

BOROSIL renewables

BOROSIL



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Research Report

27th Nov, 2020

BOROSIL
renewables

Key Data

Industry:	Solar Glass
CMP:	126
Market Cap (Cr):	Rs. 1434
52 –Week High/Low:	Rs. 149/27.5
Investment Horizon:	3 Years
Outlook:	Positive

Shareholding Pattern

Promoters:	70.50%
Public:	29.50%

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The best way to play the solar boom in India

Last decade has proved that when a high growth new technology sector comes out of a disruption cycle wealth creation take place. Its mind blowing that the Nasdaq index itself has gone up approximately 6x in the past decade, but we all know what had just happened just a decade earlier with companies going bust due to business models which didn't produce cash flows. The decade gone by has been full of disruption for the solar sector with huge disruption due to ever changing technological advancements and quantum of subsidies by the governments around the world. Hardly any companies catering to the sector have been to earn steady cash flows or survive altogether. Bankruptcies have been rampant but luckily that hasn't discouraged Institutions, entrepreneurs or the government to throw capital at the sector.

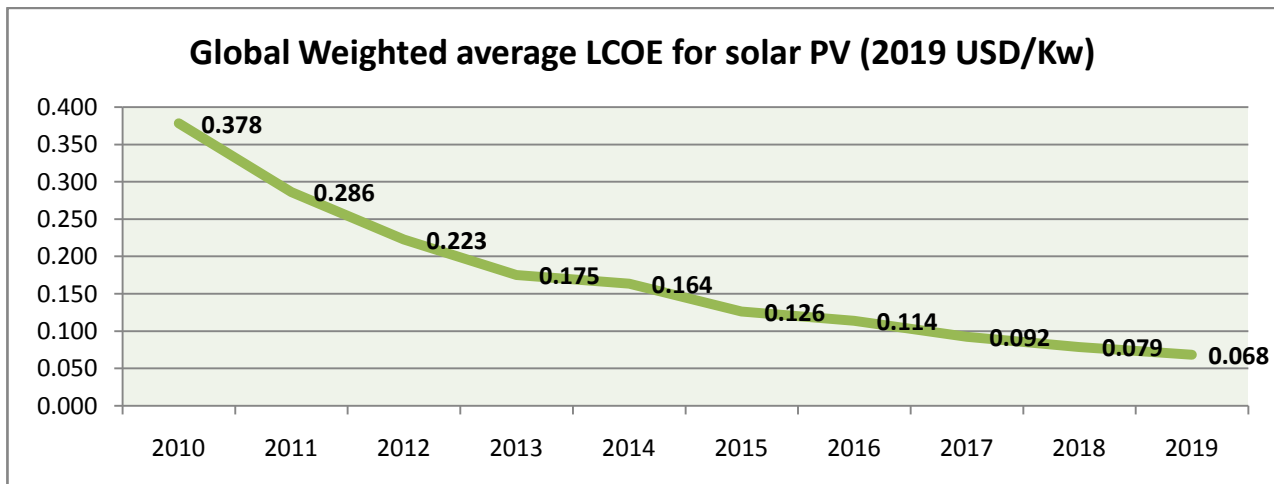
We currently are at an extremely exciting juncture where it is now amply clear that solar PV Technology is the most scalable globally and it's becoming less prone to disruption as the technology is maturing and a lot of global giants are emerging catering to various components of the PV module manufacturing.

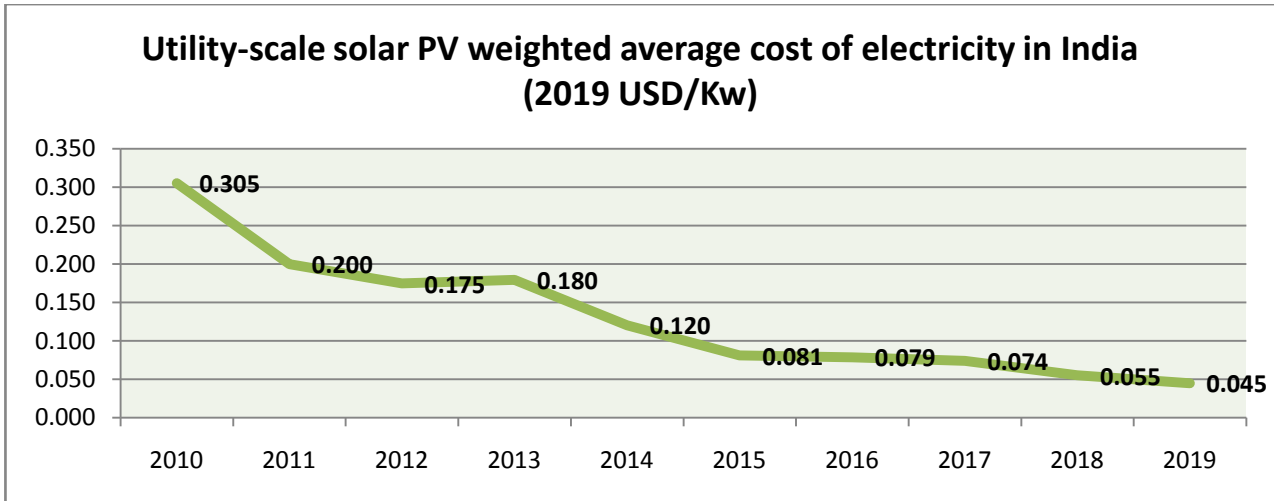
- Jinko Solar (12%), JA Solar (8%), Trina Solar (8%), Longi Solar (7%) and Canadian Solar (7%) are market leader in solar modules market.
- Longi (17%) and GCL (16%) are market leader in solar wafer market share.
- GCL – Poly (17%), Tongwei (12%), Wacker (12%) and OCI (12%) are market leader in solar polysilicon market.
- Hanwha Q Cells (7%), JA Solar (6%), Canadian Solar (5%) and Trina Solar (5%) are market leader in solar cells market.
- Xinyi Solar (24%) and Flat Glass (22%) are market leader in solar glass market.

At present, we are witnessing strong traction towards the solar sector worldwide. Solar energy is one of the fastest growing sectors in the world and countries are adopting quickly the trend of solar energy. Technological innovation has made solar equipment cost very cheaper compared to 10 years ago. Lower cost of solar installation is driving change in the energy mix worldwide.

Few years ago solar was very costly and dependent on government subsidies, even the government used to pay 70-80% subsidy on solar projects, which now is minimal or zero at various places. Installation cost of 1 MW solar power plant used to be in the range of Rs. 20-25 Cr, which is now in the range of Rs. 4-6 Cr per MW. The levelized cost of energy generated by large scale solar plants is around \$0.068/kWh, compared to \$0.378 ten years ago, which made solar competitive with other energy plants.

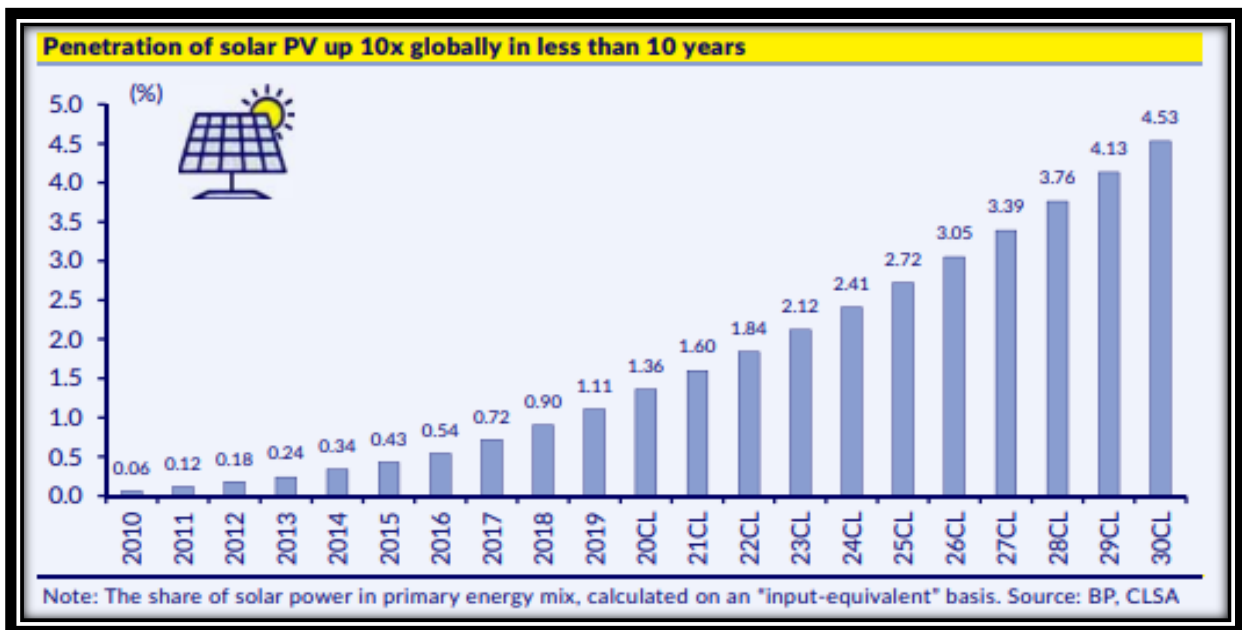
Cost of Solar energy is decreasing





*Source – IRENA Renewable Cost Database

Penetration of Solar energy is very low – It is a long term trend, and we can expect solar energy is going to disrupt traditional energy for a very long term. The current contribution of solar energy in the total energy mix has been just 1% only.

