



# Crowd-Sourcing Energy Poverty Data

Digital energy data collection for low income households at scale

*A Thrie Energy Collective innovation*



Doug Banks  
Renewable Energy  
Vision

Presented by

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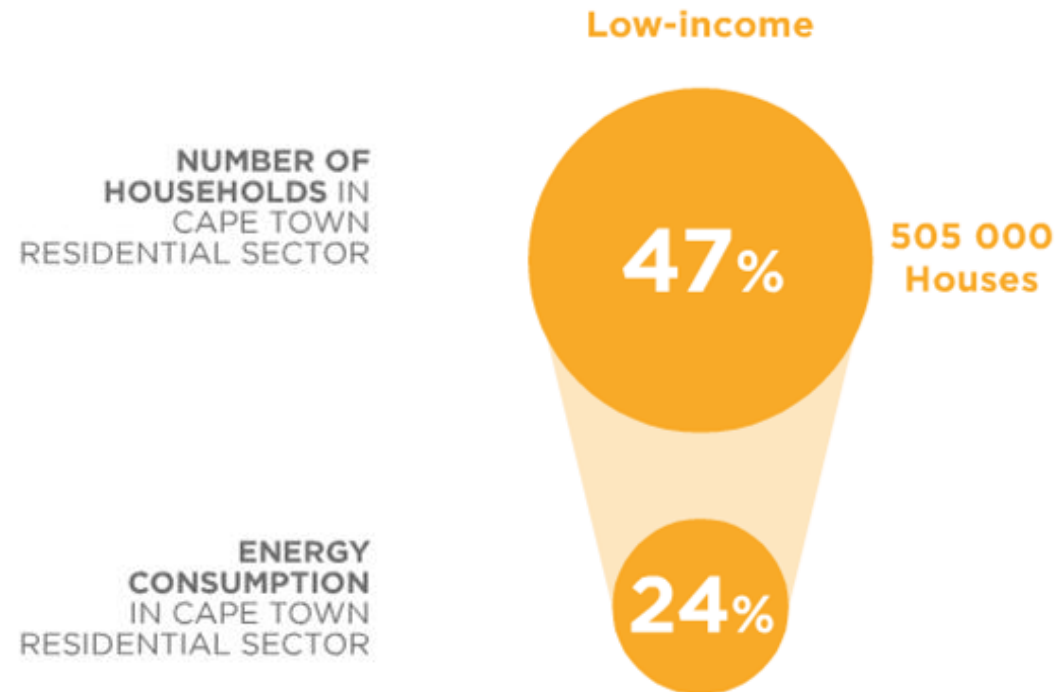
*Director and Principal Consultant*

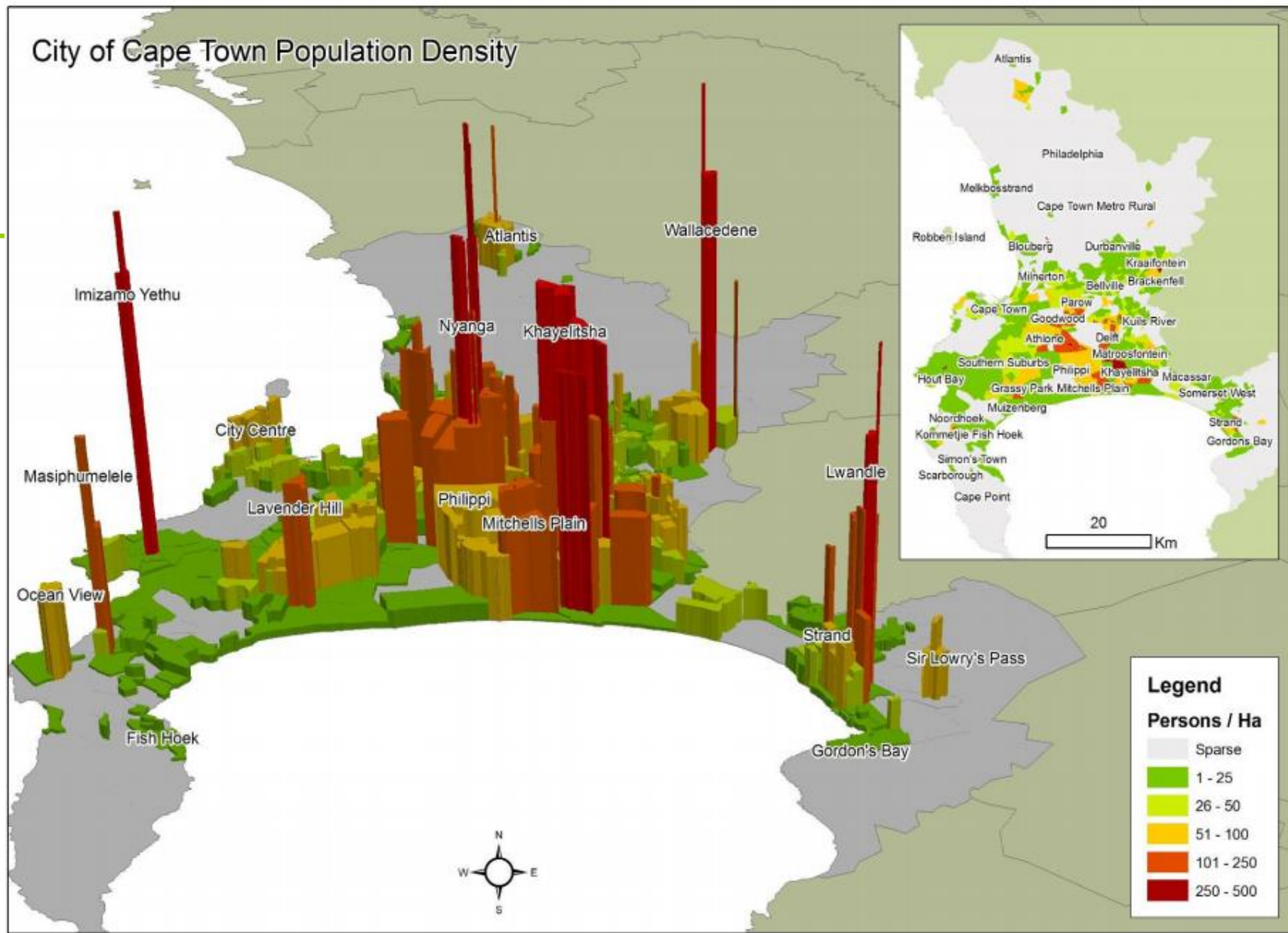
**How do we understand energy  
poverty at scale?**

# Why do we need to do this?

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- Large scale data collection for low income households
  - Focused on energy access and integration of sustainable energy technology





Turok, I., Hunter, R., Robinson, B., Swilling, M., & van Ryneveld, P. (2011). Towards resilient cities. Johannesburg: South African Cities Network.

