

Economic and Social Considerations for the Future of Nuclear Energy in Society

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Report

Workshop on co-development of recommendations on stakeholder engagement in (nuclear) energy governance

Work Package 1

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Executive Summary

The third international deliberative workshop organised under Work Package 1 (WP1) of the ECOSENS project took place online on 11–12 June 2025, gathering 27 participants from across Europe. Representing civil society, research institutions, academia, and industry, the workshop participants focused on the co-development of draft recommendations for enhancing stakeholder engagement in nuclear energy governance. Taking a set of draft recommendations based on the findings from earlier project phases as a starting point, this participatory event sought to strengthen the legitimacy, clarity, and practical value of the proposed recommendations by taking stock of the lived expertise of diverse stakeholder groups.

The workshop was structured over two half-day sessions. The first introduced the ECOSENS recommendations and divided participants into three moderated breakout groups to facilitate in-depth discussion. The second session reconvened participants in plenary for group reporting, open dialogue, and reflection on next steps. The eight recommendations under review were grouped during discussions into three thematic areas: process design, topic-specific issues (e.g. sustainability assessments and Small Modular Reactors), and stakeholder-targeted measures.

Group A called for greater structural clarity and simplification of the recommendations, advocating for visual tools such as stakeholder matrices and timelines. Participants recommended combining overlapping recommendations and emphasised the need for shared definitions of key terms like "stakeholder" and "community." Group B prioritised long-term, independent funding for civil society engagement and stressed the importance of tailoring recommendations to regional contexts—particularly in Central and Eastern Europe. They also proposed categorising the recommendations by intended audience. Group C addressed legal and power asymmetries, urging more precise language, clearer references to legal frameworks prescribing stakeholder involvement, and the integration of moderation and mutual learning into participatory processes. Concerns were raised about polarisation, especially surrounding SMR technologies, and the absence of mechanisms to rebuild trust in politicised contexts.

Despite varying perspectives, all groups converged on several core principles. There was consensus on the need for a clearer structure supported by visual and thematic tools, harmonised terminology, and practical examples of good practice, such as the former citizens' forums in Sweden and the dialogue committee of the ALFRED project in Romania. Participants emphasised the need for sustainable funding, particularly for local communities and civil society organisations, as well as the use of context-sensitive approaches, and the better integration of social sciences and humanities into nuclear research and education. Legal alignment with international conventions (e.g. Aarhus, Maastricht) was also seen as essential to ensure stakeholder rights.

Looking ahead, the revised recommendations will be presented at the ECOSENS Final Conference on 8–9 September 2025, where a panel discussion on the implementation of recommendations will also take place. The workshop demonstrated a shared commitment to improving participatory governance in nuclear energy, laying the groundwork for more transparent, inclusive, and context-responsive nuclear decision-making across Europe.

1. Introduction

ECOSENS Work Package 1 (WP1) *"A Collaborative Assessment of (Imagined) Energy Worlds"* is dedicated to exploring the societal dimensions of nuclear energy within broader energy transitions. The WP1 adopts an integrated, multi-method approach to understand citizen perceptions, assess the influence of interest groups, review energy governance practices, and engage stakeholders to co-develop future energy scenarios. WP1 is structured into four interlinked tasks, each with specific objectives and methodologies designed to inform actionable recommendations for stakeholder engagement, governance innovation, and public policy development related to nuclear energy.

Task 1.4 includes four Deliberative Engagement Workshops with the aim to stimulate discussion and enable inclusive co-construction of energy futures by involving stakeholders across civil society, government, academia, and industry. The third international workshop included a wide range of stakeholders to discuss and co-develop draft recommendations on stakeholder engagement in (nuclear) energy governance, based on findings from Tasks 1.1-1.3. This participatory process enhances the legitimacy and relevance of policy recommendations by grounding them in diverse, deliberated societal perspectives.

2. Workshop format and objectives

The international workshop was organised online on 11 and 12 of June 2025 and was attended by 27 participants. The distribution of participants per country is given in the Figure 1. They represented research organisations, academia, NGOs and CSOs, and industry.

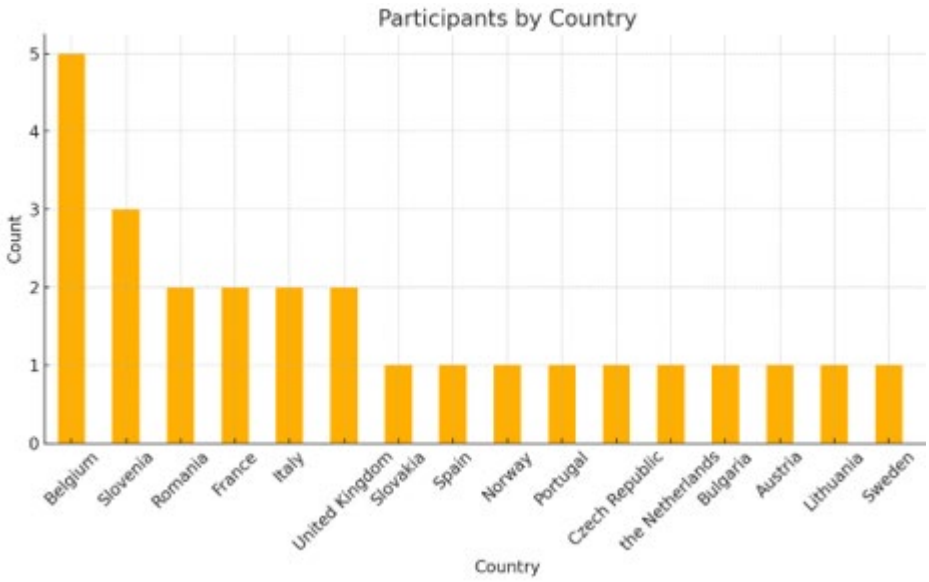


Figure 1: Participants per country in the international ECOSENS workshop on recommendations for stakeholder engagement in nuclear energy governance

The workshop objectives were to present the draft ECOSENS recommendations for stakeholder engagement in nuclear decision-making and energy policy, to conduct detailed reviews through breakout

group discussions, to collect feedback for refining the recommendations and to outline next steps for finalising these.

The workshop was divided in two half days with the following agenda:

11 June 2025, 13.30 -15.30

- Introduction to ECOSENS and WP1
- Presentation of draft recommendations
- Breakout sessions into three groups (A, B, C) lead by moderators

12 June 2025, 13.30-15.00

- Group A, B, C reports in plenary by rapporteurs
- Open floor for additional discussion and comments
- Discussion on implementation and next steps

Each of the groups had equal number of participants, assuring presence of different actors. The eight draft recommendations (Figure 2) were distributed into three areas: two on process, three on specific areas (sustainability assessment and Small Modular Reactors) and three related to specific stakeholders. All registered participants received the draft ECOSENS recommendations in advance as a Word text; additionally, they were presented briefly during the workshop.



Figure 2: ECOSENS draft recommendation on stakeholder engagement

The leading questions for discussion in the groups were the following:

- Are the recommendations clear? Are they 'good'? Is anything repeated? Missing?
- Do you have any good examples of practice and what was good about it?
- Who should implement stakeholder engagement?
- Who would need to pay attention to recommendations? Should we specify this for each recommendation / point in recommendations?

Each of the groups (A, B, C) had a a moderator and a rapporteur from the ECOSENS partners. The feedback reports were given during the second day of the online workshop.

3. Summary of Group Discussions

The group discussions revealed several critical insights and constructive proposals regarding stakeholder engagement and the refinement of the ECOSENS recommendations. The edited versions of transcripts are given in the appendixes (A, B and C).

3.1 Group A – Structuring, Simplification, and Terminology

Group A emphasized the need for greater visual clarity, proposing the use of a matrix format that maps each recommendation to the relevant stakeholder groups and implementation phases. This would provide a clearer understanding of *who* is responsible for *what*, and *when*. Participants also noted redundancies or similarities among recommendations, suggesting that Recommendations 4 and 5 (on Small Modular Reactors) as well as 7 and 8 (on local and civil society engagement) could be consolidated to reduce overlap.

A call for practical support emerged, with a request for more real-world examples, timelines, and actionable content to facilitate application in diverse contexts. Furthermore, participants highlighted the importance of legal provisions, noting, for instance, that mechanisms such as community veto rights must be considered within their national legal frameworks.

Finally, the group urged the clarification of foundational terms, such as *success*, good practice, *community*, and *stakeholder*, advocating for harmonized definitions to minimize ambiguity and improve mutual understanding.

