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A Financial Analysis and Valuation of First Solar, Inc.

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Abstract: First Solar is an American company specializing in thin-film photovoltaic solar solutions using Cadmium Telluride (CdTe) technology. This technology offers environmental protection and sustainability advantages. The company maintains market competitiveness through continuous technological improvements, enhanced efficiency and durability, and expanded production capacity. First Solar holds significant market share in the United States and India, aided by government incentives like the U.S. Inflation Reduction Act and India's Production-Linked Incentive Program. The company is expanding globally through acquisitions and long-term agreements, with plans to build new factories in both countries to boost production. Financially, First Solar performs well in liquidity, solvency, and profitability, ranking in the upper-middle tier among industry competitors. Its healthy short-term debt solvency is indicated by strong current and quick ratios, while its low debt ratio and high interest coverage ratio highlight robust long-term debt solvency. The company's gross and net profit margins are stable and expected to grow. First Solar's earnings per share (EPS) and revenue growth rates surpass those of its peers, and its price-to-earnings (P/E) and earnings growth (PEG) ratios suggest lower relative future earnings growth, enhancing investment appeal. In summary, First Solar demonstrates strong market competitiveness and growth potential with its advanced technology, sustainable business model, and solid financial performance, positioning it as a leader in the solar energy industry.

Keywords: First Solar, Stock Prediction, Performance Evaluation, Valuation

1. Introduction

First Solar is a leading U.S. solar technology company focused on the development and manufacturing of thin-film photovoltaic (PV) solar solutions for the semiconductor industry. The company manufactures and sells photovoltaic solar modules using Cadmium Telluride (CdTe) thin film technology using advanced technology developed at its research and development laboratories in California and Ohio. This technology is superior to traditional crystalline silicon modules in reducing carbon footprint, water consumption and energy use, providing an environmentally friendly solution to climate change and energy security [1].

First Solar's strategy includes continuously improving its module technology to increase wattage and energy output while enhancing manufacturing efficiency and durability. First Solar's current two main product lines, Series 6 and Series 7, both emphasize sustainability, including fast energy payback, lower carbon footprint and low water consumption. Among them, Series 7 modules were installed in just two months. Can generate more energy than is needed to make them. Its modules are

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sold globally, especially in the U.S. market, accounting for 96% of its sales in 2023. This is thanks to government incentives such as the Inflation Reduction Act (IRA), which provides tax credits for solar modules and components manufactured in the United States [2]. In addition, First Solar's operations in India also receive government support such as the Production Linked Incentive (PLI) scheme to promote domestic solar module manufacturing [3]. First Solar is also continuing to expand its market share globally, such as acquiring Evolar, a leading European thin film company, and signing a 15-year exclusive power purchase agreement (PPA) with Cleantech Solar, an Indian clean technology solar company. At the same time, First Solar is also significantly increasing its production capacity through expansion and plant construction plans. For example, First Solar's total production capacity will be 12.1GW in 2023, and on January 11, 2024, it will build a new plant in Tamil Nadu, India [4]. The sixth operational plant is expected to have an annual production capacity of 3.3GW, which will help meet growing global market demand; First Solar is also building a fifth manufacturing plant in Louisiana, USA, with an expected annual production capacity of 3.5GW by 2026 [5]. This will further strengthen its market share in North America.

In terms of competition, First Solar competes with crystalline silicon module manufacturers, most of which are related to China's supply chain. First Solar responds to competition through its unique technology, integrated manufacturing processes and supply chain management. The company also provides module recycling services with a recycling rate of over 90% and is committed to responsible supply chain management and transparency globally. Moreover, based on the U.S. White House's announcement on May 14, 2024 that it will continue to retain the tariff policy implemented by its predecessor Trump administration and impose additional tariffs on other Chinese goods, the tariff rate on semiconductors will increase from 25% to 50% [6]. This move will make it more expensive for Chinese semiconductor products to enter the U.S. market, help protect U.S. semiconductor manufacturers and reduce foreign competition, and is a good policy for First Solar.

