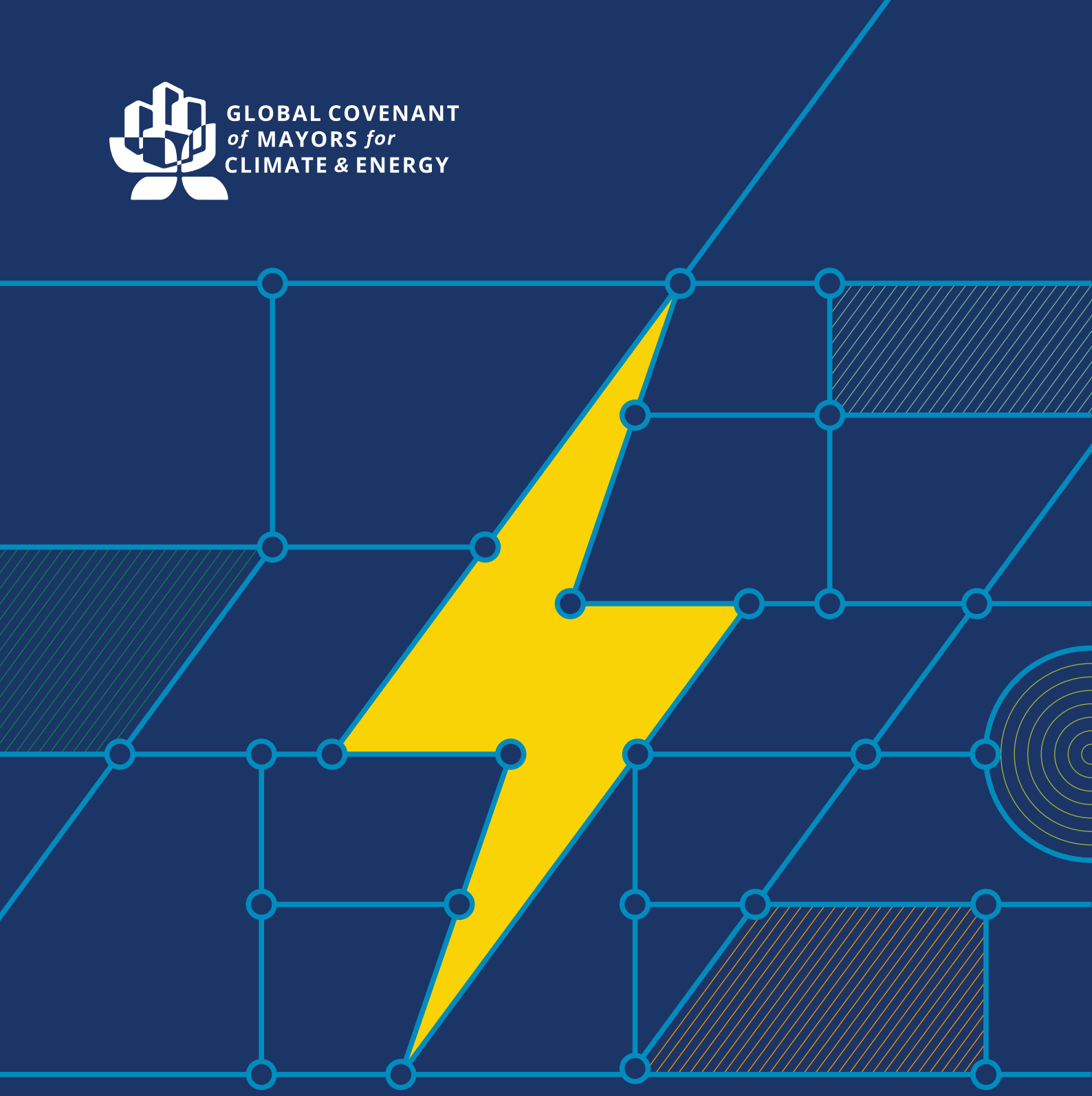
GLOBAL COVENANT of MAYORS for CLIMATE & ENERGY



UNLOCKING URBAN ENERGY ACCESS AND POVERTY

Summary Report

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Executive Summary

To complement the Global Covenant of Mayors' (GCoM) addition of the Energy Access and Poverty Pillar (EAPP) to its Common Reporting Framework (CRF), this report summarises global research on local governments' barriersand potential in facilitating energy access and addressing energy poverty.

