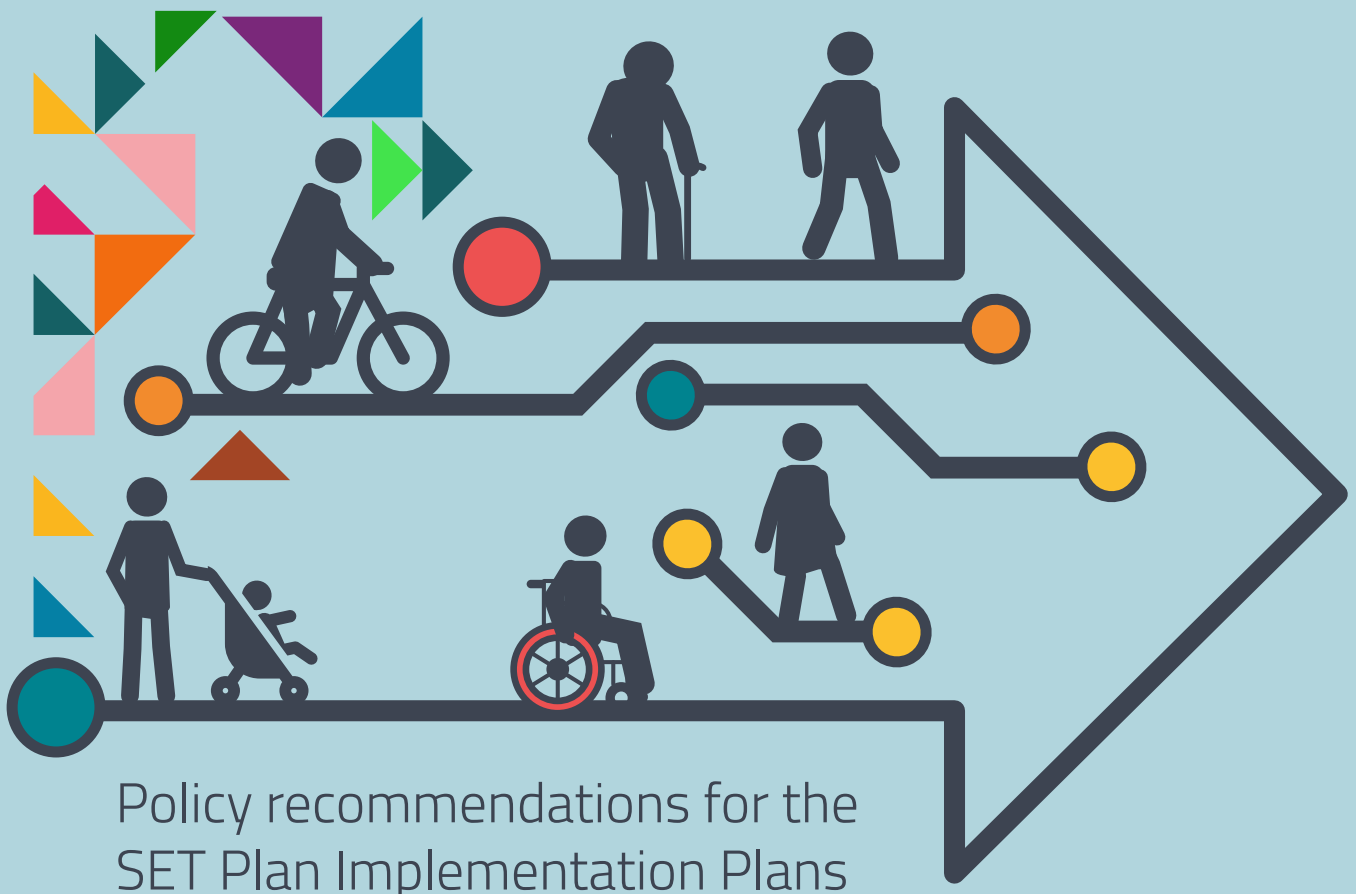




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# Strengthening the integration of Social Sciences and Humanities (SSH) in the SET Plan



Policy recommendations for the SET Plan Implementation Plans

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Social Sciences & Humanities for Climate, Energy and Transport Research Excellence

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SET Plan Implementation Plans

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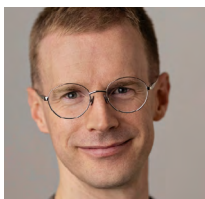
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## Executive summary

### Target audience:

- SET Plan Implementation Working Groups (IWGs)
- Secretariats supporting the IWGs implementation
- European Commission's SET Plan Secretariat (DG ENER, DG RTD, JRC)
- Upcoming SET Plan Cross Cutting Task Forces
- SET Plan Steering Group

**Goal:** Inform and influence future EU research and innovation (R&I) priorities to accommodate a wide spectrum of socio-economic challenges faced in transitions, with a particular focus on climate, energy, and mobility. Specifically, give recommendations on the review carried out over 12 SET Plan Implementation Plans.

