

Q1 CY2023

Solar Energy Market in India – Quarterly Insight

A Snapshot



Solar Energy Market in India – The Quarterly Insight

By Eninrac
ei.market

powered by why

Solar power growth in India – The momentum is still on

Government of India serious enough to unlock series of investment potential across the solar energy market space

From standalone utility scale - to rooftops - to mini & micro grids - to hybrid RE generation –to battery energy storage systems – to solar pumps –to floating solar – to other decentralized installations, the solar energy applications in India are increasing in length & breadth. The rapid maturation of solar energy segment in the country has nothing been short of astonishing. It was not long ago that solar energy space in India was driven handful of players with major focus upon utility scale developments only and that too small capacity projects. This was purely of the fact that project costs of solar were 4-5 times higher than that of conventional energy (coal precisely). But, over the past decade the project cost of solar has plummeted and today its hovers between INR 3-4 crores/MW. Many deep pocketed national and international players are nurturing this industry and have also announced staggering capacity expansion targets.

From developers – to OEMs – to EPC – development agencies- financial institutions – investment banking etc. across the globe are eyeing upon the solar energy market in India. This has led the solar installed capacity to 64 GW as of Jan 2023 from 2.63 GW as of Mar 2014, with a dramatic CAGR of 41%. But this growth would not have been possible without Government of India’s supportive policies at concurrent level. This momentum has only increased in the past one year as many landmark decisions has been announced by the Gol to push solar energy generation along with other renewables in the country. One of the recent announcement is **Renewable Generation Obligation (RGO)**. Although, it was added to the National Tariff Policy 2016 as an enabling provision. But on Feb 27 2023, It has been decided that any generating company establishing a coal or lignite-based thermal generating station and having the Commercial Operation Date (COD) of the project on or after 1 April 2023 will be required to establish RGO of a minimum of 40 per cent of the capacity of a coal power plant or procure and supply RE equivalent to such capacity. In addition, a coal or lignite-based thermal generating station with a COD between 1 April 2023 and 31 March 2025 must comply with a 40 per cent RGO by 1 April 2025, and projects with a commissioning date after 1 April 2025 must comply by COD. This clearly indicates a serious business opportunity to be tapped across the solar energy space. To tap this opportunity, the industry stakeholders need a constant up-to-date market insight & to support these requirements, Eninrac has launched the **quarterly insight on India’s Solar Energy Market** and plans to produce a series of cyclic market research studies on green and new energy market space in India.

“By 2030, solar energy installed capacity in India could reach to 240 GW – as per Gol’s target”

Solar energy market in India – CY 2023 (Q1)

Solar power industry in India has evolved over the last decade, with significant developments seen since 2015. The policy support extended by the central government as well as by the respective state governments in India has strengthened the business case for solar. It is anticipated that solar power installed capacity in India shall reach to 240 GW by 2030, accounting a share holding of approximately 56% in the total renewable energy mix. This projected growth opens a wide opportunity space for players (domestic & global) across entire spectrum of solar value chain.

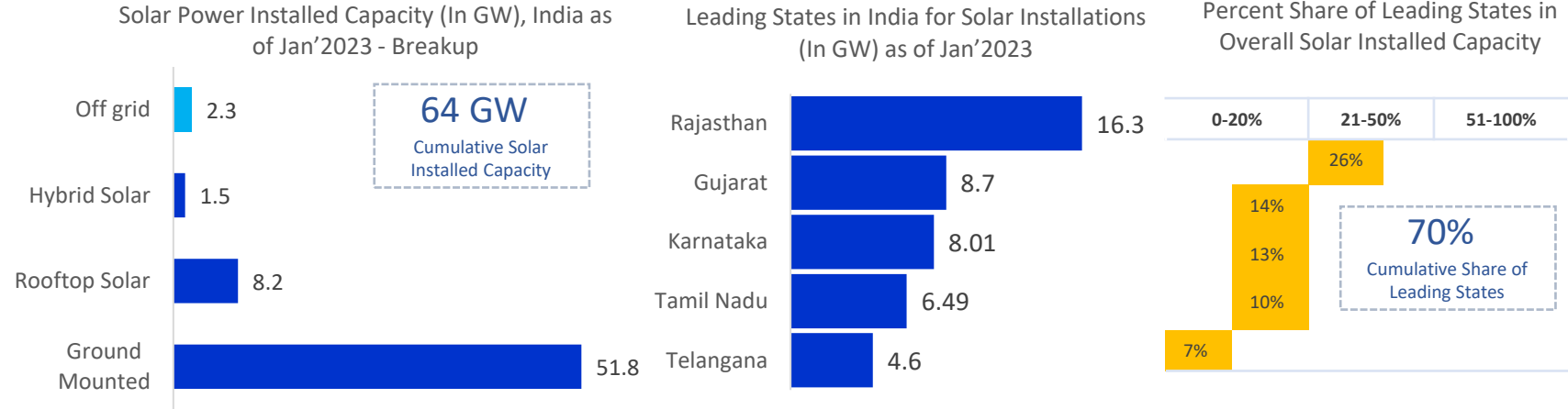
As of Jan 2023, the solar energy installed capacity of India was accounted to be 64 GW approximately. Ground mounted solar holds the largest share in India’s solar installed capacity accounting 51.8 GW of the total capacity. **Rajasthan in India boasts the status of leading state for ground mounted solar capacity with 13.4 GW of installation as of Jan 2023.**

