

EDITORIAL What if we talked about nuclear energy?



Claude Fischer
Director, ASCPE-Les
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The European Union has set out its intentions to create an energy union, to boost growth and employment. This is a wise decision. The diversity of energy sources in Europe presents some real opportunities. The EU will have to assess how complementary these sources are when creating an energy mix that protects the climate and guarantees security, competitiveness and solidarity. This issue is a major political challenge. But the matter is not up for debate because the energy mix calls into question the decisions made by Member States. And nobody dares to discuss the choices of Member States! Never mind if the decisions made by some harm those of the others or if the market disintegrates as a consequence and gives us all a weaker stance in the global competition.

Among the most difficult of questions, nuclear energy has truly driven a wedge through Europe. Member States are completely split down the middle: 14 against 14. Europe, however, refuses to interfere. The Energy Union plans to increase the share of renewable energies and energy efficiency, to reduce the emissions of greenhouse gases, but no scenario seems to contemplate nuclear energy. Neither for nor against? What does the European Commission mean by "technology neutrality" when nuclear energy represents 30% of our electricity production and 55% of our low-carbon energy and when Member States are encouraged to reach ever higher levels of safety and to manage nuclear waste? Should we decrease the

share of nuclear in the mix? Maintain current levels? Or increase it?

Building new capacities, dismantling the old ones and creating storage facilities all require long-term investments, which are of interest to all Member States and which require public subsidies that the market does not allow. What reform will allow this need to be addressed and enable Member States such as France to continue operating nuclear plants, or countries such as Lithuania to renew its capacities, or those such as the United Kingdom to develop its capacities, or other such as Poland to start their nuclear programme?

Why is this taboo? To avoid being a source of irritation to Member

States who oppose nuclear energy? Or to the Greens who lobby within the European Parliament or in the Member States which support it? Who is shying away from the debate? Those who combat nuclear energy by advancing the risks for future generations as an argument are simply misled: the ecological risks related to global warming are much worse! The climate needs nuclear energy as a low-carbon energy. But Europe also needs nuclear: we need base load electricity of 8,000 hours a year at stable prices. Mastering the complete nuclear cycle (mining, fuel manufacturing, plant operation, waste retreatment and storage) is huge part of Europe's know-how; it creates hundreds of thousands of jobs, which are often highly qualified. The technology is still new and looks set to develop with new generation reactors. Will nuclear energy be a European asset for our security and our exports in the framework of the global nuclear renaissance?

We should not shy away from the debate: rather we should be open to it. This letter is intended as a modest contribution. It paves the way for the next Entretiens Européens that we will be holding in autumn on the safety and the management of nuclear waste: two challenges regarding societal ownership.



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**Les Entretiens Européens
15 October 2015**

**"Moving towards societal
ownership of safety and nuclear
waste management"**

**With the support and the
participation of the European
Commission**

Nuclear power: an asset for security, sustainability and competitiveness

While too little mention is made of nuclear power in the strategic framework published by the European Commission, it may be very helpful in achieving its 3 goals: reducing our energy dependency, enhancing sustainability and meeting the challenges of competitiveness.

Diversity at the service of security

Nuclear production represents approximately 30% of European electricity production. Its leading industry enables Europe to depend less on CO2-emitting

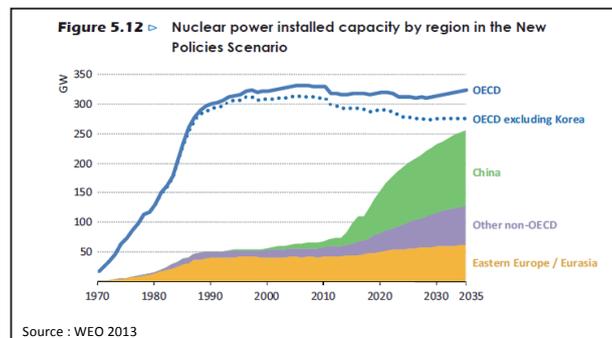
fossil resources, and to improve the trade balance even further.

Whilst the EU produces very little natural uranium on its territory, the question of fuel dependence does not arise in the same terms as for fossil hydrocarbons. Indeed,

Continues on page 2 and 3

it represents only 5% of the production costs and mines lie in diverse and stable countries for most : Canada, Australia, Namibia, Kazakhstan... In addition, its high energy density allows users to set up large inventories, up to five years of consumption for the strategic one in France.