Overall, First Solar is committed to becoming a leader in the solar industry through its advanced technology, sustainable manufacturing practices and global market strategies, while actively responding to policy changes and market competition to achieve long-term shareholder value growth and environmental protection Protect the target.

2. Performance Evaluation

In today's competitive business environment, a company's performance evaluation is critical for investors to understand its long-term development and success. Based on last year's annual financial report [10-K], this article conducts a comprehensive performance evaluation of First Solar from three key aspects: liquidity, solvency and profitability, which will help investors understand the company's operating efficiency. , financial risk, and profit potential [7].

2.1. Liquidity

Liquidity refers to the proportion of a company's assets that can be quickly converted into cash, which reflects the company's ability to pay short-term debt [8]. Figure 1 evaluates the company's liquidity through indicators such as current ratio, quick ratio and cash flow ratio. By comparing the liquidity of three competing companies, NextEra Energy, Canadian Solar and Enphase Energy, it can be seen that First Solar's liquidity is in a relatively healthy state above the average level.

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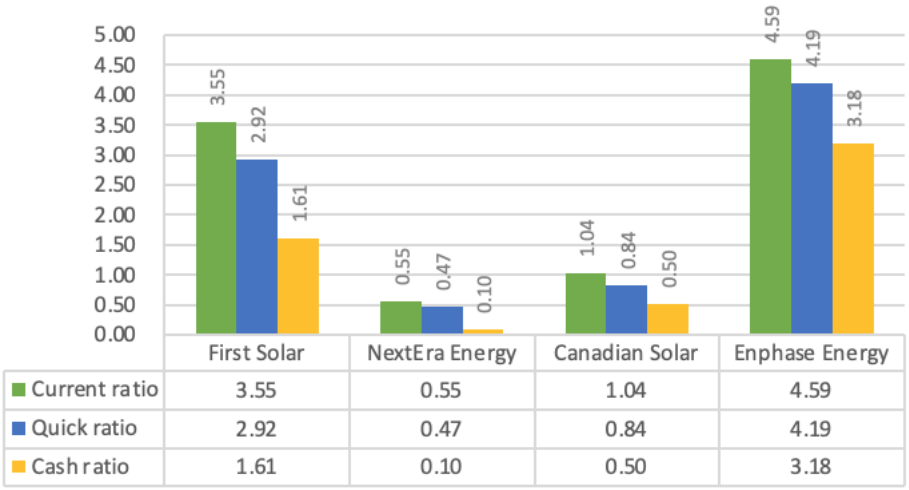

Figure 1: Liquidity ratios of First Solar and its competitors (Photo/Picture Credit: Original).

First Solar has a current ratio of 3.55, which means the business's current assets are 3.55 times its current liabilities. This ratio is relatively high and can ensure that the company has sufficient liquidity support when repaying short-term debt maturities [8, 9]. In addition to this, the company also indicated availability under its revolving credit facility, and as of December 31, 2023, the company did not have any borrowings. However, an excessively high current ratio also indicates that the company may have some idle monetary funds, excessive accounts receivable, or overstocked inventory. This may lead to the company's excessive occupation of current assets and low asset utilization efficiency, which in turn affects the company's profits ability [10]. In response, First Solar said it intends to maintain appropriate debt levels based on cash flow expectations, overall capital costs and expected cash needs from operations, including near-term construction activity and the purchase of manufacturing equipment for the company's newest manufacturing and research and development facilities in the United States.

Excluding the impact of inventory, First Solar's quick ratio is 2.92. From the data of these four companies, it can be basically judged that the difference between quick ratio and current ratio is small. This may be because the solar photovoltaic industry does not require a large amount of inventory. It can be inferred from this that First Solar has made a lot of short-term investments. In order to ensure that it can protect the investment principal and maintain sufficient liquidity, the company places its investments in a diversified group of high-quality financial institutions and restricts such investments. Concentration of investments with any one counterparty.

