European Environment Agency

The case for public participation in sustainability transitions

Public participation in environmental decision-making is a legal right in Europe. This principle was established two decades ago by the Aarhus Convention. Since then, it has been increasingly recognised that participation is not only a matter of justice and democracy but also a practical necessity for transitioning into sustainability. This briefing focuses on different forms of public participation from a sustainability transitions perspective, highlights its core tenets, principles and pitfalls.

Key messages

The European Green Deal emphasises that 'citizens are and should remain a driving force of the transition to sustainability' and that the conditions for empowering citizens and building effective forms of public participation need to be created.

Sustainability transitions require shifts in production and consumption systems that will impact our whole way of life. A transition that considers questions of distributive and procedural justice is a challenge that calls for the full creative potential and involvement of all sectors of society, including citizens.

There are numerous formats, methods and purposes of engagement and participation. Choosing the approach that is best fit for purpose in a given situation is crucial and needs to be considered with care.

Public participation can unleash creativity, generate knowledge and mobilise agency. It can provide a means for environmental and social concerns and conflicts to be expressed and debated, even if not necessarily resolved.

The ways in which the outcomes of any participation activity enter the policy or decision-making process need to be discussed and, ideally, decided from the outset. This will require cultural, institutional, legal, and potentially constitutional changes.

This briefing is part of the series 'Narratives for change', published by the EEA. The series explores the diversity of ideas needed to make our societies more sustainable and fulfil the ambitions of the European Green Deal.

Is public participation necessary for sustainability transitions?

The value and importance of public participation for Member States and European policymaking was declared by the European Commission's 2001 White paper on governance (EC, 2001). Defining public participation and incorporating it needs to be done with care. Fundamentally, accessing information and being able to participate in public decision-making are basic democratic rights. With respect to environmental matters, this right was established by the Aarhus Convention in 1998. Contemporary discussions of public participation go beyond the fundamental right aspect and include the practical benefits and achievements of public participation. Efforts to facilitate lively and rich public participation have been found to improve the outcomes and effectiveness of governance. Evidence supports this claim (e.g. OECD, 2020) although some results are ambiguous. In the worst-case scenario, participation can turn into a form of tyranny that re-enforces pre-existing power asymmetries (Cooke & Kothari, 2001) or degenerate into pointless exercises of no real significance.

Increased attention to various forms of public participation is closely tied to the current turbulent times (Felt et al., 2013). There is growing disillusionment with policy and decision-making systems because they are not up to the task of providing long-term solutions. Frameworks such as volatility, uncertainty, complexity, ambiguity (VUCA)[1] and post-normal science (Funtowicz & Ravetz, 1993), with its focus on the inclusion of extended peer communities and multiple ways of knowing, are attempts to address this situation. They give the idea of experimenting with new democratic forms a new push and emphasis.

This briefing presents key insights from sustainability studies regarding public participation and explains why a thoughtful approach to participation is particularly needed for sustainability transitions. Such insights can inspire participatory approaches in governance processes that, until now, have focused more on scientific, technical and administrative aspects.

These insights have been acknowledged in the 8th Environment Action Programme, which highlights the importance of public engagement in closing knowledge gaps and calls for public participation on all levels of decision-making. This resonates with the UN 2030 Agenda for Sustainable Development calling to 'leave no one behind'. The essence of these insights was succinctly formulated by the European Green Deal: 'citizens are, and should remain, a driving force of the transition'. Five decades of research on public participation shed light on why this is so, how it may be put into practice, and what implications it has for governmental organisations and public policy.

> The involvement and commitment of the public and of all stakeholders is crucial to the success of the European Green Deal. Recent political events show that game-changing policies only work if citizens are fully involved in designing them. People are concerned about jobs, heating their homes and making ends meet, and EU institutions should engage with them if the Green Deal is to succeed and deliver lasting change. Citizens are and should remain a driving force of the transition (EC, 2019, p. 22).

What is public participation for?

Public participation has no unique form or definition. It appears in a multiplicity of formats and approaches ranging from citizen science to consensus conferences, material deliberation workshops and bottom-up grassroots activism[2]. People influence the development of society in a myriad of ways, including voting in elections, public discussions and by their market preferences. However, academic literature on public participation usually defines it as something different and more than markets, consumer behaviour and practices of representative democracy. The International Association of Public Participation (IAP2) defines public participation as 'any process that involves the public in problem-solving or decision-making and that uses public input to make better decisions'. Often, the focus is on deliberation on and/or co-creation of potential decisions, including the knowledge and values underlying them. The IAP2 also offers a classification of public participation formats regarding the purposes of public participation and the expected impact on decision-making processes. This classification distinguishes between practices of informing, consulting, involving, collaborating and empowering.