The research approaches included:

- Literature review of global advocacy, case studies and academic research on energy access and energy poverty;
- An online survey and data analysis of 74 GCoM signatories on their barriers, local government powers and initiatives in improving energy access and alleviating energy poverty; and
- Stakeholder interviews for a case study on energy access and energy poverty in Cape Town, South Africa.

This Summary Report walks readers through an exploration of their context and political economy around energy access and poverty, via the following questions. Please refer to the full Research Report for detailed analysis and narrative.

- What does energy access and energy poverty mean for communities, households, and citizens?
- What are the consequences of the barriers local governments face in facilitating energy access or addressing energy poverty?
- How do the powers local governments possess or lack influence how energy access solutions are realised within their political economies?
- What approaches and levers are appropriate and effective for their cities' context and available powers in enabling energy access solutions?

Key findings—based on contextual and temporal snapshots of urban energy access and poverty—include:

- Understanding energy poverty—or lack of energy access—as a **form of deprivation in local lived experiences** provides critical information for local governments to **design policy, infrastructural, technological, and socioeconomic interventions.**
- Local governments have **great potential** to facilitate energy access and alleviate energy poverty due to their **ownership of data**, and **proximity to local lived experiences.**
- Local governments also face **barriers** in facilitating energy access: in the **financing** of solutions, **institutional capacity and structure** to deliver, navigating **policy landscapes, engagement and collaboration** with other stakeholders, the availability of **data** and **physical and human context**, and lack of **political leadership.**
- Local governments tend to have limited powers in influencing the urban assets and functions around energy services. A deeper understanding uncovers opportunities available for local action.
- Local governments can use three approaches to address their barriers: **short- *and* long-term outcome evaluation; efficient, effective, *and* equitable capacity allocation;** and **maximise available powers via collaborative case-making.**
- There are many possible levers for local governments to deploy in realising energy access solutions, via **policies & regulation, stakeholder collaboration, internal capacity building & data collection, investment & securing finance,** and **city-led programmes.**

The analyses and reflections throughout this research indicated that more regionally or thematically focused studies are imperative—to further understand the political economies and local narratives that local governments and their citizens work and live within.

Introduction

Research overview

The Global Covenant of Mayors (GCoM) launched the Energy Access and Poverty Pillar (EAPP) of its Common Reporting Framework (CRF) in 2022, emphasising the critical role of energy access and poverty in urban sustainability. Under the EAPP, signatories aim to act on and monitor their progress against the UN Sustainable Development Goal (SDG) 7 to ensure access to affordable, reliable, sustainable and modern energy for all.[1]

Whilst local governments are well-aware of the urgency and benefits of addressing energy access and poverty, they often face significant and complex barriers that limit their interventions. Uncovering such barriers can help to identify opportunities to innovate solutions.

The full research report details the methodology and findings from a global literature review, a survey of GCoM signatories, and interviews with stakeholders from the City of Cape Town, South Africa.

Energy poverty as lived experience

Energy poverty is a direct expression of deprivation in a city's every-day life. It is at once context and impact, experienced by individuals, households, and communities. Seeking relatable expressions and experiences of energy poverty that are contextual—yet uncover patterns[2]—allows us to seek energy access solutions that enable people to access their city's economic, social, and cultural opportunities.[3]

Citizens' interactions with energy supply and billing systems point to the infrastructural, technological and policy solutions that local governments can implement or advocate for.[4] Experiences of energy poverty also provide qualitative data for local governments to tailor projects and socioeconomic support.

In this research, energy access was investigated via three categories detailed in Table 1: secure, sustainable and affordable energy.

[1] Global Covenant of Mayors (2022) 'Energy Access and Poverty Pillar (EAPP) Annex; Common Reporting Framework' > Available here
[2] Mcintosh, I. and Wright, S. (2018) 'Exploring what the Notion of "Lived Experience" Offers for Social Policy Analysis', Journal of Social Policy, 48, pp. 1–19 > Available here
[3] Heredia, M.G. et al.(2022) 'Mainstreaming a gender perspective into the study of energy poverty in the city of Madrid', Energy for Sustainable Development, 70, pp. 290–300 > Available here
[4] Filippidou, F. et al.(2019) 'Mapping energy poverty in the EU: policies, metrics and data', European council for an energy efficient economy I Summer Study proceedings [Preprint] > Available here