Excluding the impact of receivables, First Solar's cash ratio is 1.61, which is greater than 1, which means that the total amount of cash and cash equivalents held by the company can fully repay all liabilities it needs to pay in the short term [11].

First Solar uses adequate tax planning and financing strategies to ensure that the company's cash, cash equivalents, marketable securities, cash flow from operating activities, and contracts with customers for future solar module sales will be sufficient to fund operations for at least the next 12 months Funding and capital expenditure requirements.

2.2. Solvency

Solvency refers to a company's ability to repay debt, which reflects the company's financial soundness and credit rating [12]. Figure 2 evaluates the company's solvency through indicators such as debt ratios and interest coverage ratios.

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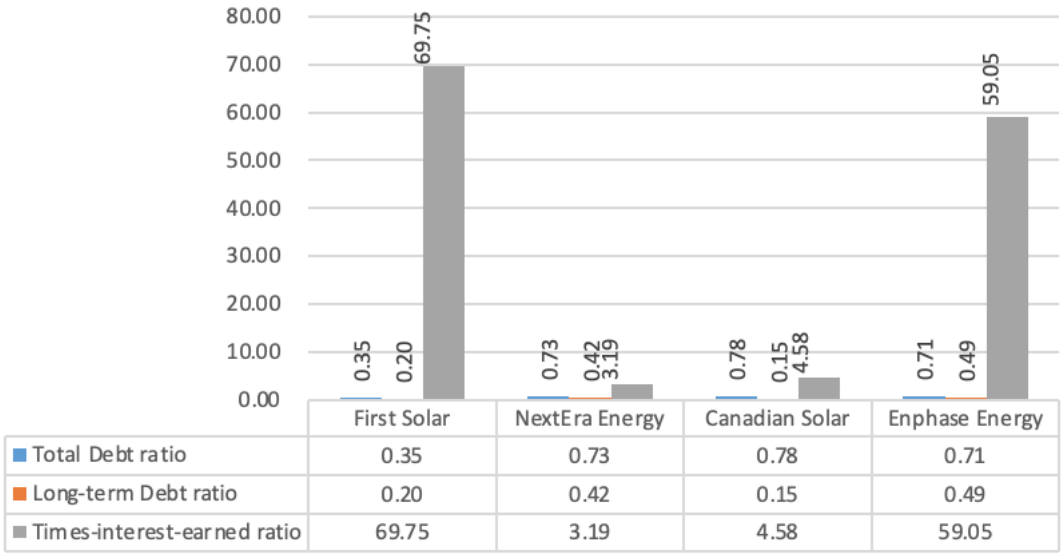

Figure 2: Solvency ratios of First Solar and its competitors (Photo/Picture Credit: Original).

By comparison, First Solar is in a comparatively advantageous position in terms of debt solvency. First of all, its debt ratio and long-term debt ratio are the lowest among these competing companies, and its interest coverage ratio is the highest. It can be concluded that First Solar is at the forefront of the industry in terms of debt solvency. First Solar's debt ratio is 0.35, reflecting the company's total liabilities of 35% of total assets. This value is lower, indicating that the company has a higher proportion of own capital and sufficient cash flow [11]. This is due to the company's good operating strategies and prudent financial policies.

Judging from the long-term debt ratio of 0.20 alone, the long-term debt ratio still accounts for the majority of the total liabilities, and the company's long-term liabilities in 2023 have also increased significantly compared with 2022, further expanding the long-term debt ratio. This is because the company is constantly expanding and investing in building factories, and due to the industry characteristics of the photovoltaic industry, the initial investment in its expansion is relatively large. But overall, the debt repayment pressure is still controlled at a relatively low level.

The times-interest-earned ratio reflects the company's ability to pay interest expenses with cash flow generated from operating activities [13]. The value of 69.75 indicates its good solvency, which is much higher than the industry level. This reduces a company's financial risk and increases investor confidence.

