

EHRO-N SENIOR ADVISORY GROUP MEMBERS' STATEMENT ON SET-PLAN ISSUE PAPER NO. 10

Purpose of the document - Background

We consider that as

Nuclear is mentioned in SET-Plan actions: Implementation process and expected outcomes (from 14.10.2015) as **Additional** priority 2: Increase safety in the use of nuclear energy:

" Action 10: Maintaining a high level of safety of nuclear reactors and associated fuel cycles during operation and decommissioning, while improving their efficiency" - Its importance has been acknowledged, but not at the level that is needed to meet the low carbon targets in the European energy mix.

Maintenance of safety levels is essential. In addition, the advanced nuclear systems or new technology developments are an integral part of the energy technology evolution and deserve to be mentioned.

One needs to explain nuclear's priority within the context of the low carbon energy production mix by defining what contributes to the core of the low carbon future and by which criteria. I.e. what constitutes the differences between the core and the additional priorities in the European Union energy priorities (Annex I) of the SET-Plan Actions?

SET-Plan policy presented in the SET-Plan Communication document and SET-Plan realisation can be carried out as separate processes though integrated where needed.

Introduction chapter

We assume that the Commission's Energy Union Communication text "*... and the world's safest nuclear generation,*" inherently includes also the over generational responsibility for nuclear waste management. If this is not the case, this is recommended to be included.

Related to the extensive LTO of the existing fleet it is important to take into consideration, that EC support is needed for R&I activities connected to new reactor designs (Reactors 3+ or GENIV, their safety, material or fuel issues) due to nuclear's contribution to the low carbon technology helping the environment. Continued R&I is also needed for the safety improvements of the new plants in 10 years and beyond.

The 2050 roadmap is from 2011 and the impact of Fukushima on the anticipated new build would need to be considered in this context. The more recent picture is provided by the Commission's Staff Working Document SWD(2016) 102 final. At least the following barriers can be identified to prevent the achievement of the SET-Plan target/s:

- Set-backs to new build and premature closure of reactors resulting not only from Fukushima but from biased electricity pricing and subsidies to various energy forms

within the European Union influencing base load production feasibility and threatening overall availability of low carbon energy production. There are also very large differences in prices of electricity within the different EU electricity submarkets.

- Some positive advances are made in nuclear waste management but in general despite the directive, the advancements with the long-term waste management are lacking due to political decision making.

A: Recommendations on the priorities/targets proposed in the issues paper(s)

- o Do you agree with the targets set in the issue paper?
- o Do you think that the level of ambition is correct?
- o Are there any standing issue(s) in the way to reaching the proposed targets/priorities?

1. Maintaining a high level of safety and security

This target is supported. Actually, LTO seems to be the most important activity for next years and it should include also the Gen III reactors and related R&I. The start of their commercial operation should ease the possibilities of the utilities to contribute in an increasing manner to the R&I activities.

In this connection the extended spent fuel storage should not be the target itself. It is an undesirable consequence from the slow progress in implementing long-term waste management solutions. This is directly linked to the second target on radioactive waste management and decommissioning and not only from the nuclear fuel cycle management point of view, but also by increasing the need for decommissioning these storages.

2. Radioactive waste management and decommissioning

Both target lines are supported. The difficulties related to political acceptance remain. One should pay attention the public concerns related to nuclear waste and to the fact that the public in large wishes for safe waste management solutions. The political emphasis on the long-term is of importance.

The development of a world-leading decommissioning sector, building on the EU's safety culture and know-how in waste management requires coordination and harmonisation in the European Union. Financially feasible solutions for the small countries/countries with small inventories of spent fuel and high-level waste or with institutional wastes are required. Therefore common effort under umbrella of Commission would be useful. This should be considered in the future revision of Directive 70/2011.

3. Advanced and innovative fission reactors

Support to the target. Measures for licensing Small Modular Reactors (SMR) need to be enhanced also as an option for countries with a small and medium grid.

4. Fusion

Support the target as a future effective and clean energy source.

Cross-cutting challenges

We are in agreement with these challenges. We would like to emphasize especially the following and to include additions to them.

- Stable/predictable investment conditions: The market prices of electricity need to be on a more predictable level and realistic in relation to the actual efficient production costs in support of needed investments. Also other (than subsidies) government measures to ease investments are required. The measures should not produce biases between Member States.
- Availability of a trained workforce a must and urgent measures are required to prevent the loss of expertise and the state-of-the art achieved up to date. Education and competence have to be based on nationally approved system and supported with European and international cooperation. Additional stakeholders to be included to the consultation and implementation process: ENEN association with links to geological disposal competence and E&T.
- Transparency and harmonisation of minimum levels of licensing rules and standards is favoured. Higher standards should be allowed on national level in accordance to the achieved state-of-the art (in compliance with the ALARA principle). The independent, responsible and competent national regulator is an essential part of this.
- Regarding the standardisation of reactor codes: Comparability is necessary, but standardisation may lead to monopoly and result in worst case in lower safety levels or inferior codes.
- Conductive socio-political environment requires: Promotion of clear democratic decision making and governance processes - which does not mean that the loudest voices or most influential Member States decide the pace of progress.
- Availability of state of the art research structures also the Underground Research Laboratories for R&I and education & training (E&T) should be mentioned in this list "(in particular for...)".
- Availability of all potential EU funding options. Support this but it should include all potential options. Currently several funding sources for R&I and E&T of the EU and H2020 are blocked due to the treatment of the sector only under Euratom funding. It has been stated that only a small part of the workforce and research is nuclear specific. Most of the needs are under the realm of nuclearization. This is most likely a political barrier that would need to be lowered to ensure global leadership and trained workforce.

o What are your specific recommendations on prioritising R&I activities on these issues

(and building where appropriate on relevant existing initiatives)?

See the comments above; the availability of trained workforce is a prerequisite for safe nuclear operations and efficient production of energy.

o Who are the best placed actors to implement the targets/priorities(Industry, EU, Member States, regions, groups of countries/organisations/etc.),?

Industry should realise its dominant responsibility in promoting and collaborating with the other R&I stakeholders for continuous improvement.

B. Identify possible gaps/barriers & areas of cooperation on the priorities/targets proposed in the issues paper(s).

We have identified these in the targets and also in the introductory document.

o Identify possible barriers (when not done already in the Integrated Roadmap) related to regulation, cooperation issues, standardisation / industrialisation / manufacturing, socioeconomics, etc.

See previous comments.

o Identify possible gaps or duplication of efforts in the R&I priorities (based on the Integrated Roadmap);

Competing efforts may induce more efficient and innovative solutions; duplication in this respect is not always a disadvantage.

o Identify priorities where there is scope for and benefit in more coordination and/or cooperation across EU, Member States, regions, Research Institutions and/or industry;

Ensuring train work force especially in decommissioning and radioactive waste management

Identify best practices of past or present coordination and/or cooperation that can be used as an example or as a starting point.

- ENEN association and its contribution as an education umbrella for nuclear energy including nuclear waste management and radiation protection
- ENETRAP projects, PETRUS networ
- MELODI, SNE-TP/Nugenia; IGD-TP
- Slovak decommissioning academy in ensuring trained workforce in decommissioning
- DOPAS project in the implementation of full-scale demonstration experiments e.g. in URLs and training and dissemination of knowledge

STATEMENT MEMORANDUM

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Organisation:	EHRO-N SAG members	Version:	1.0 5 (5)
Date:	2016-04-12	Subject:	SET-PLAN
Public	Issued:	2016-06-27	Focusing:

Statement provided on behalf of EHRO-N Senior Advisory Group members in April 2016

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