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People-centric Emission Reduction in Buildings: A Data-driven and Network Topology-based Investigation

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The building construction sector accounts for 40% of the global carbon emissions. This paper investigates public attitudes to major climate negotiations and events between 2009 and 2021 on the discourse of emissions reduction in buildings as climate action. We track the propagation of hashtags on Twitter using natural language processing and graph theory. We found that public reactions are reactive to high-level policy negotiations that emphasises specific hashtags. For example, between 2009-2012, #greenbuilding and #emissions were highly influential, shaping the public discourse on climate action. In 2013-2016, #lowcarbon, #construction and #energyefficiency were leading the discourse, which were replaced by hashtags like #climatetec, #netzero, #climateaction, #circulareconomy, and #masstimber, #climatejustice in 2017-2021. We also found that the current building emission reduction context emphasises social and environmental justice dimensions, which significantly impacts policy. Understanding the dynamism of such discourse is critical for a people-led and just low-carbon transition.

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