3.2 Group B – Funding, Participation, and Regional Specificities

Group B strongly prioritized Recommendation 8**,** underscoring the need for long-term, independent funding for civil society engagement. Drawing on models from Sweden and elsewhere, they advocated for funding that is not industry-linked, to preserve moral legitimacy and foster authentic participation. Concerns were raised about Recommendation 3**,** particularly the subjectivity of sustainability assessments. Broadening participation in these processes was viewed as essential to address inherent power imbalances and to legitimize outcomes.

The group also suggested thematic clustering of recommendations according to target audiences such as NGOs, policymakers, or academics to improve usability. Notably, regional sensitivities were raised, with an emphasis on tailoring engagement approaches to Central and Eastern European contexts, where traditions of stakeholder involvement may be less entrenched.

3.3 Group C – Power Structures, Language, and Communication Dynamics

Group C directed attention to power asymmetries and legal gatekeeping, calling for a more critical examination of how laws are implemented in practice, often by authorities who may exclude or filter stakeholder input. They flagged the vagueness of terms like *neutral information*, recommending clearer and more precise language. There was also a strong appeal for moderation mechanisms within engagement processes, given their essential role in reducing polarisation and ensuring balanced representation.

Group C advocated for a shift towards mutual learning, especially under Recommendation 2, encouraging a focus on long-term participatory processes rather than one-off engagements.

Lastly, the group warned of the growing polarisation around topics like SMRs, calling for transparent communication strategies that address mistrust and politicisation in public discourse.

3.4 Cross-Cutting Themes and Points of Consensus

Across the discussions held in all groups, several recurring themes and shared understandings emerged, pointing to areas of broad consensus.

A key priority identified was the need for a better structure and enhanced clarity within the recommendations document. Participants advocated for the use of visual tools, such as matrices and timelines, to help organise and communicate the relationships between recommendations, stakeholders, and implementation stages. An executive summary was also proposed to provide a concise overview of the document's aims and content. Equally important was the harmonisation of terminology, with participants urging for consistent definitions of key terms to avoid ambiguity and ensure coherence throughout.

The value of concrete examples of good practice was repeatedly underlined. Models such as Sweden's former civil society funding approach, its citizens' forums and national councils, and the dialogue committee for the ALFRED project in Romania were cited as informative references that could support practical implementation across different national contexts.

Funding and capacity building emerged as another foundational concern. Discussions emphasised the necessity for long-term and independent funding mechanisms for NGOs, experts, and civil society actors. To foster meaningful participation, this funding should be detached from political and industrial influence. Additionally, there was a strong call for investment in education and civic competence, ensuring that all stakeholders are equipped to engage constructively and knowledgeably.

In terms of legal frameworks, participants encouraged for deeper legal integration. Specifically, they called for stronger alignment with international instruments such as the Aarhus Convention, the Maastricht Recommendations, and relevant ACCC (Aarhus Convention Compliance Committee) jurisprudence. Beyond legal recognition, the practical enforcement of rights was considered critical for effective stakeholder engagement.

Another unifying theme was the need for context-sensitive approaches, particularly regarding Central and Eastern Europe. Given the distinct political histories and engagement cultures in these regions, participants recommended strategies tailored to local conditions and sensitivities.

Finally, the importance of research and education was widely acknowledged. Participants stressed the need to embed the Social Sciences and Humanities (SSH) more deeply into nuclear research and development. This also included the proposal to develop long-term educational curricula that address not just technical knowledge, but also core values, participatory methods, and the trade-offs inherent in decision-making processes.

4. Key Suggestions for Improving the Recommendations Document

Building on the thematic insights, participants proposed several concrete ways to enhance the recommendations document's clarity, usability, and impact.

To begin with, the **addition of a glossary of terms** and a **dedicated section** clarifying essential concepts was seen as essential for consistent understanding across diverse audiences. Closely related was the proposal for a **targeted stakeholder matrix**, which would link each recommendation to its respective actors and outline their expected roles and responsibilities.

Participants also recommended the inclusion of **concrete examples of good practice**, even acknowledging that these might be context specific. These examples were seen as vital to translating abstract recommendations into actionable guidance.

The joining of overlapping recommendations was also suggested.

Another key proposal was the development of a framework agreement or **roadmap** aimed at improving stakeholder participation on a European scale. This would provide a shared reference for aligning national practices with broader principles of engagement and inclusion.

To further enhance accessibility and transparency, participants suggested the use of **visual tools**. Among others, this should adopt a less hierarchical looking representation, to lake lcear that all recommendations are equally important. Additionally, a **visual engagement timeline**, mapping out the typical phases of nuclear projects and connecting each phase to relevant recommendations was considered useful.

They also called for the introduction of **concise action cards** or brief, practical guides that explain not only *what* each recommendation is, but also *how* it should be implemented and *why* it matters.

Lastly, there was strong support for developing a **digital, interactive version** of the document. An HTML based format, searchable by stakeholder group or theme, was seen as a highly effective way to tailor information to users' needs and make the recommendations more navigable and impactful.

5. Next steps

Following the valuable input gathered during the international workshop, the next phase will involve revising the recommendations to reflect the feedback received. These updates aim to enhance clarity, relevance, and practical applicability across diverse stakeholder contexts. The revised version of the recommendations will be presented at the ECOSENS Final Conference, scheduled for 8–9 September 2025. The suggestions of the participants will be considered as much as possible.

The workshop affirmed a strong collective commitment to enhancing stakeholder engagement in nuclear decision-making. Across all groups, the discussions were rich, thoughtful, and solution-oriented, reflecting a deep understanding of both the opportunities and the challenges at hand.

The diversity of regional perspectives, professional disciplines, and stakeholder roles brought considerable depth to the dialogue, allowing for a nuanced and context-sensitive approach to be developed. Importantly, the workshop proposed a clear path forward.

Sincere thanks are extended to all participants for their active involvement, insightful contributions, and shared dedication to building more inclusive and effective engagement processes.

Appendix A: Short transcript from Group A

So basically, we have now eight recommendations and the questions we need to raise is the following questions:

- are the recommendations clear? are they 'good'? is anything repeated? missing?
- do you have any good examples of practice and what was good about it?
- who should implement stakeholders' engagement?
- who would need to pay attention to recommendations?
- should we specify this for each recommendation / point in recommendations?



General Remarks:

- I read also the entire document yesterday and I think they were all very comprehensive, quite extensive even. What I want to say is maybe it would be nice if you could have a structure or an overview in like a matrix where you have your seven recommendations and maybe on the other axis the different actors basically that are involved there. That should take the action and that you fill out your actions. That way, just as visualisation, that's where we get together. Matrix maybe of a on the one on the one hand, the recommendations on the other hand, the actors that are involved and then in each cell you can add the specific at the specific how pieces let's say of each recommendation. I think that way it would quickly visualise like who needs to take action.
- I also don't know how to define successful (good practice) to be honest for a stakeholder participation, what does it mean as it might be different for different stakeholders.
- The document is quite good, but some elements are missing. For example, in the introduction I prefer to have some references around the generation of this recommendations, because some of them are collected from literature and other of them are produced by the workshops and different activities in the ECOSENSE work package 1 and for the traceability of these recommendation is preferable to see who generate them or keep an impression.

- General remark is about the good practises. There are only a few good practises presented in the document and I prefer to have more because generally somebody that want recommendation want to look how may be implemented because it is a deficit of implementation in this case.
- It will be nice to have a bit of an overview, the more visually kind of catching the eye of what is the essence of the different recommendations in terms of also well, what is the recommendation? What is the justification for it? The stakeholders that require action?
- Maybe start a document with some or end it with some kind of executive summary which is a visual kind of way of capturing all of the different recommendations and their essential elements on one page.
- In my opinion the different recommendations are exact and really sensible. But what is lacking for me, this is the connection between the separate recommendations. The connection between the questions why and how? Connected with the question who is doing this? For who is this written? For each separate recommendation and for each separate bullet point on the question about the question how.
- I don't have a lot to say on this really other than where we should be trying to arrive at is an agreed framework for how to communicate with stakeholders effectively. Everybody signs up to. I wouldn't like to say what is needed is a framework agreement between stakeholders and civil society. That's where I think we should end up or seek to end up, you know, with transparency.
- It is actually about whether we needed eight recommendations and there were a few that could be combined together. So in terms of structure, I don't see an advantage to creating a long list of recommendations that being concise can be more powerful. Recommendations 4 and 5, which are about SMRs, could be combined, also 7 and 8 can be combined as well, which are about different versions of enabling, kind of appropriate means of participation and I think that way we would lose quite a bit of repetition.
- It's a really long list of recommendations and I thought about some other structural elements that could fit to. To get a better grip on it and what I was looking for was sort of a timeline because there were several points in time when participation really makes sense. And it maybe it would be good to have a graph of such a timeline for nuclear projects and to help sorting recommendations. Also, to this timeline to make it also to start making it more what have you called it substantive and practical. Also to add the information which recommendations you analysed for this first recommendations, as I didn't find this information.