2.3. Profitability

Profitability refers to a company's ability to create profits, and it is a key indicator for evaluating a company's economic benefits [14]. The following will evaluate the company's profitability through indicators such as return on net assets, gross profit margin, and operating profit margin. It can be seen from Figure 3 that First Solar is at the middle level of the industry.

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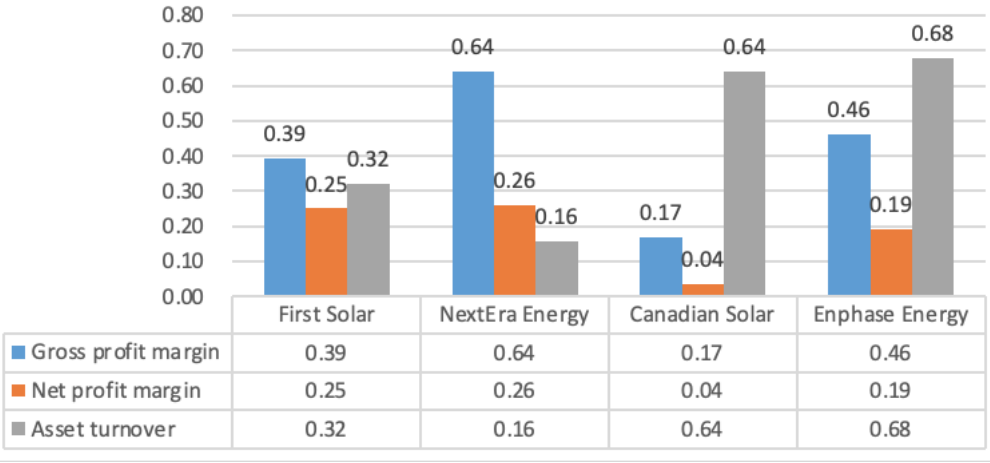


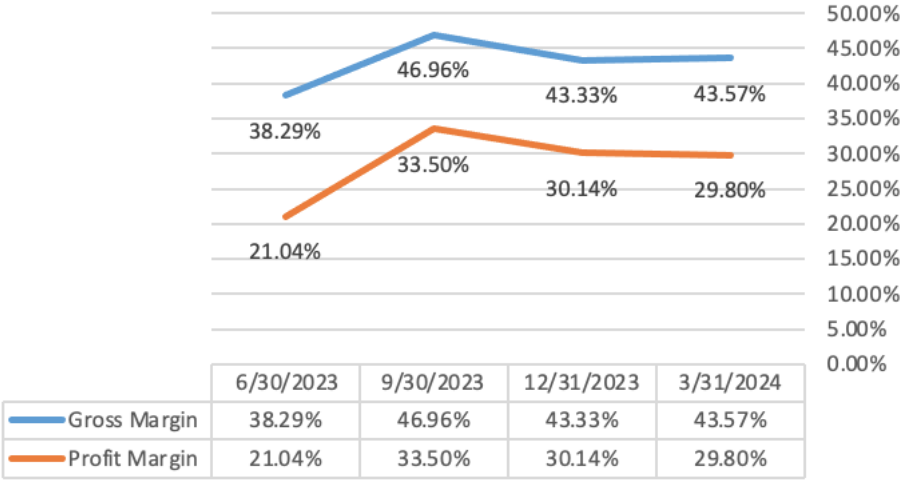
	First Solar	NextEra Energy	Canadian Solar	Enphase Energy
Gross profit margin	0.39	0.64	0.17	0.46
Net profit margin	0.25	0.26	0.04	0.19
Asset turnover	0.32	0.16	0.64	0.68

Figure 3: Profitability ratios of First Solar and its competitors (Photo/Picture Credit: Original).

First Solar's gross profit margin is 0.39. This ratio reflects the profit ratio of the company's sales revenue after deducting costs, and this data shows that First Solar has certain cost control capabilities in the production and sales process to maintain a high profit margin. The net profit margin is 0.25, reflecting the profitability of the company's main business. First Solar attributed its revenue growth to higher PV module sales and average selling prices.