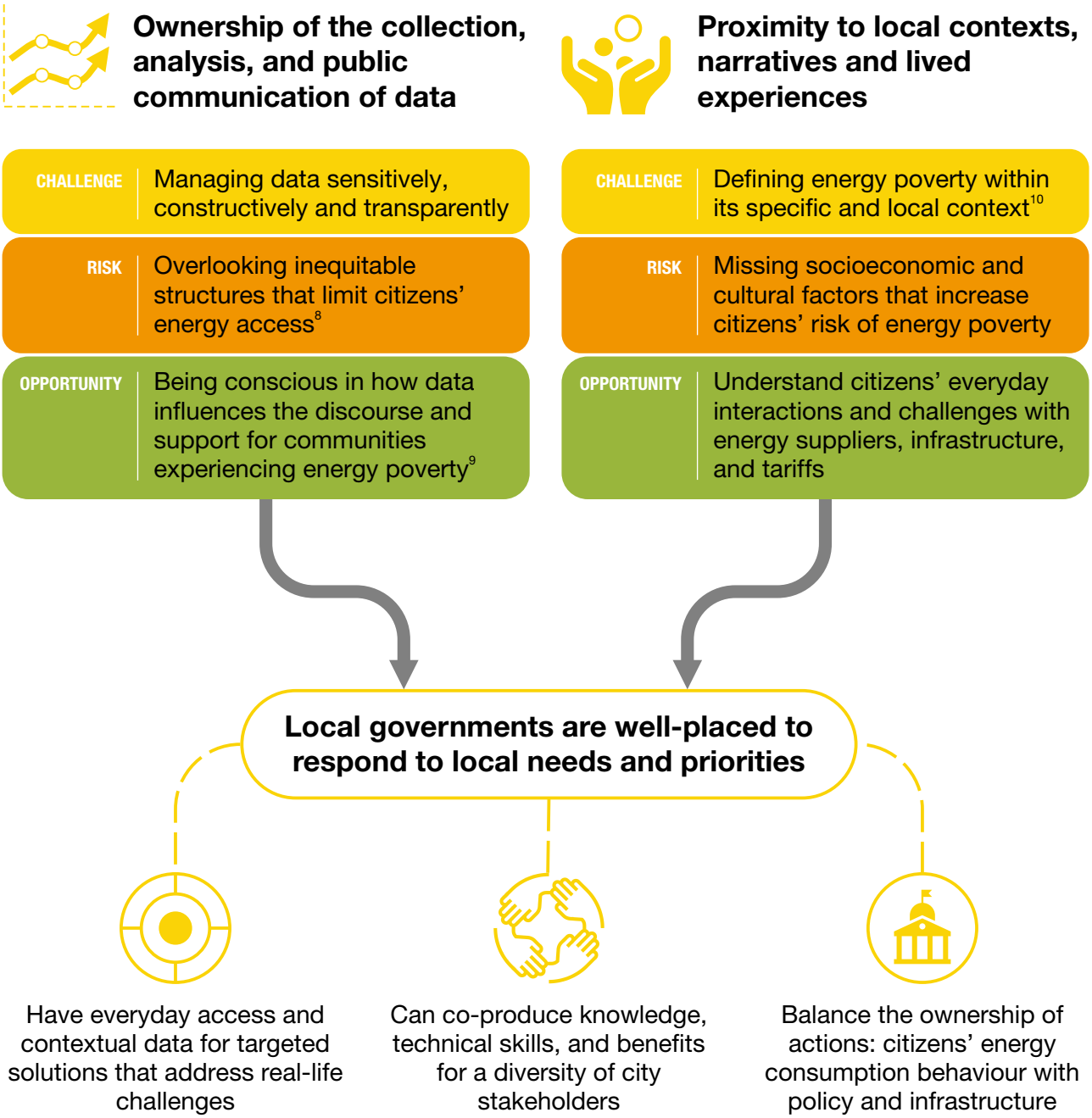
	Secure Energy	Sustainable Energy	Affordable Energy
Definition	Energy is accessible and/ or reliable—enabling access to economic, social and cultural engagement	Energy is generated from renewable and non-pollutive resources—avoiding negative health, social and gender consequences	Energy is affordable and/or building stock is energy efficient to maximise value of expenditure—enabling energy applications for economic, social and cultural opportunities
EAPP CRF targets (selected sample)	• Increase average duration of available electricity • Increase % of population or households with electricity access • Improve annual average energy consumption per capita, without affecting the level and quality of use	• Increase installed renewables capacity • Increase total renewable energy generation • Increase renewable energy consumption • Transition source mix of energy for heating & cooling	• Reduce % of population or households that face energy poverty • Increase building energy efficiency
Example of lived experience	While 86% of urban Myanmese households are grid-connected, service quality is often worse than rural connections due to the overwhelming demand for energy in urban areas, which out-strips grid capacity. Grid connections are often supplemented by batteries to cope with voltage fluctuations during monsoon season.[5]	Sustainable energy transition is not usually an immediate and single-step transition; households in Mozambique and Togo without electricity access rely on multiple energy sources, including biomass, for different applications and to provide redundancy in supply.[6]	Understanding in Central and Eastern Europe is complex, because poverty indicators are relative to national and international benchmarking, while self-assessments such as 'ability to keep one's home warm' are individually subjective.[7]