Furthermore, in related services such as enrichment or processing – recycling, the value added is largely European. Mastering of the chain (from the fuel cycle to the storage of waste, from conception and building to the operation of power plants, from technical engineering to safety culture, from research to training) is a considerable know-how that must be valued in the world and in Europe.



The diversity of the mix itself is an important parameter of energy security and baseload production of decarbonised electricity by nuclear power plants in France, Sweden, the United Kingdom or Czech Republic today is an important stabilising factor for European countries, including the Member States that decided to phase phased out nuclear energy.

Sustainability, an issue of energy efficiency

The European Union's objectives for 2030 are ambitious: a reduction of 40% of greenhouse gas emissions compared with 1990. The progress made (minus 19% in 2013) is notable, but it is largely due to the crisis and the deindustrialisation of the Union. How to achieve this reduction, supporting both a reduction in the demand and development of industry in the 15 years to come? The nuclear industry does not produce CO₂ but produces much added value, especially when plants are amortised, it is necessary to develop it.

Indeed the safety of nuclear power plants raises questions among the public at

large. It is a fundamental element of their acceptance: framed by independent, transparent and competent authorities, their operation is under control like no other industry. And whilst zero risk does not exist, too much safety may kill^[2] safety and jeopardise the sustainability of a technology promised to a new future with the next generation of reactors.

The energy efficiency of nuclear power stations could be significantly increased by directly drawing profit from the fission heat in the reactor core by the cogeneration of electricity and steam. Used marginally today, more in countries such as Switzerland, this cogeneration could be taken into

account when designing new reactors.

Furthermore, the willingness of the Commission to develop a transport sector «energy efficient and with low carbon emissions» and «to electrify the transport to reduce dependence on oil» will only become reality if the electri-

city itself is largely decarbonised and is complementary alongside nuclear and renewable energy.

Articulate competitiveness and safety

Faced with the crisis, EU Member States must be able to take advantage of the diversity of the low-carbon technologies available.

The free movement of almost free surpluses of electricity from intermittent renewable sources on the European market upset the profitability of other sources such as gas and nuclear, and imbalance choices of domestic investments. It is necessary not only to take account of the costs, including those related to networks, but finish with distortions and massive subsidies to renewable energy in the European market. The ExternE programme, followed by NEED, developed and coordinated by the European Commission until 2008, also showed that if one incorporates «externalities» in the cost per kWh of the



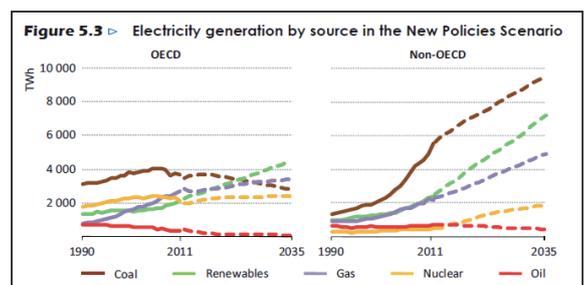
A nuclear fuel assembly
1/2 tonne = 50,000 tonnes of coal

different sources of electricity, nuclear power is particularly interesting, especially if it incorporates the cost of CO₂ emissions.

Nuclear power is a source of affordable electricity, with the second generation of reactors already amortised, but also with future generations: the French Court of Auditors has estimated the cost of kWh from new nuclear power as between €70 and €90, and for energy-intensive commodity industries, it is vital to contain the price of this electricity.

To continue to have access to power at the best production cost, it is therefore necessary to modernise our existing fleet and invest to replace reactors at the end of their lives: this requires substantial and long term investment.

Operators and consumers need visibility to engage, and long term contracts. However these remain the exception and depend on approval from the European Commission.



Today, the market discriminates against the investment in nuclear power, but reform is not on the agenda. The Commission

focuses on research and development for «the world's safest nuclear energy production». But beyond nuclear fusion with the ITER project, and the all-essential fourth generation projects, shouldn't the Energy Union be adding value to its nuclear facilities, fostering the "world's safest" nuclear, certainly, but cheaper, to restart production?

This production has fallen from 32% to 29% in the European electricity mix. With its 131 reactors representing 55% of the low carbon electricity, Europe remains a global leader. How will it keep its place and its role in the world? Disengagement at a time where nuclear power restarts in the world with the construction of 72 reactors (compared to 25 in 2004) would create

a handicap for the European industry and its assets for export, its safety and its competitiveness.



