in sustainability transitions

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Remaking Participation

Overview

1. What's the problem with participation?
2. Remaking participation
3. Experiments in remaking participation with energy and low-carbon transitions
   - Mapping participation
   - Distributed deliberative mapping
   - A participation observatory
4. Conclusions

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Participation in transition(s)

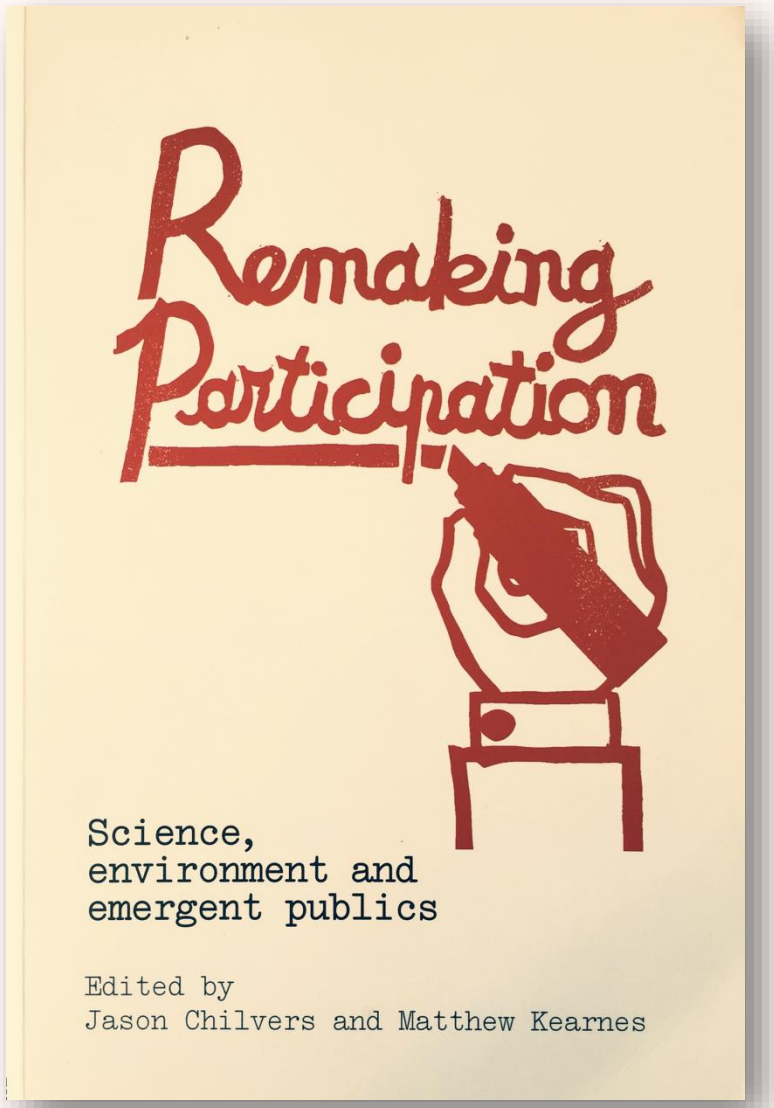
EARTH SUMMIT 92

Principle 11: “environmental issues are best handled with the participation of all concerned citizens…”

SUSTAINABLE DEVELOPMENT GOALS

Target 16.7: “Ensure responsive, inclusive, participatory and representative decision-making at all levels”.

Residual realist participation



“public participation [has] been dominated by work focused on the development and extension of participatory methods and their evaluation and critique. This methodologically focused work has, in turn, adopted pre-given (often highly specific) normative models of participation that assume a correspondence theory of an external ‘public’ existing in a natural state waiting to be discovered and mobilized by participatory techniques and procedures.”

(Chilvers & Kearnes, 2016: 4)