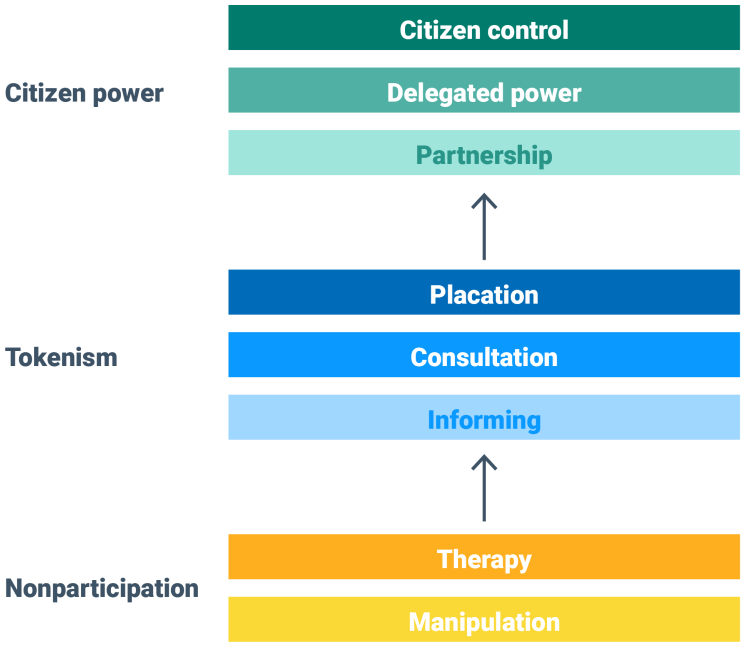
Importantly, this classification pairs each class of participation practices with the specific promises made to the participants, i.e. each mode of public engagement has its place and legitimacy. It is crucial to be aware of the implied promises and expectations and to follow through on them.

It is also implied in this classification that the participatory activities are organised by a government entity; a 'top-down' approach. When the initiative comes from citizens or civil society, e.g. the role of the Danish Folkehøjskoler[3] in the early development of wind power in the 1970s and 1980s (Garud & Karnøe, 2003), this is a 'bottom-up' engagement or participation. Variation in citizen-led approaches is termed 'research in the wild' (Callon & Rabeharisoa, 2003). The focus in such initiatives is on collaborations between scientists and non-scientists in the production and dissemination of knowledge, with both invited and uninvited participation (Felt et al., 2007; Wynne, 2006). Important forms of public engagement or participation in Europe were initially uninvited, e.g. in

the case of nuclear energy (Felt, 2015).

The IAP2 classification builds on work by Sherry Arnstein (1969). Arnstein famously distinguished between different levels of participation in relation to the degree of power that is conferred to citizens by participatory methods, noting that public participation sometimes is little more than an opportunity for citizens to endorse decisions that de facto were already made (Figure 1).

Figure 1. Sherry Arnstein's ladder of participation



Source: adapted from Fioretti et al., 2020

Meaningful public engagement is not necessarily about the tools that are applied. Instead, it is about the institutional contexts, cultural repertoires and (sometimes implicit) purposes that define how these are used and applied (Völker & Guimarães Pereira, 2021). Activities, even if planned and conducted in a strictly top-down manner, never take place in a vacuum. Pre-existing collectives and the ecologies in which they are embedded contribute to shaping how particular approaches will be applied and thus how any given engagement activity will turn out (Chilvers & Kearnes, 2015).

Another way of thinking about different types of participation is by describing different rationales for engaging citizens. Stirling (2008) distinguishes between three rationales for public participation, which he calls normative, substantive and instrumental (Table 1).

Table 1. Rationales for public participation (Stirling, 2008; Wickson et al., 2010)

Rationale for public participation	Explanation
Instrumental	'The aim is to achieve specific, predefined goals, namely, the creation of an informed populace that trusts institutional structures and scientific expertise (public as laity), and the acceptance of technological products (public as consumers)' (Wickson et al., 2010, p. 757).
Substantive	'The use of an inclusive process will lead to a substantively better outcome (without predefining what that outcome will be)' (Wickson et al., 2010, p. 757).
Normative	'The right thing to do, without reference to the ends in question [… hinges] on capacities for social empowerment (especially for otherwise excluded groups)' (Stirling, 2008, pp. 268-9).