Jacques de Méreuil
Advisor, ASCPE

29 April in Brussels¹

Why deter States from using nuclear when the industry is competitive, safe and sustainable and guarantees our energy independence? Participants expressed regret at the fact that nuclear is almost completely absent from the Energy Union and spoke against the slow-down mechanisms imposed upon the market that would see it develop or even simply maintain it.

The spot market is an obstacle for nuclear in a context in which the Commission has introduced distortions in favour of REs. The fall in prices, exacerbated by the crisis on the demand side, is jeopardising the existing park and driving away power intensive industries, explained Jacques Percebois, a professor at Montpellier, "either we liberalise or we regulate but the same rules should apply to all!" The market is dysfunctional, said Colin Parker, a representative from EDF Energy, and if the UK wants to achieve the targets that the EC itself has set, whilst revitalising its industry, a decarbonised diversified mix is needed at an affordable price: in the UK, the on-shore wind park is limited, the offshore park is expensive, there is no longer enough gas in the North Sea, CCS (carbon capture and sequestration) will not be ready overnight, but nuclear prices remain competitive: this observation is what led the government to decide upon and put forward a market reform with a general interest mechanism for supporting and promoting clean technologies². A Commission-supported reform, we were told by Massimo Garribba, head of unit on Nuclear Safety at DG Energy, "is non-transferable" and cannot serve as a model for reforming the European market. We may well ask why when the system allows investments to be made into low-carbon energy without distorting competition and has some advantages in terms of safety and competitiveness.



It would be paradoxical for the UK to benefit and not the remainder of the EU, explained Kristo Katmeridis from ENGIE. For Didier Beutier, from Areva, nuclear is a safe bet against price volatility and for safety and Europe is in need of ideas. Jean-Pol Poncelet called for greater harmonisation: for prices and long-term investments but also for construction permits, with a European regulator. "The sovereign choice of States in deciding upon their sources is directly at

odds with a European policy. How can we make the Energy Union compatible with the Lisbon Treaty and the Euratom Treaty?" he questioned. Massimo Garribba was surprised to hear such an unequivocal call for a European regulator which, in his view, was not on the agenda. There was no question of taking responsibilities away from the Member States, he clarified, and the Commission is to put forward "additional articles" along these lines in the new draft Safety Directive. Furthermore, he affirmed: nuclear will be at the heart of the public debate with an open consultation following publication of the PINC (the Illustrative Nuclear Programme for the Community), and a communication on "market design" to foster long-term investments into the energy market.

Claude Fischer

¹ Conference organised by ASCPE
Les Entretiens Européens in partnership with Foratom (cf. issues on www.entretiens-europeens.org)

² See page 6, the British system which is known as the CfD, Contract for Difference.

On 25 February 2015 the European Commission published its "Energy Union" package including a communication on a strategic framework "for Energy Union...".

The package also included a press release on preparations for the Paris Conference on Climate Change, COP21, in December 2015, and another one on electricity networks.

The Union's energy strategy can be divided up into five interrelated and mutually reinforcing dimensions:

- energy security, solidarity and confidence,
- the complete integration of the European energy market,
- energy efficiency as a means of dampening demand,
- decarbonising the economy,
- research, innovation and competitiveness.

With this project, presented as "the largest European project since the ECSC", the Commission has set its sights on three major objectives: reducing our energy dependency; strengthening sustainability in particular by reducing our greenhouse gas emissions (by 40% between now and 2030, 60% by 2050); and meeting the challenges of competitiveness that Europe is facing.

Nuclear Energy: an Ally of the Climate –

COP 21: change of method, for which result ?

COP 21* is set to take place in Paris from 30 November to 11 December 2015 and will bring together 20,000 participants (States, NGOs, businesses...) to discuss an urgent need: reducing greenhouse gas emissions in order to limit global warming to a maximum of 2°C. Between now and June, each country must commit as part of the United Nations Framework Convention on Climate Change (UNFCCC) to putting a "bottom up" method in place instead of the "top down" approach which set a global target for reducing emissions and was split between the forty most developed... without much success. Or rather saw an increase of 30% of global greenhouse gas emissions between 1990 and 2010! Will COP 21 be the breakthrough? If the objectives do not come equipped with the means, will it just be yet another global get-together?

*COP 21: Conference of the parties, the parties being the countries that signed up to the Rio Convention on the Climate in 1992.

