Sezibwa Homes

This is a community of 10 homes in Nansana, Gadaffi close. It is the location of NFE's first Reliable Power Microgrid (RPM) in Uganda

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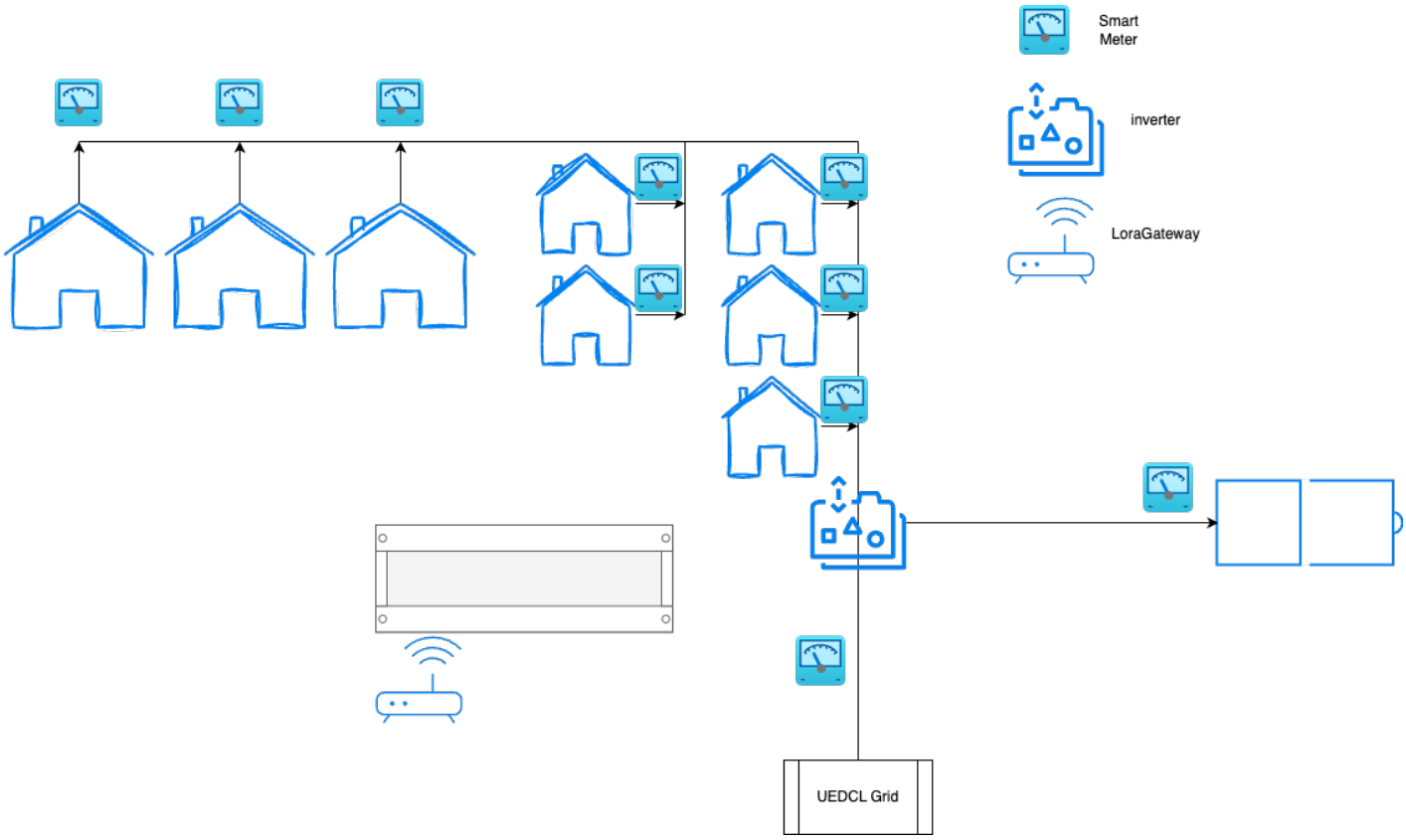
- Phase 1 Pictorial
- Customer Registry
- Inspection Document
- Welcome Note to Customers
- Outage log
- Phase 1.1
- Phase 2.0
- PDU layout

Microgrid Design



Budget - Phase 1: Sezibwa Homes

Realtime financials tracked via open collective here: https://opencollective.com/nfe/projects/sezibwa-homes-nfe-pilot

