Supporting Sub-Saharan African Municipalities with Sustainable Energy Transitions

Climate Resilience in East Africa Roundtable

Presentation by David Mann

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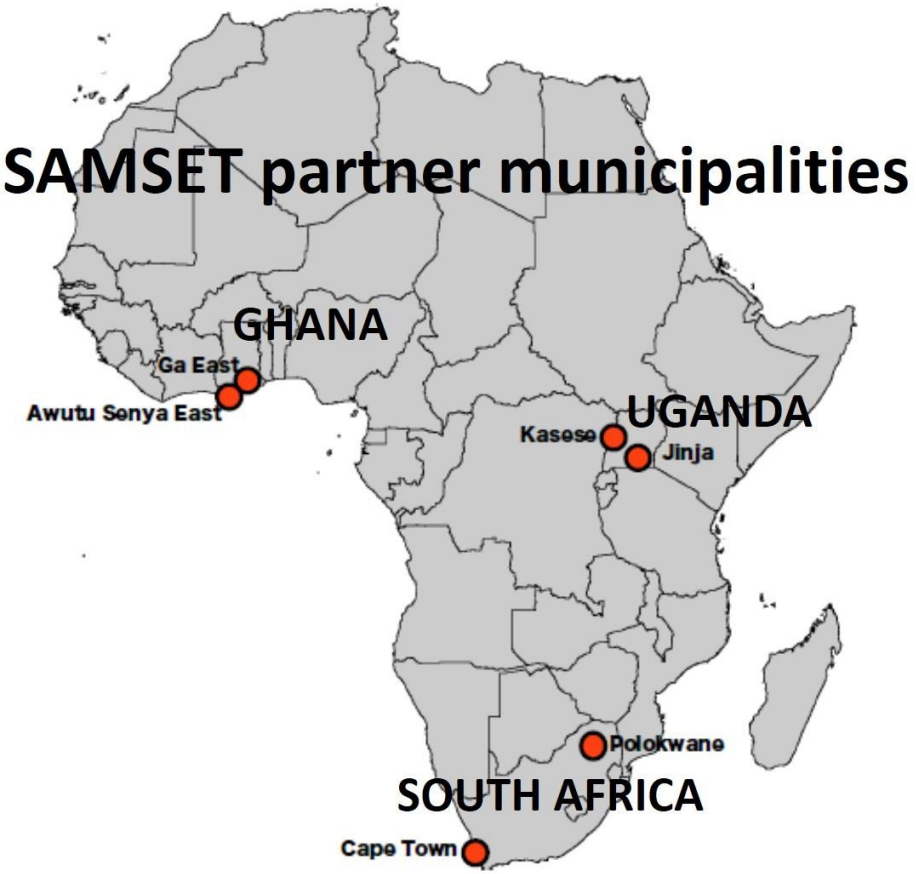
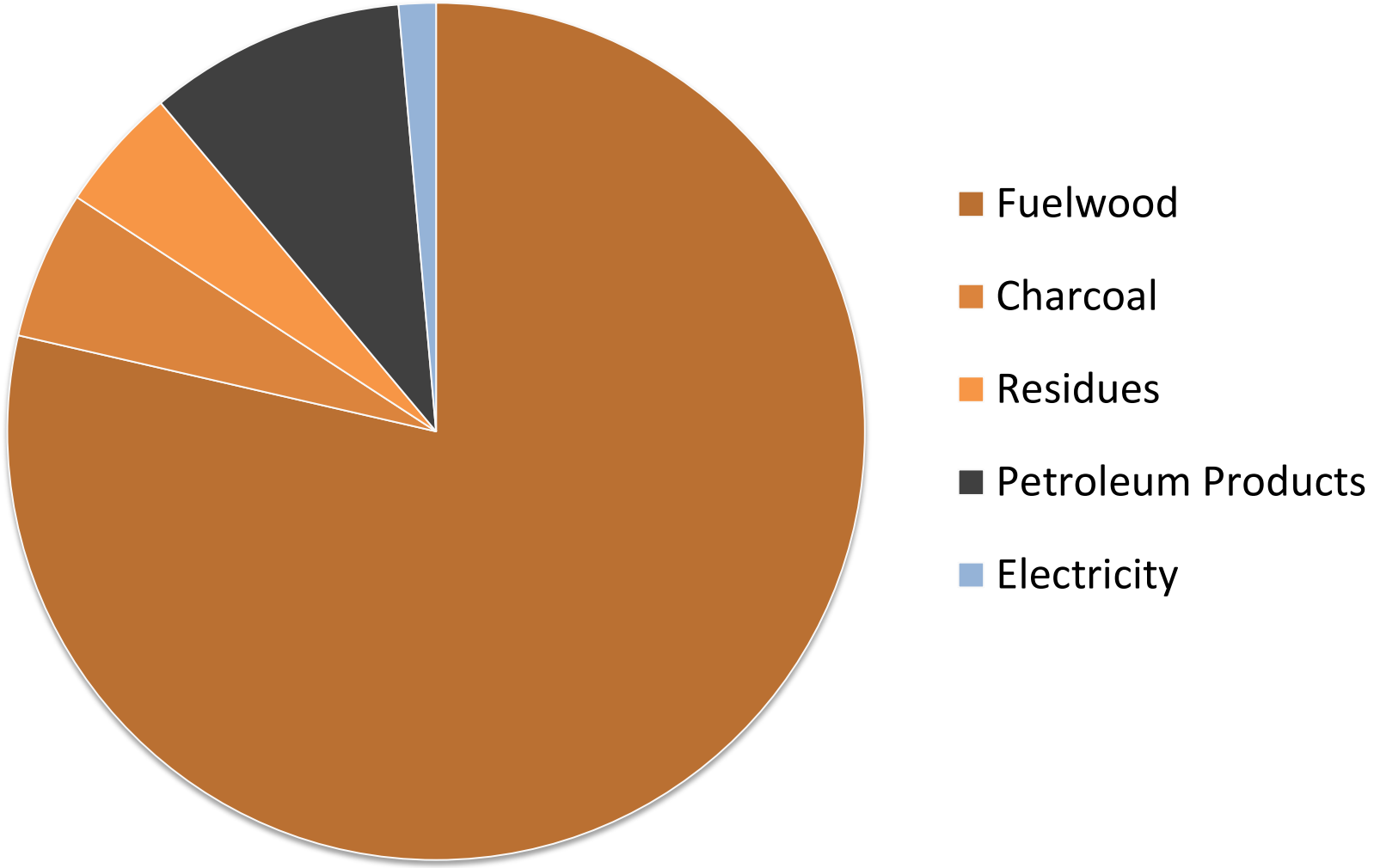
SAMSET Project