Residual realist participation

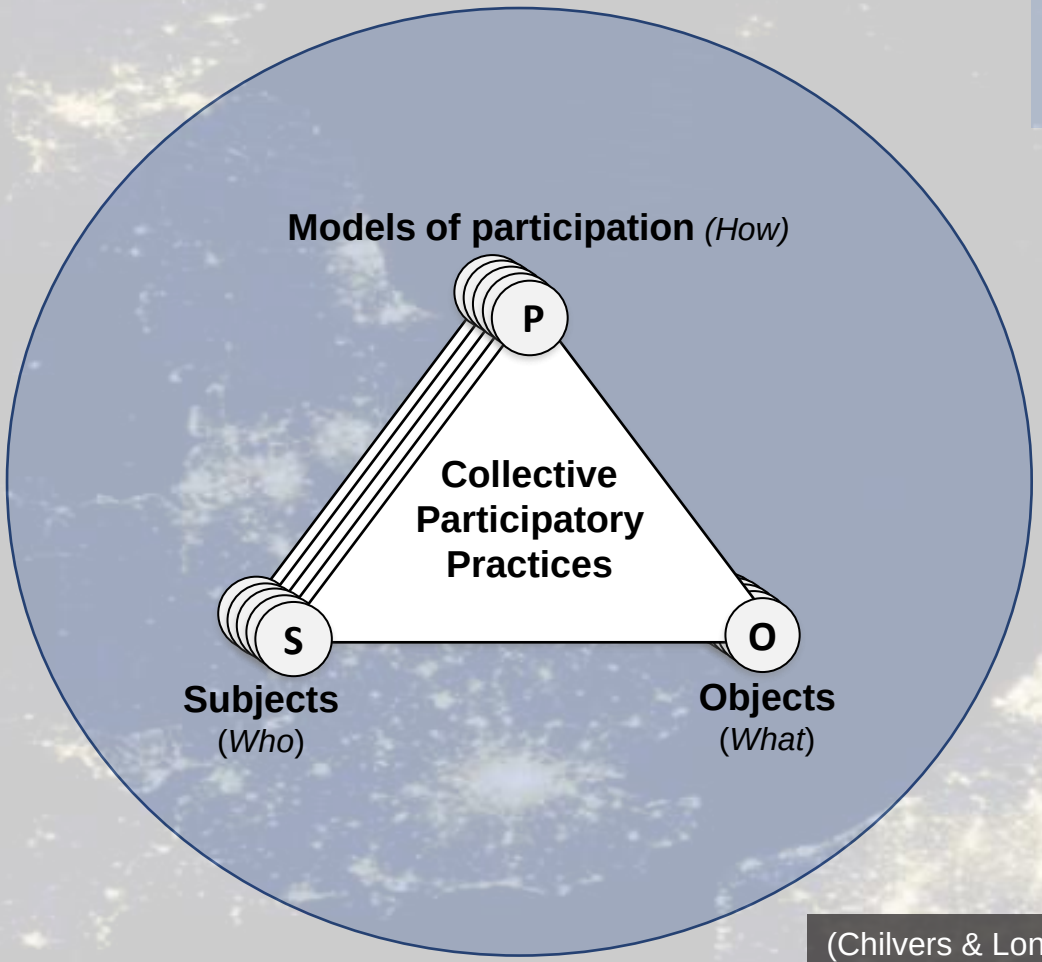
1. Publics are…	Naturally occurring, external, ready-made, individuals
2. Participation is...	Highly specific pre-given meanings, normativities, methods and evaluative metrics
3. Participation happens in…	Discrete, isolated, contained events and time-spaces
4. (Institutional) problem of participation	Extension, engagement deficits, scaling up, representation, control

(Chilvers & Kearnes, 2016; Chilvers et al. 2018)

A co-productionist theory of participation

"the subjects (publics), objects (issues and material commitments) and formats (political ontologies and participatory procedures) that comprise the constituent elements of participation can more accurately be seen as both constructed through and emergent in the performance of carefully mediated, open-ended participatory experiments"
(Chilvers & Kearnes, 2016: 13)

"heterogeneous collective practices through which publics engage in addressing collective public issues… whether deliberately or tacitly, which actively produce meanings, knowings, doings and/or forms of social organisation"
(Chilvers et al. 2018)



(Chilvers & Longhurst, 2016)

	Residual realist participation	Co-productionist participation
1. Publics are…	Naturally occurring, external, ready-made, individuals	**Emergent, constructed** through collective practices, material
2. Participation is...	Highly specific pre-given meanings, normativities, methods and evaluative metrics	Highly **diverse, experimental, co-produced** through practice, multiply productive, exclusionary (good and bad effects)
3. Participation happens in…	Discrete, isolated, contained events and time-spaces	Multiple, entangled, interrelating **systems**, spaces and **ecologies** of participation
4. (Institutional) problem of participation	Extension, engagement deficits, scaling up, representation, control	Responsiveness and accountability to multiple forms of **public relevance**, participation, issues

(Chilvers & Kearnes, 2016; Chilvers et al. 2018)

A framework for Remaking Participation

1. Reflexive and experimental participation

Deploy settings, formats, designs experimentally; Attend to framing effects, emergence/exclusions, uncertainties

2. Open up to wider systems & ecologies of participation

Attend to interrelations between & map diversities of public participation

3. Responsible participation

Anticipate future effects & social/ethical implications; create responsible democratic innovations

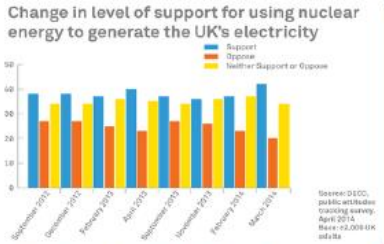
4. Institutionally responsive participation

Acknowledge power and driving forces; cultivate institutional responsiveness to diverse forms of public relevance

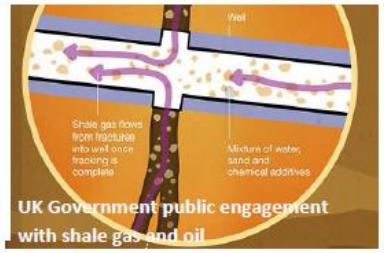
(Chilvers & Kearnes, 2020)

