH reported that Envoy billings amounted to \$9.4m in the quarter, and that its ending deferred revenue balance was \$115.7m. Additionally, we calculated earlier that the company's beginning deferred revenue balance (as of 1/1/2018) pro forma for the adoption of ASC 606 was \$123.1m. Using these figures, we calculate that ENPH should have recognized \$16.9m of deferred revenue in Q1 2018, \$6.3m higher than reported.

PP Calculation Of Q1 2018 Deferred Revenue Recognition

| (\$ in millions) | Q1 2018 |
|---|---------------|
| Beginning Deferred Revenue Balance | \$123.1 |
| (+) Envoy Billings | \$9.4 |
| (-) Ending Deferred Revenue Balance | (\$115.7) |
| Implied Q1 2018 Deferred Revenue Recognition | \$16.9 |

Source: ENPH 10Qs. Prescience Point estimates.

- **Discrepancy in beginning deferred revenue balance indicates that ENPH improperly recognized \$6.3m of deferred revenue in Q1 2018:** On pg. 10 of its latest 10Q, ENPH reported that its beginning deferred revenue balance in Q1 2018 was \$116.8m, or \$6.3m less than the \$123.1m we calculated. As shown in the table below, this discrepancy was the source of the \$6.3m difference between the \$10.6m of deferred revenue recognition ENPH reported versus the \$16.9m we calculated:

Q1 2018 Deferred Revenue Recognition: Implied vs. Reported

| (\$ in millions) | Implied | Reported | Difference |
|---|---------------|---------------|--------------|
| Beginning Deferred Revenue Balance | \$123.1 | \$116.8 | \$6.3 |
| (+) Envoy Billings | \$9.4 | \$9.4 | \$0.0 |
| (-) Ending Deferred Revenue Balance | (\$115.7) | (\$115.7) | \$0.0 |
| Q1 2018 Deferred Revenue Recognition | \$16.9 | \$10.6 | \$6.3 |

Source: ENPH 10Qs. Prescience Point estimates.

The accounting for the addition that ENPH made to its deferred revenue balance should not be subject to much discretion. It should simply be an $A + B = C$ calculation. Therefore, we do not believe that \$6.3m of deferred revenue could have simply vanished into thin air.

Instead, we believe that ENPH's beginning deferred revenue balance in Q1 2018 was actually \$123.1m, and thus the company recognized \$6.3m more deferred revenue than what it reported. Given the company's apparent attempts to hide the recognition of this revenue from investors, we believe it was improperly and prematurely recognized in violation of GAAP.

- **Discrepancies in cash flow statement support our conclusion that ENPH improperly recognized \$6.3m of deferred revenue in Q1 2018:** In general, the magnitude of changes in working capital on the balance sheet should come close to matching those in the cash flow statement. For example, if AR increases by \$10 on the balance sheet, then \$10 should be subtracted from operating CF. For working capital liabilities, the opposite is true. If a working capital liability increases by \$10, then \$10 should be added to operating CF. In other words, absent accounting manipulations, large discrepancies between the two statements should not exist.

As highlighted in the below table, in Q1 2018, there was a \$7.6m discrepancy between the change in prepaid expenses & other assets reflected in ENPH's balance sheet vs. what was implied by its cash flow statement, while there was a \$6.3m discrepancy between the change in deferred revenue liabilities reflected in its balance sheet vs. what was implied by its cash flow statement. These large discrepancies, in our view, indicate that ENPH improperly manipulated its cash flow statement in Q1 2018.

Working Capital Discrepancies: Q1 2018 CF Statement vs. Balance Sheet

| (\$ in millions) | Cash Flow From WC Changes | | Difference |
|--|---------------------------|----------|------------|
| | Q1'18 BS ⁽¹⁾ | Q1'18 CF | |
| Accounts receivable | \$9.7 | \$9.1 | (\$0.6) |
| Inventory | \$7.5 | \$7.5 | (\$0.0) |
| Prepaid expenses and other assets ⁽²⁾ | \$6.5 | (\$1.0) | (\$7.6) |
| Accounts payable, accrued and other liabilities ⁽³⁾ | (\$12.4) | (\$11.7) | \$0.8 |
| Warranty obligations | \$0.8 | \$0.8 | \$0.0 |
| Deferred revenues ⁽⁴⁾ | (\$7.5) | (\$1.2) | \$6.3 |

Source: ENPH 10Qs.

(1) Implied cash flow based on changes in working capital balance from Q4'17 to Q1'18.

(2) Balance sheet change in Q1'18 is pro forma for \$44.2m of additional deferred costs (\$43.4m + \$0.8m).

(3) Balance sheet change in Q1'18 is pro forma for \$5.6m of additional deferred liabilities.

(4) Balance sheet change in Q1'18 is pro forma for \$77.5m of additional deferred Envoy hardware revenue.

Based on common sense, a company that is manipulating its cash flow statement is likely trying to hide something. So, what is ENPH trying to hide? We believe the answer is clear: the improper recognition of \$6.3m of revenue in Q1 2018.

ENPH Further Inflated Its Q1 2018 Revenue By An Estimated \$1.2m From Accelerated Deferred Revenue Amortization

As if the \$6.3m boost was not enough, ENPH appears to have dipped further into its deferred revenue cookie jar, providing an additional boost to its Q1 2018 results.

As disclosed in its latest 10Q, ENPH accelerated the recognition of its \$77.5m of newly deferred Envoy hardware revenue by amortizing it over 6.5 years rather than 10 years. With this change, both the software and hardware portion of its deferred Envoy revenue were now being amortized at the same accelerated pace.

Commissions related to the Company's sale of monitoring hardware and service are capitalized and amortized over the period of the associated revenue, which is 6.5 years. (Source: ENPH Q1 2018 10Q, pg. 9)

Unlike in Q4 2017, ENPH did not disclose just how much its results were boosted in Q1 2018 from accelerated deferred revenue amortization. That being said, we can use a comparison of reported deferred revenue to Envoy billings to come up with a reasonable estimation.

Because Envoy billings represents the actual amount of Envoy sales in a given period, we can use this metric to gauge how much deferred revenue was inflated in the same period. In its latest 10Q, ENPH reported that Envoy billings amounted to \$9.4m in Q1 2018. Subtracting this amount from the \$10.6m of deferred revenue ENPH reported in the quarter, we estimate that accelerated deferred revenue amortization inflated the company's Q1 2018 revenue by \$1.2m:

Impact Of Accelerated Deferred Revenue Amortization On Q1 2018 Revenue

| (\$ in millions) | Q1 2018 |
|--|--------------|
| Reported Revenue Recognition | \$10.6 |
| (-) Envoy Billings | (\$9.4) |
| Estimated Revenue Inflation From Accelerated Amortization | \$1.2 |

Source: ENPH 10Qs. Prescience Point estimates.

Previously, we provided analysis indicating that ENPH had improperly and prematurely recognized \$6.3m of deferred revenue in Q1 2018. Adding this amount to the \$1.2m of estimated revenue inflation from accelerated deferred revenue amortization, we calculate that Q1 2018 revenue was inflated by a total of \$7.5m:

Estimated Total Revenue Inflation In Q1 2018

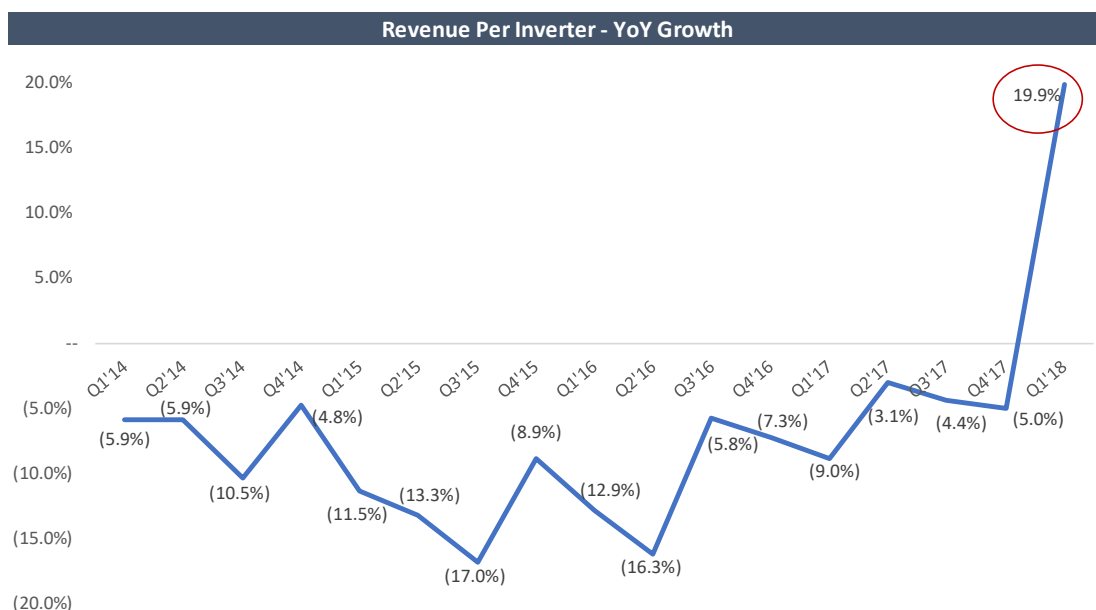
| (\$ in millions) | Q1 2018 |
|--|--------------|
| Inflation From Improper Deferred Revenue Recognition | \$6.3 |
| Inflation From Accelerated Deferred Revenue Amortization | \$1.2 |
| Estimated Total Revenue Inflation From Accounting Shenanigans | \$7.5 |

Source: ENPH 10Qs. Prescience Point estimates.