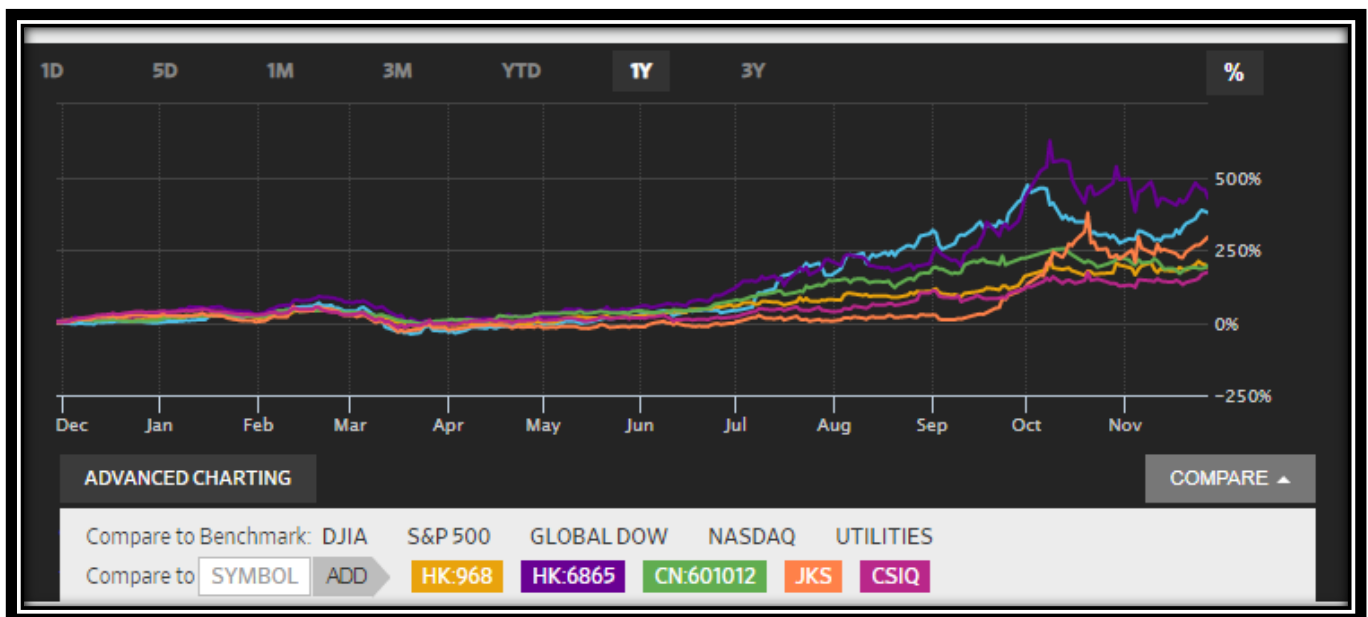


Recently, after Covid pandemic, we witnessed some large and serious money is chasing investments in solar worldwide. The trend is clearly visible in share price growth of big solar companies worldwide.

Nasdaq vs Invesco Solar ETF, solar ETF has outperformed significantly in last one year.



Performance of Solar Related Stocks Worldwide



All major companies in the sector SunRun Inc (US:RUN), Xinyi Solar (HK:968), Flat Glass (HK:6865), Longi (CN:601012), Canadian Solar (CSIQ) and Jinko Solar (JKS) has given a return of **150-500% in last 1 year** (from level of before Covid Pandemic).

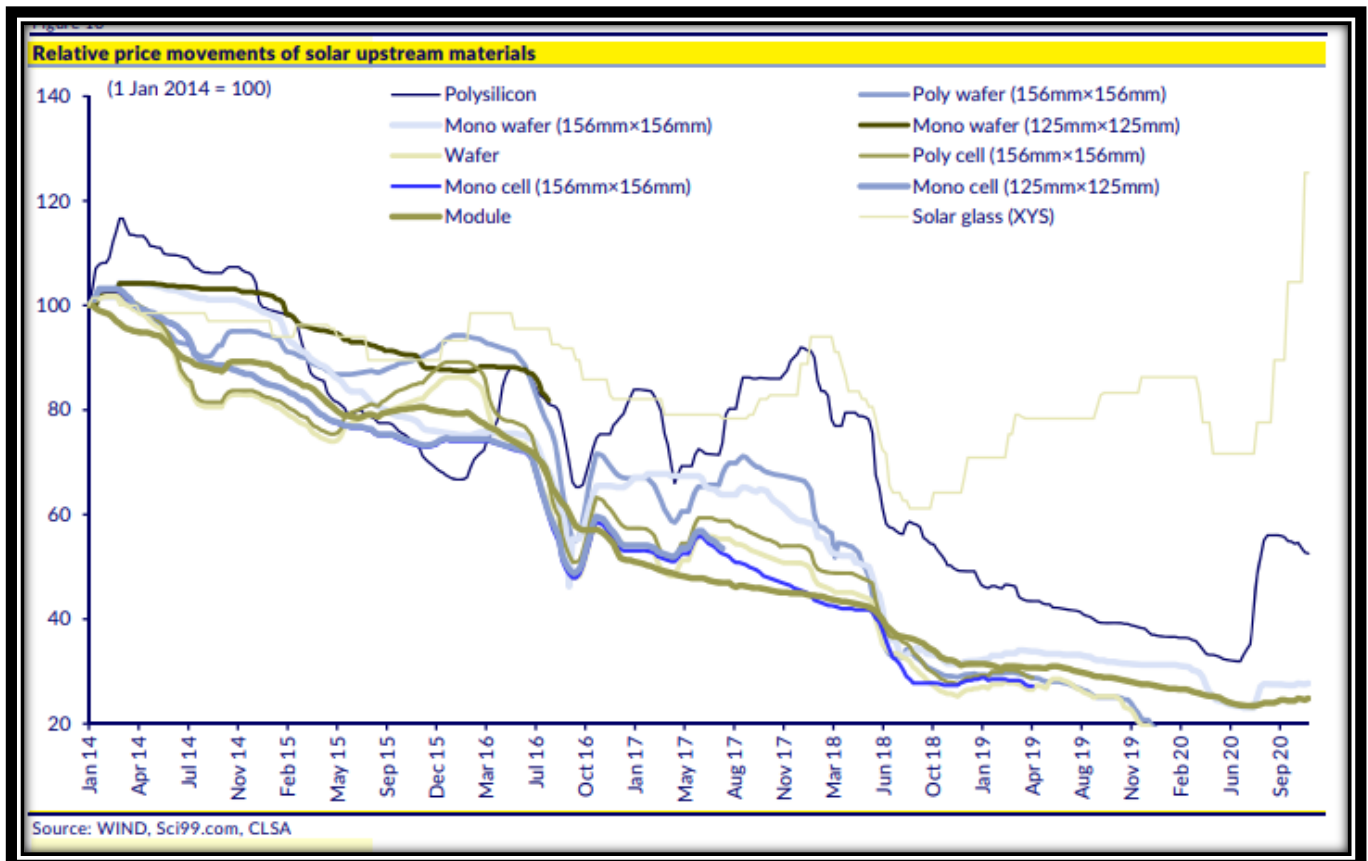
This clearly shows worldwide smart money is chasing solar energy related stocks.

So, the overall scenario makes us bullish on the trend of solar energy. And, it is going to play a big role in the future. The biggest risk in solar related business is new technology, which

keeps disrupting other players. Higher innovation has made higher uncertainty in overall business.

Solar material price has reduced 80-90% in the last 10 years. Reduction in cost keeps disrupting the business of existing companies and forces them to spend higher cash flow on innovation.

Price Movement of Solar Materials



Solar glass is one of the least disrupted products in the solar chain. Price of solar glass has been very stable in the last 5 years. So, this is obviously one of the key products in the solar chain, which can keep growing at a higher rate for the next few years without getting disrupted. And, companies in the solar glass sector are in a good position to gain from long term growth of the solar industry.