Recommendation #1.
Improve the uptake of existing recommendation for stakeholder engagement, transparency and communication in nuclear decision making.

- It's obviously an obvious one, probably you can already fill libraries with the amount of recommendations which have been made regarding stakeholder involvement in all kinds of fields and especially nuclear maybe might be one of those fields in which a lot of recommendations have already been made. The main challenge is how to make these libraries useful and usable. The difficulty I think is much more the how question, how do you actually make them or taken up in practise so that will be the main challenge. Probably the main how to tackle this is also linked with legal frameworks. In most European countries regarding strategic environmental assessments, that's some form of public consultation and public involvement which is legally obliged to take place.

- What does it mean to need to engage with stakeholders? It's a good thing that you are transparent and that you allow for consultation. Another step that needs to maybe be more clearly defined as well is what do you actually need to do with these inputs. So also, the transparency on what is actually the scope of your engagement about and what are those who are organising engagement binding themselves to do with the inputs that are collected.
- Because sometimes I have the feeling that it remains a bit of an empty box like you can show that you have actually engaged with stakeholders and have improved or have taken up some of the recommendations. But it doesn't show like what are you actually doing with the inputs that you have gathered. I think is something that can be taken up more. And where the update can be improved in terms of what is actually done with the inputs that are gathered through. Any kind of state engagement process doesn't mean that you need to take into account all of the inputs that are being gathered, but that you might need to be at least transparent on why you are not taking up some of the inputs which are provided. It has to do with just a rationale that explains also what is being done actually, a justification on why some inputs are not being considered or why decisions have not been altered based on so. That's for me an important aspect of uptake and improving the uptake, which might be more explicitly focused upon in in the document.
- I think it's indeed the obvious one that it's not always done very well or implemented even though there are guidelines. What I did not really see and that it surprised me maybe in the suggestions is how do you make clear to the people you're supposed to organise. What are the advantages? Because it's all nice to try to enforce it by rules and regulations, but my experience is that usually things happen if people actually want to do it. Because you see an actual benefit in it. I think that's maybe sometimes the problem like having the public participation that is not always clear what benefit is there? At least also not for me, because let's be honest, it's also very difficult to explain these things to stakeholders and then get good feedback and then do something with it. So maybe if there could be something like on the motivational side, let's say at the people who need to take the action, how do you motivate them to actually organise this participation?
- Maybe you could look at recommendations that were developed under the frame of, let's say, the Aarhus Convention and the Expo Convention. There might be some examples or other information.
- I want to speak a little bit about the complexity of the engagement. There are a lot of factors, national cultural experience influencing disengagement, but something that is missing here is about the expectation of the nuclear industry, because nuclear industry wants to have a process of decision in a due time. Don't forget nuclear industry need to survive. They need to work and a very long process for this decision is practically a source of making up the process itself. In my opinion, an important source is in fact the stakeholders are not well prepared for the decision making. They are claiming that the participation they want to participate, but in fact when they engage in the process, they need a lot of time to understand, to inform, to receive information, and this is a very, very long process. I want to introduce a recommendation in this sense for different stakeholders, how to prepare them to be more informed, how we can prepare these stakeholders for straight full decision.
- I support what the colleagues said up to here and especially previous speech. Because what he's thinking about in my view, is education of more stakeholders, not only several experts in NGOs. It seems to me that it is much more general than all the other recommendations.

- Most of the of the citizens are not aware how to be engaged, how to insist for transparency, how to communicate and to be equal partners in communication, communicating and decision making for nuclear projects. Probably it will be useful to make even an educational handbook: Book for action for education, educational book for action, a handbook about stakeholder engagement in nuclear decision making
- I know that you said that there are so many existing recommendations and they are not taken upon. But I still think that the recommendations that are missing in the nuclear field are those on the environmental impacts. And they should be also included here (recommendations based on Aarhus and ESPO conventions). They set the legal perspective for public participation.
- An element about the good practises looking to the full text, the recommendation 1 on the sentence three, I recommend a slightly more diplomatic tone because it's seen this document is written with a position practically (adverse on nuclear industry). Nuclear industry has many scenes, but the intention of this document is to fill some gaps, to create some bridges, not to practically destroy what exist. Therefore, I recommend some more diplomatic tone. (Related to this sentence, the development of new nuclear project proceeds with limited public debate and without comprehensive participatory mechanisms and so on.) Also, in Romania there is a n example of good practice with ALFRED project on public engagement.
- The need to stick to factual language - I think sentence three is stating a fact. But also that the recommendations are neither for stakeholder groups or for industry. They are an analysis of existing work.
- Another point under diversity and inclusion, which is on the second page of this recommendation. The second bullet point is to introduce mechanisms for community veto or consent withdrawal, f.e. in siting processes such as the geological disposing facility. This statement doesn't acknowledge that in some countries such mechanism is and in some countries it is not available. We're writing for a not only a range of different stakeholders, we're writing across very many multiple national contexts where there is quite a lot of variability. In practise, so I think again, the writing needs to take into account differences across contexts. It remains debatable whether that counts as a success because it's a success for some people and not a success to other people. It is the policy working because the policy allows for it.
- But even the kind of the statement of a policy can be an empty box and I might say like tick boxes. You can have a statement of a policy, but that doesn't mean it is conducted in a spirit of how it is meant, rather than a kind of more instrumental reading of it. What is still not completely clear in the UK context, who counts as community. It's like every word has to be defined and agreed.
- Somebody has already mentioned about success. Can you agree in advance? Can stakeholders agree in advance what counts as success?

Recommendation #2
To move from instrumental to substantial engagement.

- Maybe if you could find an example that you as a consultant would classify as good, maybe it would be nice to take it up in the document and for each of your recommendations provide why it fulfils. You have a lot of words that can have a lot of meaning so it is important to have clear definitions.
- I was a bit confused by this recommendation because I really like the title. But what is written under the title I think this doesn't fit together because for me engagement is more the way than

what is targeted here. Engagement would go more in in the direction of dialogue and interaction and so. Maybe the title should be changed, or the content should be broadened.

- I think precisely about the plan, about how exactly and with what instruments and what kind of legislation or changes we can make this happen to move from instrumental to substantive engagement. We should look at what we have currently as legislation or structure, I mean the orchestration, the European directives and the national legislation, and to combine with suggestion of how this could happen in practise by experts.
- I thought I'd come up with an example of good practise, but then realised that actually it was just already in the final bullet point in some respect. The education of scientists, so obviously lots of the time people are talking about educating stakeholders. But of course, the IT is the scientific community that will be a Co-creator of engagement to processes, and therefore there is an educational need in the scientific communities. And so, my thinking was around starting early. So we often think about start stakeholder engagement early, but you actually have to start early with the education of scientists.
- Just a short additional comment about the education. This switch from instrumental to substantive engagement of civil society could work, especially if we implement the science and practise of professional risk communication.
- Maybe another example on another level would be Germany during discussions of RW technological repository. Sort of a technical dialogue was offered for participation concerning the FEPs, features, event and processes and it was very interesting to be able to engage on a detailed level. But what happened after this workshop was that there was no follow up, nothing. And I think this it was a pity. There is no legal right to participate in such technical dialogues, but they are very good if they take place, but if it's only a single event and it's not embedded, if comments or questions are not replied, how they are taken up in the future then it doesn't make as much sense as it could make.

Recommendation #3:
Faster engagement of stakeholders in sustainability assessment for energy policy advice.