Unusually Large Increase In Revenue Per Inverter Confirms Our Analysis, In Our View

From Q1 2017 to Q1 2018, ENPH's reported inverter volume increased just 6.6% from 573K to 611K. Despite this modest increase in volume, ENPH's reported revenue increased a robust 27.8% during that same time period from \$54.8m to \$70.0m.

At a high level, the driver of this large YoY increase in revenue was a mind-boggling 19.9% YoY increase in revenue per inverter (total revenue ÷ inverter volume), from \$95.6 in Q1 2017 to \$114.5 in Q1 2018. As shown in the below graph, this large increase in revenue per inverter was way out of line with historical trends, as ENPH's revenue per inverter had declined YoY in every single quarter from Q1 2014 to Q4 2017,



Source: ENPH earnings reports.

In our view, this unusually large increase in revenue per inverter confirms our analysis that ENPH's Q1 2018 revenue was significantly inflated from manipulative and potentially fraudulent deferred revenue accounting. The reason being, absent accounting shenanigans, it does not appear possible that revenue per inverter could have increased by such a large amount given the nature of ENPH's business.

Consider that there are two things which can legitimately increase revenue per inverter 1) an increase in pricing, and 2) an increase in the % of non-inverter product sales. But, neither of these could have caused the 19.9% YoY increase in revenue per inverter reported in the quarter based on the following:

- MLPE component prices typically decline a meaningful amount year-after-year:** Like other solar components, MLPE component prices are under constant pricing pressure and typically decline around mid-to-high single digits every year. ENPH management recently acknowledged that the ASP of its microinverters generally decline at this rate on its Q4 2017 earnings call. Yet, just one quarter later in Q1 2018, its revenue per inverter increased massively. What could have possibly changed?

We have modeled a 2% reduction every quarter in 2018. So that's what we've modeled and all our financials, all our operating plan 30-20-10 et cetera takes into account that. (Source: [ENPH Q4 2017 earnings call](#))

- The % of non-inverter product sales should not fluctuate wildly from quarter-to-quarter:** ENPH generates almost all of its non-inverter product sales from 1) cables & accessories, and 2) the Envoy system. According to several solar distributors that we recently spoke with, cables & accessories and the Envoy system are sold together, along with the actual microinverters, as a system rather than separately.

Because these components are purchased together, the % of non-inverter product sales should stay relatively stable from period-to-period. Therefore, it is highly unlikely that the % of non-inverter product sales could have increased by such a large amount in Q1 2018.

The 19.9% YoY increase in revenue per inverter also indicates that our estimate that Q1 2018 revenue was inflated by \$7.5m is a fairly accurate one.

In support, consider that after subtracting \$7.5m from its reported Q1 2018 revenue of \$70.0m, the company's revenue per inverter declines from \$114.5 to \$102.3 which is much more in-line with the revenue per inverter of \$95.6 it reported last year in Q1 2017:

| Adjusted Q1 2018 Revenue Per Inverter | |
|--|----------------|
| <i>(\$ in millions)</i> | Q1 2018 |
| Reported Revenue | \$70.0 |
| (-) Excess deferred revenue | (\$7.5) |
| Adjusted Revenue | \$62.5 |
| (÷) Inverter Volume | 611K |
| Adjusted Revenue Per Inverter | \$102.3 |

Source: ENPH 10Qs. Prescience Point estimates.

PP Estimates That ENPH's Q1 2018 Gross Margin Was Inflated By 40.7% Or 765 Bps

In this section, we have presented analysis which indicates that ENPH's Q1 2018 revenue was inflated by an estimated \$7.5m from manipulative and potentially fraudulent deferred revenue accounting.

We estimate that this \$7.5m of excess deferred revenue was recognized at, or close to, a 100% margin based on the following:

- ENPH's revenue per inverter in Q1 2018 increased 19.9% YoY and 12.2% QoQ. However, despite such a large increase in revenue per inverter, its COGs per inverter in Q1 2018 remained relatively flat, increasing just 1.7% YoY and 3.7% QoQ. This indicates that ENPH incurred very little if any costs for the estimated \$7.5m of excess deferred revenue it recognized.

| Q1 2018 Revenue and COGS Per Inverter: YoY and QoQ Comparison | | | | |
|--|----------------|---------|----------------------|---------|
| <i>(\$ in millions)</i> | YoY Comparison | | QoQ Comparison | |
| | Q1'17 | Q1'18 | Q4'17 ⁽¹⁾ | Q1'18 |
| Revenue Per Inverter | \$95.6 | \$114.5 | \$102.1 | \$114.5 |
| % Growth | | 19.9% | | 12.2% |
| COGS Per Inverter | \$82.8 | \$84.2 | \$81.2 | \$84.2 |
| % Growth | | 1.7% | | 3.7% |

Source: ENPH Earnings Releases.

(1) Revenue per inverter pro forma for the exclusion of \$2.6m of accelerated deferred revenue.

- Further, as we discussed earlier, ENPH's Q4 2017 revenue was boosted by \$2.6m from accelerated deferred revenue amortization. The company appears to have improperly recognized this excess deferred revenue at an inflated margin of 100%, when disclosures in its filings indicate that it should have been recognized at an ~80% margin. We believe it is likely that this seemingly improper behavior by management continued in Q1 2018.

As shown in the table below, after adjusting ENPH's results to exclude the impact of its deferred revenue accounting shenanigans, we calculate that its adjusted Q1 2018 gross margin was just 18.8%. Thus, we estimate that its reported Q1 2018 gross margin was inflated by 40.7% or 765 bps! We also estimate that its reported Q1 2018 revenue and gross profit were inflated by 11.9% and 57.5%, respectively.

| Prescience Point Adjusted Q1 2018 Financials | |
|---|----------------|
| <i>(\$ in millions)</i> | Q1 2018 |
| Reported Revenue | \$70.0 |
| (-) Benefit From Accelerated Amortization Of Deferred Revenue | (\$1.2) |
| (-) Benefit From Improper Deferred Revenue Recognition | (\$6.3) |
| PP Adjusted Non-GAAP Revenue | \$62.5 |
| Revenue, % Overstatement in Reported Financials | 11.9% |
| Reported Non-GAAP Gross Profit | \$18.5 |
| (+) Reduction From Over-Accrual Of Warranty Expenses | \$0.7 |
| (-) Benefit From Accelerated Amortization Of Deferred Revenue | (\$1.2) |
| (-) Benefit From Improper Deferred Revenue Recognition | (\$6.3) |
| PP Adjusted Non-GAAP Gross Profit | \$11.8 |
| <i>PP Adjusted Non-GAAP Gross Margin</i> | <i>18.8%</i> |
| <i>Reported Non-GAAP Gross Margin</i> | <i>26.5%</i> |
| Gross Profit, % Overstatement in Reported Financials | 57.5% |
| Gross Margin, % Overstatement in Reported Financials | 40.7% |

Source: ENPH 10Qs. Prescience Point estimates.

Note: ENPH's warranty accruals in Q1 2018 amounted to 3.6% of sales which, unlike in Q3 2017 and Q4 2017, exceeded its historical average from FY 2014 to Q2 2017 of 2.5%. Thus, we included an add-back of \$0.7m in our adjusted Q1 2018 financials for the over-accrual of warranty expenses.

(Former) CFO Bert Garcia Was Unable To Provide Credible Answers When Questioned

Given the gravity of our findings, we were hoping that ENPH's (former) CFO Bert Garcia could provide some clarity on the issues we identified. During a call, Mr. Garcia provided insightful answers as related to the company's operations, but could not provide credible answers when pressed to explain the irregularities we identified in ENPH's financial reports – Yet another glaring red flag suggesting that ENPH fabricated its Q1 2018 results.

The most relevant takeaways from the conversation with Mr. Garcia are provided below:

- **Mr. Garcia was unable to offer any explanation for the accounting discrepancies we identified:** During the conversation with Mr. Garcia, he was asked to provide an explanation for the various accounting discrepancies we discovered in ENPH's Q1 2018 financial statements and disclosures. For example, he was asked to explain how the reported deferred revenue balance as of 1/1/2018 could have been \$116.8m when the disclosures it provided indicate that it should have been \$123.1m instead.

Alarming, he was unable to offer any explanation at all. Instead he stated that he was not aware of this discrepancy and that he would "have my controller take a look at that."

- **Mr. Garcia claimed that the anomalous increase in revenue per inverter was due to increased sales of...cables & accessories!?:** Mr. Garcia was also asked how revenue per inverter, the primary driver of ENPH's margin expansion in Q1 2018, could have possibly increased almost 20% YoY. In response, he explained that this increase was driven by an increase in the % of non-inverter products revenue. When pressed to be more specific, he claimed that the sales of cables & accessories had experienced a significant uptick during the quarter.
- **Based on overwhelming evidence, cables & accessories revenue could not have been the cause of the revenue per inverter increase:** Mr. Garcia's explanation does not hold water for a number of reasons. To begin with, cables & accessories revenue typically accounts for only a small portion of ENPH's total revenue (<10% of total revenue based on our analysis). As such, cables & accessories revenue would have had to increase an implausibly large amount to cause a 19.9% YoY increase in revenue per inverter. To be more specific, as detailed in the Appendix, we estimate that cables & accessories revenue would have had to increase a whopping **303.7% YoY!**

Further, as we discussed earlier in this section, the components for ENPH's microinverter system are purchased together rather than separately. This was confirmed by several solar distributors with whom we spoke. Because the system components are purchased together, the % of cables & accessories revenue should stay around the same level from period-to-period.

