Affordable and clean urban energy - Policies – Constraints and Trade-offs

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Outline

- Cities interventions
- Clean transport perspectives – electric vehicles, et al.
- Energy access in Africa
- Case study: Kasese District Programme
- Role of Technology – energy-information nexus
- Policy alignment
- South Africa’s energy system driving city activism

Some interventions

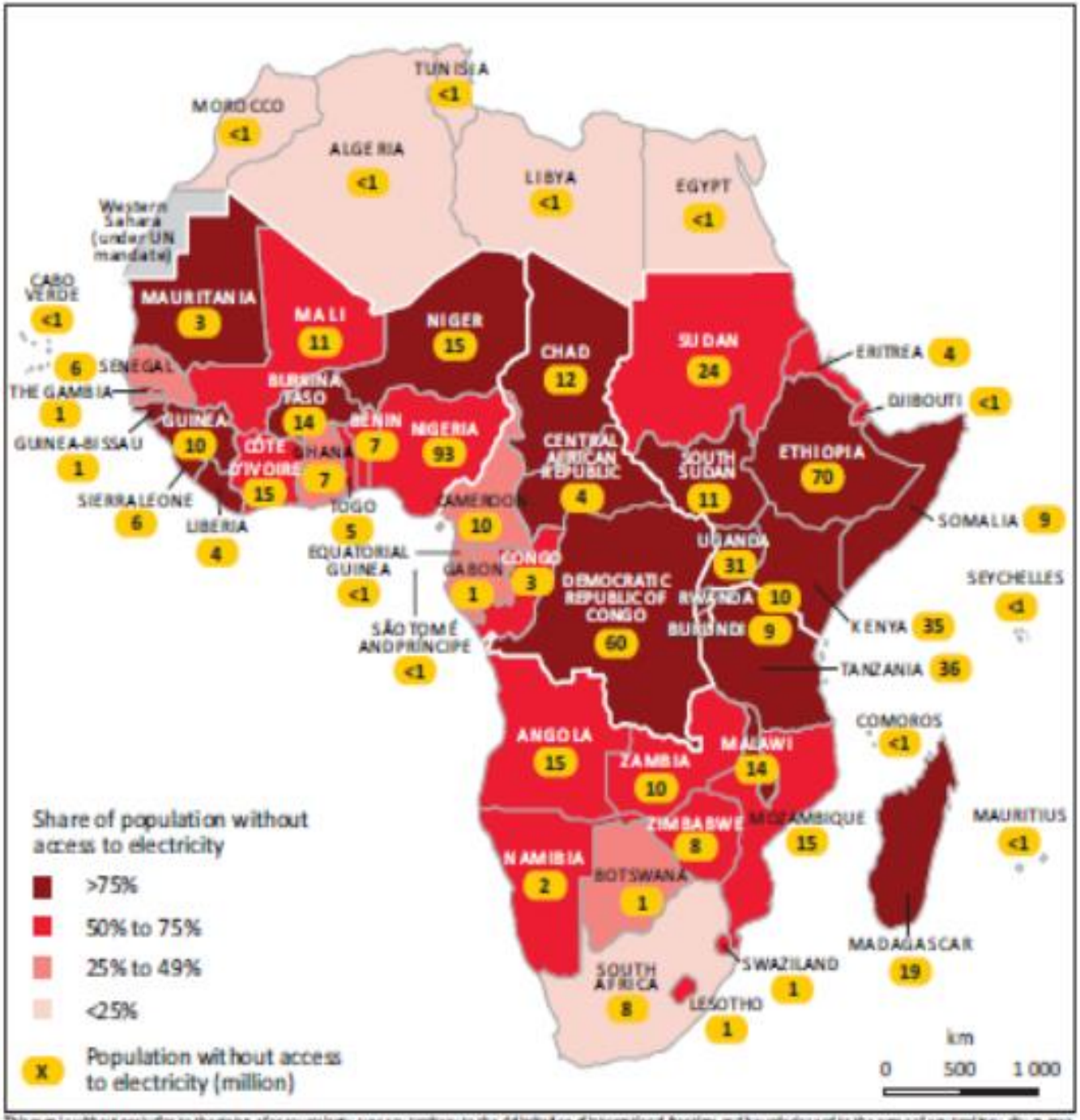
- Enormous impact through local renewable energy targets
- Transition public transport to electric vehicles powered by renewable
- Set building codes to include renewables
- Enact energy efficiency standards
- Develop district heating and cooling systems
- Choose to heat and cool municipal buildings with renewables
- Plus increasing becoming smarter with new technologies and digital advancement
- BUT CONTEXT SPECIFIC