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- Lack of accurate, up to date, large scale datasets
- Large low income population
- Access to detail-rich “inaccessible” information

Figure 2: Africa Mobile Penetration 2Q 2012

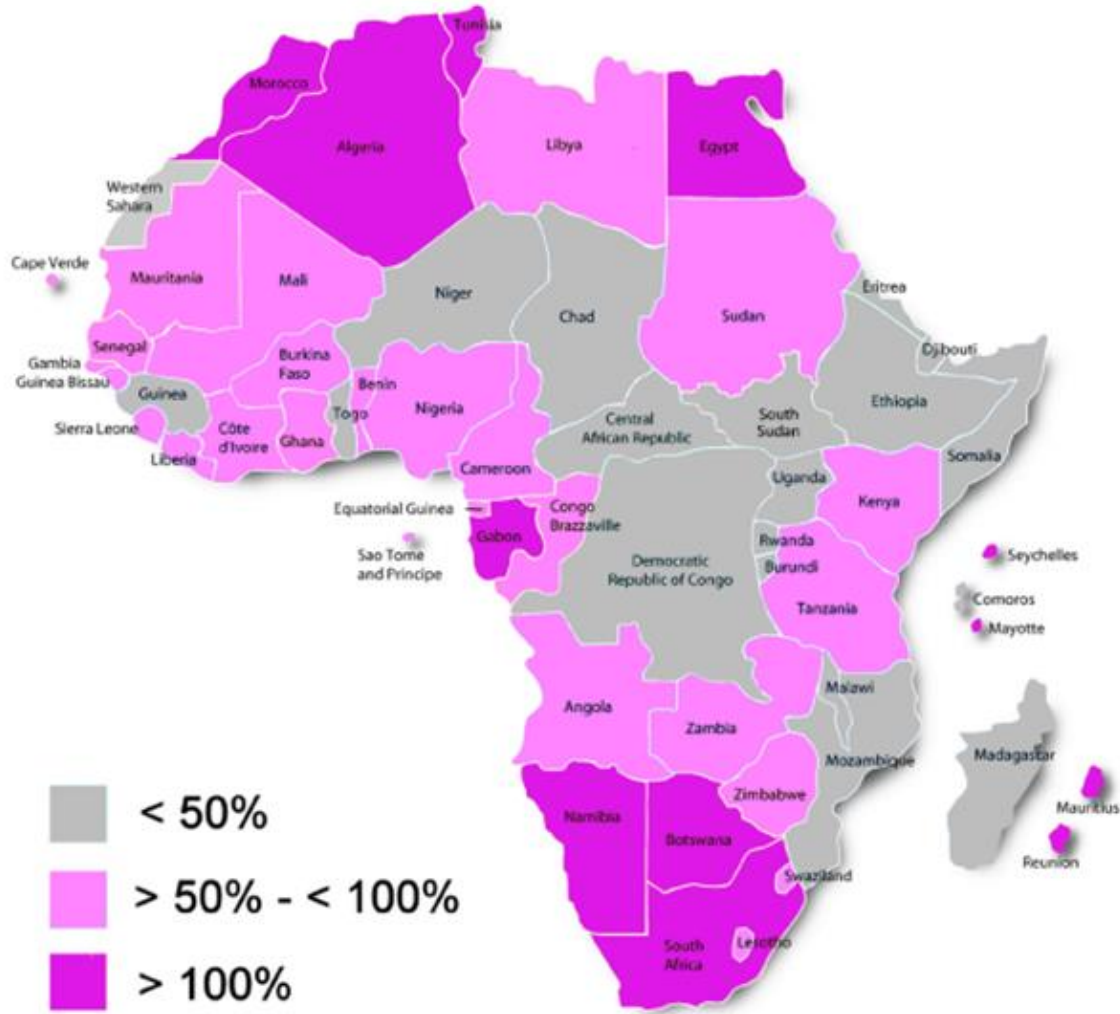
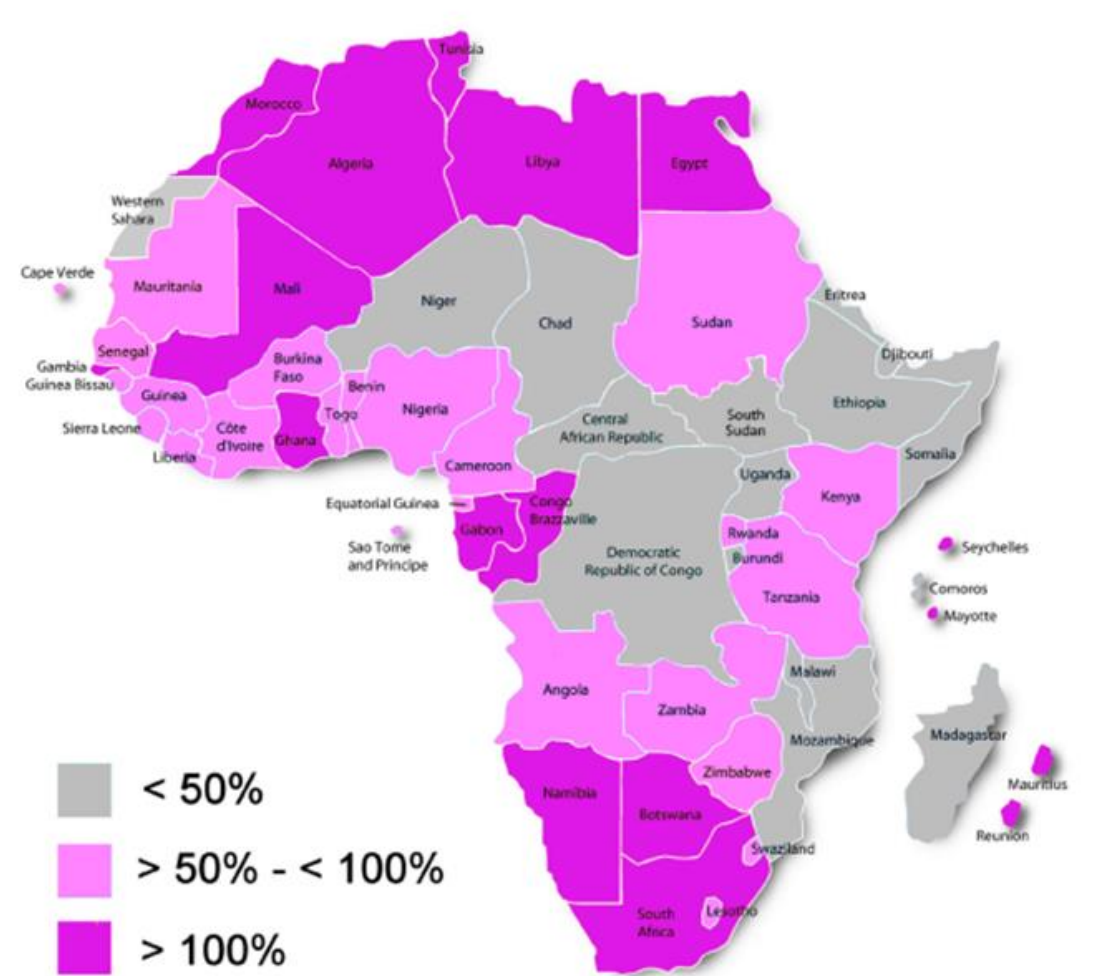


