BEHIND THE NUMBERS
Quality of Earnings Analysis

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Behind the Numbers

Companies in this Issue

First Solar, Inc. (FSLR)
Earnings Quality Update

We are reinitiating earnings quality coverage of FSLR with a 4+ (Acceptable) rating.

For an explanation of the EQ Review Rating scale, please refer to the end of this report.

Summary

When we first looked at FSLR years ago, it was generating a sizeable amount of income from changing assumptions related to warranties, accruals, and depreciation. It was also building power plants and benefitting from modifying forecasts used in the percentage of completing accounting used to account for those deals.

In 2022, FSLR cleaned up much of that and has returned to primarily selling solar modules. We believe the quality of its earnings has improved and we are assigning a 4+ rating.

With the recent government programs to incentivize new infrastructure and energy spending, FSLR has picked up a considerable backlog and is expanding its production capacity. This building out of the production base has led to considerable movement on the balance sheet including:

- Rising inventory. This is an indication of the capacity buildout and not a concern.

- Accrued Expenses rose from $288 million to $383 million in 2022 – but $107 million was due to accrued PP&E as FSLR's heavy building started. This is a sign of conservative accounting as the expense has been recognized on the income statement before the cash has gone out.

- Deferred Revenues jumped from $298 million to $1.2 billion in 2022 as customers placed orders in advance of the new capacity. This is signaling future revenue to be booked in future quarters.

- PP&E now includes a large Construction in Progress balance which rose from $1.1 billion to $462 million representing investments in plant and equipment that has yet to be brought into service and depreciated.

However, concerns remain, particularly regarding FSLR's accounting for warranties. The company has enjoyed a material tailwind to earnings growth for the last several years from changes to assumptions related to warranties which we believe may wane or even reverse over the next year. However, the amount of the potential headwind is relatively small compared to the expected FY 2023 EPS estimate of over $14. More specifically:

- Warranty accounting continues to help earnings through both lower accruals and changes in estimate to reverse past accruals back into earnings. We consider this a poor source of earnings and expect this to become a headwind going forward:

	2022	2021	2020	2019
EPS	-$0.41	$4.38	$3.73	-$1.09
Beginning Warranty Balance	$52.6	$95.1	$129.8	$220.7
Accrual for New Warranties	$4.7	$9.3	$9.4	$17.3
Settlements	-$12.7	-$12.3	-$22.5	-$11.9
Impact of Change in Estimates	-$10.8	-$39.5	-$21.7	-$85.7
Ending Warranty Balance	$33.8	$52.6	$95.1	$129.8
Per Share Expense from New Warranties	-$0.04	-$0.07	-$0.07	-$0.13
EPS Impact of Change in Estimates	$0.08	$0.29	$0.16	$0.64

Points to Note:

- We are using a 21% tax rate to estimate EPS impacts

- Note that the size of the warranty accrual is only $33.8 million now as FSLR's backlog for modules is rising. We believe higher sales should boost warranties going forward and this may no longer add to EPS.

- Historically, both lower expense for new warranties and the benefit of the change in estimates for warranties have often been a significant source of earnings.

- The company estimates that a 1% change in returns for the installed base of modules would cost $147.0 million. In our view, it would not take much for warranties to become a drag on EPS.

- At the same time, FSLR is promising better performance for its solar modules. It used to offer 25 years of warranty time. That is now up to 30 years. From 2014-2016, the annual decay rate of efficiency was estimated at 0.7% per year. In 2017, that was changed to 0.5%. Now it is 0.3%-0.5%. FSLR expects the new Series 6 modules to perform better. That may lead to a lower assumption for decay as part of the warranty too. That could mitigate some of the cost early on.

- When FSLR has to make good on a warranty – say a group of panels has degraded from 100% to 80% efficiency in terms of power generation- it can settle that in several ways. It can write a check, it can replace the modules, or it can simply give the customer more panels so the customer's total returns to the full amount FSLR's warranty promises. The amount booked as settlement should rise simply by having more modules in place with customers. Also, it would likely replace modules with its latest technology that may have higher fixed costs as part of the production. That could also push up the warranty accrual needed going forward.