Clean transport perspectives – electric vehicles

- High density cities in developed countries with excellent infrastructure suitable for electrification of transport
- Driven by pro-electric policies such as no-purchase taxes and reduced value added tax, no charges for using toll roads, access to free parking within cities, and free access to bus lanes in Oslo
- Purchase tax and VAT exemptions are critical instruments at the national level In the United States
- Generous network of charging stations (with specific parking spaces) and a streamlined process for installing home charging stations in Portland

Caveat

- Impact on livelihoods, costs and source of electricity – RE v fossil fuels
- Working with what you have?



This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Kasese District Renewable Energy Strategy

- 23 rural sub-counties and one urban authority
- Goal - 100% access to 100% renewable energy by 2020
- small-scale decentralised renewable energy solutions
- framework for increasing community support, awareness, and training
- Co-development of regulations, regultaions, standards and quality control
- Since 2012, over 1 650 Kasese residents have received career training
- number of businesses, which sell and install renewable energy equipment has expanded from 5 to 55
- Encourage uptake through waiving costs of trading licenses , enacting tax exemptions for energy technologies
- Provide land to investors for solar PV mini-grids

Energy- information nexus

- Emerging continuum of technology systems that provide access to electricity by harnessing now ubiquitous information technology' in the process addressing challenges relating to end-user financing
- Put differently – mobile phones supporting decentralised renewable energy
- Enables pay as you go rather than large upfront capital costs using
- Existing examples M-Kopa and SunnyMoney
- Cell phone access is critical
- Key challenge- upstream financing for RE enterprise due to a variety of factors
- Key question – how can both national and local government reduce risk to unlock private sector finance

Strengthening links between urbanisation/SD

New Urban Agenda -

‘**Development enablers**’ that can harness the multiple forces of urbanization in ways that generate across-the-board growth — national urban policy; laws, institutions and systems of governance, and the broad urban economy.

‘**Operational enablers’** such as local fiscal systems, urban planning, and basic services and infrastructure, that support sustainable urban development.

What happens if they are not aligned – the South African example

Structure of SA's energy system

- Energy mix
  - 90% generated by coal
  - supplemented by minority shares of hydro, solar and wind, nuclear and liquid fuels)
- State monopoly - electricity utility Eskom is a vertical integrated state owned entity – operate, generate and distribute electricity
- Single-buyer model with RE Independent Power Producers (IPPs) only allowed to sell to Eskom
- Municipalities as distributors on sub-national level must buy from Eskom
- Limited opportunity to build own RE or procure from embedded generators – mostly rooftop PV
- Level of electrification – 85.5%
- Use of wood and paraffin approximately 19%compared to levels close to 90% in other sub-Saharan African countries

Embedded Generation -, prosuming and revenue

- Driven by the private sector, both at household and industry level largely driven by load shedding experience and decreasing costs of PV
- in essence PV installed on rooftops
- Challenge to municipalities that have to manage a future decrease in revenue from electricity sale
- Responding to the changing landscape and many have implemented guidelines and feed-in tariffs
- Some installation for own use on municipal buildings
- Exploring options to procure power from sources other than Eskom, such as independent power producers
- But resistance by Regulator to extend role of municipalities in the RE space
- View of National Treasury – in the absence of an explicit Constitutional mandate municipalities are not authorised to engage in RE