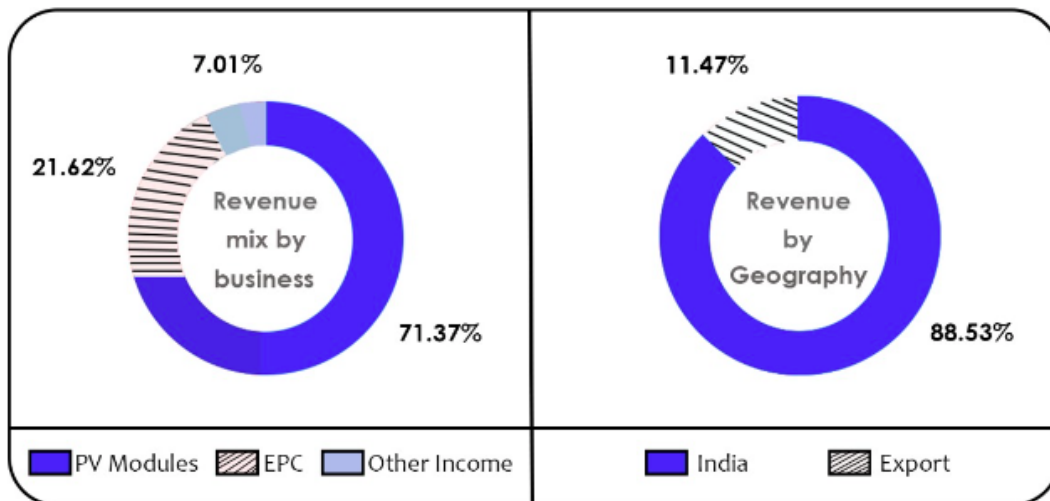


About Vikram Solar Private Equity

Established in 2006, Vikram Solar Limited (formerly Vikram Solar Pvt. Ltd.) is currently India's largest domestic PV module manufacturer and an integrated solar energy solutions provider across photovoltaic ("PV") modules, engineering, procurement, construction and services ("EPC") and operations and maintenance services ("O&M"). The company has an international presence across six continents and is actively contributing to shaping the solar revolution. Vikram Solar manufactures highly efficient mono- and polycrystalline silicon PV modules. The company has three manufacturing facilities in West Bengal and Tamil Nadu. In FY23, Vikram Solar generated 6% of its revenue from the EPC and O&M business, while 94% of its revenue came from the sale of solar modules.



Highlights of Vikram Solar

- a) Presence across 6 continents.
- b) Vikram Solar has helped businesses generate electricity using solar energy and has reduced carbon emissions by 1.4 million tonnes so far.
- c) They have exported 3.5 GW worth of PV modules.
- d) The company currently employs more than 1962 people.
- e) A total of 42+ distributors covering 600 out of the total 718 districts of India.
- f) 970 MW projects under operation and maintenance. Vikram Solar Limited continues the rich tradition and extensive manufacturing experience of the Vikram Group, with a track record of over 40 years since 2005. They were able to successfully demonstrate their capabilities much before the Indian solar power sector witnessed vigorous growth and development.

Advanced Research and Development Infrastructure

As a Tier 1 manufacturer of PV modules, Vikram products are designed to maintain standards of quality, reliability, and performance. The company has its own research and development department, which helps it stay one step ahead in the ever-evolving field of solar power technology. Vikram Solar also conducts research and study programs with leading laboratories across the world. Over the years, Vikram Solar has sought expertise and know-how to develop a research and development (R&D) team that focuses on improving its product portfolio and launching new products to better serve its customers. The R&D team conducts collaborative research programs with leading laboratories such as the National Institute of Solar Energy (INES) in France and the University of New South Wales (UNSW) in Australia.

Total Capacity of Vikram Solar

Currently, the company has a production capacity of 1.2 GW of PV modules. Vikram Solar focuses on introducing breakthrough and innovative technologies. The production facility has machinery and equipment imported from the US, Switzerland, Germany, and Japan.

Total Projects Completed

Vikram Solar is a comprehensive EPC solar power solutions provider, designing, installing, and commissioning ground-breaking solar power projects using world-class technology. Vikram Solar Limited is proud of its track record of installing and commissioning a total of over 135 GW of solar power projects across India.

Future Plans of Vikram Solar

Vikram Solar's focus today is to establish a new and world-class 1.3 GW module manufacturing facility in Tamil Nadu. Towards this, they are going to invest ~5500 Cr and will take its total annual module manufacturing capacity to 2.5 GW, making Vikram Solar the largest solar panel manufacturer in India. The next goal is to enhance the Tamil Nadu manufacturing facility's capacity to 3 GW within the next 5 years.