Mapping ecologies of participation in energy transitions

UKERC Transforming the UK Energy System national citizen engagement process



DECC's public attitudes tracking



UK Government public engagement with shale gas and oil


Experiences of fuel poverty academic study

Windfarm protests in Nant Y Moch, Wales


Tilting at windmills dance installation


RENERGY Living Labs academic project

DECC's My2050 simulator and public dialogue


Energy Babble academic project

The BBSRC's Bioenergy Distributed Dialogue

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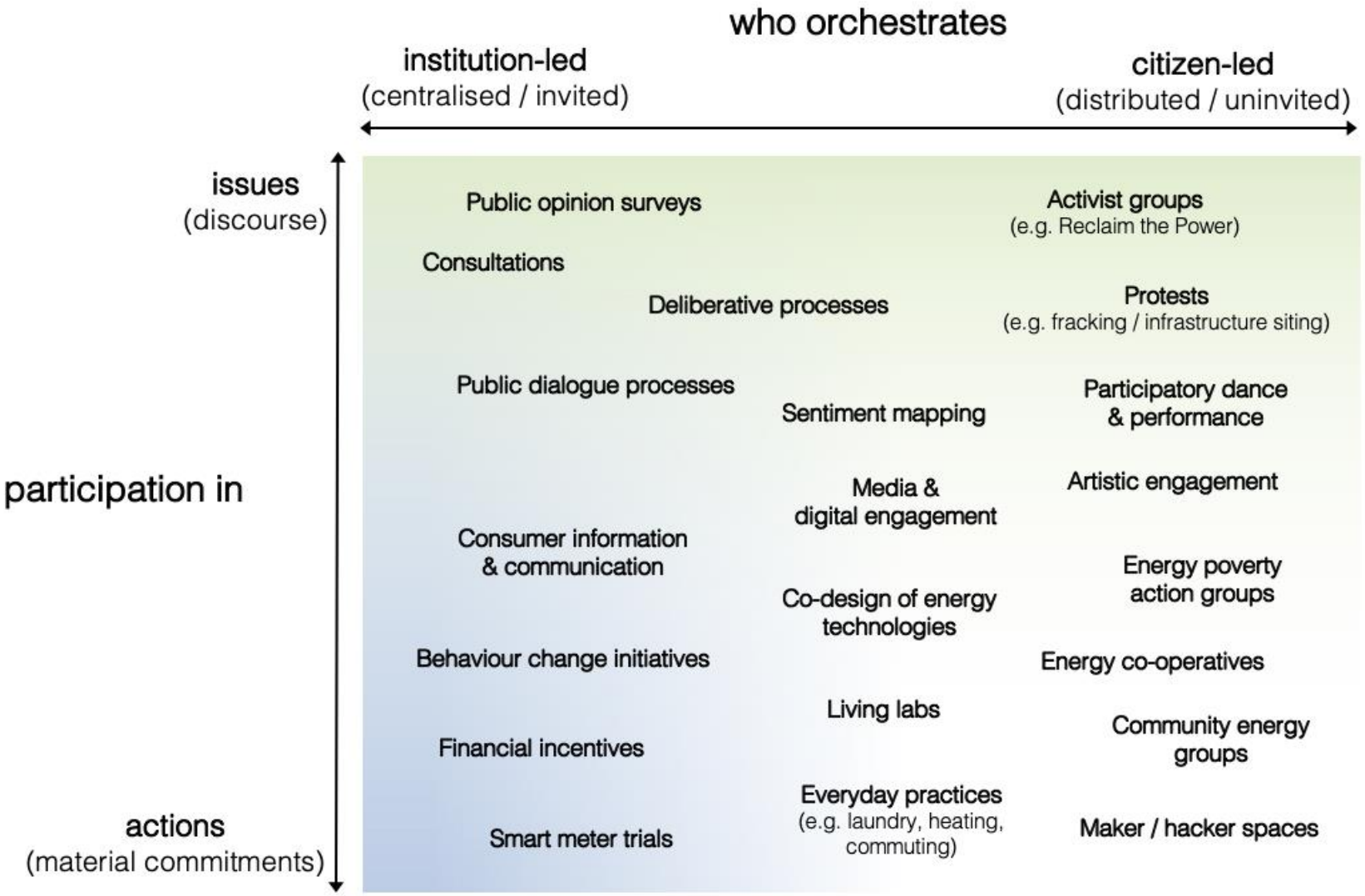
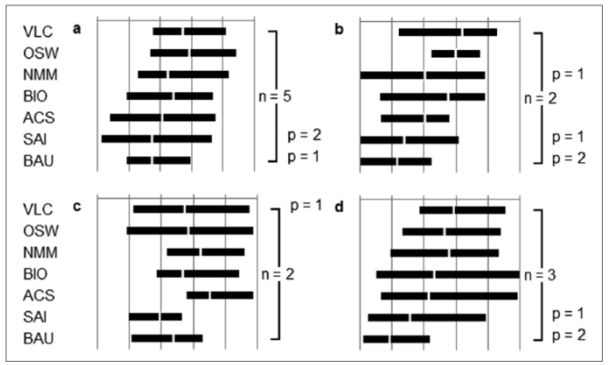
Mapping ecologies of participation across systems



(Chilvers et al. 2017, 2018, 2021; Pallett et al. 2019)

The Distributed Deliberative Mapping (DDM) Experiment



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Socio-technical visions of energy futures

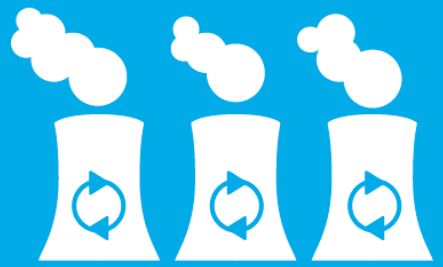
FUTURE ENERGY VISION 1

Business as usual

A vision of a future where the energy system is similar to how it is now.