The three rationales may be present in varying degrees and without being mutually exclusive. However, the substantive rationale is very important in the context of sustainability transitions, with implications for design choices and participation methods. The substantive rationale implies that public participation is as much a matter of knowledge as of action, and that participatory and co-creative methods can address 'the need to go beyond producing knowledge about our world to generating wisdom about how to act within it' (Fazey et al., 2020, p. 5). To do so, ways of knowing other than normal science need to be employed, such as transdisciplinary research; community-based, local and traditional knowledge; and post-normal science (Funtowicz & Ravetz, 1993).

Employing these other ways of knowing for sustainable transitions means moving beyond the purpose of informing citizens, raising awareness, or even convincing them about pre-defined policies, decisions or technological choices. Research has shown that citizens are willing to participate in meaningful forms of public engagement and that they are perfectly capable of contributing to high-level deliberations, as long as the process is well-organised. Furthermore, the focus on thinking together can help overcome tendencies of polarisation as deliberation promotes considered collective judgement (Dryzek et al., 2019).

This means that the best use of these approaches is clearly not to limit it to understanding the opinions, needs and expectations of a specified constituency. The rationales in Table 1 point to the fact that the greatest potential of engaging citizens lies in its use as a 'technology of humility' (Jasanoff, 2003). This means deliberating on the use of scientific knowledge in decision-making and establishing institutional mechanisms for reflecting about problem framings and governance models (Stirling, 2008).

While this argument sounds abstract, it has very concrete implications: there are many potential purposes to public participation. Large scale deliberative processes are very different from engaging citizens to deliberate on local environmental conflicts. It is necessary to be mindful about the purposes of any participatory activity when making decisions about which approach to apply.

Moreover, it is crucial to be open and transparent about these purposes and about who is making these choices. The same applies to the expected outcomes and follow-ups.

Are there any 'teeth' to the participatory activity? Participation for the sake of it, or as window dressing for decisions already made, will do more harm than good. Overall, public participation is neither a panacea nor a quick fix. It is very likely that proper participatory processes will slow down policy and decision-making processes. However, the outcomes will almost certainly be more robust and sustainable and, in that sense, participation and engagement can be seen as a way of governing for resilience (see e.g. OECD, 2020).

Practicing public participation

Sustainability transitions are likely to require fundamental change across multiple dimensions (EEA, 2021b, 2021a). Technological innovation and changes of individual behaviour are necessary but not sufficient elements of this change. Above all, sustainability transitions require new systems of production and consumption that will re-shape social practices and lifestyles — 'social practices' refers here to habitual behavioural patterns that are reinforced by technical infrastructures and institutionalised configurations such as commuting for work, or patterns of energy consumption (Shove & Walker, 2014). Technologies, individuals and social practices (distinct from individual behaviour) are all part of complex socio-technical systems. Accordingly, a sustainability transition, framed as a change of all these elements, is a system change that will create frictions and conflict (Allen et al., 2017). Such system changes require many forms of knowledge and attention to what has been called knowledge architecture (Oliver et al., 2021).

This means that public participation is necessary in the shaping and deployment of these transitions and the social and technological innovations necessary for them (EC, 2017), and more in general when facing systemic challenges (EEA, 2019a). In a similar manner, the EEA's Knowledge for Action report calls for 'more participatory, interdisciplinary and transdisciplinary approaches' and even a 'new knowledge system for systemic transformation' (EEA, 2021b). Already, the European environment – state and outlook 2020 (SOER 2020) states: 'Achieving sustainability transitions requires public engagement in defining visions and pathways, coherence across policy domains and scales, and use of foresight and adaptive approaches to navigate risks' (EEA, 2019b, p. 378).

Historically, participation processes were often conceived and organised top-down by governmental and academic actors. Bottom-up processes, however, can be spontaneous, organised by actors in civil society or initiated by circumstances. It is important to analyse how initiatives that are organised in a top-down manner are received by those who are to participate, and how bottom-up initiatives, not necessarily invited or welcomed by existing power structures, e.g. 'yellow vests'[4] and Fridays for Future, are managed by institutional arrangements purporting to promote engagement.

