

## Euratom STC Chair's Input and Comments on the Nuclear Issues Paper

The process initiated to convert SET Plan actions into implementable Research and Innovation with outcomes aimed at achieving the hoped for EU objectives in the Energy Sector is a good one. It clearly sets out the way in which stakeholders can provide comment and input on the issues and the proposed targets, priorities and implantation measures including R&I actions and/or policy measures.

The STC is one important stakeholder. It has provided advice on S&T matters relevant to the nuclear sector since the inception of the Euratom Treaty. The STC views the current initiative as positive and is pleased to give initial views and to participate in further evolution of the actions supporting the SET Plan.

The outcomes articulated in the Issues Paper are compatible with the recommendations made in the STC's current draft opinion and with recommendations made over its previous mandates.

The action most relevant to the STC's orbit is Action 10 which sits under the important Additional Priority 2: Increase safety in the use of nuclear energy.

Limiting the action to 'Maintaining a high level of safety of nuclear reactors and associated fuel cycles during operation and decommissioning while improving their efficiency' does not seem to adequately support the Priority specified. Maintaining **and seeking to improve the already high level of safety**..... might better reflect the sentiment, be in line with previous aspirations related to safety and give greater scope for EU supported R&I in the field.

The consultation clearly sets out the questions it wishes stakeholders to address. Nevertheless the STC wishes the whole of its opinion to be used as input and requests that the Commission ensures that this is in fact the case. Our concern is that the response to the specific questions in the consultation may result in something of importance being missed.

The detail given is somewhat limited but as the targets are essentially headline targets, they provide a good basis on which to build a supporting R&I programme. The level of ambition is somewhat conservative but realistic in most cases given the constraints of the Euratom programme. It will be important to look for every opportunity to link with and seek synergistic funding from other parts of Horizon 2020. For example, with respect to SMR's, the STC opinion, pointed out the need for R&I with respect to grid responses, flexibility and stability, co generation of process heat or high temperature electrolysis for H2 production and security considerations associated with dispersed SMR deployment. This links with Core Priority 2 Action 4 in the wider SET Plan expected outcomes.

One area which the STC was surprised was not mentioned is the area of Radioisotopes and their production in Research Reactors within the EU. Given the risks associated with the LTO of existing reactors and the delays encountered with eg JHR a review to assess the position EU wide may be appropriate. Additionally, while the cross cutting section of the Issues Paper mentions the availability of state of the art infrastructure, a more explicit action plan

as per the STC draft opinion is needed with respect to key underpinning infrastructure for research and innovation.

The paper comments on the Energy Union aspiration of maintaining technological leadership in the nuclear sector. It rightly points out that it will not be easy for Europe to retain leadership in all areas especially in view of the increase in generating capacity in the rest of the world. In STC's view and as stated in the draft opinion, in advanced systems, the investment being made by non EU states and in particular China, dwarfs that of the MS and EU level research combined. There needs to be some specific actions for international collaboration developed with respect to targeted R&I in the development of advanced and innovative reactors and their associated fuel cycles in systems which are not foreseen as Gen IV priority systems for deployment within Europe as per Target 3. Otherwise the EU will have diminished influence on the way in which safety, security and safeguards aspects are applied in advanced systems and it will fail to deliver Action 10.

Moving on to commenting on the specific targets

### **Target 1: Maintaining a high level of safety and security**

This is fundamental to ongoing acceptance of nuclear energy for those MS wishing to continue to deploy nuclear energy systems and to satisfy the concerns of those MS who wish to concentrate on alternative means to ensure affordable security of electricity supplies. It is also relevant to medical and industrial applications of ionising radiation

The target emphasises the importance of availability of research infrastructure, there therefore should be an associated action which seeks to determine where there are potential gaps or where there may be a threat to historic important facilities of pan European relevance due to aging issues.

The target is fundamental to all areas within the scope of the Euratom Treaty

- existing reactors which are Gen II and Gen III (and with different issues)
- operational fuel cycle facilities
- Life extension of both of the above
- the design and piloting of future advanced and innovative reactors and facilities (even if the systems may not be led by EU Member States or deployed on EU territory because it is essential to bring EU influence to bear internationally as they evolve)
- radioactive waste management and decommissioning of legacy assets
- achieving operational GDF's
- Fusion where 'standard' as far as the fission world is concerned, nuclear issues will assume prominence as the technology progresses closer to industrialisation

-non energy applications of nuclear technology

So the structure of the current remaining Targets section of the Issues paper doesn't look right and may lead to inadequate sub targets. It is also very selective. Specifically In terms of ambition one sub-target '*by 2020 availability of conclusive research findings on (1) ageing of structures..... etc*', it is overambitious as written as it implies close out of the topics highlighted when in fact they represent a massive R&I challenge which will be ongoing and not 'solved' by 2020.

Most of the actions and targets required to support THIS ACTION 10 are embedded within the plethora of initiatives and documents referenced in the annexes. Rather than just listing them it would be helpful in the next stage to develop a rationalised list as it is currently unclear what has priority, what is advisory and what may actually significantly influence the creation of new initiatives, funding mechanisms and priority setting for R&I. If this was done and based on the Integrated Roadmap it would simplify efforts to identify gaps or duplication of efforts in the R&I priorities.

Finally STC's input is more likely to be helpful at Stage 2 of the whole process where it can react to what is proposed and where its Opinion can be compared with the priorities generated as a result of the multiple sources of input from Stage 1. Given the commitment already shown by STC members in developing its current Opinion through Working Groups giving great consideration to detailing priorities for R&I, it is suggested that the STC is used as a resource to help move the SET Plan initiative forward.



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