Contribution to the public consultation of the European Investment Bank
Lending policy in the energy sector

AREVA

AREVA supplies solutions for power generation with less carbon. Its expertise and unwavering insistence on safety, security, transparency and ethics are setting the standard, and its responsible development is anchored in a process of continuous improvement.

Ranked first in the global nuclear power industry, AREVA’s unique integrated offering to utilities covers every stage of the fuel cycle, nuclear reactor design and construction, and related services. The group is also expanding its operations to renewable energies – wind, solar, bioenergies, hydrogen and storage – to be one of the leaders in this sector worldwide.

With these two major offers, AREVA’s 48,000 employees are helping to supply ever safer, cleaner and more economical energy to the greatest number of people.

I. GENERAL ECONOMIC AND ENERGY CONTEXT

Particularly in the current economic climate, is there a trade-off between promoting a competitive and secure energy supply and one which is environmentally sustainable?

Where should the balance lie and what implications does this have for energy sector investments?

How does investment in the energy sector contribute to growth and employment? Are investments in all energy sub-sectors equally valuable? And how does investment in the energy sector rank relative to other investments in the economy which support growth and employment?

What impact do you consider the current economic crisis will have on the energy sector (demand, policies, supply)?

Investments in the power sector – Current challenges

In AREVA’s view, the EU power sector currently faces two crucial challenges: the 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.

For the last two decades, utilities cash flows available for self-financing have decreased, as well as utilities ability to rely solely on their balance sheet (corporate finance). Requirements to keep up with tightening carbon regulation, regulated assets disposal, ageing grids and consolidation of the European market with even the largest utilities with limited capacity to lead more than one or two large projects at the same time (big offshore wind farms, new nuclear power plants or CCS projects).

While the business case for investments in low-carbon power generation technologies is clear (stable, predictable and low operating costs), the hurdles for the financing of capital intensive long-term projects are high.

Implementing EU policy objectives

The European Investment Bank’s energy lending policy was last formalised in 2007. Considering the drastic changes that have occurred in the economy AREVA welcomes the prospect of a review of the lending policy as announced by the Bank.
For AREVA, this review should fully envisage the role of the EIB as a facilitator of the EU energy policy, in a technology neutral approach towards the decarbonisation of the European energy system.

In this respect, there should not be any trade-offs between the three objectives of the EU energy policy. Rather, EU policies and the EIB policy in particular, should aim at reconciling the three objectives with appropriate regulatory initiatives and support schemes for low-carbon energy technologies, including nuclear energy. Competitiveness, security of supply and sustainability are pillars of equal importance.

Likewise, in order to maximise the impact of the Bank’s actions on value creation in Europe, growth and jobs, the EIB revised policy should clearly aim at fostering the emergence of a perennial European energy industry through privileging those projects which contribute to maintaining a European technology leadership.

(See below a specific input on renewables energy sources and nuclear energy as well as additional comments on the role of the EIB in facilitating long-term investments)

II. RENEWABLE ENERGY

The Bank’s economic justification for supporting emerging renewable energy technologies, whose cost is significantly above that of conventional and mature renewable energy technologies, is that continued investments in these technologies will eventually lead to cost reductions and will ultimately be the least-cost approach to meeting the EU’s renewable energy targets. Do you agree with this approach? Is there an alternative approach to the economic justification of these technologies which you consider more appropriate?

What evidence is there that the cost of emerging renewable technology is falling?

What level of investment in RE do you expect in the short and medium term?

What are the barriers to investment in renewable energy outside Europe? How might these be overcome?

Do you agree that there is significant scope for investment in renewable heating and cooling?

What are the barriers to investments in this sector and how might these be overcome?

General policy approach

As a result of efforts at EU and national level, a European renewables industry has developed (in particular for offshore wind). In the future, EU policies for renewables energy sources should aim at fostering the emergence of a perennial European renewables industry, and efforts should concentrate on areas where the development of such industrial capability and supply chain is most realistic.

As expressed in the European Renewables Energy Strategy public consultation, AREVA considers that as most renewable sources are progressively approaching grid parity, there is a significant risk that mandatory targets for 2030 would lower the incentives for the renewables industry to reach cost-competitiveness as soon as possible. In addition, mandatory targets for renewables would prevent Member states from reaching décarbonisation objectives in a cost-efficient way.

