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Q12

Do you think India will meet 50 percent of its energy needs from renewable energy by 2030 ? Justify your answer. How will the shift of subsidies from fossil fuels to renewables help achieve the above objective ? Explain.

UPSC Civil Services Mains 2022 · GS III · 15 marks · Farm Subsidies and PDS

Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System - objectives, functioning, limitations, revamping; issues of buffer stocks and food security; Technology missions; economics of animal-rearing.

Core demand of the question

- Judge whether India will meet 50 per cent of energy needs from renewables by 2030
- Explain how shifting subsidies from fossil fuels to renewables would help
- Distinguish **Panchamrit** capacity targets from generation and final energy needs

Revision summary

Panchamrit targets 50 per cent of installed electric capacity from non-fossil sources by 2030, including hydro and nuclear.

That is not 50 per cent of energy needs, and not even 50 per cent of electricity generation, because solar and wind have lower capacity factors.

Half of all energy from renewables by 2030 is unlikely given oil and industrial coal.

The capacity target is more plausible if transmission, storage and discom health improve.

Shifting subsidies from fossils to renewables and storage helps relative prices and manufacturing; social fuels need targeted DBT, not a blunt cut.

Introduction

At Glasgow (COP26) India announced **Panchamrit**, including a target that **50 per cent of installed electric capacity** would come from **non-fossil** sources by **2030**. That is not the same as **50 per cent of energy needs** from **renewables**. Capacity is megawatts on the nameplate; energy needs include **heat, transport fuel and electricity actually generated**. The answer must keep those words apart.

Body**Capacity versus needs versus generation**

- **Installed capacity** is the rated MW of plants. Solar and wind have **lower capacity factors** than coal or nuclear, so 50 per cent non-fossil **capacity** still leaves coal supplying a larger share of **kilowatt-hours** unless storage and hydro firm the mix.
- **Non-fossil** in **Panchamrit** includes **large hydro and nuclear**, not only solar and wind. **Renewables** in casual speech often exclude nuclear and sometimes large hydro. Mixing the terms overstates the green share.

- **Energy needs** (primary or final energy) are dominated by **oil in transport, coal in industry and cooking/heat**, not only by the power sector. Even a clean grid would not automatically make half of **all** energy renewable by 2030.

Will India meet '50 per cent of energy needs from renewables by 2030'?

- On a strict reading of **final or primary energy**, **no, not as currently on track**: oil and coal in non-power uses remain large, and 2030 is close.
- On the **official Panchamrit reading-50 per cent non-fossil installed electricity capacity**-India has a **credible shot** because solar auctions, falling module prices, and a large pipeline have already pushed **non-fossil capacity** to a high share of the total MW. Meeting it still needs **transmission, storage, land and a solvent discom**.
- **So: capacity target, plausible; 'half of energy needs from renewables', not the same promise and not the likely 2030 outcome.**

How shifting subsidies from fossils to renewables helps

- **Fossil subsidies** (under-priced coal freight in some periods, ATF and diesel politics, under-recovery in power) keep dirty energy cheap at the point of use and **crowd out** the relative price signal for solar, wind, storage and electrified transport.
- Moving support to **renewables and storage**-viability gap for offshore wind, green hydrogen pilots, rooftop solar, and timed **PM-KUSUM**-type pumps-lowers the **levelised cost** the buyer sees and builds domestic manufacturing (PLI for modules).
- Redirecting **kerosene and untargeted LPG** leaks toward **clean cooking and targeted DBT** cuts indoor air pollution without pretending every fossil rupee is already gone (fertiliser and LPG still have social aims).
- A **just transition** in coal districts must ride with subsidy reform, or the politics will reverse the shift.
- Subsidy reform is not a magic 50 per cent of **energy needs**; it is how the **power mix and later transport** decarbonise faster.

Honest bottom line

- Celebrate the capacity target. Do not write as if India promised half of all energy from solar by 2030.

Flow diagram

Panchamrit 2030 -> 50 percent non-fossil capacity
 Energy needs -> Oil heat industry
 50 percent non-fossil capacity -> Generation still coal-heavy unless storage
 Shift subsidies -> Solar wind storage e-mobility
 Solar wind storage e-mobility -> 50 percent non-fossil capacity
 Solar wind storage e-mobility -> Energy needs

Conclusion

Panchamrit's 50 per cent is about non-fossil electricity capacity, not half of India's energy needs from renewables. The capacity goal is within reach if grids and storage catch up; the energy-needs phrase is a different, harder test. Shifting subsidies toward renewables and storage improves relative prices; it does not erase oil and industrial coal by 2030.

Facts & figures

Panchamrit

Five Glasgow 2021 pledges, including 50 per cent non-fossil installed electricity capacity by 2030 and net-zero by 2070.

Non-fossil capacity

Solar, wind, hydro, nuclear and other non-coal/gas capacity in MW; not identical to renewable generation share.

Capacity factor

Actual energy produced relative to nameplate; much lower for solar/wind than for coal or nuclear.

PM-KUSUM

Scheme for solar agricultural pumps and decentralised solar, a subsidy shift toward on-farm renewables.

Net-zero 2070

India's long-horizon climate pledge; 2030 energy-needs claims must not be collapsed into this date.

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