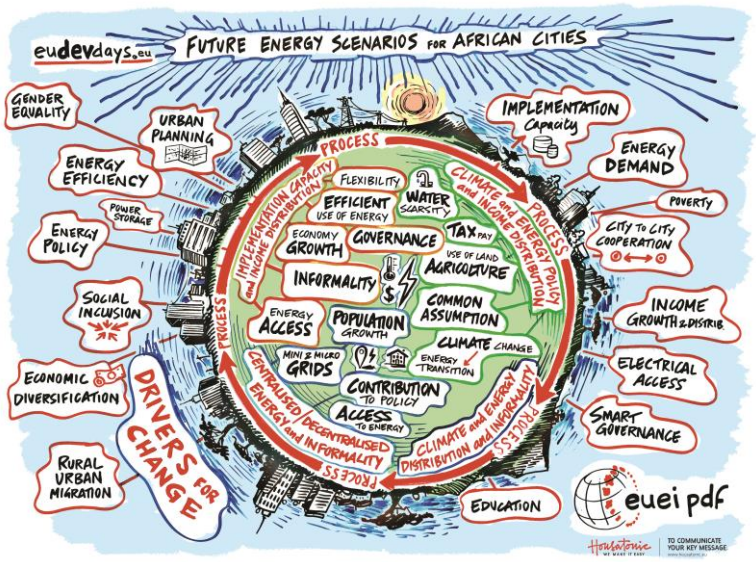
Conclusions from the EDD16 Project Lab:
Future Energy Scenarios for African Cities
Unlocking Opportunities for Climate Responsive Development

Background

Opportunities to address urban challenges have not been fully considered in the context of African cities. Africa's urban population is projected to rise from 400 million to 1.26 billion between 2010 and 2050 and it is the last continent to urbanize. Local governments in Africa have great interest and incentives to initiate climate action in their own constituency but are often constrained by a lack of institutional capacities and policy options to exploit the full range of local action.



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In this context, the EU Energy Initiative Partnership Dialogue Facility (EUEI PDF) is developing four detailed energy scenarios for African cities, assessing their implications and providing concrete policy-options for city leaders in a thematic study which:

- **mitigates risk in strategic policy-making** by providing a long term horizon 2050 in order to **identify uncertain drivers for change and wildcards;**
- **breaks down complexity** of urban planning (inter-sectorial inputs) by presenting four scenarios and concrete policy choices;
- enhances **effectiveness and design of plans, programmes and projects** at city level by complementing and informing city level energy scenarios modelling; carbon inventory and climate risk modelling work;
- informs debate of how cities can support the **achievement of Sustainable Development Goals.**

The EDD Project Lab

The EUEI PDF, in partnership with Cities Alliance and representatives from Covenant of Mayors Africa, conducted this session in the framework of this year's European Development Days (EDD16). The workshop, attended by about 40 experts ranging from practitioners in both African and European municipalities as well as representatives from the private sector and NGOs, is part of the process building up to the development of the energy scenarios. The keynote speaker, Mr. Edison K. Masereka of KCCA (Kampala Capital City Authority) opened the session with some details of the current situation in Kampala in terms of action oriented sustainability measures as well as facts informing policies planned for the future of the city. From the EUEI PDF and ATKINS, Ms. Silvia Escudero and Mr. Roger Savage respectively, introduced the thematic study and the scenario building process in detail.

The EUEI PDF currently receives contributions from the European Commission, Austria, Finland, Germany, Italy, the Netherlands and Sweden