- An instrument that is well developed and well working linked to the Strategic environmental assessment is a very suitable instrument for the issue at stake here, meaning for sustainability assessments for energy policy. It is important to use this instrument for your national energy and climate plan that also tackles sustainability impacts of climate and energy policy.
- Text is quite long, in the effective text there are two pages of items. This is too much in comparison with the other part. On the other hand, looking to the title, it seemed to be not enough because the title of the document is recommendation of stakeholder engagement in nuclear decision making and energy policy. I prefer for example to have an approach related to the energy field and because there are a lot of elements that are common for all the technology in terms of the stakeholders, not only for the nuclear and to focus for some examples for nuclear.
- If you talk about the energy policy and that it's usually indeed about a set of technologies, it's like a future energy system. So, it doesn't really make sense to separate nuclear from other technologies, it's all the same. And how it usually goes. You have the first step. You first have to come up with a world view at 2050 or a longer world view where you want to be. For example, if we had a discussion in Belgium, do we still want to have our industry and those jobs in our country or not? That's very important decision and it also defines the limits of where you can

go or can't go. And then you drop down and in the end you fill it up with technologies. It's not the other way around. It. You take a technology and then see if it fits in there.

- There is a big difference between making the strategy, like we do, an energy system analysis like how it could ideally look like in 2050 while fulfilling all the boundary conditions like allowing for industry, mobility of persons and so on. And then you see that the cost optimal technologies but then you have an idealised future situation.
- The thing is getting from now to there and it means you will have winners and losers along the way, and people are instituted or agents that lose something and always gain something. And it's the policy at all. And only then because the policy come in and when you need to nudge society from. The expected trajectory to what you want, where you want them to go, and that's the policy gap. That's what they sometimes call existing policies, are additional measures in the national energy and climate plans. So there is also a difference between strategizing how the energy system should look like and what would need to be fulfilled. First having the vision that's energising how it should look like and only then you have the policy package that needs to address the implementation cap. I don't really see here. But it's like I said, maybe it's also my background that that makes me look a bit different here.
- I think it's maybe just the framing of this recommendation makes it a slightly awkward thing. Question: is this recommendation about the need for stakeholder engagement in sustainability assessments of nuclear, or is it about the place of nuclear in all energy policy? Or is it about all energy policy of which nuclear is just one part?
- From my experience, it is wonderful to involve the stakeholders in the energy policy. Because if this is a major decision at the level of any country or a group of country, region of Europe, Union and maybe larger, but this is very difficult to do. First of all, there are only little examples. We mentioned consultation in the national energy and climate plans development and is obligatory, according with the recommendation of Europe Union, but generally this is only a collecting of input, and these inputs are sometime ignored by the policymakers or cannot be used by the policymakers due to different reasons.
- The process also depends on the capability of the people to discuss and to understand the complexity of the process. At the national level, such process should be built in many years. Probably the experience from nuclear is important, but you cannot expect in four years, for example, to build such a process. Today, people cannot understand, for example, the cause of the blackout in Spain because more of them cannot understand the system itself. Therefore, we need to wait and build this process and let's say introduce enough information in the schools, in the technical part.
- We can probably add as a recommendation to develop the education of European Union member countries with classes in schools about energy and waste in general, and especially about nuclear energy and nuclear waste. This is this additional recommendation.
  How to include the bullets of recommendation through these sections: most important is to introduce new legislation with requirements otherwise it cannot be realised.
- It's more just a general question: Having worked in schools and being a school teacher and also trained teachers, I know that every area of science, technology, engineering, medicine, maths has its priorities of what should be taught in schools.
  School curricula can't be dictated by industrial needs or things like that. I think if we want a recommendation around and looking at the educational system, which I think is a really good idea, but I don't think we can recommend that things should be taught about specific items. I think there's maybe a recommendation around education systems reflecting on the way to

prepare children for the future. But I do wonder whether we can think of making recommendations which are so specific in areas of science, because there are just too many of them to fit into a curriculum.

- I also actually wanted to comment on the education. The content that was made, I also don't think we should indeed focus too much on a specifically and teaching them about energy. I think it's more what you need for this type of deliberation, what youngsters need to realise is the finiteness of resources and that in every decision you make, there is always winner and a loser. But there will always be limits and it's thinking about limits and understanding that there are always trade-offs. I think that's important because too much debate is about should we do nuclear or not, windmills or not.
- Some tools can be developed like Geo safe interface, which is a web-based programme which could allow civil society users to explore the evolution of a geological repository. Such tools could enable better stakeholders' engagement in decision making. I think the argument really will be driven by what technology is available to civil society users to explore the issues.

Recommendation #4 and #5

Basically both recommendations are related to SMR: transparency and public information on SMR technologies and related policies, and the next one is foster public dialogue on SMR by engaging diverse public and stakeholders in conversation to address benefits and risk.

- It's all very specific topic on the cost of SMRs and what stuck with me was when at one event we discussed different parameters when it comes to cost. They don't present any information on cost because they said the information is not conclusive if you ask. If you ask different stakeholders, and while that's all nice, I think what is lacking there and maybe in general in nuclear energy is societal leadership. Like somebody has to take the lead and say these are a probable value for these technical aspects for these costs and we put them out there.
- For nuclear technologies to take leadership and say like, hey, we consulted with different stakeholders and this is what we came up with as probable values. Will it be exactly that? No. Will there be other values possible? For sure? Can you deviate by circumstances: for sure? But still this is good values to work with and to use, for example to engage with stakeholders.
- IAEA, International Agency for Atomic Energy could take this social leadership and publish all other types of parameter information. Why not about cost? And like I said, I understand the idea of it is not sure, but you're better than you're 80%, right and maybe 20% wrong then not seeing anything and being 100% wrong. Sometimes you need to just put it out there with the necessary caveats of that. That is uncertainty here.
- I'm not sure why the information and participation in SMR should differ from the participation in the bigger NPPs? What is the reason? We have some deficits, and we already see them and of course it should be made better here when form of new topics emerge. But I don't really understand why these SMRs do have separate recommendations at all.
- Knowledge on SMRs is insufficient, fragmented and factually incorrect. I think it would be useful to think about why it is so and who makes it to be so. This is connected also with the third bullet information on project benefits and risk is selectively shared. Why is selectively shared? And it should be discussed in public forum, which are these forums. This is question also to you need to be precise.
- I want to say there is a lack of information. This lack of information about SMR is not common only for the stakeholder. It is also at the level of expert, because there are a lot of supposition in

in each design. Today there are 90 types of SMR that are "paper reactors". Only two SMRs are practically in operation, and this is very few operational experience and not relevant in term of cost because the cost of SMR is depending too much on the hypothesis of fabrication in the factory. This fabrication in factory is not yet available in any country. Therefore, what is to do in this condition? My recommendation is to speak to discuss frankly with the audience, with the stakeholders about the different advantages of SMRs, for example, you discuss a lot about flexibility.

- From my side in in this process is to use the recommendation that are generally produced for the large reactor and to start a good process for SMRs because we are at the beginning and can develop probably better process in terms of the engagement in the decision making process.
- One remark under Recommendation 5. Integration of social sciences and humanities. Invest in targeted research on perceptions. Monitor public opinion. This isn't this is an SSH research, in my view. It's just marketing and public opinion surveys. It's not research.

Recommendation #6:
Open up spaces in nuclear R&D for participatory initiatives, enabling deliberative decision making and integration of social science and humanities.

- No comments

Recommendation #7 and # 8:
Provide national political support and appropriate means for local communities' engagement and the same for the civil society organisations engagement, in particular environmental NGOs.

- Again, they seem sort of slightly different character to some of the others recommendations. And some of it, I just wonder whether they need to be here, they're actually part of recommendation 2. So, if you want to move to substantive rather than instrumental, then quite a lot of the information under recommendations seven and eight actually seem to be the how for recommendation 2.
- The example of involving of youth and adapting messaging to different age groups has an example of the Netherlands Citizen Assembly that seems more like an example of good practise than something that is in the how part.
- Some of these recommendations are just really specific to particular national contexts, so it's the only recommendations where we've actually got mention of specific countries. Rather than dealing with this as a bigger issue.
- In terms of who our audience for these recommendations are, we would hope they are sure for within Europe but also beyond.
- Foreign funding is important, and it is not out of place. I think it's a reality. When we look at Hungary, they want to implement a law that funding from abroad is forbidden for NGOs, especially environmental NGOs. I think this is a reality in today's life. To engage in participation in nuclear issues takes time. And if this goes without any funding, this is difficult if not even impossible, and I think this is a very important recommendation that funding is needed. It can't be expected that that people engage only in their spare time and do it for free, especially if an engagement should go over the long term.