A driving force in the fight against global warming

IPCC researchers have confirmed it: limiting global warming cannot be achieved without nuclear. How can Europe, home to the largest nuclear park in the world, and France, which will play host to the COP 21 at the end 2015, act as driving forces and lead the fight against global warming?

Whilst Fukushima in 2011 managed to slow down the growth of nuclear energy in Europe, everywhere in the world – in Russia, China, Korea, Turkey, India, Saudi Arabia, South Africa and even in Japan, there are some ambitious programmes on the

horizon. According to the scenarios explored by the IEA¹, the number of countries with access to the nuclear industry will rise from 31 in 2013 to 36 in 2040 and the world's capacity for nuclear electricity will rise from 392 GW to 620 GW (+60%). This increase, however, will only represent 12% of the world's electricity production² whereas nuclear capacity of 930 GW will be needed (and therefore an increase of 530 GW between now and 2050 – i.e. an additional 12GW/year) in order to cap CO₂ emissions and limit global warming to 2°C. This

challenge will be all the greater given that 200 reactors will have to be upgraded, closed or replaced in the United States, Russia, Japan and Europe (out of the 434 that are currently operational).

How are these 36 countries in the world going to cooperate as part of COP21³? What proposals could they make so as to create the conditions for developing nuclear energy as part of the energy strategies of the world's States and largest regions? The Kyoto Protocol had ruled out nuclear energy from the "clean development mechanism" (CDM). The urgent need for solutions and measures for achieving the GHG reduction targets has reopened the debate: should nuclear be included in a reform of the CDM? And would that be enough? Would there have to be new funds for promoting its development? Reform market frameworks? What would be at stake for Europe and France? Whilst the European Commission's decision to support the United Kingdom⁴ has been called into question by Austria and Luxembourg, and the wind power industries of Germany, let us not leave the offensive to countries where the results should make them slightly more humble! In fact, the decrease in nuclear in Germany (which went hand in hand with an increase in renewable energies and coal) has made it the biggest polluter in Europe with CO₂ production of 760 million tonnes in 2013.

France must deploy its knowledge of the whole cycle in order to contribute towards promoting sustainable nuclear energy in Europe and in the world. Its interests are in line with those of the United Kingdom and the nuclear States: it can play the role of mediator in the search for a historical compromise on the European mix which would propel it into a leading position in the run up to COP21.

Claude FISCHER



COP 21, nuclear and Franco-British cooperation*: Claude Fischer moderated the round table discussion during the Convention held by the SFEN (French Society for Nuclear Energy) on 5 March 2015 at the Maison de la Chimie (House of Chemistry), with (left to right) Benoît Leguet, CDC Climat, Alistair Toft, UK, Jean-Pol Poncelet, Foratom, Gerassimos Thomas, Commission européenne.

¹ Cf. World Energy Outlook 2014 - IEA

² 45% of the growth in nuclear electricity production to 2040 will take place in China; the combined share of India, South Korea and Russia will amount to 30%. It will increase by 16% in the United States but will decrease by 10% in the European Union.

³ The nuclear associations of 36 countries have signed a manifesto: see opposite.

⁴ See page 6

- Nuclear Energy: an Ally of the Climate



39 nuclear associations have signed up

On the occasion of the ICAPP congress (International Congress on Advances on Nuclear Power Plants)

- Nice, 3 to 6 May 2015 - 39 associations representing 50,000 professionals in nuclear from 36 countries on 5 continents signed a manifesto setting out their commitment to the fight against climate change. In order to achieve the CO₂ emission reduction targets recommended by the IPCC, the 39 signatories believe that each country must have access to a portfolio as large as possible of low-carbon technologies, including nuclear energy. They would like to see recognition from the UNFCCC (United Nations Framework Convention on Climate Change) that nuclear energy is a low-carbon form of energy and allow it to enter into the financing mechanisms for which all other low-carbon energies are eligible.

Video of the declaration: <https://www.youtube.com/watch?v=-arGtYlrwY&feature=youtu.be>

Photos: <https://www.flickr.com/photos/120990791@N02/sets/72157648631228479/>

Press release: http://www.sfen.org/sites/default/files/public/atoms/files/cp_icapp2015_04052015_0.pdf



Nuclear energy is the least carbon-intensive form of energy with emissions ranging from 2.5 to 5.7 g of GHG per kWh of electricity produced as opposed to 105 to 366 for thermal generation (and 2 to 76 g for REs). Since 1971, 56 gigatonnes of CO₂ have been saved thanks to nuclear, and in 2040, nuclear will make savings of almost 50% of GHGs emissions each year in South Korea, 12% in Japan, 10% in the United States, 8% in China.