Finally, cables are generally a fairly commoditized, lower margin product. Therefore, if cables & accessories revenue had actually increased by such a large amount, then its gross margin likely should have come under pressure. Yet, puzzlingly, ENPH's gross margin in Q1 2018 expanded significantly.

Speaking Of Mr. Garcia, He Just Left The Company

If Mr. Garcia's inability to explain ENPH's numbers is a severe red flag, then his recent departure is a blaring siren.

On May 1, 2018, ENPH [announced](#) that Mr. Garcia was resigning as CFO and would be departing the company at the end of June:

Enphase Energy...today announced that its Chief Financial Officer, Bert Garcia, is leaving the Company to pursue other opportunities. Enphase has an external search underway to identify a replacement. Garcia will continue as CFO until June 30, 2018... (Source: ENPH 5/1/2018 press release)

On the surface, Mr. Garcia's sudden departure makes little sense. Why would he leave right at the moment when the company's financial performance appears to finally be turning around?

However, given ENPH's increasingly questionable and potentially fraudulent accounting practices, his sudden departure makes a lot more sense. Based on the evidence, we suspect Mr. Garcia jumped ship because 1) he was not comfortable putting his name behind the numbers ENPH was reporting to investors, and/or 2) he wanted to avoid any potential fallout that would result if the company's accounting issues were eventually exposed.

Even More Accounting Shenanigans: ENPH's Results Further Inflated By A Warranty Accounting Change Initiated In FY 2014

But wait, there's more!

To this point, we have adjusted ENPH's financial results from Q3 2017 to Q1 2018 to exclude the impact of the accounting shenanigans which occurred under the watch of its new CEO. In this section, we will further adjust its financial results over the past three quarters to exclude the impact of a questionable accounting change initiated under the watch of its former CEO.

In FY 2014, ENPH changed its warranty accounting from an undiscounted method to a much more unorthodox discounted method whereby its warranty expenses are calculated on a net present value basis. Our research indicates that ENPH resorted to this unusual method of warranty accounting for one simple reason – to inflate its financial performance.

Since switching to discounted accounting in FY 2014, ENPH's warranty expenses have averaged 2.4% of sales. However, based on our analysis, we estimate that its average warranty expenses would have been significantly higher at 6.6% of sales if it had continued to use an undiscounted method.

We believe ENPH's results should be further adjusted to eliminate the effect of discounted accounting. After adjusting its warranty expenses to 6.6% of sales, we calculate that ENPH's 'actual' gross margin in Q3 2017, Q4 2017 and Q1 2018 was 15.6%, 16.9% and 15.1%, respectively. Thus, we estimate that its **reported gross margin in Q3 2017, Q4 2017 and Q1 2018 was inflated by an astounding 40.3%, 43.2% and 75.3%, respectively!**

ENPH Suddenly Changed Its Warranty Accounting In FY 2014

Prior to FY 2014, ENPH accounted for warranty expenses on an undiscounted basis. Using this method, the warranty expense is equal to the amount of claims projected for warranties issued during the period.

In FY 2014, ENPH curiously changed to a discounted method of warranty accounting. Using this method, the warranty expense in a given period is calculated by discounting the estimated future claims for warranties issued during the period to present value.

The following disclosure from ENPH's FY 2017 10K summarizes the company's current method of warranty accounting:

The Company estimates the fair value of warranty obligations by calculating the warranty obligations in the same manner as for sales prior to January 1, 2014 and applying an expected present value technique to that result...Warranty obligations initially recorded at fair value at the time of sale will be subsequently re-measured to fair value at each reporting date. In addition, the fair value of the liability will be accreted over the corresponding term of the warranty of up to 25 years using the interest method. (Source: ENPH FY 2017 10K, pg. 61)

We Believe ENPH Switched To Discounted Accounting To Artificially Depress Its Warranty Expenses

In our knowledge, almost all companies calculate warranty expenses on an undiscounted basis. This includes ENPH's direct competitor SEDG, as well as other publicly traded solar companies such as Vivant Solar and First Solar. In fact, ENPH is the only public company which we have come across which uses discounted warranty accounting.

So why did ENPH decide to use such an unorthodox method of warranty accounting? We believe that the company did so in order to artificially reduce its warranty expenses and, in turn, inflate its reported gross margin.

Due to the effect of discounting future claims to present value, changing to discounted accounting results in an immediate reduction in warranty expenses. In its [FY 2013 10K](#), the company actually acknowledged that its future warranty expenses would be lower due to the effect of discounting:

Warranty obligations recorded at fair value are **expected to be lower, as compared to our previous accounting** at estimated costs, primarily due to the effects of discounting to net present value. (Source: ENPH FY 2013 10K, pg. 40)

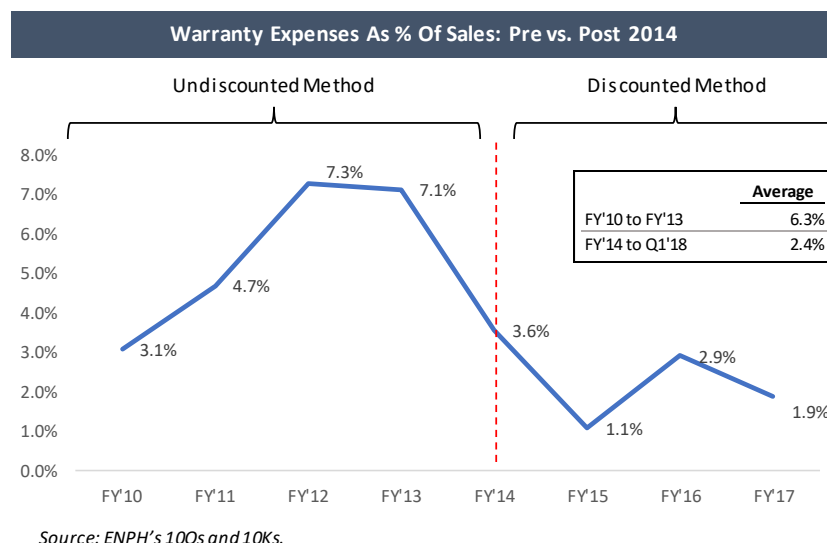
How much changing to discounted accounting reduces warranty expenses is largely dependent upon the discount rate used. If the discount rate is relatively low, then there will likely not be much of a reduction. However, if the rate is high, then the reduction will likely be significant.

As disclosed on pg. 14 of its Q1 2018 10Q, ENPH currently uses an extremely high discount rate of 16% – 17% in its warranty model. Given this aggressive discount rate, we believe that switching to discounted warranty accounting has significantly depressed ENPH's ongoing warranty expenses.

As of March 31, 2018, the significant unobservable inputs used in the fair value measurement of the Company's liabilities designated as Level 3 are as follows:

| Item Measured at Fair Value | Valuation Technique | Description of Significant Unobservable Input | Percent Used (Weighted-Average) |
|--|-----------------------|---|---------------------------------|
| Warranty obligations for microinverters sold since January 1, 2014 | Discounted cash flows | Profit element and risk premium | 16% |
| | | Credit-adjusted risk-free rate | 17% |

The data supports our conclusion. As shown in the below figure, prior to switching to discounted warranty accounting, ENPH's average warranty expenses as a % of sales was 6.3% from FY 2010 to FY 2013. By comparison, since switching to discounted accounting in FY 2014, ENPH's average warranty expenses have been less than half that amount at just 2.4% of sales.



Comparison To SEDG Indicates That ENPH's Warranty Expenses Are Unsustainably Low

We believe that discounted warranty accounting has reduced ENPH's warranty expenses to an unsustainably low level. This becomes clear upon comparing ENPH's and SEDG's warranty expenses since FY 2014.

SEDG is a direct competitor to ENPH and is the largest provider of MLPE components in the solar industry with over \$600m in annual revenue. Over the years, there has been much debate in the industry regarding which solution is more reliable – ENPH's microinverters or SEDG's DC optimizers.

During our diligence, we interacted with several solar product distributors and solar industry consultants. Not one felt that ENPH's product was much more reliable than SEDG's. However, there were several who felt that SEDG's product was much more reliable than ENPH's. The reasons commonly cited were that microinverters,

1. have more components and thus have more points of failure; and
2. are placed on the roof and thus are exposed to harsher weather conditions

For example, provided below is an email that we received from a solar installer in the Virginia area expressing such sentiments:

Thank you for contacting us.

Yes, we do install Enphase microinverters in cases that specifically call for it. We use them as little as possible as they add many more potential failure points to a system and have a number of drawbacks. But yes, we do use them.

What are the addresses of the properties? We'd like to take a look at them on GIS. One thing to keep in mind is that in Blackburg we have to adhere to the fire code setbacks - 3' from ridges, 1-1/2' from hips and valleys and 3' from rakes.

Thank you!

██████████

In our view, the best measure of reliability is the actual amount of warranty claims that a company is paying out relative to its level of sales. The higher the amount of claims as a % of sales, the less reliable the products likely are.

As shown in the table below, from FY 2014 – Q1 2018, ENPH's warranty claims payments amounted to 2.4% of sales, while during that same time period SEDG's claims payments were 22.2% lower at 1.9% of sales.

