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.
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- It can thus reduce India’s dependence on energy imports.
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- **Sources** - Ethanol is made largely from plant-based sources, such as sugarcane and vegetable oil.
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- A land-constrained country like India can ill-afford this.
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- But unlike this, methanol can be derived from a variety of renewable, non-renewable and abundantly available feedstock.
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- These include agricultural biomass, urban solid waste, coal, and natural gas.
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- It, significantly, includes even carbon dioxide (CO_2) present in the air.
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- **Potential** - India’s potential to produce methanol is huge.
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- As, India has over -
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i. 125 billion tonnes of proven coal reserves
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ii. 500 million tonnes of biomass (generated annually)
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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.
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- The Indian Railways is considering converting its entire fleet of 6,000 diesel engines to methanol-operated locomotives.
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- This could cut down the railways’ energy bill by half.
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- **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 CO2, 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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