For further analysis, the revenue reports for the first four quarters were studied. It was found that in the third quarter of 2023, a significant improvement in gross margin occurred, primarily due to the recognition of the advanced manufacturing production credit under IRC Section 45X, a reduction in sales freight costs, an increase in the average selling price per watt of modules, and Continued cost reductions, as well as the upfront sale and related impairment of the Luz del Norte photovoltaic solar power plant [14].

As Figure 4 shown, profit margins remained stable despite declines. First Solar expects to earn between $13 and $14 per share by 2024, selling 15.6 to 16 gigawatts of modules at an average selling price of 28.2 cents per watt, with a gross margin of 46%.



	6/30/2023	9/30/2023	12/31/2023	3/31/2024
Gross Margin	38.29%	46.96%	43.33%	43.57%
Profit Margin	21.04%	33.50%	30.14%	29.80%

Figure 4: Quarterly profit margins of First Solar (Photo/Picture Credit: Original).

In terms of asset turnover, it can be seen that the ratio is relatively low across the industry. This may be due to the fact that solar photovoltaic products are durable consumer goods and usually have a long service life, so replacement frequency is not high; and the large-scale production requires a

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large amount of raw materials and equipment. The value of these fixed assets accounts for most of the company's assets. Therefore asset turnover will decrease. So even though First Solar's asset turnover rate is relatively low, it is still within the normal range.

From the above analysis, it can be concluded that First Solar's profitability is very impressive. A strong profitability can drive a company's growth and development, bringing greater returns to investors [15].

Through a comprehensive assessment of liquidity, solvency and profitability, it can be concluded that First Solar's financial situation is relatively healthy. This will provide investors with valuable information about the company's future growth potential and risk management.

3. Valuation

3.1. Forecast

Through the following data in Table 1, this section will compare the four companies and analyze why First Solar has the most potential.

Table 1: Valuation ratios of First Solar and its competitors.

	First Solar	NextEra Energy	Canadian Solar	Enphase Energy
Share price	$175.58	$60.09	$16.11	$107.10
TTM EPS	7.74	3.25	3.88	3.38
NTM EPS	13.51	3.38	3.02	3.53
EPS Growth rate	74.5%	4.0%	-22.2%	4.4%
Revenue growth rate	35.6%	2.4%	12.3%	-7.6%
TTM P/E ratio	22.68	18.49	4.15	31.68
NTM P/E ratio	13.00	17.78	5.33	30.34
PEG	0.30	4.62	-0.19	7.14
GP/A	12.55%	10.13%	10.76%	31.29%

First, First Solar has the highest EPS in both the trailing 12 months (TTM) and the next 12 months (NTM). EPS represents the after-tax profit earned by each ordinary share of the company and is an important indicator of the company's profitability. Higher EPS indicates that First Solar is more profitable per share, which means that for every $1 invested by investors, the company can earn more profits than other companies [16]. What is surprising is that First Solar's EPS growth rate still maintains a relatively high growth rate of 74.5%, indicating that the company's profitability has significantly improved. Such a growth rate means that the company is in good operating condition and its business is developing rapidly. Judging from First Solar's expansion and factory construction plan, this ratio is not a one-time non-recurring project, but is caused by real economic activities, so it is expected that this objective growth rate can be maintained in the future. From the perspective of revenue growth rate, this is an important indicator to measure the sales growth rate of a company and is usually used to evaluate the market performance and competitiveness of the company. First Solar's revenue growth rate of 35.6% means that the company's sales performance is very good, market demand is strong and it occupies a favorable position in the market.

Compared with its peers, Canadian Solar's EPS growth rate is -22.2%, which is a negative number, but its price-to-earnings ratio is very low, at 5.33. This means that Canadian Solar's current share price is low relative to its profitability, but the company's earnings growth prospects are not optimistic. Enphase Energy's NTM P/E ratio is 30.34 but its PEG is 7.14, indicating that the market has a positive attitude towards the company's future earnings growth prospects, but it may also mean that the

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company's stock price has a certain bubble risk, and a negative revenue growth rate also can illustrate this point. Negative growth based on growth rates illustrates the performance of Canadian Solar and Enphase Energy. The company may face problems in operation or lack of market competitiveness, so it is not recommended to invest in it. NextEra's data is a little inferior to First Solar.