Bill of Quantity NFE-Nansana

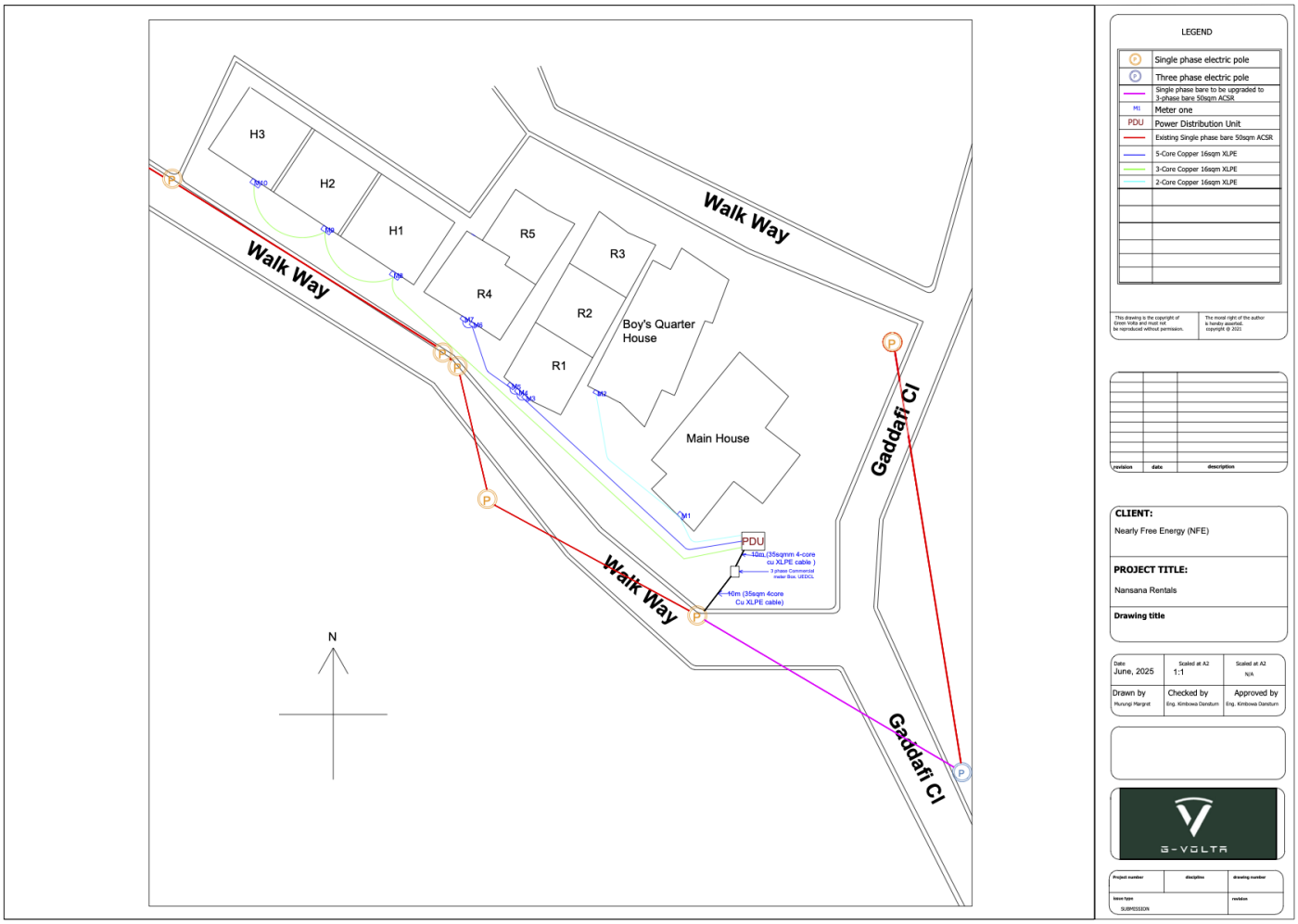
S/No	Item	Specifications	Quantity	SI Unit	Rate(UGX)	Amount (UGX)
1	Enclosure box for the PDU	80cm*60cm*25cm	1	box	550,000	550,000
2	Single phase MCCB	160A ABB	3	pc	120,000	360,000
3	Three phase Smart meter	80A Chint	1	pc	400,000	400,000
4	Busbars (Red, Yellow, Blue, Black and Green Yellow)	200A	5	pc	150,000	750,000
5	Circuit breakers	80A	10	pc	30,000	300,000
6	Enclosure Trunkings (Slotted grey truncking)		2	pc	30,000	60,000
7	Din rail		1	pc	10,000	10,000
8	Self tapping screws	0.5"	1	pkt	35,000	35,000
9	Cable lugs ring	16mm pin	18	pc	3,000	54,000
10	Cable lugs ring	25mm ring	18	pc	5,000	90,000
11	Sleeves	25mm	2	m	5,000	10,000

