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Financing: A Key Factor of Nuclear Power Development

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Ladies and Gentlemen, dear Colleagues, good morning.

In front of such a distinguished and educated audience, I don't need to explain the drivers of energy and environmental policies.

We all know in this room that nuclear energy has a necessary and legitimate role to address the challenges of climate change, security of supply, and affordability. And everybody here is realizing that we are experiencing a new "oil shock". It has a clear impact on electricity prices.

But with such compelling arguments in favour of nuclear energy, and with competitive products in the market place, why has the so-called "nuclear renaissance" not already taken place?

Or has it already?

New nuclear power plants are being built in the world

In Asia, nuclear has always been part of the energy mix. Today, Japan and South Korea are expanding their reactor fleet. India and China have ambitious plans for new builds, and are starting to implement them.

In Western Europe and in North America also, "renaissance" is a fact. The first step is the "renaissance" of older plants thanks to extensive programs of life extension. A sharp reversal when compared to the situation 5 years ago: at that time, the expected trend was closure and decommissioning. Thus, these plants will, literally, enjoy a second life!

In Western Europe, the second step is already underway: the first EPR plant is under construction in Finland – TVO is holding the "corner stone ceremony" next Monday. And in France, EDF made the decision to launch the construction of an EPR.

Joining in the “renaissance spirit”, more and more countries and utilities are taking action to include nuclear in their energy mix, or to enlarge its share:

- AXPO, in Switzerland, expressed its desire to have a new nuclear plant in the coming 10 years.
- Eletronuclear, in Brazil, is willing to complete Angra 3 and add further power plants later.
- The Bulgarian utility is currently launching a request for bid for two reactors at Belene.
- ESKOM in South Africa is considering adding new reactors to its fleet.

And many other utilities in countries such as the United-Kingdom – our host today – Lithuania, Poland, Vietnam, Turkey, and many other ones ...

Of the many issues that need to be addressed in order to meet the challenge of new build, financing is fundamental to all parties: it will be my focus today.

Financing: A case of risk and reward

Macro-economics has increasingly led the financial community to assess the economic competitiveness of nuclear energy. The conclusion of their reports is that investing in a nuclear power plant makes sense. Or, using a financial keyword, a nuclear power plant can create value.

Now, that may not be enough to get easy financing. Once a power plant is built, there is no risk premium at all associated with its operation; but investors' perception of the risk for a new nuclear project is still relatively high. Thus, there is still a significant risk premium associated with the initial investment.

The bottom line is a “risk-reward” analysis, which translates for most potential investors into a request for a high return on investment. To make things happen, we need to tackle each side of the problem: the risk, and the reward.

Reducing immediate risks in direct control of project developers

Let's begin with the means we have to alleviate or master the main risks under our industry control, which are time and budget:

- To start with, new reactor designs should not rely in my view on too innovative technical solutions. All of us here are engineers; we love technical innovation. But for the financial community, it is not the best offer. So, instead, new reactors should incorporate the feedback from thousands of reactor-years of robust operation and safety excellence; at the same time, they must provide the owner with the safety level required today by our regulators. In other words, to stimulate a new era of growth, evolutionary reactors are in my view more attractive than revolutionary reactors!
- Also, we should benchmark and learn from recent and current new build projects which have delivered a new plant on time and on budget; one of the most recent examples being Ling-Ao, in China.

- Finally, the vendor must show its commitments to its products, through price and guarantees. This is what AREVA is doing with TVO in Finland and is prepared to do with EDF in France, in China and elsewhere.

These three principles will limit the industrial risks and, consequently, the contingencies that could be embedded in new build projects.

Reducing immediate risks beyond the reach of project developers

Now, other uncertainties do exist beyond industry's control.

The most important is the regulatory and licensing process. It can have a significant impact on the time and cost of nuclear projects.

Many years ago, the US was the example not-to-follow with its protracted and sometimes collapsing licensing procedures. It did scare utilities and potential investors. Since then, the US administration has recognized those shortcomings and issued a new set of regulations. And the industry, utilities and vendors have responded positively.

This example highlights the fact that investors and industry need a stable, clear and predictable licensing and authorization process; and a process that is also as efficient and fast as reasonably possible.

I believe that governments that recognize the value of nuclear energy in their energy mix are moving towards establishing more efficient procedures and allocating appropriate resources. There are several examples. In the US, the recent Energy Bill offers an "insurance" against licensing delays for the first new nuclear power plants to be built.

Greater licensing efficiency can also be expected through increased international collaboration on design certification, assuming that regulators are willing to follow this path.