Table 1 Energy access definitions and targets detailed in EAPP CRF

[5] Aung, T. et al.(2022) 'City living but still energy poor: Household energy transitions under rapid urbanization in Myanmar', Energy Research & Social Science, 85, p. 102432 > Available here
[6] Karpinska, L. and Śmiech, S. (2020) 'Invisible energy poverty? Analysing housing costs in Central and Eastern Europe', Energy Research & Social Science, 70, p. 101670 > Available here
[7] Mahumane, G. and Mulder, P. (2022) 'Urbanization of energy poverty? The case of Mozambique', Renewable and Sustainable Energy Reviews, 159, p. 112089 > Available here

The potential of local governments

The research explored how and why local governments have significant potential and opportunities in facilitating energy access for communities and households:



[8] Simcock, N., Frankowski, J. and Bouzarovski, S. (2021) 'Rendered invisible: Institutional misrecognition and the reproduction of energy poverty', Geoforum, 124, pp. 1–9 > Available here

[9] Sareen, S. et al.(2020) 'European energy poverty metrics: Scales, prospects and limits', Global Transitions, 2, pp. 26–36 > Available here

[10] Zhou, K., Wang, Y. and Hussain, J. (2022) 'Energy poverty assessment in the Belt and Road Initiative countries: based on entropy weight-TOPSIS approach', Energy Efficiency, 15(7), p. 46 > Available here

Local governments' barriers to implementing energy access solutions

Local governments shared the limitations they face to energy access and poverty—and the efficacy of their efforts. These are summarised here in 7 barrier types across various energy access themes:

Highly relevant energy access themes

The barriers to action on energy access rated most relevant by survey respondents (Figure 1) were in **financing** solutions, navigating **political landscapes**, as well as **engagement and collaboration** with stakeholders.

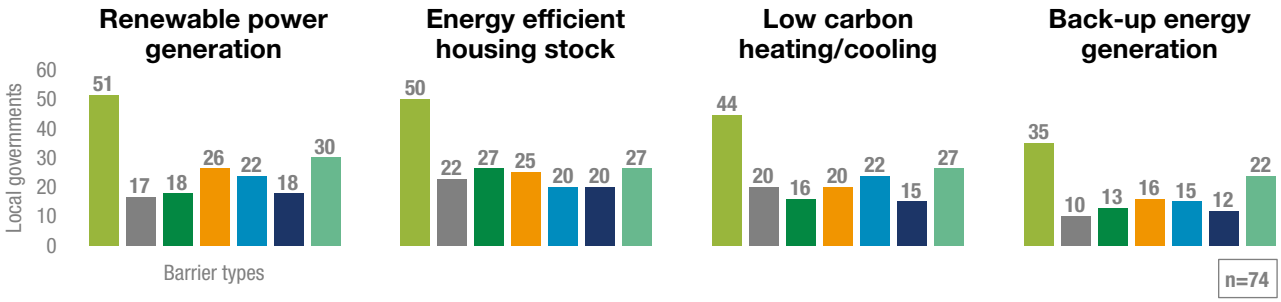


Figure 1 Barrier types for most 'relevant' energy access themes across surveyed local governments

Other notable energy access themes

Some other energy access themes also highlighted notable barriers (Figure 2) around **data** and **physical and human context** to inform energy tariffs, in addition to local governments' **institutional capacity and political leadership**.

