



European Union seminar on “Nuclear Futures?”

23-25 August 2014, Alpbach, Austria

Concept note

Overview

The closed seminar on “Nuclear futures?” is being held in conjunction with the European Forum Alpbach. It is funded by the European Union and jointly organised by the European External Action Service through the EU Non-proliferation Consortium, the Development and Cooperation – EuropeAid Directorate-General (DEVCO) of the European Commission, and the Commission’s Joint Research Centre (JRC). Administrative arrangements are handled by the German Federal Office of Economics and Export Control (BAFA) through its DEVCO-funded program on ‘EU-Outreach in Export Control of Dual-Use Items’. The 35-40 participants include both government officials and non-governmental experts from EU member states and beyond.

Objective

The purpose is to discuss future developments impacting the peaceful use of nuclear energy and traditional nuclear non-proliferation policies with a view toward preparing input for EU policy consideration. The seminar will address various aspects regarding medium- to long-term changes in the global energy market and supply, as far as this can be projected, and related security aspects. The question mark in the title of the seminar is meant not to imply doubt about the future role of nuclear energy, but, rather, agnosticism. The “3 S’s” of peaceful nuclear energy –safety, security and safeguards will be addressed as well as the need to adapt export controls of dual-use items in view of intangible technology transfers and the growing industrialisation of middle-income countries and south-south trade.

Format

The seminar consists of four sessions, each of which has two panels except for session IV which has three panels. In each panel, two or three speakers will lead off the discussion with remarks of 8-10 minutes. Some will use power-point presentations, which will be distributed later. For ease in seeing the screen, a U-shaped table will be employed. If there are insufficient chairs for everyone at the table, participants are encouraged to occasionally swap places with those in the second row.

The chair of each session, who may also wish to contribute personal views, will act as timekeeper and moderator of the ensuing discussion, to which all participants are encouraged to participate. The discussion part of each panel will last about an hour, allowing for a substantive exchange amongst all the participants.





23.08.2014 - Day 1

15.00–18.30 Session I: the place of nuclear energy in worldwide energy development

To meet inexorably rising global energy demands, governments and the private sector must continually seek new and improved sources of supply. Will nuclear power plants continue to be a key source? The 437 nuclear power plants in operation in the world today supply about 13% of global electricity. In the European Union about 27% of electricity is produced by nuclear energy. Nuclear power is generally seen to play a fundamental role in meeting targets to cut greenhouse gas emissions and to ensure energy security.

Energy supply systems have a relationship to national security, economic prosperity and the environment. As governments endeavour to support economic modernisation, population growth, urbanisation and the aspirations of a growing middle-class, choices have to be made regarding the energy mix, development paths and related security aspects. To meet rising electricity demands, while also lowering CO₂ emissions, many countries see no alternative but to put nuclear energy on the table as a component of their economic development and energy security strategies. The Fukushima disaster impacted nuclear power plans in several western countries but had less impact on nuclear power expansion in emerging markets.

Panel 1: A tentative worldwide energy panorama

Panel 1 offers a general introduction to “a tentative worldwide energy panorama” and the relation with global economic development. Considering the constant growth of energy consumption and controversies involving nuclear energy, this panel will analyse the different policies and the role assigned to nuclear energy by states. National and regional nuclear energy programs have evolved significantly since the Atoms for Peace program began in 1953, but accidents at Three-Mile Island, Chernobyl and now Fukushima reduced growth expectations. This panel will also consider aspects of energy security and may outline expectations for energy supply and demand in the next decades.

Panel 2: Nuclear energy development: realistic options and regional issues

Following on the overview of the present situation of nuclear energy in Panel 1, this will focus on the potential evolution of this energy in the next two decades. Looking at the main state actors involved in the development of nuclear energy in the 21st century, we will seek to map what could be a future “nuclear planet” and the potential dangers regarding nuclear trade, civilian facilities, and R&D-associated technologies. Issues include the change in global oil markets, the impact of shale oil, the impact on global energy prices, competitiveness of nuclear energy and geopolitical as well as Climate change aspects are important issues to be further reflected on.