**Context:** The Implementation Plans represent the sectoral reference document for each SET Plan IWG. These IWGs report to the European Commission on the SET Plan targets and R&I activities carried out at national and European levels. Each Implementation Plan identifies priorities for R&I of the technology and/or sector, to ensure that its research targets remain aligned with the key industrial developments. The Plans are directly drafted by each IWG and are updated on a 3–5-year basis<sup>1</sup>.

**Methodology:** SSH CENTRE partners carried out a thematic review of the current version of 12 Implementation Plans. The focus was on the extent to which Social Sciences and Humanities (SSH) considerations had been accounted for thus far, and therefore what opportunities still existed to advance the integration of SSH further. The analysis concluded in August 2024, hence Implementation Plan revisions since then could not be included in this report.

**Results:** Overall, only four out of the 12 current Implementation Plans demonstrated a 'good or sufficient' inclusion of SSH components: Sustainable and Efficient Energy Use in Industry, Wind Energy, Positive Energy Districts (PEDs), and Photovoltaics (PV).

In contrast, the other Implementation Plans have limited (CCUS, geothermal, energy systems, ocean energy) or practically absent (concentrated solar, bioenergy, Energy Efficiency in Buildings, nuclear safety) integration of SSH components within their guiding R&I priorities, making urgent the need to improve this gap for the great majority of them (71%).

Throughout the review, a pattern detected was that SSH topics were often mentioned in a wide and generic way (e.g. user integration, environmental sustainability of the value chain, user acceptance) in the overall framing of the document, but were poorly integrated or were absent from the R&I targets, which make up for the core section of the Implementation Plan. Additionally, several documents briefly mention societal aspects (e.g. acceptance, key non-technical barrier/enabler) in

<sup>1</sup> All SET Plan IWGs' Implementation Plans can be found at: [https://setis.ec.europa.eu/publications-and-documents/set-plan-documents\\_en#implementati5yioon-plans](https://setis.ec.europa.eu/publications-and-documents/set-plan-documents_en#implementati5yioon-plans)



the first pages, but without discussing the challenges and opportunities that each specific technology will encounter when being implementing into societies.

Furthermore, when SSH topics are addressed in the Plans, they are often discussed in a simplified way (e.g. proposing social campaigns to increase acceptance, or technical devices to enhance end-user integration), without recognising the variety and complexity of SSH-related issues that could have been addressed (e.g. such as citizen engagement, justice, energy poverty, vulnerability, fair business models, accessibility).

The core of this report thus presents five headline recommendations aimed at strengthening SSH considerations in the current SET Plan Implementation Plans:

1. Embed societal aspects in technological development and implementation (Section 2)
2. Integrate SSH targets and indicators within the Implementation Plans, and monitor their performance and implementation (Section 3)
3. Consider people as citizens, not only as users or consumers (Section 4)
4. Establish clear links with the existing policy framework, and describe how R&I implementation pathways target these policies (Section 5)
5. Adopt a multi-scalar approach for implementing the SET Plan, with greater consideration given to sub-national levels (Section 6)



# 1. Introduction

## 1.1. Background context

Energy is an essential dimension of the European Union's (EU) policy, society, and economy. The role energy plays in the decarbonisation of the EU, to make it the first net-zero continent by 2050, makes energy research and innovation (R&I) efforts a priority of the utmost importance.

The Strategic Energy Technology Plan (SET Plan) represents one of the EU's main instruments supporting low-carbon energy transition and coordinating EU research and innovation (R&I): born in 2007, in order to increase the synergies between EU Member States, it was revised in 2023, and it keeps identifying the strategic priorities and actions needed to accelerate this EU energy system transformation in a cost-effective way<sup>2</sup>.

Given the relevance of the SET Plan within the transition to a competitive and sustainable EU economy, this report focuses on how the SET Plan could better integrate Social Sciences and Humanities (SSH). This report supports and welcomes the recent inclusion of societal needs in the revised SET Plan, which “must be respected to ensure a just, fair and socially acceptable transition for all as a means of facilitating the development and implementation of low-carbon energy technologies and infrastructures”<sup>3</sup>.