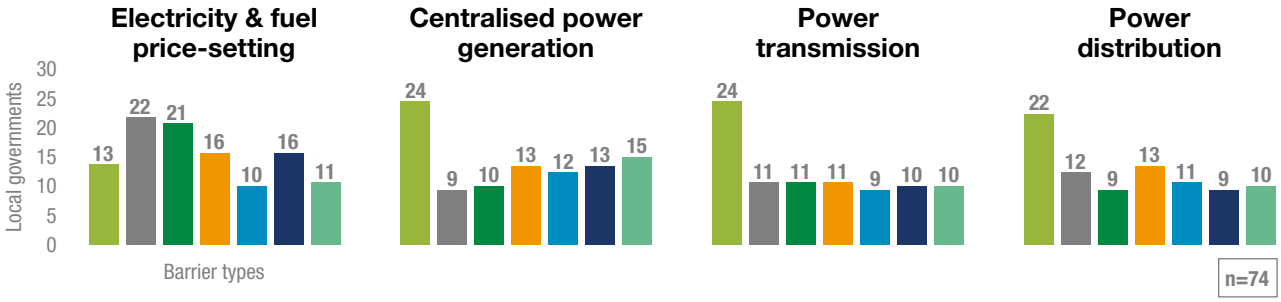


Figure 2 Barrier types for other notable energy access themes reported by surveyed local governments

Further reflection for energy access stakeholders

- Which barriers make it challenging to analyse, plan and implement energy access policies and solutions?
- Which other barriers reinforce finance as a barrier, and how?
- In what ways do these barriers influence how a local administration and its staff imagine, prioritise and progress feasible action?

Local government powers

The powers analysis provided a snapshot of the extent of authority and control that some local governments possess or lack in progressing energy access goals and solutions (Figure 3).

Power signatures

Many local governments indicated that they have limited to no powers across all energy access themes. This is useful to understand why some energy access themes appear more 'relevant' across multiple local governments; due to their ability to control/influence these themes within their capacity and political economies.

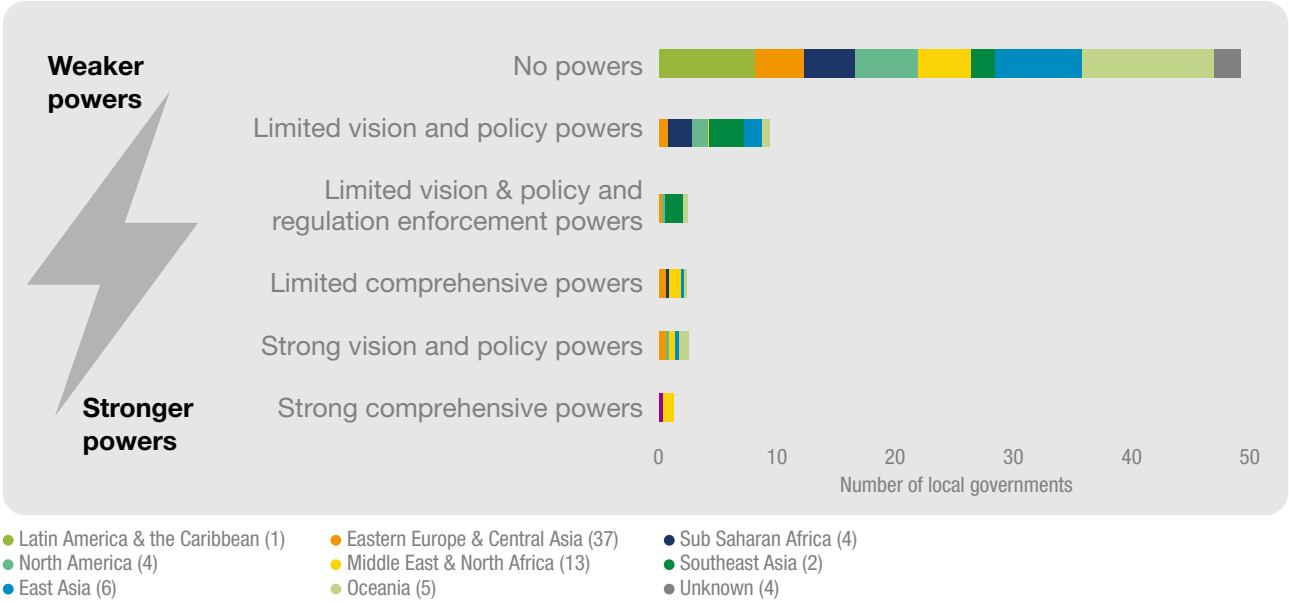


Figure 3 Indicative breakdown of power signatures by region (numbers in brackets highlight how many survey respondents belonged to each region)