12	Sleeves	16mm	2	m	3,000	6,000
13	Flexible Cable Red	25mm	2	m	15,000	30,000
14	Flexible Cable Blue	25mm	2	m	15,000	30,000
15	Flexible Cable Yellow	25mm	2	m	15,000	30,000
16	Flexible Cable Red	16mm	4	m	8,000	32,000
17	Flexible Cable Yellow	16mm	4	m	8,000	32,000
18	Flexible Cable Blue	16mm	4	m	8,000	32,000
19	Flexible Cable Yellow Green	10mm	2	m	5,000	10,000
20	Flexible Cable Black	2.5mm	2	m	1,500	3,000
21	Flexible Cable Green	2.5mm	2	m	1,500	3,000
22	Flexible Cable	2.5mm	2	m	1,500	3,000
23	Communicatio n Cable	1.5mm	6	m	1,500	9,000
24	Indicator lamps	230V	3	pc	5,000	15,000
25	Double Socket	Pcs	1	pc	10,000	10,000
26	Insulating tape	Pcs	5	pc	3,000	15,000
27	Pin lugs 25sqmm for different colours	Pkt	1		4,000	4,000
28	Pin lugs 16sqmm for different colour	pkt	1		3,000	3,000
29	Airal Cable	35sqmm ABC Cable	100	m	15,000	1,500,000
30	IPC	35-70sqmm	8	EA	6,000	48,000
31	Armoured Cable	25qmm	10	m	65000	650,000

32	UEDCL 3phase Commercial Meter	TOU Code 10.2	1	EA	3,500,000	3,500,000
33	Service Cable	16sqmm 2 Core cable	30	m	15,000	450,000
34	Service Cable	16sqmm 3 Core cable	150	m	30,000	4,500,000
35	Service Cable	16sqmm 5 Core cable	100	m	50,000	5,000,000
36	Smart Meters	1 Phase DinRail Split prepaid meter-1.pdf	10		290,000	2,900,000
37	LoraWAN gateway	CAL-025.pdf	1		1,803,000	1,803,000
38	Labor (installation)	Green Volta			2,000,000	2,000,000
		Total				**25,237,000**

Reconciled budget attached 1RECONCILIATION NFE-NANSANA.pdf

Site Layout


H3
H2
H1
R5
R4
R3
R2
R1
Boy's Quarter House
Main House
Walk Way
Walk Way
Walk Way
Gaddafi Cl
Gaddafi Cl
PDU
10m (35sqmm 4-core cu XLPE cable)
3 phase Commercial meter Bus. UEDCL
40m (35sqm 4core Cu XLPE cable)
N
LEGEND
Single phase electric pole
Three phase electric pole
Single phase bare to be upgraded to 3-phase bare 50sqm ACSR
M1 Meter one
PDU Power Distribution Unit
Existing Single phase bare 50sqm ACSR
5-Core Copper 16sqm XLPE
3-Core Copper 16sqm XLPE
2-Core Copper 16sqm XLPE
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revision
date
description
CLIENT:
Nearly Free Energy (NFE)
PROJECT TITLE:
Nansana Rentals
Drawing title
Date
June, 2025
Scaled at A2
1:1
Scaled at A2
N/A
Drawn by
Murungi Margret
Checked by
Eng. Kimbowa Dansturn
Approved by
Eng. Kimbowa Dansturn
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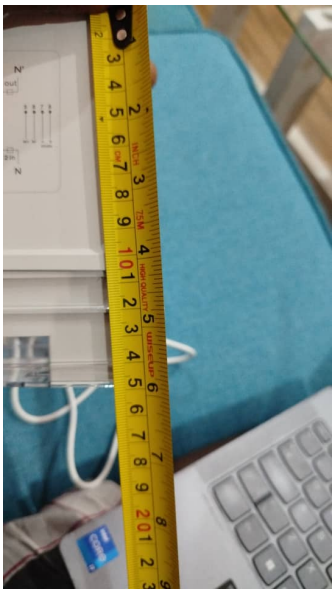
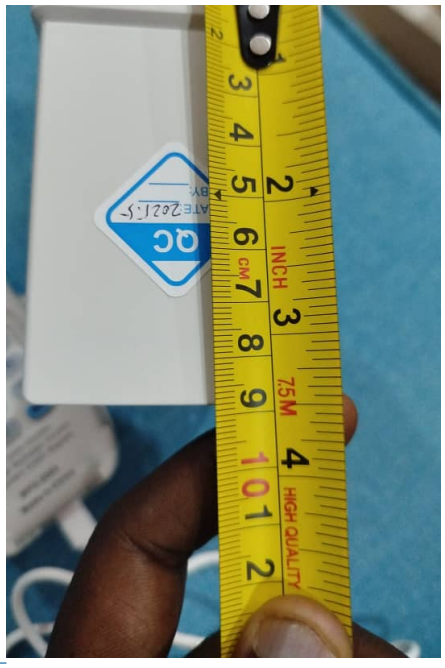
SUBMISSION
revision

