

Urban renewable energy transitions: local financial innovations for just and transformative development

RP5002

Background

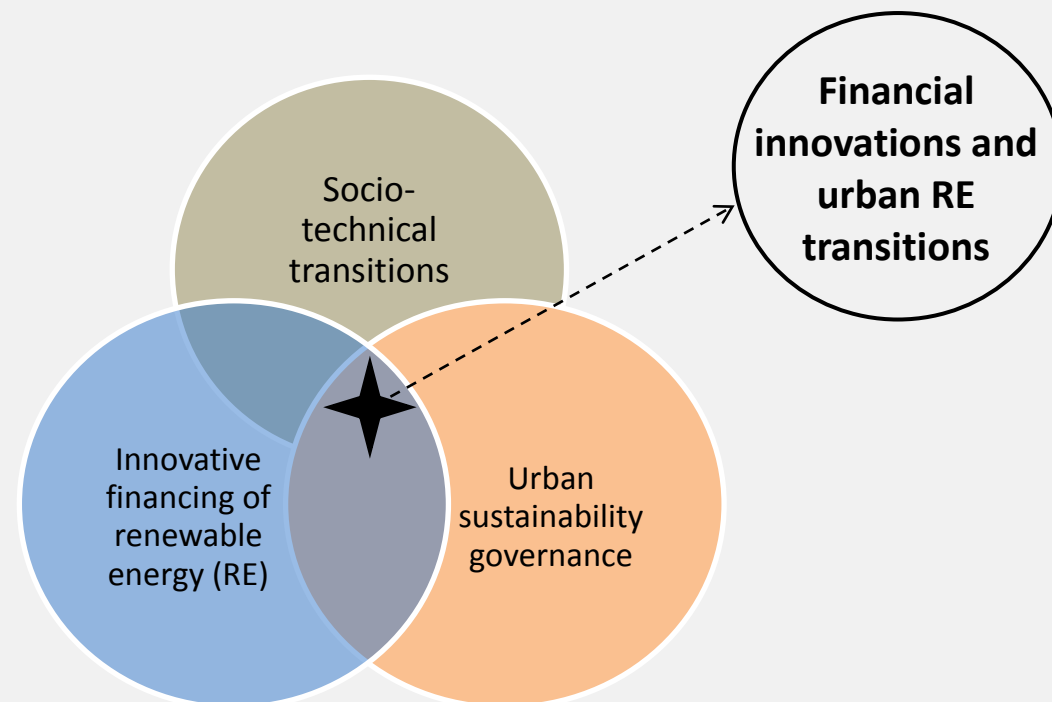
- Cities are important social and experimental arenas for bringing about sustainability transitions
- It is unclear whether urban actors are achieving change at scale, and what this might look like (e.g. RE supply to the city)
- Urban actors remain constrained by a lack of authority and resources, often placing responsibility on individuals/households



The role of finance

Finance is a productive entry point...

- Capital investment underpins energy infrastructure development
- Alternative business models for RE development are drawing on diverse sources of capital (civil, public, private)
- Illuminates distribution of costs/benefits ... which is lacking conceptualisation in transitions theory



How does finance scale up renewable energy (RE) in the city?

Can novel financial mechanisms generate social equity outcomes?

METHODS

1 In-depth qualitative case studies of 3 novel financial mechanisms for RE development in **Melbourne** and **Sydney** comprising semi-structured stakeholder interviews and document analysis:

- Low-income solar finance (Melb)*
- Local government renewables group purchasing (Melb)*
- Commercial-scale solar crowdfunding (Syd)*

2 International comparison through qualitative case studies of **Bristol, UK** and **Malmö, SE**, recognised as ambitious cities with existing renewable energy supply.

Scale can be understood in regards to RE output, geographical reach, the cumulative effects of diverse infrastructures displacing fossil fuels, or the replication and translation of policies between places.

For example:

- A consortium of local stakeholders launched a tender for 110GWh RE supply from a large-scale generator outside of Melbourne – the group aggregated their energy use to stimulate investment in new RE assets via multiple power purchase agreements (PPAs) which offset their energy consumption on site
- Darebin City Council introduced a rate repayment scheme for household solar PV, providing loans for pensioner households in the LGA, and has completed its third phase – the model is being piloted across 22 Melbourne municipalities by EAGA

Social equity questions relate to the distribution of impacts/benefits, community participation, and recognition of vulnerability and rights to access goods and services.

For example:

- Darebin's solar scheme (see left) seeks to reduce pensioners' vulnerability to electricity costs during heat waves and cold winters (due to low incomes) by loaning the upfront cost of a solar PV system to generate "free" electricity on site
- Pingala energy cooperative established a platform for residents in Sydney to purchase shares in a commercial-scale solar PV system installed on a local brewery to enable broad participation in the shift towards a decentralised RE system

- Bristol Energy Cooperative in the UK likewise conduct share offers to fund solar PV installations on community buildings as well as local solar farms; it also recirculates generated profits through a community fund for local energy-related programs and not-for-profit services



Assemblage methodology

An orientation to the field

- *Tracing actor relations and networks* – urban interventions comprise dynamic configurations of heterogeneous actors embedded in place
- Openness to *multiplicity* through in-depth research
- Recognising the importance of *materiality* in shaping change processes (distributed agency among human and non-human actors)
- *Capturing translocal networks* of actors, resources and mobile policies

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