Historical Warranty Claims: ENPH vs. SEDG

| (\$ in millions) | FY'14 | FY'15 | FY'16 | FY'17 | Q1'18 | Total |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| ENPH: | | | | | | |
| Reported Revenue | \$343.9 | \$357.2 | \$322.6 | \$286.2 | \$70.0 | \$1,379.9 |
| Reported Warranty Claims - \$ | \$8.8 | \$7.3 | \$8.5 | \$7.0 | \$1.7 | \$33.3 |
| Warranty Claims - % | 2.6% | 2.0% | 2.6% | 2.5% | 2.4% | 2.4% |
| SEDG: | | | | | | |
| Revenue | \$215.4 | \$424.7 | \$490.0 | \$607.0 | \$209.9 | \$1,947.0 |
| Warranty Claims - \$ | \$4.4 | \$7.6 | \$6.6 | \$14.2 | \$3.8 | \$36.5 |
| Warranty Claims - % | 2.0% | 1.8% | 1.3% | 2.3% | 1.8% | 1.9% |

Source: ENPH and SEDG 10Ks and 10Qs.

Given all of the evidence indicating that ENPH's products are less reliable, it would stand to reason that its warranty expenses should be higher than SEDG's. However, this is not the case.

As shown in the table below, from FY 2014 to Q1 2018, ENPH's warranty expenses amounted to just 2.4% of sales, while during that same time period SEDG's warranty expenses were 109.1% higher at 5.1% of sales! Thus, despite paying out more claims on a relative basis than SEDG, ENPH is accruing less than half the amount of warranty expenses. Based on this comparison, ENPH's accruals for warranty expenses since FY 2014 appear to have been woefully insufficient.

Historical Warranty Expenses: ENPH vs. SEDG

| (\$ in millions) | FY'14 | FY'15 | FY'16 | FY'17 | Q1'18 | Total |
|------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| ENPH: | | | | | | |
| Revenue | \$343.9 | \$357.2 | \$322.6 | \$286.2 | \$70.0 | \$1,379.9 |
| Warranty Expenses - \$ | \$12.3 | \$3.9 | \$9.4 | \$5.4 | \$2.5 | \$33.5 |
| Warranty Expenses - % | 3.6% | 1.1% | 2.9% | 1.9% | 3.6% | 2.4% |
| SEDG: | | | | | | |
| Revenue | \$215.4 | \$424.7 | \$490.0 | \$607.0 | \$209.9 | \$1,947.0 |
| Warranty Expenses - \$ | \$13.1 | \$24.2 | \$13.7 | \$34.7 | \$13.2 | \$98.8 |
| Warranty Expenses - % | 6.1% | 5.7% | 2.8% | 5.7% | 6.3% | 5.1% |

Source: ENPH and SEDG 10Ks and 10Qs.

PP Estimates That ENPH's 'Actual' Q3'17, Q4'17 and Q1'18 Gross Margin Was 15.6%, 16.9% and 15.1%, Respectively

We believe that ENPH's results from Q3 2017 to Q1 2018 should be further adjusted to include a level of warranty expenses which is more in-line with SEDG's. By doing so, we can derive a more accurate estimate of ENPH's gross margin performance over the past three quarters.

From FY 2014 to Q1 2018, SEDG's warranty expenses amounted to 5.1% of sales, while its warranty claims were 1.9% of sales. This means that SEDG's warranty expenses were 2.7x greater than the actual amount of warranty claims it paid out to customers.

From FY 2014 to Q1 2018, ENPH's warranty expenses amounted to an average of 2.4% of sales. But if ENPH had expensed the same amount of warranty expenses relative to claims as SEDG, then its warranty expenses would have been significantly higher at 6.6% of sales (*SEDG warranty-to-claims ratio of 2.7 * ENPH average warranty claims of 2.4% of sales*).

We believe that 6.6% of sales represents a more appropriate level of warranty expenses for ENPH not only because it is more in-line with what SEDG is accruing, but it is also in-line with what ENPH was accruing prior to its change to discounted accounting – As calculated previously, from FY 2010 to FY 2013, the company's warranty expenses averaged 6.3% of sales.

Earlier in this report, we adjusted the company's financial results from Q3 2017 to Q1 2018 to exclude the impact of the accounting shenanigans initiated under its new CEO. In the table provided below, we have further adjusted its financials from Q3 2017 to Q1 2018 to exclude the impact of discounted accounting by increasing its warranty expenses in each quarter to 6.6% of sales.

After making this additional adjustment, we calculate that ENPH's 'actual' gross margin in Q3 2017, Q4 2017 and Q1 2018 was 15.6%, 16.9% and 15.1%, respectively. Thus, we estimate that its reported gross margin in Q3 2017, Q4 2017 and Q1 2018 was inflated by 40.3%, 43.2% and 75.3%, respectively! We also estimate that its reported gross profit in Q3 2017, Q4 2017 and Q1 2018 was inflated by 40.3%, 48.0% and 96.2%, respectively.

To put into perspective just how low the company's 'actual' gross margin is, consider that SEDG's reported Q1 2018 gross margin was 38.4%. This is 154.4% or 2330 bps higher than our estimate of ENPH's 'actual' Q1 2018 gross margin.

Prescience Point-Estimated 'Actual' Q3 2017 to Q1 2018 Financials

| (\$ in millions) | Q3 2017 | Q4 2017 | Q1 2018 |
|---|---------------|---------------|---------------|
| Reported Revenue | \$77.0 | \$79.7 | \$70.0 |
| (-) Benefit From Accelerated Amortization Of Deferred Revenue | \$0.0 | (\$2.6) | (\$1.2) |
| (-) Benefit From Improper Deferred Revenue Recognition | \$0.0 | \$0.0 | (\$6.3) |
| PP-Estimated 'Actual' Revenue | \$77.0 | \$77.1 | \$62.5 |
| Revenue, % Overstatement in Reported Financials | 0.0% | 3.4% | 11.9% |
| Reported Non-GAAP Gross Profit | \$16.8 | \$19.3 | \$18.5 |
| (-) Benefit From Under-Accrual Of Warranty Expenses | (\$4.8) | (\$3.7) | (\$1.6) |
| (-) Benefit From Accelerated Amortization Of Deferred Revenue | \$0.0 | (\$2.6) | (\$1.2) |
| (-) Benefit From Improper Deferred Revenue Recognition | \$0.0 | \$0.0 | (\$6.3) |
| PP-Estimated 'Actual' Non-GAAP Gross Profit | \$12.0 | \$13.0 | \$9.4 |
| <i>PP-Estimated 'Actual' Non-GAAP Gross Margin</i> | <i>15.6%</i> | <i>16.9%</i> | <i>15.1%</i> |
| <i>Reported Non-GAAP Gross Margin</i> | <i>21.8%</i> | <i>24.2%</i> | <i>26.5%</i> |
| Gross Profit, % Overstatement in Reported Financials | 40.3% | 48.0% | 96.2% |
| Gross Margin, % Overstatement in Reported Financials | 40.3% | 43.2% | 75.3% |


Source: ENPH filings with the SEC, Prescience Point estimates.

ENPH Is Significantly More Levered Than Reported

Due to its consistent under-accrual of warranty expenses since FY 2014, we believe that ENPH is significantly more levered and its liquidity position more precarious than what is reflected by its balance sheet.

From FY 2014 to Q1 2018, ENPH's reported warranty expenses averaged 2.4% of sales. But, as just estimated, we believe that 6.6% of sales represents a more appropriate level of warranty expenses for the company. Based on this difference, we estimate that ENPH has under-

accrued a total of \$57.1m of warranty expenses since FY 2014. This, by extension, implies that its reported warranty liabilities as of 3/31/2018 were understated by the same amount:

| Estimated Understatement Of Warranty Liabilities | |
|---|---------------|
| (\$ in millions) | |
| Normalized Warranty Expenses (% Of Sales) | 6.6% |
| (-) Reported Warranty Expenses (% Of Sales) ⁽¹⁾ | 2.4% |
| Estimated Under-Accrual Of Warranty Expenses (% Of Sales) | 4.1% |
|  | |
| Cumulative Revenue From FY 2014 To Q1 2018 | \$1,379.9 |
| (*) Estimated Under-Accrual Of Warranty Expenses (% Of Sales) | 4.1% |
| Estimated Understatement Of Warranty Liabilities (as of 3/31/2018) | \$57.1 |

Source: ENPH 10Ks and 10Qs. Prescience Point estimates.

(1) Represents average warranty expenses as % of sales from FY'14 to Q1'18.

As of 3/31/2018, ENPH's reported total debt balance (term loan + other debt + warranty liabilities) was \$81.4m. But after adding \$57.1m of incremental warranty liabilities, its total debt balance climbs to \$138.5m, 70.2% higher than reported:

| Adjusted Total Debt Balance | |
|---|----------------|
| (\$ in millions) | |
| | 3/31/2018 |
| Term Loan + Other Debt | \$50.7 |
| Warranty Liabilities | \$30.6 |
| Reported Total Debt Balance (as of 3/31/2018) | \$81.4 |
| (+) Adjustment For Under-Accrual Of Warranty Liabilities | \$57.1 |
| Adjusted Total Debt Balance (as of 3/31/2018) | \$138.5 |
| Adjusted Total Debt Balance, Degree Of Increase - \$ | \$57.1 |
| Adjusted Total Debt Balance, Degree Of Increase - % | 70.2% |

Source: ENPH 10Qs. Prescience Point estimates.

Furthermore, pro forma for the SPWR deal, ENPH only has \$28.3m of cash remaining on its balance sheet. Given its ongoing struggles to generate meaningful cash flow, we expect the company will quickly blow through this small cash cushion to fund its ongoing and growing warranty claims and service its debt.