Procurement Pictorial




INCH
CM
7.5M
HIGH QUALITY


LPWAN IoT Gateway

Monthly Finances

Energy Sales

We are making these sales projects based on what they spend today and not the power they use.

- Number of Customers: 10
- Average historical spend per customer: 80,000 UGX per month (about 3kWh per day, for 30 days)
- Total Revenue: 800,000 UGX per customer (800 UGX per kWh)

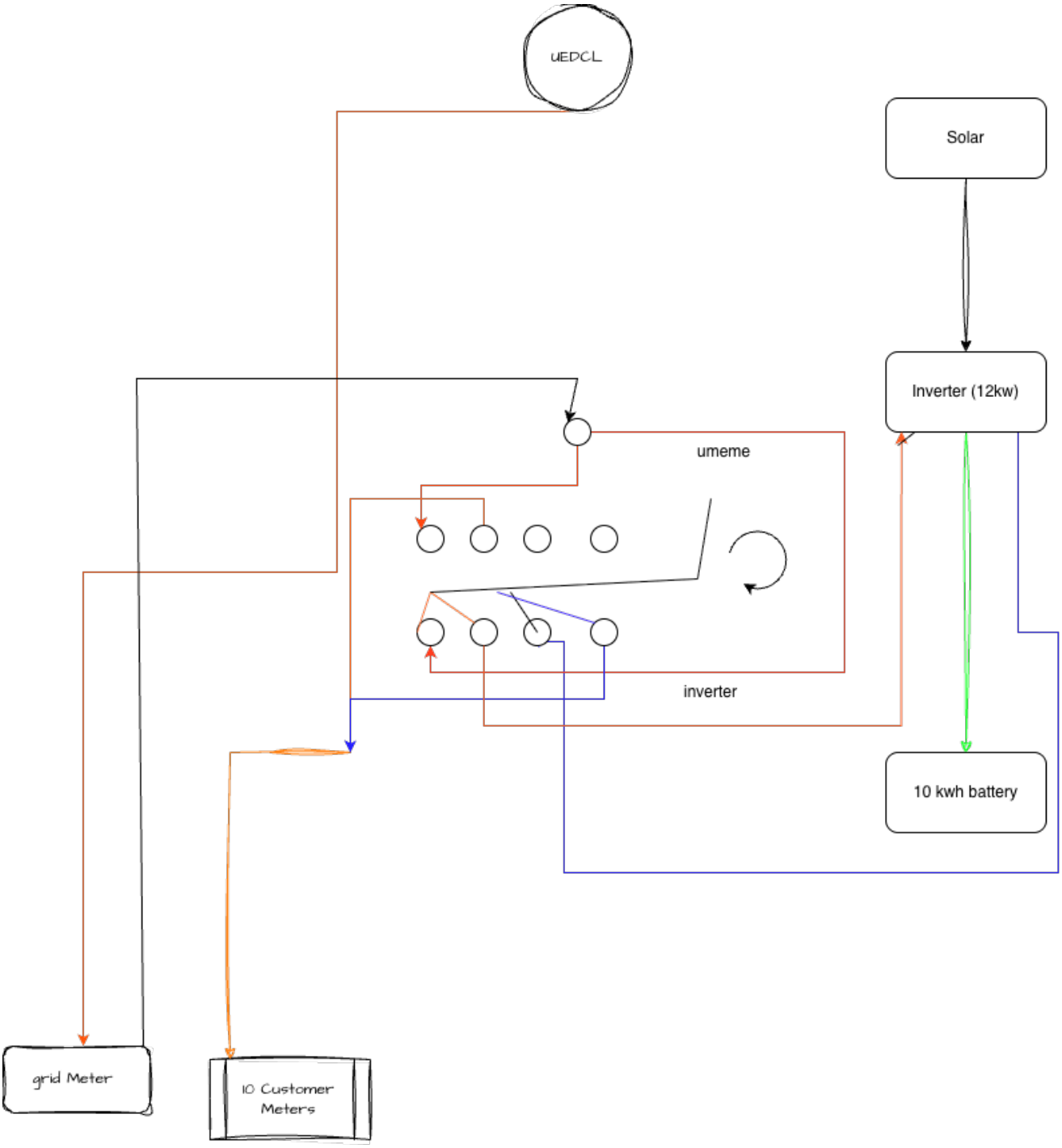
Expenses

- Bulk Purchase of power: 491,760 UGX (546.4 per kWh at 3kWh per day for 30 days for 10 customers)
- Taxes (18% VAT) - Charge to customer?
- Operations: 100,000 UGX
- Real time expenses tracked here on Open Collective

Net Returns

- Sales - Expenses: **308,240 UGX**

Sezibwa Site Plan for Phase 2


UEDCL
Solar
Inverter (12kw)
umeme
inverter
10 kwh battery
grid Meter
10 Customer Meters


Grid Meter UEDCL
Solar

Ownership (Membership)

> This project is community owned as per the model described here.

Funders

- NFE - 21,300,071 UGX
- Unallocated - 3,936,929 UGX

Workers

- NFE

Customers

- Non Eligible yet

Phase 1 Pictorial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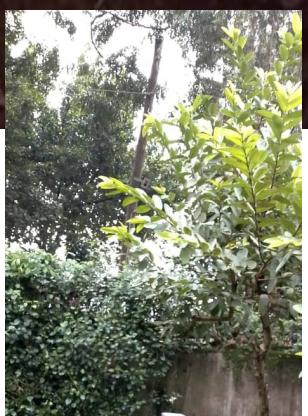



GAGIYA
MCCB
GYM1-125L
OFF

Customer Registry

Name	House Number	Contact	Meter Number

Inspection Document

Inspection Document.pdf

Welcome Note to Customers

Hello, This is Aaron from Nearly Free Energy. We provide reliable electricity to neighbourhoods like yours.

Your landlady has agreed to work with us to bring reliable power to your neighborhood. This will be done in the a 3 phase process.

Phase 1: Smart Metering:

We will switch you from Yaka to Smart Meters. This is needed in order for us to monitor when UEDCL power goes off so that we can size your neighbourhood backup correctly.