Table 2. High-profile examples of engagement and participation activities

Initiative	Brief description	Important lessons
Irish Constitutional Convention and subsequent Citizens' Assemblies	Series of Citizens' Assemblies on Issues: abortion rights, gender equality, on a national level.	Concrete decisions through follow-up activities.
Citizens' Convention on Climate	Representative panel of French citizens, directly involved in the preparation of the law.	Follow-up was perceived to be unsatisfactory by some of those involved in the process. There was a particular mix of bottom-up elements and executive decision characterised in this initiative.
Austrian 'Klimarat'	Citizen Assembly on climate change-related issues.	No clear follow-ups. Politicians are deciding how to deal with the citizens' recommendations.
Conference on the Future of Europe	Citizen led series of debates on a supra-national level.	Created momentum for more permanent modes of deliberative democracy in the Commission. Points to challenges of pan-European engagement.
Extinction Rebellion	International bottom-up activist movement focusing on climate change and democracy.	Demands transformative change in power structures and increasing reliance on participatory politics.

The issues of justice and equity are crucial across various strands of debates about sustainability transitions. Literature is burgeoning and gaining prominence in policy circles (Geels et al., 2017), pointing to the need to pay attention 'to the social and distributional consequences of decarbonisation' (Geels et al., 2017, p. 1244). This literature and, in particular, the so-called 'multi-level perspective' (Geels et al., 2017), is promoted by the EEA as 'a useful model for understanding how these interactions [between drivers of change on micro and macro levels] shape the dynamics of change in production-consumption systems' and as a perspective that 'describes transition processes as arising from the interplay of developments at three levels: regime, niche and landscape' (EEA, 2019b).

While definitely an important perspective, there is a residue of techno-optimism (that technological change in general leads to more societal benefit than harm and risk – see e.g. Strand et al., 2018) and a danger of regulatory capture (that regulatory agencies may be dominated by the interests they regulate and not by the public interest – see e.g. Saltelli et al., 2022) in the way transitions are sometimes described and envisioned. Ostensibly novel transitions may readily end up concealing deeper realignments with existing structures — the realised forms of 'transformation' may be more 'discursive and superficial than material and substantive' (Stirling, 2014).

Within transitions literature, calls for a 'just' transition are becoming more and more pronounced and pointing to misconceptions in how the current existential crises are dealt with. The relationships

between prosperity and sustainability are more complex than commonly assumed and far from being simply a linear development. Further differentiated and nuanced solutions are necessary. Importantly, pertaining to structural barriers to sustainability transitions, there are currently no principles in place for a transition that aims to be ‘just’ (Jasanoff, 2018).

Designing truly integrative participatory processes requires addressing less conventional forms of expertise, skills and knowledge — including forms of tacit, embodied and emotional knowledge. Participants must be encouraged to express, work and experiment with these forms of knowledge (Caniglia et al., 2021). There need to be ways to compensate for uncertainties in our knowledge base and ways to deal with ignorance. This means asking tough questions about the limits of our knowledge and what this implies for governance.

This is where public participation enters debates about ‘just’ transition. Institutionalising reflexivity about how the problems to be solved are understood and what the limits of this knowledge are crucially relies on integrating more diverse sets of knowledge, ways of knowing and epistemic actors (Stirling, 2014). This stance is described as inserting more ‘humility’ into policy and decision-making processes (Jasanoff, 2007), and abandoning over-confidence in our collective ability to predict and control (Guimarães Pereira, 2015; Stirling, 2019). Such a reflexive or humble position allows focus on the following questions: ’What alternative ways can our questions be posed? Who is most likely to be hurt? Who loses and who wins? How can we know better?’ (Jasanoff, 2018, p. 13). This line of argument then makes it clear that participation and engagement are crucial for achieving just sustainability transitions. Such reflexivity and careful attention to justice and distributional issues requires not only contributions from multiple perspectives, but also collective ownership and stewardship of a future deemed desirable by society. This needs mainstream forms of top-down participation, but also bottom-up engagement and ‘research in the wild’ (Callon & Rabeharisoa, 2003). As noted: ‘If the end justifies the means, only debate can justify the ends’ (Callon et al., 2009, p. 109).