This panel will explore whether the development of nuclear energy is still considered to be a viable and valid energy option. Parameters that might constraint such development will also be explored. The purpose of the panel is not to debate the nuclear option itself but rather to focus on conditions and constraints that have convinced certain states or group of states to consider this option. The panel will pay particular attention to the Middle East and non-OECD Asia.





24.08.2014 - Day 2

09.00–13.00 *Session II: Nuclear Safety and Security*

Session II will set the scene with regard to the main features and challenges of nuclear safety, security and safeguards, to later discuss a holistic approach to these 3 S challenges, explore the synergies, the complementarities, and the cultural aspects, as well as the skills requirements, technological challenges, legal basis, economic consequences and impact to the industry. The session may also address the difficulties and some potential drawbacks of bringing these issues together.

The session will discuss different approaches, methodologies, risk-based assessments, etc with respect to nuclear safety, security and safeguards, with a view toward advancing a set of recommendations. Ethical issues, civil responsibilities, sustainability and transparency are also important elements that may be addressed by the panel.

The overall goal is to achieve the level of knowledge and insight to allow for an optimal integration process between the disciplines and thus increase both effectiveness and efficiency for future nuclear “3S” investments.

Panel 1: Key features of nuclear safety, safeguards and security for the civil nuclear fuel cycle

Panel 1 will identify the main features and challenges of nuclear safety, safeguards and security from the point of view of the legal framework, technology, economics, and culture focused on countries that are newcomers to nuclear energy or aspiring to a nuclear energy programme

Panel 2: Integrating safety, safeguards and security: synergies, complementarities, and limitations

Panel 2 will discuss how to ensure a holistic approach to integrating nuclear safety, security and safeguards by exploring the synergies and complementarities, and identifying the difficulties and drawbacks of bringing the “3 Ss” together from the point of view of different stakeholders: international organisations, regulatory authorities and the industry. The role of industry in establishing its own set of voluntary guidelines is among the topics to be explored.



14.30-18.00 Session III: Nuclear futures and Non-proliferation – how to promote a safer world

Session III aims to promote nuclear energy in a non-proliferation context. It links session II (nuclear safety and security) and session IV (technical solutions to possible proliferation risks). It addresses the development of nuclear energy around the world with regard to proliferation risks in the context of the global nuclear non-proliferation regime.

The first part of the session addresses global issues: national programs in development and associated non-proliferation status, the major recent and future challenges to the non-proliferation norm, and the current NPT review cycle. The second part of the session focuses on regional challenges in Asia and in the Middle East.

Panel 1: The nuclear non-proliferation norm: history and challenges ahead

Panel 1 will discuss the main challenges to the nuclear non-proliferation norm globally, based on recent history and expected trends, and focusing on major political and legal issues. We will explore the strengths and weaknesses of the non-proliferation norm and its associated instruments, including strengthened IAEA safeguards, the Additional Protocol and the NPT. Issues associated with non-compliance, abuse of the NPT Article X right of withdrawal, and the quest for NPT universalization will also be explored. Linkages between non-proliferation and disarmament and perceptions of failure of nuclear weapons states to meet their Article IV obligations may also be touched upon.

Panel 2: Preventing nuclear dangers in Asia and the Middle East

Panel 2 focuses on current and potential future nuclear risks in Northeast and South Asia and in the Middle East. Key topics include realistic scenarios related to energy development, North Korea's NPT violations and nuclear threats, the Iranian nuclear crisis and the potential for nuclear use in South Asia. These issues also raise questions concerning strategic stability, the danger of a proliferation cascade in some regions, motivational factors for developing a military nuclear programme, and the prospect for a zone in the Middle East free of nuclear weapons and other weapons of mass destruction.



25.08.2014 – Day 3

08.30–11.45 Session IV: Export Controls: Impediment or necessary condition to allow technology development related to new forms of energy?

Session IV comprises three panels. Panel 1 will explore and analyse how international and regional regimes attempt to control and, in certain case, prohibit certain transfers of nuclear technology. Panel 2 will focus on how industries and exporters face the new commitments required by catch-all provisions. Panel 3 will focus on how national trade control authorities are facing new commitments imposed by multilateral strategic trade control regimes and on how they are implementing catch-all provisions.