- What I'm saying is funding is part of the how of the proper engagement and that's why I was questioning whether it should be in recommendation too. So it comes earlier and it's part of the substantive need.
- My question about specifics is literally on the language to do with. So that we mention funding from German foundations. We mentioned something about Slovakia. We mentioned former Soviet blocs that to me is not relevant. The relevant thing to say is we need the funding. The funding is important. That's the recommendation. The other things are just about how we find ourselves in this situation now.
- Point about the funding is really important and it should be such not only for NGOs or local communities, but also for individual experts that are known, which are opinion leaders in the separate countries.
- You need funds to discuss if you want to do nuclear, but it should be the same also for other impacts on environment, like large wind park on shore and because, in my opinion even people get more excited if they will have a bunch of big windmills in their neighbourhood. And so I don't really see the difference from a societal perspective because all different technologies have an impact on the neighbouring. I'm gonna give an example in Belgium context. And I think there has never been as much fuss in Belgium as for the extension of the ring way around Antwerp.

Appendix B: Short transcript Group B

Let me start by briefly acknowledging the visual layout. On page two we see that same very colourful set, which is helpful.
I'd like to quickly remind everyone of the questions:

- How does this document strike you overall?
- Are there things that would make it easier to use and more impactful?
- Are the recommendations clear?
- Can we contribute best practice examples?
- And finally, who needs to pay attention to these recommendations?

The idea is to go through the recommendations one by one and share reflections. The first two are about process, the third about sustainability assessment, and four and five relate to SMRs. If we are having a fluent discussion, a break might make sense after the fifth.
Before going into the document as a whole, I'd like to ask: for those who had time to look at it in more depth, is there any recommendation among the eight that you feel we should prioritise before part of the group leaves in about 45 minutes?



General Remarks:

- Speaking now in my role as one of the co-authors of the document. These recommendations were distilled from all the materials produced throughout the project since 2022. I can assure you there is no particular order of importance in the way they are listed. Each recommendation is relevant in its own focus area, and they often overlap. They should be seen as a networked list, where one links to another. Capacity building, for instance, is indeed central to stakeholder engagement, as was mentioned in the introduction. In case it wasn't clear earlier, recommendations 1–3 are more process-oriented, 4 and 5 focus specifically on SMRs, and 6–8 address particular stakeholder groups or interests. So, while the list could have been reshuffled, the categorisation is intentional.
- A few formal things: we're mixing American and British spelling (with -z- and -s-), and there's inconsistent use of italics, I'm not sure why. It also would be helpful to consistently highlight any term that appears in the glossary.

- I also felt the first page could give a little more information about where all of this comes from, but this will be easy to solve.
- My impression is that the recommendations feel somewhat one-dimensional, meaning they touch on many nuanced issues we experts recognize, but these nuances might be lost on decision-makers or other target groups reading the document. For example, from my experience in the Czech Republic and Central/Eastern Europe, a decision-maker might simply skim the document and conclude, "We need more stakeholder engagement," and leave it at that. This is not unique, as many European approaches already call for increased engagement across various fields. So generally, I would suggest making each recommendation as distinct and straightforward as possible, delivering a clear, focused message. This could be helped by grouping the recommendations into clusters.
- Also, different recommendations might be targeted at different audiences, some more suitable for decision-makers, others for NGOs, and that distinction could be made clearer in the document.
- The title of WP1 refers to collaborative assessment of imagined energy worlds. The idea of imagined points to the future, possible futures that don't yet exist. I find that this future-oriented perspective is largely missing. Stakeholder engagement should also be used to deliberate the future of nuclear energy, not just current practices.
- I find there's a lack of strong reference to social sciences and humanities expertise. Right now, this is only mentioned in Recommendation 6. That may be enough, but if so, it should be clearly highlighted and consistently referenced throughout the rest of the document. As social scientists, we can contribute much more than simply calling for more engagement. We can act as facilitators, provide valuable input, bring data and evidence, and actively support the engagement process itself.
- When it comes to social sciences and humanities (SHS), I'll admit that when I see these references in documents like this or in similar contexts, they can sometimes come across as a bit corporatist, almost like we're just claiming our seat at the table or securing a budget line.
  So, to make the value of SHS expertise clearer and more concrete, what it is and what it contributes, perhaps, one option would be to define it more explicitly in the glossary. It may not be the perfect solution, but it could help.
- For me, this discussion about how to make the different target groups and priorities more visible really highlights that maybe a linear text document isn't the ideal format. In other projects, maybe even in the IPA project, though I wasn't directly involved, there's been the idea of using an HTML-supported presentation, something interactive. For example: "I'm an NGO - show me the recommendations most relevant for me." Or, "I'm a decision-maker - guide me to what I need to focus on." That kind of structure could make the document more accessible and practical for different audiences.
- In general, stakeholder engagement is still much less common in Central and Eastern Europe. From my experience, experts and decision-makers working within government structures may be less familiar or comfortable with participatory approaches. That's why I believe it's crucial to tailor the messaging specifically for them. To make it clear that stakeholder engagement can be combined with scientific expertise and that social sciences and humanities can bring real value. We can contribute with concrete methods, data, and approaches that help design, structure, and support the engagement process, not just ask for more dialogue, but actually move it forward in a meaningful way. This kind of clarification and framing would be especially helpful in the context I know best, but I believe it's also relevant more broadly across the EU.

- We could still mention some of the potential benefits for decision-making that arise from it. In my experience, for instance with the siting process for the deep geological repository in the Czech Republic, there is significant mistrust among government officials toward stakeholder engagement. Past attempts have failed, and as a result, new calls for engagement are often dismissed. So, I think it would help to tailor the message more carefully for this group. That means providing arguments, examples, and showing what engagement can actually achieve.
  Also, it reinforces what I said earlier: we need the individual recommendations to stand out clearly, so that decision-makers don't just skim through and simplify the message as "we're being told, once again, to engage more." In some countries, including the Czech Republic, that oversimplification is a real risk.
- I don't really have anything against the eight recommendations themselves. But I do think that the accompanying text especially the bullet points, could be used to expand the recommendations in more directions. That would help avoid the impression of one-dimensionality in the document as a whole.
- I think there may be a need for a few more lines at the beginning of the document that speak to the added value of stakeholder engagement, not just in an instrumental or functional sense, like *anonymous'* point about "requisite variety" (the idea that without enough perspectives, you might miss something crucial to safety or sustainability).
- But also: is there a moral dimension? A cultural one? The more seriously we take engagement and the more we embed it across months, years, and decades, the more likely it is to become a shared societal practice. Something we understand collectively as necessary and legitimate.
- Public financing of NGOs used to be a good practise. At the same time, I'm personally concerned that there may have been an element of revenge in the decision to cut that funding. My impression is that public officials are generally comfortable with environmental NGOs as long as they stick to "nature" - plants, animals, things that are politically safe. But when an NGO raises a safety issue, as happened in the Swedish copper corrosion case, officials don't like it. It feels like they want to punish that kind of engagement.
- Taking a more general perspective on how the information is presented, and I think Barbara or the physicist in us can relate to this, the use of colours, frequency, and energy feels well designed. Even if there is no formal order to the recommendations, the layout gives a sense of flow, starting with higher-frequency items like #8 and moving toward the more foundational involvement of individuals in recommendation #1. In that sense, it works well as it is.
- I wouldn't worry too much about the form, length, or structure of our recommendations because we simply weren't given enough funding to polish them or make them look visually attractive and centered.
- I don't think we need to make the documents more "understandable" by following trends like TikTok just because young people use it. In the end, ECOSENSE is a coordination and support action activity, and in theory, we are writing documents to be read by well-financed research institutions who are interested in further research. I believe the research gaps are very well identified between the lines of the documents we prepared.
- Unfortunately, there is zero funding for social science research on nuclear issues, as all of us in the SHARE network know. But we have dignity and don't want to be begging the European Commission for money. Still, I agree with someone's remark that the usefulness of social research could be emphasized more.

