

# LPG CYLINDER SMART METER – DISRUPTOR IN LPG INDUSTRY



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# Background

LPG CSM

## Why an LPG Cylinder meter?

Approximately 75% of Kenyan households and 93.2% of rural households rely on polluting fuels for cooking. With affordability being a key access barrier to clean cooking fuels, such as liquefied petroleum gas (LPG), LPG smart meter technology may help resource-poor households adopt LPG by allowing small and incremental gas payments.

Over 21,560 Kenyans die every year due to Household Air Pollution(HAP) attributed to exposure to harmful pollutants emitted from burning wood & charcoal.



## KEY COMPETITORS

### LPG CYLINDER SMART METER

Koko networks	M-Gas	Sun King & Paygo
<b>Customer base:</b> Over 700K customers <b>Fuel:</b> Ethanol <b>Technology:</b> Automatic fuel dispensing machines, smart bottles, smart cookstoves	<b>Customer base:</b> Over 300K customers <b>Fuel:</b> LPG <b>Market:</b> Nairobi metropolis <b>Technology:</b> Cylinder Smart meter with 13kg gas & cookstove	<b>Fuel:</b> LPG <b>Market:</b> at Inception, leverage on over 2M solar customers mainly rural <b>Technology:</b> Cylinder Smart meter with 13kg gas & cookstove



KOKO Networks Celebrating The 700,000 Customer



# THE CYLINDER SMART METER-CSM

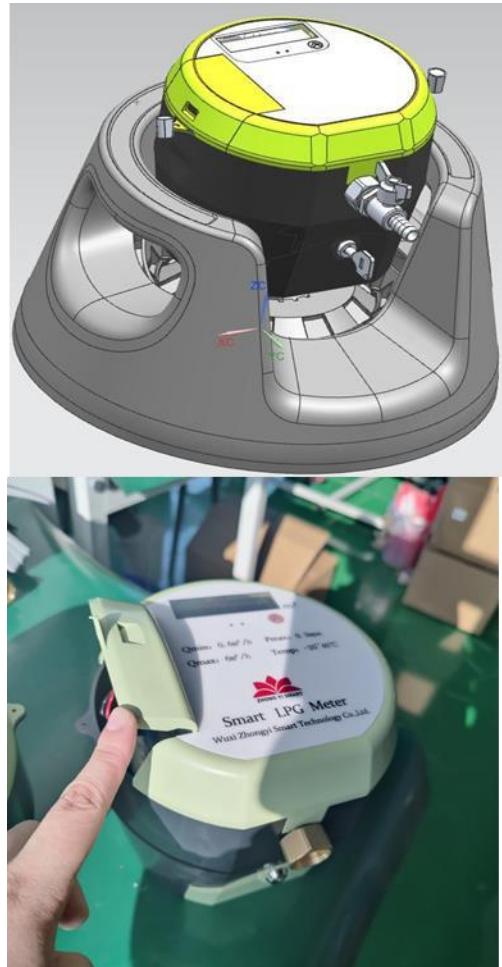
Design concept

### Design & functions

The meter is primarily used to offer LPG to customers on a prepaid basis. Measurement of LPG and the ability to remotely control access to the gas is a critical function of the meter.

