

**Interview** Santiago San Antonio, Foratom

## ‘The word nuclear has lost its taboo status’

*The Director-General of Foratom - the association for the nuclear energy industry in Europe - Santiago San Antonio, is confident of a nuclear renaissance in Europe, stemming from the renewed support for nuclear energy from politicians across the continent.*

| by Hughes Belin

What do you mean by a ‘nuclear renaissance’?

For many years, most states, most utilities and most politicians were reluctant to discuss nuclear energy, but in 2007 politicians, the European Commission and the European Council started to recognise its potential benefits in combating climate change, promoting competitiveness, etcetera. That is what I call the start of a real renaissance. The word ‘nuclear’ lost its taboo status. At a European level, nuclear energy started to be treated in the same way as other energy sources. The European Commission has even created a new forum (European Nuclear Energy Forum – ENEF) to launch a debate among stakeholders in Europe. This represents a big change in Europe and that’s why I call it a ‘renaissance’. Politics aside, new plants have been built in France and Finland, Italy has decided to return to nuclear energy, Sweden has decided to reconsider its ban on the construction of new nuclear power plants (NPPs) and Poland is considering constructing a NPP in the future. New NPPs are being built in Romania, in Bulgaria, in the Czech Republic, in Slovakia and of course in the UK with an anticipated 10-12 plants to be constructed in the near future in cooperation with the most important utilities in Europe. Nuclear energy gives the electricity supply greater independence. Europe is very poor in

natural resources: we import 50% of our primary energy needs and we depend very much on some neighbours – I refer to the gas crisis we experienced recently.

But we will also have to rely significantly on Russian uranium, don’t you consider it also as a dependency?

The supply of uranium is not cartelised for the time being. The main resources are very well distributed (Australia, Canada and Russia) and unlike gas, uranium is very easy to store. Moreover, if your supplier were to announce that he can no longer supply you, it is very easy to find an alternative supplier and you have one or two years to do so. Moreover, we use only 5% of the energy capacity of the nuclear fuel in our NPPs. We could always recycle that fuel to have more: reprocessing allows us to recover the remaining 95%. It was not economically viable in the past but now it could be. The market price for uranium concentrate was 10\$/lb for many years. It has increased five-fold today. In Europe there are only facilities in France (La Hague) and the UK (Sellafield). Given that clear non-proliferation controls exist, more countries deciding to reprocess would not be an issue. In some plants in Europe and the USA, we use so-called MOX, which includes plutonium from the former Soviet Union’s dismantled war heads.



Do you produce waste when reprocessing?

Yes, besides plutonium (which you can also re-use in MOX), you produce actinides. They are very high-level waste, but in a much smaller quantity. The final quantity of waste from a used 5m-long fuel rod made of fuel pallets is 90% less. The nature of the waste is exactly the same. Present technology cannot eliminate actinides by burning: we have to store them in glass. In the future, using new technology will produce less actinides as they can be used in partitioning and transmutation reactors.

How much can nuclear energy contribute to combating climate change?

In the EU-27, according to official Eurostat figures for 2005, nuclear represents 31% of gross electricity generation and 14.2% of primary energy consumption. I don't have other figures. The conclusion is clear: nuclear energy does not emit CO<sub>2</sub> and if we want to meet the CO<sub>2</sub> emission reduction targets in Europe, the way forward is to use renewable and nuclear energy. In Europe, using nuclear power has resulted in a saving of 675 million tonnes of emissions of CO<sub>2</sub>-equivalents per year. And this despite the fact that nuclear is not recognised within the framework of Clean Development Mechanisms (CDMs) under the Kyoto Protocol.

Is such recognition in the post-Kyoto negotiations something that you would want?

Yes, we would want that. China and Japan are pushing for it: they intend to propose that nuclear is included in CDMs at the next Conference of the Parties (COP) in Copenhagen.

We are currently experiencing a credit crunch. Is nuclear energy competitive?

Many studies about the competitiveness of nuclear energy show that its competitiveness fluctuates depending on fuel costs and interest rates. But in general, it is more competitive than all other alternatives. Its main advantage is predictability. The cost of operating and maintaining a NPP remains very stable during its lifetime. For the time being, the financial

crunch has not affected the utilities sector. They get all the credit they need from the banks.

Will new construction in Europe exceed the number of dismantled old NPPs?

That depends largely on political decisions in many countries. Extending the lifetime of existing plants is recognised as the cheapest option to guarantee the supply but Europe, as yet, has no common policy for this and it is subject to the decisions of the respective regulators and governments in the different member states. One of the main objectives of the EU Commission is to maintain the contribution of nuclear to the electricity mix (around 30%).

*'We don't think that we need more regulation in Europe'*

Is the lack of nuclear engineers an issue?

It is an issue, of course. But over the past two or three years utilities, construction companies and engineering companies have been taking steps to resolve the problem – the 'nuclear renaissance' is not new.

Are you satisfied with the EU Commission proposals on nuclear safety?

We support the current draft. We did not like an earlier draft because it left the door open for further regulations. We don't think that we need more regulation in Europe. We believe that reference safety levels of the EU nuclear safety directive should be the ones put forward by the IAEA and the Convention on nuclear safety, that's it. And that is what the EU Commission has now proposed after having changed an earlier draft. What we need now is the harmonisation of existing regulations. ■

## Who is Santiago San Antonio?

*Santiago San Antonio took office as Director General of the European Atomic Forum (Foratom) in July 2006. A graduate of the Polytechnic University of Madrid, he has been working in the operational side of the nuclear industry his whole life. He has been director of power plants in Spain, spent two years in the US at the Institute for Nuclear Power Operations and participated in the foundation of WANO (World Association of Nuclear Operators). Since 1972 he has developed his professional career at Tecnatom, an engineering and services company in Spain. He was elected Director General of the Spanish Nuclear Industry Forum in July 1997.*