## 1.2. Methodology

SSH CENTRE partners carried out a thematic review of the current version of 12 Implementation Plans, focusing on the extent to which these integrated the following Social Sciences and Humanities (SSH) domains and topics: Societal Actor Engagement; Public Perception; Justice and Equity; Employment Dynamics; Economic Factors; Behavioural Aspects; Ethical Considerations; Local vs. Global Dynamics; Infrastructure and Spatial Planning; Social Innovation and Community Initiatives; Gender Perspectives; and User Relevance. This list was defined by the EERA Joint Programme on ‘clean Energy transition for Sustainable Society’ (JP e3s) and the EERA JP Wind Sub-programme work on ‘Social aspects of wind energy’.

All the spreadsheets used for (and produced by) the review are available on Zenodo<sup>4</sup>. They are available to everyone, in accordance with SSH CENTRE's Open Access commitments.

<sup>2</sup> [https://energy.ec.europa.eu/topics/research-and-technology/strategic-energy-technology-plan\\_en](https://energy.ec.europa.eu/topics/research-and-technology/strategic-energy-technology-plan_en)

<sup>3</sup> COM/2023/634 final, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the revision of the Strategic Energy Technology (SET) Plan*, Brussels, p.8

<sup>4</sup> SSH CENTRE content analysis of SET Plan Implementation Plans and HEU Partnerships SRIAs available here: <https://doi.org/10.5281/zenodo.14760509>



As a disclaimer, whilst the absence of these SSH topics in the Implementation Plans has been highlighted in places, it does not imply that they are neglected or not covered by the IWGs more generally. However, as relevant societal aspects for the energy transition, their absence within the IWG programmatic document represents a limit for further and deeper SSH-related integration. It also needs to be pointed out that updated versions published by IWGs after August 2024 were not included in the review.

### 1.3. Report aim and structure

The aim of this report is to provide recommendations to EU SET Plan policy actors, to assist them in the integration of SSH considerations within their Implementation Plans, and thus also the processes that sit behind these Plans. Specifically then, the target audiences for this report are the: SET Plan Implementation Working Groups (IWGs); Secretariats supporting the IWGs implementation; European Commission's SET Plan Secretariat (DG ENER, DG RTD, JRC); upcoming SET Plan Task Forces; and, SET Plan Steering Group.

This report is divided into five headlines policy recommendations aiming to make the SET Plan more inclusive and complete in terms of SSH-related topics. A sixth transversal recommendation on the need to always keep the Implementation Plans up to date, given their relevance as strategic document of each SET Plan Implementation Working Group (IWG) is also included in Box 1.

Each of the five recommendations details what the current status of SSH domains and topics in the Implementation Plans are, based on the review carried out by the SSH CENTRE partners in 2024, and provides a set of sub-recommendations and additional indications on how to close the existing gap, and positive examples detected during the review that could facilitate the transition to a more inclusive and impactful SET Plan.



### Box 1. The need for regular SET Plan Implementation Plan revisions

Before delving into the specific SSH-based recommendations (Sections 2-6), a paramount recommendation valid for all SET Plan Implementation Plans is that these documents need to be regularly updated and revised. Indeed, the review carried out resulted in the evidence that the more recently published or updated Implementation Plans better include SSH-contents, as shown in Figure 1.