For further reading

- **Nuclear, an ally of the climate**, position of Claude Fischer, 5 March 2015, www.entretiens-europeens.org

- **Nuclear energy is part of the solution in combating climate change**, contribution from SFEN to the preparation for the COP 21, www.sfen.org

- **Technical and economic issues of the integration of a large share of variable RES to the European interconnected electrician system**, Alain Burtin et Véra Silva, 31 mai 2015 - EDF - R&D. *The authors of the study demonstrate that phasing out nuclear in Europe would double the GHG emissions from 125g at present to an average of 250g per kWh in the mix.*



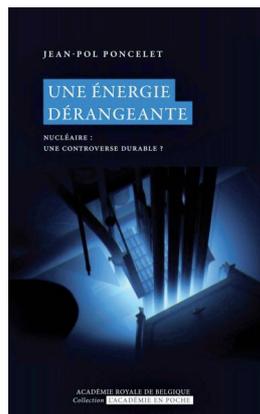
Signatories

- American Nuclear Society (ANS)
- Argentine Association of Nuclear Technology (AATN)
- Atomic Energy Society of Japan (AESJ)
- Australian Nuclear Association (ANA)
- Austrian Nuclear Society (OKG)
- Belgian Nuclear Society (BNS)
- Brazilian Nuclear Energy Association (ABEN)
- Bulgarian Nuclear Society (BGNS)
- Canadian Nuclear Society (CNS-SNC)
- Chinese Nuclear Society (CNS)
- Croatian Nuclear Society (HND)
- Czech Nuclear Society (CNS)
- European Nuclear Society (ENS)
- Finnish Nuclear Society (ATS)
- French Nuclear Energy Society (SFEN)
- German Nuclear Society (KTG)
- Hungarian Nuclear Society (MINT)
- International Nuclear Society Council (INSC)
- Italian Nuclear Association (AIN)
- Korean Nuclear Society (KNS)
- Latin American Section of the American Nuclear Society (LAS/ANS)
- Lithuanian Nuclear Energy Association (BEA)
- Malaysia Nuclear Society (PNM)
- Mexican Nuclear Society (SNM)
- Mongolian Nuclear Society (MNS)
- Netherlands Nuclear Society (NNS)
- Nuclear Engineers Society of Turkey (NMD)
- Nuclear Industry Association South Africa (NIASA)
- Nuclear Institute (NI)
- Nuclear Society of Kazakhstan (NSK)
- Nuclear Society of Russia (NSR)
- Nuclear Society of Serbia (NSS)
- Nuclear Society of Slovenia (DJS)
- Nuclear Society of Thailand (NST)
- Romanian Nuclear Energy Association (AREN)
- Slovak Nuclear Society (SNUS)
- Spanish Nuclear Society (SNE)
- Swedish Nuclear Society (SKS)
- Swiss Nuclear Society (SGK)

When to reform the market for nuclear investments?

Nuclear is a highly capital-intensive industry and building a power station does not come cheap. This much is true. But, once built, the cost becomes very competitive: 42 euros per MWh for depreciated nuclear as is the case in France for second generation power plants and approximately 75 for third generation plants. The UK, which has just decided to build two 1500 GW reactors at Hinkley Point, will have to amortize their investments they offer 110 euros per MWh, which is in line with the prices guaranteed for renewable energies (RE) in the run up to 2020, in the knowledge that the latter will benefit from discriminatory aid and that the prices do not include the costs of developing networks to remedy their intermittency. (It should also be factored in that the lifespan of these plants is three times higher for 3G nuclear than for REs). Furthermore, a reform of greenhouse gas emission quotas would bring the price per MWh to beneath that of coal and gas if it were possible to achieve a CO2 price that is not too ridiculous (at least 30 €/tonne).

Investors are calling for guarantees to be able to commit to and negotiate long term contracts. Given that the market does not provide long term reference prices but a short term spot price, the deferred profitability causes huge problems when it comes to discount rates. On the other hand, there are dissuasive rules on State aid; the Commission is divided on how to modernise them and for the time being is pushing back the reform for the nuclear sector. DG Competition,



however, is dealing with projects on a case by case basis and is granting derogations to States seeking to invest. Each has its own model: Excellium in France, Mankala in Finland, the CfD in the UK¹, Poland is in search of its own and is being drawn towards the British model which guarantees not only the construction of plants and their sustainable running but maintains prices regardless of market fluctuations (contract for difference*).