Sotoplay this high growth theme we are placing our bet on the solar glass industry as this segment is the least prone to disruption and has large companies dominating (top 2 players around 50% world market share) the most in terms of market share as it's a difficult business to enter and the existing players keep on becoming large at the cost of smaller marginal players and also due to the inherent growth in the sector and tailwinds like bifacial

technologies which has glass on both side of the panel which may just double the consumption of glass per module.

The company that we have chosen has an even more interesting position in the market, as it's the only player in India which has struggled to compete with large Chinese manufactures over the past decade and hence not been able to grow much profitable but now after many years of struggle the company has been able to come at the lower side of the cost curve to compete with the global giants and also a regulatory framework making domestic glass demand more favourable for the local manufacturers seems to be trickling down in the numbers with and added sweetener of global short supply dynamics aiding it in the medium term.

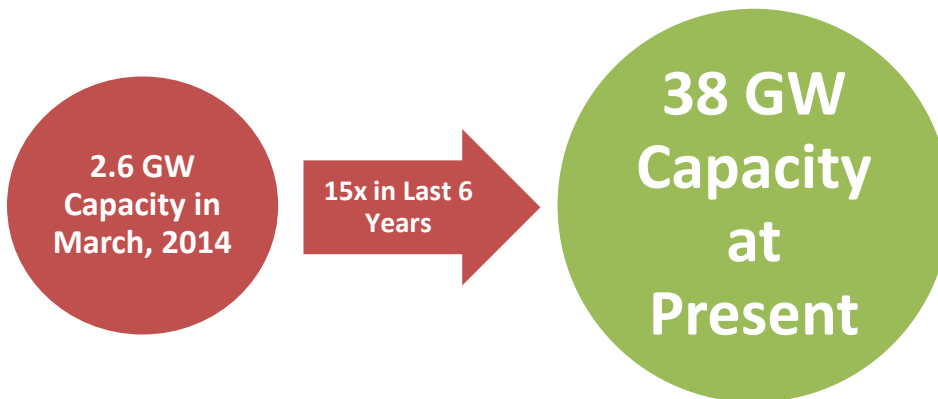
Borosil Renewables Limited

A. Investment Rationale

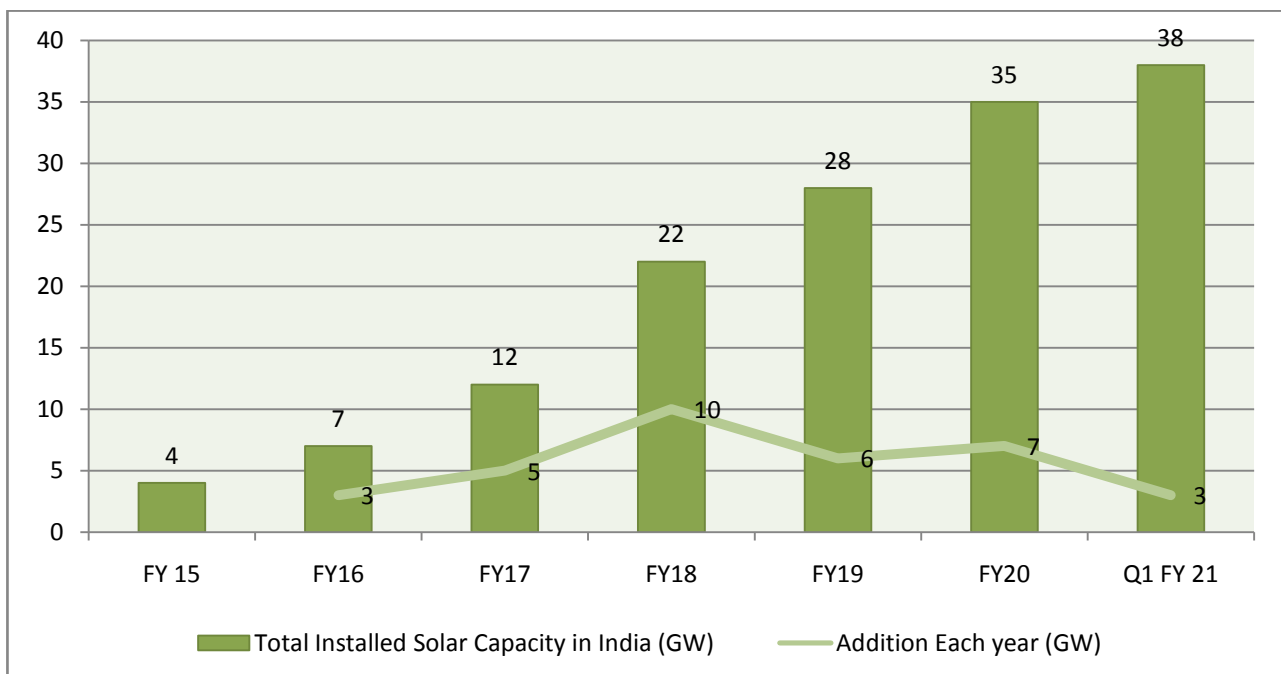
1. Strong Growth in Solar Industry

We can witness the visible impact of solar energy in the Indian energy scenario during the last few years. India's total installed capacity is around 38 GW of solar power, which is 10% of total installed power capacity in India. It is expected to be 4.7 GW to be commissioned in the second half of 2020.

India's total installed capacity has increased by 15x in the last 6 years.



Installation of Solar Power in India (From 2015 to present)



Indian Government is targeting 100 GW of installed capacity of solar power in India by 2022 and 300 GW by 2030. The government's objective is to establish India as a global leader in solar energy.

Schemes by Government for Supporting Solar Projects -In order to achieve the above target, Government of India have launched various schemes to encourage generation of solar power in the country like Solar Park Scheme, VGF Schemes, CPSU Scheme, Defence Scheme, Canal bank & Canal top Scheme, Bundling Scheme, Grid Connected Solar Rooftop Scheme etc.

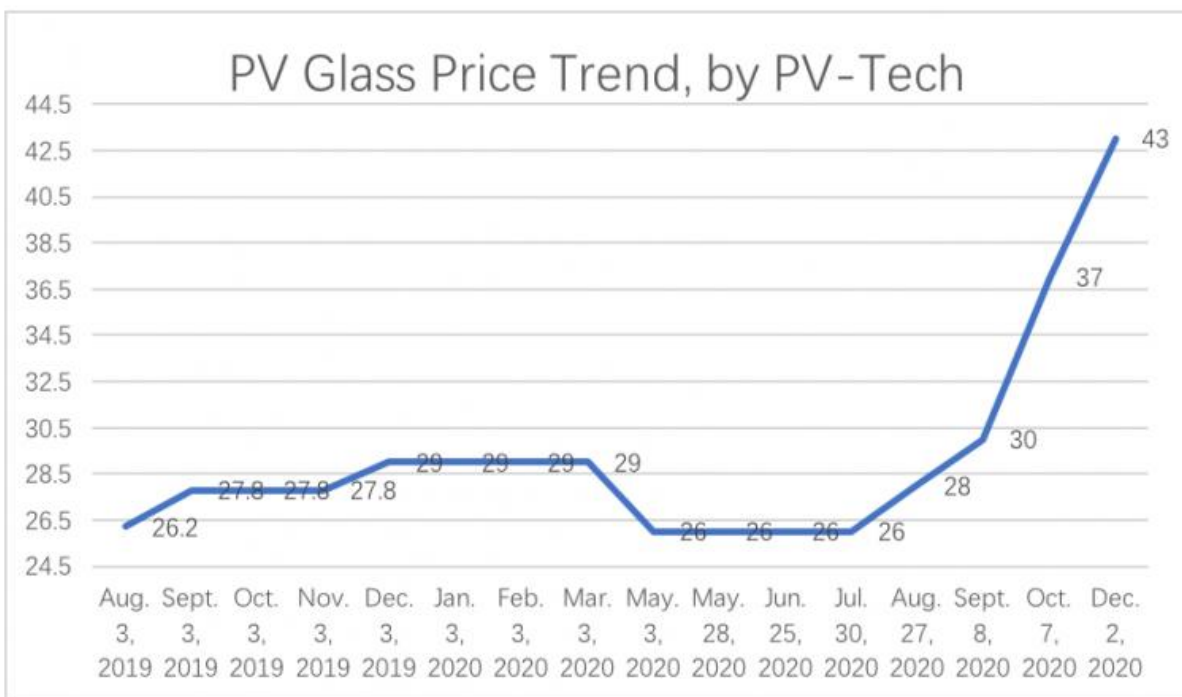
Opportunity is very big in Solar Power –National Institute of Solar Energy has assessed the Country’s solar potential of about 748 GW assuming 3% of the waste land area to be covered by Solar PV modules.

Government Support -Indian government has agreed on a financing package that includes INR45 billion (US\$603 million) of investment over five years to support the domestic development of high-efficiency PV modules.