### Functions:

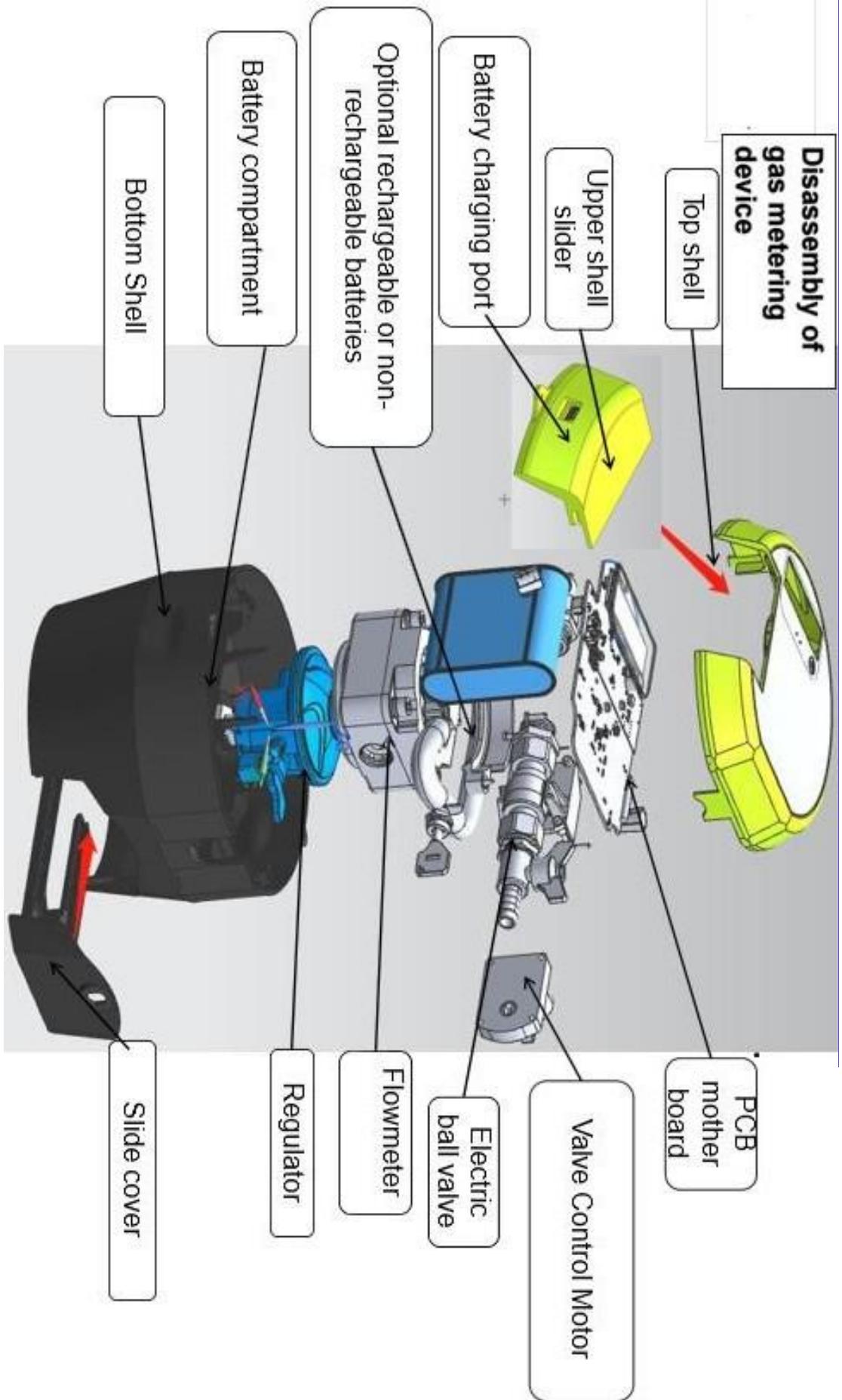
1. Safely release gas when customer has enough token to cook, shut down when depleted
2. Measure amount of gas consumed and remaining in cylinder real time
3. Communicate location of the CSM



