

Solar power potential in india





Overview

The solar power potential of India is assessed at 10,830 GW in 2025. With about 300 clear and sunny days in a year, the calculated incidence on India's land area is about 5,000 (5,000 trillion) (kWh) per year (or 5 Wh/yr). The solar energy available in a single year exceeds the possible energy output of all of the energy reserves in India. The dail.

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Gujarat has been a leader in solar-power generation in India due to its high solar-power potential, availability of vacant land, connectivity, transmission and distribution infrastructure and utilities.

TERI's study, Reassessment of Solar Potential in India: A Macro-level Study, revisits the solar potential of conventional areas like barren & unculturable lands and explores additional avenues to increase the country's solar potential estimates.

National Institute of Solar Energy (NISE) 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.

Geographical Advantage: India receives abundant solar radiation, with ~300 sunny days per year and an average of 4-7 kWh/m²/day, making most regions ideal for solar power generation. What is India's solar potential?

National Institute of Solar Energy (NISE) 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. Solar energy has taken a central place in India's National Action Plan on Climate Change with National Solar Mission (NSM) as one of the



key Missions.

Does India have a reassessment of solar energy potential?

New Delhi, June 10, 2025: The Energy and Resources Institute (TERI) released a landmark report titled, 'Reassessment of Solar Potential in India: A Macro-level Study', which aims to offer a renewed perspective on the country's solar energy potential.

Which regions in India have a high solar potential?

Regions like Rajasthan, Gujarat and Andhra Pradesh offer particularly high solar potential due to the extensive land available and optimal climatic conditions. According to the Ministry of New and Renewable Energy (MNRE), India's total solar energy potential is estimated at approximately 750 GW, highlighting significant untapped opportunities.

How much solar energy is available in India?

With about 300 clear and sunny days in a year, the calculated solar energy incidence on India's land area is about 5,000 lakh crore (5,000 trillion) kilowatt-hours (kWh) per year (or 5 E Wh/yr). The solar energy available in a single year exceeds the possible energy output of all of the fossil fuel energy reserves in India.

Why is solar power important in India?

Solar power in India is an essential source of renewable energy and electricity generation in India. Since the early 2000s, India has increased its solar power significantly with the help of various government initiatives and rapid awareness about the importance of renewable energy and sustainability in the society.

Why is India a leader in solar energy?

The continued focus on solar energy aligns with global sustainability goals and positions India as a leader in the renewable energy sector. As the world grapples with the urgent need to combat climate change, India's solar energy sector stands as a beacon of hope and a testament to the power of sustainable innovation.



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Global Solar Atlas

Global Photovoltaic Power Potential by Country Specifically for India, country factsheet has been elaborated, including the information on solar resource and PV power potential country statistics, seasonal electricity generation variations, ...

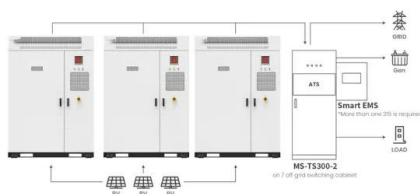
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[TERI Unveils a Report on Reassessing India's Solar ...](#)

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Application scenarios of energy storage battery products

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Explore the untapped solar energy potential in India and the country's ambitious goals for renewable energy. Discover how solar power is shaping India's energy future with government



initiatives and rapid technological advancements.



Solar power in India

OverviewSolar potentialHistoryInstallations by regionInstallations by applicationConcentrated solar powerHybrid solar plantsSolar heating

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Rooftop Solar Potential of India in 2025

Solar power leads the way with 94.17 GW (as of Nov 2024) among all the sources of renewable energy like Wind, Hydro, playing a crucial role in India's efforts to harness its abundant sunlight. And rooftop solar ...



TERI Unveils a Report on Reassessing India's Solar ...

The study estimates India's total solar potential at 10,830 gigawatts (GW), far exceeding previous assessments while identifying new

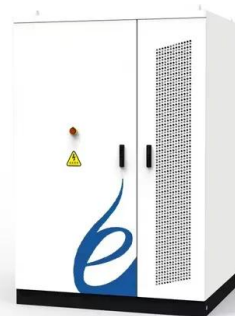


opportunities across both conventional and innovative applications of solar ...



Which States Have the Highest Solar Energy Potential ...

The solar energy generation potential in a specific area can be assessed based on factors like availability of land, solar radiation etc. The National Institute of Solar Energy (NISE), an apex institute of Ministry of New & ...



India's solar energy sector: Challenges

India's solar journey is a tale of turning challenges into opportunities, of harnessing the sun's boundless energy to light up lives sustainably. On this World Environment Day, India's solar saga reminds us ...



(PDF) Solar power potential mapping in India using ...

The present paper maps the district-wise potential for concentrating solar power (CSP) and centralized solar photovoltaic (SPV) technology based power plants in India. The evaluation is based on remotely-sensed annual average global ...





Tapping Renewable Energy Potential in India

Solar Energy: With over 300 sunny days annually, the National Institute of Solar Energy (NISE) estimates its potential at 748 GW, assuming 3% of wasteland is covered by Solar PV modules. States like Rajasthan, Gujarat, ...



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