Concerns with Shale Gas Exploration

Why in news?

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Union government approved private and government players to explore and exploit unconventional hydrocarbons.

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What are unconventional hydrocarbons?

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- Conventional hydrocarbons can be sponged out of permeable rocks easily, unconventional hydrocarbons like shale gas is trapped under low permeable rocks.
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- Therefore, a mixture of ‘pressurised water, chemicals, and sand’ (shale fluid) is required to break low permeable rocks in order to unlock the shale gas reserves, and this process is known as fracking.
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- The process requires around 5 to 9 million litres of water per extraction activity.
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What are the concerns with Shale gas extraction?

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- Shale rocks are usually adjacent to rocks containing useable/ drinking water known as ‘aquifers’, extraction of such gas pose a daunting challenge to India’s fresh water resources.
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- Water cycle in a typical fracking process is different than other conventional hydrocarbon production activities.
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- When shale fluid is injected underground at high pressure to fracture the

rock, 5-50% (depending on the local geology) of the fluid returns to the surface, known as ‘flowback water’.
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- Return flows continue as oil and gas is pumped from the well,the flow back water is usually methane-contaminated, and therefore it poses different recycling and leakage issues than usual wastewater.
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What are the measures of the government in this regard?

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- Acknowledging the challenges in shale gas exploration, the Directorate General of Hydrocarbons (DGH) issued a guideline on environment management during shale gas extraction.
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- The DGH in its guideline proposes five new reference points (term of references) relating to water issues in the fracking process that a project proponent must explain while applying for the environmental clearance.
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What are the pitfalls with government measures?

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- However, the guideline falters and states that these challenges will be dealt while granting environmental clearances as per the Environment Impact Assessment (EIA) process.
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- The EIA process, however, does not differentiate between conventional and unconventional hydrocarbons.
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- No differentiation has been made in the EIA notification between conventional and unconventional oil and gas exploration in this sector.
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- The Ministry of Environment, Forest and Climate Change (MoEFCC), which generally releases sector-specific manual for environment clearance, is yet to come out with a manual specific to fracking activities.
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What is the way forward?

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- Implementation of the fracking processes without a consultative thought through process, especially on ‘water usage policy’, may result in larger issues including water stress, contamination of groundwater, and related health hazards.
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- By which India is missing an opportunity to comprehensively regulate the fracking process for a sustainable shale gas exploration in India.
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- As a first step, a sector-specific EIA manual on exploration and production of unconventional hydrocarbon resources may be a good idea.
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Source: The Hindu

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