ENEF contribution to the European Investment Bank lending policy consultation

The European Nuclear Energy Forum (ENEF) is a broad discussion platform on transparency, on opportunities and on risks of nuclear energy. Founded in 2007, ENEF gathers all relevant stakeholders in the nuclear field: governments of the 27 EU Member States, European Institutions including the European Parliament and the European Economic and Social Committee, nuclear industry, electricity consumers and the civil society.

One of the main priorities for the Working Groups of the European Nuclear Energy Forum as established in the 1st Forum in Bratislava in November 2007 was to establish a nuclear energy roadmap for the responsible use of nuclear in Europe, covering in particular legal and financial aspects.

Under the working group "Opportunities" the "Financing" identified some concerns in the financing of new nuclear power plants. The sub working group "Financing" has also analysed, e.g. how to share the different risks and how to deal with the financial concerns, which seem to be common for all large investments, not specifically in nuclear investments.

Facilitating investments in nuclear power direct or indirect public sector financial support might be appropriate. This could include utilities investing in NPPs and/or funding with involvement of EU institutions, e.g. Euratom or European Investment Bank (EIB) loans.

ENEF Opportunities working group and its subgroup on Financing welcome the opportunity to respond to European Investment Bank’s (EIB) consultation launched to support the review of EIB’s energy lending policy. ENEF recognises the EIB’s important role as a provider for funding in the energy sector and is pleased to be given the opportunity to express its views on the European power sector.

**European Investment bank should be a facilitator in implementing measures enabling to EU energy policy targets.** Any lending policy of EIB should be technologically neutral and should not create distortions in the market by supporting one type of low carbon resources more than other types. The lending policy of EIB should follow the CO₂ reduction targets and therefore nuclear energy - as it represents today two thirds of the low carbon electricity - should play an important role.
Introduction

According to IEA world primary energy demand is expected to increase by 35% between 2010 and 2035, or 1.2% per year on average\(^1\). This growth is expected to be driven mainly by China and other emerging economies.

Globally, the number of nuclear power plants under construction, planned and proposed is very similar to the number before the Fukushima accident. Currently there are 436 nuclear reactors operating globally with 374 GWe of total capacity\(^2\). In the IEA’s New Policy Scenario world nuclear capacity will reach 580 GW in 2035.

Many Member States see nuclear energy as a secure, reliable and affordable source of low-carbon electricity generation. Projects for long term operation of existing facilities and new nuclear power plants in EU countries would need significant amount of investments over the period to 2030.

Regarding nuclear investments in general, the higher the uncertainties anticipated by the investors, the higher the capital costs for nuclear projects. Too many risks can dissuade investors and lenders from financing nuclear projects. Therefore, a stable and predictable legal and regulatory framework, clear national energy policy and stable political background will give a solid basis for nuclear investment. Predictable market conditions are necessary for investors to be able to evaluate the investment.

What role do you expect nuclear power to play in the European energy market?

The electricity demand is forecast to grow, even if the energy demand growth would slow, because it becomes an increasingly used energy vector. The role of low carbon power technologies should be increasing in the long term in case the CO\(_2\) emission targets are kept in the EU. Nuclear power plants are producing low carbon electricity in a competitive way and therefore are important contributors in meeting commonly agreed emission reduction targets.

Nuclear energy is today providing around 30% of the electricity consumed in the EU. Nuclear electricity is perceived mainly as stable and reliable base load securing electricity supply in a competitive and low carbon way.

The Energy Roadmap 2050 provides diverse decarbonisation scenarios for the EU, three out of five showing nuclear energy as being an important contributor to the low carbon electricity mix over time and reaching between 15 and 20% in 2050. These figures are somewhat lower than the projections by industry or by the International Energy Agency\(^3\). The 20% share can be translated into some 100 to 120 new power plants to be built by 2050. Such a building period

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\(^1\) The IEA World Energy Outlook 2012, The New Policies Scenario
\(^2\) World Nuclear Association, November 2012
\(^3\) Energy Technology Perspectives 2012 : Pathways to a Clean Energy System, OECD/IEA, Paris, 2012
will extend over about 20 years and be correlated with the long term operation of existing facilities.

