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# Megacities: Transitions to Clean Energy Solutions

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# Megacities: Transitions to Clean Energy Solutions

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1. The Carbon Trust & Low Carbon Cities
2. Lessons from Carbon Trust / IDB Latin America megacities work
3. Case study: Building capacity for project prioritisation

We work with governments, multilateral organisations, businesses, cities & regions, helping them contribute to and benefit from a more sustainable future



- We are independent and mission driven; profits are reinvested in our mission to accelerate the move to a sustainable, low carbon economy
- 180 employees across 30 nationalities - experts who understand challenges and create bespoke solutions
- We are impartial, rigorous and innovative - working internationally with new technologies, markets and business models
- Over 15 years' experience – we know what does and doesn't work

Our approach is founded on experience.  
We are helping over 3,000 cities, regions  
& public bodies across the world to save  
94m tCO<sub>2</sub> & \$3.6bn in avoided energy  
costs



We are providing strategic support and  
technical assistance to cities & regions  
internationally including:

- 420 cities & municipalities
- 1,800 universities, colleges & schools
- 150 government ministries & agencies
- 280 hospitals
- 80 police & fire authorities

Our collaborators:



Foreign &  
Commonwealth  
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# Roadmap to Clean Energy in Latin America's Large and Megacities

## Funder:



## Beneficiaries:

LatAm policy decision-makers

## Timing:

Nov. 2016 – ongoing

- **Objective:** Guide local LatAm energy policy decision-makers in reducing energy consumption in large and megacities whilst increasing the supply of more efficient and sustainable energy solutions
- **Approach:** Looking at six buildings blocks to enable a transition to a clean and sustainable energy system, their challenges, and ways forward
- Presenting case studies, tools and global capacity building initiatives

Building capacity for project prioritisation



Governance for whole-of-city planning and implementation



Financing and delivery models



Legal, policy and regulatory structures



Stakeholder engagement theory and tools



Grid resilience to natural hazards

# Audience & Aims; What the publication is intended to do

## Who's it for?

- Subnational energy policy decision makers in Latin American major cities (over 5 million) but a useful resource for any city

## What does it do?

- It provides guidance in developing & implementing city-wide clean energy solutions

## Aim?

To help subnational bodies to:

- Save money, while increasing energy security
- Increase standards of living and the supply of more efficient and sustainable energy solutions
- Reduce the overall use of energy





# Approach; We drew on stakeholder interviews, analysis of secondary research & our own capabilities & experience



## Sustainability strategy & governance

- Mobilising city-wide stakeholders
- Establishing vision and setting goals
- Identifying, quantifying and prioritising opportunities
- Developing implementation plans and tracking progress

## Measurement, reporting & verification



- Quantifying city-wide resource footprints
- Assessing and verifying impact of initiatives
- Communicating impacts to stakeholders

## Technology innovation & implementation

- Setting innovation priorities and designing innovation policy
- Identifying and incubating start-ups
- Convening consortia and running demonstrator programmes
- Designing and managing implementation schemes
- Building energy efficiency, green building design & planning