- On the other hand, as a civil society representative in Europe, I know that those in real power who are often not politicians simply don't want social research because they fear the results. We have to be honest about that.
- I think this will be one of the key outcomes of our project that might reach a wider audience. Maybe it's something we could also present within our networks, not just research networks, but also our national contacts involved in nuclear energy in some way. So, I believe it's worth investing a bit more energy to make it look more compelling and polished.
- I think the question of involving as many stakeholders as possible is crucial. We talked with anonymous before he left about environmental assessments, and I think everything came up there: the importance of doing these assessments fairly and with all stakeholders involved.
- But there's a problem with nuclear decisions, in that unless the process is set up in a way that's basically non-democratic, it's very difficult for nuclear projects to get through the decision-making process. That doesn't mean, though, that the process should be undemocratic. The decision-making should be fair and democratic, and if nuclear doesn't succeed under those conditions, then so be it.
- I mean, how does society make decisions about difficult issues, and how do they do it to reach long-term, sustainable solutions? Honestly, I'm not only tired right now, but actually quite depressed about the situation in the world and how things seem to be going in the completely opposite direction of what I thought we were all trying to achieve with this document. Sorry I can't be more constructive here, but I wonder if it might be possible to discuss these broader societal development issues somewhere in the report or its outcomes, if such observations have been made in the project.
- I'm thinking about presenting a few present-day scenarios where something good is happening where people are having fun, sharing success, and all participants benefit. That really resonates with me.
- I wouldn't want to see a recommendation that just says "share success stories," but something that's sensitive to the fact that we really need to feel that we're succeeding together, that we're making progress as a collective, to encourage us to keep going.
- Regarding the document, if it's meant to have real impact and reach people, then it should be written for the audience it wants to reach. If it's just a checkmark for the Ecosystem project, then fine. But if we want to reach further, there should be another, shorter, more compelling document, maybe a leaflet or something colorful and easy to read. Eighteen pages is a lot nowadays; people don't watch long videos on TikTok, and the same applies to documents. So it should be made very clear, easy, straightforward, and direct. Depending on the audience, you can say, "If you want to know more, read the full document."
- In the life cycle assessment work I did previously, you can set parameters and boundaries so that the numbers suit your purpose. Civil society should always be included because you can't trust the numbers completely otherwise. Life cycle assessments should be done realistically and holistically, not only focusing on environmental or economic parts, but also including the social dimension. Social aspects should be standardized and clearly shown, for example, if children are involved in raw material production, that should be explicitly stated for each energy source. At least for nuclear, this is often missing. I hope solar energy does better, but I'm not sure as I'm not in that field. So this needs to be taken care of from beginning to end, not just commissioning or recycling or circular economy. It should be done openly and in a way that's easy for people to understand, showing the whole picture clearly.

Recommendation #1.
Improve the uptake of existing recommendation for stakeholder engagement, transparency and communication in nuclear decision making.

- I spoke about the importance of integrating this kind of information into education from an early age, as part of preparing individuals for active citizenship. I believe we need to invest in education and promote lifelong learning, so that people have the opportunity to think critically about these issues. At the same time, I recognise that many people simply don't care. In that sense, sometimes it may actually be easier to begin with something like Recommendation #8, rather than starting at this foundational level.
- I agree that presenting this point as a standalone box or a framing element in the document, rather than tying it only to Recommendation #1, could help emphasize that it's a broader societal challenge. It's not just about stakeholder engagement in one sector, but about building a culture of informed, thoughtful, collective reflection.
- That's a brilliant analogy with Schrödinger's cat. Until the box is opened or in this case, until a person is personally confronted with a nuclear issue (e.g., a waste repository proposal nearby, or energy infrastructure affecting their region) the issue remains abstract, out of sight, and out of mind. It also underlines how potential engagement often exists in a suspended state. The public is not inherently apathetic, but rather in a kind of "superposition", where care or concern only fully materializes when the decision becomes local, tangible, or urgent. That's when people "open the box" and start to engage, often under pressure and with little preparation. This is exactly why early education, inclusive dialogue, and a culture of shared responsibility are so important. We shouldn't wait until the box is forced open by conflict or crisis. We need to create channels where people feel it's normal and valuable to be engaged before the stakes are personal.
- Rather than trying to push for "early and universal" involvement, could better highlight the goal of cultivating societal trust through the institutionalization of good deliberative practice.
- Early in the process, not only should civil society be engaged, but they should have the decision-making framework clear in advance, including access to justice, so that they can trust the whole process.
- Early involvement and clarity in decision-making rules are essential. This makes it easier because society is used to decision making on environmental issues generally, and then nuclear issues just become part of that, and nothing special in a sense regarding engagement.
- Decision making in nuclear should follow the same rules as for other things. And just because it's more difficult doesn't mean you can set aside the rules for it.
- If there had been more resourcing for civil society to participate in nuclear decision making, there would have been at least some strong parties that would have had to engage.
- Well, I thought about what someone mentioned regarding imagining future scenarios, and maybe it might help to imagine present scenarios instead. For example, looking at good practices that are already working very well in certain regions where nuclear is present, compared to other regions where it's still not. That might help when developing these kinds of exercises, so you don't even have to imagine the future, you can just look at things that are already happening elsewhere. Maybe it can help to reduce some fear or overcome some traumas.
- And I want to put particular emphasis on the idea that risk perception is probably a very active factor in this, as you said, and maybe even an unspoken one. If we say that the lack of interest

is because it's so technical, so difficult, so clear that there will be little influence, then maybe the risk perception or risk aversion, or experience, or whatever, needs to have its own acknowledged, unthreatening place as well.

- Recommendation #1 is actually the longest, and there's already quite a lot of text to absorb. So, I was thinking that perhaps not all of these valid point-style recommendations need to be included there.
- Maybe an alternative would be to move some portions of the text and make them part of a general introduction. This way, the valid points, which are grouped around key topics like legal aspects, institutional aspects, and oversight could be outlined in more detail upfront. By doing this, the message attached to each recommendation would become clearer, and the recommendations themselves could be cut down in length.
- I'm a fan of using things like coloured boxes or different formats, like in a magazine, where you can read the easier summary in the margin and the more detailed information in the main body of the text.

Recommendation #2
To move from instrumental to substantial engagement.

Recommendation #3:
Faster engagement of stakeholders in sustainability assessment for energy policy advice.

- I want to take a moment to comment on recommendation #3, which may sound technical but is very important. This stems from the Ecosense project, where WP2 focused on sustainability assessment, and WP1 provided a broader, more critical perspective on this exercise. Sustainability assessments are quite common now. The European Commission, European Parliament, various institutes, and the IPCC all conduct them for nuclear energy and other technologies. The key point is that these assessments are always subjective, based on values and preferences, which is not a problem. When people come together, they bring their own values, concerns, and hopes. To build trust and address concerns about subjectivity, it's essential that these assessments are transparent and participatory. They should be as inclusive as possible without losing formal rigor, using different methods and models, as we did in WP2 of ECOSENS. Although it's challenging to fully engage the general public, especially those without technical background, I believe it is worthwhile to include them in these sustainability assessments.
- In my work in nuclear issues, about 25 years ago at university, I was involved in a lot of this kind of analysis. However, it was often quite academic. The environmental movement generally does not use these analysis tools much; sometimes they commission reports like LCAs, but that was a long time ago and not in my personal work. I think there is some skepticism about these analyses because sometimes the person commissioning the work has a pre-set result in mind, so the analysis can be designed to show a specific outcome. I'm not sure what value this type of analysis has for the public. Of course, the scientific community values it highly, but I wonder how much it really benefits the general public.
- I could give you an important example. The European Union has issued a taxonomy of sustainable energy options and actually declared nuclear as being one of them. There has been very heavy critic from the opposition's in the parliament, but also from environmental groups about this decision, calling it a political analysis rather than scientific.

- There is a hard line between a scientific and a political decision, as we say, all of these inputs are not value free and should not be value free. It's impossible.
- The question is who has the power to decide an outcome of such an analysis and where is it placed? This analysis (taxonomy) was actually placed within the nuclear part of the of the EU Commission.
- It actually undermines the whole idea of the process itself. It's not only a question of who participates, but actually if the process is set up badly, then then then it loses value.
- In short, if sustainability assessment is to be done, it should be done together, collaboratively.
- When I interviewed military personnel about risk perception, I noticed their strong need, like all of us, to recycle certain exercises and information. This seems key here as well: going through sustainability assessments is not always about discovering something entirely new, but about revisiting and relearning what we already know, because we never know enough.
  I believe this point could even be added to the recommendation itself, as one of the bullet points. It's always worthwhile to look at previous assessments and reflect on what we can learn from them.
- There's been a great deal of difficulty defining and finding satisfactory indicators for the social pillar. The general idea here of involving stakeholders in identifying indicators, but I would say that particularly for the social pillar, there's a need to understand what is measurable and meaningful.
- This is really the core challenge of sustainability assessments: how to quantify what is fundamentally not quantifiable. Even something seemingly simple like visual pollution, often dismissed as irrelevant, can actually be quite important, yet nearly impossible to measure meaningfully.
- What I've been missing, though, is the ability to engage with other parts of the Commission beyond the nuclear-focused units. I understand why this is difficult, the internal structure of the Commission is very complex, but if environmental assessments are to be meaningful at EU level, they can't remain siloed within DGs focused only on nuclear. There needs to be better coordination across different DGs, for instance, those working on renewables, energy efficiency, and others, so that broader stakeholder perspectives are included in the evaluation process, not just those organised by the nuclear side for nuclear topics.

