



ETHANOL BLENDING - GS III MAINS

Q. The future of India's renewables strategy hangs on a delicate food-fuel trade-off; and a choice between intensifying hunger and reducing fossil fuel use. Discuss the above statement in the light of India's Ethanol Blending Programme. (10 marks, 150 words)

News: *India's ethanol conundrum*

What's in the news?

- As **more than 100 countries at COP28 in Dubai pledged the tripling of global renewable energy capacity by 2030**, India faces a tightrope walk with regard to its ethanol blending target.
- The future of India's renewables strategy hangs on a delicate food-fuel trade-off; and a choice between intensifying hunger and reducing fossil fuel use.

Key takeaways:

- While **ethanol blended petrol (EBP) increased from 1.6% in 2013-14 to 11.8% in 2022-23**, the 20% target by 2025 has run into trouble with low sugar stocks in 2022-23 and the impending shortfall in sugarcane production this year.
- As evident from Minister of Consumer Affairs Piyush Goyal's statement in May, the **government is looking at a major transition towards grains-based ethanol for meeting the target.**
- The recent authorization of the **National Agricultural Cooperative Marketing Federation of India (NAFED) and the National Cooperative Consumers' Federation of India (NCCF) to procure maize (corn) for supplying ethanol** distilleries indicates emphasis on this transition and will boost an organized maize-feed supply chain for ethanol.

Ethanol Blending:

- Ethanol can be mixed with gasoline to form different blends
- Once blended, the ethanol cannot be separated from the petrol.
- As the ethanol molecule contains oxygen, it allows the engine to more completely combust the fuel, resulting in fewer emissions and thereby **reducing the occurrence of environmental pollution.**
- Since ethanol is produced from plants that harness the power of the sun, ethanol is also considered a **renewable fuel.**
- It has a higher octane number than gasoline, hence improving the petrol octane number.



India's National Biofuel Policy:

Aim:

- The policy is aimed at **reducing dependence on imports by encouraging fuel blending.**

Ethanol Blending Petrol (EBP) Programme:

The Centre promotes the Ethanol Blending Petrol (EBP) programme with the aim of

- Enhancing energy security.
- Reducing import dependency on fuel.
- Saving foreign exchange.
- Addressing environmental issues.

Highlights:

- **Renewable Energy Pledge:** Over 100 countries commit to tripling global renewable energy capacity by 2030 at COP28 in Dubai.
- **Ethanol Blending in India:** Ethanol blended petrol (EBP) in India rose from 1.6% (2013-14) to 11.8% (2022-23), aiming for a 20% target by 2025.

Challenges with Ethanol Target:

- **Low sugar stocks and potential sugarcane production shortfall** pose challenges to India's 20% ethanol blending target by 2025.

Shift to Grains-based Ethanol:

- Government explores a transition to grains-based ethanol, emphasizing maize procurement for ethanol distilleries.

National Agricultural Cooperative Involvement:

- Authorization of NAFED and NCCF to procure maize signals a focus on an organized maize-feed supply chain for ethanol.

Key Challenges:

- **Low Sugar Stocks:**
 - Current low sugar stocks impact ethanol production from sugarcane, necessitating a shift to alternative feedstocks like maize.
- **Sugarcane Shortfall:**
 - Impending shortfall in sugarcane production poses a challenge to meeting ethanol blending targets.
- **Food-Fuel Trade-off:**
 - Transition to grains-based ethanol raises concerns about diverting grains from food production, potentially impacting food prices.



- **Ethanol Price Dynamics:**

- Link between ethanol, crude oil, and corn prices can create market volatility, affecting global food prices.

WAY FORWARD:

- The future of India's renewables strategy hangs on a delicate food-fuel trade-off; and a choice between intensifying hunger and reducing fossil fuel use.
- On the one hand, the government can reconsider its EBP target and stagger it to contain the contradictions.
- On the other hand, we need more investment in public infrastructure, urban design to contain the fuel demand for automobiles and in renewables such as solar power.
- To counter the most genuine fear of loss of food security, India may also shift Focus to next-generation Biofuels like:
 - Grasses and algae;
 - Cellulosic material such as bagasse, farm and forestry residue, etc.