Recent collaboration between Finnish and French safety authorities for the EPR is a positive indication of what has been achieved to date, and of what could be achieved with the US NRC.

Such improvements make the landscape more predictable and help answering the concerns of the financial community.

Reducing the mid-term and long-term risks

Once the reactor is operational, utilities need to handle the electricity market risk. Today, utilities and consumers are in an environment of rising prices, generally speaking; and their challenge is to hedge this upward trend. It is of special importance for high capital projects, but it is not specific to our technology. So today, I will not specifically comment on it.

Investors and the financial community are also concerned with long-term risks specific to the nuclear industry, especially those of waste management and decommissioning.

Funding decommissioning and waste management is more a public confidence issue than, strictly speaking, a financial issue. National rules have been set up for provisioning the necessary amounts and technical solutions are now available, including for geological disposal.

Still, to strengthen investors' confidence, the role of government is essential in providing for a clear and reliable framework, and a reasonable timeline. Having said that, responsibility does not lie solely with government. On the contrary, the industry must remain engaged and active. And contribute experience and innovation:

- in decommissioning the oldest reactors and nuclear facilities; and
- in operating and further improving solutions for managing spent fuel and high-level wastes, fields where the industry has already proven its know-how.

Before moving on, I would like to underline that the stable framework the industry needs will be all the more stable when there is a minimum consensus on energy policy. This can come only through public debate; with due consideration of actual facts and figures, but by public debate. No more decisions in a closed room.

And let me emphasize this point: the importance of public and political acceptance cannot be under-estimated. It is my belief that the energy and environment policies must be discussed in a very transparent way. The more these policies are debated, the more we can expect a stable energy policy; and the more we can expect to have nuclear embedded in the energy mix.

And when the industry is open and transparent, we build trust with all stakeholders, including the financial community. It does contribute to reducing the perception of risk.

Financing opportunity, financing engineering

Now, even when the short-term and long-term risks are properly managed, the decision to commit the large funds required to build a new 'merchant' reactor cannot be taken lightly!

That's where the reward comes in. At that point innovative engineering, I mean innovative financial engineering, can help.

From the investors' point of view, the risk profile of a new nuclear power plant project changes over time:

- Their perception of the risk is much higher in the construction phase, especially for a new design or in a country where no new built occurred recently.
- Their perception of the risk is lower once the reactor is commissioned; operations and market risk will be similar or lower than that of current operating nuclear power plants.

So, are we properly matching reward to risk? Should we split the project into different stages, with different investors and different returns on investment, duly matching the level of risk at each stage? The first stages, being the riskiest ones, should obviously offer more return.

This is just an example. My purpose here is to illustrate what financial engineering can bring to support new build. Our industry must engage the financial community, and tap their creativity and expertise.

And this is the right time to do it. In several countries, and especially in the US, the WACC, the Weighted Average Cost of Capital, is today very low:

- the cost of debt is very affordable; and
- the cost of capital for utilities remains low and there is no penalty for those having nuclear plants in operation.

From a financial point of view, it is therefore a good time to optimize value creation.

Emerging markets: International financial institutions to join?

I recognize that this approach may not work as such in emerging countries. Most of the time, banks and private investors wait for a signal from the international financial community, the World Bank and others, before getting involved in large infrastructure projects.

Are we doing enough to get them involved?

There is a wide recognition, in international institutions, of the climate change and energy security issues. There is a clear “rational” appreciation of the value of carbon-free energy.

But, more often than not, there is still, within these organizations, a “subjective” restraint to admit that nuclear is part of the solution.

Thus, if we want to meet the expectations of developing countries, if we want to open new markets, we must actively request from the international financial institutions a lending policy consistent with their energy policy goals. These institutions are warming to hydropower. We must ensure that financing nuclear energy will be another component of their lending policy.

It may not be easy, but we have to have these organizations changing their minds.

Ladies and Gentlemen, dear Colleagues

The outlook of nuclear energy has never been so positive for a long time. Our industry is gearing up and investing to meet the growing demand.

However, we cannot rely only on excellent technical engineering and the mood of the time. The decision to build a new nuclear plant will always be a voluntary choice, subject to suitable financial solutions. And we, the industry, must be as

innovative and creative here as we have been technically. We have to suggest to our customers new innovative financial solutions.

We must avoid a vicious circle of high risk perception, leading to a high premium on financing cost, leading to an even higher risk perception, and so on. Our challenge is to converting the vicious circle into a virtuous circle.

It is up to our industry to manage the very first new builds on time and on budget, within a stable licensing and regulatory framework. Success on these points will reduce the risk premium; and the financial community will feel comfortable in investing in more and more nuclear power plants.

Thank you very much.