Recommendation #4 and #5:
Basically, both recommendations are related to SMR: transparency and public information on SMR technologies and related policies, and the next one is foster public dialogue on SMR by engaging diverse public and stakeholders in conversation to address benefits and risk.

Recommendation #6:
Open up spaces in nuclear R&D for participatory initiatives, enabling deliberative decision making and integration of social science and humanities.

Recommendation #7:
Provide national political support and appropriate means for local communities' engagement in nuclear decision making.

Recommendation #8:
Facilitate and support the engagement of civil society organizations, incl. environmental NGOs in nuclear decision making.

- This should be developed further in connection with recommendations #1 to #7. Long-term and sustainable resourcing is essential, as many of these processes, including waste issues, will continue for decades.
  Without focused support, advisory councils to government or strong NGOs won't be in a position to contribute meaningfully. At present, many environmental NGOs avoid engaging with this topic entirely, they simply hope it disappears. My input comes also from experience in Sweden, where the environmental sector was well-resourced and able to contribute constructively to nuclear waste discussions, ultimately improving decision-making.
- I just want to note that if the very first comment we receive is that recommendation #8 feels lost at the end, that already tells us something important. It might be a matter of the ergonomics or visual presentation, perhaps the networked structure we spoke about should be made more visible in the way the recommendations are displayed.
- That aligns well with the broader vision of sustainability. The idea that we're embedded within complex systems. If we define the boundaries too narrowly, we're not really engaging in true sustainability work.
- The issue of *stakeholder fatigue* is significant, and we've seen that continued support is essential, not only financial, but also moral and motivational. That, I think, is a key point we should emphasize.
- The key point is how fragile this kind of capacity building can be. It's very easy to dismantle. That's why sustainable, long-term resourcing is crucial from the outset, and all parties need to understand its value to society. Even though major decisions on waste have already been made in Sweden, these are long-term issues, and things will continue to evolve. Civil society must remain involved in that evolution. I believe it's vital to have diverse voices in decision-making, including those you might not agree with. Not to silence them, but to ensure a resilient and inclusive process over time.
- I'd like to raise a quick point about vocabulary. The term *capacity building* is often understood in many fields simply as *training*. So we should be careful to communicate that what we mean here is broader, it's more of a systems concept, involving long-term support and enabling structures.
- Yes, capacity building can mean much more than just training. For example, in the context of UN climate change negotiations, it includes resources, time, and broader structural support. If we choose to use this term in the recommendation, we need to clearly explain what we mean by it.
- The community around Östersund, and similarly in Oskarshamn, took ownership when they realized the repository would be located there. They strengthened their efforts and conducted their own analyses because they had the necessary funding and resources. Likewise, NGOs were able to do independent work thanks to adequate resourcing.
- What this suggests to me, and what I would recommend stating clearly at the beginning, is that we need to rethink the roles of the different actors involved. This is not a charity issue where one strong actor asks a wealthy actor to fund some local involvement. For the system to be sustainable in the long term, it requires highly competent and well-supported actors.

Appendix C: Short transcript Group C

Let us begin with a brief roundtable to share your general impressions of the document. This is a safe space, so please feel free to be as critical as you believe is necessary. We will go around and hear from those who wish to contribute. Would anyone like to share their overall thoughts on the structure, the tone, or the way in which the recommendations have been formulated?
Is there anyone who feels there is room for improvement in these areas?



General Remarks:

- I would like to respond to one of the points raised in the final slide, specifically the idea of including examples. It might be worthwhile to go beyond examples and also include references to legal instruments and requirements. For instance, documents such as the Nuclear Safety Directive contain provisions related to access to information and the possibility of enabling public participation.
- While this may not be directly within the terms of reference of the ECOSENS project, grounding the recommendations within the broader legal landscape could enhance their relevance and impact. There are approximately five or six key legal texts that are particularly pertinent and worth referencing. It may even be useful to include this suggestion as a standalone recommendation, to clarify the regulatory framework that underpins these kinds of requirements.
- One point mentioned in the document, which I believe deserves greater prominence is the need to analyse and understand the power dynamics at play. This is crucial. When designing a public participation process, it is essential to be aware of the power imbalances involved. Otherwise, legal frameworks can easily be used not as enablers, but as tools to restrict participation. Public hearings, for example, are disappearing. Most input now is written, and it gets filtered by civil servants rather than independent bodies. As a result, even detailed, well-argued feedback often gets ignored or erased from final reports, which demotivates people from participation.
- For me, the crucial point is the relationship between legal prescription, the implementing authority, and the public. Authorities often act as gatekeepers, using legal provisions as

justification to filter or minimise public input, which severely compromises the effectiveness of the participation process.

- Another point maybe, as an example for the recommendations regarding public participation principles: insisting on the major roles of environmental impact assessment and SEAs also.
- What I felt was missing are clear definitions of key terms. The glossary is a good start, but I think there's more potential to clarify terminology. Let me give a concrete example: the phrase *"neutral information"* appears several times, but it's quite ambiguous. What exactly does *neutral* mean in this context? Does it mean balanced? Objective? Is there even such a thing as truly neutral information, especially in this field? So for me, it's essential that we clarify: participation for what purpose? Is it to contribute to an actual decision, or just to provide input for a report? Without that clarity, the process risks feeling generic and unproductive. To summarise, I believe the core terminology needs to be better defined, not just with a few references, but with meaningful context. Otherwise, we risk everyone interpreting key terms in completely different ways and that undermines the whole process.
- Looking at the entire document, one thing I really missed is a clear indication of which recommendations are relevant for which stakeholders. When you're involved in a particular process or procedure, you want to be able to look at the document and say, What can I actually implement here? But at the moment, that link is hard to make, because there are so many recommendations that apply to different actors and contexts. Structuring the recommendations more clearly by stakeholder group or by procedural context could really help.
- On the issue of definitions, especially around terms like neutral information or neutral communication, I think it's too limiting to try and capture all of that in a single word. We might need to take a bit of time as a group to explore: What kind of information do we actually need for meaningful public participation? In my view, this should include verified information, but also information from different viewpoints. The same goes for communication it's not just about balance or neutrality; it's about clearly describing the nature and sources of the information being shared. So I'd suggest expanding on these concepts rather than trying to compress them into one term. A richer description of what information and communication should look like especially from multiple angles would be much more useful in practice.
- My first impression when reading the draft was that there is a lack of concrete examples. I understand that this is already on the agenda for our group, and I know there may not be perfect cases, we don't live in a perfect world, but examples are crucial. Each recommendation should explain more clearly what is meant and ideally include best practices to illustrate the intent. Even if we cannot show ideal situations, we can highlight where something works better for example, compare how one country has handled a particular challenge more effectively than another. That helps us move toward improvement, even if perfection isn't possible. Also, we shouldn't limit ourselves to examples from the nuclear field. There may be relevant cases from other sectors, or from civil society engagement more broadly, which could help us communicate more clearly what we expect from decision-makers. In short, more concrete examples even imperfect ones would make these recommendations much more actionable and compelling.
- I do think we still need to make the content more concrete. The document is quite long, and at times feels unbalanced. Some recommendations come with lengthy justifications, while others are quite brief. I'm not sure whether it would be better to provide a general justification at the beginning, rather than a separate one for each recommendation, just something I've been thinking about, although I don't yet have a clear answer.

- Wouldn't it be possible to relate recommendations with stakeholders using colour codes? Or emoticons? In order to avoid repetitiveness.
- The document should have been shared earlier.

Recommendation #1.
Improve the uptake of existing recommendation for stakeholder engagement, transparency and communication in nuclear decision making.

