

GEOLOGICAL RESOURCES FOR ENERGY: OIL & GAS, NON-CONVENTIONAL, CO₂



Yannick PEYSSON

Chercheur
IIFP Énergies nouvelles
& École Polytechnique

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Amphi. Gay Lussac

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Département de Mécanique

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" Fluid Dynamics of Sustainability
and the Environment "
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et l'Université de Cambridge (UK)*

The world energy consumption is mainly composed (more than 85%) of fossil resources (coal, oil and gas). Those resources contributed to the large expansion of our modern civilization. But in the 21st century, the Oil & Gas industry faces two new constraints that are going to create large changes in the domain of Energy. The first constraint is the finite volume of conventional fossil reserves and the fact that the world realizes that those limits are approaching. A first symptom of this was the large increase of the oil prices in 2008. This situation created an unexpected development of non-conventional resources that modify strongly and in a very short time the energy mix first in the US but more generally worldwide. A second constraint is climate change. The understanding, in the second part of the 20th century, of the CO₂ effect on the global warming leads to new policies that tend to limit the accumulation of greenhouse gases in the atmosphere (Kyoto protocol, environmental taxes...). This new constraint creates the condition for a faster shift in the energy mix but also it pushes the development of geological CO₂ storage. The development of this technique could contribute to limit the CO₂ emission during the energy transition phase. Regulation rules are still on discussion but some pilots are running around the world to demonstrate the potential and the feasibility of this technique.



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Conférence de l'Institut Coriolis pour l'Environnement de l'École Polytechnique