Included in PLI (production-linked incentive) scheme –Solar modules included in a production-linked incentive (PLI) scheme that has been green-lighted by India’s cabinet in a move to help make domestic manufacturers globally competitive, create economies of scale and boost exports.

2. PV (Photovoltaic) Glass Price Trend & Shortage of product in the market

Price of PV Glass has increased by 70-80% since July-August month, due to high demand.



Prices for glass that coats photovoltaic panels have risen 71% since July, and manufacturers are struggling to produce it fast enough to keep more than a week’s worth of sales in inventory, according to Daiwa Capital Markets.

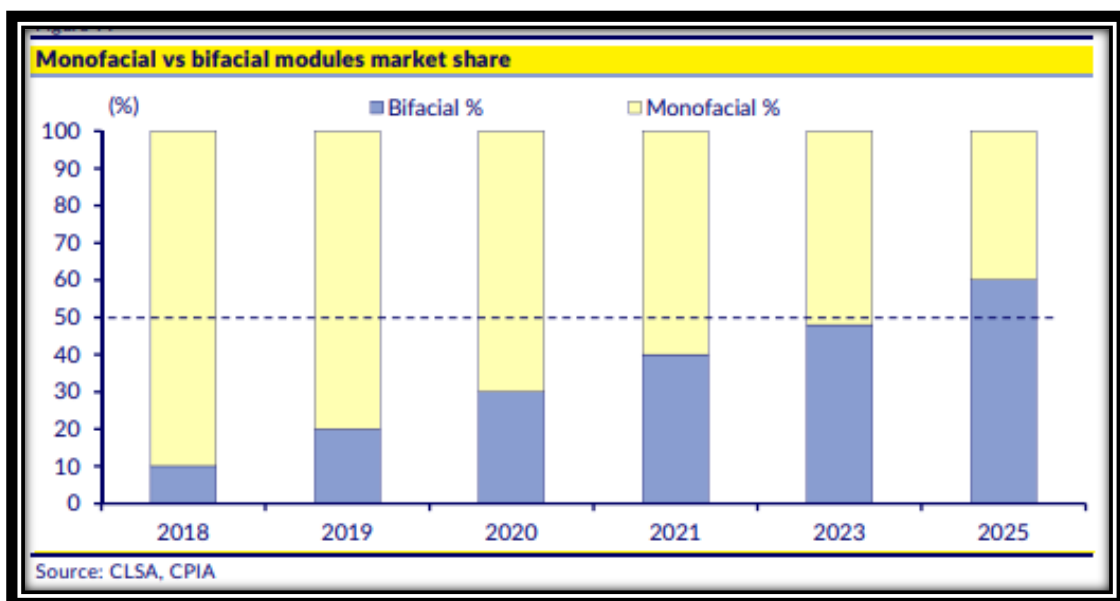
Shortage of solar glass and rising prices in the world market – Market is estimating 20-30% shortage of PV glass outputs in next year.

Flat Glass second largest PV Glass manufacturer in the world recently revealed that it expects solar glass shortages of around 15% next year. "With a completely open policy, the supply-demand balance will not be achieved earlier than 2022," it said.

According to our discussion with the management of Borosil Renewables, the price of solar glass can remain high for next 15 months, as new capex and supply will take at least 15 month.

3. Trend of Bifacial Modules

Glass demand has been rising in industry because increasing prominence of bifacial panels, which coat both the top and bottom with the glass, helps in higher power generation. Market is expecting bifacial panel share in solar projects upto 50%, which was 14% in 2019, by 2022-23.



One of the major reasons of shortage is also the trend of bifacial panels which increase glass requirements.

In the long term, with solar installations increasing around the globe and the rising demand for thinner glass due to the permeability of double-glass modules, along with the development of thin-film solar glass industry, the market demand for glass is likely to stay high.

4. Raw Material availability

Major inputs in Solar Glass are soda ash, silica sand and power, which procurement is easily available for Borosil. Company is procuring more than 40% of raw material from local MSME vendors.

All the production facilities of the company are located at Bharuch, Gujarat. This is a strategic location for the company, because of the proximity to raw materials and the availability of natural gas.

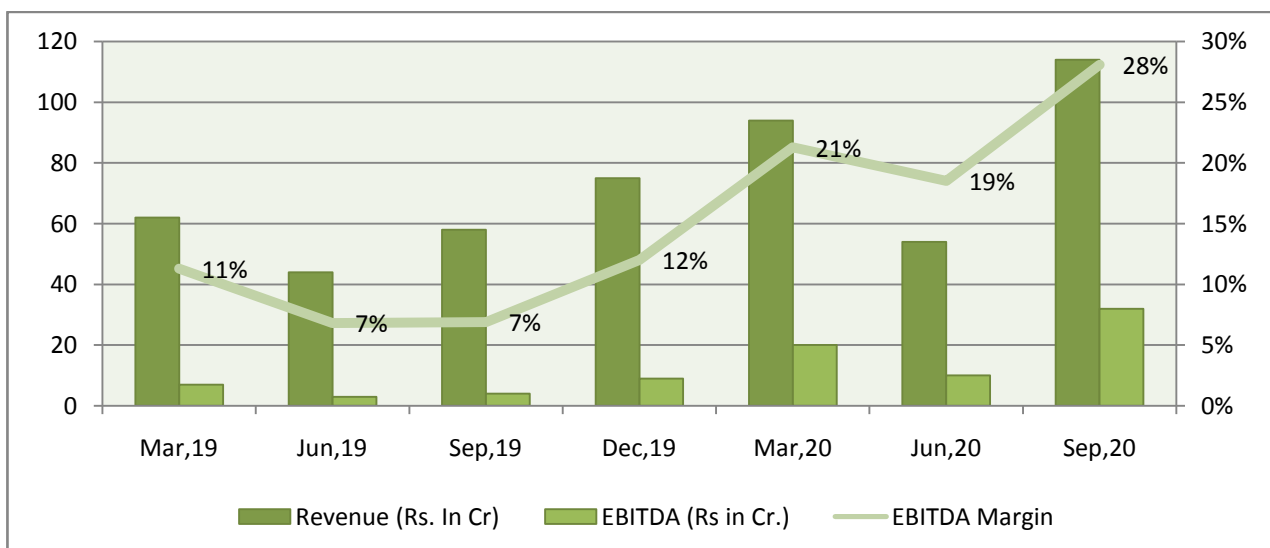
As per estimates of IHS Chemical (Market Advisory Service), the total Global Soda Ash capacity at the start of 2020 is around 73 million MT and demand is approximately 62 million MT. **Total installed capacity of Soda Ash in India is 4.2 million tons**, with an estimated production of about 3.4 million tons in the last financial year. **The total size of Indian market is 4 million tons** and almost 20-25% demand is being met by imports.

Almost all the major soda ash players are located in Gujarat due to the closeness and ready availability of the main raw materials namely limestone and salt. So, sourcing Soda Ash for Borosil is easy.

5. Recovery in EBITDA margins with completion of capacity expansion in 2019

The Company has added a second furnace with a capacity of 240 MT/day, with total cost of Rs. 227 cr. And, company also refurbished an old furnace in Dec, 2019 with a capex of Rs. 40cr, which was funded through internal accruals.

Company's EBITDA margin contracted to 6-7% in H1 FY 20, due to decline in the selling price and increase in operating costs, resulting from poor performance of its old furnace before refurbishment. However, in H1 FY 21 margin improved to 25%.



As a result, the operating performance of the expanded capacity of the company with both furnaces in operation should have been visible from Q4 20 onwards but Covid and lockdown have impacted Q4 20 and Q1 21 performance. So, Q2 21 was the first normal result after completion of capex.

Expansion Plan - The Company is planning to install a 3rd furnace (SG3) with an installed capacity of up to 500 MT and a capex of Rs. 500 cr. New capacity will be operational by the first quarter of 2023.

6. Single Player in India, preference to domestic manufacturers and domestic manufacturing push by government

At present, Indian solar industry is heavily dependent on imports of solar cells, solar modules as well as solar glass. Borosil Renewable is only domestic manufacture of solar glass in India.

According to our discussion with few PV module manufacturers in India, they are looking for buying solar glass from domestic sources instead of importing. In the domestic market, its natural advantage of offering a shorter lead-time to module manufacturers works favourably in helping it to secure business and lower working capital.

Domestic Manufacturing Push

Schemes with Domestic Content Requirement (DCR):

The solar power projects under:

- 12000 MW - Government Producers Scheme (CPSU Scheme),
- KUSUM Scheme
- New Roof-top Scheme

are mandated to source their requirement of solar cells & modules from domestic sources.

