

Future of Nuclear Power in Europe: the Practicalities

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17 national fora from the European Union



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Mission

- Acts as the voice of the nuclear energy sector in EU policy debates and initiatives.
- Works to enhance relations between the industry and the European Institutions
- Delivers information on nuclear energy to the European Institutions, the media and the public
- Provides regular information to its members on developments emerging from the European Institutions
- Acts as an adviser to international organizations and institutions

Nuclear in Europe

- The share of nuclear countries in the European Union is 15 out of the 27 Member States
- There are 145 nuclear reactors in operation in EU-27
- These reactors generate approximately 1/3 of electricity
- And around 15% of EU-27 primary energy
- Nuclear energy enhances competitiveness, promotes sustainable development, fights climate change and strengthens the security of energy supply in the EU

EU Import Dependency

- EU energy demand is set to rise by 21% between 2002 and 2030
- Fossil fuel prices have doubled in the past 2 years
- EU-25 overall energy import dependency will increase to almost 70% in 2030
- Dependency on imported fuel: current focus on relations with Russian Federation i.e. 26% of EU-27 oil comes from Russia, 29% for gas...

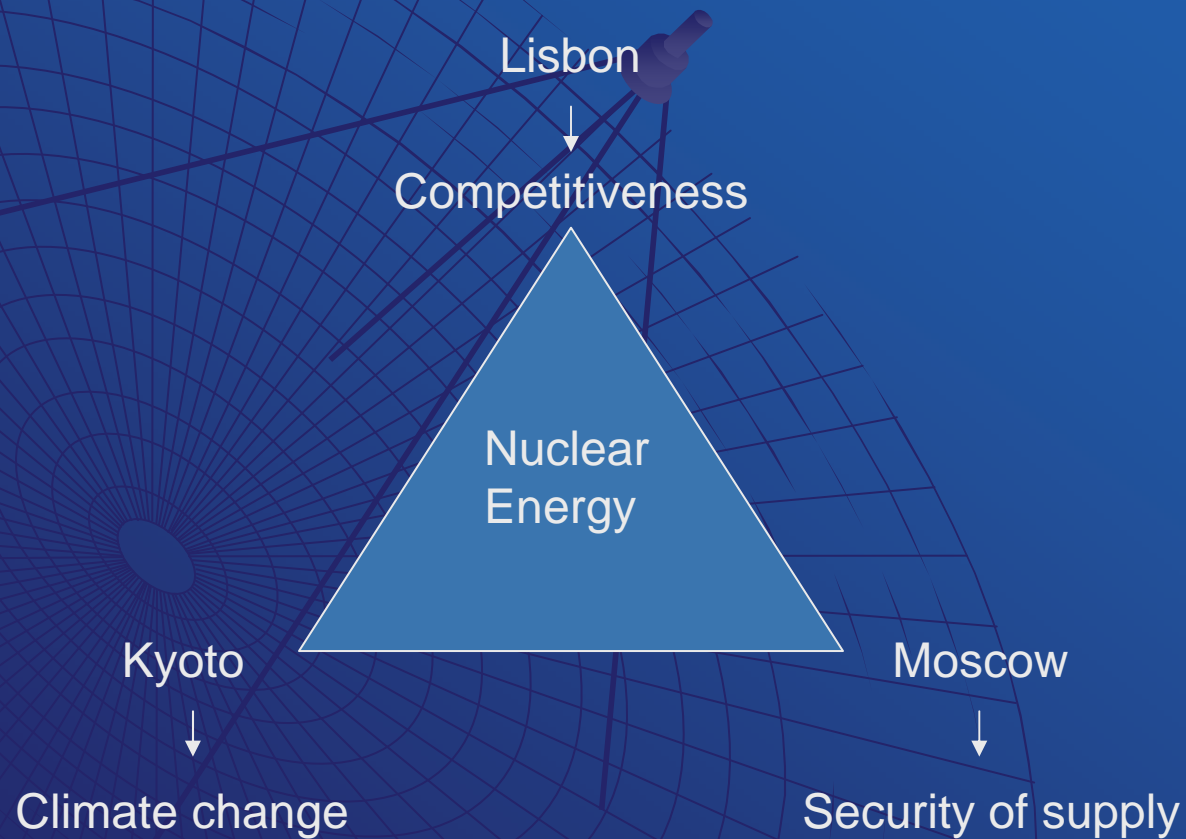
Nuclear new build in the EU

- Finland: fifth nuclear unit operational by 2011; three separate environmental impact assessments launched – preparation for the sixth unit
- France: new nuclear unit at Flamanville site to be operational by 2012
- Baltic States and Poland: agreement on a joint nuclear new build in Lithuania to be operational by 2015
- Romania: Cernavoda Unit 2 commercial operation started in late 2007; efforts to resume construction of Unit 3
- Bulgaria: two reactors planned in Belene to be operational by 2013.
- Slovakia: plans to build to additional units at Mochovce site by 2013

Nuclear new build plans in the EU

- UK: The Energy White Paper paves the way for future nuclear new build because “excluding nuclear would be a risk of higher costs to UK economy”
- The Netherlands: conditions for industry to build new nuclear units set up by the Dutch Environment Ministry
- Slovenia: second nuclear reactor under consideration
- Poland: first nuclear power plant under consideration
- Hungary: second nuclear power plant considered
- Czech Republic: industry wants to invest in new nuclear reactors – third unit in Temelin?
- Italy: New NPP project by 2013

Nuclear contribution Triangle



Competitiveness

- Nuclear electricity is, in almost all cases, more competitive than electricity from fossil fuels (OECD)