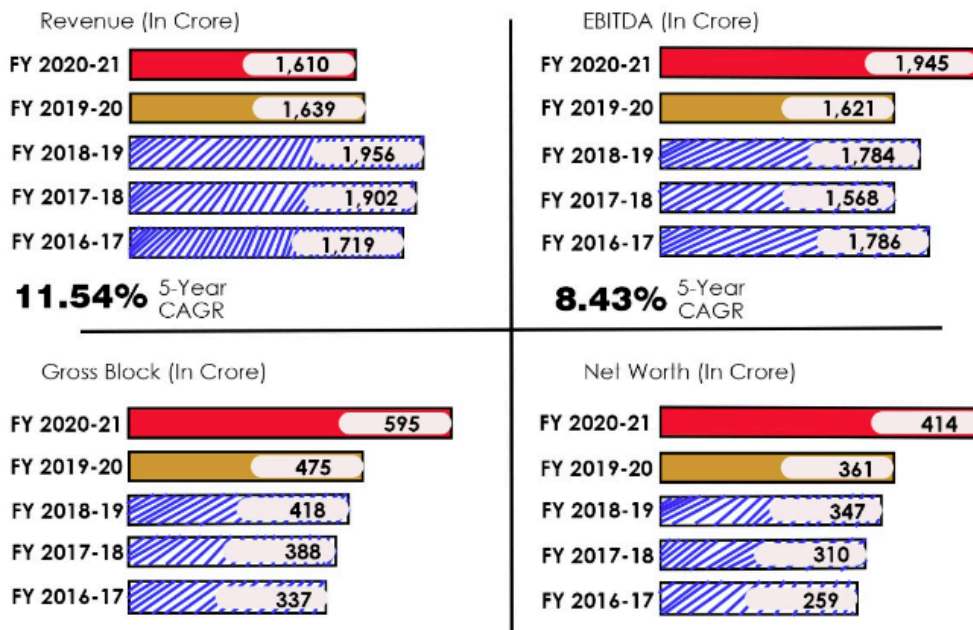
Achievements of Vikram Solar in the last 15 years in the Solar Sector

- a)** First company to contribute to the solarisation of the world's maiden fully solarised airport in Kochi, Kerala.
- b)** Designed, installed, and commissioned India's first floating solar plant in Kolkata, West Bengal.
- c)** Executed the largest single-shed rooftop solar plant in eastern India- a 2.15 MW solar plant at Nilganj, North 24 Paraganas, West Bengal for Keventer Agro Limited.
- d)** Commissioned rooftop solar plant on the tallest building in Kolkata- THE 42' with 22.5 kW capacity.

e) Commissioned 225 MW plant, the largest in the state of Uttar Pradesh for NTPC Ltd. Vikram Solar also comes with the experience of commissioning 6 solar projects for airports (Kolkata, Calicut, Dibrugarh, Gaya, Gondia, and Cochin) in India.

Growth in the last 5 years

Progress over the years



Government's PLI scheme for solar photovoltaic modules

To make India an exporter, the Indian government has increased funding under the Production Linked Incentive (PLI) scheme for domestic solar cell and module manufacturing to Rs 24,000 crore from the existing Rs 4,500 crore. "The government has introduced a PLI scheme (for solar cells and modules) worth Rs 4,500 crore. They have invited bids and acquired 54,500 MW of solar power capacity. Industry bodies have sought the government's approval of an additional Rs 19,000 crore under PLI, which has been approved (in principle). Currently, the PLI for solar modules stands at Rs 24,000 crore. Going forward, the Production Linked Incentive (PLI) scheme for solar power will boost Vikram Solar's capacity expansion plans.

Key Risks for Vikar Solar

a) Project Execution: An amount of INR 83 Cr (included in accounts receivable in financial statements) has been withheld/collected from certain customers about EPC contracts on account of penalties, generation losses, etc. not allowed by the Company and the matter is to be submitted to arbitration/court as per the provisions of the respective contracts referred to it. The management is keen to resolve the matter in the Company's favour and necessary adjustments will be made based on the outcome of the arbitration.

b) Corporate Governance: The remuneration paid to the Managing Directors and Executive Directors of the Company for the financial year ending March 2023 has exceeded the limit prescribed under Section 197 of the Companies Act, 2013 by INR 1,367 Cr, which is subject to the approval of the Government. Shareholders of the Company. No adjustments were made to the financial statements pending this approval.

Industry Outlook:

The solar power industry in India is expected to grow at a faster rate in 2021. The Ministry of New and Renewable Energy is aiming to achieve an ambitious target of having 114 GW of solar power capacity by 2022. The Government of India is working towards developing green cities in each state by installing rooftop solar PV systems in every residential home and setting up solar farms in suburban areas.

