

Risks of extracting ‘flammable ice’

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Methane gas hydrates, also known as flammable ice, are an abundant but untapped source of clean energy. In a technical breakthrough in May, China successfully extracted gas hydrate from the Shenhu area in the north of the South China Sea. However, further exploration demands great caution.

The challenge is to extract these gas hydrates from their reserves in sedimentary deposits along continental margins, and to find safe and economical ways to develop them industrially. Their stability depends on surface pressure and temperature, so transforming them from solid sediment into liquids and gases could weaken the sea floor, causing mass movement, landslides or subsidence. Hydrates can suddenly release large amounts of methane, drastically altering the marine environment, harming sea creatures and affecting the climate.

We need a better grasp of the risks of such operations and how to manage them. Developing a solid and consistent regulatory framework will help industry and governmental agencies to avoid past mistakes, such as the horrendous consequences

of the premature marketing of poorly understood chemicals, including DDT (see, for example, R. Dunn *Nature* 485, 578–579; 2012).

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