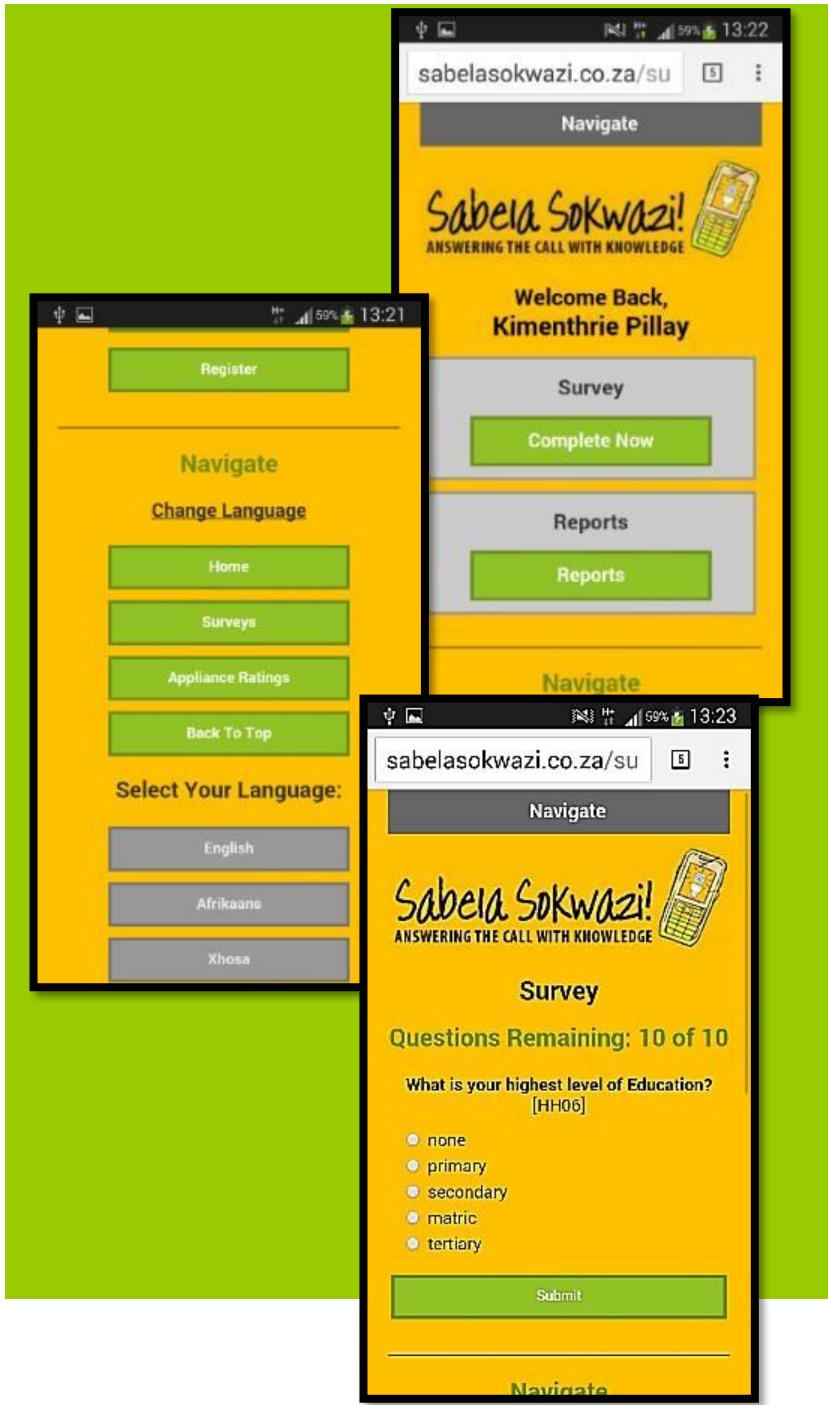
Figure 1: Africa Mobile Penetration 2Q 2013





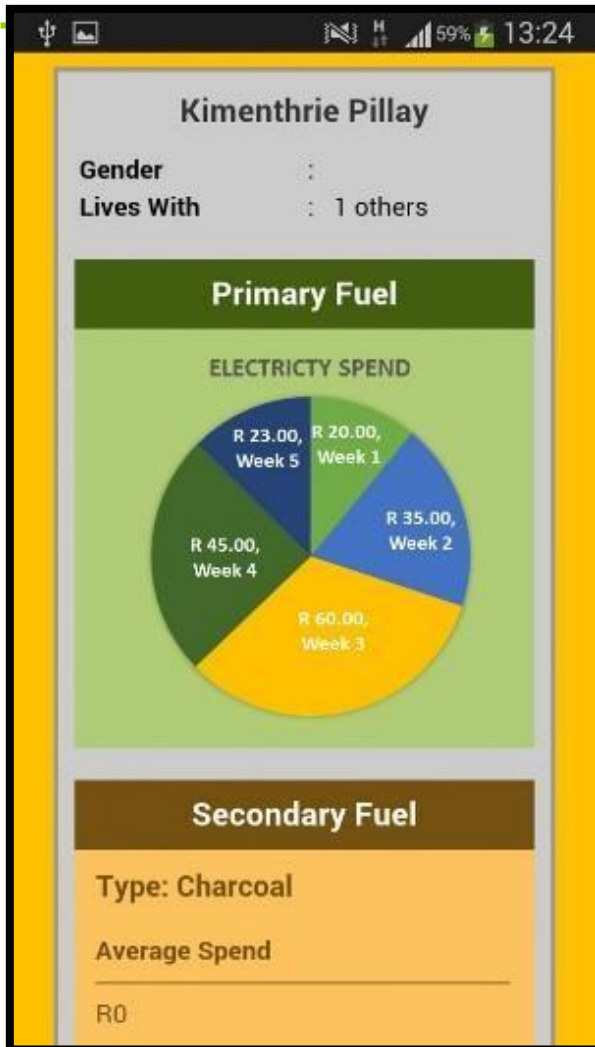
# Survey & Question Design

- What fuels people are using?
- Why they use these fuels?
- What kinds of stove and lighting apparatus do people use?
- How much this is costing them on a weekly and monthly basis?