7. Anti-dumping duty

Duty in range of \$64.04 to \$136.21 per metric ton is applicable on solar glass imported from China valid till August, 2022. But, Chinese glass imported into a SEZ escapes this antidumping duty and then modules are cleared into the domestic tariff area, with no duty. Import from Malaysia is not subject to additional duty. Chinese companies are doing export through Malaysian subsidiaries. About 60% of the imports into India now came from Malaysia.

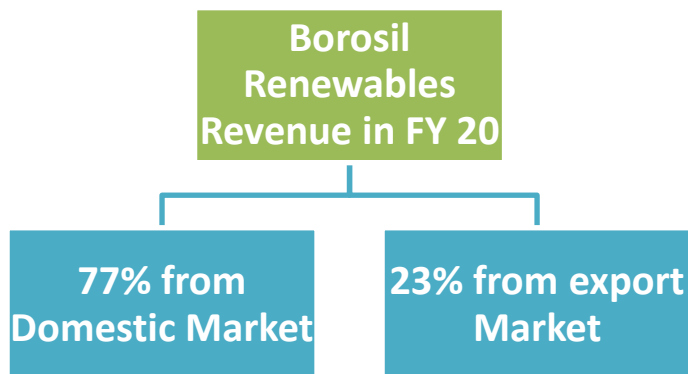
The company's application is currently pending with DGFT for levy of countervailing duty. Decision is due in mid December. A positive decision will help the company in expanding margin and gaining market share.

B. About Company

Borosil Renewables is part of Borosil group and only domestic manufacture of PV glass in India. The company is engaged in production of low iron textured solar glass for application in the solar power sector. Company is also the world's first manufacturer of 2mm fully tempered solar glass.



Company generates 100% revenue from only one segment which is manufacturing of Glass. Exports comprised 23% of the Company's revenues during FY20.

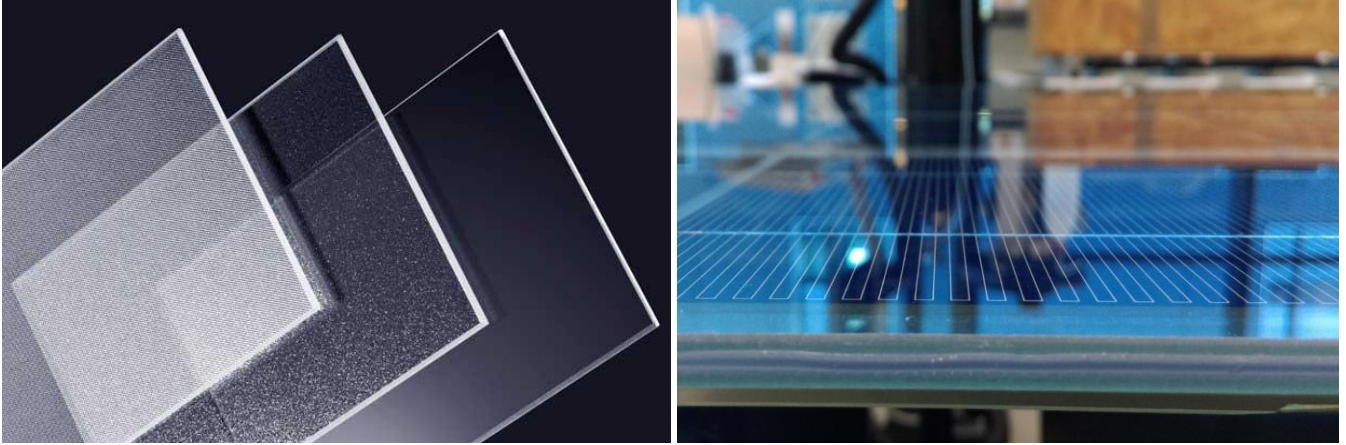


Product portfolio of Company

Company manufactures High Performance Solar Glass from 2 mm to 4 mm thickness for

- Utility scale ground solar PV
- High Performance Green House

- Solar Rooftop
- Bifacial, Glass-glass, BIPV
- Solar Thermal projects
- Company also manufactures solar glass with coatings.



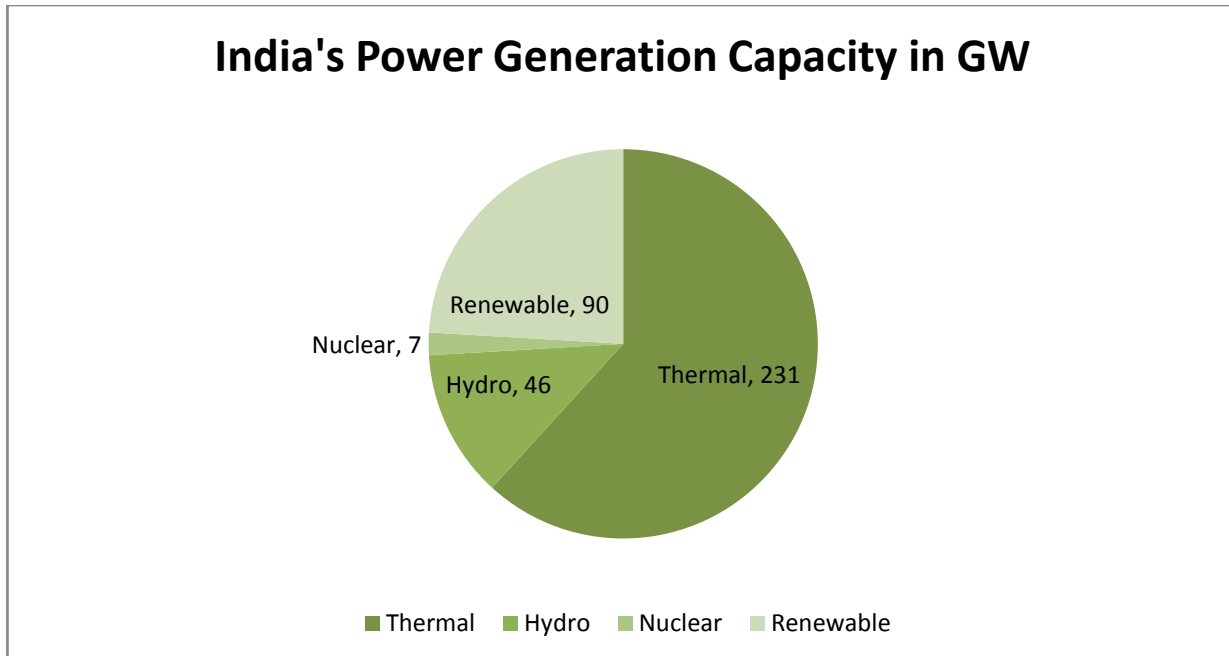
Current Capacity of Company –Company current total capacity is 450 MT/day, 210 MT/day from first furnace and 240 MT/day from first furnace. At current capacity, the company can produce solar glass for 2.5 GW solar plants annually.



C. About Industry

India is the world's third largest producer and consumer of electricity. India's total installed generation capacity is 374 GW, renewable form around 24% (90 GW).

India's power generation capacity



Renewable Power Generation – Renewable form around 24% (90 GW) of total power generation capacity in India of which 40% is Solar.

Indian Solar Industry - India's total installed capacity of solar power is 38 GW (10% of Total Capacity). It is expected 4.7 GW to be commissioned in the second half of 2020. India is 5th largest country in terms of total installed solar power capacity.

Major Growth Drivers of Solar Industry in India

- Targets **100 GW of Installed Capacity by 2022** which is targeted to grow to 300 GW by 2030
- Domestic manufacturing push by **Kusum Scheme** - 26 GW by 2022 with an incentive for farmers to install Solar Pumps/Grid Connected Projects etc.
- **Renewable Purchase Obligation (RPO)** mandates that all electricity distribution licensees should purchase or produce a minimum specified quantity of their requirements from Renewable Energy Sources.

Manufacturing in Solar Industry – Present Installed Solar PV Manufacturing Capacities in India

- Solar PV Cells Capacity - Around 3 GW/year
- Solar PV Modules capacity - Around 10 GW/year

- Polysilicon/Wafer/Ingots – No manufacturing in India

India's solar module capacity is around 10-11 GW, Due to stiff competition from low-priced imports, the actual Domestic Manufacturing is about 4 GW.

However, this trend is expected to change with a favourable policy framework, like domestic manufacturing linked tenders and imposition of custom duties etc. which will help create enablers for investments into domestic manufacturing and is also expected to increase the current low capacity utilization.

Domestic PV Module Manufacturer has announced a big capex – Domestic PV module manufacturers are very bullish on the solar installation trend in India. They are doing big capex.