Phase 2: Backup installation:

We will install the right sized battery backup so that when UEDCL goes off, you power remains on. These batteries will be charged when UEDCL is on so that they can be ready when UEDCL is off. This backup will come on automatically so you should not notice when UEDCL is off.

Phase 3: Solar Generation:

We will install solar panels on your roof to help charge the batteries when UEDCL is off for much longer periods like several weeks.

Frequently asked Questions

If Yaka is gone, how will I pay for power?

You will switched from prepaid to postpaid. This is the same way you pay for your water bill. You receive a monthly bill from us via SMS and you will have 5 days to pay the bill via Mobile Money, Visa or Mastercard.

How can I know how much I have used at anytime during the month?

Please contact us on our Whatsapp business account. We shall check your smart meter and share with you our usage.

What happens when I don't pay my monthly bill by the 5th day of the month?

Your smart meter will automatically turn off power to your house. Once you pay the bill, the meter automatically turns power back on.

When will Phase 1 be completed?

Phase 1 is currently in progress. We are targeting to complete phase 1 by end of this week.

When will Phase 2 be completed?

We are targetting to start Phase 2 in December 2025, I should be completed within a month depending on transport logistics of the batteries. They are being imported from supplier overseas.

When will Phase 3 be completed?

The timelines for Phase 3 are not yet determined but will likely be within 2026.

How much will I be paying for power?

