

The risks in fracking

Many scholars believe that **fossil fuel energy** will decline markedly by 2050. Such conclusions have been challenged by others who say that the earth has enough resources to quench humankind's thirst for development for many centuries to come. Among other energy supplies, shale gas and oil are likely to be abundant and available.

Shale gas and oil are unconventional natural resources found at 2,500-5,000 m below the earth's surface, as compared to conventional crude oil found at 1,500 m. The process of extracting shale oil and gas requires deep vertical drilling followed by horizontal drilling. The most common way to extract shale gas is 'hydraulic fracturing' (fracking), where high volumes of water mixed with certain chemicals are pushed down to break the rocks and release the trapped energy minerals.

Coal-fired projections: on the draft energy policy

Because of its benefits, shale gas is being perceived by some as a 'saviour' of humanity. Fracking seems an attractive tool, both politically and economically. To gain such benefits, the government introduced a policy on shale gas and oil in 2013, permitting national oil companies to engage in fracking. Under the first phase, shale gas blocks were identified in Andhra Pradesh, Arunachal Pradesh, Assam, Gujarat, Rajasthan and Tamil Nadu. However, environmental groups have strongly criticised this move, which they say will have adverse environmental impacts. Countries like Germany and France and subnational governments like Scotland have banned fracking.

Fracking is bound to have positive economic and political impacts. In the U.S., where shale gas has been commercially exploited for two decades, the prices of fuel and electricity have dropped. Recent negotiations between the Secretary of the Organisation of the Petroleum Exporting Countries (OPEC) and American shale producers to control oil production and prices show that the U.S. has gained significant political advantage. Similarly, if India commercially exploits shale deposits, it could meet its ever-increasing energy demand, decrease oil and gas imports, and improve the balance of payments.

While this paints a possible bright future, fracking is bound to have a detrimental impact on local communities and the environment. As fracking consumes large amounts of water (average 15,000 m³/well) and relatively larger surface area, it is bound to impact irrigation and other local requirements. In the U.S. experience, out of 260 chemical substances, 58 have been identified to pose a risk to human life and environment, eight are carcinogens and 17 are toxic to freshwater organisms. Further, as 25-90% of the fluid is not retrieved and cracks in the shaft are possible, there is a high risk of pollution to nearby underground water. Instances of groundwater pollution have been reported in the U.S. (Pennsylvania) and Canada. Fracking has other impacts such as increased air emissions (including greenhouse gases) and seismic activity. Environmental impact assessments of the European Union and the U.K. have recognised these risks.

The Supreme Court of India has ruled that every person has the right to enjoy pollution-free water and air. It is also an established principle that the state holds its natural resources in trust for the benefit of the people, and has the duty to protect these resources from harm. If the risk from fracking to underground water materialises, courts can hold the state responsible for it, stop the activity, and order other corrective and preventive measures.

Another hurdle that fracking might face is the 'precautionary principle', which has been incorporated into law. It dictates that where there is a significant risk to the environment or human health, precautionary measures must be undertaken, irrespective of any scientific uncertainty. Therefore, even though some scholars might contest the above-mentioned risks posed by

fracking, the government would be obliged to adopt measures to reduce those risks.

The Model Bill for the Conservation, Protection, Regulation and Management of Groundwater, 2016, sets a priority for use of groundwater — right to water for life, and water to achieve “food security, supporting sustenance agriculture, sustainable livelihoods and eco-system needs”. Only after satisfying these priorities can underground water be used for other purposes. In the light of the risks involved, the government should impose a moratorium on fracking.

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