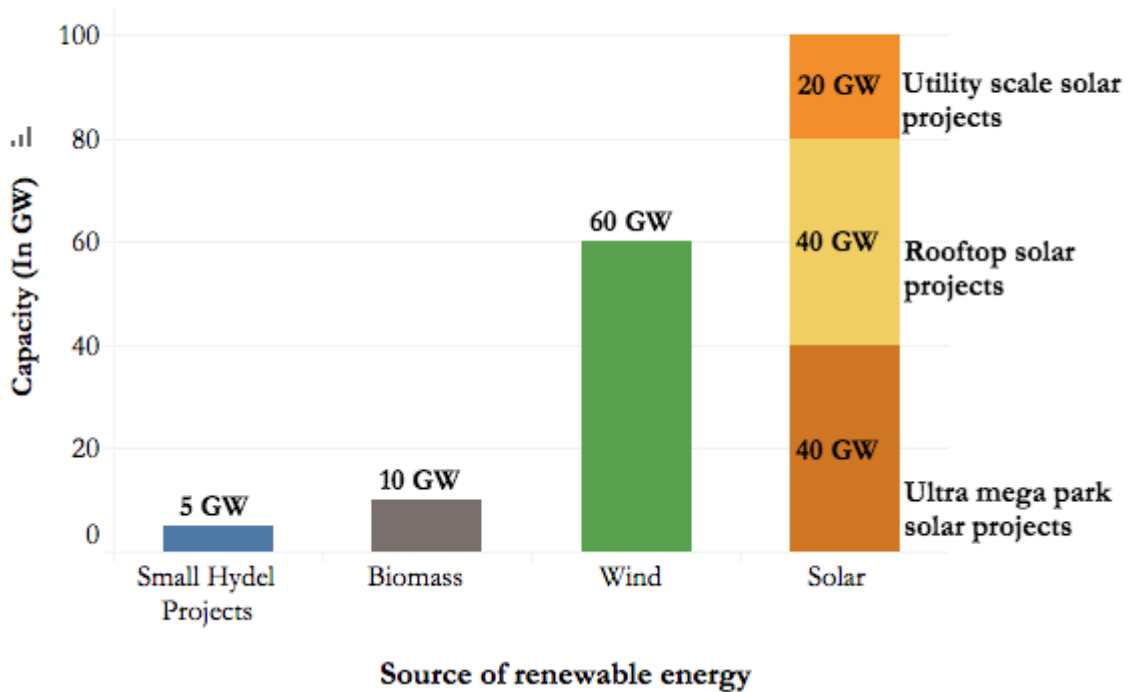




## Hits and misses: India's solar power energy targets

How far has India come with respect to solar power generation and storage? Why do the authors of the report say that India will not meet its 2022 solar goal?

### India's 2022 Renewable Energy Target



### India's solar policy

1. Since 2011, India's solar sector has grown at a compounded annual growth rate (CAGR) of around 59% from 0.5GW in 2011 to 55GW in 2021.
2. Under the National Solar Mission (NSM), the total installed capacity target was set as 20GW by 2022. In 2015, the target was revised to 100GW and in August 2021, the government set a solar target of 300GW by 2030.
3. India currently ranks fifth after China, the U.S., Japan and Germany in terms of installed solar power capacity. As of December 2021, the cumulative solar installed capacity of India is 55GW, which is roughly half the renewable energy (RE) capacity (excluding large hydropower) and 14% of the overall power generation capacity of India.



4. Within the 55GW, grid-connected utility-scale projects contribute 77% and the rest comes from the grid-connected rooftop and off-grid projects.

### Target of 100GW of solar power:

1. A report prepared by JMK Research and Analytics and the Institute for Energy Economics and Financial Analysis says India will likely miss its 2022 target of installing 100GW of solar power capacity.

2. The report states that as of April, only about 50% of the 100GW target, consisting of 60GW of utility-scale and 40GW of rooftop solar capacity, has been met.

3. This is because of rooftop solar lagging behind, the authors say. A 25GW shortfall in the 40GW rooftop solar target, is expected compared to 1.8GW in the utility-scale solar target by December 2022. Thus, it is in rooftop solar that the challenges of India's solar-adoption policy stick out.



### Rooftop solar adoption targets:

1. In December 2015, the government launched the first phase of the grid-connected rooftop solar programme to incentivise its use in residential, institutional and social areas.



