

Financing renewable energy in cities is an opportunity to prioritise public services provision and inclusive community participation

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Introduction

Despite city leadership on climate change – where national government ambitions fall short (UNEP 2020) – the emissions reduction potential of cities remains unrealised (CUT 2019). As the urgency of limiting global warming to 1.5 degrees Celsius intensifies (IPCC 2021), global city networks are increasing calls for green finance to be channelled towards local climate policy implementation (Westman 2021).

Globally, the “finance gap” for decarbonising infrastructure, often concentrated in urban areas, looms large. The Cities Climate Finance Leadership Alliance estimates that USD\$93 trillion worth of investment between 2015 and 2030 is needed, incorporating business as usual spending as well as decarbonisation costs (CCFLA 2015). Meanwhile, only 3 out of 23 high-income countries have provided their fair share of a \$100 billion commitment of annual climate investment by 2020 to support low- and middle-income countries (Colenbrander et al. 2021).

Business-as-Usual Financing of Urban Infrastructures

Municipalities often face budget constraints and a lack of legislative authority over key systems contributing to climate change, such as energy and transport, which limit large-scale investments. Mainstream policy discourse suggests that local government should be supported to meet the requirements of global financial markets through internal capacity building and technical knowledge. For example, the [City Climate Finance Gap Fund](#) implemented by the World Bank and European Investment Bank provides municipalities with funding and knowledge to establish “finance-ready” and “bankable” climate-friendly projects.

An important consideration for city practitioners and decision-makers must be how investment priorities align with local social and ecological needs. If the social equity and justice dimensions enshrined in the Sustainable Development Goals (SDGs) and signalled in green pandemic recovery pledges (C40 2020) are to be realised, city decision-makers need to grapple with how existing economic structures generate uneven urban development outcomes.

A key concern is the financial bottom line. In simple terms, private debt- and share-based investment is accompanied by obligations associated with cost recovery and profitability (relative to financial risk) in the form of interest and dividend payments over short- or more “patient” long-term time horizons.

These standards reduce low carbon development opportunities to their financial component parts and create thresholds for investment based on quantitative measures of value, risk, and return. Privatised infrastructure provision is characterised by opaque (global) ownership structures (Hall et al. 2018) and transference of costs to (local) governments (Christophers 2018) and consumers (Pryke and Allen 2019).

Local and Social Priorities for Climate Finance in Cities

At worst, profit-oriented investment perpetuates the concentration of financial benefits among the few, inaccessibility and spatial exclusion, and a lack of democratic oversight over essential infrastructures. Local governments and community organisations play a key role in addressing these social and geographical trade-offs by establishing social priorities and conditions for financing transitions to zero carbon cities.

Community energy co-operatives are a well-known example of collective investment and management of local renewable energy by individuals (Hatzl et al. 2016). Through share purchases, community energy allows individuals to have a direct stake in renewable energy developments which are typically guided by environmental and social objectives rather than commercial profitability.

Income-contingent loans for higher education issued by the Australian Government provide a different example of a public financing mechanism structured to ensure equitable social outcomes. The upfront cost of university education is covered by a government loan. Repayments are not required until the student reaches a higher income threshold in the future to avoid harmful financial burdens while supporting education as a public good (Spies-Butcher and Bryant 2018).

Prospects for City-led Adaptation and Reconfiguration of Financial Standards

Transitions to renewable energy production and consumption in cities provide an opportunity for innovative public services provision and engagement of local communities. Building on the precedents identified above, this paper highlights alternative modes of renewable energy investment in cities led by local government and community organisations (Hadfield 2021).

The [Solar Saver](#) scheme, first established by Darebin City Council, Melbourne in 2013, involves the provision of public loans to aged and disability pensioner homeowners for rooftop solar. To address the upfront cost barriers faced by pensioner households as well as vulnerability to heat waves and increasing energy bill costs, the loan scheme breaks from commercial finance offerings by providing long-term, interest-free credit. Council models the balance of loan repayments and future cost savings on energy bills to ensure participating residents will be financially better off (MEFL 2016).

By renegotiating the terms of credit, Solar Saver enables the installation of rooftop solar PV on a previously excluded cohort of low-income owner-occupied housing. Residents benefit from a trusting relationship with council as a non-commercial broker and adviser, while the loans are ultimately repaid to council for future expenditure via a local property tax charge.

[Solar Park](#) in Helsingborg, Sweden demonstrates a more radical approach through the financing of a community solar array on a former landfill site in the city. Founded in 2015 by representatives of the local municipal energy company, Solar Park aims to increase solar energy production near urban centres, where there is high energy demand, and maximise participation through co-ownership.

In contrast to market-based development by private utility companies, the initiative enables direct and transparent ownership and management of the renewable energy facility by those primarily interested in solar technology. The community association makes clear that shareholders cannot expect a financial return on their investment, and may not get their money back, due to low energy market prices. Nevertheless, Solar Park has grown to over 400 members across Sweden and has sold over 2000 ground-mounted solar panels.

Conclusion

Innovative approaches like interest-free finance for low-income homeowners and share-based community ownership of renewable energy facilities in cities illustrate the potential for adaptations and radical reconfigurations of orthodox finance to overcome some of the limits and exclusions of profit-oriented investment.

With attention on cities in the latest [international climate policy negotiations](#), local governments have the opportunity to advocate for quality public services and the interests and needs of communities, especially the vulnerable and marginalised. Social value propositions and democratic oversight are needed to ensure that low carbon urban infrastructure development avoids continued transfers of public funds to global investors and entrenched urban inequalities.

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