Universität Stuttgart
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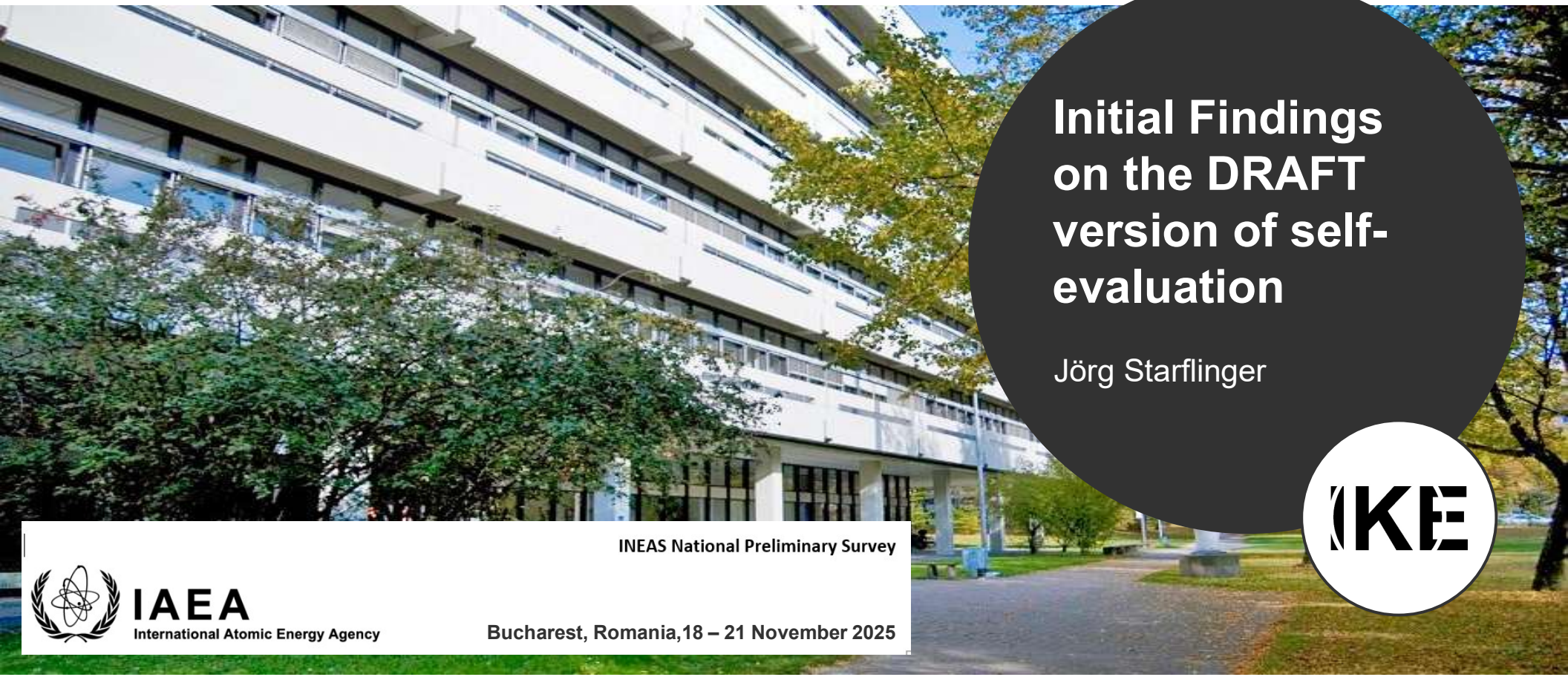

Initial Findings on the DRAFT version of self-evaluation

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IKE

INEAS National Preliminary Survey

IAEA
International Atomic Energy Agency

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General findings

- All participating organisations have made an excellent contribution.
- The self-assessment document is of very high quality.
- All questions in the IAEA document are addressed appropriately.
- The conclusions drawn are meaningful and convincing.
- The self-assessment can serve as an important strategic document supporting decision making in the future.

- Possible general improvement:
  - Some objectives and ambitions are unspecific, and there is no indication of how to measure whether an objective has been achieved or to what extent.
  - Where appropriate: Define SMART objectives – specific, measurable, achievable, relevant and time-bound.

Question 1: WHAT ARE THE GOVERNMENT'S PRIORITIES FOR NUCLEAR AND RADIOLOGICAL SCIENCE AND TECHNOLOGY?

- Due to the nature of the question, the answers are very general, which is appropriate.

- Q1.1: How is prioritisation reflected in the answers? Is the first answer the one with the highest priority? Could you please briefly describe the prioritisation process? (Who did/does what and how?)
- Q1.2: Only nuclear power plants are mentioned under ‘Diversification and development of nuclear infrastructure’. This category could also have included the research reactor in Pitesti and the hot cells at other sites (basically all nuclear facilities that require a licence). Are these also a focus of the government?
- Q1.3: Under ‘Training and further education of personnel in the nuclear and radiological field’, standardisation is mentioned (excellent!). Later, so-called ‘centres of excellence’ are mentioned. Please define what these are and whether these centres call into question the standardisation of efforts (competition).
- Q1.4: Under ‘Promoting the use of nuclear energy for medical and industrial purposes’, the question arises: For whom? Targeted communication is crucial here and requires input from communication specialists.