First Solar's P/E ratio based on the past 12 months is 22.68, while the next twelve months is 13.0. NTM is lower than TTM, which means that the market expects the company's profits to increase in the next year. It may be that the market expects the company to improve efficiency, expand market share, launch new products or services, etc. After knowing P/E, divide it by the company's annual profit growth rate to get PEG, which is an indicator used to evaluate the company's performance growth. First Solar's PEG is 0.3, which means that the stock's price-to-earnings ratio is 0.3 times its profit growth rate. In other words, the price of this stock is low relative to its future profit growth, which may be an attractive investment opportunity [17].

3.2. Strategy & Risks

It is worth noting that investment decisions should be based on more comprehensive analysis and consideration. In addition to the above quantitative analysis of data, a qualitative analysis of First Solar's strategy and risks should also be conducted to consider the impact it brings.

According to Item 7 of First Solar's annual report [10-K], the company has a series of expansion plans. First Solar is currently expanding its manufacturing capacity to approximately 8GW and plans to build a fourth manufacturing plant in the United States, which is expected to begin operations in the second half of 2024. At the same time, the company also plans to start up its fifth manufacturing plant in the United States by the end of 2025, and they are also expanding the manufacturing scale based on the existing plant in Ohio. The expansion of the existing facility is expected to be completed in the first half of 2024.

Expanding manufacturing capacity can enable First Solar to better meet market demand. According to the latest reports, First Solar plans to build a fifth manufacturing plant in the United States, investing up to $1.1 billion to further expand its photovoltaic (PV) solar module production capacity in the United States. The new plant is expected to be completed and put into use in the first half of 2026 [5]. It will produce First Solar's 7 series modules, which are expected to use 100% American-made modules as determined in the domestic content guidelines issued by the U.S. Treasury Department. Expanding manufacturing capacity can also enhance First Solar's competitiveness in the market. By expanding production capacity, First Solar can provide more products and services, thereby attracting more customers and strengthening its position in the market. Expanding manufacturing capacity also helps First Solar improve its economic benefits. Through economies of scale, First Solar can reduce the cost of its unit products and improve its profit margins. However, expanding manufacturing capacity may also bring some risks. For example, if market demand forecasts are inaccurate, it may lead to overcapacity; or if raw material prices fluctuate too much, it may affect First Solar's cost control [18]. Overall, First Solar's decision to expand its manufacturing capacity has a positive impact on its long-term development, but it also needs to be cautious about the possible risks.

4. Conclusion

For investors, First Solar has demonstrated strong business growth potential and financial robustness. Its leading position in thin-film photovoltaic technology, combined with sustainable manufacturing practices and government-supported policies, provides the company with a stable market position and growth momentum. First Solar's financial indicators show good liquidity, debt repayment ability and

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profitability, especially when compared with industry competitors, its EPS growth rate and revenue growth rate are both high, indicating strong growth in the company's performance.

Although First Solar plans to expand its production capacity, which may bring certain market risks such as overcapacity or cost fluctuations, these risks are controllable in the long run, considering the continued growth in global demand for clean energy and policy support in markets such as the United States and India. In addition, First Solar's low P/E ratio and low PEG ratio indicate that its stock is undervalued relative to future earnings growth, providing investors with a potential high return opportunity.

Therefore, investors should consider First Solar as a candidate for long-term investment, especially for investors seeking to invest in the clean energy sector. However, investors should also pay attention to market dynamics, policy changes, and the company's progress in executing expansion plans to ensure timely adjustments to investment decisions. Overall, First Solar's business model, financial performance, and market prospects make it an attractive investment option in the solar industry.

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