- Any rise in uranium prices has only a minor impact on the cost of nuclear electricity
- The cost of nuclear electricity is stable and predictable, and has the advantage of being able to compensate for electricity price increases resulting from fluctuations in fossil fuel costs.
- Most nuclear power plants operate continuously as a base load with very high capacity factors

Climate Change

- Curbing CO₂ emissions – contribution to sustainable energy mix:
 - Nuclear power plants do not release greenhouse gas (GHG) emissions during the operation
 - From the life-cycle perspective, nuclear power plants' GHG releases are equivalent or inferior to the ones of most wind power stations
 - Nuclear power in Europe contributes today to saving approximately 700 million tonnes of CO₂ emissions a year

Security of Supply

- Nuclear energy helps strengthen security of energy supply by reducing reliance on imported fossil fuels and electricity
 - Uranium is available from a wide range of politically stable countries
 - Already existing technologies permit a more efficient use of these resources
 - Amount of fuel needed for nuclear power plants is small compared to fossil fuels

EU Institutions: Positive climate

- European Parliament : more pro-nuclear than ever – new MS MEPs with a strong political weight have a great impact on pro-nuclear decisions
- Present French EU Presidency supportive
- European Commission: 24 out of 27 Commissioners, including President Barroso, recognise the benefits of nuclear energy

EU Initiatives

- **ENEF** – European Nuclear Energy Forum
- **HLG** : High Level Group on Nuclear Safety and Waste Management integrated by European nuclear regulators
- **SNETP** : Sustainable Nuclear Energy Technology Platform => R&D on nuclear fission

=> Need for a coordinated approach in order to establish EU Roadmap for Nuclear investments

ENEF: European Nuclear Energy Forum

- Establishment of a platform for open debate on nuclear energy – sharing best practices
- Forward-looking analysis of all the issues surrounding the future development of nuclear power in the EU:
 - industrial bottlenecks
 - finance & competitiveness
 - public opinion concerns (waste, safety, security)
 - nuclear research => direct link with SNETP
- Co-hosted by Slovakia and the Czech Republic

Conclusions

- Nuclear debate is at the core of the policy makers agenda
- In 2007-08, the EU Institutions have marked a turning point on political decisions concerning nuclear energy which have lead to the establishment of concrete actions
- Climate change debates, as well as sustainable development issues and security of supply will not be able to be dissociated from nuclear energy developments
- Clear need for EU Nuclear Roadmap to enhance investments

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