The cost of power will not change. IT is determined by ERA (Electricity Regulatory Authority). You will be paying the same domestic rate you are paying today: https://www.uedcl.co.ug/approved-tariffs. You will charged domestic rate fees per unit you use + VAT (18%) + monthly service charge (5320 UGX). All these charges exist on your Yaka bills. The only change here is that it's postpaid not prepaid.

What if I want to still pay using prepaid token like Yaka?

At this time, our system doesn't support this payment mode. But we think postpaid is better for most customers so we think you will find it more convenient than yaka tokens.

What happens to my current yaka balance and yaka meter?

UEDCL will entually reposes that yaka meter. The timelines for this are unclear. However please contact us and share your current Yaka balance, we will credit the units to your monthly bill for next month.

How can I contact you?

You can email us on team@nearlyFreeEnergy.com or Whatsapp us on 077

Outage log

Date	Duration	Reason	Impact	Remarks
1 September 2025	8 hours	2/3 phases with voltage too low due to a broken link, this one impacted a wider area (whole of Nansana)	all 10 customers impacted because deployment was still in progress	Known to happen fairly often and could we temporarily resolved locally with a phase selector
6th September 2025	1 hour	Meter Alarm triggered for Main house	Main house only	Need to investigate reason why alarm/relay was triggered
9th September 2025	6 hours	Transmission team doing substation maintenance so they shut down the line	10/10 houses impacted.	

Phase 1.1

Goal

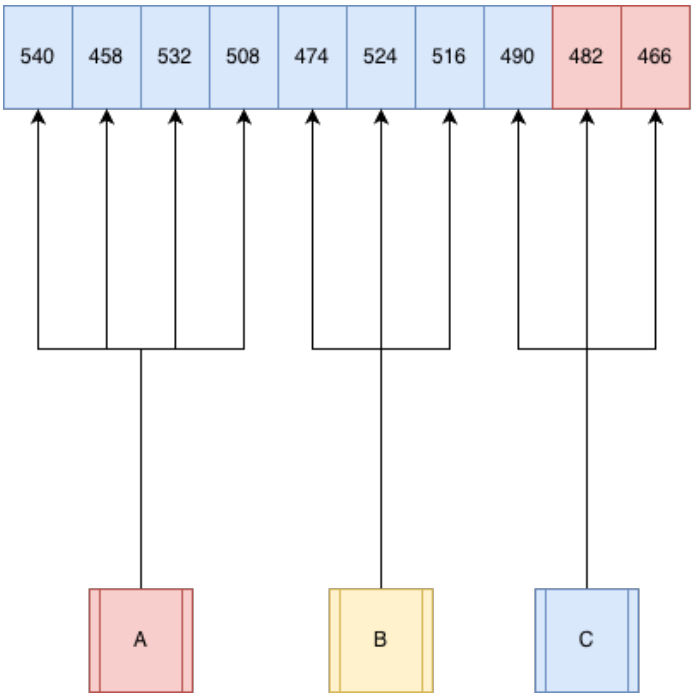
- Install phase selectors to increase reliability when some phases have low voltage

Item	Specification	Quantity	Unit Price	Amount	Remarks
PDU	80cm*60cm*25cm	1	900,000	900,000	We need a bigger PDU in order to fit the phase selectors
Phase selectors		3	300,000	900,000	
Labor		-	-		
Total				18,000,000	

Phase 2.0

Goal: Adding Battery Capacity. We are estimating that we need to add 15 to 25 kWh of battery capacity. We are yet to do some analysis on the consumption and outage profile for the community to determine what would be the ideal capacity.

PDU layout


540
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532
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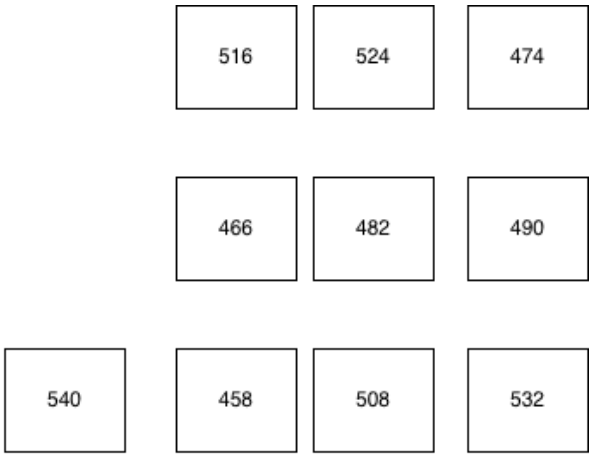
A
B
C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