Trends observed

The trend for powers to be shared between various levels of government and the private sector also provide insight; to where and how local governments may experience overt, gatekeeping or less-transparent barriers to facilitating energy access solutions:

National government	Regional government	Local government	Private sector
Usually own regulatory and budgetary powers for energy access	Dependent on national governance structure; influence in back-up energy generation	Strong influence over setting energy access vision and policy	Likely to have ownership or operational powers, especially in renewable energy generation

Further reflection for energy access stakeholders

- What does a local government's power configuration tell us about strategic and meaningful stakeholder engagement in facilitating energy access?
- How does analysis of a local energy access political economy allow stakeholders to direct capacity and resources towards progressing solutions?
- How can the diversity of power signatures at regional or global scales stimulate innovation and innovation in policy levers?

Local government levers

Unpacking the analysis of local government barriers and powers are a way to understand the energy access themes where focused action will be fruitful. Local governments can consider the following three approaches to do this, which can be iteratively and increasingly mainstreamed in their work and priorities in sustainability, social equity, and beyond:

Evaluating short- *and* long-term outcomes

Prioritise complex community, private sector, and vertical engagement that may not produce tangible nor immediate results

Efficient, effective *and* equitable capacity allocation

Provide city staff the clarity on and mandate to allocate resources towards equitable planning and outcomes in their everyday work

Maximising available powers by collaboration

Seek spaces, stakeholders and opportunities within their available powers to maximise their innovation, programmes and advocacy

These approaches are concretely demonstrated in the types of levers that local governments can use to address energy poverty and advance energy access. Some proposed levers are listed in the following page, labelled according to:

Time horizon for visible and tangible outcomes	**Level of capacity** required of local governments	**Powers configuration** that lever will apply to maximise
→ **Short-term** 1-3 years	● ○ ○ **Easy-win** Feasible with existing resources	ϟ ϟ ϟ **Sole powers** Local governments have sole authority
⟶ **Medium-term** 3-10 years	● ● ○ **Collaborative action** Includes engagement with internal & local stakeholders	ϟ ϟ ϟ **Shared powers** Local governments have sole or shared authority
⟶ **Long-term** More than 10 years	● ● ● **Extensive coordination** Includes engagement with regional & national actors	ϟ ϟ ϟ **Limited powers** Local governments have shared or no authority

Local governments may use the approaches to their progress through the climate and energy action journey, then refer to the levers as ways to respond to their citizens' lived experiences and the political economy of stakeholders. Please refer to the full Research Report for greater detail.

Power signatures

→ ● ● ○ ϟ ϟ ϟ **Energy and climate action master planning** for prioritising, documenting and implementing solutions

→ ● ● ○ ϟ ϟ ϟ **Analyse climate risks and adaptive capacity** to support critical energy infrastructure and policy frameworks

⟶ ● ● ○ ϟ ϟ ϟ **Establish legal and regulatory frameworks to implement interventions** with private sector participation

→ ● ○ ○ ϟ ϟ ϟ **Policy and programme design that speaks to lived experiences** that deliver socioeconomic benefits

Stakeholder collaboration

→ ● ○ ○ ϟ ϟ ϟ **Community-led data collection programmes** for quantitative and qualitative data of lived experiences

→ ● ● ○ ϟ ϟ ϟ **Co-design solutions with local communities that speak to specific contexts and needs**

⟶ ● ● ○ ϟ ϟ ϟ **Engage with private sector and academia** for solutions, implementation, and community training opportunities

⟶ ● ● ● ϟ ϟ ϟ **Transparent and documented processes** for local education and ownership of interventions and outcomes

⟶ ● ● ● ϟ ϟ ϟ **Engage with national and regional energy access actors** to advocate for trickle-down solutions and benefits

→ ● ● ○ ϟ ϟ ϟ **Coordinate stakeholders and data for national engagement** to make the case for implementing national actions

