Surveying Solar Energy Potential of Rooftops

Why in news?

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Bengaluru sets out an aerial mission to collect data on the solar energy potential of its rooftops.

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What is the mission on?

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- Bengaluru sent helicopter which hovered over the rooftops of the city.
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- The aim was to collect data on the solar energy potential of the city's rooftops.
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- This is being executed by the Centre for Study of Science, Technology and Policy (CSTEP).
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- It offers support to the Bangalore Electricity Supply Company (Bescom).
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- The data will also be put in the public domain.
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How does it work?

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- It employs the ‘web-based rooftop photovoltaic tool using aerial LIDAR (Light Detection and Ranging) project’.
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- The helicopter has a camera that emits laser pulses.
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- Reflections from the ground get captured, creating a rough 3D map.
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- This raw data will be sent to the Defence Ministry for vetting.

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- After this, the process of shadow analysis and creation of a model city map will begin.
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What are the benefits?

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- **Bescom** - The Bangalore Electricity Supply Company will be equipped with a map of the most lucrative rooftops to generate solar power.
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- Bescom will move to achieve the 1 GW solar target for 2021-22.
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- **Resource assessment** - It helps assess how much of the city's power needs can be met through rooftop solar installations.
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- The survey helps determine usable rooftops, separating them from green spaces.
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- It thus helps analyse the quality of the solar resource.
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- **Investments** - With urbanisation, solar maps help electricity utilities come up with good business cases and investment vehicles.
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- They can also give residents an opportunity to become partners in the effort.
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- People can make money by consuming and/or selling the solar energy generated.
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- **Solar Target** - Moreover, scaling up rooftop solar installations is essential to achieve the solar target of 100GW by 2022.
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- It is aimed at creating 40GW of power capacity through rooftop solar panels alone by 2022.
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What are the limitations?

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- The industry is apprehensive that the favourable scope could diminish for the

solar sector during the current year.
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- Impact of factors such as imposition of safeguard duty and anti-dumping duty on imports should be evaluated.
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- The levy of the goods and services tax on photovoltaic modules also needs an assessment.
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- Major solar projects that connect to the grid often face the challenge of land acquisition and transmission connectivity.
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- This has led to a delay in planned capacity coming on stream during 2017.
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- Notably, nearly 3,600 MW did not get commissioned during the last quarter, out of a scheduled 5,100 MW.
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What is the way forward?

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- The domestic policy has to be attuned to the overall objective of augmenting solar capacity.
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- The Centre should come up with incentives to utilise the investment potential.
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- The southern States and Rajasthan host the bulk of national solar infrastructure on a large scale.
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- These regions should continue to lead by adding rooftop capacity, with some forward-looking policymaking.
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- Initiatives such as the Bengaluru mapping project can contribute to assessments of real potential.
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- Surveys to map usable rooftops for solar power must be undertaken on a nationwide scale.
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Source: The Hindu

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Quick Fact

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LiDAR

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- LiDAR (Light Detection and Ranging) is a monitoring system.
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- LiDAR works by projecting laser beams towards the sky.
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- The light interplays with the objects falling on its path through absorption, reflection and scattering.
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- This helps determine the composition of suspended particulates.
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- It is used for mapping and modelling in micro-topography, forestry, agriculture, meteorology and environmental pollution.
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