- EPSRC/DFID/DECC-funded from 2013 to 2017



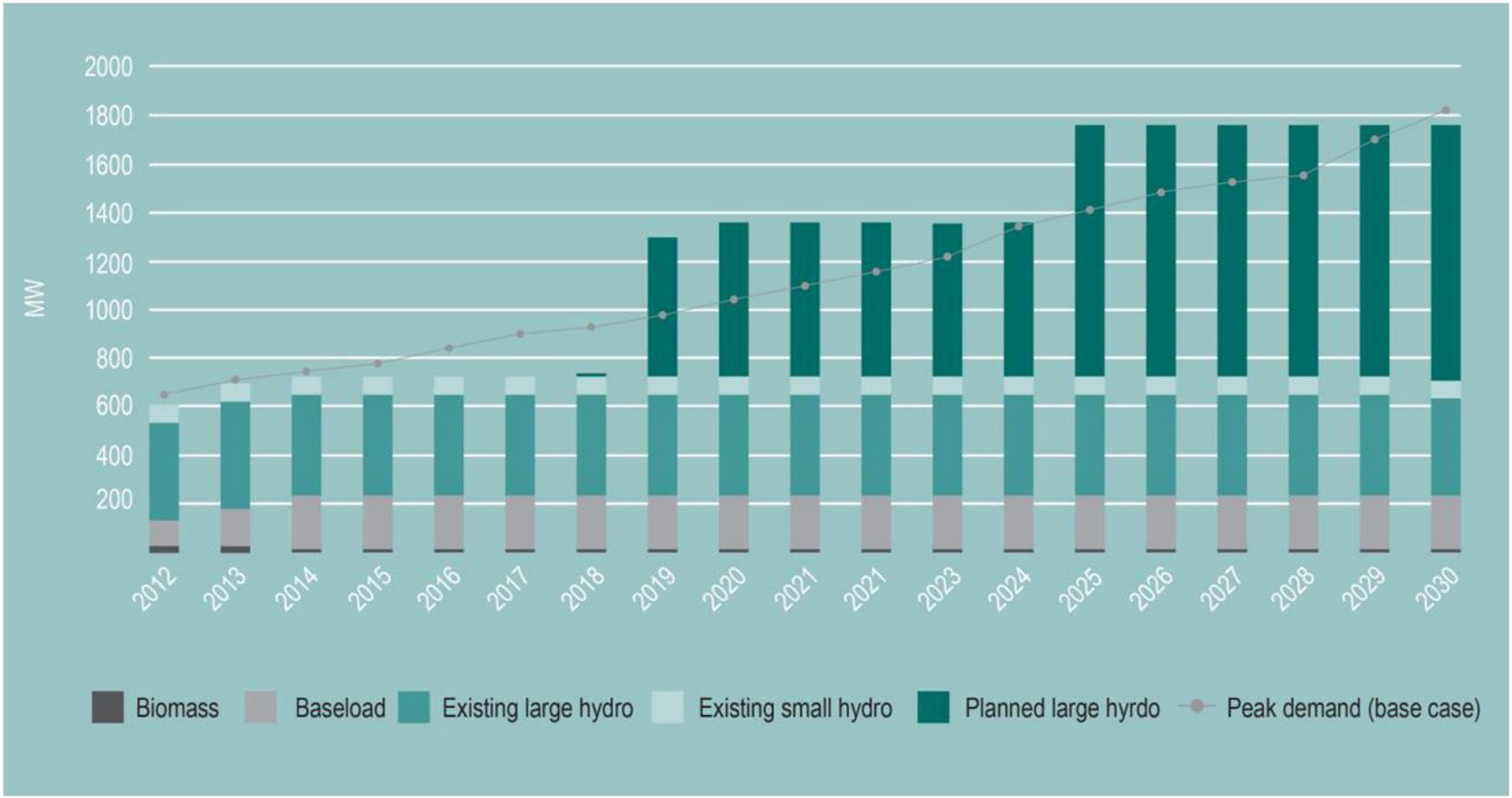
Uganda Matryrs University - Nkozi

National Energy Consumption Matrix



Source: MoEMD 2009

National Electricity Supply and Demand Forecast