- My first point is that we need to look more closely at the legal aspects of public participation. Many legal obligations stem from the Aarhus Convention, but as mentioned in the recommendations, these are often not properly implemented.
- Civil servants often interpret the law differently than civil society does. While legal tools like the *Maastricht Recommendations* and ACCC jurisprudence give clear guidance on how broad and meaningful public participation should be, many officials still fall back on narrow readings of national law or claim that such guidance isn't binding. What I'm missing in the current recommendations is a stronger, clearer point that references existing legal obligations and guidance. There's already a wealth of content in the Aarhus Convention, Maastricht Recommendations, ACCC findings that outlines what proper participation should look like, including the possibility of informal participation before formal procedures begin. So, the legal framework exists, but how authorities engage with it is critical. Implementing these obligations is not just about compliance, it requires skill, willingness, and a learning process. Authorities are still learning how to do this well, and I think our recommendations should reflect both the legal obligations and the need to build capacity and awareness in how to apply them meaningfully.
- We need to be mindful of national and local specificities when discussing participation methods.
- The document mentions polarisation only once, and even then, it's linked only to the first recommendation. I believe it's important that the document more clearly acknowledges the potential pitfalls of stakeholder engagement and addresses how they can be mitigated. Engagement is, of course, essential, but the risk of it leading to extremes or polarisation is always present. Just mentioning it once isn't enough. From academic research, we know that rules of procedure are critical as others have already pointed out but so too is the role of moderation.
- If I'm not mistaken, the entire document does not mention moderators or moderation at all. That seems like an important omission. Effective moderation plays a crucial role in managing diverse viewpoints and preventing discussions from escalating or becoming polarised. I would suggest including this aspect in the document moving forward.
- I want to add that if we're aiming to create a meaningful map of different actors or publics, it really depends on the objective and level of participation we're talking about. For instance, representativeness is often linked to tools like opinion polls, or designed to engage very large publics. Even in some public debates, aiming for representativeness is considered important but in reality, we know there are always biases in who actually participates. From my point of view, representativeness can be a misleading objective, especially when it doesn't align with the actual goals of the participation process. Not all engagement needs to be large-scale to be meaningful. Some stakeholder engagement efforts are small, focused on specific publics or panels, or limited to a few actors but they still contribute value, influence decisions, and change outcomes.

- I think we need to be much more specific when we talk about the spectrum of public participation: What is the objective? Which publics are we engaging? How do we reach them? Sometimes it's not about analysis at all sometimes it's about contributing to public and political life more broadly.
- We've already mentioned the idea of power mapping. For me, power mapping must be linked to power balancing. There are concrete instruments that can support this, like veto rights, referenda (although I find them problematic, too unpredictable and easily manipulated), and others. These tools aren't just theoretical; they can genuinely shift how power operates in participatory processes.

Recommendation #2
To move from instrumental to substantial engagement.

- I'm not sure whether this fits best under the current recommendation or somewhere else, but based on my experience with engaging the public, particularly small or medium-sized communities, I believe one essential element is creating opportunities for learning. Participation shouldn't just be about asking people to take a stance or make a decision. It should be about fostering a process of mutual learning. That means both the public and the organisers gain something meaningful from the engagement. Otherwise, participation risks becoming purely formal or symbolic. When the process involves genuine exchange of useful information, communities can better understand what's at stake, and at the same time, project promoters can learn from the concerns, perspectives, and knowledge of the public. This kind of two-way engagement makes it much more likely that the project or investment becomes something that all parties feel connected to. That emotional connection matters. So, for me, this recommendation should really be read or even expanded to include the idea of co-learning and co-ownership. Participation must be seen as a common project, not just a procedural requirement.
- There are good practices for this. See the Douth radioactive way process. E.g. check historical processes, books about international practices, local inputs and youth-only sessions. Good practice. Look into it. Negative side: not all the interested parties were included.
- I want to highlight something that isn't really mentioned explicitly in the document, but which I believe is crucial: the need to move from ad hoc decision-making moments to sustained participatory processes. What's really important is to shift towards long-term, process-oriented participation where engagement continues throughout the decision-making cycle, across different phases, and over time. This marks the transition from instrumental to substantive engagement from ticking a box to genuinely integrating public input into policy and planning. Embedding participation as part of an ongoing process, rather than a one-off event, is essential if we want to build trust, accountability, and lasting legitimacy.
- Perhaps the term "salami slicing" should be considered here – many different procedures for many different things.

Recommendation #3:
Faster engagement of stakeholders in sustainability assessment for energy policy advice.

- I have one very practical concern, and that's how to embed participatory processes in the context of a four-year political cycle, which is common across most EU countries. The kinds of long-

term engagement processes we're talking about often take longer to define, launch, and implement than a single political term allows. And I still struggle with the question of how we can prevent these processes from being interrupted or abandoned when a new government takes over. I don't have a clear answer. I do believe that continuity must come from civil society to some extent, and I know we're doing our best to ensure that, but it's not easy, especially in the current political climate, where populism is increasingly influential and can shift priorities very abruptly.

- First, it's really important to ensure that civil society actors are given the opportunity to provide historical and critical feedback on past experiences with assessment processes particularly sustainability assessments. I'm thinking of several cases where civil society was invited to participate in such procedures, which often involved complex and demanding methodologies. So, before we move forward with new recommendations or actions, we need to ensure that we've learned from past experiences and that includes honest, critical feedback, not just formal evaluations.
- Good practices are in France, structured processes. Such structures have legal bases. Also, a good one in Sweden. Facilitate the participation of civil society in decision-making. Feeling of responsibility for people.

Recommendation #4 and #5:

Basically both recommendations are related to SMR: transparency and public information on SMR technologies and related policies, and the next one is foster public dialogue on SMR by engaging diverse public and stakeholders in conversation to address benefits and risk.

- In debates such as those around SMRs or other emerging technologies, it might be helpful to synthesise the communication not just in terms of factual content, but also in terms of dominant frames. From my perspective, this can be even more informative than focusing exclusively on granular details because it helps people navigate complex, value-laden discussions more effectively.
- I have a real problem here, and I think it's a fundamental one. You rightly pointed out the issue of information quality, but what I want to stress is how deeply compromised the current communication environment is particularly within conflicting frames. There's a perception war going on. On one side, we have the SMR industrial alliances, whose messaging is heavily framed, often featuring over-optimistic timelines and exaggerated progress claims. On the other side, we have government communication, which suffers from internal bias. Many within the ministry want SMRs to succeed, so their information is often not balanced either. So where can we turn for independent, reliable information? So my question is: do our current recommendations offer any tools to deal with this kind of culture war environment? Because I don't see them. Perhaps this is something we need to explore further. Whether there are good practices from other fields or countries that have managed to restore trust and re-open real, meaningful dialogue in such polarised settings.
- Add the pillar of giving resources for civil society to participate.

Recommendation #6:

Open up spaces in nuclear R&D for participatory initiatives, enabling deliberative decision making and integration of social science and humanities.

- I would recommend that national projects related to SMRs and nuclear installations should be required or encouraged to include dedicated space for social scientists and civil society actors. Early and meaningful involvement can build local trust, increase understanding, and lead to genuine public support.
- I was just writing about this as part of a review of good practices specifically the Swedish National Council for Nuclear Waste. It has long been recognised as a positive example of how to structure meaningful engagement. Maybe providing these forums for discussion between the experts, the civil society, and also thinking of R&D.

Recommendation #7:
Provide national political support and appropriate means for local communities' engagement in nuclear decision making.

- You've missed an important one: citizens' forums. If we're talking about good practices, these should absolutely be included. Citizens' forums have been used in a growing number of cases as deliberative tools, particularly at the local level. In these forums, a group of around 100 citizens is selected by lottery, meaning they are randomly chosen, not self-selected or representing a specific interest group. This is a key feature they're not there to speak on behalf of any stakeholder organisation, but as members of the public. These forums have shown that random selection combined with informed deliberation can produce credible, well-reasoned input that goes beyond polarised or interest-based positions. I would recommend working this into the recommendations more explicitly.

Recommendation #8:
Facilitate and support the engagement of civil society organizations, incl. environmental NGOs in nuclear decision making.

- I'd like to address a major practical barrier that hasn't received enough attention: the lack of funding for environmental NGOs working on nuclear issues. This problem goes far beyond Central and Eastern Europe. So I would suggest:
- A recommendation to support NGO participation through dedicated, independent funding structures, especially in areas like radioactive waste governance.
- A call to private foundations and public funders to include nuclear issues within the scope of climate and energy debates. Right now, too many are simply afraid to engage, due to the polarised environment and the risk of being labelled politically.
- If the European Commission or any other body wants to engage broadly with civil society, they must avoid setting ideological or prescriptive conditions. Civil society participation must be open to critical voices and scientific uncertainty, not tied to pre-determined technological commitments.
- If we want environmental NGOs to be meaningfully involved, nationally and at the EU level, we must ensure that funding, inclusion, and independence are guaranteed, not constrained by political expectations or fixed visions.
- Local participation is also important during decommissioning.