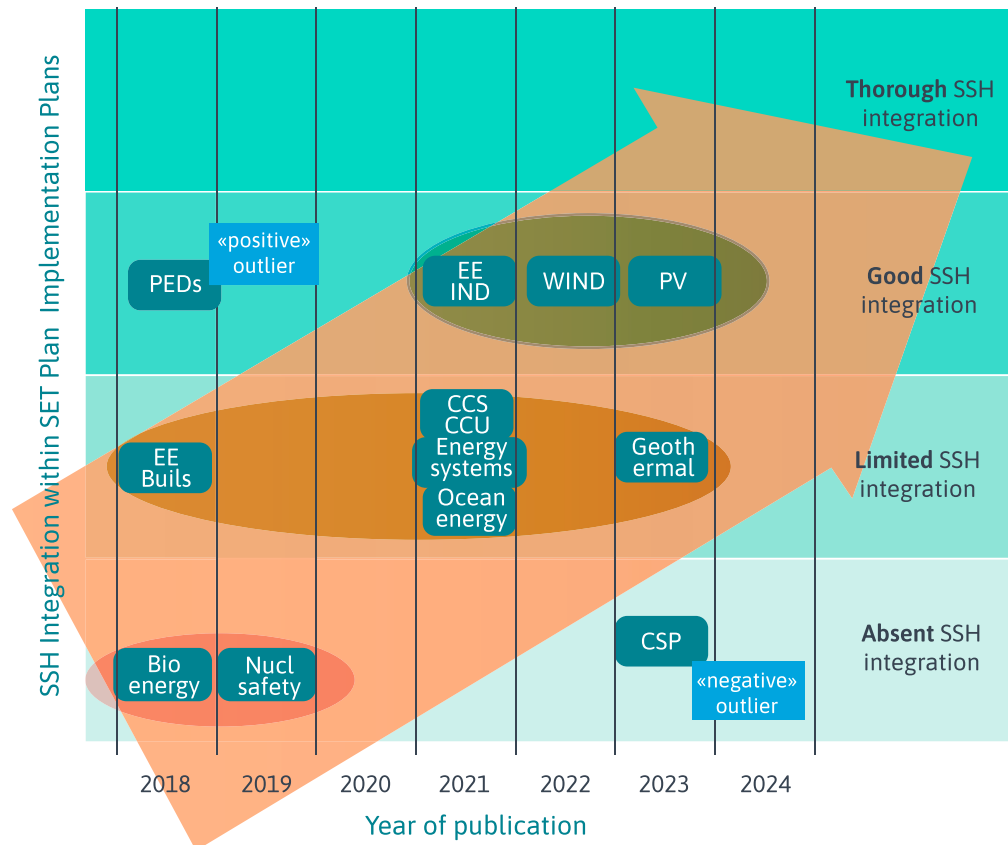


Figure 1: Correlation between year of IP revision and SSH contents included

A regular revision is beneficial for both technical and non-technical content integration, as IWGs that have gone through periodic revisions can be a sectoral reference for R&I. To be a fruitful and effective reference point, it is essential to have up-to-date documents that not only provide more information on environmental, social, and economic factors about a specific technology, but that are also well-aligned with the latest EU energy R&I targets and priorities.

Two outliers are worth mentioning, as they stand out in Figure 1: the IWG on Positive Energy Districts (PEDs) still relies on an Implementation Plan dating back to 2018; however, it integrates SSH components well, involving many different stakeholders and perspectives within the document, in a successful interdisciplinary approach. On the contrary, the IWG on Concentrated Solar Thermal Technologies (CSP-STE) revised the document in 2023, but non-technical components have been omitted in this latest revision.

The SSH CENTRE consortium thus supports a regular revision of the guiding document of the IWGs, the Implementation Plan; these revisions should include and involve SSH experts, to make sure each SET Plan IWG priorities are well aligned with the societal needs of the SET Plan.





## 2. Recommendation #1: Embed societal aspects in technological development and implementation



### 2.1. Progress so far

In recent decades, the relatively ‘closed’ process of innovation and technological development has been challenged in favour of a more open and inclusive process intended to meet societal needs. This move opens multiple entry points for Social Sciences and Humanities (SSH) perspectives beyond the traditional sectoral stakeholders. While the topic of social acceptance is included in the Implementation Plans, this does not go far enough to reach the potential of SSH in technological development and implementation.

Deeper engagement with SSH perspectives has the potential to provide crucial context and content to specific Implementation Plans. These Implementation Plans would benefit from a more thorough engagement with different SSH perspectives (i.e. drawing from the SSH disciplines including Sociology, Anthropology, Psychology, Geography, Political Science, Ethics, as well as Literature and Cultural Studies), that enables the consideration of complex and nuanced societal aspects affecting technological development, transition, and societal transformation. Furthermore, through the engagement with SSH perspectives, the needs of different actors and the understanding of those actors’ roles can lead to a better identification of actions to pursue within each SET Plan IWG. In doing so, the inclusion of SSH can help policymakers in addressing common topics affecting implementation, including conflicts and controversies that may arise from the interactions between issues related to citizen engagement, gender and inequalities, ethical concerns, regulatory aspects, and innovation processes, to name a few.

As the Implementation Plans firstly aim at supporting the R&I development of a specific technology or sector, the need for technology development and implementation is usually not questioned. However, all technological development entails a social and environmental impact, and not acknowledging conflicts and controversies could lead to a tunnel vision over the relevant R&I challenges, with potential negative spillover in terms of technology acceptance. Considering the societal aspects of technological R&I, also means including social issues, relevant policies, local geography, etc. in both technology development and technology implementation.