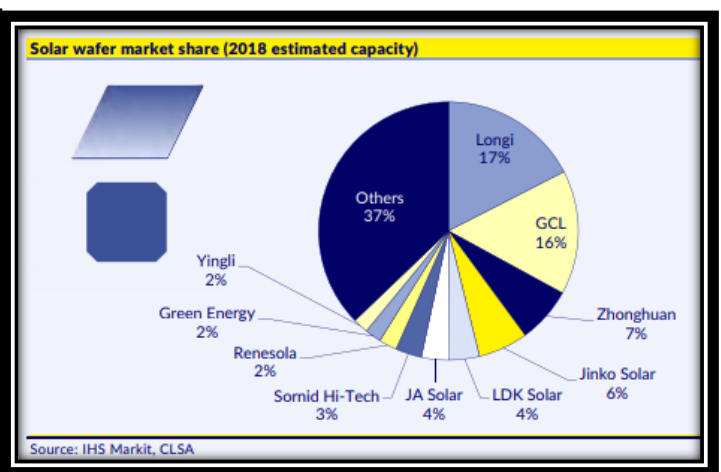
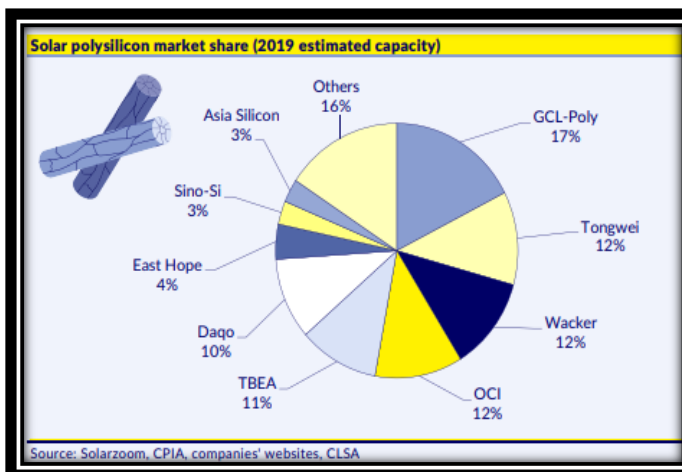
Capex Announced by Domestic Players

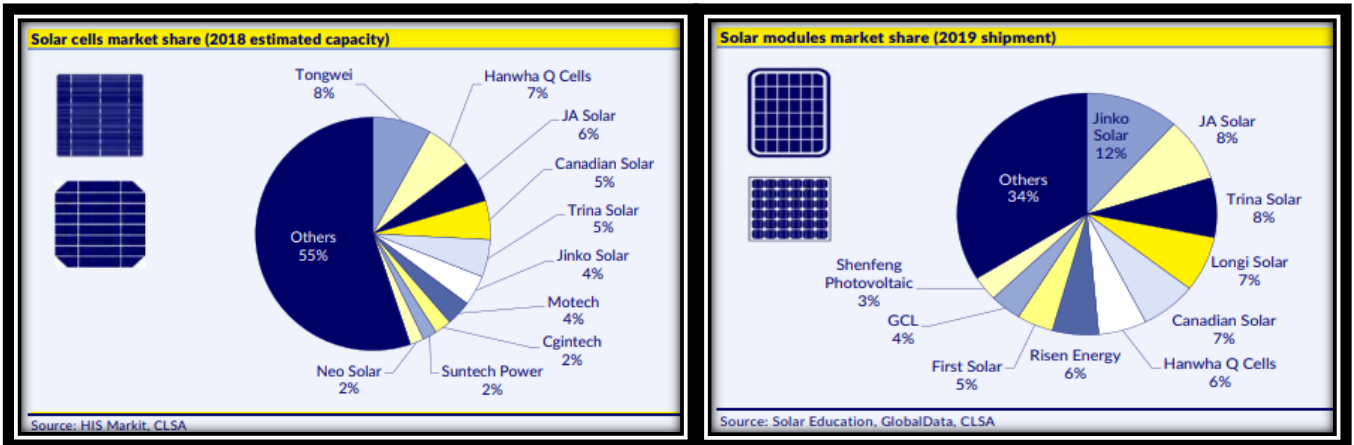
- Renew Power – 2 GW
- Vikram Solar – 3 GW
- Waree Energies – 3 GW
- Mundra Solar – 4 GW

*source – Borosil renewable Investor Presentation

Global Scenario

Solar components market share is concentrated in few handful players globally.

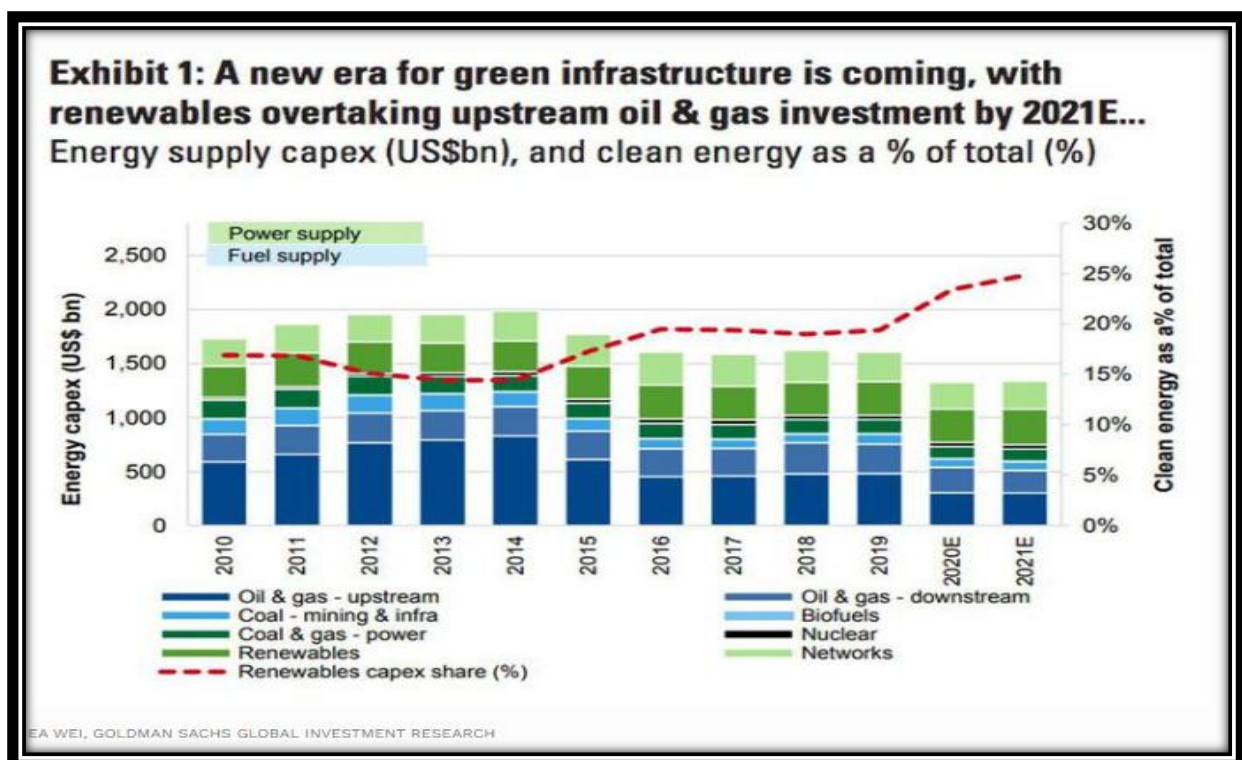




All major players in the industry are announcing large expansion plans for 2021. Solar PV has become competitive. Now, they also can sustain without government subsidies. So, PV module price is determined from overall demand and supply, not much dependent on subsidies.

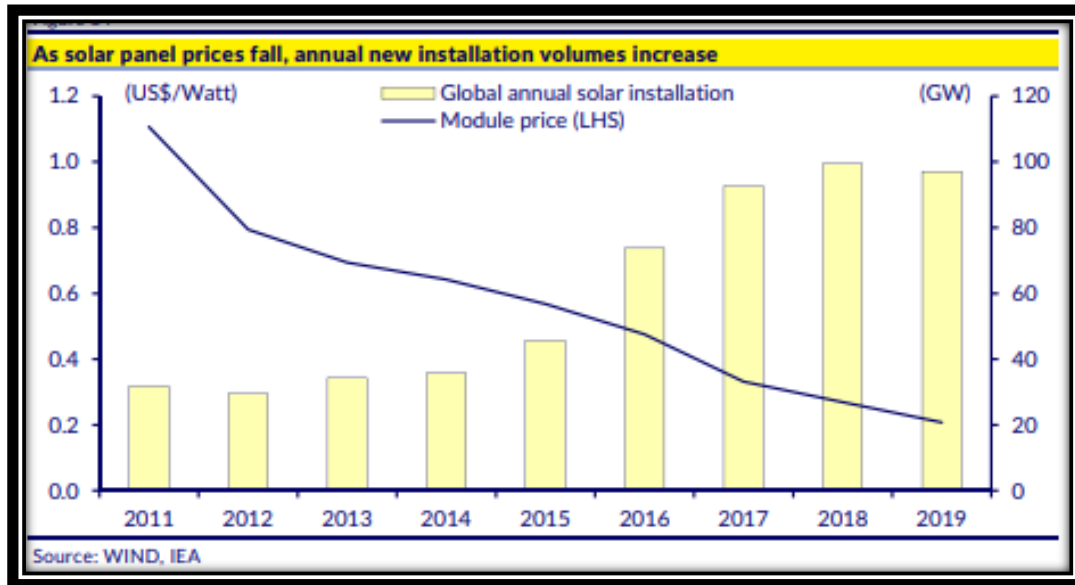
Climate change is now top priority of US - With Joe Biden’s presidential election victory, climate change is set to be a one of the top priority for the incoming administration. President has laid out an ambitious roadmap for decarbonizing the US economy, which includes a carbon-free power sector by 2035 and net-zero carbon emissions for the country by 2050.