Austria has announced its intention to bring the matter before the European Court of Justice to contest the decision made by the European Commission to give the green light to London's plans for the CfD for the two reactors at Hinkley Point. In Germany, it is the cooperative Greenpeace Energy which has entered the fray. But the British Government does not appear willing to allow its decisions to be dictated and in turn is threatening to strike back at Austria. In early March the United Kingdom and France, together with six other countries, penned a joint letter to the Commission to request greater support for nuclear (see below).

The Euratom Treaty, still in force today, grants the Commission a mandate to "contribute to the formation and development of Europe's nuclear industries". Today, given the hostility shown by certain Member States, it must guarantee other Member States the right to develop nuclear and must support the financing of long term investments. In return, these countries must guarantee nuclear safety for all European citizens.

Jean-Paul Poncelet
Director General of Foratom

¹ As part of the CfD, the consortium in charge of constructing and then operating the reactors will not be subsidised, it will sell electricity at market rates but it will have the right for 35 years not to sell at a loss thanks to a compensation system.

8 European countries call for support for nuclear energy

In early March, eight EU countries (Romania, together with France, the UK, Poland, the Czech Republic, Lithuania, Slovenia and Slovakia) sent an open letter to the European Commission calling for greater flexibility in public support for the nuclear sector, as a response to the attacks staged by Germany and Austria concerning the matter of the EPR at Hinkley Point.

The coalition believes that the sector ought to benefit in the same way as renewable energy from European subsidies for research, innovation and financing for new projects. But in addition to simply calling for public support, these countries were also expressing their wish to see Europe reconsider its stance on nuclear energy and finally recognise it as a carbon-free form of energy which has an essential role to play in the fight against climate change.

The Energy ministers of the signatory countries underlined that several European countries would not currently be in a position to respond to the climate objectives set by the EU without nuclear. They also welcomed the Commission's approval of the UK's project which for them marked a first step towards a more responsible and sustainable nuclear Europe.

A CfD for the long term

In September 2014, the European Commission ratified the mechanism known as the "Contract for difference" which had been put forward by the United Kingdom in order to renew its nuclear power stations. Take a closer look at what this decision really means with Jacques Percebois.



Why did the Commission ratify a public support mechanism for British nuclear?

What the European Commission ratified was investment protection for the consortium in charge of constructing and then operating two EPR reactors in the UK. This consortium will sell at market prices but, for a 35-year period, it will have the guarantee of not selling at a loss. If the price then falls below the project's break-even point, the consortium will be entitled to receive compensation. In return, for 60 years, if the price of electricity soars, the consortium will be expected to share out the profits. It is possible that in future the winning party will be the British Government and not the consortium.

What message does this agreement send?

The Commission recognises that investing in nuclear cannot be achieved without public support and visible levels of profitability over the long term. Nuclear is a "long duration" activity; the life cycle of a new reactor is 60 years and the return on investment is seen over the long term. In other words, at a time when nuclear is really taking off (there are currently 72 nuclear reactors under development, especially in Asia, as opposed to 25 in 2004), it is important to lend fresh support to nuclear in Europe. This is a technology of the future, especially when it comes to joining forces with renewable energies to combat global warming. Other countries too such as Saudi Arabia and Turkey are waking up to its appeal.

What prospects does this decision from the Commission open up for nuclear in Europe?

This will set a precedent for investment projects of this magnitude. It is a good sign for nuclear and brings many positives, both from an economic and ecological point of view. We have to plan ahead for the surge in demand for electricity: the UK has taken this on board by focusing on both nuclear and renewables. Furthermore, it would be good for France to shift its gaze away from Germany slightly and more towards the UK!

In Prague, ENEF invites all stakeholders to take part in the debate

There were over 150 of us in total, spanning a range of different backgrounds and from all corners of Europe, who came together to debate nuclear issues at the ENEF, the Prague and Bratislava Forum, created by the European Commission in 2007.

Among the conclusions presented by Gerassimos Thomas, deputy Director General at the European Commission's



At the ENEF on 27 May in Prague, with: Czech minister Jan Mladek, Gerassimos Thomas and Anton Pavlov, Minister from Bulgaria

DG Energy, we were reminded that the nuclear sector is part of our energy mix, it has huge investment needs and this applies to the whole cycle, all the way through to decommissioning. A "new" subject, chosen as the subject for a round table discussion (see below), which must build on existing experience and best practices as there are many challenges ahead, especially pertaining to the question of what to do with nuclear waste.