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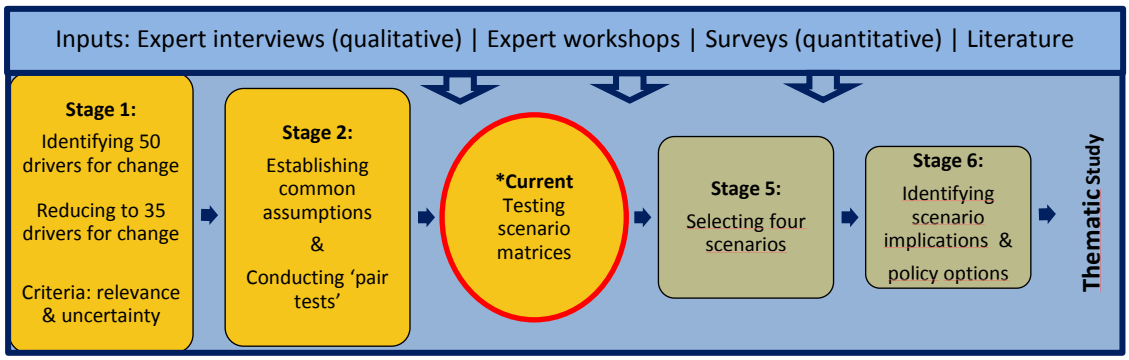
Live Voting

Participants voted from a set of options they best thought answered the question:

"What factors cause the greatest uncertainty regarding the future of energy in African cities?"

Stages of the Thematic Study

The scenarios explore the interplay of economic, social, environmental and technological drivers for change. 50 key drivers for change were identified and categorized based on their relevance and uncertainty. Common assumptions were identified and pair tests were then conducted matching different key drivers to form matrices. The project is currently at a stage were, the matrices are being tested through expert interviews and workshops such as the EDD Project Lab.



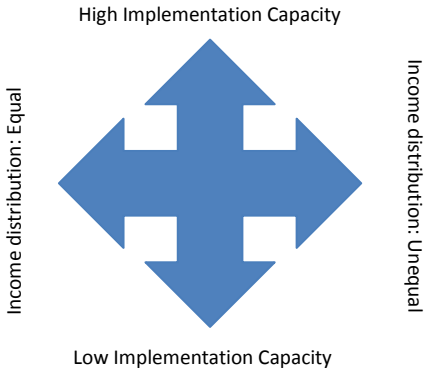
Discussion Groups

Four matrices were explored in detail each in a discussion group facilitated by experts, with specific focus on the possible implications on;

Group 1: Energy & Private Sector	**Group 2: Urban Development & Civil Society**
Group 3: Energy & Public Sector	**Group 4: Urban Development & Financiers**

The facilitators, in order of group number, were **Annika Lenz**, Liaison Officer, UN Habitat; **Francesca Oliva**, Program Manager and Energy Focal Person, AVSI Foundation; **Jean-Pierre Elong Mbassi**, Secretary General, UCLG Africa and **Jamie Simpson**, Project Manager, Cities Alliance. Below are the summaries of their discussions:

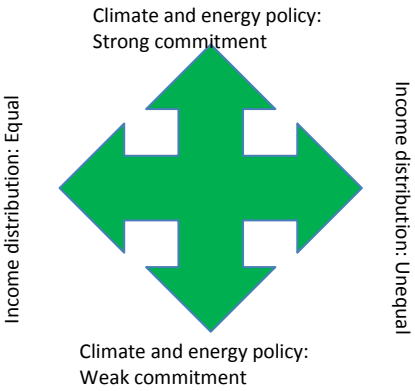
Scenario Matrix 1: Implementation capacity and income distribution



Possible implications for the **development of renewable energy** and the **role of the private** sector in this matrix:

- Weak regulations can lead to good infrastructure when the market kicks in. However, weak regulations are also a risk for the private sector. Many times, there is no enabling environment for the market in general.
- Limited possibilities for private sector if everything is driven by the public sector, government leadership is key to attract any investment.
- Cities are currently locked in their energy choice from the past which is mainly fossil fuel.
- Public investment is needed for the renewable energy infrastructure; the private sector can take over at a later stage.
- In poorer countries, the low consumption capacity of the population is an issue because it makes investments less (quickly) profitable. Off-grid solutions are still very relevant in African cities even if centralised infrastructure is technically available.