Lever legend

Time horizon for visible and tangible outcomes	**Level of capacity** required of local governments	**Powers configuration** that lever will apply to maximise
→ Short-term	● ○ ○ Easy-win	ϟ ϟ ϟ Sole powers
⟶ Medium-term	● ● ○ Collaborative action	ϟ ϟ ϟ Shared powers
⟶ Long-term	● ● ● Extensive coordination	ϟ ϟ ϟ Limited powers

Internal capacity building and data collection

- **Central working group for energy access** to lead ownership, coordination, and stakeholder engagement
- **Joining regional and international platforms** to share best practices, develop solutions, and form advocacy coalitions
- **Data-collection networks and infrastructure** between local government departments and relevant stakeholders
- **Data analysis and case-making** via coherent and systemic methodology to design and progress solutions
- **Monitoring, evaluation and reporting (MER) frameworks to support planning** and consider new information
- **Building local technical knowledge and capacity** across stakeholders for multi-disciplinary and co-designed solutions

Investment and securing finance

- **Financing energy access programmes** to subsidise or co-finance solutions, encouraging ownership and education
- **Analysis and innovation of funding models** to improve cost-parity of solutions and attract large-scale investors
- **Energy performance contracting (EPC)** to deliver energy efficiency retrofits with committed reduction targets
- **Engage with potential funders** to support and finance interventions, infrastructure, and levers

Programmes led by local governments

- **Energy data infrastructure and audit analysis** via smart metering to understand energy consumption and target solutions
- **Local community training** to ensure energy expenditure is maximised for living conditions and thermal comfort
- **Energy efficiency retrofits**—especially for social housing and other local government assets
- **Distributed renewable energy generation** on buildings to offset or subsidise energy consumption
- **Financial support for households to improve energy affordability** via tariff reviews and other socioeconomic support
- Municipal energy procurement directly with energy providers with secure supply uptimes and renewable generation sources

Lever legend

Time horizon for visible and tangible outcomes	**Level of capacity** required of local governments	**Powers configuration** that lever will apply to maximise
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⟶ Long-term	● ● ● Extensive coordination	ϟ ϟ ϟ Limited powers

Case Study

Energy Access and Poverty in Cape Town, South Africa

Cape Town faces complex energy-related challenges, including a highly nationalised, regulated and largely coal-fired energy supply system, rapid urbanisation and a growing proportion of low-income households, rolling blackouts due to load-shedding, declining national grant allocations, and geographical and legal constraints that limit grid extension to areas occupied by informal settlements.

A selection of some of the key initiatives being undertaken by the City of Cape Town and other key stakeholders to alleviate energy poverty and improve energy access are listed below; offering some practical examples of some of the levers identified in the previous section this report:

Establish legal and regulatory frameworks
Cape Town have been lobbying the national government to enable municipalities to procure renewable energy from private energy developers.

Central working group for energy access
Cape Town set up a Low-income Energy Services unit dedicated to improving access to energy services amongst low-income communities.

Policy and programme designed to reflect lived experience
Cape Town are exploring a 'Free Basic Alternative Energy' policy for informal settlements, providing residents with coupons for energy services.

Joining regional and international platforms
Cape Town was a founding partner of the Municipal Energy Resilience Initiative, a knowledge and capacity building network for renewable energy.

Please see full case study in the Research Report for more details on Cape Town's energy access and energy poverty context, as well as local initiatives and action.

Lessons Learnt

Local governments recognise the urgent challenge to alleviate energy poverty and improve energy access. They are well-placed to act due to their proximity to lived experiences, role in consolidating data, and position to convene relevant stakeholders. This work—in alignment with GCoM's new Energy Access and Poverty Pillar—calls for a fresh perspective and vocabulary for local governments to:

Notice, articulate, and expose the overt barriers, political gatekeeping, or disempowerment they may experience in facilitating energy access

Pinpoint effective steps forward based on its combination of barriers experienced and powers available

Support case-making and co-design with community, private sector, and other governmental bodies

Discuss common challenges and transferable levers with local government peers at regional and international scales

Local experiences and consequences of energy poverty also provide direct insight on approaches local governments can take, including:

Evaluating short- *and* long-term outcomes

Efficient, effective *and* equitable capacity allocation

Maximising available powers with collaborative case-making

These approaches will increasingly empower local governments to apply bespoke levers related to policy and regulation, stakeholder collaboration, capacity building and data collection, investment and securing finance, and delivering locally-led programmes.

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