Moreover, the Implementation Plans consider societal needs very broadly. For example, the core argument of the Geothermal Implementation Plan<sup>5</sup> focuses on the need to decarbonise heating, cooling and electricity production, as well as energy

<sup>5</sup> Implementation Plan Geothermal Implementation Working Group, 2023



security and affordability, with no links to how the implementation of the technology plan would actually impact these topics. Across EU policy areas, the recognition of societal needs in general, and the reliance on social momentum to support the technological changes needed to meet them, has accelerated greatly since the introduction of the European Green Deal<sup>6</sup> in 2019 and subsequent policies. However, most of the Implementation Plans have been left out of this trend. Most of the Plans thus need to be updated to reflect the current scope of societal needs and to build connections with the relevant EU policy frameworks and support structures.

Finally, in light of the EC focus on European competitiveness for the upcoming years, steered by the Draghi report in September 2024<sup>7</sup>, the SET Plan also has the potential to serve as testbed for the implementation of “sustainable competitiveness”<sup>8</sup>, meaning a competitiveness which brings forward economic, social and environmental aspects simultaneously. To do this, a stronger focus on SSH disciplines will be an asset.

## 2.2. What is needed?

- Most generally, IWGs should shift the perspective of SET Plan Implementation Plans from purely technological to socio-technical, recognising the human and societal dimension of technological development and implementation.
- Involve various SSH perspectives/disciplines through interdisciplinarity - highlighting especially the role of the Humanities which often are overlooked
- Avoid siloed Implementation Plans by adopting a balanced cross-sectoral approach, drawing inputs from state/public, market/private and community actors and sectors.
- Update plans to reflect the current scope of societal needs, for a common, relevant and up-to-date framing of the challenges and targets, e.g. in relation to the EU Missions, and Partnerships
- At a minimum, all Implementation Plans should be updated to reflect and support the SSH aims of current EU policy frameworks and instruments, including: the European Green Deal, NextGenerationEU, REPowerEU, and the Fit-for-55 package, as well as the current Framework Programme 9 (FP9) and the forthcoming Framework Programme 10 (FP10), which is currently under discussion.
- The SET Plan needs to ensure its relevance as a framework able to support the successful advancement of the Draghi Report’s concept of ‘sustainable competitiveness’, by establishing a balanced approach to the economic, social, and environmental dimensions of competitiveness.

6 [https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal\\_en](https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en)

7 European Commission, *The future of European competitiveness – A competitiveness strategy for Europe*, 9 September 2024, Brussels

8 European Commission, *EU competitiveness: Looking ahead*, 9 September 2024, Brussels.



## 3. Recommendation #2: Integrate SSH targets and indicators within the Implementation Plans, and monitor their performance and implementation



### 3.1. Progress so far

As stated in the 2015 SET Plan revision communication, ‘Towards an Integrated Strategic Energy Technology (SET) Plan’, it is “essential that socio-economic impacts of the energy system transformation and the factors that determine people’s interaction with the energy system are better understood”<sup>9</sup>.

To better integrate SSH into the SET Plan, the SSH CENTRE consortium recommends a stronger incorporation of Social Sciences and Humanities (SSH) perspectives into the specific actions and targets of the Implementation Plans. This also requires that the Implementation Plans include mechanisms for measuring and evaluating their targets, i.e. KPIs and their target values, that go beyond the commonly used technology readiness levels (TRLs) and enable the monitoring of non-technical (social) targets.

Our review of the Implementation Plans indicates that many IWGs indeed integrate SSH topics either in dedicated sections or as part of addressing technical topics. However, the specific actions or targets in the Plans do not often include SSH perspectives. This may lead to SSH perspectives being overlooked, as the implementation, monitoring and evaluation of each IWG agenda will focus on the specific actions and targets mentioned in each Implementation Plan. Only mentioning SSH aspects in the strategic text without including any of them in the targets, risks leading to a situation where everybody agrees that SSH integration in Implementation Plans is important, but nobody has the responsibility to implement it.