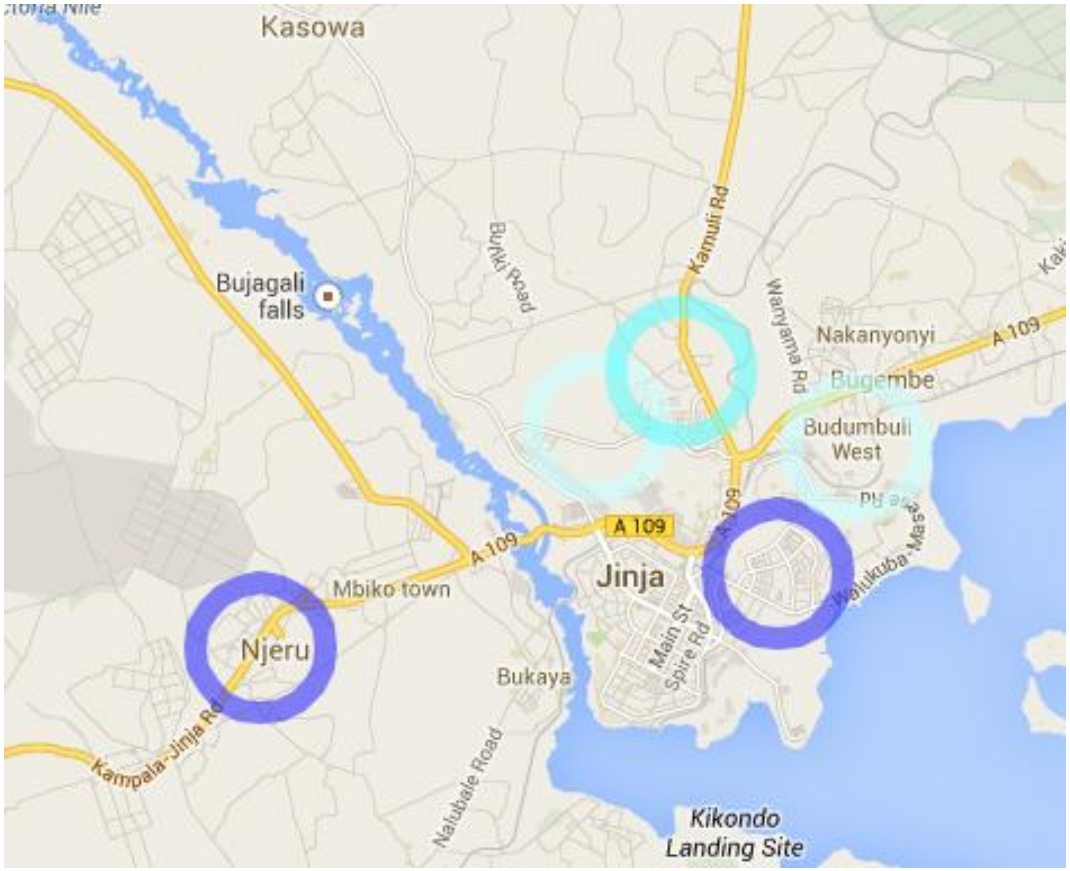
Whitley and Tumushabe 2014

Access to Electricity

- Nationally, between 7 and 15 % of households have electricity (55 % in urban areas)
- Per capita annual power consumption: 69.5 kWh
- African average: 578 kWh