There are numerous experiments with participatory and deliberative forms of governance. They point to both the potentials and the challenges of integrating participation and engagement with more traditional governance mechanisms. The most central insights are that the general public is highly capable of contributing to high-quality deliberations as long as the process is well-organised[5], and that the trickiest part actually concerns the policy side of things. Finding good ways of following up on recommendations reached by citizens is often difficult. The Irish Constitutional Convention with its subsequent Citizen Assemblies is a good example of that; it was well-organised and led to actual changes via referenda. In contrast, the Austrian Klimarat has delivered recommendations to the policy realm, and it is not entirely clear which of the recommendations will become consequential and how. Similar issues have been described for the French Citizens’ Convention on Climate.

Conflict, dissent and the pitfalls of the information deficit model

The extreme ends of public participation include processes that are organised by a governmental institution and focus on a highly specific decision problem, as well as citizen-led initiatives that emerge more spontaneously to address social needs. Whatever the origin is, their full creative potential can only be unleashed if they occur in a safe space where all actors can speak freely and express their concerns and conflicts. Where this cannot be guaranteed, it is crucial to make reflection on power imbalances part of the design for participation activity. Environmental and social conflicts are real and their existence, as well as their potential wickedness, deserve to be acknowledged (Rittel & Webber, 1973).

Citizens' access to information is necessary for public participation. The Aarhus convention with its Protocol of PRTRs is a key example of this principle. However, a considerable body of social research indicates that while necessary, the principle might not be sufficient. Scientific experts and advisors occasionally rehearse and stabilise the so-called 'information deficit model' (Irwin, 1994; Wynne, 1993). The pitfall here is that public dissent or dissatisfaction with expert advice is often ascribed to a lack of information (information deficit) or even ignorance. Proponents of the information deficit model believe that public opinion can be fixed by education or 'awareness-raising' campaigns, or that 'wrong' knowledge can be corrected by inoculation with true facts and real data. In practical terms, the deficit model shifts participation towards the instrumental rationale. This is considered a pitfall because the information deficit model repeatedly has been shown to be empirically incorrect and theoretically problematic. Public dissent is frequently an expression of conflicting values or different social and environmental concerns. In fact, this is just the kind of input needed for citizens to be a 'driving force of the transition' (EC, 2019, p. 22).

There are several additional pitfalls connected to the information deficit model. These pitfalls often concern our own assumptions about the participants of public deliberations (Michael, 2012). Neither the 'public' nor the 'citizen' is a neutral category. There often are implicit expectations about who citizens are and how they should behave. This is, for example, the case when they are invited mainly as the embodiment of values, ethics and lived experience and thus bring their own subjective views other than objective scientific facts. Framed as such, the overall purpose of participation is often geared towards public acceptance of novel policies or technologies. In a similar manner, members of the public are often treated as static entities while decades of research point to the dynamic nature of engagement collectives. Different formats of engagement and participation tend to bring about the public members they intend to engage (Felt & Fochler, 2010).

Furthermore, group dynamics are often neglected when interpreting the outcomes of engagement activities. Specifically, citizen participation activities show a tendency to repress differences and forge ahead towards consensus formation, which is why scholars have referred to them as 'machineries for manufacturing consensus' (Felt & Fochler, 2010).

As exemplified by the ‘Yellow vests’ demonstrations and Fridays for Future, participatory processes are often conflictive. These movements are fuelled by severe disagreements over questions of economic justice and a lack of decisive climate actions. Conflict, if well managed, can be productive when it makes ambiguities and implicit tensions more visible. Allowing for conflict in participatory activities also shifts attention from aiming for consensus to the need to work towards resolutions and compromises. When selecting citizens to participate in policy or decision-making, there is a risk of treating communities as homogenous units and overlooking diverging interests and perspectives. Thus, while in deliberative processes a key principle is to be transparent about recruitment criteria (OECD, 2020), implicit assumptions and rationales about participants and the communities they come from often remain opaque.

To avoid these pitfalls, it is useful to think about participation activities in terms of ‘engagement collectives’ that are embedded within broader ‘ecologies of participation’ (Chilvers & Kearnes, 2015). Our attention is directed to the fact that each participation activity is made up of sets of actors, participation methods, ideas about purposes and aims, various normative commitments and the issues at stake. Although none of these elements are completely pre-determined, they influence and shape each other in the course of the activity.

The challenge for experts may be to reflect on their own institutionally and constitutionally stabilised and implicit assumptions about both the participants and the rationales or purposes of participation activities, and in addition, pertaining to the deficit model, to listen carefully to the expressions of citizens rather than dismissing them as unknowledgeable (Wynne, 1993). Otherwise, the participatory process may lose trust, legitimacy and force. Engagement and participation just for the sake of it will neither increase the perceived legitimacy of EU institutions nor the trust of EU citizens in said institutions.