The energy market is regulated by the government in the service of economic growth to provide a secure and constant energy supply. The public's role is mainly as consumers of a 24/7 supply of energy. Reductions in energy use are encouraged through coordinated energy efficiency and behaviour change initiatives. Energy is mostly supplied by fossil fuels (including coal and natural gas – with a commitment to fracking) and nuclear power, but some is supplied by sources of renewable energy (such as wind, wave and solar power). Power is distributed by large energy companies via a centralised grid.

Advocates of this vision include parts of the UK Government and large energy companies.



IF THIS IS THE FUTURE WE ARE HEADING INTO...

WILL WE BE ABLE TO MEET CLIMATE CHANGE TARGETS?
CAN A CENTRALISED ENERGY SYSTEM BE FAIR AND EQUITABLE ?

FUTURE ENERGY VISION 2

Large-scale technologies

A vision of a future where new technologies are developed and deployed to reduce carbon dioxide emissions.

In developing these technologies decisions are made by experts on behalf of the public. There are no restrictions on energy use and overall levels of consumption can rise. Energy is supplied by a mix of fossil fuels accompanied by technology for capturing carbon dioxide before it is released into the air, biofuels that have been enhanced through genetic modification to make them more productive and nuclear fusion. Power is distributed by large energy companies via a centralised grid.

Advocates of this vision include corporate philanthropists like Bill Gates and scientists like James Lovelock. Existing examples include new nuclear power stations like Hinkley Point and scientific projections that assume bioenergy with carbon removal will be effectively deployed on a large scale.

IF THIS IS THE FUTURE WE ARE HEADING INTO...

WILL THESE TECHNOLOGIES BE AVAILABLE SOON ENOUGH?
ARE THERE ANY POTENTIAL NEGATIVE SIDE EFFECTS?
WHO STANDS TO BENEFIT AND WHO WILL BEAR THE RISKS?

FUTURE ENERGY VISION 3

Deliberative energy society

A vision of a future where the public has much more of a say over what happens with the energy system.

The energy market is regulated by the government in the service of economic growth, but members of the public are active partners in decision making. People become more aware of issues relating to energy demand which lowers the overall level of energy use in the home and for transport. Energy is mostly supplied by sources of renewable energy (such as wind, wave and solar power), but some is supplied by fossil fuels (including coal and natural gas). Power is distributed by large energy companies via a centralised smart grid that includes information technologies to make the grid more efficient.

Advocates of this vision include social scientists, Government-sponsored public dialogue programmes like Sciencewise and civil society organisations calling for greater citizen empowerment.

IF THIS IS THE FUTURE WE ARE HEADING INTO...

CAN WE REALLY ENSURE EVERYONE HAS A SAY?
WILL THE PUBLIC ACTUALLY BE LISTENED TO BY THOSE IN POWER?
WILL DECISION-MAKING BE SLOWER AND AT WHAT COST?

Socio-technical visions of energy futures

FUTURE ENERGY VISION 4

Smart tech society

A vision of a future where 'smart' technologies are used to make the energy system more connected and efficient.

The energy market is heavily deregulated to encourage smart innovations in energy systems. The public's role is mainly as more active and aware consumers (or prosumers). Reductions in energy use are sought by improving energy efficiency and making the timing of energy demand more flexible and responsive to supply. Energy is almost entirely supplied by sources of renewable energy (such as mixed large- and small-scale wind, wave and solar power). Power is distributed through a decentralised smart grid that can store energy so that it is not lost and includes information technologies to make the grid more efficient.

Advocates of this vision include technology companies like Google or Apple and electric vehicle manufacturers like Tesla. Existing examples include smart technologies for managing energy at home like HIVE and government support for developing electric vehicles.

IF THIS IS THE FUTURE WE ARE HEADING INTO...

WHAT ARE THE IMPLICATIONS FOR PRIVACY AND CIVIL LIBERTIES?
CAN THOSE IN CONTROL OF SMART TECHNOLOGIES BE TRUSTED?
MIGHT LOW-TECH SOLUTIONS DO THE JOB JUST AS WELL?

FUTURE ENERGY VISION 5

Local energy partnerships

A vision of a future where people work together in partnership for localised energy systems.

Local governments, businesses and the public collaborate to support alternative models of growth, where non-monetary benefits are also valued. Reductions in energy use are sought by improving energy efficiency and making the levels and timing of energy supply appropriate for localised forms of energy production. Energy is mostly supplied by sources of renewable energy (such as small-scale wind, wave and solar power), but some is supplied by biofuels combined with technology for capturing carbon dioxide before it can be released into the atmosphere. Power is distributed through a decentralised smart grid that can store energy so that it is not lost and includes information technologies to make the grid more efficient. Heat is distributed through local networks.

Existing examples include community energy initiatives like community owned wind turbines and feed-in tariffs for paying those generating their own electricity. Advocates of this vision include local energy service companies and energy cooperatives.

IF THIS IS THE FUTURE WE ARE HEADING INTO...