From 27 EU members states 14 operate nuclear power plants and 2 are planning new nuclear power plants and most of them are continuing their commitment on nuclear energy - by either extending the lifetimes of the power plants or building new ones, or both. Those countries plan to decarbonise their economies by relying also on nuclear in their future energy mix. And if the EU energy markets are going to be integrated and cross border trade will increase, nuclear electricity will have an important role in creating stability of European electricity grid.

The latest assessments confirm that the safety improvements requested following the European “stress tests” will have a limited technical and economic impact on nuclear new builds. The ENSREG final report on the stress tests concludes that “large increases of investment costs for new nuclear generation capacity in Europe are unlikely if the best available technologies are chosen”.

Under those conditions, it can be expected that nuclear energy will remain competitive compared with other energy sources. The nuclear energy sector will therefore remain a key and sustainable contributor to EU growth and jobs. Indeed, a series of studies demonstrate that nuclear power currently supports around 250000 direct jobs and around 800000 total jobs in the EU\(^4\).

It is crucial, in this respect that the EIB plays a stronger role in enabling the EU power sector to face the challenges of modernisation of an ageing generation fleet and the transition towards a low-carbon economy, bearing in mind that both need to take place at least cost and to support the European industry. At the same time level playing field and equal opportunities for different energy sources should be ensured.

Decarbonising the European economy without nuclear could significantly increase total costs and jeopardise security of energy supply.

As nuclear power stations are ageing, should their life be extended (where possible) or should they be replaced with other generation sources?

In those EU member states which will continue to rely on nuclear energy for their mix, most nuclear power plants - after careful assessments both of safety and economics - will have life time extensions between 50 and 60 years\(^5\). The 3\(^{rd}\) generation nuclear plants already have expected lifetime of 60 years. The extensions of operating life times will require modernisation programmes with important investments, but will be a very efficient contributor to the low carbon economy targets agreed in the EU.

\(^4\) France : PwC, Germany : BMU, UK : Cogent-ssc, Belgium : PwC, Others : French Senate / AREVA analysis

\(^5\) Cour des Comptes, The Costs of the Nuclear Power Sector, January 2012
http://www.ccomptes.fr/Publications/Publications/Les-couts-de-la-filiere-electro-nucleaire
With required investments in the life time extensions of the present nuclear capacity Member States will secure the low carbon electricity supply for years to come.

Despite the fact that for most types of the nuclear technologies the life extension is a cost effective way to strengthen low carbon electricity generation, new generation sources must be considered in parallel. New constructions, utilizing the proven state-of-the-art technologies bring the industry forward, maintain technological progress, utilize evenly the resources of nuclear suppliers and consequently keep the construction costs at check. At the same time the newest safety requirements, including post-Fukushima findings, can be implemented more efficiently. Therefore new nuclear power plants sources and lifetime extensions of present nuclear power plants are complementary.

With well planned investments in the life time extensions of the present nuclear capacity Member States in the EU could secure the low carbon electricity supply for years to come. And replacing retired nuclear power plant with new nuclear power plants ensures that the low carbon electricity production stays at the required and agreed level.

The level playing field and equal opportunities for different energy sources should be ensured in all energy sector investments

What will be the impact on electricity generation and climate action of the reconsideration of nuclear policies within EU member states, in particular after the Fukushima accident?

Member states which have decided - after Fukushima - to phase out their nuclear power plants will have to replace this production capacity with other sources, notably by fossil fuels and by renewable energies. Phasing out in one member state will have an important impact on the security of supply also in neighbouring countries, as some part of the phased out capacity is foreseen to be replaced by imports of electricity from neighbouring countries.

Replacing nuclear power with intermittent renewable energies will put additional requests on grid stability and back-up capacity. Electricity prices for final consumers will inevitably rise to a great extent.

With phasing out nuclear power plants it will be very difficult to meet the CO₂ emission reduction targets. In addition the impact on the electricity prices will be considerable.