Creating conditions for empowering EU citizens

Sustainability transitions require public participation on all levels, including in the overarching Conference on the Future of Europe , the opportunities created by the Protocol of PRTRs under the Aarhus convention to Member States, and the local initiatives and efforts to develop sustainable social practices in countries, regions and communities. Importantly, this means working towards strong constitutional and institutional anchoring of participatory mechanisms in political procedures (EP & Alemanno, 2022).

In some instances, participation might be contained as a simple input to a process already defined and structured by scientific and political institutions. Such practices do not correspond to the ambition of the European Green Deal of having citizens as the driving force of the transition. To become a driving force, citizens would not only have to be informed. More importantly, they would have to be empowered to contribute their own knowledge, wisdom and creativity; to challenge experts and

institutions; and to change and reframe the very process of participation — including their place and significance in policy and decision-making.

True empowerment, in Arnstein's sense, means the power to not only shape top-down initiatives and proposals but also to express disagreement and propose alternatives. To unleash this potential, it is important to move beyond an understanding of public participation and citizen engagement as a set of tools: instead, it is about creating enabling environments in which they can be applied to their full potential. Thorough reflection is needed on broader institutional conditions in light of the ambition of integrating participatory mechanisms (EP & Alemanno, 2022; Jančić, 2023). Moreover, cultural, educational, institutional and even legal constraints (e.g. the compatibility of EU legislation) need to be considered, including the privileged position of conventional scientific inputs to the knowledge base.

Perhaps then, there is one central question to discuss. What cultural and institutional changes are necessary to sufficiently acknowledge public participation as a source of knowledge, creativity and wisdom — and a vehicle to transition towards a sustainable and socially just Europe?

Acknowledgments

Benini, L., Jesus, A. (EEA); Funtowicz, S., Kovacic, Z., Strand, R. Völker, T. (European Centre for Governance in Complexity).

The Joint Research Centre and the Eionet Groups on Foresight and State of the Environment were consulted during the preparation of this briefing.

Notes

[1] Introduced by the U.S. Army to describe the more volatile, uncertain, complex, and ambiguous world that emerged at the end of the Cold War, the concept of VUCA has since gained traction in business administration, education and EU policy.

[2] For an overview of participatory approaches and their relation to the policy-cycle see Guimarães Pereira & Völker, 2020. In addition, there are numerous dedicated websites listing and detailing participation tools such as https://participedia.net/#, the Action Catalogue and the KNOCA website on climate assemblies. Websites accessed 29 June 2023

[3] Danish Folkehøjskoler, first established in Denmark in mid-1800s, are non-formal residential

schools for adults offering learning opportunities in a wide variety of subjects.

[4] The ‘yellow vests’ or ‘gilets jaunes’ movement were a series of protests advocating social and fiscal justice that began in France in November 2018 triggered by an increase in fuel taxes.

[5] Over the last couple of years, the OECD has published several influential and highly visible reports pointing to principles and quality criteria for deliberative democracy initiatives (OECD, 2020, 2021). In their evaluation guidelines the OECD points to the importance of process design integrity, the experience of the participants and the need for pathways to impact. In addition, there is a plethora of literature on quality criteria for different approaches, methods, and context. For the case of engagement in research and innovation governance (see e.g. Wickson & Carew, 2014).

References

Allen, T., et al., 2017, ‘Radical transitions from fossil fuel to renewables: A change of posture’, Complex Systems and Social Practices in Energy Transitions. Green Energy and Technology, pp. 221–235 (https://doi.org/10.1007/978-3-319-33753-1_10).

Alemanno, A., 2022, Towards a Permanent Citizens’ Participatory Mechanism in the EU, European Parliament, Policy Department for Citizens’ Rights and Constitutional Affairs (https://doi.org/http://dx.doi.org/10.2139/ssrn.4232168).

Arnstein, S. R., 1969, ‘A Ladder Of Citizen Participation’, Journal of the American Planning Association, 35(4), pp. 216–224.

Callon, M., et al, 2009, Acting in an Uncertain World: An Essay on Technical Democracy. The MIT Press.

Callon, M., and Rabeharisoa, V., 2003, ‘Research “in the wild” and the shaping of new social identities’, Technology in Society, 25(2), pp. 193–204.