Between 3/31/2018 and 3/31/2019, ENPH is scheduled to pay \$25m in term loan principal payments which is almost equivalent to its current pro forma cash balance of \$28.3m. Thus, we expect ENPH will need to tap the equity markets within the next ~8 months (i.e. prior to 3/31/2019) for an additional cash infusion, resulting in yet more dilution for existing shareholders. That being said, given the evidence of malfeasance presented in this report, whether ENPH will be successful in raising additional equity is highly questionable, in our view.

The Value Destructive SPWR Deal

On June 12th, ENPH [announced](#) that it had signed an agreement to "acquire" SPWR's microinverter business for \$25m of cash and 7.5m shares of ENPH common stock. The company also announced that it had signed a five-year agreement to be the exclusive supplier of microinverters for SPWR's AC modules.

As evidenced by the 47.1% increase in ENPH's share price since the announcement, investors appear to believe that this deal is significantly value accretive for shareholders and is a positive step forward for the company. However, we believe this optimism is misplaced, as our research indicates that ENPH has misled investors by misrepresenting the true nature of its agreement with SPWR, as well as by providing rosy Non-GAAP projections which are disconnected from reality.

Based on our findings, this transaction is not value accretive for shareholders, but is actually significantly value destructive.

When An Acquisition Is Not Really An Acquisition: ENPH Is Paying SPWR To Be Its Customer

The term "acquisition" is not what we would use to describe the deal ENPH just struck with SPWR. Beyond receiving some patents of likely marginal value, the company is receiving little else in the way of assets normally associated with an operating business (i.e. product lines, factories, customers, etc.).

So, let's describe this deal for what we believe it really is. ENPH is essentially paying SPWR a hefty sum (\$25m of cash and 7.5m shares of stock to be exact) to be its customer for the next five years. This becomes abundantly clear when reading Mr. Kothandaraman's description of the deal in the June 12th press release:

"We are pleased to become the microinverter supplier for SunPower's AC Modules," said Badri Kothandaraman, president and CEO of Enphase Energy. "The IQ 7XS 320W AC microinverter in an ACM strongly complements SunPower's high efficiency solar cells, communication and racking to create a high performance, high quality and easy-to-use Equinox™ Home Solar System, providing exceptional value to homeowners, dealers and architects." (Source: ENPH 6/12/2018 press release)

To say the least, buying customers is a very peculiar business strategy; and as we will show for ENPH, not a very profitable one.

Misleading Non-GAAP Financials Obfuscate The True Economics Of The SPWR Deal

In its investor [presentation](#) detailing the transaction, ENPH provided the following Non-GAAP projections on what it expected the SPWR agreement will contribute to its financials on an annualized basis:

- \$60m – \$70m of revenue
- \$20m – \$25m of gross profit (gross margin of 33% – 35%)
- \$14m – \$21m of operating income

When looking at these projections, the economics of the deal appear to be quite favorable for ENPH. But these projections do not come close to reflecting reality, in our view.

When Valeant's accounting practices came under fire a few years ago, the company was widely criticized for its Non-GAAP accounting. Of particular focus was its exclusion of the amortization of acquired drug patents from its Non-GAAP financials. Critics argued, and rightfully so, that excluding amortization costs was misleading because drug patents have a limited life.

Like a drug patent, ENPH's contract with SPWR has a limited life as well. Because of this, we believe the amount that ENPH paid SPWR to be its customer should be amortized in its financials over the duration of the contract. As disclosed on pg. 12 of its June 12th investor presentation, the Non-GAAP projections that ENPH provided excludes any such expense. Thus, we believe these projections are highly misleading and do not represent the true economics of the agreement.

Operating Expense - reflects Enphase's assumptions and projections solely relating to incremental operating expenses to be incurred by Enphase following the implementation of the SunPower transaction, **but excluding any impact of purchase accounting**, employee-stock based compensation expense and transaction-related charges... (Source: ENPH 6/12/2018 investor presentation, pg. 12)

Assuming ENPH's share price of \$6.62 as of 7/24/2018, we calculate that it paid SPWR a total consideration of \$74.7m (\$25m of cash + \$6.62 share price * 7.5m shares). Amortized over the length of the contract of five years, this amounts to an annual expense of \$14.9m. When this expense is included in the projections provided by ENPH, the economics of the deal look quite poor.

As shown in the table below, pro forma for the inclusion of \$14.9m of amortized deal costs, we calculate that ENPH will generate just \$2.2m of operating income per year from its contract with SPWR. Based on this, we calculate that ENPH paid a whopping 34.4x multiple of annual operating income for its five-year agreement. Given the egregiously rich multiple it appears to have paid for a limited, five-year supply agreement, we conclude that this deal is highly value destructive for shareholders.

Implied Purchase Multiple Of SPWR Deal: PF For Amortized Deal Costs

(\$ in millions)

| | |
|--|---------------|
| Annual Revenue | \$65.0 |
| (*) Projected Gross Margin ⁽¹⁾ | 34.0% |
| Annual Gross Profit | \$22.1 |
| (-) Incremental Operating Expenses | (\$5.0) |
| (-) Amortized Deal Costs | (\$14.9) |
| PP-Adjusted Annual Operating Income From SPWR Agreement | \$2.2 |
| Purchase Price ⁽²⁾ | \$74.7 |
| Implied Purchase Multiple | 34.4x |

Source: ENPH June 12th investor presentation. Prescience Point estimates.

(1) Represents the mid-point of ENPH's gross margin projection of 33% - 35% as provided on pg. 8 of its June 12th investor presentation.

(2) Equal to \$25m of cash + 7.5m of ENPH shares * \$6.62 share price as of 7/24/2018.

So why would ENPH consummate such a seemingly value destructive transaction? As we already mentioned, ENPH projects that it will generate a fairly robust 33% - 35% gross margins from this agreement. Thus, our best guess is that by essentially paying SPWR to be its customer, this allowed ENPH to negotiate higher gross margins from the agreement. This will provide a temporary boost to its future consolidated gross margins over the next five years, but ultimately this boost is artificial and comes at the expense of significant shareholder value.

Intensifying Competitive Landscape And Slowing Industry Growth Portend A Bleak Future For ENPH

We believe that ENPH's future is bleak.

The company's accounting shenanigans have distracted attention away from the fact that its revenue has and continues to contract. Despite a highly favorable industry environment, ENPH's reported revenue has declined by 17.5% over the past three fiscal years from \$343.9m in FY 2014 to \$283.6m in FY 2017. This decline has been driven by a loss of market share to SEDG, its primary competitor, whose revenue has increased by 181.8% during that same timeframe from \$215.4m in FY 2014 to \$607.0m in FY 2017.

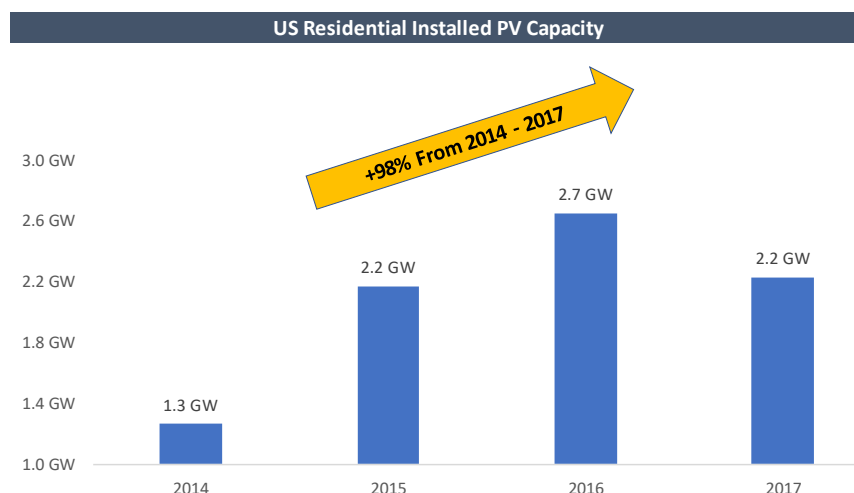
In order to justify its lofty valuation, ENPH will need to return to organic revenue growth and generate meaningful profits going forward. But, based on our analysis, we believe ENPH's organic revenue will continue to decline and its losses will accelerate for the following reasons:

- ENPH is likely to continue losing share to SEDG given that SEDG has an inherently more cost-effective solution, is far better capitalized, and has far higher margins than ENPH
- A number of new, well-capitalized competitors have recently entered or have plans to enter the MLPE space. Most notable is Huawei's recent entrance into the market
- ENPH faces a much less favorable industry environment going forward as many of the tailwinds which benefitted it and other MLPE providers, such as the rapid growth in US residential solar installations and the state-by-state adoption of NEC 2014 & NEC 2017, have slowed down considerably

MLPE Companies Have Benefitted From A Highly Favorable Industry Environment

Over the past few years, microinverter and power optimizer manufacturers have benefitted from huge industry tailwinds which have driven a large increase in the sales of MLPE components.

From 2014 to 2017, residential solar installations in the US increased over 75% from 1.3 GW to 2.2 GW of PV capacity:



Source: GTM Research

In addition to this large increase in residential volumes, the adoption of NEC 2014 and NEC 2017 nationwide electrical codes has driven a large increase in the market share of microinverter and power optimizer companies.