Although there is room to introduce a plethora of SSH topics in the R&I actions of the plans, it is also clear from the current review that not every single research target or action can have SSH in it. In addition to integrating SSH into the SET Plan actions and targets, the plans should also include means of evaluation and measurement, e.g. KPIs, for SSH actions and targets. KPIs may generally be used to measure inputs, outputs and processes. Therefore, even if SSH indicators may be outside the conventional scope of particular technologies, for example, in terms of final performance, they can still be used to widen the inputs (e.g. citizens engagement and stakeholders participation activities, environmental analyses, etc.) and ensure a more inclusive process. The potential uses of SSH indicators should be considered along the full length of the Implementation Plan, from inputs to final outputs.

<sup>9</sup> EC/2015/6317, Communication from the Commission, Towards an Integrated Strategic Energy Technology (SET) Plan: Accelerating the European Energy System Transformation. p. 11.



Furthermore, our review has shown that the Implementation Plans that included SSH-specific actions and targets often used ‘Technology Readiness Levels’ (TRL) as means of measurement. Obviously, it is not possible to measure actions, such as increasing public engagement or empowering citizens with TRLs. Hence, it is important to also include ways of measuring (quantitatively and qualitatively) into the Implementation Plans which make it possible to evaluate and monitor the implementation of SSH actions/targets/KPIs. A relevant example would be the Societal Readiness Level (SRL) indicators, the implementation of which appears to be included and tested also in the upcoming Cluster 5 of Horizon Europe from the current year (2025)<sup>10</sup>.

### 3.2. What is needed?

- Implementations Plans should include R&I targets and actions that reflect SSH perspectives on the respective technologies (see [Recommendation #1](#)). We suggest two alternative approaches:
  - Implementation Plans could streamline SSH actions to specifically address SSH aspects across all R&I activities, without treating them in isolation and separated from technological targets and actions.
  - Implementation Plans could add a dedicated section on SSH targets and actions, i.e. with thematic examples of topics to cover, or a non-exhaustive list that the IWG could use as guidance in the revision of the Implementation Plan.
 

This would help understanding the difference between technical feasibility and actual socio-technical innovation, and avoid any technological determinism. A good example for reference is one of the six R&I priority actions of the Implementation Plan for Offshore Wind that explicitly addresses SSH topics (Action 5 “Ecosystem, social impact & human capital agenda”<sup>11</sup>), that was drafted with the advice of SSH experts.
- Implementation Plans should include means of measurement/evaluation that are suitable for measuring SSH targets and actions. Examples of specific SSH-related indicators focused on inputs or outputs of R&I funds can be found in: investment in engagement activities that assist with R&I (input), range of stakeholders/participants/disciplinary perspectives included, in absolute number or a share of the total (input); societal impact (output), number of engagement activities completed, e.g. workshops (output), societal readiness levels (output).
- SSH experts should be involved in the formulation of the targets and advise on means of measurement.

<sup>10</sup> [EU to announce ‘social readiness’ pilot under 2025 Horizon Europe plan](#), 2024

<sup>11</sup> [Implementation plan on wind energy](#), 2023, pp. 5-6



## 4. Recommendation #3: Consider people as citizens, not only as users or consumers



### 4.1. Progress so far

The dominance of technical considerations within the energy R&I sector has led to ‘people’ often being either intentionally ignored or at least inadvertently overlooked. And when people have been considered, ‘people’ are too often limited to being thought of as ‘users’ or ‘consumers’ (often also described under the banner of the ‘general public’). This conception limits people to passive roles such as end-of-system purchasers or accepters of technologies.

The current situation thus represents a gap with the priority the EC set up for the SET Plan in 2015, claiming that “European research coordinated through the SET Plan should examine how to best involve citizens, including consumers, social partners and civil society, in the energy system transformation, related to both technology and infrastructure projects”<sup>12</sup>.

Indeed, our review highlighted that the concept of social acceptance is mentioned within some Implementation Plans. However, social acceptance is typically defined in a narrow way, only focusing on improving knowledge, increasing awareness, and building positive messages. For example, the Energy Efficiency in Buildings Implementation Plan<sup>13</sup> refers to the everyday impacts of different technologies and energy systems, yet it struggles to more deeply embrace and reflect on possibilities here, such as: how people could be better engaged and involved in decision-making processes that may directly affect them. The engagement of citizens can help minimise and mitigate possible unintended consequences. Engagement processes are essential if a shift from a passive energy consumer/user to an active energy citizen is to be achieved.

Similarly, it is interesting to note that, within the discussions started during the SET Plan Conference 2024<sup>14</sup>, some ETIPs proposed to move towards the notion of ‘public preference’<sup>15</sup>, by developing citizen awareness on the advantages of each technology and what they can deliver in economic, social, and environmental terms. Whilst this move is undoubtedly shifting these technological discussions in new directions, and thus should be commended, we believe that there remains potential to greater integrate SSH insights to support technology implementation.