Factors Driving Solar Growth

a) Reduction in Solar PV Tariff:

One of the key growth drivers for solar energy in India has been the reduction in solar PV tariffs from ~7.36/kWh (10 US cents/kWh) in FY 2014-15 to ~2.63/kWh (3.57 US cents/kWh) in FY 2019-20.

b) "Make in India" Initiative: The Government of India is actively promoting the development of domestic manufacturing capacity for solar cells and modules through various programs as part of the "Make in India" initiative.

c) Extension of safeguard duties: In December 2020, India extended safeguard duties on imported solar cells and modules for another year.

d) Rooftop lease policy: In 2017, the Indian government introduced the rooftop lease policy to boost solar power, which backed the country's target of generating 40 GW of solar power from rooftop systems by 2022. However, pandemic-related restrictions slowed growth, but the policy will provide a boost to the solar power sector once the situation normalizes.

e) Solar Innovation: Another growth driver in the solar market is the focus on innovation with photosensitive nanoparticles, bifacial solar modules, floating solar modules, etc. being brought to the market.

Challenges in the Solar Business

a) DisCom Issues: The Indian government has taken various measures such as the Ujwal DISCOM Assurance Yojana (UDAY Scheme) introduced in 2015 to address the financial challenges of the power distribution companies (DisComs). However, successive lockdowns during the COVID-19 pandemic have made it difficult for government authorities to get the power distribution companies to sign formal power sale agreements.

b) Suppressed Power Demand: Falling demand for power is proving to be a major challenge. The pandemic has further reduced demand, although concerns remain.

c) Land Acquisition Issues: Land allocation for renewable energy is a major issue. To address this issue, the Indian government introduced measures such as a "rooftop rental" strategy to promote solar energy, but pandemic-related restrictions have posed unprecedented challenges.

Overview of the Indian solar PV market

The solar PV market in India has fallen to its lowest level in five years. However, India ranks sixth in new solar PV installations and fifth in total generation in 2020. About 4.4 GW of solar PV capacity was added during the year, taking the national total to 47.4 GW. Pandemic-related lockdowns and labor shortages caused delays in project construction and auctions, leading to the decline. Moreover, government authorities struggled to get power distribution companies to sign power sale agreements (PSAs), leaving around 17-18 GW of solar PV projects without PSAs. Apart from this, rising costs of raw materials and solar PV modules, and rising transportation and freight costs contributed to the decline of the solar PV industry. Moreover, utility-scale solar PV projects, which accounted for around 78% of the installed capacity in 2020, also declined by 60% year-on-year to 2,520 GW of installed capacity. The rooftop market contracted by 22% to 0.719 GW of installed capacity. In the utility-scale solar PV sector, Andhra Pradesh, Gujarat, and Rajasthan are the three largest states, accounting for around 51% of the installed capacity.

1. Government Policies on Solar Energy: The Government of India has launched various programs to promote solar energy generation in the country such as Solar Farm Scheme, VGF Scheme, CPSU Scheme, Defence Scheme, Canal Embankment and Canal Roof Scheme, Bundling Scheme, Grid Connected Solar Roof Scheme etc.

2. The Government has set a target of adding an average of 30 GW per year in the next seven years, increasing the solar power capacity from the current 67 GW to 280 GW by 2030. The cost of 1 GW of solar cells is around Rs 2,500 crore and the annual market size of the targeted growth in India is estimated to be around Rs 75,000 crore.

3. ALMM and how it benefits Indian module manufacturers: ALMM generally stands for Approved List of Models and Materials. It is a regulatory framework and certification system established by the Ministry of New and Renewable Energy (MNRE) of India. The ALMM framework primarily relates to solar photovoltaic (PV) modules and aims to ensure the quality and performance of these modules used in solar power projects. Here is how ALMM benefits Indian module manufacturers:

- A) Quality assurance**
- B) Suitability for government projects**
- C) Access to incentives and subsidies**
- D) Market Credibility**
- E) Competitive advantage in the export market**

As of August 17, 2023, Vikram Solar is one of the largest manufacturers on the list of approved module manufacturers of the Ministry of New and Renewable Energy ("ALMM").

Basic customs duty on solar modules and solar cells: India plans to impose a customs duty of 40% on solar modules and 25% on solar cells from April 2022 to reduce imports and increase local production. Previously, the customs duty was 20%.

The top five solar PV companies by capacity are:

A) WAAREE ENERGIES LIMITED: Waaree Energies Ltd. Established in 1989. Since its inception, the company has been on a long journey spanning over 30 years and now has a production capacity of over 12 GW. Waaree Energies is India's largest solar module manufacturer with over 380 locations across India and 20 other countries, occupying a notable position in the solar energy sector.