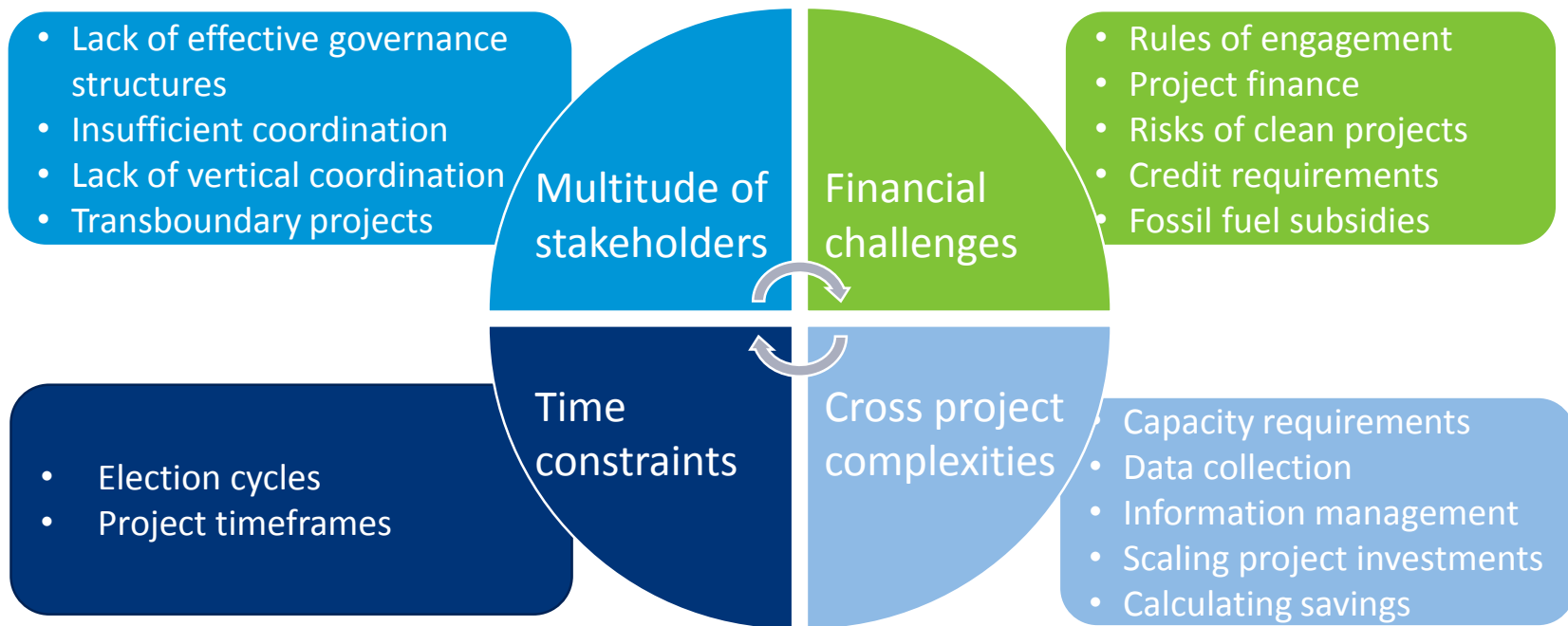


# Introduction: Cities are key to achieving international climate goals

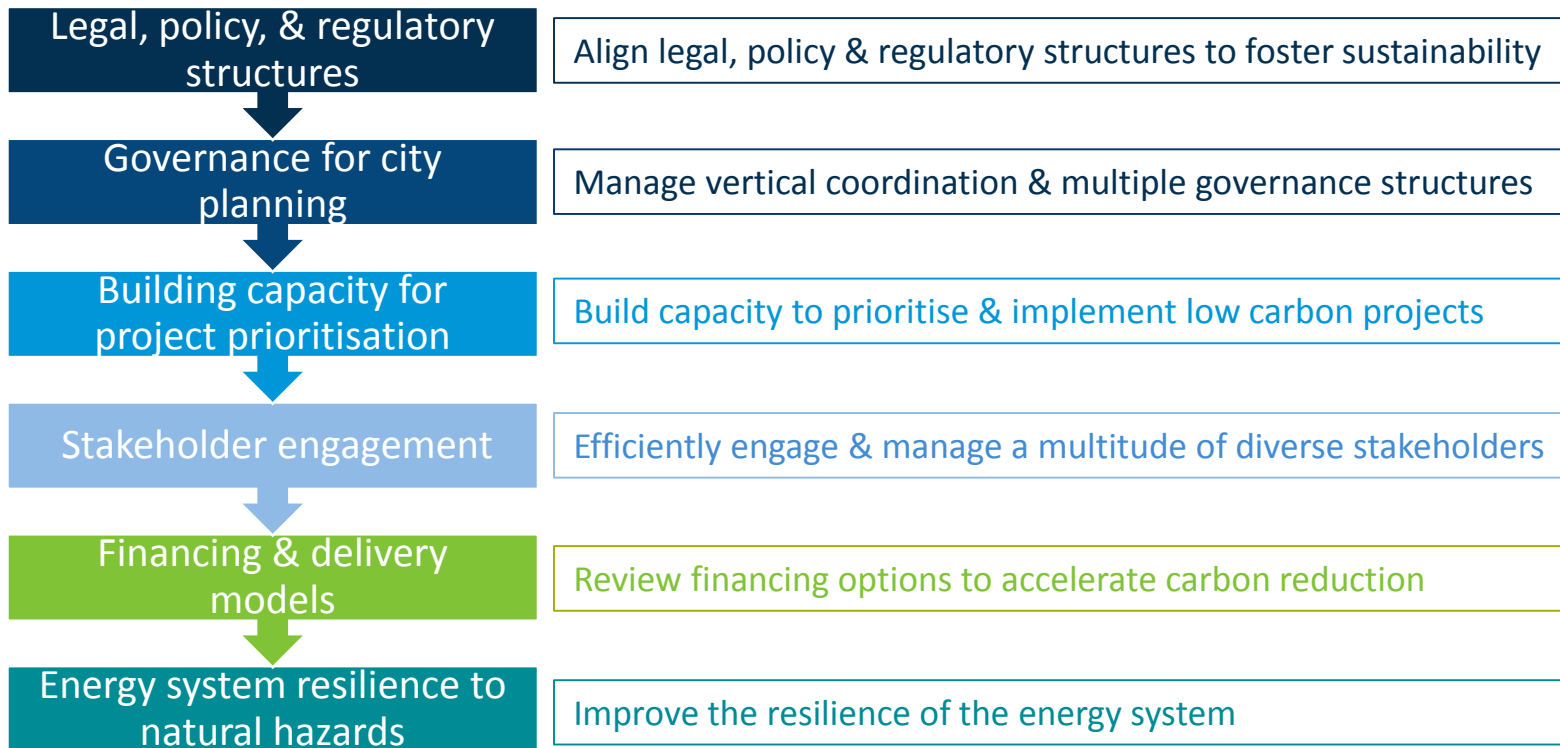
- 
- A stylized illustration of a city skyline in shades of blue. It features various building shapes, some with solar panels on their roofs, and a grid-like pattern on the left side. The buildings are arranged in a way that suggests a dense urban environment.
- 
- A stylized illustration of a city skyline in shades of blue, similar to the one above, featuring various building shapes and solar panels.
1. Over 50% of global population lives in cities, consuming 70% of the world's energy
  2. Latin America is one of the most urbanised regions with over 80% living in cities
  3. Continued urbanisation trend & growth of cities increases expected energy demand
  4. Cities hold key planning, housing, procurement, taxation & education powers
  5. The power of cities is increasing with devolution and awareness of climate action

