

**Closing Speech SNE-TP Launch Conference, 21st September 2007,
Alain Bugat, Administrateur Général du CEA**

Mesdames et Messieurs,
Ladies and Gentlemen,

Many speakers today have recalled which energy challenges the world and Europe in particular, are facing: to have a sufficient supply of energy at an affordable price while limiting greenhouse gas emissions, in a global context of increasing tensions on available resources.

The supply of energy is a necessary condition for development, which in turn leads to an increase of the share of electricity in the energy mix.

There will be no credible answer to the energy and climate challenges without nuclear energy. It is a safe, reliable and competitive source of energy, with some of the lowest carbon emissions of all energy technologies. Nuclear energy must therefore be considered alongside renewable energy technologies for Europe's future low carbon energy mix.

It is both a young and proven technology. Given the number of reactors in operation throughout the world, nuclear energy boasts over twelve thousand years of industrial experience. Its evolutions have been dictated by the expectations of the public: enhancement of safety of course, and a responsible management of waste. And there is still a considerable potential for progress, relying on scientific and technological innovations in other engineering areas, for instance material science and intelligent systems.

In the medium and long term, there is also a high potential for development of nuclear energy, for applications other than electricity generation: desalination, hydrogen production, and production of heat.

Energy technologies should not be opposed to one another. They complement each other – and scientific advances enable synergies to be developed. Second generation biofuels produced using high temperatures with high efficiency ratios is an example of such synergy. Progress in material sciences can greatly benefit nuclear fission, fusion but also solar thermal energy.

Technological Platforms in the area of energy, in particular the *Sustainable Nuclear Energy* Technology Platform which we are launching today, the *Hydrogen and Fuel Cell* Technology Platform and the *Biofuels* Technology

Platform – will offer major opportunities for developing synergies, sharing technological road-maps and optimising resources.

All will play a role in making the European Union a world leader in low carbon energy technologies. They will enable their industrial deployment within ten to twenty years. But for that to happen, Europe needs to intensify its Research and Development efforts immediately. Japan and the United States for example are investing considerable resources in the development of hydrogen technologies.

One way of increasing our R&D effort is to encourage private / public partnerships. It is one of the roles of the Technology Platforms. The proposed Joint Technology Initiative (JTI) on hydrogen and fuel cells is an example of such partnerships. The Sustainable Nuclear Energy Technology Platform will need to gather the resources needed for its ambition R&D objectives in order to achieve the technological breakthroughs which are needed.

Exactly 50 years after the signing of the Euratom Treaty, Europe has become without any doubt the world leader in nuclear energy. This treaty has provided the stable environment to carry out very high level research. It is essential to maintain this framework today in the context of a nuclear renaissance in the world. Europe faces scientific, technological and industrial competition both to conquer markets for Generation III reactors, and to establish the standards of tomorrow's Generation IV reactors, which will use far less fuel and produce far less waste.

Indeed, the development of a new generation of nuclear systems is a long and challenging task. Technological breakthroughs require several decades. These time-scales are beyond the investment capacities of industry alone. It is therefore of the up-most importance that besides private investment, public investment faces up to the challenge. Considerable funds today are mobilised in the United States, in Asia and in Russia, to carry out research and development for Generation IV reactors.

In this global competition, European Union countries, by themselves, cannot rival the United States, Russia or Asian powers. It is only through better coordination and pooling of human and financial resources as well as research infrastructures that Europe can hope to maintain its leadership.

The R&D efforts and the various means of funding large research infrastructures in Europe must be encouraged, to enable Europe to be a major player in the development of Generation IV systems. France has committed to build a 4th Generation reactor prototype by 2020 - and this project is open to collaboration. The objective is shared by the stake-holders of SNE-TP, and alternative technologies may be developed in other European countries.

As far as Generation III technology is concerned, industrial alliances have multiplied in recent months:

- Toshiba has acquired Westinghouse in 2006, increasing its portfolio of pressurised and boiling water reactors;
- General Electric and Hitachi have begun a long term partnership to develop boiling water reactors;
- Areva, which markets the EPR and the SWR-1000, has established an alliance with Mitsubishi, and has exported the fuel cycle technologies developed in La Hague to Rokkasho-Mura. With their newly created joint venture Atmea, Areva and Mitsubishi plan to develop a new 1100 MWe reactor;
- In Russia, Atomenergoprom was created as a single holding company for the civil nuclear industry. It is aimed at marketing both reactors and fuel cycle technologies in Europe and in developing countries.
- Finally, new players in China and India could appear in the next decade.

Europe must therefore bridge its differences to build a strong nuclear industry, able to contribute significantly to the economic prosperity of its Member States. The statements made this morning by the potential industrial users of nuclear energy show that there exist great expectations from industry at large in terms of nuclear Research, Development, Demonstration and Deployment.

In its Spring meeting this year, the European Council has suggested that a *“broad discussion takes place among all relevant stakeholders on the opportunities and risks of nuclear energy”*. This has opened the way for the creation of a Nuclear European Forum, which will be launched officially in November this year in Bratislava. This is a very important initiative, which will provide European stakeholders with a forum of debate on nuclear energy, at a time when Europe has made energy policy one of its highest priorities.

The forum will also be able to address the funding issues for R&D, for technologies that are close to market and for those that involve a higher level of risk. New funding mechanisms must be encouraged, such as the private/public partnerships which I mentioned earlier. In the Hydrogen and Fuel Cell Technology Platform (HFP), new funding possibilities have been investigated, with support from our industrial partners and from the Commission. More than forty research organisations and universities have committed to funding in part the activities of the future JTI. Funding through the 7th Framework Programme has also increased to respond to the challenge.

In the nuclear field on the other hand, I have to say that I was very much disappointed by the size of the budget devoted to fission in the 7th Euratom

Framework Programme, given the ambitions and the needs expressed by the stakeholders. These have been recalled in the Vision Report of the Sustainable Nuclear Energy Technology Platform which you have all received today.

I would like to underline how this vision, shared between Europe's R&D actors, is a key element in the construction of a European Research Area: a major step towards a knowledge-based economy providing jobs and growth, according to the Lisbon Agenda. But to be successful, it is necessary that all stakeholders be present in the platform, since it is also a forum for exchanges between the different actors, producers and users, industry and research. Such a dialogue is necessary to ensure that nuclear energy meets the expectations and future needs of our society.

I would like to thank the European Commission, and especially Commissioner Potocnik and Commissioner Piebalgs for their support of the Sustainable Nuclear Energy Technology Platform, even though as was recalled, Technology Platforms are the property of their stakeholders and not that of the Commission. After the different statements made today, I am fully confident on the ability of the R&D actors to meet the challenges that were formulated, to ensure the highest levels of safety standards and the widest cooperation at the European level. The Strategic Research Agenda that the Platform will produce in the next two years will I am sure fill this expectation.

I would also like to acknowledge the balanced and transparent work of the European Parliament which will help construct a new energy policy for Europe.

Finally, I would like to thank all the speakers, and wish all current and future Platform members a fruitful and successful activity.