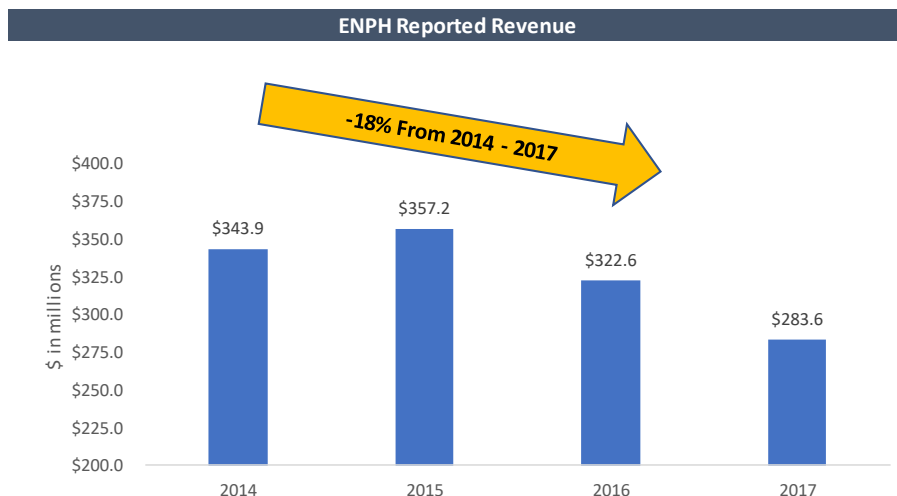
NEC 2014 and NEC 2017 electrical codes require rapid shutdown capabilities for rooftop mounted solar systems at the array and module level. Microinverter and power optimizer solutions are both NEC code compliant, while string inverter solutions currently lack the necessary technological infrastructure to be in compliance.

Because of this, as NEC 2014 and NEC 2017 adoption has accelerated over the past 2+ years, the US inverter market share of SEDG, ENPH and SPWR increased from just over 50% in Q1 2016 to 82% in Q4 2017 (*Source: GTM Research*), while the major string inverter companies – ABB, SMA and Fronius – saw their share decline from 46% to 19%.

Despite These Huge Tailwinds, ENPH's Revenue Actually Declined By 18% From FY 2014 to FY 2017

One would presume that with these tailwinds at its back, ENPH's volumes and revenue should have increased significantly over the past few years. However, this is not what happened.

From FY 2014 to FY 2017, the volume of microinverters that ENPH shipped increased just 12% from 2.6m to 2.9m, significantly lagging the 75% growth in US residential solar installations during that same time period. Due to this sluggish volume growth, and the continuous natural decline in ASPs of its microinverters, ENPH's revenue actually declined by 17.5% from \$343.9m in FY 2014 to \$283.6m in FY 2017:



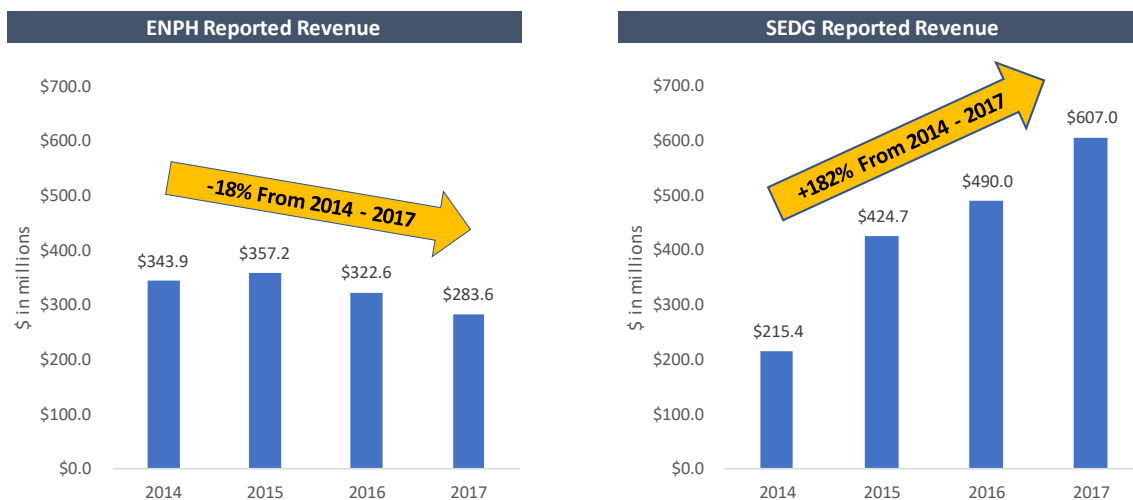
Source: ENPH 10Ks

ENPH Continues To Lose Ground To SEDG And Is Unlikely To Reverse This Trend Anytime Soon

The reason for ENPH's poor topline performance over the past few years is simple. The company has lost a significant amount of market share to SEDG – its primary competitor.

While ENPH's business has struggled over the past 3+ years, SEDG's business has thrived. From FY 2014 to FY 2017, SEDG's revenue increased 181.8% from \$215.4m to \$607.0m. As a result of its exponential growth, SEDG is now the largest provider of inverters in the solar space with an almost 45% share of the US inverter market.

As shown below, the difference in performance between SEDG and ENPH since FY 2014 is striking:



Source: ENPH and SEDG 10Ks.

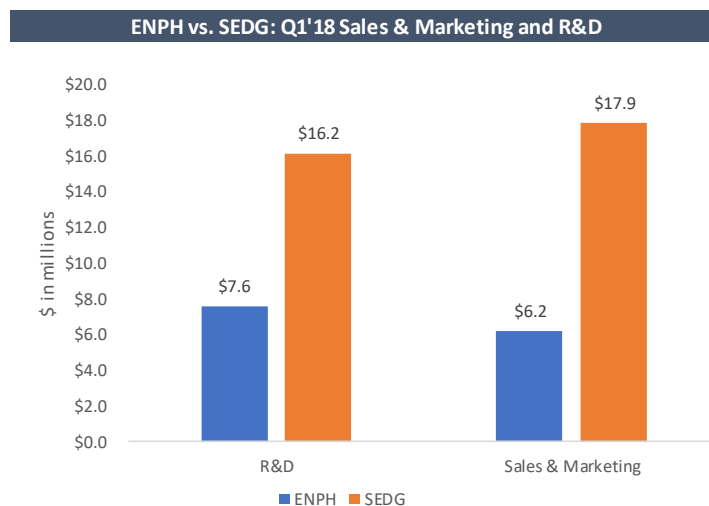
The reason for why SEDG is thriving while ENPH is struggling is primarily based on one factor – cost. SEDG's DC optimizers are a cheaper solution than ENPH's microinverters for most residential installations (source: [here](#), [here](#), [here](#) and [here](#)). Because the solar industry is largely

a cost driven business, this has pushed more and more installers to choose optimizers over microinverters. These sentiments were echoed by a solar industry consultant with whom we recently spoke:

The solar market is incentive driven and it is very thin margin for all the players in the value chain... it's a cost sensitive environment...and basically it kind of comes down to that part about cost and what you get for it, so DC optimizers (from SEDG) are generally less expensive (than ENPH)

The question investors must ask now is whether ENPH will be able to cut its costs and subsequently lower its prices enough to take share back from SEDG. In our view, this is highly unlikely for the following reasons:

- **ENPH's solution is inherently disadvantaged to SEDG's solution:** From an architectural standpoint, microinverters are inherently disadvantaged to DC optimizers. Only one DC optimizer is required for per solar system. Because of this, the cost per watt of SEDG's solution declines as the system size increases. Microinverters, which are basically miniaturized inverters, are installed at the module level. Each module in a system requires one microinverter. Because of this, the cost per watt of ENPH's solution does not decline as the system size grows. Absent abandoning microinverters and developing a brand new solution, it will be very difficult for the company to overcome this disadvantage.
- **ENPH's gross margin is only a fraction of SEDG's:** As calculated earlier, after adjusting for its accounting shenanigans, we estimate that ENPH's 'actual' Q1 2018 gross margin was 15.1%. By comparison, SEDG's reported Q1 2018 gross margin was 154.4% or 2330 bps higher at 38.4%. Because of this large difference in margin, SEDG has a lot more capacity to cut prices in order to maintain or grow market share. Accordingly, even if ENPH cuts costs at a faster pace going forward, SEDG can make up for this by simply cutting its prices at the expense of some of its margin advantage.
- **ENPH is spending significantly less on R&D and sales & marketing than SEDG:** Over the past few quarters, ENPH has significantly cut back on its operating expenses. While this has helped to slow down the company's cash burn, it has significantly reduced the amount it is investing in R&D and sales & marketing. In Q1 2018, ENPH spent just \$9.6m and \$6.5m on R&D and sales & marketing, respectively. By comparison, in Q1 2018, SEDG spent \$17.9m and \$16.2m on R&D and sales & marketing, respectively.



Source: ENPH and SEDG 10Qs.

Because ENPH is spending 53.0% less on R&D than SEDG, it will be extremely difficult for the company to innovate and cut costs at the same pace. Furthermore, because ENPH is spending 65.2% less on sales & marketing than SEDG, it will be that much more difficult for the company to maintain let alone increase its market share.