WILL THE BENEFITS BE SHARED AND HOW?
WHAT CHANGES TO GRID INFRASTRUCTURE WOULD BE NEEDED?
WHO IS RESPONSIBLE FOR THE WHOLE ENERGY SYSTEM?

FUTURE ENERGY VISION 6

Off-grid energy communities

A vision of a future where communities live 'off-grid'.

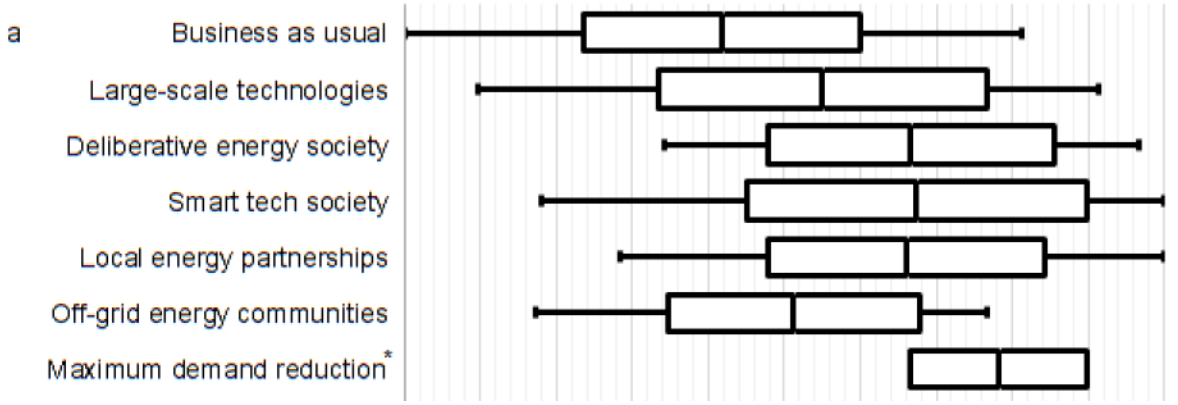
Decision making is led by communities with no involvement from government or businesses. They live in an entirely different energy system with an alternative model of growth, where non-monetary benefits are valued. Radical reductions in energy use are brought about through altogether different societal expectations of normal living standards, such as not having energy available all the time and using fewer electric appliances and digital devices. Energy is entirely supplied by sources of renewable energy (such as small-scale wind, wave and solar power, as well as ground source heat pumps). Power is distributed through local grids.

Advocates of this vision include existing radical off-grid communities. An existing example is off-grid energy production on the Isle of Eigg in Scotland where levels of use are strictly limited.

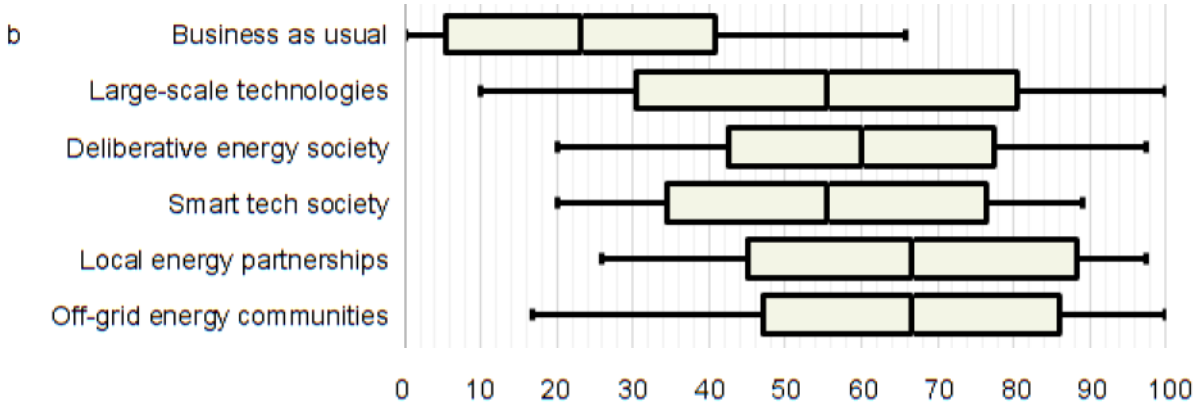
IF THIS IS THE FUTURE WE ARE HEADING INTO...

COULD THIS GROW BEYOND NICHE ACTIVITIES?
WOULD PEOPLE REALLY ACCEPT SUCH CHANGES?
WILL BASIC NEEDS BE MET UNDER THIS VIEW OF GROWTH?