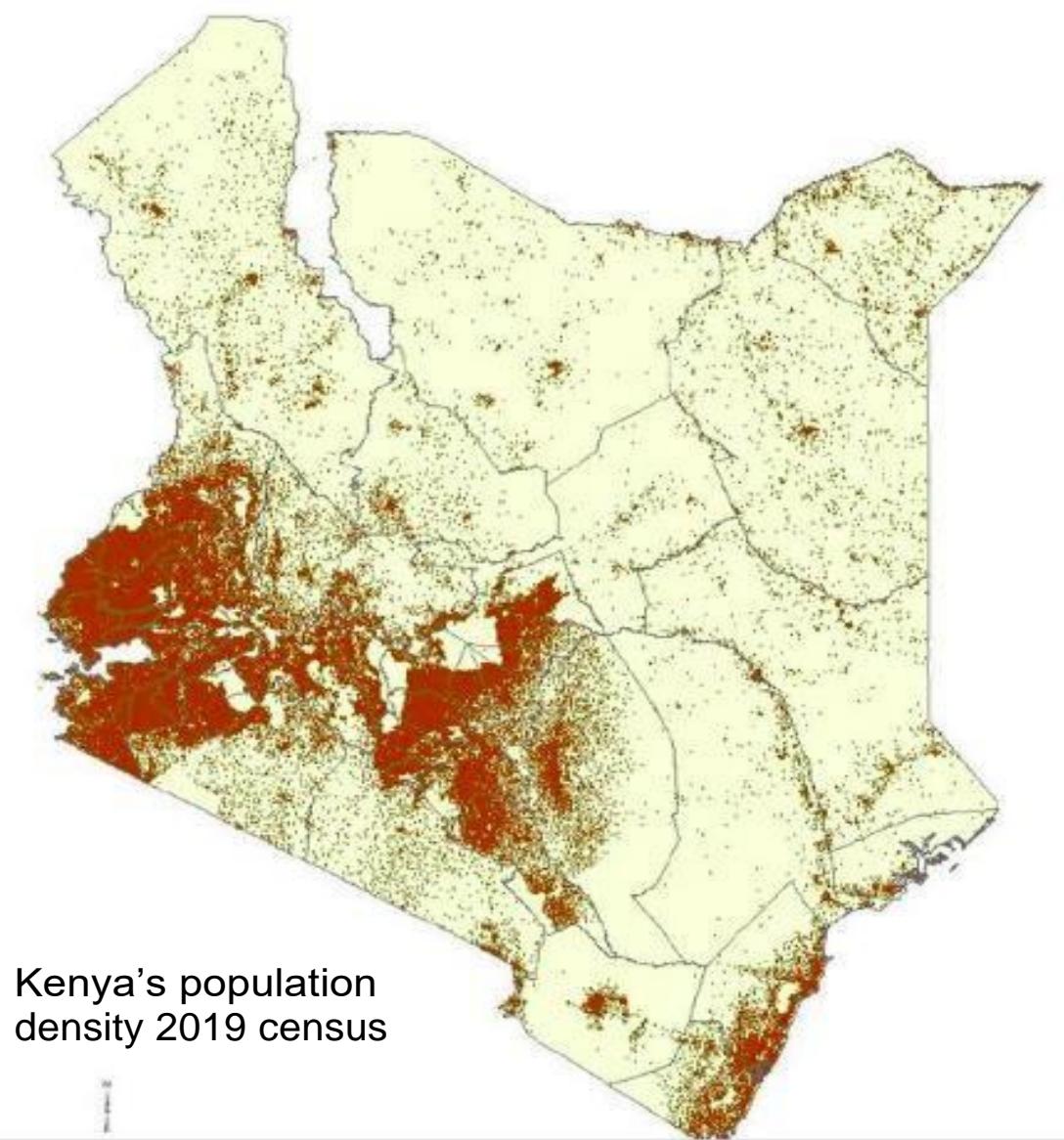
### Benefits of Cylinder Smart meter:

1. Affordability- Makes LPG affordable, one can cook with as low as Kes 5.00 and does not require upfront lump sum of over Kes 3,000 to refill a 13Kg cylinder.
2. Never run-out of gas solution: With CSM you can determine precisely how much gas is used and how much is left hence plan for early delivery to avoid running out of gas
3. Data: CSM provides real time data like customer consumption, location etc that's vital in decision making
4. Locks in Customer-With CSM the company is assured of keeping and maintaining customers
5. Traceability of Cylinders: CSM cannot be detached from the cylinder hence
6. Access to Financing: CSM technology can easily get funding(grants, equity, debt, carbon finance etc.)

## Disassembly of gas metering device



# THE OPPORTUNITY



The way to get started is to quit talking and begin doing.