# Co-development and social impact



sabelasokwazi.co.za/us

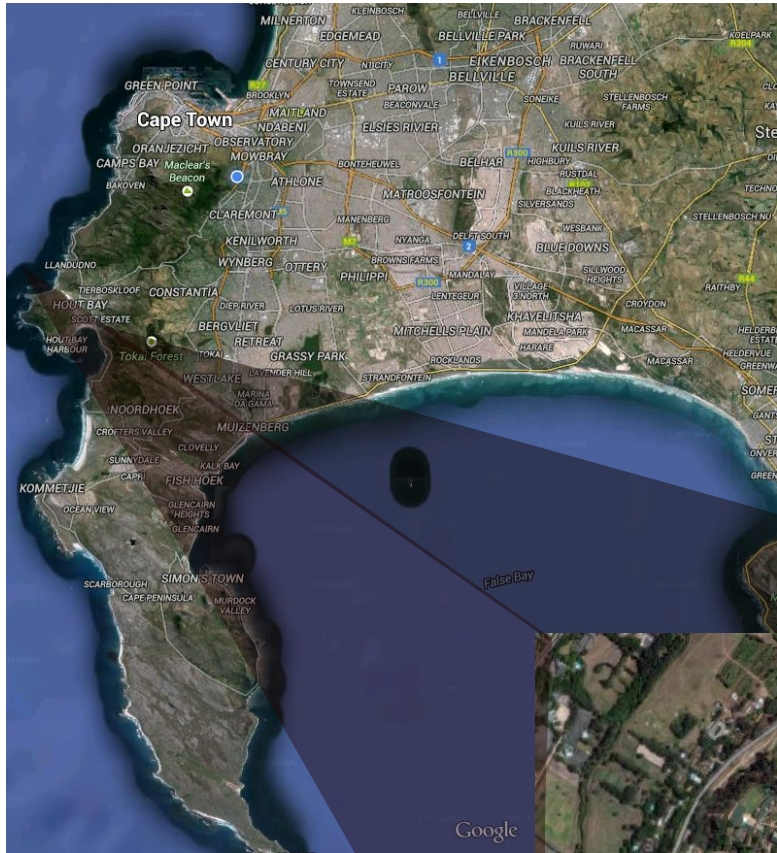
**Safety Tips:**

**Electricity**  
Make sure you turn your stove off at the wall after use.

**Charcoal**  
Smoke inhalation can damage your lungs.

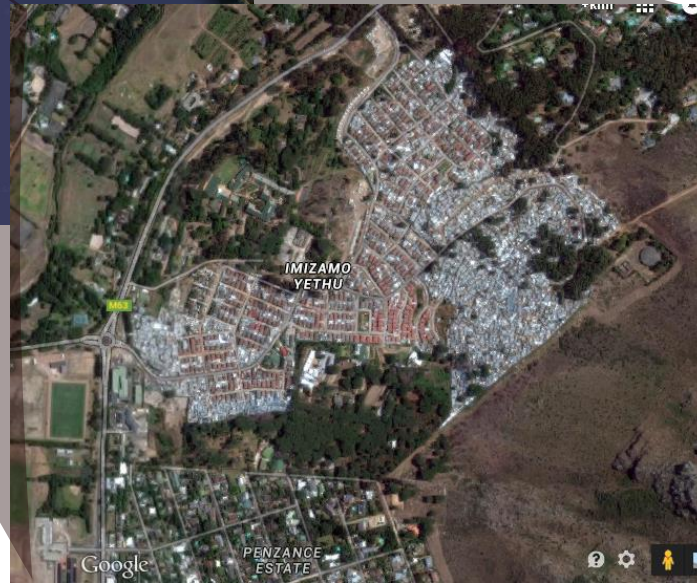
**Wood**  
Smoke inhalation can damage your lungs.

Users are informed of their consumption on a weekly basis with cumulative energy reports showing how much they have spent on what fuel. The report also includes safety tips specific to the fuel being used in the household



# Implementation

This study collected data from 200 households and nearly 300 households registered on the system







# Innovations

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- Technology accessible

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- Large and interactive data sources

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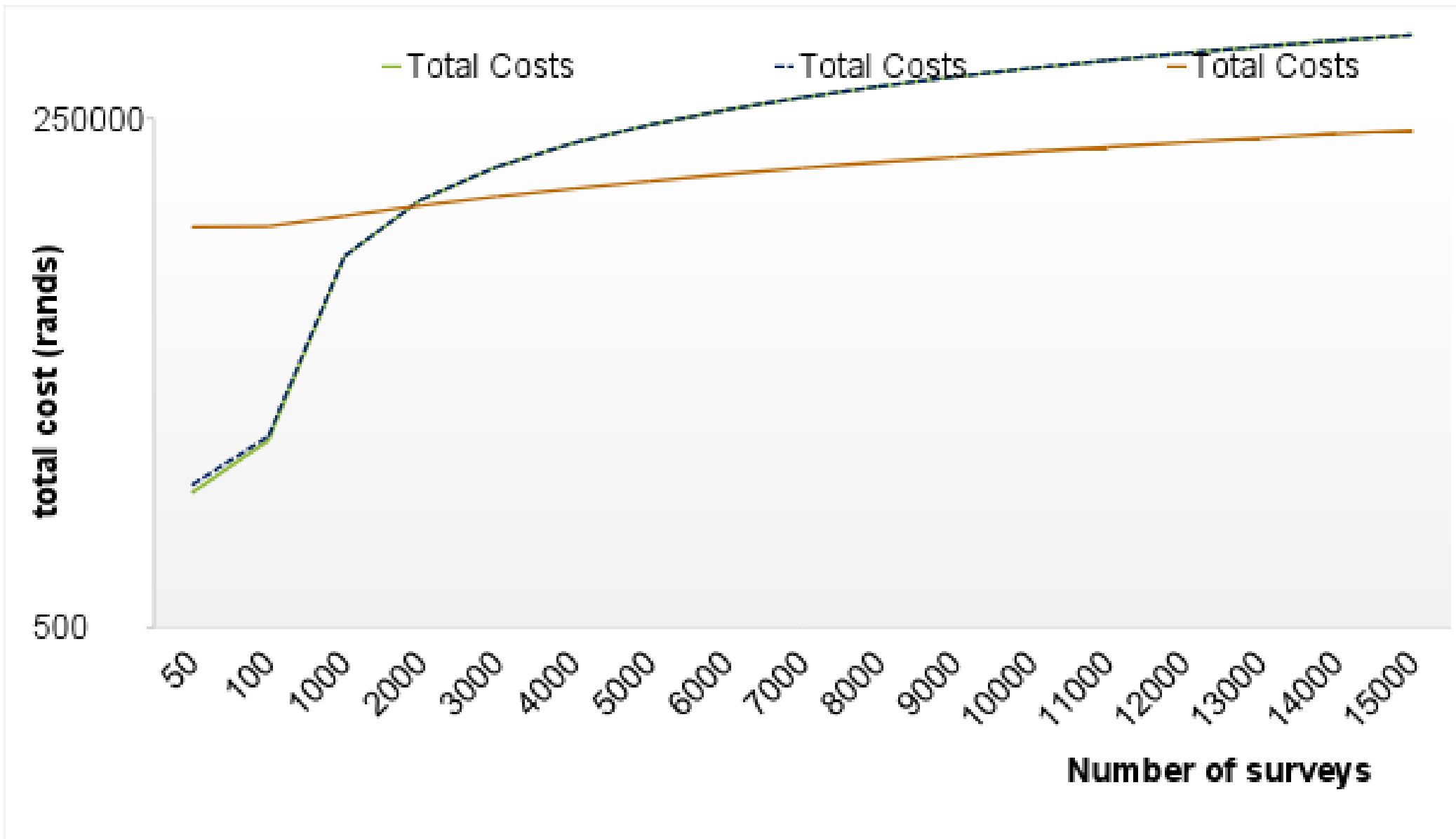
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# Innovations