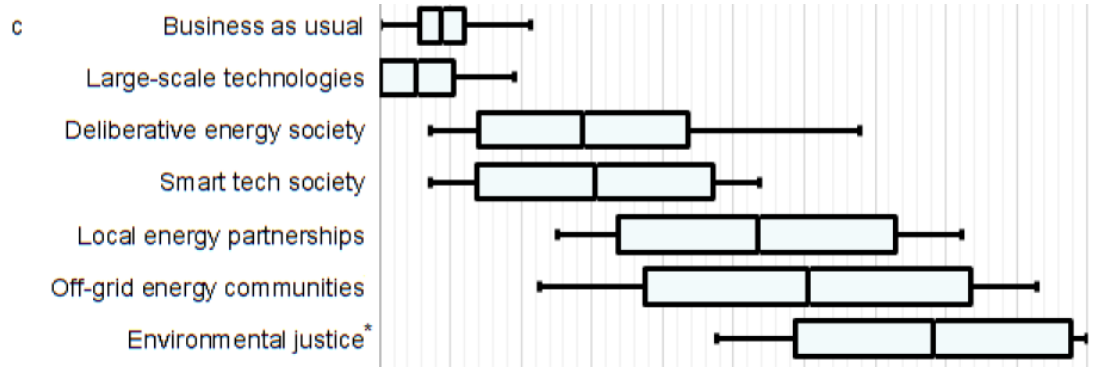
Specialists



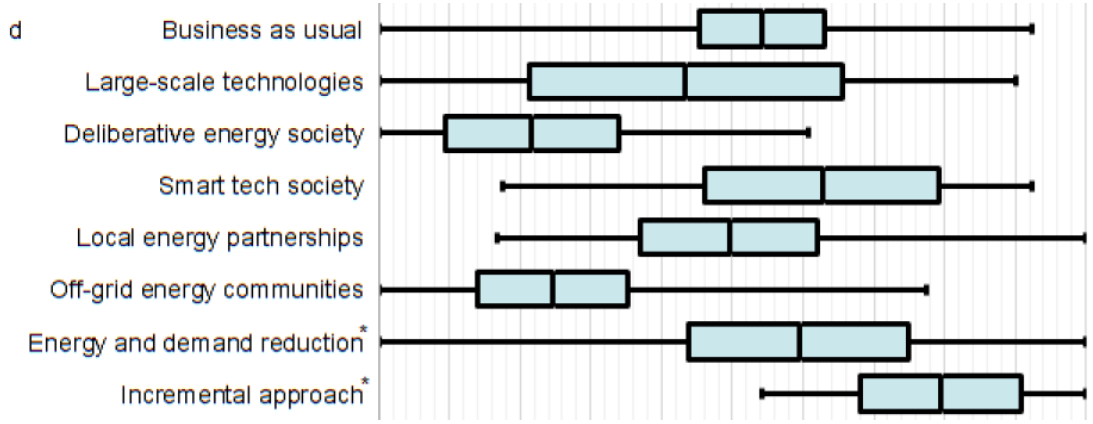
Deliberative citizens



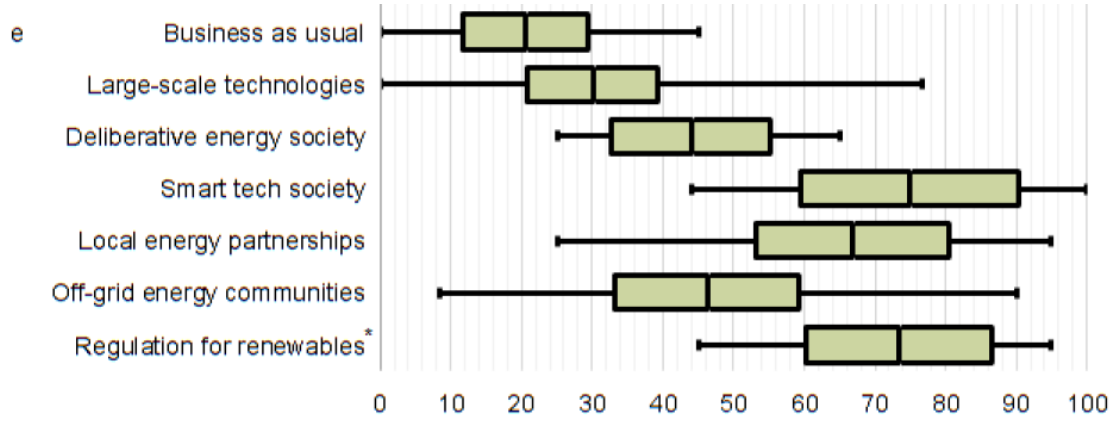
Activist group



Grassroots innovator group

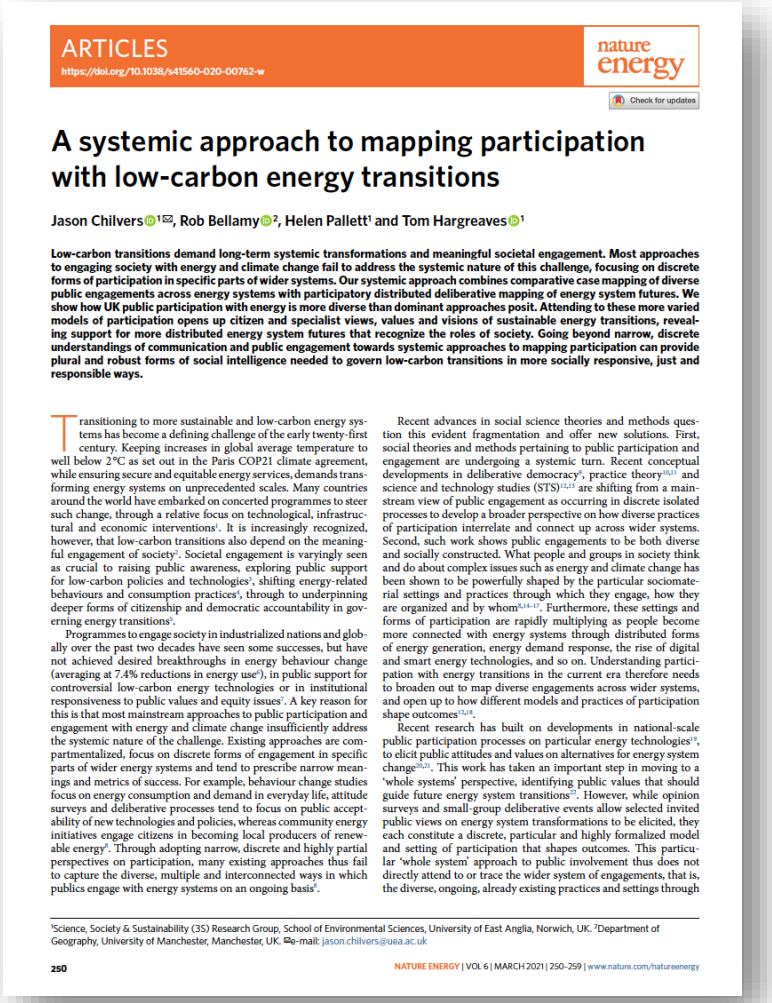


Smart energy consumers group



A systemic approach to mapping participation

- Mapping participation opens up to diversities, exclusions, emergence and systemic inequalities of participation, publics and public issues (beyond existing methods and institutional closures)
- Can inform the design of new anticipatory public engagement – participatory mapping of socio-technical system futures
- Shows that practices, formats and atmospheres of participation matter – and must be accounted for
- Shows specialist and citizen support for more distributed and inclusive energy system futures
- Can provide plural and robust forms of social intelligence needed to govern sustainability transitions in more socially responsive, just & responsible ways



ARTICLES
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nature energy
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A systemic approach to mapping participation with low-carbon energy transitions

Jason Chilvers[1]✉, Rob Bellamy[2], Helen Pallett[1] and Tom Hargreaves[1]

Low-carbon transitions demand long-term systemic transformations and meaningful societal engagement. Most approaches to engaging society with energy and climate change fail to address the systemic nature of this challenge, focusing on discrete forms of participation in specific parts of wider systems. Our systemic approach combines comparative case mapping of diverse public engagements across energy systems with participatory distributed deliberative mapping of energy system futures. We show how UK public participation with energy is more diverse than dominant approaches posit. Attending to these more varied models of participation opens up citizen and specialist views, values and visions of sustainable energy transitions, revealing support for more distributed energy system futures that recognize the roles of society. Going beyond narrow, discrete understandings of communication and public engagement towards systemic approaches to mapping participation can provide plural and robust forms of social intelligence needed to govern low-carbon transitions in more socially responsive, just and responsible ways.

Transitioning to more sustainable and low-carbon energy systems has become a defining challenge of the early twenty-first century. Keeping increases in global average temperature to well below 2 °C as set out in the Paris COP21 climate agreement, while ensuring secure and equitable energy services, demands transforming energy systems on unprecedented scales. Many countries around the world have embarked on concerted programmes to steer such change, through a relative focus on technological, infrastructural and economic interventions[1]. It is increasingly recognized, however, that low-carbon transitions also depend on the meaningful engagement of society[2]. Societal engagement is varyingly seen as crucial to raising public awareness, exploring public support for low-carbon policies and technologies[3], shifting energy-related behaviours and consumption practices[4], through to underpinning deeper forms of citizenship and democratic accountability in governing energy transitions[5].