Walt Disney

# Opportunities

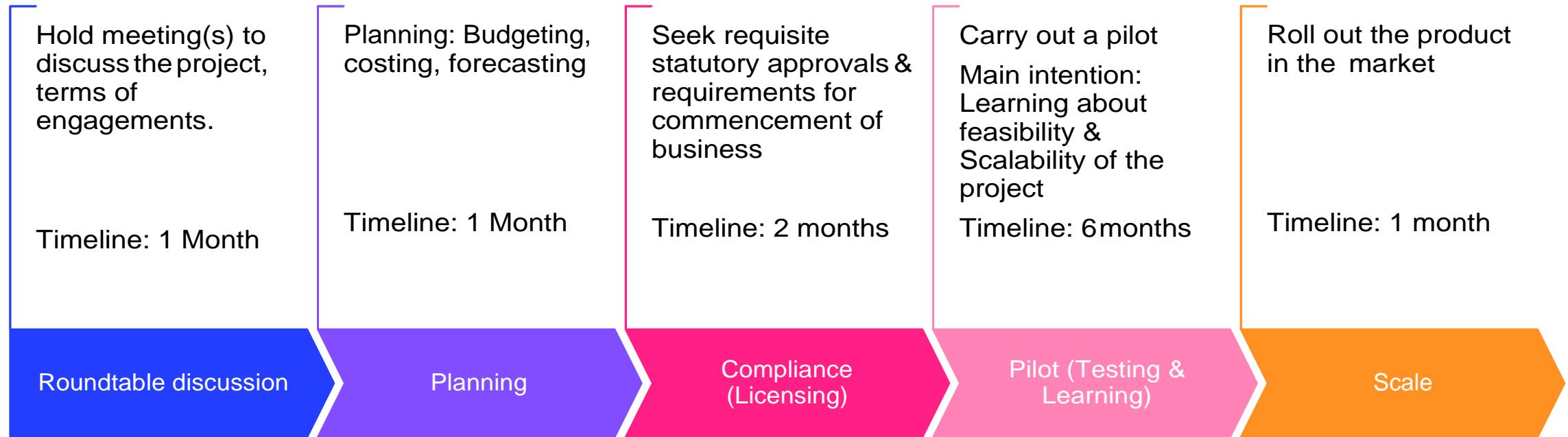
Item	Description
Market	Only 25% of Kenyan household use LPG. There is a bigger pie 75%-underserved by current business as usual status CSM LPG is scalable; M-Gas & Sunking(PayGo Energy) are scaling
Technology	Kenyans appreciate and purchase technology that works Case in point is Koko network & M-Gas exponential growth
Infrastructure	Kenya has well developed LPG infrastructure from depots, filling plants, retail outlets ready to leverage on without heavy Capex investment
SDG 7 funding	LPG is key to achieving United Nation's Sustainable Development Goal no. 7-Clean Sustainable Energy for All. Hence has many funding opportunities for leveraging. Examples: Government(e.g., KOSAP-Clean Cooking fund \$ 5 million) USAID DIV, Carbon Financing

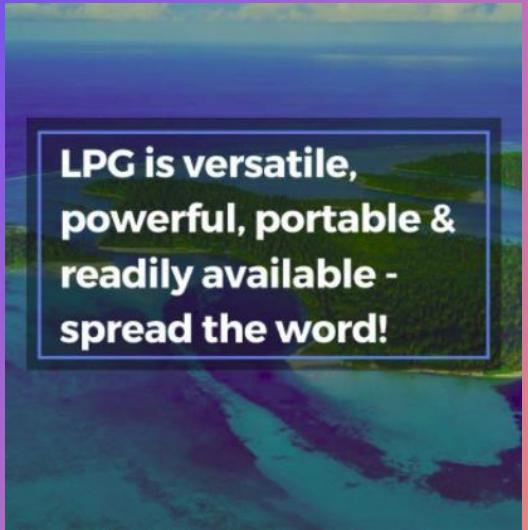
## Open funding opportunity

### USAID DEVELOPMENT INNOVATIONS VENTURES 2023 FUNDING

Stage 1	Stage 2	Stage 3	Evidence Generation
Pilot	Testing / Positioning for Scale	Transitioning to Scale	Evidence Generation
Up to \$200,000	Up to \$1,500,000	Up to \$15,000,000	Up to \$1,500,000