"There should be no doubts over the Commission's commitment to nuclear," he insisted, "it must lead the way in safe production," by focusing on R&D and innovation and by ensuring quality in its human resources. Preparations for a roadmap are currently underway: with a report on investment, a draft on market reform and the Emissions Trading Scheme? and with the prospect of a new directive in a year's time. He ended by saying that it would be an open consultation and that all stakeholders would be invited to take part in it.

Do we need to create a European decommissioning market?

As a leader of the nuclear sector as a whole, Europe should also strive to become a leader in decommissioning. It is a question of safety and a challenge to be able to renew its nuclear park, the largest in the world with 131 reactors and which dates back to before 1990. There are challenges for exports when it comes to remaining competitive on a market that is undergoing a huge renaissance and becoming competitive on a growing decommissioning market given the ageing of the world's power plants. **There is definitely scope for the next few decades which must be explored without further ado rather than leaving it for future generations.**

All European countries are involved, those which have decided to bring the production of nuclear energy to a halt such as Germany or Italy, but also and especially the countries wishing to pursue nuclear and develop it further.

Decommissioning is a lengthy and expensive process (becoming more expensive the longer the process continues) which is going to require a high performance industry, appropriate competences, long term financing, a regulated market with clear

legislation and authorisation procedures, well-managed nuclear waste processing and a great deal of solidarity and transparency. There will be stiff competition among decommissioning companies which will be vying for a share in a market representing 220 billion in the world: **what will be the framework for this market? How can responsible decommissioning be regulated?** Responsibilities differ from State to State, from one nuclear safety authority to another, between operators or managers of radioactive waste. Should we harmonise strategies and create a European safety authority? When decommissioning, must we



From single Energy source Fora towards an Energy Forum

The political debate on the mix and dialogue between stakeholders and civil society remains divided between nations and different forms of energy. Electricity has its own forum in Florence, gas in Madrid, fossil fuels in Bonn, RE in Amsterdam, nuclear in Prague and Bratislava... Why not have a European Energy Forum where people could talk about all energy sources combined and their complementary aspects? The annual event would be preceded by a series of European conferences each year in each Member State, bringing together national parliaments and key players from civil society so that each national policy can be incorporated into the European strategy.

wait to have interim and definitive storage facilities all across Europe which are capable of processing all of the waste? And, if not, what can be done with the waste? Should it be recycled? House it on temporary sites in national or even regional centres? Export it to countries which have their own waste processing centres?

There were so many questions raised by the ENEF on 27 May in Prague during the round table discussion. Now there **needs to be a debate with citizens and key players in civil society as decommissioning power plants is also a question for society to grapple with as a whole.**

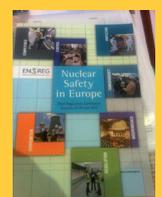


Round table discussion moderated by **Claude Fischer** with **Saida Läarouchi-Engström**, Vice President, SKB, **Anton Pavlov**, Minister in Bulgaria, **Riccardo Casale**, Chief Executive Officer, SOGIN SpA, **Herikko Pilt**, Deputy Director-General, Ministry of Employment and the Economy, Finland.

Out of the 140 reactors that are currently shut down in the world, Europe has over 60%: 29 in the UK, 27 in Germany, 12 in France, 4 in Bulgaria, 4 in Italy, 2 in Lithuania, 1 in the Netherlands, 3 in Slovakia, 2 in Spain, 3 in Sweden.

2015 Conference in Brussels on 29 and 30 June 2015

- The European approach to nuclear safety
- Public engagement
- Operator responsibility
- Towards long term harmonisation
- Managing nuclear waste and decommissioning
- Organising sites in the event of implementing emergency plans



Nuclear safety, A European public good

The Energy Union in Europe is an asset for growth and employment. And even if Member States may disagree on the nuclear question, with a perfect balance between 14 States which use nuclear energy and 14 which oppose it, nuclear safety is a matter that cannot be disputed; it is a European public good. For Member States on both sides of the debate, nuclear energy production cannot exist without nuclear safety.