Highest spending – According to Goldman Sachs, spending for renewable power projects will become the largest area of energy spending in 2021.

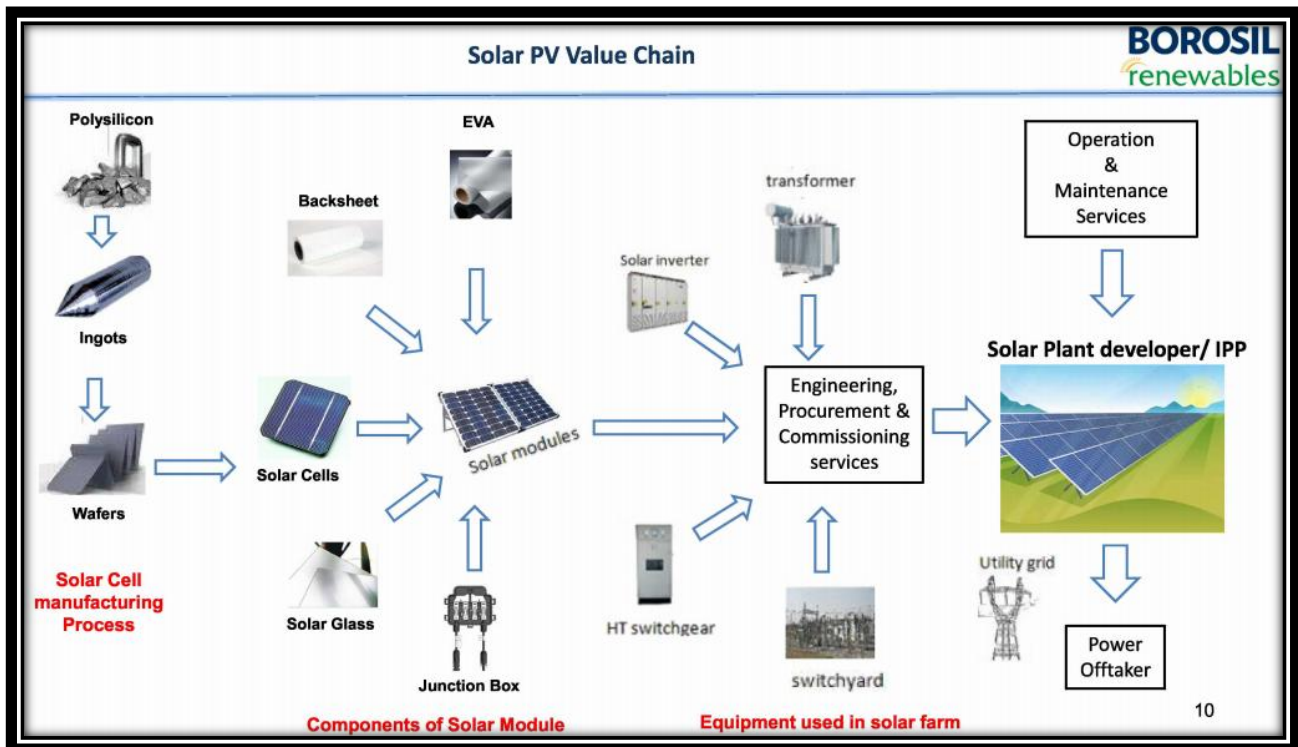


According to the report, renewable power will reach 25% of total energy supply capex in 2021, beating out hydrocarbons for the first time ever.

In 2019 annual global solar PV installations once again exceeded 100 GW of which China accounted for about 30 GW.



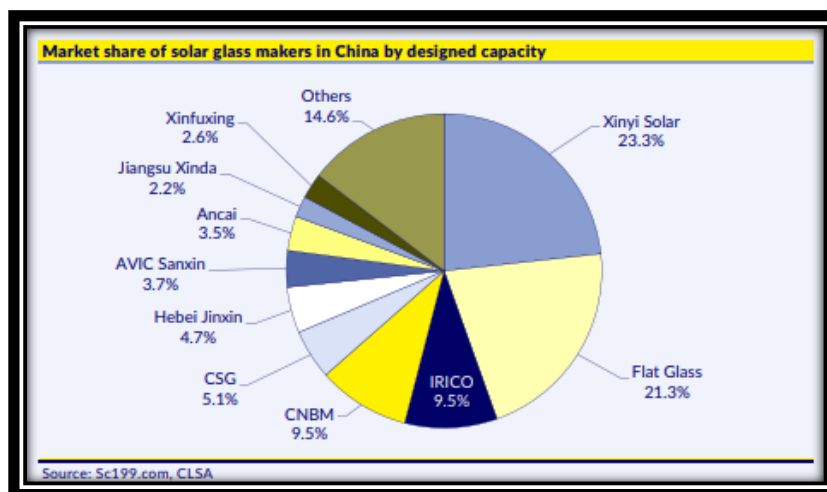
Solar PV Value Chain



About Solar Glass Industry

Solar Glass – Solar Glass is one of the critical components in solar modules. Typically, **Solar Glass comprises 10- 11% of the module cost** and solar module comprises around 60-70% of total project cost.

Solar power sector globally has dominated by China during the last few years, which has become major player in solar industry. Now, Chinese manufacturers are using Malaysia and Vietnam as their new manufacturing location to avoid international tariffs.



Solar Glass Market is concentrated – Xinyi Solar and Flat Glass group owns around 50% market share of solar glass in the world.

Current trends in Solar Glass Industry

Bifacial Modules – Glass demand has been rising in industry because increasing prominence of bifacial panels, which coat both the top and bottom with the glass, helps in higher power generation. Market is expecting bifacial panel share in solar projects upto 50%, which is 14% at present.

In the long term, with solar installations increasing around the globe and the rising demand for thinner glass due to the permeability of double-glass modules, along with the development of thin-film solar glass industry driven by the popularisation of green buildings, the market demand for glass is likely to stay high.

Increase in cost of Glass with rising prices and bifacial module trends - For panel makers, glass now accounts for about 15-20% of the total cost of production after rise in prices, up from about 10%. Solar Glass is expected to make up to 20% of the solar module cost, and 10-11% of the total solar project cost.

Leading module companies “lock” orders in advance - Against such uncertainties in the glass market, some leading module enterprises that have close collaboration with the glass sector advanced orders for what they look set to need in the future.

Solar Glass Indian Market Scenario

Indian solar industry is heavily dependent on imports of solar glass. Borosil Renewables is only domestic manufacture of solar glass in India.

Indian **PV module manufacturers** lack competitiveness because of higher prices and lower capacity utilisation compared to China. Currently, Indian solar manufacturers import most components and raw materials. As a result, locally made solar modules are nearly 33% more expensive than Chinese modules.

However, the Indian government sought to boost domestic manufacturing in 2018 by imposing a safeguard duty of 25% on imported solar panels from China and Malaysia.

Worryingly, capacity addition in the solar sector has been slowing down. The installed solar capacity was some 35 GW on June 30 this year, way behind the target of 100 GW by 2022. The coronavirus pandemic has also severely affected the industry by disrupting supply chains.

To counteract the impact of the Covid-19 outbreak, Indian Prime Minister Narendra Modi announced a policy of Atmanirbhar Bharat (Self-reliant India) in May 2020. In the solar sector, this implies a shift in focus to domestic manufacturing.

Indian companies are presently capable of producing 3 GW of solar PV cells and 10 GW of solar PV modules, according to the Ministry of New and Renewable Energy. The country does not yet produce polysilicon, wafers and ingots.