Intensifying Competitive Landscape Is Likely To Further Erode ENPH's Market Share

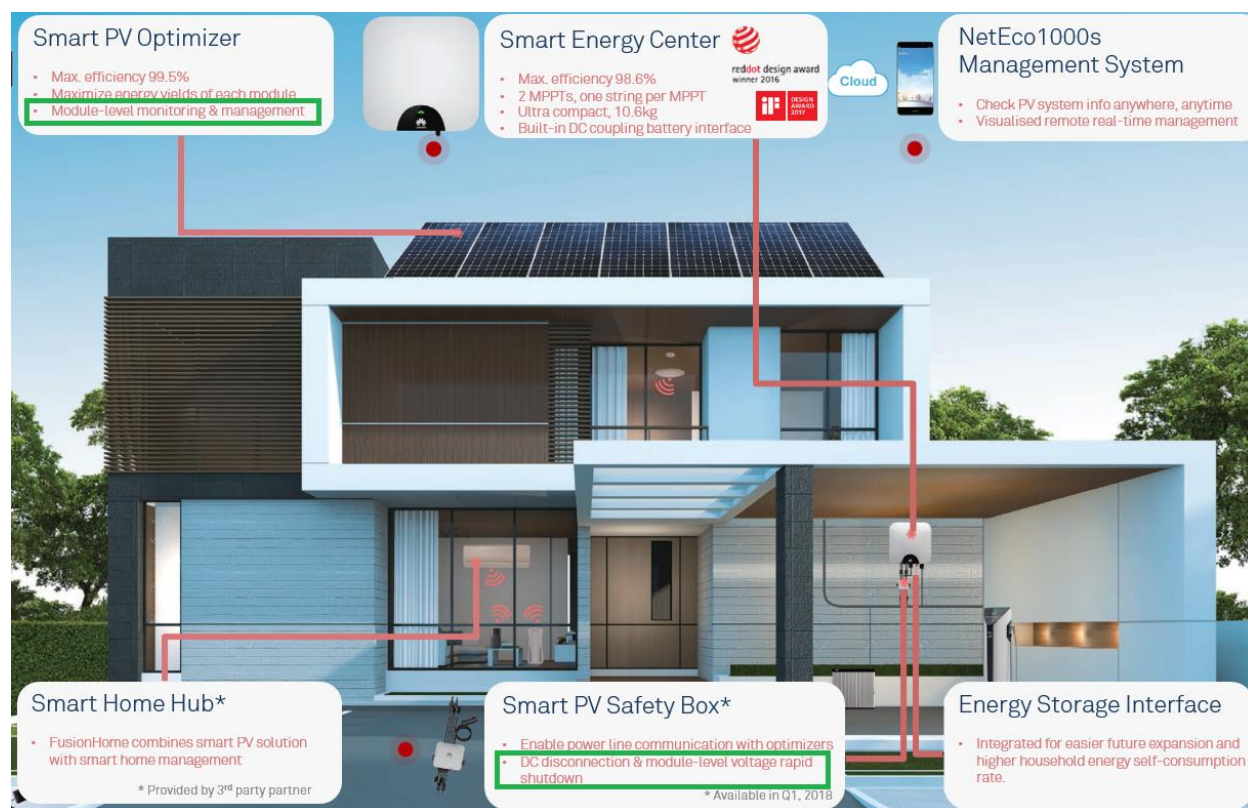
In addition to continued competition from SEDG, ENPH will soon have to compete with a number of new, well capitalized entrants who have or are poised to soon release their own MLPE solutions. We believe this intensifying competitive landscape is likely to result in further market share losses for the company.

Of particular concern for ENPH is Huawei's recent entry into the MLPE market with its new optimizer solution which was released in Australia and select European market earlier this year. Given Huawei's recent presence at a number of US trade shows, including the [GTM 2018 Solar Summit](#) in early May, it appears that the rollout of this product in the US market is imminent.

When asked about Huawei's new optimizer product on its [Q4 2017 earnings call](#), SEDG management dismissed it as a "crippled solution" which lacked safety (i.e. rapid shutdown) or monitoring features:

The product they're now releasing is a product that does not have communication between optimizers and inverter and therefore do not have safety and/or monitoring, so it's a pretty crippled solution... (Source: SEDG Q4 2017 earnings call)

However, this claim appears to be a bogus one. As per the following disclosure from its [website](#), Huawei currently offers both monitoring and rapid shutdown to its customers as options:



To be clear though, there is not a whole lot of information at this time regarding the merits of Huawei's product. That being said, the most concerning development for ENPH investors is not the optimizer that Huawei has just released. In our view, the most concerning development is simply Huawei's decision to enter the market.

Even if its first entry into the MLPE market fails, Huawei has the money and resources to quickly catch-up and eventually take significant share. This is exactly what it did in the C&I solar market – within one year of entering this market, it quickly took share and rose to being the #2 player mainly via aggressive pricing. We believe this will be repeated in the residential market.

In addition to Huawei entering the market, semiconductor bellwethers MXIM and Texas Instruments have recently developed their own MLPE offerings. As detailed in a May 12th [report](#) on SEDG from Vertical Group, both MXIM's and TI's offerings already appear to be gaining significant traction and, in the view of Vertical Group, will likely prove to be a disruptive force in the industry:

And, which should be of concern to the SEDG bulls out there, we note that a number of leading string inverter companies have announced immediate plans to incorporate MXIM's and TXN's technology into their product lines, including ABB, Fronius, Omron (Japanese player), SMA and Outback.

Lastly, as detailed here ([link](#)), MXIM has already established partnerships to imbed its MLPE chips inside the modules of solar heavyweights JinkoSolar (JKS; SELL), Hanwha Q Cells (HQCL; NC), Trina Solar (TSL; NC), and SunTech (STPFQ; NC). Translation... we now have a clear cut roadmap to what

will likely prove to be the next disruptive technological breakthrough in the inverter market.
(Source: Vertical Group 5/12/2018 SEDG report, pgs. 5-6)

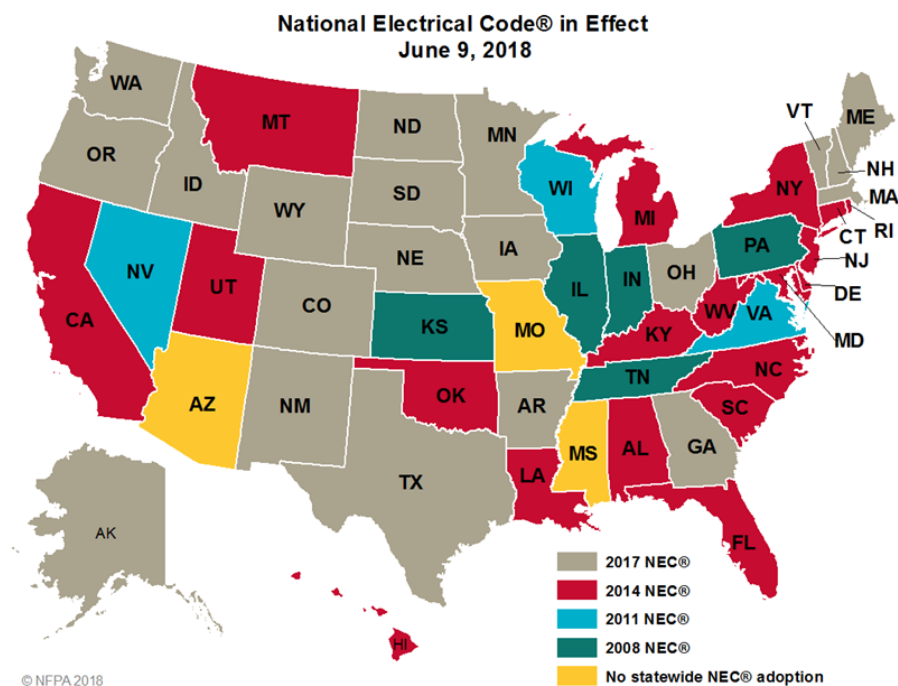
Finally, LG Electronics recently [announced](#) on June 18th that it is releasing its own microinverter for residential applications, bringing yet another well-capitalized competitor into the MLPE space.

It should also be noted that LG is currently one of ENPH's key AC module partners. In our view, LG's decision to release its own microinverter casts doubt on not only the viability of this partnership, but the viability of the company's AC module strategy as well. This is a serious concern for investors given that ENPH has touted AC modules as one of its primary growth drivers going forward.

Less Favorable Industry Environment To Further Pressure ENPH's Topline

In addition to an intensifying competitive landscape, ENPH's topline growth is likely to be further pressured by what looks to be a much less favorable industry environment for MLPE providers going forward.

As discussed earlier, one of the primary drivers of the market share increase for microinverter and optimizer companies has been the state-by-state adoption of NEC 2014 and NEC 2017. At the moment, 42 states in the US have already implemented rapid shutdown requirements, and just two additional states plan to move to NEC 2017 by year-end. The removal of this significant tailwind will make it much more difficult for optimizer and microinverters companies, including ENPH, to take share from string inverters companies.



Additionally, as already mentioned previously, ENPH, SEDG and SPWR accounted for a whopping 82% of the inverter market share in the US as of the end of Q4 2017. Given the outsized market share that microinverter and optimizer companies have already captured, any further share gains from string inverter companies will be much less substantial going forward.

Finally, we believe it is unlikely that the US residential solar market will grow nearly as fast over the coming years as it did for much of the past decade. Recent evidence supports this – In 2017 installed PV capacity in the US residential market actually declined by 16% YoY.

Furthermore, according to a [recent report](#) by GTM Research, residential solar installations in the US will likely remain flat in 2018 versus 2017. Although this is certainly an improvement from the 16% decline experienced last year, it is a far cry from the gangbusters growth in years prior.

Valuation

Since Mr. Kothandaraman took over as CEO on 9/6/2017, ENPH's share price has increased exponentially by 496.4% from \$1.11 to \$6.62, and its market capitalization has exploded to near all-time highs from \$106.2m to \$778.0m.