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- Technology accessible
- Three languages
- Responsive survey design
- Use of incentives
- Instant communication
- Large and interactive data sources
- Wide reach
- Long term viability



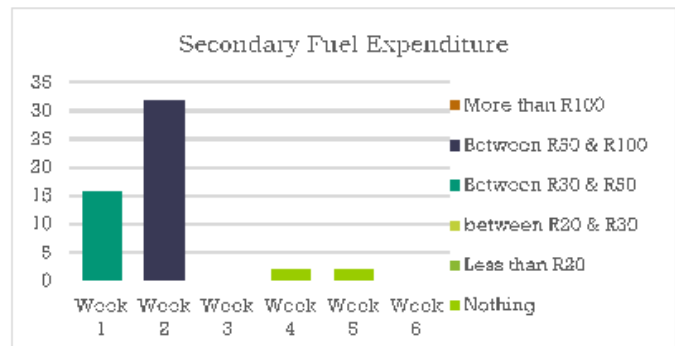
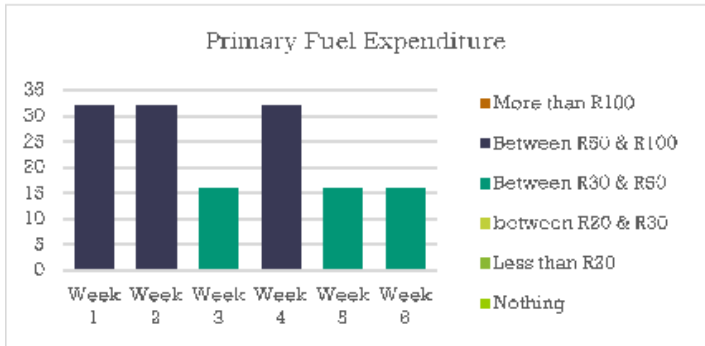
Weeks Completed	7
First Registration	01 May 2015

DEMOGRAPHICS	
Age	18
Gender	female
Employment	yes
Type of Employment	housekeeper
Education	matric
No# Hhold occupants	3

Lighting Fuel	Electricity
Number of electricity purchases in a week	5
Number of electricity purchases in a month	8
Period for no electricity	Never
<b>INCOME</b>	<b>6000</b>

Education
Transport
Shared Co
Cell phon

FUELS	Frequency of use
Primary Fuel	Electricity
Secondary Fuel	Biogas
Tertiary Fuel	Biogas



PROJECT FEEDBACK	
Awareness	Pamphlet
Incentive	I wanted to know more about saving energy
Lower incentive	Yes
Appliance consumption calculator use	No

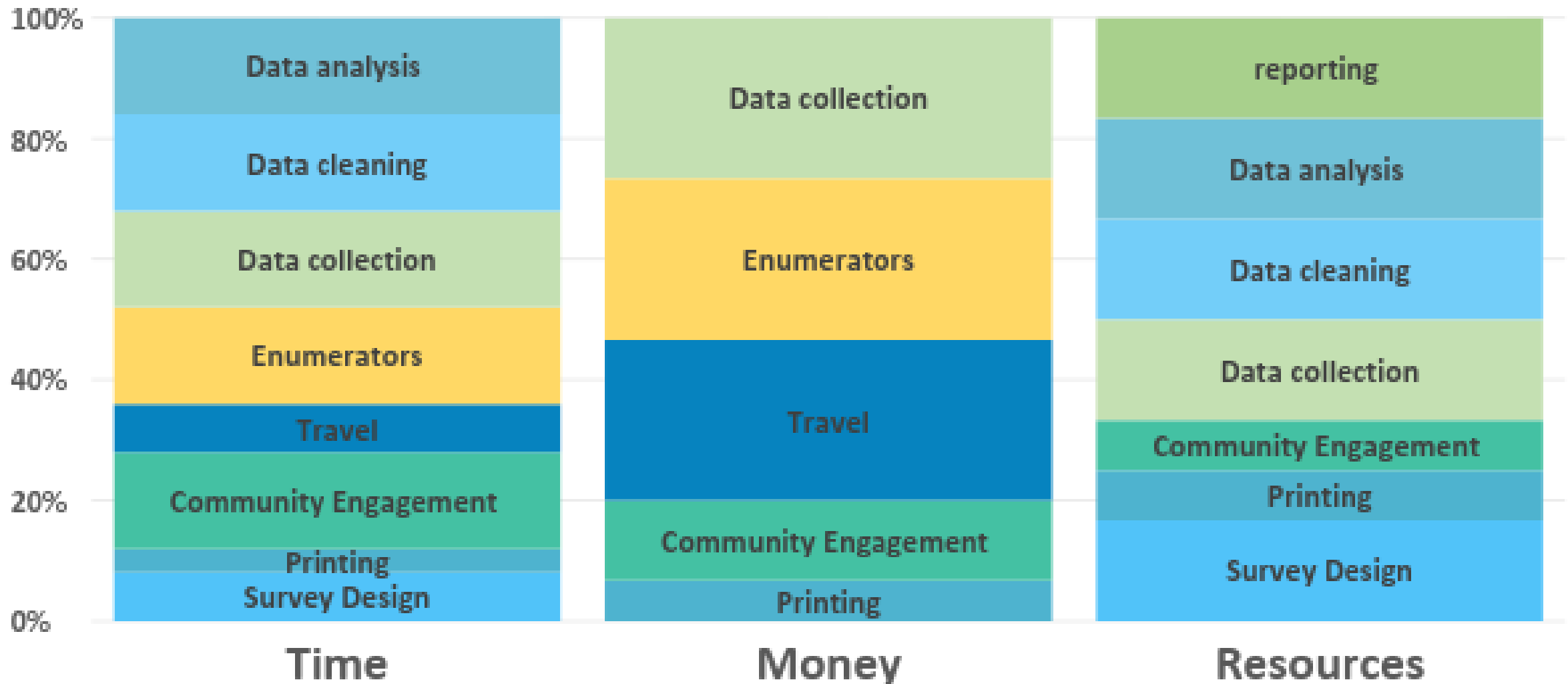
Figure 1 Data Range for a single participant

ELECTRICITY		
Monthly Electricity	500	Kwh
Electrical Connection	Yes	
FBE	No	
Own Meter	Yes	
Satisfaction of energy supply for:		
Cooking	Adequate	#N/A
Heating	Adequate	#N/A
Cooling	Adequate	#N/A
Lighting	Adequate	#N/A