2. The second phase, approved in February 2019, had a target of 40GW of cumulative rooftop solar capacity by 2022, with incentives in the form of central financial assistance (CFA).

## Rooftop solar market

Factors impeding rooftop-solar installation include

- Pandemic-induced supply chain disruption
- Regulatory roadblocks
- Inconsistent policy frameworks of the Centre/ State governments
- Lack of consumer awareness
- Limits to net-metering (or paying users who give back surplus electricity to the grid);
- Taxes on imported cells and modules, unsigned power supply agreements (PSAs) and banking restrictions;
- Financing issues plus delays in or rejection of open access approval grants; a
- Unpredictability of future open access charges

However, thanks to falling technology costs, increasing grid tariffs, rising consumer awareness and the growing need for cutting energy costs, the rooftop solar market is gradually coming up.

## Rooftop is future:

1. Going ahead, rooftop solar adoption is expected to proportionally increase as land and grid connectivity for utility solar projects are expected to be hard to come by.
2. Given the challenge of integrating variable renewable energy into the grid, most of the RE capacity installed in the latter half of this decade is likely to be based on wind-solar hybrid (WSH), RE-plus-storage and round-the-clock RE projects rather than traditional solar/wind projects, according to the report.



## A fuller learning

The decision to allow students to pursue two degrees is welcome. Institutions and teachers should be enabled to own the reform.

## UGC issues norms for students to do two programmes at once

The guidelines are applicable to academic programmes other than PhD.

### Rationale or Need:

1. It is in keeping with the New Education Policy's welcome thrust on eliminating silos in education.
2. The UGC has said the move caters to the increase in demand for higher education
3. With the rapid increase in demand for higher education and limited availability of seats in regular stream, several higher education institutes have started a number of programmes in Open and Distance Learning (ODL) to meet the aspirations of students. It has also led to the emergence of online education programmes.

### Two academic programmes concurrently: Benefits

1. An eligible student studying for a degree in a science subject should also have the opportunity to learn the intricacies of a discipline in the humanities, social sciences or commerce, and vice-versa.
2. Currently, the higher education regulator's rules do not allow simultaneous enrollment in two programmes. This inflexibility is often cited as a major cause for the lack of meaningful conversations across streams of knowledge.
3. The deficit is particularly glaring because a range of contemporary challenges — from addressing climate change to designing employment programmes that cater to local needs to making workplaces more inclusive — require the broad-basing of expertise.
4. The reform is, therefore, much needed and if done well, can go a long way towards fulfilling one of the major objectives of liberal education — broadening outlooks and expanding the perspectives of students.

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5. Admission to one course doesn't preclude your capability to pursue another course. If a student is not capable, then they will not succeed. But if they are capable, let them take it.

6. Why penalise a student who is only looking to enhance his or her skills?

Implementing it will, however, pose challenges. It will place demands on academia and require hand-holding by policymakers.

### Challenges to higher education:

#### Enrolment Ratio:

1. This decision will increase the load on universities. It doesn't increase the number of students enrolling in universities because the same student will study two courses. So, the gross enrolment ratio [GER] in higher education doesn't go up.
2. The GER for higher education is at 27.1% according to the All India Survey on Higher Education (AISHE) 2019-20. The NEP has set the target of raising this to 50% by 2035
3. The move will also lead to a demand for more teachers when thousands of vacancies for current needs haven't been filled.

#### Need for teacher training for a diverse classroom:

1. A growing body of literature attests to the explosion of aspirations after the liberalisation of the economy but the country's educational institutions have struggled to do justice to the pedagogical needs precipitated by the far-reaching transformations.
2. Teachers are, by and large, still not trained to do justice to students coming from a variety of social and economic backgrounds.
3. The new reform could compound this predicament, especially because instructors will now be required to design courses and structure teaching practices to cater to students with core competencies in diverse knowledge streams — for instance, a history classroom may well have students who are

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currently specialising in physics or commerce, besides those with a grounding in a social science discipline.

4. The UGC will have to draw up training programmes for teachers to enable them to adapt to the changing character of the classroom.

### **Facilitation and Autonomy:**

1. The regulator will have to do this without becoming overbearing — its record is not too inspiring on this count.
2. Reforms must begin by addressing a vexed issue: Autonomy, or the lack of it, for institutions as well as for teachers. Institutions have their own ethos and comparative advantages.