- Recycling older modules is a program that has been discontinued for new sales. FSLR will collect and disassemble modules for legacy sales that still are part of this program. Its accretion expense related to this program is $5.0-$5.5 million. We don't see a problem with that. However, FSLR frequently changes its estimates for the liability. In the last three years it has been:

	2022	2021	2020
Chg in Estimate	-$7.5	$10.8	-$18.9
EPS Impact +/-	$0.06	-$0.08	$0.14

Normally the changes involve forecasts for labor costs and the value of the recycled raw materials. The change in estimate is recorded in Cost of Goods Sold.

- Restricted Marketable Securities are worth watching. These are long-term investments to support FSLR's recycling program for older solar modules. Some of these are in foreign accounts. FSLR has been booking gains into other income/expense from selling these securities for several years until 2022. There were no gains or losses booked in 2022, but the unrealized loss is now $65.9 million, or 49 cents in EPS:

	2022	2021	2020
EPS	-$0.41	$4.38	$3.73
Gains on sale	$0.0	$11.7	$15.1
EPS impact	$0.00	$0.09	$0.11

- In the past, FSLR had a history of changing assumptions to lengthen the depreciation period for PP&E. This happened in 2017 and 2019. As the new equipment comes online, we will watch to see if the estimated useful life for equipment is stretched again from the current 5-15 years.

- Bad debt expense rose to $2.0 million in 2020 during Covid and then became a $2.4 million credit in 2021 that cost 2 cps in 2020 and generated 2 cps in 2021. It looks normal again.

- R&D spending is rising. We consider this a positive. Because the makeup of revenues has changed significantly with the sale of the operating plants in 2022, we won't look at this as a percentage of revenue now. But, simply note the total spending is up:

	2022	2021	2020
R&D	$112.8	$99.1	$93.7

- Gross margin can vary tremendously at FSLR. Competition can result in lower selling prices of solar modules more quickly in some years than others. Also, some of the raw materials that FSLR uses are difficult to find from multiple suppliers. Cadmium Telluride is a by-product of copper refining. Therefore if copper prices decline, there may be less Cadmium Telluride. One of the reasons FSLR started to build whole solar power plants was it could limit the price decay of solar modules as a plant may be contracted and built at a fixed price. We believe returning to solar module sales may increase the volatility of gross margin:

Modules	2022	2021	2020	2019	2018
Gross Margin	4.8%	20.3%	24.7%	19.9%	-10.1%

  In 2022, higher freight/storage fees lowered gross margin for modules by 6.9%. Also, keep in mind that all the reductions to warranties and reversing accruals has been helping gross margin. Guidance for 2023 is for gross margin to jump to 33%-38%. That should be the result of forecasted sales coming in $1 billion over 2022 levels and leveraging fixed costs. FSLR sees about 3.5%-4.0% of gross margin expansion coming from that and another 18%-20% coming from advanced manufacturing production tax credits from the Inflation Reduction Act beginning in 2023.

- Income taxes at FSLR involve a number of moving parts. Primarily, the company has past operating losses and tax credits that are the bulk of deferred tax assets. FSLR has a sizeable valuation allowance against the deferred tax assets. This allowance changes every year and that change is a large part of FSLR's tax calculation:

Income taxes	2022	2021	2020	2019	2018
Chg in allowance	$22.2	$2.6	-$31.7	-$5.7	$19.1
Total Tax	$52.8	$103.5	-$107.3	-$5.5	$3.4

In 2022, the allowance rising cost FSLR 21 cents in EPS. For 2023, FSLR is guiding to $60-$85 million in taxes vs. $52.8 million in 2022. Given the outlook for sales and margins improving, we would expect to see the valuation allowance decline more in 2023 and help earnings.