Question 2: WHAT ARE THE EXISTING POLICIES AND STRATEGIES GOVERNING NUCLEAR AND RADIOLOGICAL EDUCATION, SCIENCE AND TECHNOLOGY?

- The question was answered very well. Long- and medium-term strategies are defined in government documents. Important stakeholders such as regulatory authorities are addressed.

- Q2.1: Would it be possible to add references to the national nuclear plan and other documents?
- Q2.2: If possible, a strategy paper with a roadmap should be drawn up, aimed at all stakeholders in the field of education and training. For short-term needs, specific measures to attract, promote and retain young talent in the nuclear sector should be explicitly mentioned.

Question 3: WHAT IS THE NATIONAL DEMAND FOR NUCLEAR AND RADIOLOGICAL SPECIALISTS?

- The question is answered very well in all three subcategories. The sectoral approach is well covered (power plants, medicine). The categories focus on the academic field and represent the most important professions in the nuclear sector. The areas are well described.

- Q3.1: Would it be possible to distinguish between short term (practically tomorrow), medium term (5 years) and long term (10 years)? Different time frames require different measures.
- Q3.2: Could the professions with a lower EQF level be addressed using e.g. the pyramid of nuclear competences (nuclear specialists, nuclearised specialists, nuclear-aware specialists)?
- Q3.3: Please consider this a living document. New professions will be needed in the future (see Q3.1). For example, IT security will become more important, as will electricity specialists who balance the base load from nuclear energy with volatile renewable energies, etc.

Question 4: WHICH TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING INSTITUTIONS AND WHICH HIGHER EDUCATION INSTITUTIONS CURRENTLY OFFER PROGRAMS WITH A NUCLEAR OR RADIOLOGICAL CONTENT?

- The information appears to be complete. All relevant stakeholders have been addressed. The chapter contains very valuable information.

- Q4.1: The information provided by the individual universities varies considerably in terms of the breadth and depth of the topics covered. Could harmonisation be achieved? Example: Some organisations describe the machinery and experienced staff required, while others describe (sometimes very general) lecture topics. This is inconsistent.
  Q4.2: Subchapter 'II. Describe the scope of teaching experience in nuclear and radiation protection-related degree programmes for each institution. Is there access to specialist teachers from other institutions? How does this arrangement work?'
  Could the names be removed for data protection reasons? The answers could be as simple as '1 full professor specialising in nuclear engineering, 2 assistant professors specialising in neutronics and reactor thermohydraulics, 1 external lecturer from a nuclear power plant specialising in practical radiation protection'. It would be interesting to know when people are retiring, as this could lead to immediate action.

Question 4: continued

- Q4.3: subsection III. ‘Describe the laboratory facilities available for each institution. Is there access to laboratory facilities at other locations? If so, what facilities are these and where are they located?’ Also in this subsection, there are differences in the responses from several universities. The table should be changed (I would never specify in a document where someone could find my radioactive sources). Please consider nuclear security aspects..

- Summary: Chapter 4 would benefit most from harmonisation. Please bear in mind that a harmonised structure makes it easier to read and understand when this document is to be passed on to a decision-making body. It might be useful to formulate a conclusion, e.g. that certain instruments are outdated and new investments should be made soon. Please use this chapter to convey a message. Translated with DeepL.com (free version)

Question 5: DO ANY OF THE TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING PROVIDERS AND HIGHER EDUCATION PROVIDERS COLLABORATE IN A FORMALIZED COMMITTEE OR NETWORK?

- The responses clearly show that there is both national and international cooperation. Highly committed networks are a clear commitment to mutual support in achieving ambitious goals, such as attracting new talent to the nuclear sector.

- Q5.1: As the ANUEN network is very important at national level, the management structure should be made more visible. How do the members work together? What is the governance structure like? How is the decision-making process organised? Perhaps this information could be placed as an appendix to the document?
- Question 5.2: Subchapter 4. Consortia for the development of the nuclear industry in Romania. Please also consider ***mentoring*** by industry or measures such as the German scholarship to positively engage students with the university at an early stage.

Question 6. ARE THERE ANY INTERNATIONAL PARTNERSHIPS IN THE TEACHING OR RESEARCH OF NUCLEAR AND RADIOLOGICAL TOPICS?

- All partners have described partnerships quite well. There is no comment, simply the good wish: Keep it running.

Question 7: HOW IS FUNDING OBTAINED? INCLUDES DETAILS OF THE GOVERNMENT OR STATE'S CONTRIBUTIONS, INDUSTRY CONTRIBUTIONS AND STUDENT FEES, AND THE PROVISION OF BURSARIES.

- The funding procedures are explained very well.

- Q7.1: Please try to pool your efforts and equipment (if this has not already been done within the framework of ANUEN). Government funding agencies value cooperation. Please try to maximise the added value of collaboration (e.g. by sharing equipment and exchanging data between interested institutions). Please go on with your good work!

Summary

- Romania‘s education and training startegy is excellent.
- Relevant stakeholders are addressed.
- All findings are minor.

- In some chapters the document could benefit from harmonization of the information.
- Implementation could be made more visible (e.g. using SMART goals).

- Well done. Congratulations to all participants!

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Vielen Dank! Thank you! Mulțumesc mult!

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