Programmes to engage society in industrialized nations and globally over the past two decades have seen some successes, but have not achieved desired breakthroughs in energy behaviour change (averaging at 7.4% reductions in energy use[6]), in public support for controversial low-carbon energy technologies or in institutional responsiveness to public values and equity issues[7]. A key reason for this is that most mainstream approaches to public participation and engagement with energy and climate change insufficiently address the systemic nature of the challenge. Existing approaches are compartmentalized, focus on discrete forms of engagement in specific parts of wider energy systems and tend to prescribe narrow meanings and metrics of success. For example, behaviour change studies focus on energy consumption and demand in everyday life, attitude surveys and deliberative processes tend to focus on public acceptability of new technologies and policies, whereas community energy initiatives engage citizens in becoming local producers of renewable energy[8]. Through adopting narrow, discrete and highly partial perspectives on participation, many existing approaches thus fail to capture the diverse, multiple and interconnected ways in which publics engage with energy systems on an ongoing basis[8].

Recent advances in social science theories and methods question this evident fragmentation and offer new solutions. First, social theories and methods pertaining to public participation and engagement are undergoing a systemic turn. Recent conceptual developments in deliberative democracy[9], practice theory[10,11] and science and technology studies (STS)[12,13] are shifting from a mainstream view of public engagement as occurring in discrete isolated processes to develop a broader perspective on how diverse practices of participation interrelate and connect up across wider systems. Second, such work shows public engagements to be both diverse and socially constructed. What people and groups in society think and do about complex issues such as energy and climate change has been shown to be powerfully shaped by the particular sociomaterial settings and practices through which they engage, how they are organized and by whom[8,14–17]. Furthermore, these settings and forms of participation are rapidly multiplying as people become more connected with energy systems through distributed forms of energy generation, energy demand response, the rise of digital and smart energy technologies, and so on. Understanding participation with energy transitions in the current era therefore needs to broaden out to map diverse engagements across wider systems, and open up to how different models and practices of participation shape outcomes[15,18].