Gujarat is a leader in rooftop solar installations, with a capacity of 2.26 GW. Hybrid solar projects are operational only in the state of Rajasthan in India as of Jan 2023 accounting a capacity of 1.57 GW. The state also leads in offgrid solar installation with a capacity of 0.53 GW (535.8 MW)

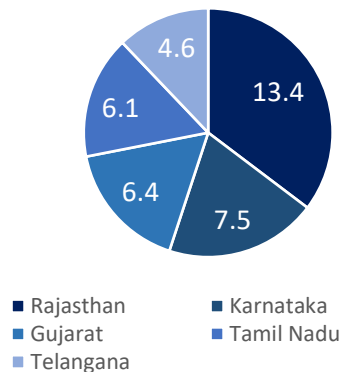
Get actionable analysis, forecasts & market updates on Indian solar industry with Eninrac’s **Quarterly Insight**

To enquire more , drop a query at connect@eninrac.com

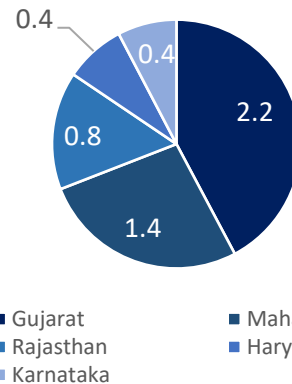
176 GW is what India needs to achieve in terms of solar energy installed capacity till 2030, as per GoI targets, A look at solar energy installation landscape in India as of Jan’2023



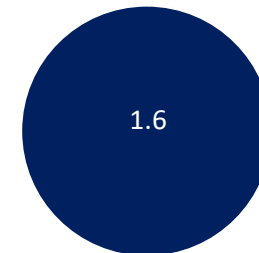
Leading States for Ground Mounted Solar Installations (GW)



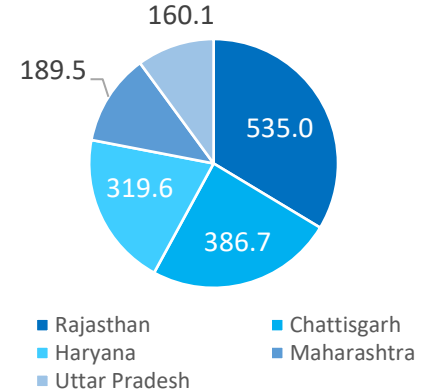
Leading States for Rooftop Solar Installation (GW)



Leading States for Hybrid Solar Capacity (GW)



Leading States for Offgrid Solar Installation (MW)



Solar supply chain market in India – CY 2023 (Q1)

