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Assembling the impossible: how games can support action on net zero

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ABSTRACT

Increasingly, games are used by researchers to engage people with subjects that they may otherwise find intangible, abstract, or remote. Acting on climate change is widely regarded to be one such subject. In this paper we introduce a new game-based workshop that blends art, performance and humour within scenario-based role-play to facilitate understanding of how local organisations might assemble the governance structures and resources capable of navigating local decarbonisation pathways. The game-based workshop builds on a narrative review of place-based governance of net zero, two embedded case studies examining interactions between national and local policymaking in England, and ten practitioner/expert interviews, which resulted in identifying seven challenges of organising to deliver transformative change. Developing this game approach through an iterative co-creation process in collaboration with artists facilitates the playful exploration of the challenges local actors face, and ways in which existing multilayered and fragmented governance can be negotiated. Our experience suggests this game approach is both a research tool and a means of creating an open, collaborative space for practitioners, policymakers, and academics which encourages participants to mobilise diverse knowledges, to sequence actions and resources for local action, and to develop local strategy on net zero.

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Figures and tables

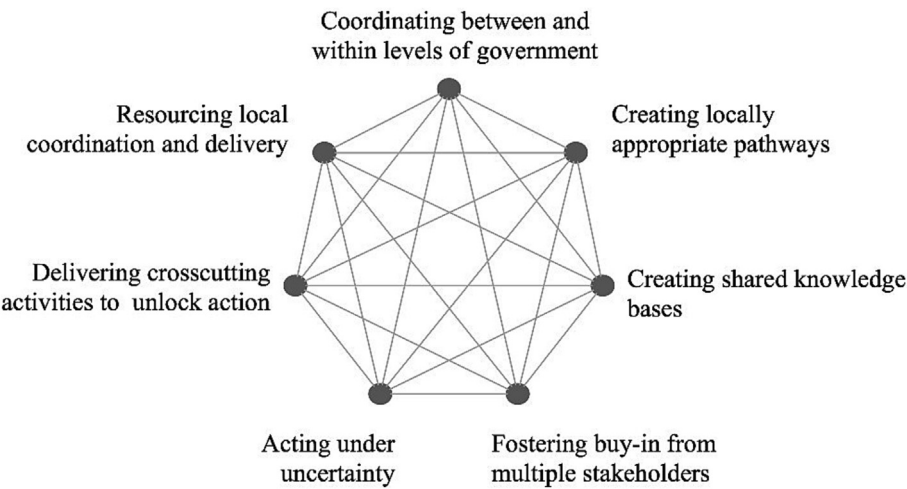


Fig. 1. The seven challenges of organising to deliver net zero [2].

Table 1
Frequency and distribution of policy instruments derived from Cairney [1] in local authority, combined authority, and national climate action plans [4].

	Policy - LA	Policy - CA	Policy - Nat
1: Compliance markets (ETS)	0 %	0 %	1 %
2: Economic incentive (subsidy)	3 %	7 %	3 %
3: Funding scientific research	0 %	0 %	4 %
4: Government-backed loans	1 %	0 %	4 %
5: Grants and funds	40 %	38 %	17 %
6: Organisational change	2 %	4 %	3 %
7: Planning	5 %	3 %	3 %
8: Public expenditure (capital and revenue)	14 %	0 %	6 %
9: Public education and advertising	0 %	9 %	6 %
10: Public procurement	0 %	0 %	2 %
11: Regulations, legislation and standards	31 %	31 %	23 %
12: Regulated funding & levies	0 %	1 %	4 %
13: Strategy	4 %	8 %	23 %



Fig. 2. Two local councillors from local authorities which constitute the West Yorkshire Combined Authority discuss the ways in which the game reflects their experiences in the council chamber in Leeds, UK, 11/05/2024.



Fig. 3. A participant explaining why they are playing a particular card in Leeds, UK, 11/05/2024.