- Selling the various power plants and the operating & management operations in 2021 and 2022 helped EPS with one-time gains. To FSLR's credit, it puts these gains in a separate line item on the income statement. These won't repeat and were a sizeable amount of pre-tax income in 2022 and 2021:

	2022	2021	2020
EPS	-$0.41	$4.38	$3.73
Pretax Income	$8.6	$572.2	$293.2
Gains on Sales	$253.5	$147.3	$0.0

- Disposing of the Luz del Norte plant in Chile in December 2022 was accounted for differently. FSLR booked a $57.8 million loss into Cost of Goods Sold. Government financing programs forgave $30.2 million of the debt for this plant when it was sold. That was booked into "Other Income, net." Using a 21% tax rate, the net of this transaction cost FSLR 20 cents in EPS and 221 bps of gross margin in 2022.

- Selling the plants also reduced "other assets" – which dropped $119 million in 2022- $114 million was due to lower operating lease assets after the sales. The same with the $136 million drop in 2022 for "other liabilities. The drop in operating lease liabilities was $105 million. We do not see a problem here.

- Goodwill and Intangible write-offs do not pose much risk at this point. Gross Goodwill is $407.8 million but only $14.6 million after an impairment of $393.4 million in 2011 due to excessive pricing erosion for solar modules and $74.9 million in 2016 when FSLR accelerated the retirement of older manufacturing processes. Intangibles are only $56.1 million at this point. Price erosion is still a potential risk to margins but not much for a write-off.

Explanation of EQ Rating Scale

6- (Exceptionally Strong)- Indicates uncommonly conservative accounting policies to the point that revenue and earnings are essentially understated relative to the company's peers. Higher possibility of reporting positive earnings surprises

5 (Strong)- Indicates the company has no areas of concern with its reported results and we see very little risk of the company disappointing due to recent results being overstated from aggressive reporting in recent periods.

4 (Acceptable)- Indicates the company may have exhibited a minor “red flag”, but the severity of the issue is not yet a concern. Minimal risk of an earnings disappointment resulting from previous earnings or cash flow overstatement

3 (Minor Concern)- Indicates the company has exhibited either a larger number of or more serious warning signs than companies receiving a 4. The likelihood of an immediate earnings or cash flow disappointment is not considered to be high, but the signs mentioned deserve a higher degree of attention in the future.

2 (Weak) Indicates the company’s recently reported results have benefitted materially from aggressive accounting. Follow up work should be performed to determine the nature and extent of the problem. There is a possibility that upcoming results could disappoint as the impact of unsustainable benefits disappears.

1 (Strong Concern)- Indicates that the company’s recent results are significantly overstated and that we view a disappointment in upcoming quarters is highly likely

In addition to the numerical rating, the EQ Review Rating also include either a minus or plus sign. A minus sign indicates that our analysis shows the overall earnings quality of the company has worsened since the last review and there is a possibility the numerical rating will fall should the problem continue into upcoming quarters. Likewise, a positive sign indicates that the overall earnings quality is improving, and the company may see an upgrade in its numerical rating should the trend continue.

Key Points to Understand About the EQ Score

The EQ Review Rating is much more than a blind, quantitative scoring method. While we utilize proprietary adjustments, ratios, and methods developed over decades of earnings quality analysis, the foundation of all of our analysis is reading recent SEC filings, press releases, conference call transcripts and in some cases, conversations with managements.

The EQ Review Rating is not comparable to a traditional buy/sell rating. The Rating is intended to specifically convey the extent to which reported earnings may be over/understated. Fundamental factors such as forecasts for future growth, increasing competition, and valuation are not reflected in the rating. Therefore, a high score does not in itself indicate a company is a buy but rather indicates that recent results are a good indication of the underlying earnings and cash generation capacity of the company. A low score (1-2) will likely result in us performing a more thorough review of fundamental factors to determine if the company warrants a full-blown sell recommendation.

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