APPLIANCE OWNERSHIP	
Stove type	Electric
Fridge	Yes
TV	Yes
Cell phone Type	Samsung
Laptop or tablet?	Yes laptop
Working appliances	Yes

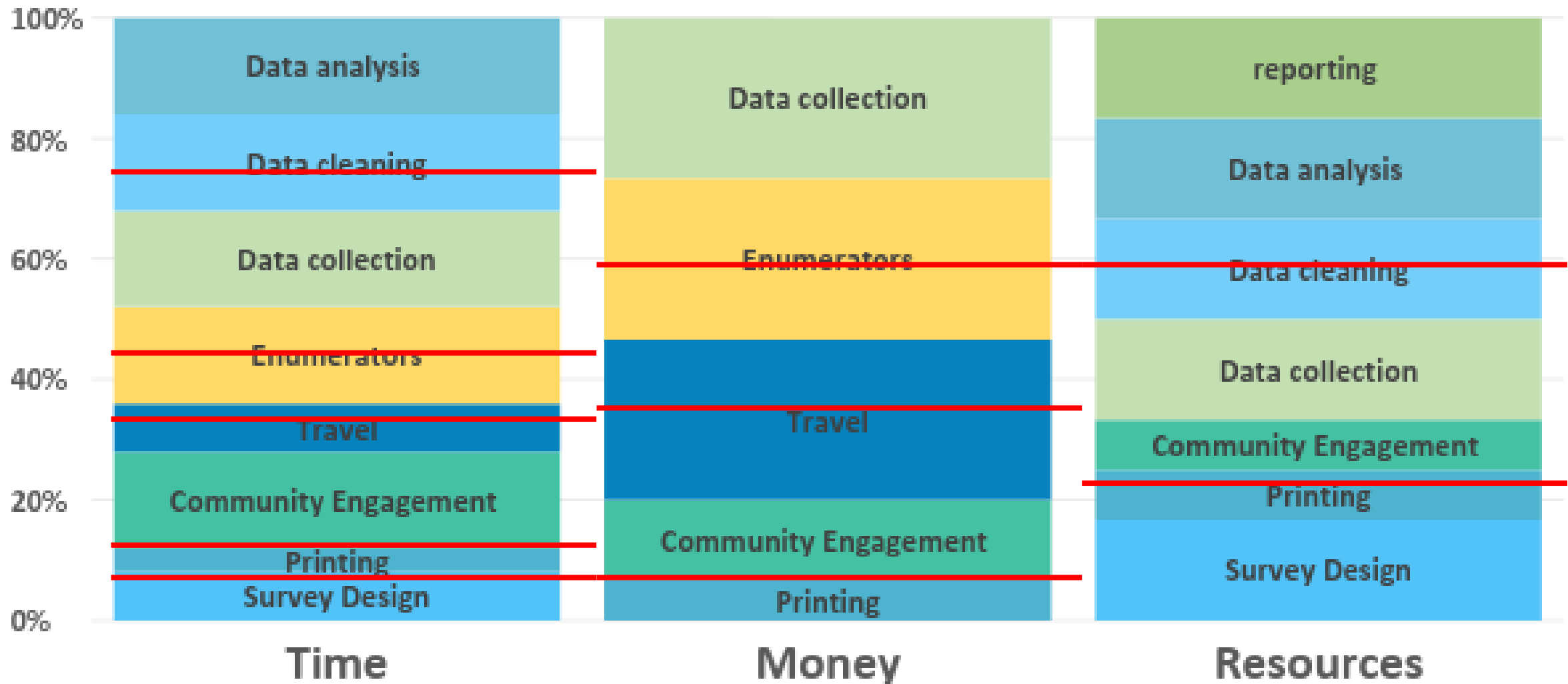
EXPENSES	
Groceries	2000
Fuel	500

# How do we do it differently?



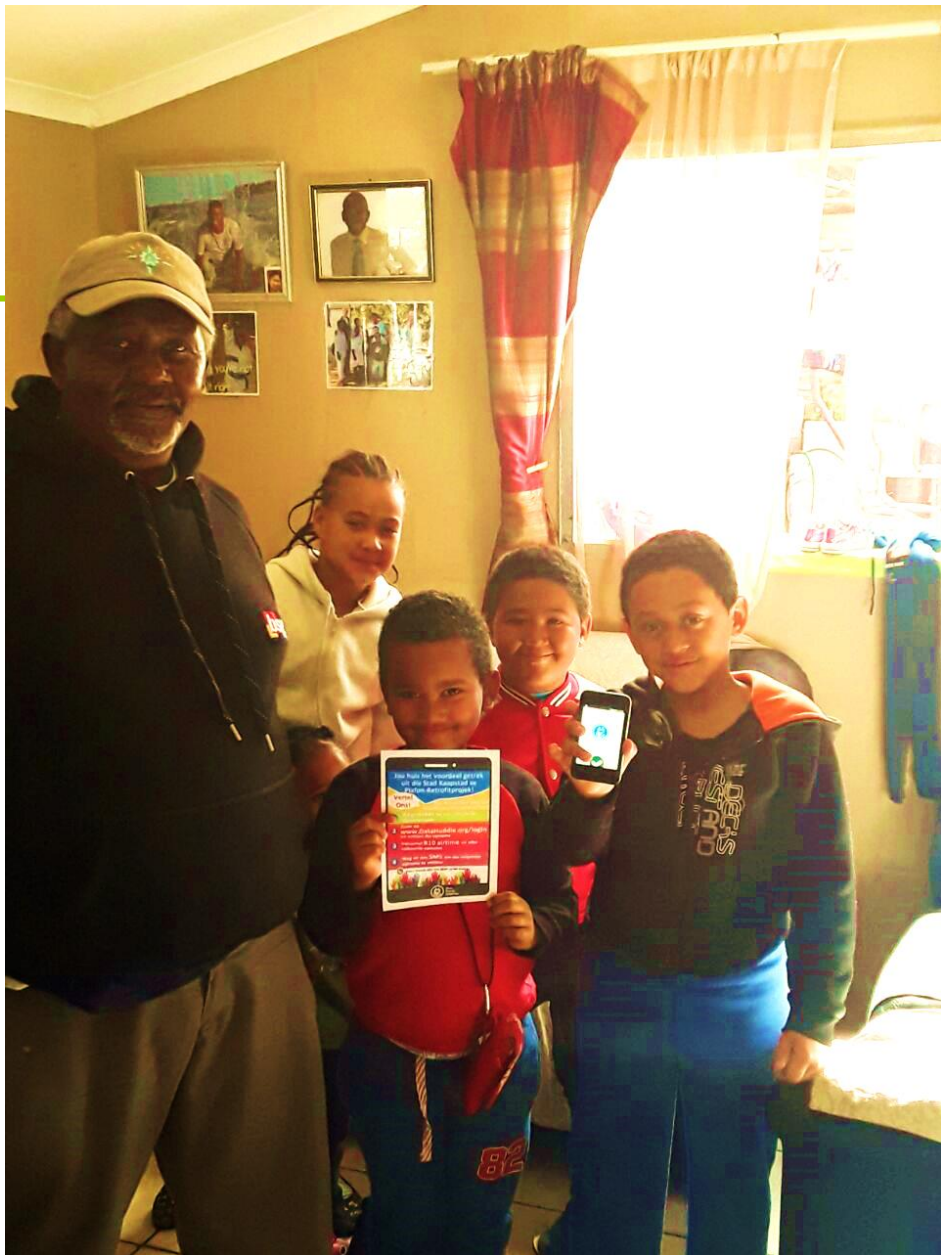


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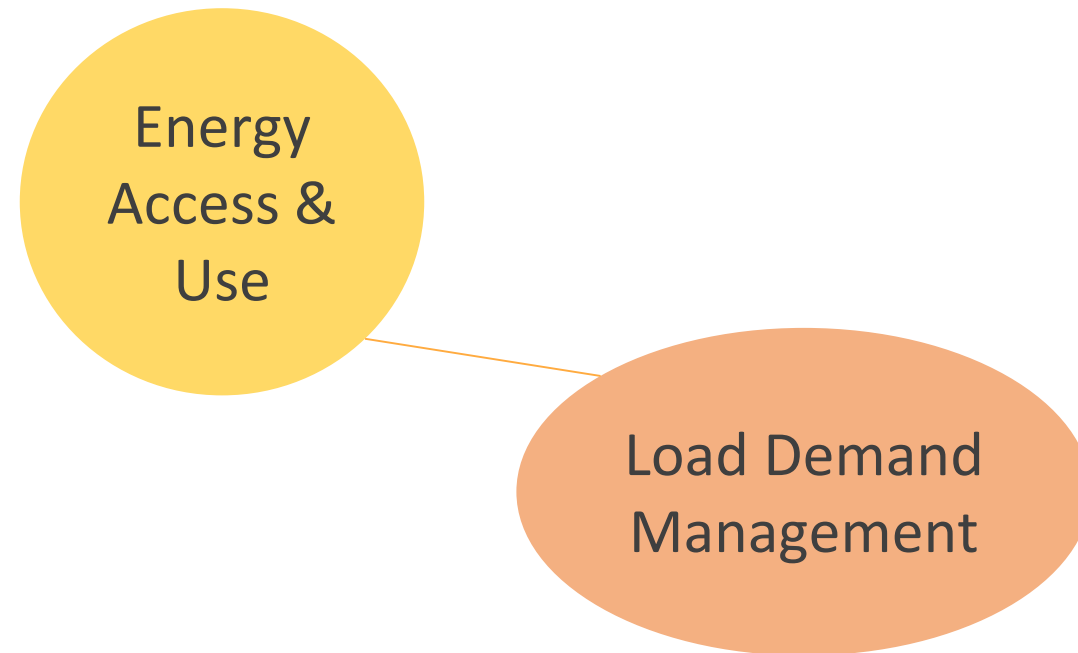
# Scaling up and out