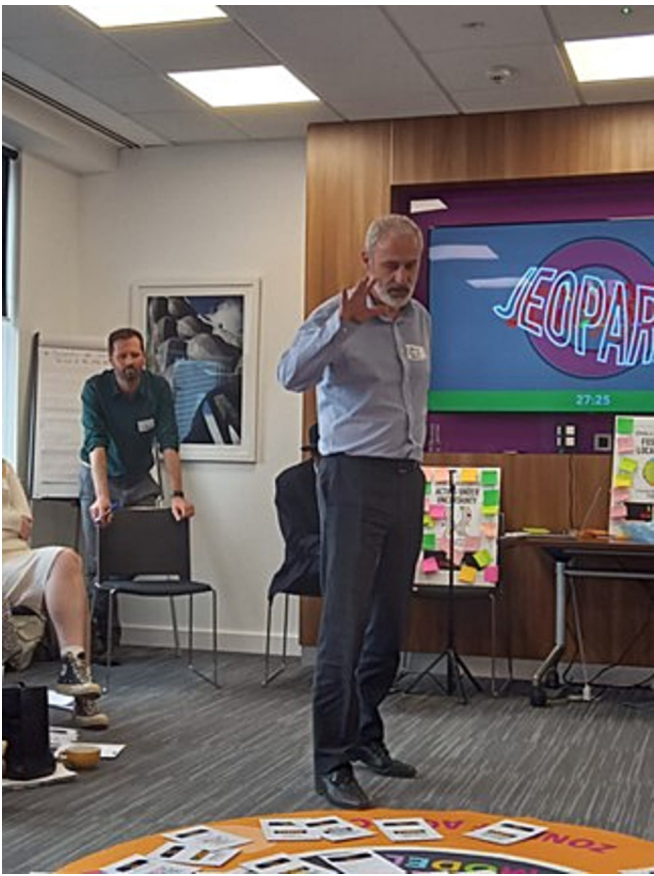


Fig. 4. A climate change manager explains why the group should consider demolition and rebuild rather than refurbishment as a solution to reducing carbon emissions in social housing Leeds, UK, 11/05/2024.

Table 2

The seven challenges of organising to deliver net zero [3].

1. Coordinating between and within levels of government, which are simultaneously siloed and overlapping and exhibit misaligned powers and responsibilities.
2. Creating locally appropriate pathways that account for place-specific strengths and weaknesses, recognising that no one size fits all.
3. Creating shared knowledge bases out of current dispersed and sporadic collection, retention and usage of data, enabling informed decisions and sharing of best practice.
4. Fostering buy-in from multiple stakeholders to secure legitimacy for net zero actions that harnesses the expertise and resources of multiple local actors.
5. Enabling decision-making in an uncertain environment (acting under uncertainty), despite many local decisions being affected by decisions made elsewhere.
6. Delivering cross-cutting activities to unlock local action, such as stakeholder engagement or revising procurement policies, whilst recognising the limited local powers and dedicated resources for such activities.
7. Resourcing local co-ordination and delivery in a landscape of constrained public finances, competitive, uneven grant allocation, and skills shortages.

Table 3

Contributions and responsibilities in game production and development.

Game play	Contributions and responsibilities
<p>Players select a scenario relating to local NZ delivery and then have to work collaboratively to solve this scenario against the clock</p> <p>Players are dealt 3 resource cards (money, people, action) which they take in turns to add to the 'zone of agency', justifying how their resource contributes to solving the scenario</p> <p>Resource cards are supplemented by message cards (blank cards players can write on) to add expert knowledge into gameplay</p> <p>Once the time is up, players assess the scenario against the resources they have inputted</p> <p>The game then enters a timed jeopardy round where players select two challenges of organising to deliver (introduced earlier in the workshop format) pertinent to the scenario, which each introduce a jeopardy</p> <p>The players then have to reflect on how the jeopardies impact their ability to solve the scenario</p>	<p>Scenarios developed by researchers based on embedded case studies and expert/practitioner interviews</p> <p>Resource cards developed by researchers based on embedded case studies and expert/practitioner interviews, and in collaboration with the artists</p> <p>Challenges developed by the researchers based on a literature review of policy and practitioner publications [2] while jeopardies co-developed by the researchers and the artists</p>

CRedit authorship contribution statement

Esmé McMillan: Writing – original draft, Visualization, Project administration, Investigation, Formal analysis, Conceptualization. **Jake Barnes:** Writing – review & editing, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization. **Morag McDermont:** Writing – original draft, Methodology, Investigation, Formal analysis. **Colin Nolden:** Writing – review & editing, Supervision, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization. **Sophie Mellor:** Visualization, Methodology. **Simon Poulter:** Visualization, Methodology.

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Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Live Model abstract

Live Model is a collaborative game designed to empower action on net zero. How can you work together to deliver progress? What challenges might you experience? What opportunities lie in getting it right? The aim is to solve a place-based net zero scenario collaboratively whilst navigating a set of governance challenges, all set against the clock. The game is built around a simple insight: that organising to deliver net zero is as important as organising the delivery of net zero but the distinction is often not recognised. The former is often forgotten in a rush to do the latter. Whilst the urgency of the climate emergency demands accelerating delivery, thinking about organising to deliver foregrounds critical but often neglected aspects of achieving change. This includes foundational work required to unlock and guide action and the development of place-based visions for net zero that respond to situated needs and aspirations. The game is intended for practitioners in the net zero space, rather than the general public. The game can be used within one organisation – for example, a team within a council or a community group – or between teams and organisations, for instance at a local net zero forum with representatives from local government, VCSE sector, local businesses, etc. Having a variety of participants is useful for generating discussion [5].

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Data availability

Data will be made available on request.

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Further reading