Caniglia, G., et al., 2021, ‘A pluralistic and integrated approach to action-oriented knowledge for sustainability’, Nature Sustainability, 4, pp. 93–100 (https://doi.org/10.1038/s41893-020-00616-z).

Chilvers, J., and Kearnes, M., 2015, Remaking participation: Science, environment and emergent publics, Routledge.

Cooke, B., and Kothari, U., 2001,Participation: The New Tyranny?, Zed Books.

de Laet, M., and Mol, A., 2000, ‘The Zimbabwe Bush Pump: Mechanics of a fluid technology’, Social Studies of Science, 30(2), pp. 225–263 (https://doi.org/10.1177/030631200030002002).

Dryzek, J. S., et al., 2019, ‘The crisis of democracy and the science of deliberation’, Science, 363(6432), pp. 1144–1146. (https://doi.org/10.1126/SCIENCE.AAW2694).

Publications

EC, 2001, European Governance - A White Paper (COM (2001) 428 final).

EC, Directorate-General for Research and Innovation, 2017, LAB – FAB – APP : investing in the European future we want : report of the independent High Level Group on maximising the impact of EU research & innovation programmes, Publications Office of the European Union, Luxembourg (https://data.europa.eu/doi/10.2777/477357)

EEA, 2019a, Sustainability transitions: policy and practice, EEA Report No 9/2019, European Environment Agency.

EEA, 2019b, The European environment : state and outlook 2020 : knowledge for transition to a sustainable Europe, Publications Office of the European Union, Luxembourg (https://www.eea.europa.eu/soer/2020).

EEA, 2021a, Growth without economic growth, Publications Office of the European Union, Luxembourg (https://www.eea.europa.eu/publications/growth-without-economic-growth).

EEA, 2021b, Knowledge for action : empowering the transition to a sustainable Europe, Publications Office of the European Union, Luxembourg (https://www.eea.europa.eu/publications/knowledge-for-action).

Fazey, I., et al., 2020, 'Transforming knowledge systems for life on Earth: Visions of future systems and how to get there', Energy Research & Social Science, Volume 70, University of Sussex, UK (https://doi.org/10.1016/j.erss.2020.101724).

Felt, U., 2015, 'Keeping Technologies Out: Sociotechnical Imaginaries and the Formation of a National Technopolitical Identity', Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power, Chicago University Press, Chicago.

Felt, U., et al., 2013, 'Science in Society: Caring for Our Futures in Turbulent Times', ESF Science Policy Briefing (Vol. 50, pp. 1–36), European Science Foundation, Strasbourg, France.

Felt, U., and Fochler, M., 2010, 'Machineries for Making Publics: Inscribing and De-scribing Publics in Public Engagement', Minerva, 48(3), pp. 219–238 (https://doi.org/10.1007/s11024-010-9155-x).

Felt, U., 2007, Taking European knowledge society seriously. Directorate-General for Research, Science, Economy and Society, European Commission, Belgium.

Fioretti, C., Pertoldi, M., Busti, M. and Van Heerden, S. (eds), 2020, Handbook of Sustainable Urban Development Strategies, EUR 29990 EN, Publications Office of the European Union, Luxembourg (https://urban.jrc.ec.europa.eu/urbanstrategies/).

Funtowicz, S., and Ravetz, J., 1993, 'Science for the Post-Normal Age', Futures, 25(7), pp. 739–757.

Garud, R., and Karnøe, P., 2003, 'Bricolage versus breakthrough: distributed and embedded agency in technology entrepreneurship', Research Policy, 32(2), pp. 277–300 (https://doi.org/10.1016/S0048-7333(02)00100-2).

Geels, F. W., 2017, 'Sociotechnical transitions for deep decarbonization', Science, 357(6357), pp.

Publications

1242–1244. (https://doi.org/10.1126/SCIENCE.AAO3760).

Guimarães Pereira, Â., 2015, 'Science, Philosophy and Sustainability', in: Science, Philosophy and Sustainability, Routledge (https://doi.org/10.4324/9781315757902).

Irwin, A., 1994, 'Science and Its Publics: Continuity and Change in the Risk Society', Social Studies of Science, 24(1), pp. 168–184 (https://www.jstor.org/stable/370300).

Jančić, D., 2023, The Changing Role of Citizens in EU Democratic Governance(D. Jančić (ed.)), Bloomsbury Publishing (https://doi.org/10.5040/9781509950850).