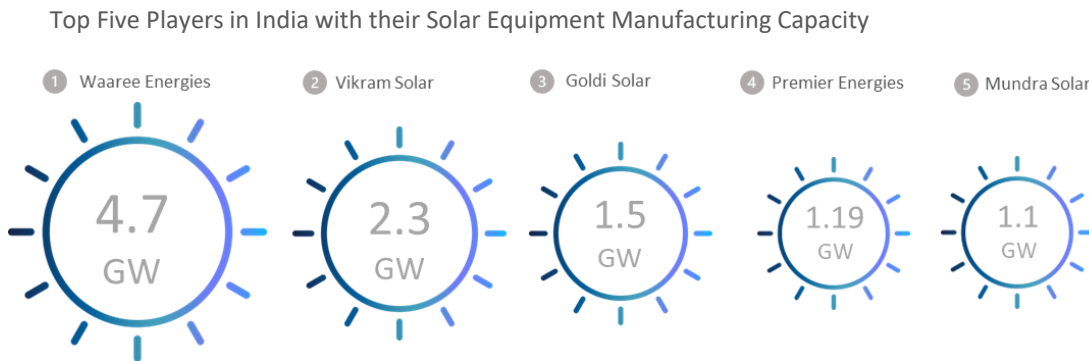
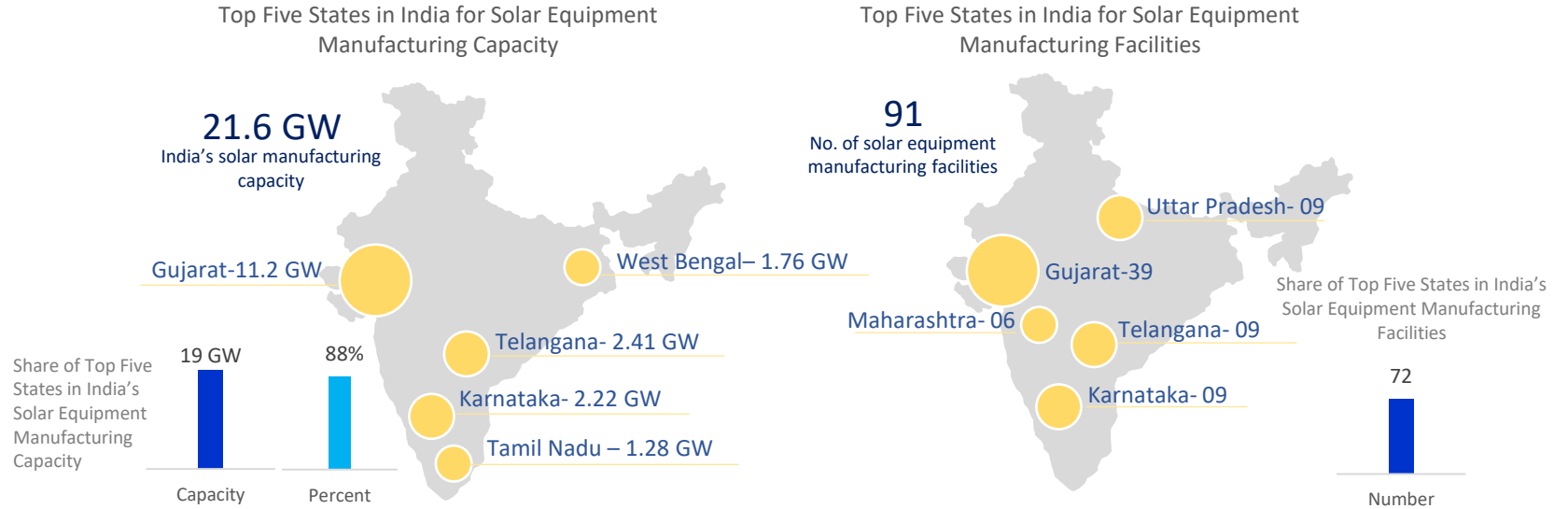
“18.4 GW of solar equipment manufacturing proposals have been received under phase 2 of PLI scheme by Reliance, First Solar, Shirdi Solar & Tata”

While Reliance, First Solar & Shirdi Solar has submitted bids for facilities integrating polysilicon, wafer, cell & module manufacturing. Tata power submitted bid for facilities integrating cell & module manufacturing. Other notable players that also participated in the bids for the phase II of PLI scheme are – **Avaada, Grew, JSW, ReNew & Waree for wafers, cell & module manufacturing. Vikram Solar, Ampin** along with ReNew, Reliance & Tata Power for integrating cell & module manufacturing. Presently, India has a **solar equipment manufacturing capacity of 21.6 GW approximately per annum. Waaree is the largest solar OEM in India**, with a manufacturing capacity of 4.75 GW per annum. **Vikram solar is second in line** with a manufacturing capacity of 2.02 GW having two facilities, one each in West Bengal & Tamil Nadu. **In India, Gujarat is the home to maximum number of manufacturing facilities. The state has about 39 solar equipment manufacturing facilities with an annual capacity of 11.12 GW (as of Jan’2023)**

Get actionable analysis, forecasts & market updates on Indian solar industry with Eninrac’s **Quarterly Insight**

To enquire more , drop a query at connect@eninrac.com

One year extension till March 2024 given by the GoI for importing solar PV modules – Breather for domestic solar OEMs in India, A look at domestic solar equipment manufacturing scenario in India, as of Jan 2023



Source: Eninrac EI Market, MNRE, Channel Checks

“ Vikram solar is planning to expand its solar equipment production capacity by approx. 63% to 6.3 GW by 2024.”

Solar Policy Update in India – CY 2023 (Q1)

Renewable Generation Obligation - On Feb 27 2023, It has been decided that any generating company establishing a coal or lignite-based thermal generating station and having the Commercial Operation Date (COD) of the project on or after 1 April 2023 will be required to establish RGO of a minimum of 40 per cent of the capacity of a coal power plant or procure and supply RE equivalent to such capacity.

As of Jan 2023, approximately 10 GW of capacity was installed under the scheme **“Development of Solar Parks and Ultra Mega Solar Power Projects”**. 57 Solar Parks with an aggregate capacity of 39.25 GW has been approved under this scheme.