Sources: DHS 2011, MoEMD 2013

Electricity Access in Jinja



Percentage of surveyed households with electricity

0 – 20

21 – 40

41 – 60

61 – 80

81 – 100

[Average = 45]

Source: DHS 2011

Passenger Transport - Jinja

Annually

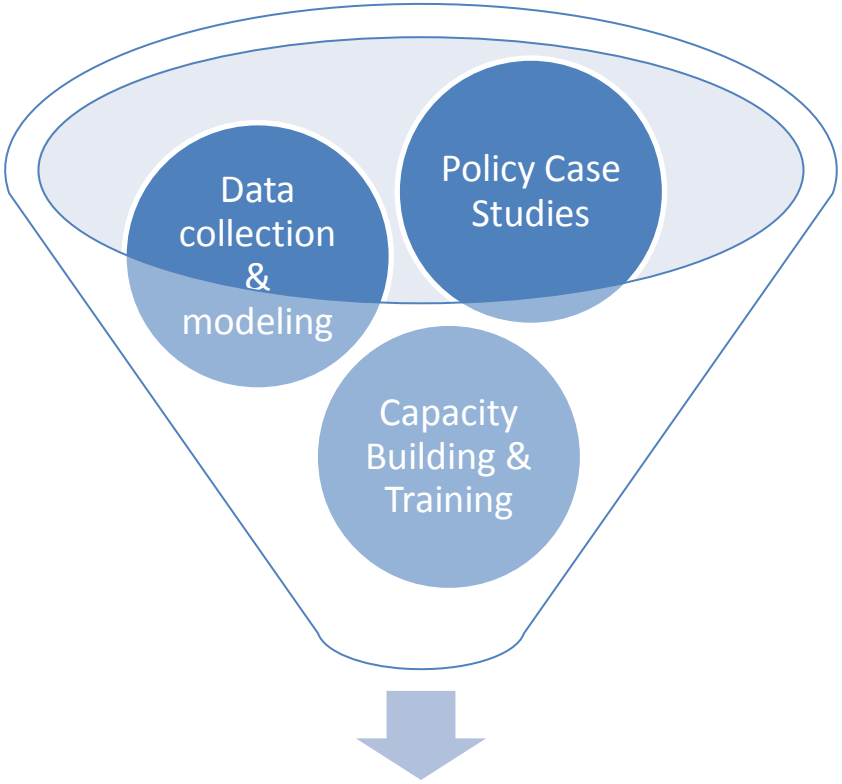
- Kilometres = 104,463,000
- Litres Petrol = 3,258,801
- Litres Diesel = 2,153,338

Potential Energy Transitions

	CATEGORIES	Household[1]				Institutional	Industrial
		Country-dweller[2]	"Bridgeheader"	"Consolidator"	"Status Seeker"		
ENERGY SOURCES/ USEAGE	COOKING	Firewood	Charcoal (1kg purchases)	Charcoal (50kg bulk purchases)	Charcoal/Gas	Charcoal (bulk purchases)	Charcoal (bulk purchases)
	LIGHTING & APPLIANCES	Kerosene	Cheap solar lights, electricity (extra-legal connection)	Electricity (mainly legal connections)	Electricity (legal connection, plus backup inverter)	Electricity (legal connection, plus backup inverter)	Electricity (legal connection), diesel generator
	'MODERN ENERGY' APPLIANCES USED	Phone charger	Phone charging, electric lights, radio	Charger, lights, small fridge, TV, radio	Lights, large fridge, water heater, entertainment centre	Lights, computers (electricity)	Lights, machinery (electricity & diesel)
	MAIN TRANSPORT MODES	Bicycle, walking, bodaboda, commercial minivan (petrol)	Bicycle, walking, boda boda, commercial minivan, intercity bus (petrol/ diesel)	Commercial minivan, intercity bus, single private car (petrol/diesel)	Multiple private cars (petrol/diesel)	Cars/trucks (petrol/diesel)	Trucks (diesel)

STRATEGIES	WELFARE CONSIDERATIONS	Health Impacts of paraffin lamps and indoor charcoal stoves	Sedentary Lifestyles	Worker health and safety
	ECONOMIC CONSIDERATIONS	Employment and Business Creation		Reduced utility bills
	POLICYPROMOTION	Improved Non-Motorised Transport Infrastructure / Cost-effective public transport	Carpooling/ Urban fabric densification for trip avoidance	Efficiencies and fuel switches
	TECHNOLOGY PROMOTION	Charcoal Briquettes	'Honeycomb' Briquettes (require special stoves)	
		Household Level Solar	Micro-grid Solar Systems	

SAMSET Activities



Sustainable Energy Strategy

More Information: www.samsetproject.site11.com