## Challenges: Significant obstacles impede major cities in driving faster action on clean energy solutions.....

- In addition to cross-cutting challenges such as managing rapid growth, four key challenge areas exist:



## Recommendations: Cities must focus on tackling six key areas in response to these key challenges.....



# Tools and support: Available Support & Case Studies

## Reporting platforms, tools & methodologies

- Global Protocol Community-Scale GHG
- The carbonn Registry (cCR)
- ICLEI's HEAT+
- World Bank's CURB & TRACE
- SOURCE (project prep software)
- Carbon Trust – LowCarbonCities™ tools
- NASA Megacities Carbon Project

## Case studies from across Latin America

- Governance
- Political leadership
- Buildings energy efficiency
- Renewables
- Target setting
- Public transport

## Capacity building initiatives

- IDB's Emerging Sustainable Cities Initiative (ESCI)
- Compact of States & Regions
- Global Covenant of Mayors
- C40 Cities Network
- World Bank's City Credit Worthiness Initiative
- EU's Urban – LEDs (Low Emissions Dev Strategy) training
- Under 2 MOU commitments
- Megacities Alliance for Water & Climate
- Carbon Neutral Cities Initiative
- ICLEI's 100% RES Cities
- EU's URBACT – knowledge exchange
- ESMAP RE Resource Mapping Initiative



## Conclusions

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- **Major cities must be the primary focus of clean energy solutions** in Latin America
- Using energy more efficiently can help cities to **increase their energy security**
- Focus on **robust planning needs to be prioritised** recognising that there are big hurdles to address in turning plans into implemented policies and investments
- There are opportunities to **raise standards of living in cities while reducing energy use** through the application of energy efficiency and renewable energy
- Meeting these dual objectives will require focussed political will in addition to increased technical & financial assistance

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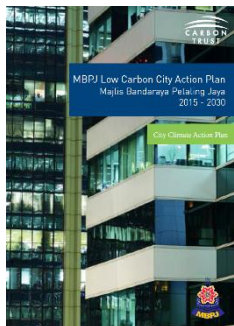
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## Developing City and public sector Carbon Management Plans

**Participating cities:** Kuala Lumpur City Hall (DBKL), Petaling Jaya City Council (MBPJ) and Ampang Jaya City Council (MPAJ)

**Approach:** Supported the city councils to understand & quantify their emissions, to identify projects and opportunities for GHG reductions and energy savings, and created a strategy to enable them to implement those actions. In order to develop the plans, we undertook energy audits in energy hotspots. The strategies developed included an identification of available funding for project implementation and prioritised projects on payback and GHG emissions reductions.

**Outputs & Impact:** Supported the city of Kuala Lumpur's inclusion in the C40 initiative

City	Plan	Reduction target	Energy Savings	GHG reductions (tCO <sub>2</sub> e)
Petaling Jaya	City Plan	30% by 2030	RM 9 Bn	6,000,000
Petaling Jaya	CMP	25% by 2020	RM 10.15 M	12,889
Ampang Jaya	City Plan	25% by 2030	RM 13.7 Bn	11,350,000
Ampang Jaya	CMP	30% by 2022	RM 13.5 M	14,668
Kuala Lumpur	CMP	20% by 2022	RM 76.1	134,345

# Tried and tested structured process for project prioritisation and action plan development

## Key activities

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- 1 Mobilise stakeholders**
  - Identify key stakeholders
  - Build and train team
  - Set scope and define headline aspirations
- 2 Baseline carbon & target set**
  - Measure carbon emissions baseline
  - Calculate current and future energy costs
  - Set and approve carbon reduction targets
- 3 Identify opportunities**
  - Identify carbon and cost-saving opportunities
  - Quantify costs and savings
  - Prioritise opportunities
- 4 Develop strategy**
  - Develop carbon reduction strategy
  - Based on prioritised opportunities
  - Develop robust implementation plan
- 5 Implement and review**
  - Commence project implementation
  - Review performance measurement process
  - Embed carbon reduction into daily business



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