

# Editorial

**R**enewable resources and energy conservation are today, more than ever before, in the public eye. By conducting its research in nuclear energy, which is especially sparing of raw materials and environmentally friend, the CEA has also focussed, for quite some time, on what used to be called "new sources of energy". Its work in this area notably concerns the production of electricity by photovoltaic conversion of solar energy and the rationalization of energy use, in particular in the field of heat transfer. The CEA's research is founded upon the high degree of competence it has acquired in the nuclear energy sector and, more specifically in electrochemistry, thermodynamics, materials engineering, mechanical engineering, safety and modeling.

**O**n June 1, 1999, the Interministerial committee for scientific and technological research decided "to breathe new life into research related to mastering energy and renewable resources. The focus will be on developing less-polluting substitute sources of energy (fuel cells, photovoltaic systems, wind energy, biomass, etc.) that enable greenhouse gas emissions to be reduced, especially in the transportation sector". In addition, the CEA was requested to "significantly step up its research efforts in alternative sources of energy. Parallel to this, a technological network bringing together researchers and industrialists is created to link new developments in fuel cells and, ultimately, other alternative sources of energy".

**T**he CEA tied these new pursuits into its strategic objectives for the period 2000-2004 by creating a specific programme management division for *New Energy Technologies*, of which Anne Falanga took the lead on January 1, 2001. *Clefs CEA* seized this opportunity to present the scientific and technological stakes of developing alternative forms of energy that, though highly attractive, have not yet proven their economic viability. This issue, devoted to examining alternative energies, begins with an overview of energy sources and their use in today's world. The four chapters making up the body of the review discuss respectively: primary sources of energy and means of transforming them, energy conversion, energy storage and rationalization of energy use. Three of these chapters highlight the central role that hydrogen will play as a new energy vector. Indeed, this year the CEA launched a *Hydrogen* programme that openly welcomes outside collaboration and partners.

**M**ost of the proposed activities will be undertaken by critically-sized teams of researchers having longstanding experience in co-developing projects with industrial partners and, increasingly, in the European context. Approximately 200 people taken from all divisions of the CEA will be mobilized in 2001 to take on these tasks and contribute to scientific breakthroughs that will determine to a certain extent our energy policies in the future. A future that other technological breakthroughs could upset in the medium, long or very long term. This is the debate taken up in the last two, more speculative articles.

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