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Energy  
Access &  
Use

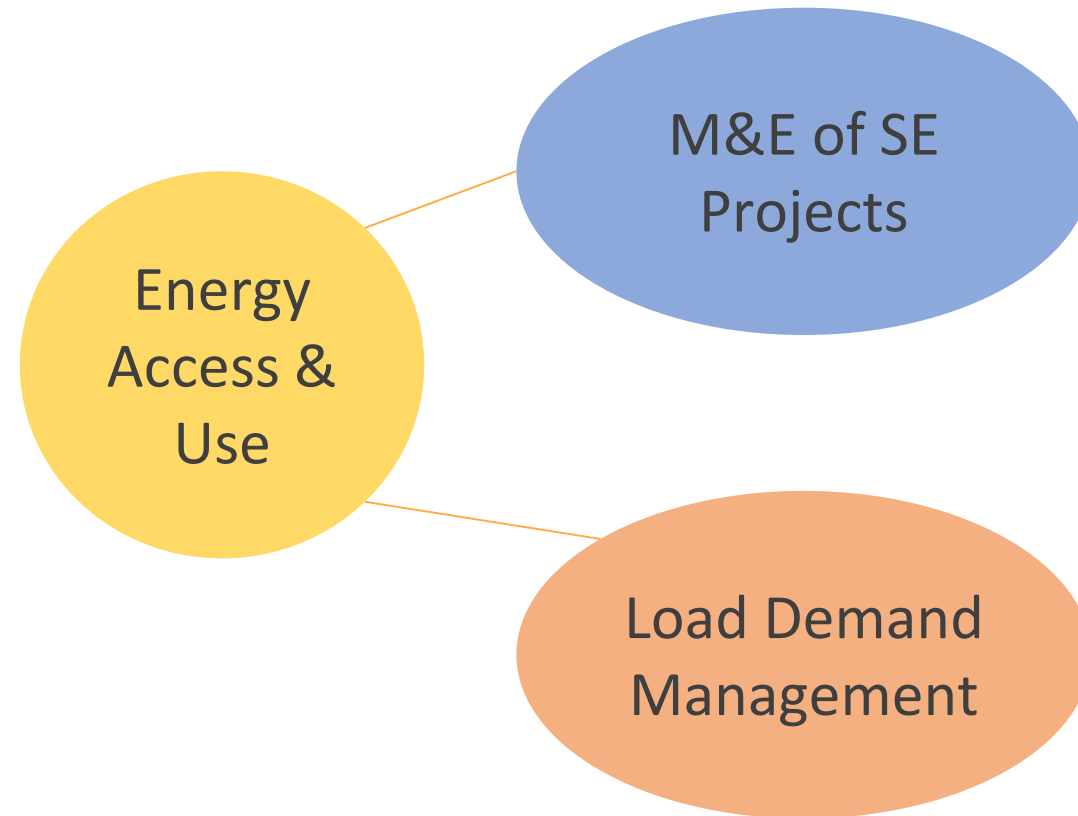
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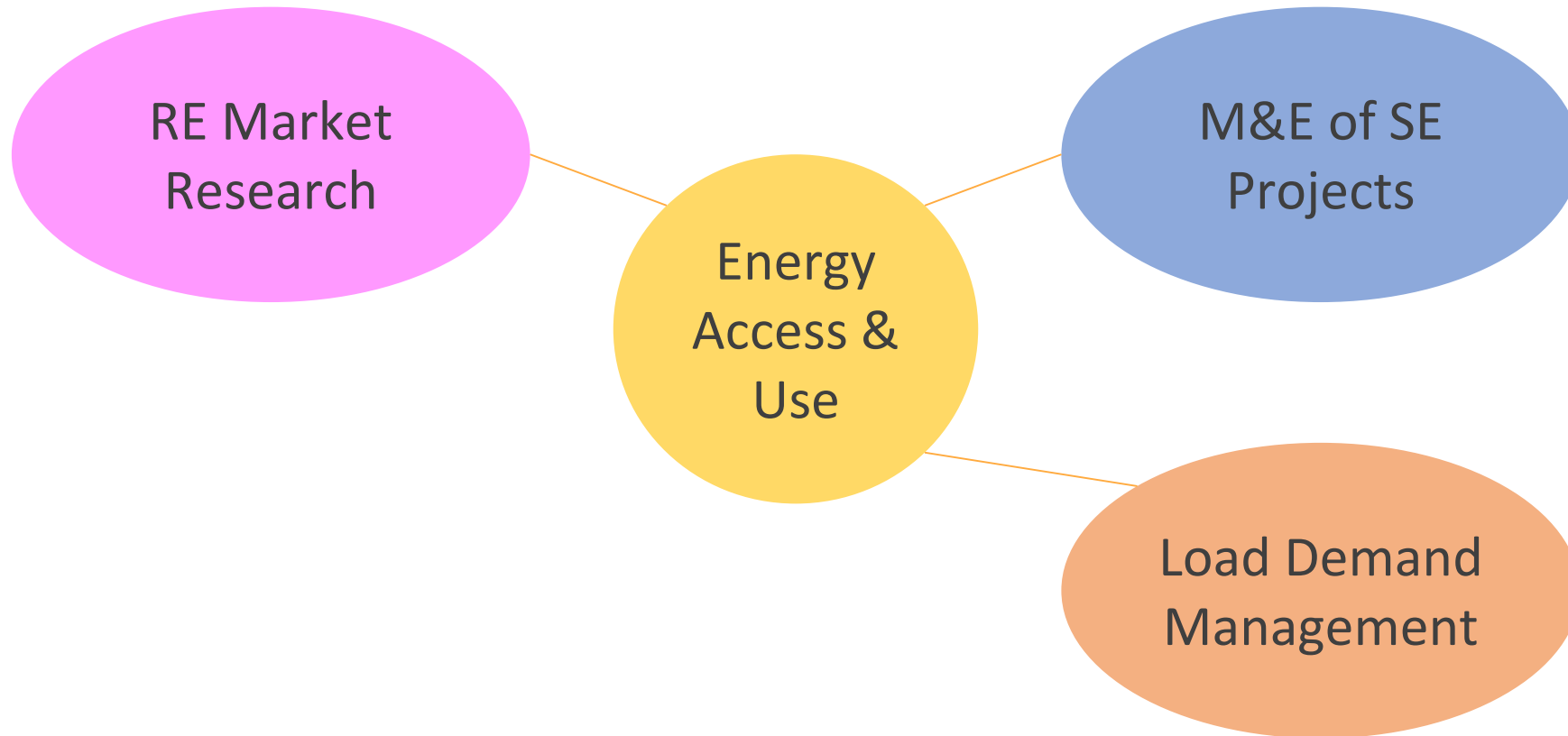
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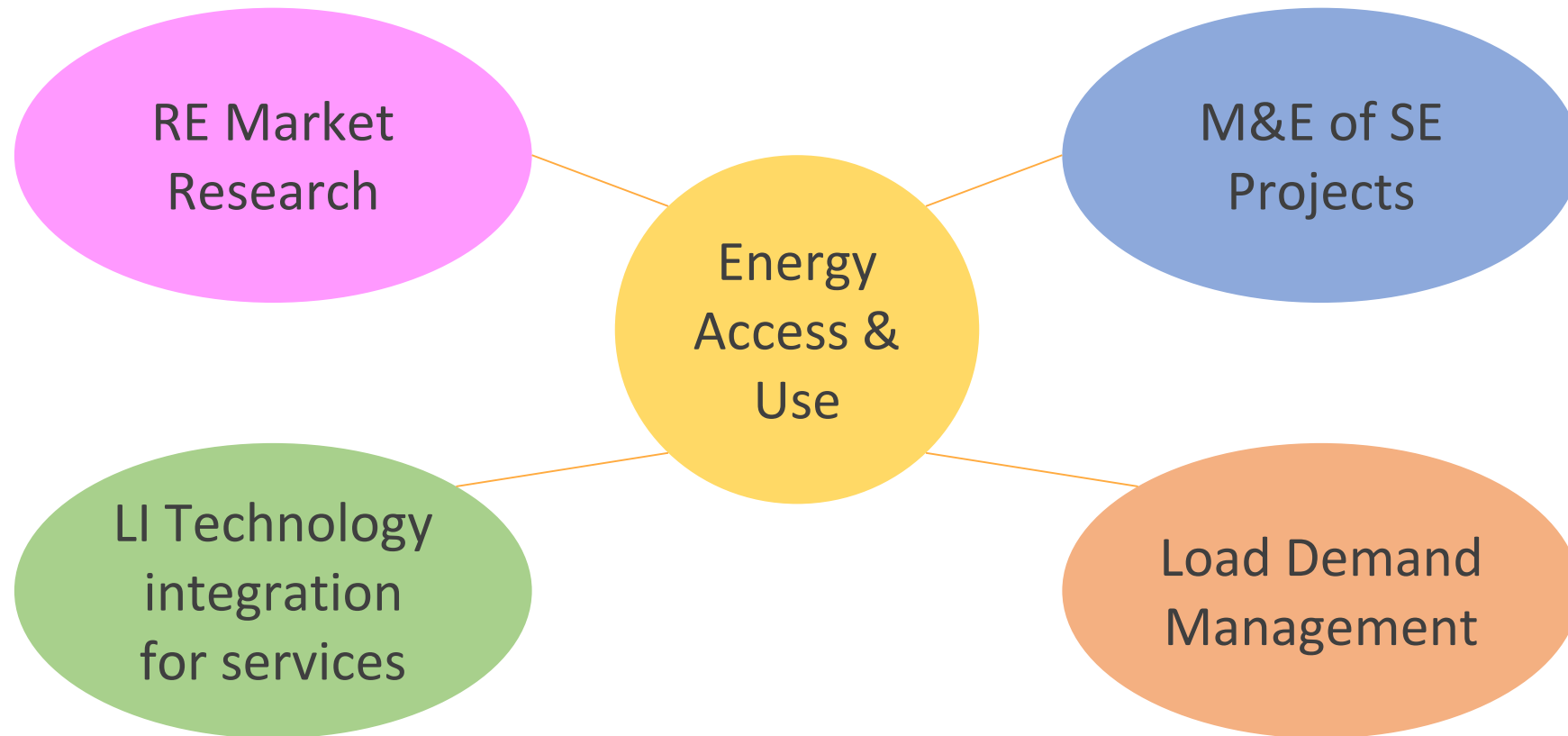
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# Scaling up and out

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**Thank you!**  
Questions or Comments?

For more information go to  
[www.thrienergycollective.com](http://www.thrienergycollective.com) or contact  
[info@thrienergycollective.com](mailto:info@thrienergycollective.com)