Recent research has built on developments in national-scale public participation processes on particular energy technologies[19], to elicit public attitudes and values on alternatives for energy system change[20,21]. This work has taken an important step in moving to a 'whole systems' perspective, identifying public values that should guide future energy system transitions[22]. However, while opinion surveys and small-group deliberative events allow selected invited public views on energy system transformations to be elicited, they each constitute a discrete, particular and highly formalized model and setting of participation that shapes outcomes. This particular 'whole system' approach to public involvement thus does not directly attend to or trace the wider system of engagements, that is, the diverse, ongoing, already existing practices and settings through

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(Chilvers et al. 2021)

A participation observatory

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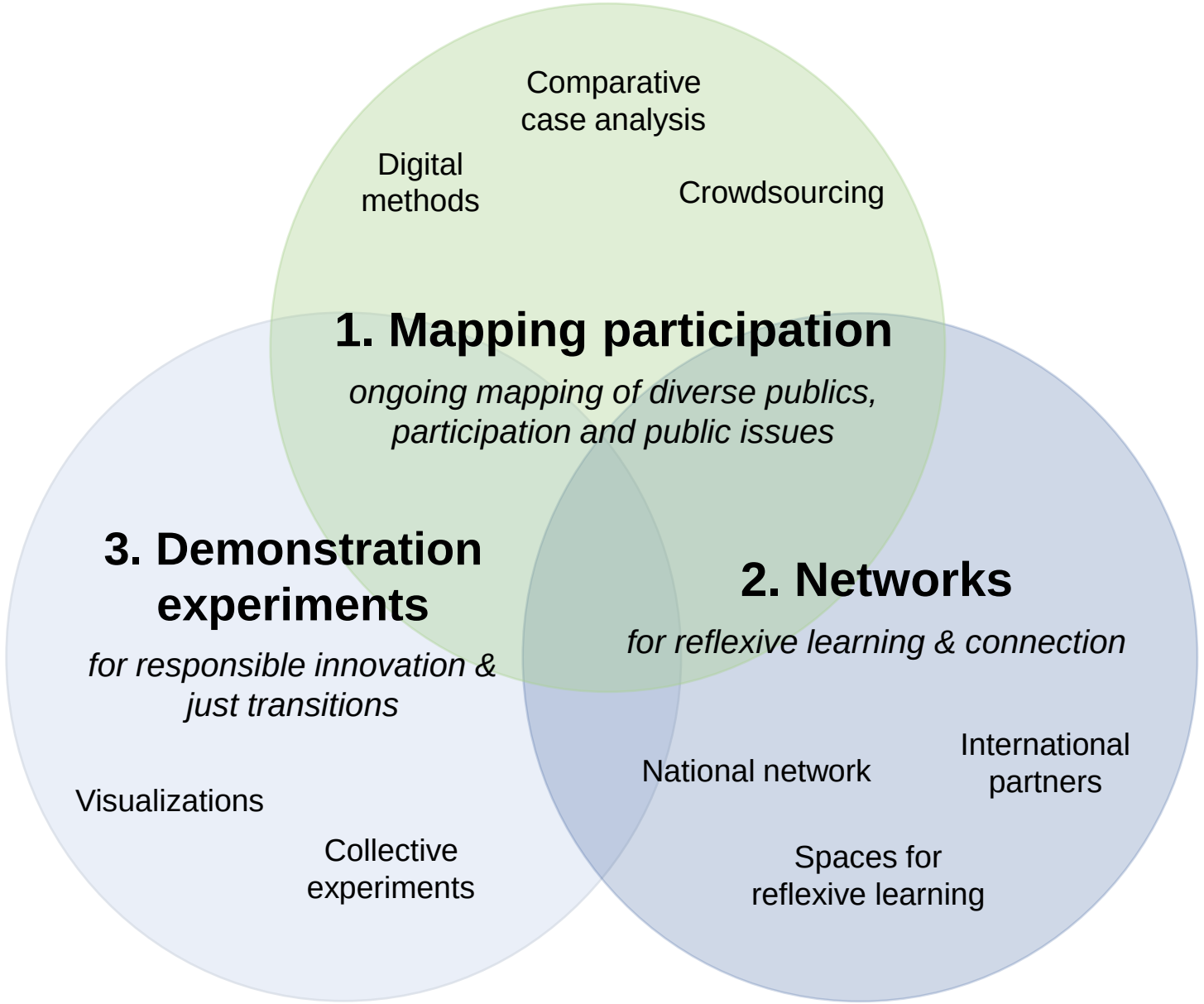
Public Engagement Observatory



Conclusions

STS offers alternative ways of imagining and seeing – thus doing and valuing – participation

Experimental, systemic, responsible, responsive

Systemic approach to mapping participation opens up publics, participation, visions, values, doings

From representing (groups of) individuals to mapping collective practices of participation – take atmospheres, formats and practices of participation and democracy seriously

Novel institutional architectures like distributed observatories – ongoing mapping, reflexive learning and translation for more socially responsive, responsible and just transitions

Thank you

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