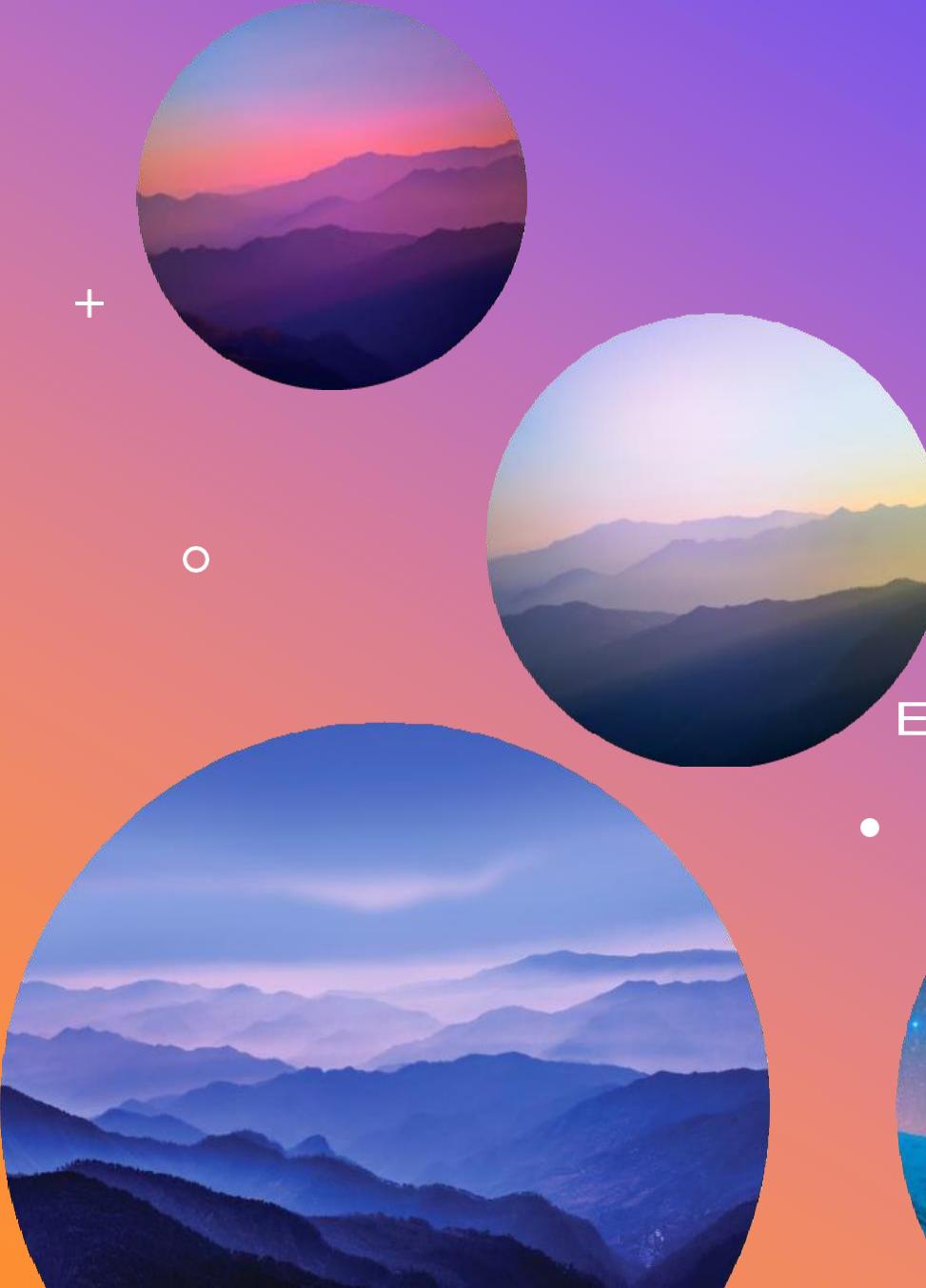
# Next Steps- One Year plan





# Summary

1. LPG is a clean energy whose penetration in Kenyan Market is below 25% hence immense opportunity exists
2. Current LPG market(25%) is mainly cash upfront hence inaccessible & unaffordable by millions of households.
3. Cylinder smart meter technology greatly improves accessibility & affordability of LPG through Pay as you Go system.
4. There's are various funding opportunities for CSM-LPG both locally & internationally
5. The best time and moment to start is NOW!



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