But, that said, how can we guarantee the safety of nuclear plants? There is no ambiguity either in the regulations or in their implementation; the operator of a nuclear plant bears responsibility for the safety of the plant. But some will question that: can we trust a profit-making entity? Isn't profit-making detrimental to nuclear safety? Fortunately, we have a common legislative framework and national independent national regulatory authorities. Are the regulatory authorities a real guarantee of the protection of the



European citizens? Or are they, as a body independent from undue influence, using their authority to add specific local requirements in the process running the risk of losing the necessary balance between having to produce proof on paper and human expertise on the ground? Is there really any public appetite for all this paperwork or do we embed ourselves in a protective mode towards the risk of legal attack as created by nuclear opponents? And why is the nuclear industry accused again and again of a lack of transparency and hiding behind secrecy?

There is no reason to doubt Europe's nuclear plants, and the 28 Member States deserve to be proud of their respective levels of safety.

How can we reach this goal? Respect and listening to one another is a prerequisite.

A nuclear operator needs to face a strong and internationally recognised regulator, but also needs an open dialogue with the public and with the NGO's in the vital role that they play in acting as a thorn in their side. Each side must respect the other: I need you to play your part, we complement each other but any lack of balance between control of safety and implementation of safety would damage irrevocably the responsibility for safety.

Openmindedness and a questioning attitude are additional prerequisites. And for that, entities involved in nuclear activities in Europe know that benchmarking with others, also outside of Europe, equally benefits safety. They do that peers to peers, regulators to regulators, operators to operators. Is it, however, sufficiently developed between vendors, who conduct their business in a competitive world? How can they build together the codes & standards for tomorrow? Can Europe be reasonably expected to export the best codes and standards, running the risk of hampering the progress that is continually made through understanding what is going on in the outside world? Or do we prefer Europe to be the accelerator for development of global codes and standards for sustainable safety?

Educating citizens is a third condition, and cannot afford to be overlooked. How can we equip every European citizen with the capability to understand not only how energy is generated but also prevention and risk management side, give them the capability to live a safety culture? Any citizen should be able to take part in the social debate without being obligated to choose their thoughts between those of the "pros" or those of the "against".

We are citizens of Europe, we ought to be proud of our nuclear facilities, proud of their level of safety, proud of protecting the environment in a global word where safety does not stop at Europe's borders.

Véronique Decobert
Director of Regulatory Affairs,
EMEA, Westinghouse

Les Entretiens Européens in favour of societal ownership of safety and nuclear waste management

15 October 2015 at the Stanhope Hotel, Brussels

With the support and the participation of the European Commission and the partnership of representatives of several European countries

- Nuclear waste management: towards national plans and greater harmonisation
- An industry with high added value and innovative solutions
- Responsibility for management: producers, managers, territories, workers...

What do the Member States do? Germany, Belgium, France, Hungary, Italy, Netherlands, United Kingdom, Sweden... What about Canada?

- Safety: working together to construct a European public good

Post-Fukushima, the ASCPE conferences for a sustainable nuclear sector in Europe

- 27 June 2011, les Entretiens Européens at the University Foundation of Brussels: **Bulgaria, Hungary, Lithuania and the Czech Republic... The economic challenges of sharing European safety**
- 7 November 2012, lunchtime debate in Brussels: **Nuclear in Europe: future challenges**
- 11 April 2013, les Entretiens Européens in Brussels: **EU/Russia Dialogue - Nuclear sector: competition and cooperation**
- 24 May 2013, seminar by the "Energy" group in Paris: **Nuclear in Europe and in the world.**
- 17 September 2013, screening of the debate in Paris: **Pandora's promise** in partnership with the SFEN and the IFRI with an appearance from director **Robert STONE**
- 22 to 24 October 2013, les Entretiens Européens in Warsaw and Krokowa: **A civil society initiative for nuclear appropriation in Poland**
- 30 October 2014, les Entretiens européens in Brussels: **How to finance the move towards carbon-free and competitive electricity on the European market?**
- 14 November 2014, les Entretiens Européens in Paris: **Towards societal ownership of nuclear waste management**
- 29 April 2015 in Brussels, seminar by the "Energy" group: **Nuclear's contribution to the Energy Union**

Minutes and summaries are available on www.entretiens-europeens.org

Also see the 3 conference cycles run by our partner the ENELA, **European Nuclear Energy Leadership Academy**, in Munich on 9-10 February, 22-23 March and 26-27 April 2012 "Putting severe accidents into perspective: Learning from the past, preparing for the future of nuclear energy" and the summary produced by Michel Cruciani: <http://www.confrontations.org/images/confrontations/coll/2012/enpartenariat/ENELA-Resume-Thematique.pdf>

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