

The Berkeley Lab made the observations viz-a-viz PM Narendra Modi's announcements during the COP26 summit. He had committed to bring down the dependence on fossil fuel by tapping into greener alternatives

Toward an affordable and dependable grid

If India continues making progress in replacing fossil fuel with renewable sources, the Lab says it could attain



50%
Electricity supply from carbon-free sources by 2030

40%
Current contribution of non-fossil sources to installed capacity

HERE'S HOW IT COULD BE DONE

Quadrupling total renewable energy capacity over the decade and complementing renewable energy buildout with flexible resources such as

- 1 Shifting agricultural electricity consumption to solar hours
- 2 Using batteries to store four to six hours of daily energy for nighttime use
- 3 Utilising existing thermal power plants flexibly instead of building new coal- or gas-based plants

3RD

India is the third largest energy consumer in the world

1496W

India's current installed capacity of renewable energy

1756W

Installed capacity in renewable sources is the target by 2022

What did the Berkeley Lab seek to find?

Using state-of-the-art computer models and simulations, researchers examined the least-cost investment pathway to reliably meet India's electricity demand through the year 2030

500 GW

Target India seeks to achieve by 2030

EXFILE • EMISSION

INDIA ON ROAD TO CLEAN ENERGY

India's commitment to emission controls will help it leapfrog to a more sustainable and reliable power system to serve its nearly doubling demands by 2030, says a study published by the US Department of Energy's Lawrence Berkeley National Laboratory. Here's what the study said

8-10%

Drop in India's electricity costs if it attains 500 GW non-fossil electricity capacity

43-50%

Decline in carbon emissions intensity of its electricity supply against the 2020 levels

One rider though is that prices of harnessing renewable energy and battery storage should continue to decline



We found that building such high levels of renewable energy would actually be economical for India, thanks to the cost reductions in clean technologies that have occurred much faster than anticipated,

Berkeley Lab scientist and study's lead author Nikit Abhyankar

Ill-effects of transition are few

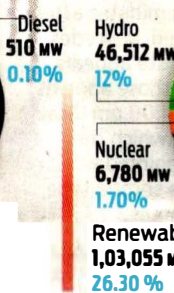
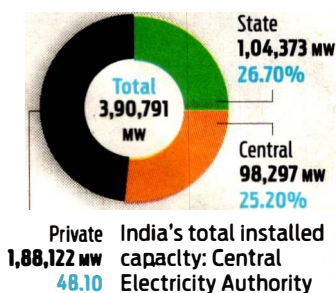
The study shows that by 2030, coal consumption and greenhouse gas emissions from the power sector can almost hold at 2020 levels. Transitioning to clean energy sources to meet electricity demands is therefore unlikely to lead to a loss of coal-mining and transportation-related jobs in the near to medium term

Step In the right direction

India's planned pursuit of greener alternatives to fuel its urbanisation and industrialisation is substantiated by a spike in the installed capacity of non-fossil fuel sources

3,90,371 MW

India's total installed capacity, fossil and renewable combined



Regulatory framework critical

In a complementary report, the research team emphasized that an enabling policy and regulatory framework is critical for India to achieve this least-cost resource mix. Such a framework includes:

1. Enabling states to share resources with each other
2. Integrating reliability and cost-effectiveness in electric utilities' procurement practices
3. Widening and deepening the electricity markets
4. Ensuring that energy storage is appropriately valued and compensated for
5. Coordinating between power and gas sector operations for efficient utilisation of the existing assets