

## Moving to Methanol

### Why in news?

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NITI Aayog is helping the Ministry for Petroleum and Natural Gas draft a Cabinet note on methanol.

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### What is the initiative?

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- When a Cabinet note is circulated it covers all aspects and issues that may pose a challenge for Methanol Policy implementation.

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- The policy will be a combined effort of the Ministry of Petroleum and Natural Gas, Fertiliser and Coal among others.

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- The NITI Aayog will be a facilitator.

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- It is also looking at possible international collaborations.

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- This is to get help during the interim period till coal to methanol production in India reaches a level that it can meet the demand.

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- There is a need to import certain quantity of methanol till then.

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### How is methanol a better option for India?

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- **Imports** - Methanol is a cost-effective, non-polluting and versatile fuel.

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- It can fully or partially replace petrol, diesel or liquefied petroleum gas (LPG).

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- With methanol, India aims at trimming the crude oil import bill by 10% by 2022.
- It can thus reduce India's dependence on energy imports.
- **Sources** - Ethanol is made largely from plant-based sources, such as sugarcane and vegetable oil.
- A land-constrained country like India can ill-afford this.
- But unlike this, methanol can be derived from a variety of renewable, non-renewable and abundantly available feedstock.
- These include agricultural biomass, urban solid waste, coal, and natural gas.
- It, significantly, includes even carbon dioxide (CO<sub>2</sub>) present in the air.

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- **Potential** - India's potential to produce methanol is huge.
- As, India has over -

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- i. 125 billion tonnes of proven coal reserves
- ii. 500 million tonnes of biomass (generated annually)
- iii. substantial quantities of stranded natural gas

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- **Cost** - The locally generated and relatively cheaper methanol can significantly contribute to saving cost.
- The Indian Railways is considering converting its entire fleet of 6,000 diesel engines to methanol-operated locomotives.
- This could cut down the railways' energy bill by half.
- **Besides**, if about 20% of crude oil imports are substituted by methanol,

vehicular pollution can be slashed by 40%.

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- In all, this is a positive move serving both the energy- and environment-related objectives.

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## **What are the concerns?**

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- Methanol-powered vehicles are almost totally non-polluting.
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- However, a large amount of CO<sub>2</sub>, a potent polluter, is emitted during the process of making methanol from coal.
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- This will need to be either captured and stored or used to co-generate power in methanol plants.
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- Otherwise, it has to be recycled into methanol.
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- However, the technology for this purpose needs further refinement and scaling up.
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- Also, internal combustion engines now can accept methanol-doping of only up to 15% with minimal modification.
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- Higher levels of blending will require changes in engine design.
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- Despite these, the overall gains from the use of methanol outweigh the cost of surmounting the drawbacks.
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- It could certainly add a new dimension to the country's energy security.

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**Source: Business Standard, BusinessLine**

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