Jasanoff, S., 2003, 'Technologies of Humility: Citizen Participation in Governing Science', Minerva, 41(3), pp. 223–244.

Jasanoff, S., 2007, 'Technologies of humility', Nature, 450(7166), p. 33.

Jasanoff, S., 2018, 'Just transitions: A humble approach to global energy futures', Energy Research and Social Science, 35, pp. 11–14 (https://doi.org/10.1016/J.ERSS.2017.11.025).

Michael, M., 2012, 'What Are We Busy Doing? Engaging the Idiot', Science, Technology & Human Values, 37(5), pp. 528–554.

OECD, 2020, 'Innovative Citizen Participation and New Democratic Institutions. Catching the Deliberative Wave', OECD Publishing (https://doi.org/10.1787/339306da-en).

OECD, 2021, Evaluation Guidelines for Representative Deliberative Processes, OECD Publishing, (https://doi.org/10.1787/10CCBFCB-EN).

Oliver, T. H., et al., 2021, 'Knowledge architecture for the wise governance of sustainability transitions', Environmental Science & Policy, 26, pp. 152–163 (https://doi.org/10.1016/J.ENVSCI.2021.09.025).

Pereira, Â. G., and Völker, T., 2020, 'Engaging With Citizens', in; Science for Policy Handbook, pp. 78–95, Elsevier (https://doi.org/10.1016/B978-0-12-822596-7.00008-5).

Rittel, H. W., and Webber, M. M., 1973, 'Dilemmas in a general theory of planning', Policy Science, 4, pp. 155–169.

Saltelli, A., et al., 2022, 'Science, the endless frontier of regulatory capture'. Futures, 135.

Shove, E., and Walker, G., 2014, 'What is energy for? Social practice and energy demand', Theory, Culture & Society, 31(5), pp. 41–58.

Soneryd, L., 2015, 'Technologies of Participation and the Making of Technologized Futures', in: Chilvers, J., and Kearnes, M. (eds), Remaking Participation: Science, Environment and Emergent Publics, pp. 144–161, Routledge.

Stirling, A., 2008, '"Opening Up" and "Closing Down": Power, Participation, and Pluralism in the Social Appraisal of Technology', Science, Technology & Human Values, 33(2), pp. 262–294 (https://doi.org/10.1177/0162243907311265).

Publications

Stirling, A., 2014, ‘Transforming power: Social science and the politics of energy choices’, Energy Research & Social Science, 1, pp. 83–95.

Stirling, A., 2019, ‘Sustainability and the politics of transformations: From control to care in moving beyond modernity’, What Next for Sustainable Development?: Our Common Future at Thirty, pp. 219–238 (https://doi.org/10.4337/9781788975209.00023).

Strand, R., et al., 2018, ‘New narratives for innovation’. Journal of Cleaner Production, 197, pp. 1849-1853.

Völker, T., and Pereira, Â. G., 2021, ‘“What Was That Word? It’s Part of Ensuring Its Future Existence” Exploring Engagement Collectives at the European Commission’s Joint Research Centre’, Science Technology and Human Values, 48(2), pp. 428–453 (https://doi.org/10.1177/01622439211046049).

Wickson, F., and Carew, A. L., 2014, ‘Quality criteria and indicators for responsible research and innovation: learning from transdisciplinarity’, Journal of Responsible Innovation, 1(3), pp. 254–273 (https://doi.org/10.1080/23299460.2014.963004).

Wickson, F., et al., 2010, ‘Who or what is “the public”?’, Nature Publishing Group. (https://doi.org/10.1177/0963662510363054).

Wynne, B., 1993, ‘Public Uptake of Science: a Case for Institutional Reflexivity’, Public Understanding of Science, 2(4), pp. 321–337.

Wynne, B., 2006, ‘Public engagement as a means of restoring public trust in science–hitting the notes, but missing the music?’, Public Health Genomics, 9(3), pp. 211–220.

Identifiers

Briefing no. 18/2023
Title: **The case for public participation in sustainability transitions**
EN HTML: TH-AM-23-022-EN-Q - ISBN: 978-92-9480-597-3 - ISSN: 2467-3196 - doi: 10.2800/805480
EN PDF: TH-AM-23-022-EN-N - ISBN: 978-92-9480-596-6 - ISSN: 2467-3196 - doi: 10.2800/520008

Published on 03 Oct 2023