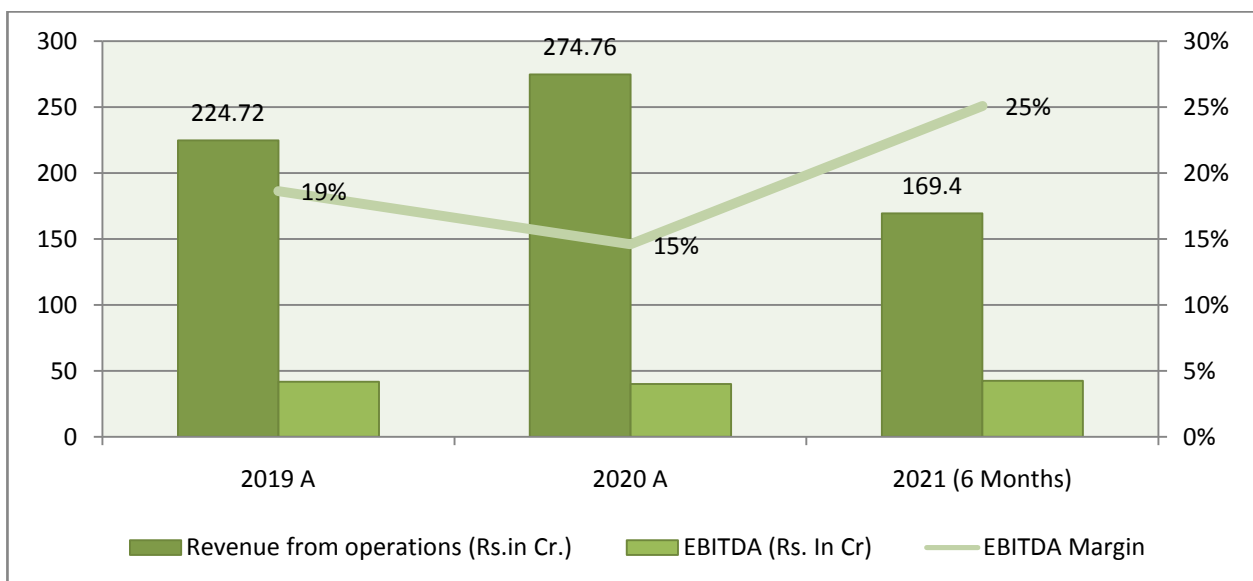
To support local manufacturing, India has extended the safeguard duty till July 2021.

Competition impact on Borosil Renewables – Other component market is struggling in terms of price competitiveness. But, solar glass industry is witnessing shortage. According to estimates PV glass output may fall 20%-30% short of demand next year.

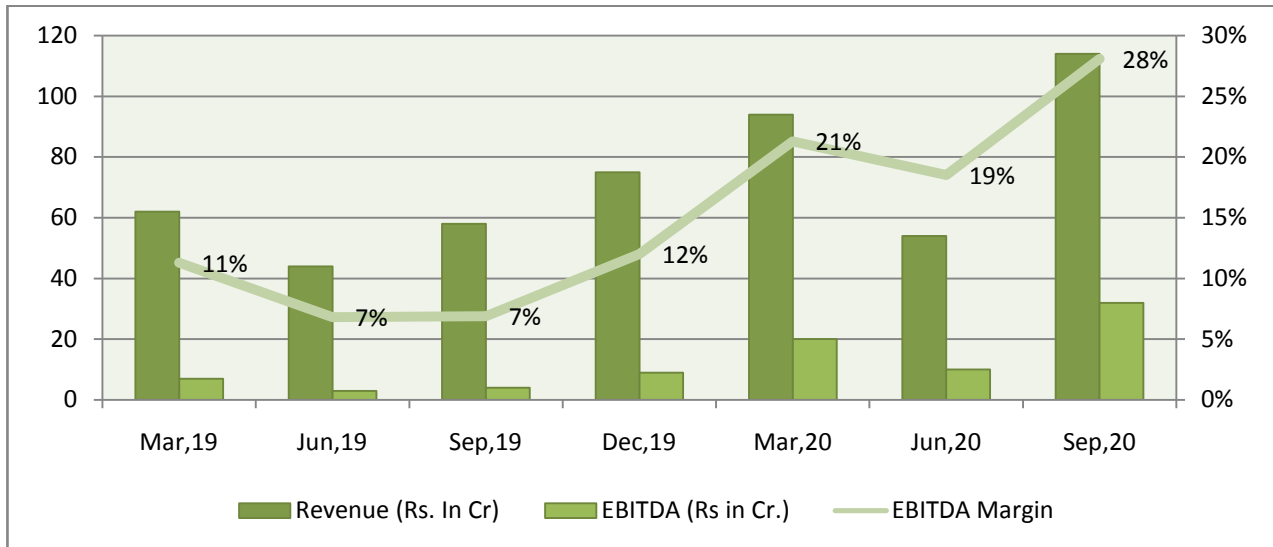
Demand Outlook – Global Solar PV Glass Market is projected to grow at a CAGR of 24.60% during the 2020-2025. With the high demand of solar glass and shortage on supply side, demand scenario look positive.

E. Financials

Particulars (Rs. In Cr)	2019	2020	2021 (6 month)
Revenue from operations	224.72	274.76	169.4
Total Cost	55.79	84.22	43.82
Raw Material in %	24.8%	30.7%	25.9%
Employee Benefits Expense	26.67	26.84	15.23
Employee benefit expenses in %	11.9%	9.8%	9.0%
Other Expenses	100.43	123.63	67.86
Other expenses in %	44.7%	45.0%	40.1%
Power & Fuel	41.26	55.46	
Power & Fuel in %	18.4%	20.2%	
Operating Profit	41.83	40.07	42.49
Operating Profit in %	19%	15%	25%
Finance Costs	0.42	6.66	4.08
Depreciation and Amortisation Expense	17.88	32.1	20.99
Total Expenses	201.24	273.48	152.01
PBT	23.48	1.28	17.39
TAX	-0.08	0.82	5.19
PAT	23.56	0.46	12.2



Quarterly Trend in Financials



F. Valuation

What company can achieve by 2023 –Company can achieve Turnover of Rs. 1000 cr after completion of announced capex. **Xinyi Solar and Flat Glass are trading at EV/EBITDA Multiple of 22 and 17 on expected earnings of FY20.** As both Xinyi Solar and Flat Glass are global leaders, they deserve a higher valuation multiple than Borosil Renewables. **So, our target multiple is at 45% discount to Xinyi Solar and 25% discount to Flat Glass valuation.**

Revenue (Rs in Cr)	2019 A	2020 A	2021 (6 Months)	On Current Capacity (E)	After Capex by 2023 (E)
Revenue from operations	224.72	274.76	169.4	600	1000
EBITDA	41.83	40.07	42.49	180	250
EBITDA Margin	19%	15%	25%	30%	25%
LT Debt	23.67	76.83	68.74	60	250
Enterprise Value at multiple of 12.5X to EBITDA				2250	3125
Enterprise Value less Debt				2190	2875
Current Mcap				1434	1434

Valuation per T/D Capacity

Particulars	Capacity (T/D)	Enterprise Value (USD Million)	Share of Solar Glass in Sales (FY 20 E)	Solar Glass Business Valuation(USD Million)	Capacity Per T/D Value
Xinyi Solar	9800	15089	80%	12071.2	1.23
Flat Glass	6400	8644	85%	7347.4	1.15
Borosil Renewables	450	204	100%	204	0.45

*Operational Capacity by end of 2020.

Two global leader valuations per Ton/Day capacity is \$1.23 and \$1.15 million, comparatively Borosil is trading at \$0.45 million, 60-65% discount to global leaders. Borosil is not directly comparable with Xinyi and Flat Solar as they are very big in size and are global leaders. Presently, in India Borosil is the only player in the solar glass industry and chances are very high for borosil to emerge as a first big player with 3000-4000 Ton/Day capacity in the very long term from India. Company has already announced a capex plan to reach 1000 Ton/Day capacity by Q1 2023.

G. Major Risks

Supply from China - China as the World's largest PV glass producer accounts for over 90% of the total solar glass capacity. The Chinese producers are setting up manufacturing plants in Malaysia, Vietnam and Thailand mainly to cater to export markets. A significant portion of solar glass imports into the country today are happening from Malaysia. Also, manufacturing plants in Vietnam with large capacities are expected to be commissioned in the current year and in next year. If they continue dumping in India and Indian government rejects the application of Borosil Renewable for anti-dumping duty, it can impact margins of Borosil.

New Capacity Coming in 2021 - Both Xinyi and Flat Glass are adding new capacity aggressively. Flat Glass will add a total 4600 Ton/Day capacity and Xinyi will add total 4000 Ton/Day capacity in 2021. Aggressive expansion of both companies can make demand-supply imbalance.

Change in Government's Approach –Change in the government's supportive approach to the solar sector can impact growth of the solar industry in the country.

Outlook Interpretation –

Positive – Expected Return of 12%+ on annualized basis in the long term

Neutral – Expected return in the range of +/- 12%

Negative – Expected return in negative

Disclaimer:

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