

CNRS INTERNATIONAL MAGAZINE

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THEORY AND
MEDICINE

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of Transition?**

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- ▶ **Actin and microtubule cytoskeleton in cell motility and morphogenesis: an integrated view**
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- ▶ **Marine eco-systems biology**
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- ▶ **Building, repairing and evolving biological tissues**
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- ▶ **Comparative biology of aging**
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On this cover:
Natural gas pipeline
in California (US).

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or more than 20 years, scientists have warned both governments and the public at large about climate change caused by the increasing concentration of atmospheric greenhouse gases (GHG). A consequence of human activity, this phenomenon is mostly due to the massive release of fossil carbon that was trapped in the ground for millions of years in the form of oil, coal, and gas. Given the inevitable depletion of fossil resources, a rising global population, and people's legitimate aspiration to have access to the energy required for their well being, there is an urgent need to switch to an energy mix that emits fewer GHGs.

Energy transition will be one of the main challenges facing humankind in the 21st century. And it is not only a technological undertaking but also a significant societal issue and the subject of heated debate.

The recent broadcast of documentaries about shale gas and hydraulic fracturing in the US, which expose the disastrous environmental consequences of the hasty exploitation of a new resource coupled with an obvious lack of regulatory framework, have already stirred international public opinion.

Scientific research should be able to inform the public and political decision-makers objectively and openly, about the respective benefits and drawbacks of the various energy options, all of which bring their share of potential inconvenience. In this context, a scientific seminar

was held at the CNRS in January 2014 to review current knowledge on source rock gas and the technologies required to exploit it.

It is the topic of this issue's cover story, which takes a broader look at the latest gas production methods, such as the fermentation of organic matter from waste, or the stimulation of former coalmines by depressurization (without fracking). Methane from conventional reservoirs is an energy source that releases less CO₂ than oil and much less than coal, which several countries are now starting to exploit or re-exploit massively. Gas can also be used as a way of storing or hybridizing intermittent renewable energy. For all these reasons, gas will continue to be one of humankind's main energy sources over the next 20 to 30 years—if not longer.

By Alain Dollet,

Deputy Scientific Director of
the CNRS Institute for Engineering
and Systems Sciences (INSIS), and
in charge of the organization's
Energy Task Force.





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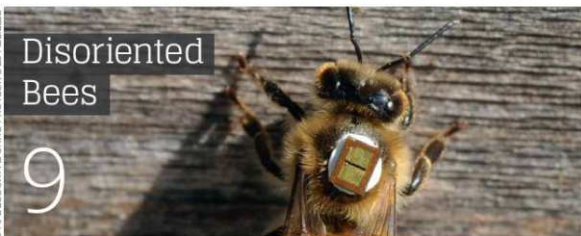
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