B) ADANI SOLAR GROUP: Adani Solar was established in 2016. This solar module manufacturer in India has a production capacity of 4 GW. The company offers monofacial and bifacial modules (PERC technology) that help in harnessing solar energy. Currently, Adani Solar is building a 10 GW solar manufacturing ecosystem in India.

C) VIKRAM SOLAR: Vikram Solar was founded in 2006. Its presence in the solar energy sector in over 32 countries, experience in installing 1.42 GW projects in India, and an annual production capacity of 3.5 GW modules make Vikram Solar a capable brand in the solar energy industry. The solar panel manufacturer is ambitious to achieve India's green energy target of 500 GW by 2030. Till now, Vikram Solar has commissioned over 300 projects across multiple locations.

D) GOLDI SOLAR PRIVATE LIMITED: Gujarat-based Goldi Solar was established in 2011. The company offers solar energy products in the domestic market as well as in 20 other countries. Goldi Solar has achieved a record increase in production capacity from 10 MW to 500 MW in just a decade. Goldi Solar has an annual production capacity of 2.5 GW and is currently planning to add another 2,000 MW by the end of 2023.

E) Saatvik Green Energy PVT. LTD.: Saatvik Green Energy Pvt. Ltd. started its venture into the solar power sector in Haryana in 2015. The company is actively contributing to the solar energy sector with an annual production capacity of 1GW. The solar module manufacturer has its manufacturing facility in Ambala (Haryana) and will soon be setting up another manufacturing facility at Gandhidham, Gujarat with a capacity of 1.2GW.

Fundamentals

Fundamentals			
Vikram Solar	260 Per Equity Share	Market Cap (in cr.)	6081.8
Unlisted Shares Price		P/E Ratio	405.17
Lot Size	1000 Shares	P/B Ratio	16.67
52 Week High	330	Debt to Equity	2.02
52 Week Low	180	ROE (%)	4.11
Depository	NSDL & CDSL	Book Value	14.1
PAN Number	AABCIS168D	Face Value	10
ISIN Number	INE078V01014		

Financials (Figures in cr)

P&L Statement			
P&L Statement	2021	2022	2023
Revenue	1627	1743	2092
Cost of Material Consumed	1216	1395	1717
Gross Margins	24.47	19.36	17.17
Change in Inventory	0.5	-11	-101
Employee Benefit Expenses	87	109	91
Other Expenses	129	178	179
EBITDA	177.5	59	187
OPM	11.02	3.41	9.02
Other Income	17	13	19
Finance Cost	99	103	122
D&A	39	48	64
EBIT	138.5	11	123
EBIT Margins	8.6	0.64	5.93
PBT	56	-79	20
PBT Margins	3.48	-4.57	0.96
Tax	18	-16	5
PAT	38	-63	15
NPM	2.36	-3.64	0.72
EPS	16.17	-2.43	0.58
Financial Ratios	2021	2022	2023
Operating Profit Margin	11.02	3.41	9.02
Net Profit Margin	2.36	-3.64	0.72
Earning Per Share (Diluted)	16.17	-2.43	0.58

Balance Sheet			
Assets	2021	2022	2023
Fixed Assets	334	502	644
CWIP	66	4	18
Investments	0	0	0
Trade Receivables	736	917	959
Inventory	193	265	373
Other Assets	469	549	482
Total Assets	1798	2237	2476
Liabilities	2021	2022	2023
Share Capital	23.5	258.8	258.8
FV	10	10	10
Reserves	391	92	106
Borrowings	621	703	738
Trade Payables	506	754	446
Other Liabilities	256.5	429.2	927.2
Total Liabilities	1798	2237	2476

Cash-Flow Statement			
Cash- Flow Statement	2021	2022	2023
PBT	56	-79	19
OPBWC	171	72	196
Change in Receivables	0	0	0
Change in Inventories	33	-72	-108
Change in Payables	0	0	0
Other Changes	-197	210	109
Working Capital Change	-164	138	1
Cash Generated From Operations	7	210	197
Tax	6	-9	-2
Cash Flow From Operations	13	201	195
Purchase of PPE	-57	-141	-131
Sale of PPE	0	0	0
Cash Flow From Investment	-40	-155	-110
Borrowing	103	37	-8
Divided	0	0	0
Equity	15	0	0
Others From Financing	-114	-73	-94
Cash Flow from Financing	4	-36	-102
Net Cash Generated	-23	10	-17
Cash at the Start	32	8.5	18.5
Cash at the End	9	18.5	1.5