AREVA would thus support a flexible approach for the 2030 horizon, where Member states would decide on how best to attain décarbonisation objectives by way of an indicative target of 2/3 of low-CO₂ electricity in the power mix.

For renewables in particular, AREVA would recommend complying with the revision dates set in the 2009 Directive on Renewable Energy:
- Progress report towards the 2020 objective before end of 2014,

Enhanced focus on R&D to bring down the costs of renewables technologies and improved financing support are considered more powerful policy elements than targets that Member states have often failed to reach in the past.

Considering the fierceness of global competition in low-CO\textsubscript{2} energies today, the EU will need to make sustained efforts in R&D to retain its technological leadership. All initiatives under the SET-Plan should thus receive adequate funding (via Horizon 2020, NER300, structural and cohesions funds, etc.)

Recommended role of the EIB

In AREVA’s perspective, the role of the EIB should therefore focus on those renewable energy technologies where the efficiency of EIB investments as a biggest impact on the development and maintenance of a strong European industrial base, technology leadership and export capacities.

For instance, the offshore wind industry has already a good record and a high potential for value creation in Europe. The different components (substructures, towers, …) are localized in Europe, bring significant amount of supply chain value and maximize jobs creation locally. The offshore wind sector is still an emerging industry where Europe as a technology leadership. The maintaining of this advantage should be a full policy objective for the EIB.

What is more, the role of the EIB should also be to contribute to supporting investments in immature technologies and “first-of-a-kind” projects, hereby contributing to building a competitive technological advantage for the renewable industry in Europe. EIB investments would act as an important catalyst for private investors and help utilities chose the most advanced technologies for there projects.

IV. NUCLEAR ENERGY

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

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

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?

General comment:

In AREVA’s perspective, there is a strong case for re-opening the Bank’s lending policy to nuclear new build projects and, if appropriate, to safety improvements needed to implement measures requested by national safety authorities as a result of the European “stress tests” post-Fukushima, or life time extensions.

While the EC Energy roadmap 2050 foresees a stable share of nuclear energy in the EU by 2050, it also recognizes the merits of nuclear energy to meet the EU energy policy objectives. Likewise, the proven contribution of the nuclear industry to value creation in Europe, growth and jobs cannot be disregarded.

In the meantime, as for any capital intensive long-term project, nuclear new build project faces financing hurdles. The EIB participation to those projects would have a beneficial signalling and catalytic effect for private investors.
Most analysis foresees a stable share of nuclear energy in the EU by 2050.

As of today, 14 out of 27 Member States have operating nuclear power plants. After the Fukushima accident, only Germany and Belgium have announced decisions to completely phase out nuclear (Italy had no operating NPP and decided not to launch a nuclear program). Meanwhile, the United Kingdom, the Czech Republic, Finland, Hungary, Slovakia, France, Bulgaria, Sweden, The Netherlands, Romania have confirmed ambitious new build programs or their commitment to nuclear energy.

In the meantime, the EC “Energy roadmap 2050” presented several scenarios towards the decarbonisation of the energy sector by 2050. Those considering nuclear as an option envisage that nuclear energy will keep a stable share in the EU energy mix (around 20% for the “reference” and “diversified” scenarios).

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

In the EC Energy Roadmap scenarios, nuclear energy is considered to be the most competitive energy source even though discrepancies of about 30% appear in the hypothesis taken for the cost of the installed nuclear KW over the period.

In its final report, the European Nuclear Regulators Group (ENSREG), which led the post-European safety assessments post-Fukushima (“stress tests”) concluded that the likelihood for new reactor designs to be strongly affected by the safety upgrading measures resulting from the “stress tests” was low and that “therefore, large increases in the investment costs for new nuclear generation capacity in Europe are unlikely if the best available technologies are chosen.

The cost of safety upgrade packages are estimated to range from €100m to 200m per unit. Indeed, EDF estimates the cost of safety upgrade packages to amount to €10bn for the entire French fleet, which corresponds to an average €170m/unit. What is more, even if a utility invests €200m for safety upgrades, the production cost of currently operated reactors is only marginally affected. Hence, with a 2-5% increase in cost of production, profit margins are not questioned.