<sup>12</sup> EC/2015/6317, Communication from the Commission, Towards an Integrated Strategic Energy Technology (SET) Plan: Accelerating the European Energy System Transformation. p. 11

<sup>13</sup> [Energy Efficiency Solutions for Buildings Implementation Plan](#), 2018

<sup>14</sup> The Conference, held in Budapest in November 2024, provided a platform for policymakers, researchers and industry stakeholders to develop connections and to facilitate collaboration within energy R&I. The theme of the conference was ‘Scaling up research, innovation and competitiveness in clean energy technologies’.

<sup>15</sup> This was discussed during round tables at the SET Plan Cluster Workshop on IWGs and ETIPs at the SET Plan Conference. SSH CENTRE attended through EERA.



The involvement of citizens goes beyond sharing information to convince them to accept a pre-determined solution, rather it requires more initial and ongoing engagement with the decisions at hand. This approach emphasises that participation is a process and that it requires two-way interaction, rather than a one-way knowledge transfer from experts to citizens.

## 4.2. What is needed?

- Implementation Working Groups should embrace the strategic possibilities offered by using the label ‘citizen’. For example, such a label may assist in reflecting upon how individuals and communities can feature more centrally within policy agendas.
- Investment priorities should recognise the huge potential of involving citizens and communities as decision-makers, partners in project, and even potentially project initiators.
- The upcoming SET Plan Cross Cutting Task Force on societal needs, coordinated by the SET Plan Secretariat office, should ensure it takes a citizen-centric (rather than a user-centric) approach.
- Although the SET Plan policy programme is primarily about industry-led R&I, each Implementation Working Group should establish specific subgroups that reflect on the likely effects of investment priorities for citizens – ideally, there would be some direct engagement with citizens to support reflection too.
- Implementation Working Groups need to work in collaboration with SSH researchers, e.g. to start including topics of societal engagement and fairness in their Implementation Plans.
- Implementation Plans should acknowledge that there is no one, single society (or ‘public’), and thereby refer to societies in the plural and actively seek out different sorts of communities with different sorts of stakes in the transition.





## 5. Recommendation #4: Establish clear links with the existing policy framework, and describe how R&I implementation pathways target these policies



### 5.1. Progress so far

The picture is mixed when it comes to the inclusion of policy frameworks and specific actions for policymakers to support the Implementation Plans. As highlighted during our review of the Implementation Plans, several Implementation Plans (e.g. Geothermal, Energy Systems, Nuclear Safety), make no or little mention to relevant policies and policymakers. This is a missed opportunity in several ways.

First, not including actors such as policymakers means that there is a lack of clarity on who is responsible for progressing the SET Plan. Not mentioning policymakers directly is also a missed opportunity to open up a dialogue with them and openly state how they may support the implementation of these strategic documents. A notable exception is the Positive Energy Districts Implementation Plan, which details who is responsible for each next step, including policymakers<sup>16</sup>.

In addition, the degree to which the policy framework for a specific SET plan is set out also significantly varies. When reviewing the Implementation Plans, we found that, on the one hand, the Geothermal Implementation Plan only mentions the European Green Deal, and only once, giving only a broad sense of how geothermal technologies can contribute to meeting EU targets. On the other hand, several Implementation Plans (Offshore Wind, CCUS, Ocean Energy, Bioenergy, Energy Efficiency in Industry) detail several directives, mechanisms, regulation and protocols relevant to its implementation.

Finally, we observed that when policy pathways are identified, they tend to focus solely on the financial tools that would support implementation. Whilst necessary, financial tools are not sufficient and need to be considered with other policy mechanisms even within the SET Plan framework. For example, a wider framework is provided the Implementation Plan on Energy Efficiency in Industry<sup>17</sup>, that provides detailed suggestions on ways to increase cooperation amongst stakeholders, including policymakers, knowledge exchange and capacity-building, which are essential tools in policy development. In the Implementation Plan<sup>18</sup> for offshore wind,

<sup>16</sup> See tables in the descriptions of the Modules starting on page 11 of the [PEDs Implementation Plan](#) (2018)

<sup>17</sup> [SET Plan Implementation Plan on Energy Efficiency in Industry](#) (2021), Activity 2.4 (p. 57)

<sup>18</sup> [SET Plan Implementation Plan for offshore wind](#) (2022), p.27



co-creation is suggested as an organisational model to engage with policymakers so that a range of SSH tools and methods can be deployed to support policymakers.