Panel 1: Ban vs. control of technology: how best to ensure that nuclear energy is used for strictly peaceful purposes?

From the outset at the end of 1940s, the development of nuclear energy for electricity generation has raised concerns about potential misuse for non-peaceful purposes. To counter such risks, the international community has adopted several instruments, some of them legally binding and others political in nature such as the guidelines of the Nuclear Suppliers Group, to control the transfer of sensitive nuclear materials and technologies. Such instruments have established trade control principles and procedures under which exports of certain goods require government pre-authorisation. To grant it or not, national trade authorities assess criteria and request certain conditions to be fulfilled by the recipient state.

With the development of new technologies and means of intangible transfer, however, trade control authorities have to face new proliferation risks that cannot be fully countered by the traditional combination of authorisation and customs controls. Such intangible transfers include technology that is transferred via email or other electronic means without physically crossing borders where customs controls usually operate. This panel will discuss strategic trade controls from both the perspective of the Nuclear Suppliers Group and countries that have been at the receiving end of export controls and which now seeks NSG membership. Participants are encouraged to take up the issue of intangible technology transfers.

Panel 2: Challenges and future development of technologies related to new forms of energy

The panel is related to the impact of trade controls principles on emerging technologies in the energy sector. Industrial research and the development of new technologies have always presented major challenges for trade control. To face such new challenges, export control regimes have established annual reviews of their export control lists. Complementary, catch-all provisions have been progressively adopted by national and regional export control systems. Consequently industries and exporters have seen their responsibilities extended in the fight against nuclear proliferation. Presently, it is not only for listed items that an authorisation will be required, but also for any item that exporters are aware of that it might contribute to weapons purposes even if not listed. The main speakers in this panel will come





from the nuclear industry. All participants are encouraged to offer their views on catch-all provisions.

Panel 3: Practical views from export control authorities

Keeping in mind the two main topics of panel 1 (intangible technology transfers) and panel 2 (catch-all provisions), panel 3 will focus firstly on how national trade control authorities are facing new commitments imposed by international and regional trade control regimes and, secondly, on how they are implementing catch-all provisions. The speakers in this panel represent export control authorities.

13.00 – 15.30 Public breakout session at Alpbach Political Symposium:

Several participants from the closed workshop will engage with a broader audience as part of the Alpbach Political Symposium, which is open to anyone attending the Symposium. Our session, entitled ‘Future Energy Needs vs. Non-Proliferation Policies’, is one of nine breakout sessions taking place at the same time early Monday afternoon. The full list of plenary and breakout sessions for the Symposium is available online at the Forum website: http://www.alpbach.org/wp-content/uploads/2014/05/2014_Programme_POL_.pdf.

As described in the program (p. 28):

This session will address the impact of long term energy demands on the peaceful uses of nuclear energy and traditional nuclear non-proliferation policies. The Fukushima accident has had some impact in Western countries but less on nuclear power expansion in emerging markets. Will the transformation in the Middle East lead to a rethinking of nuclear energy projects in the region? Could we expect new or less conflicts on resources in 2030? Will export controls prevent or enable countries to embark on new technologies? Are renewables an alternative?

Depending on their availability, one or two keynote speakers (TBC) will lead off the session. Otherwise it will go straight into a discussion of the themes covered in the four sessions of the “Nuclear futures?” closed seminar namely, “Global energy development”, “Nuclear safety and nuclear security”, “Non-proliferation”, and “Export controls”. A representative from each of those sessions will speak for 8-10 minutes, introducing the main issues. They are not expected to summarise the preceding discussion, but rather to draw from it in laying out to a more generalist audience the challenges and potential solutions. An open discussion with the audience will then follow.

Not all participants in the “Nuclear Futures?” seminar need attend this public breakout session. Nor would this be practical, given the limited size of the room and the need to accommodate students and others who are attending the Alpbach Political Symposium. It would be ideal, however, if about one third of the workshop participants attend in order to give ballast to the discussion with a generalist audience.