Solar rooftop promotion - 19% of the solar rooftop planned capacity has been achieved in India with **7.65 GW** installed as against planned capacity of **40 GW**

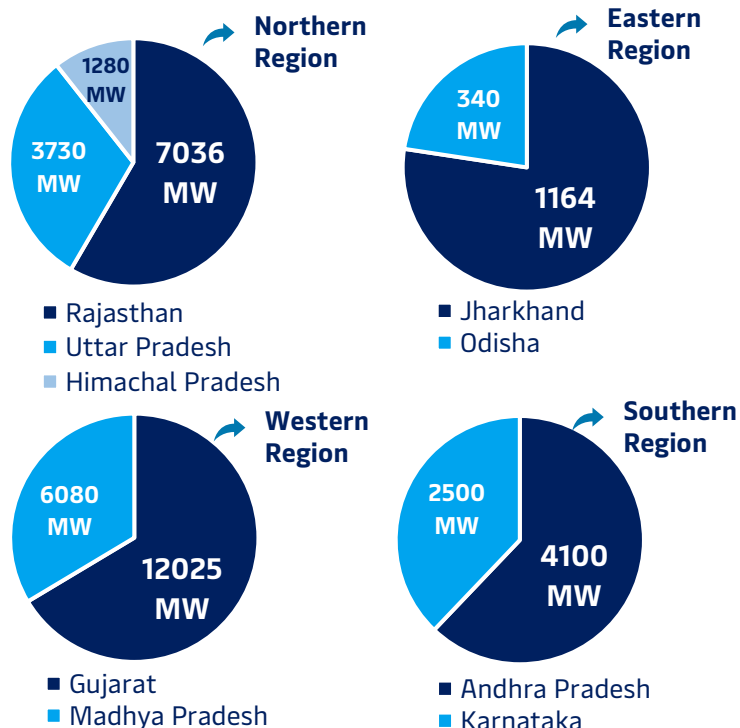
KUSUM Scheme - 500408 Solar Pumps on standalone basis have been installed in India & 48 MW of capacity under component A of the scheme is achieved through PM KUSUM scheme

Stay updated about the policy & regulations across India’s solar industry with Eninrac’s **Quarterly Insight**

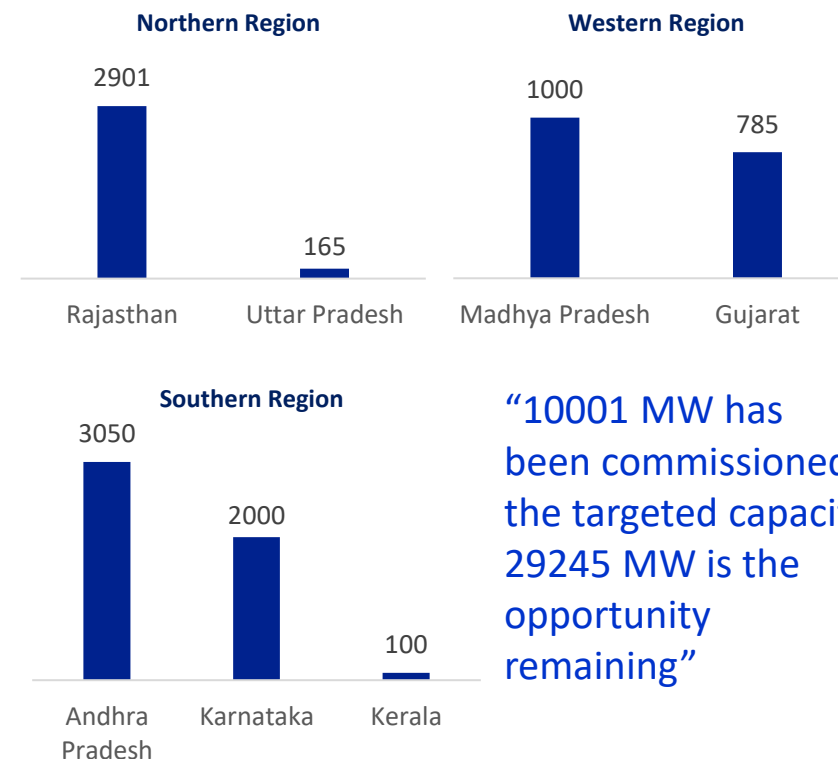
To enquire more , drop a query at connect@eninrac.com

Development of solar parks & ultra mega solar power projects – status as of Jan 2023

Approved Capacity – Solar Parks in India (MW)*



Achieved Capacity – Solar Parks in India (MW)*



“10001 MW has been commissioned the targeted capacity, 29245 MW is the opportunity remaining”

Source: EI Projects Monitor, MNRE, Channel Checks

WANT TO LEARN MORE ABOUT THE REPORT ?

WRITE OR CALL TO US

at connect@eninrac.com
+91 93190 48963/47963, +91 72900 16953