## 5.2. What is needed?

- Implementation Working Groups should include explicit links to existing policy frameworks and explain how their activities support these policies, as a way to support dialogue with policymakers.
- Implementation Working Groups should include considerations of how policymakers at different levels of governance (see [Recommendation #5](#)) can take action to support the roll out of specific technologies. This should go beyond the use of financial tools and consider a range of methodologies and processes e.g. that will take citizens' needs into account.
- Implementation Working Groups need to work in collaboration with SSH researchers, e.g. to develop ways of working with policymakers that break silos and allow increased cooperation between different stakeholders.
- Methods to evaluate the impact of policies on the roll-out of SET Plan technologies should be developed to enable continuous cross-checking, with the aim of maintaining a dynamic and adaptable landscape that addresses emerging challenges.





## 6. Recommendation #5: Adopt a multi-scalar approach for implementing the SET Plan, with greater consideration given to sub-national levels



### 6.1. Progress so far

The implementation of energy technology requires more than engagement and understanding of the technologies themselves, as also the context in which they are going to be implemented has a significant impact on low-to-high TRL technologies. Although the main scope of the SET Plan is the coordination of national efforts, the local level is also important for understanding the context in which actions are being undertaken, and the different stakeholders present, so to identify the best implementation path. As such, this highlights the value of adopting a multi-scalar approach within the SET Plan – whereby there is an engagement with characteristics of the EU, national, regional and local to support the implementation of technologies. The meaningful consideration of these different scales requires engagement with insights from SSH, including understandings of the geography of each Member State, their infrastructures (both social and material), and the interconnections between places and across different scales within the EU.

Our review of the Implementation Plans shows how discussion of governance is dominated by the EU and national scale. Whilst reference is made to other governance levels, including the regional and local, these are typically in relation to specific opportunities and activities (such as when referencing potential stakeholders and technological opportunities). For example, the Solar PV Implementation Plan<sup>19</sup> refers to the city level in terms of implementation, and the Positive Energy Districts<sup>20</sup> (PEDs) one refers to the central role of cities in positive energy districts, and the opportunities that a network of cities provides in relation to developing PEDs. Greater consideration of the local and regional in the SET Plan Implementation Plans will also facilitate engagement with relevant stakeholders, including citizens (as referenced in the PEDs Implementation Plan) – this also aligns with the Recommendation #3 above.

The multiple scales associated with the implementation of technologies is articulated in the Energy Efficiency in Buildings Implementation Plan which refers to the different scales where energy efficiency activities can be implemented, as well as

<sup>19</sup> [Implementation Working Group on Photovoltaics \(PV\) Implementation Plan](#), 2023

<sup>20</sup> [Positive Energy Districts Implementation Plan](#), 2018



the need to have a more holistic approach. A more holistic approach would require interactions within and between different scales, including the local/city level.

The value of greater engagement with the specific characteristics of the regional and local within the SET Plan is particularly pertinent for distributed energy technologies or those technologies which are embedded within a particular locality. For example, the Implementation Plans for Solar PV, Positive Energy Districts, Energy Efficiency in Buildings, and Geothermal could all make more reference (and develop provisions to greater support the consideration) of the local contexts in which the technologies are to be implemented. The Implementation Plans would thus substantially benefit from greater engagement with local needs and perspectives, with more information and data of the context that each SET Plan technology will be implemented in.

## 6.2. What is needed?

- Implementation Working Groups should adopt a multi-scalar approach for implementation that includes sub-national levels, in addition to the EU and national one.
- There is the need to meaningfully engage with sub-national scales within Implementation Working Groups, whereby the complexity of the locations in which technologies are to be implemented are considered, with significant impact on the data of each implementation site/area. Consideration of this complexity would benefit from SSH insights, including cultural, historical, and geographical characteristics of place.
- Flexibility should be better embedded into Implementation Plans so that implementation activities can be designed to reflect the context in which technologies are to be situated, as well as enable Implementation Plans to adapt to shifting contexts.
- Implementation Plans should better acknowledge and appreciate the interconnections and interactions between actors and across scales to build upon synergies that exist. These synergies can support the implementation of SET Plan technologies.
- The greater incorporation of sub-national scales within Implementation Plans should be used to facilitate the engagement with all relevant stakeholders, to help ensure that implementation activities reflect their diverse needs and experiences, informed by the context in which they are situated.



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