Under those conditions, it is expected that nuclear energy will remain competitive compared with other energy sources as it is now (source VGB 2010 – chart below).
The nuclear energy sector is a key and sustainable contributor to EU growth and jobs

According to a wide range of studies, nuclear power currently supports around 250,000 direct jobs and around 800,000 total jobs in the EU (source France: PwC, Germany: BMU, UK: Cogent-ssc, Belgium: PwC, Others: French Senate / AREVA analysis).

By example, the construction of one EPR reactor in the EU generates up to 12,000 European jobs in total and added value for over 800 MEuros per year.
Taking as a reference the EC Energy Roadmap 2050 “Reference” and “Diversified” scenarios and a general assumption of 50 years operation average for the nuclear power plants, it is therefore estimated that from 40000 to 54000 additional direct jobs could be created in the EU nuclear industry on average over 2012 to 2050.

Additional EU jobs in the nuclear industry, 2012-2050
(Full time equivalent, annual average)

V. ADDITIONAL COMMENTS: NEW EIB TOOLS TO FACILITATE LONG-TERM INVESTMENTS IN THE ENERGY SECTOR
Irrespective of the technology concerned, capital intensive long-term investments in the power sector (in particular offshore wind farms and nuclear power plants) would benefit from an updated toolbox from the EIB. The following proposals are based on existing instruments in other countries (mainly USA and Japan) or in the transport sectors.

The rationale of those instruments should be
- To facilitate high upfront investment, which means the to lower the cost of access to capital;
- To help the “first movers” which take the highest risk with “first-of-a-kind” projects, since the return of experience will benefit to all in the long term and can be labelled as “public good” (cf. for instance below a proposal for a standby credit line or more broadly the rationale of US Energy Bill)

**Loan guarantee**

On the model of loan guarantees schemes devised in the USA or those already granted by the EIB in the transport sector (cf. Loan guarantee Instrument for Trans-European Transport Network Project (LGTT))\(^1\), the EIB could offer loan guarantees to the lenders involved in the financing of projects as early as in the construction phase.

| Main objectives | - Allow commercial banks to provide loans  
- Reduce financing costs by improving the borrower’s credit rating (as it is substituted with that of the credit issuer and leads to a decrease in the interest rate and increases the project feasibility) |
| Suggested features | - Guarantee granted to senior commercial lenders, applying to portion of the loans to be defined  
- Unconditional guarantees granted upon first request, called upon by lenders in case of default during construction or operation period  
- Granted against a premium consistent with the level of risk assumed  
- Should the guarantee be called upon, the guarantor may turn to relevant stakeholders in the project |

**Direct loan during construction with repayment flexibility**

Some flexibility to the repayment conditions could be a useful feature of the loans granted in the construction phase of nuclear new build projects by the EIB with the aim of facilitating the participation of private lenders in the construction phase. The loans would thereby be designed to be refinanced during operation so as to provide leverage for other financing sources.

| Main objectives | - To channel EU financing to the construction phase, during which financing is more challenging to achieve and more expensive  
- To catalyze private financing for nuclear projects |
| Suggested features | - Loan granted directly to the project main borrower or investor  
- Could represent a minor portion (10-20%) of the total debt raised for the project (c. €300-500m per project)  
- Granted on market terms |
- Gradual repayment once the plant is operating
- Flexibility regarding loan repayment terms, including but not limited to: Grace period for 1-2 years after operation starts to allow for production ramp-up; discretionary repayment option with deadline
- Repayment subordinated to that of private lenders

### Standby credit lines (EIB)

On the model of the US « standby support » the European Investment Bank support could be shaped as « standby credit lines », available as the new build project starts. This facility would primarily be aimed at covering the licensing and related construction risks on the project in a given Member State.

| Main objectives | - Allow financing of cost overruns – by nature unpredictable and unquantifiable – caused by additional requirements from safety authorities during licensing and construction  
|                 | - Their risks and potential financing needs, specific to first-of-a-kind projects, are not under the control of either the supplier or the customer and deter commercial lenders from financing projects unless utility is sufficiently large  
|                 | - Standby credit lines could comfort private lenders by mitigating this specific risk |

| Suggested features | - Granted to a limited number of projects  
|                   | - Available upon start of construction  
|                   | - Granted on market terms (commitment fee to be paid once credit line is made available)  
|                   | - Used according to terms as specified above  
|                   | - Repayable after operations start, subordinated to senior loans |