But we believe that the recent increase in ENPH's share price has been wholly unwarranted given,

- Our research which indicates that the large expansion in the company's reported gross margin over the past three quarters was almost entirely attributable to accounting shenanigans
- The value destructive SPWR deal
- ENPH's use of discounted warranty accounting which has further inflated its gross margin and artificially depressed its warranty liabilities by a material amount
- The heightened risk of further market share losses due to the recent entrance of Huawei and other well-capitalized competitors into the MLPE space
- The heightened risk of a liquidity crisis or dilutive equity raise within the next 8 months due to the company's significant near-term cash needs and weak cash position

Meanwhile, Wall St analysts are missing the forest for the trees, deriving their lofty EPS estimates and, in turn, their lofty price targets from ENPH's inflated reported gross margin and guidance. At the moment, the consensus analyst price target for ENPH shares is \$7.46 (*Source: Yahoo Finance, 7/24/2018*).

We believe that ENPH shares should revert back to a valuation which is more in line with where they traded prior to Mr. Kothandaraman's promotion. At the moment, ENPH is not profitable on either an EBITDA or EPS basis (based on our estimate of ENPH's 'actual' results). Thus, we resort to a multiple of revenue to value ENPH.

Currently, ENPH is trading at an LTM revenue multiple of 2.7x. By contrast, as of 9/5/2017 (the day before Mr. Kothandaraman's promotion), ENPH was trading at an LTM revenue multiple of 0.4x:

ENPH Valuation Comparison: Pre-Mr. Kothandaraman's Promotion vs. Today

| (\$ in millions, except per share values) | 9/5/17 | 7/24/18 |
|--|----------------|----------------|
| Share Price | \$1.09 | \$6.62 |
| (*) Total Fully-Diluted Shares Outstanding | 97.5 | 117.5 |
| Market Capitalization | \$106.2 | \$778.0 |
| (+) Total Debt | \$47.3 | \$50.7 |
| (-) Cash & Equivalents | (\$31.0) | (\$53.3) |
| Enterprise Value | \$122.6 | \$775.4 |
| (÷) LTM Revenue ⁽¹⁾ | \$308.7 | \$291.3 |
| LTM Revenue Multiple | 0.4x | 2.7x |

Source: Company 10Ks and 10Qs.

(1) LTM revenue as of 7/24/2018 pro forma for the exclusion of \$2.6m of revenue inflation in Q4'17 and \$7.5m of estimated revenue inflation in Q1'18.

As investors realize that the financial improvement reported by the company was primarily attributable to accounting chicanery, we believe the equity will revert to its historical valuation of 0.4x LTM revenue, in our view. Accordingly, we value ENPH shares at \$1.01, representing 84.7% downside from its current share price.

Prescience Point Estimation of Fair Value of ENPH Shares

| (\$ in millions, except per share values) | |
|--|----------------|
| PP-Estimated 'Actual' LTM Revenue ⁽¹⁾ | \$291.3 |
| Revenue Multiple Prior To Mr. K's Promotion ⁽²⁾ | 0.4x |
| Market Capitalization | \$115.7 |
| (-) Total Debt | (\$50.7) |
| (+) Cash & Equivalents | \$53.3 |
| Equity Value | \$118.2 |
| (÷) Total Fully-Diluted Shares Outstanding | 117.5 |
| Market-Value Per Share | \$1.01 |

Source: Company 10Ks and 10Qs.

(1) Pro forma for the exclusion of \$2.6m of revenue inflation in Q4'17 and \$7.5m of estimated revenue inflation in Q1'18.

(2) Represents EV / LTM revenue multiple as of 9/5/2017.

But even this valuation is too generous for ENPH given the preponderance of evidence that we believe indicates it has materially misled investors about its financial performance, resulting in an outsized risk of financial restatements and enforcement actions by the SEC and other regulatory bodies. Thus, while we conservatively value ENPH shares at \$1.01, we believe there is a high risk of further downside to our target price.

Public Interest Statement

We believe the information contained in this article about ENPH's questionable accounting practices is a matter of public interest.

ENPH is a publicly traded company on the NASDAQ with a market capitalization of over \$700m. Some of the company's largest investors include institutional investment firms such as Vanguard Group and Gilder, Gagnon, Howe & Co. The clients of these firms include many retail investors who have invested their savings into investment funds and retirement funds managed by these institutions.

Also, as mentioned earlier in this article, we believe ENPH will likely need to raise a meaningful amount of money from investors via a secondary equity offering. Based on the research we have provided in this report, the potential investors in such an offering could experience a significant financial loss.

Thus, given the potentially negative financial impact that ENPH's actions could have on its large and diverse investor base, we believe it is important to disclose our findings about the company to the public.

Appendix

Implied YoY Increase In Cables & Accessories Sales In Q1 2018:

ENPH generates revenue from the sale of microinverter systems, AC modules and battery systems. As of Q1 2018, microinverter systems account for the vast majority of the company's total revenue, while AC modules and battery systems account for a very small percentage.

A microinverter system generally consists of 1) the microinverters, 2) cables & accessories, and 3) an Envoy monitoring system. Based on our research and analysis, which included conversations with various solar distributors in the US and an analysis of pricing data on Renvu.com, we estimate that microinverters, cables & accessories, and the Envoy system account for 75.0%, 7.5% and 17.5%, respectively, of the total cost of a microinverter system:

| PP Estimated Microinverter System Cost Breakdown | |
|---|-----------------------|
| | % of Total |
| Microinverters | 75.0% |
| Cables & Accessories | 7.5% |
| Envoy System | 17.5% |
| Total Microinverter System Cost | 100.0% |

Source: Pricing data from Renvu.com, Solar distributor conversations, Prescience Point estimates.

As acknowledged by management, AC modules and battery systems currently account for just a small portion of its revenue. Thus, we estimate that AC modules and battery systems account for 5% of ENPH's total revenue. Putting it all together, we estimate that microinverters, cables, the Envoy system, and AC modules & batteries account for 71.3%, 7.1%, 16.6% and 5.0%, respectively, of ENPH's total revenue:

ENPH Estimated Revenue Composition

| | % of Total Revenue |
|------------------------|-----------------------|
| Microinverters | 71.3% |
| Cables & Accessories | 7.1% |
| Envoy System | 16.6% |
| AC Modules & Batteries | 5.0% |
| Total Revenue | 100.0% |

Source: Pricing data from Renvu.com, Solar distributor conversations, Prescience Point estimates.

Using these percentages, we have provided a breakdown of ENPH's Q1 2017 revenue per inverter by product:

Estimated Q1'17 Revenue Per Inverter Breakdown

| | Revenue | |
|------------------------|-----------------|---------------|
| | Per Inverter | % of Total |
| Microinverters | \$68.1 | 71.3% |
| Cables & Accessories | \$6.8 | 7.1% |
| Envoy System | \$15.9 | 16.6% |
| AC Modules & Batteries | \$4.8 | 5.0% |
| Total | \$95.6 | 100.0% |

Source: Prescience Point estimates.

Now, if we assume all of the \$19.0 or 19.9% YoY increase in revenue per inverter in Q1 2018 is from increased cable sales as Mr. Garcia claimed, we estimate that cable revenue per inverter increased from \$6.8 in Q1 2017 to \$25.8 in Q1 2018.

As shown in the table below, this implies that cable revenue as a % of total revenue increased by 215.9% YoY from 7.1% in Q1 2017 to 22.5% in Q1 2018, and that cable revenue grew by 303.7% YoY from \$3.9m in Q1 2017 to \$15.7m in Q1 2018! By comparison, inverter volume in Q1 2018 increased YoY by a modest 6.6%.

Estimated Revenue By Product: Q1 2017 vs. Q1 2018

| | Revenue Per Inverter | | Inverter Volume | | Revenue | | % of Total Revenue | |
|-------------------------------------|----------------------|----------------|-----------------|----------------|---------------|---------------|--------------------|---------------|
| | Q1'17 | Q1'18 | Q1'17 | Q1'18 | Q1'17 | Q1'18 | Q1'17 | Q1'18 |
| Microinverters | \$68.1 | \$68.1 | 573,000 | 611,000 | \$39.0 | \$41.6 | 71.3% | 59.4% |
| Cables & Accessories ⁽¹⁾ | \$6.8 | \$25.8 | 573,000 | 611,000 | \$3.9 | \$15.7 | 7.1% | 22.5% |
| Envoy System | \$15.9 | \$15.9 | 573,000 | 611,000 | \$9.1 | \$9.7 | 16.6% | 13.9% |
| AC Modules & Batteries | \$4.8 | \$4.8 | 573,000 | 611,000 | \$2.7 | \$2.9 | 5.0% | 4.2% |
| Total | \$95.6 | \$114.5 | 573,000 | 611,000 | \$54.8 | \$70.0 | 100.0% | 100.0% |
| YoY Increase In Cable Metric | | 278.6% | | 6.6% | | 303.7% | | 215.9% |

Source: Prescience Point estimates.

(1) Assumes that increase in revenue per inverter is entirely from cables & accessories as claimed by former CFO Bert Garcia.

Prescience Point Estimate Of The Value Of Badri Kothandaraman's Options Package:

| PP-Estimated Current Value Of Badri Kothandaraman's Options Package | | | |
|--|---------------|---------------|---------------|
| <i>(\$ and options granted in millions)</i> | 4/12/17 | 9/6/17 | |
| | Option Grant | Option Grant | Total |
| Options Granted | 1.0 | 1.0 | 2.0 |
| Current Share Price (as of 7/24/18) | \$6.62 | \$6.62 | NM |
| Exercise Price ⁽¹⁾ | \$1.34 | \$1.11 | NM |
| Value Per Share | \$5.28 | \$5.51 | NM |
| Options Value | \$5.3 | \$5.5 | \$10.8 |

Source: Company filings with the SEC. Prescience Point estimates.

(1) Assumes exercise price is equal to ENPH share price on date of Mr. Kothandaraman's promotions to COO (4/12/17) and CEO (9/6/17).

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