Scenario Matrix 2: Climate and energy policy and income distribution



Possible implications for **energy efficiency in buildings** and the **development of the cities** as well as the **role of civil society** in this matrix:

- The mix of transport solutions will be important in informal areas and will have a growing impact on energy.
- There will be a strong need for capacity building to accompany solutions to make them effective.
- In a scenario with strong commitment and equal income distribution, more innovation options are possible and a more reactive engagement of the private sector can be expected.
- The role of civil society has a tendency towards being more participatory when there is a strong commitment.
- Given an unequal income distribution, energy access solutions need to be tailored to meet the needs of a poorer society.
- Policies promoting the productive use of energy (by non-domestic users) should also be considered.

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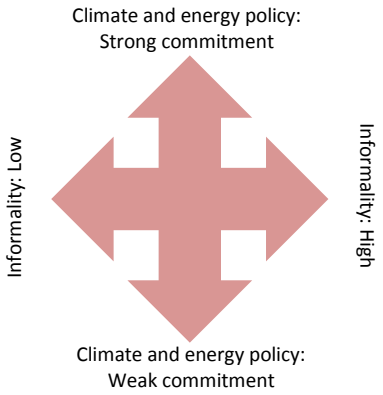
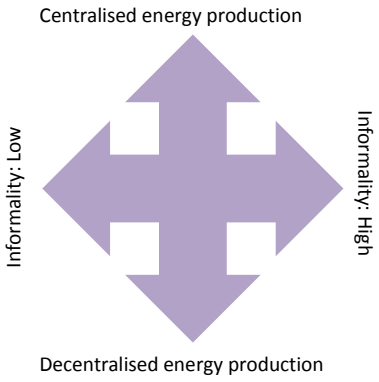
Scenario Matrix 3: Climate and energy policy and informality



Possible implications for the **development of renewable energy and enhancement of energy access** in African cities in this matrix as well as the **mandates and roles of municipalities**:

- 25% of the households in slums do not have access to energy. Those with access to electricity pay a high price but are faced with high rates of corruption.
- Even if power networks are close by, decentralised energy systems might be the best solution for enhancing access in slums due to frequent mobility of the households and a high risk for conventional utilities to provide these services.
- Since the highest power consumption in slums takes place at night, PV systems only make sense in combination with storage.
- Even in the best scenario, the role of civil society is very weak in African cities.
- Kampala is an example of a city that has high informality but strong energy and climate commitment. Some municipalities in South Africa see themselves in a scenario with weak energy and climate commitment and high informality.

Scenario Matrix 4: Centralised /decentralised energy production and informality



Possible implications for **energy production and technologies** in African cities and the role of **financiers** and the **banking sector** in this matrix:

- Currently African cities are implementing high scale infrastructures that face high risks of vulnerability in terms of costs and sustainability. This issue should be addressed by:
  - enhancing infrastructure resilience;
  - increasing transaction costs;
  - retrofitting infrastructure.
- Different technology choices will influence the market structure completions.
- In the future, the demand from consumers should not be ignored as it is a driver for policy development (latent demands).
- Competition between firms of energy production units.
- The informal sector is very vulnerable; however it has proven to be attractive for innovative business opportunities.

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General conclusions

All groups also discussed other aspects of the project and the scenario building process and provided the following suggestions:

1. **Additional drivers for change** could be geopolitics, skills development and the different aspects of informality (incl. tax, employment etc.).

   Implementation capacity is key issue across all of the drivers.

2. **Detailed definitions** of drivers for change such as informality and income distribution should be provided to address all the facets of each driver.

   Energy and climate policies could go hand in hand, but are often contradictory in many countries.

3. **The rationale of the common assumptions** should reflect that assumptions such as economic and income growth are considered for the long term (2050) and entail slowing the downward trends.

   Increasing temperatures and water scarcity cannot be assumed for all geographical regions within Sub Saharan Africa and should be replaced by the term extreme weather conditions.

   Additional common assumptions were discussed including: health (new diseases); population growth combined with rural migration

Participants are invited to provide their further views on the drivers for change by completing the survey evaluating individual drivers for change, here. The survey will be closed on the 15th of July.