



# *BATTERY MEASUREMENT TOOL*

PROPOSED TO:

PROPOSED BY:

*Ranjit Singh, LnkTechnologies*

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## THE COMPANY

Lnk Technologies creates digital solutions for organisations that want to manage energy consumption and reduce GHG emissions fast.

Our first-to-market software with sustainability at its core uniquely enables monetisation of progress towards Net Zero targets via an AI powered Energy Management System coupled with a GHG reporting facility.

Ultra accurate data from IoT sensors optimises energy efficiency management and automates carbon accounting.

By integrating advanced analytics and real-time data monitoring, we provide actionable insights to help you optimize energy use, achieve environmental goals more efficiently and monetise your route to Net Zero.

Beyond technology, LNK Technologies pride ourselves on delivering not just a service, but a partnership to support a culture of sustainability within your organisation.

We offer comprehensive training and support to ensure that your team can fully leverage our system's capabilities. Our dedicated customer service team is always on hand to assist with any queries and provide ongoing support.

Join us in building a greener future. Together, we can make a significant impact on reducing global greenhouse gas emissions, one organisation at a time. Let's turn sustainability from a challenge into an opportunity for growth and innovation.



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# THE ASK - BATTERY STORAGE MONITORING

## PROBLEM STATEMENT

To provide a technology solution to:

Accurately measure the state of charge and discharge of BESS

Precisely calculate profit margins between cost to charge and the sale price for each KWH discharged.

Optimise financial returns from intelligent deployment of BESS behind the meter, in front of the meter and co-located with generation

## CURRENT SOLUTIONS

We can measure the charge and discharge levels of various battery types at great accuracy (every 3s). Further measurements (see opposite) may also be taken in real-time.

Data taken from the source of the battery is displayed in a meaningful way on the dashboard enabling optimisation and management of BESS to create new financial models and energy solutions using:

- Charge/discharge capacity in % integrated to a live billing engine.
- Actual cost of energy to the supplier and setting the cost to the consumer.
- Proactive monitoring of status, and battery health.
- Payback period and IRR projections on BESS

## METHODOLOGY

### 1. Voltage-Based Method:

- Measuring the battery voltage using our proprietary IoT sensor.
- Use a voltage divider to scale down the battery voltage to a safe range for ADC.
- Calculate the state of charge based on the voltage using BigData battery chemistry calculations

### 2. Current Measurement:

- Measure the current flowing in and out of the battery using proprietary current sensors
- Integrate the current over time to track the charge/discharge and battery degradation.

### 3. Temperature Compensation:

- Battery voltage varies with temperature. Incorporating our own temperature compensation and BigData algorithm in code calculations improves accuracy and efficiency.

### 4. Calibration and Testing:

- We can calibrate the Battery system using known values through our real time sensors to control load and flow
- We can stress and load test an applied solution with different charge/discharge scenarios, adding to the lifespan of the battery



# EXAMPLES OF CURRENT CAPABILITY

Fig 1 : Battery temperature and leakage (showing inefficiency by the minute/seconds) fluctuation, charge and discharge (by months-minute accuracy)

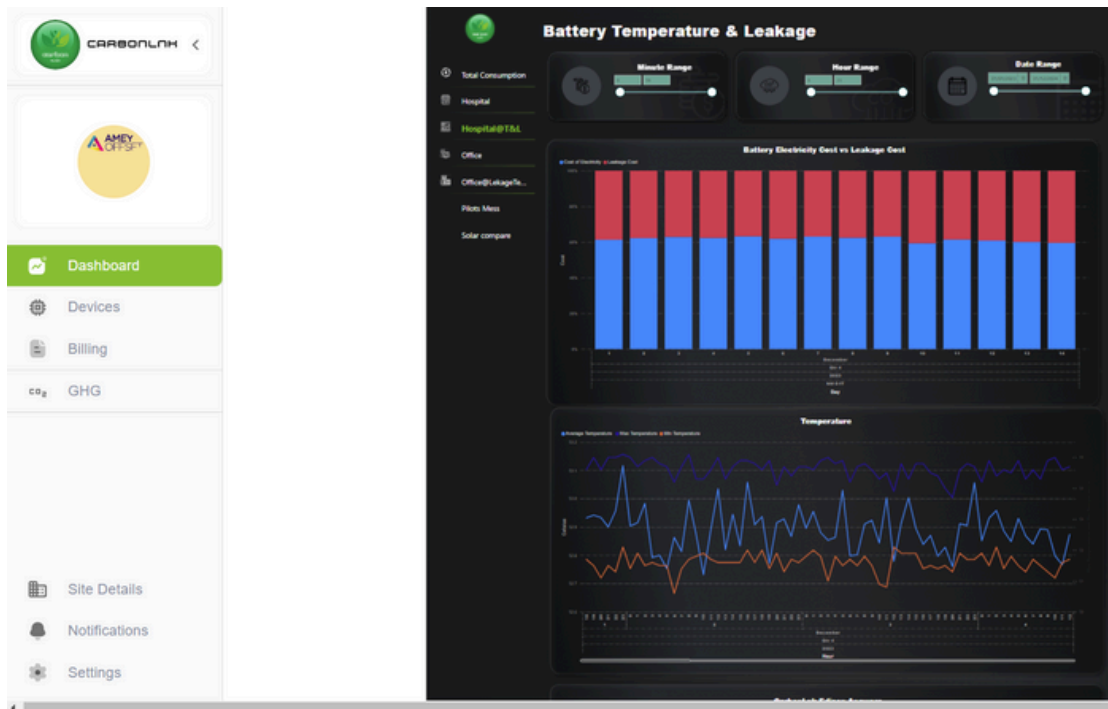
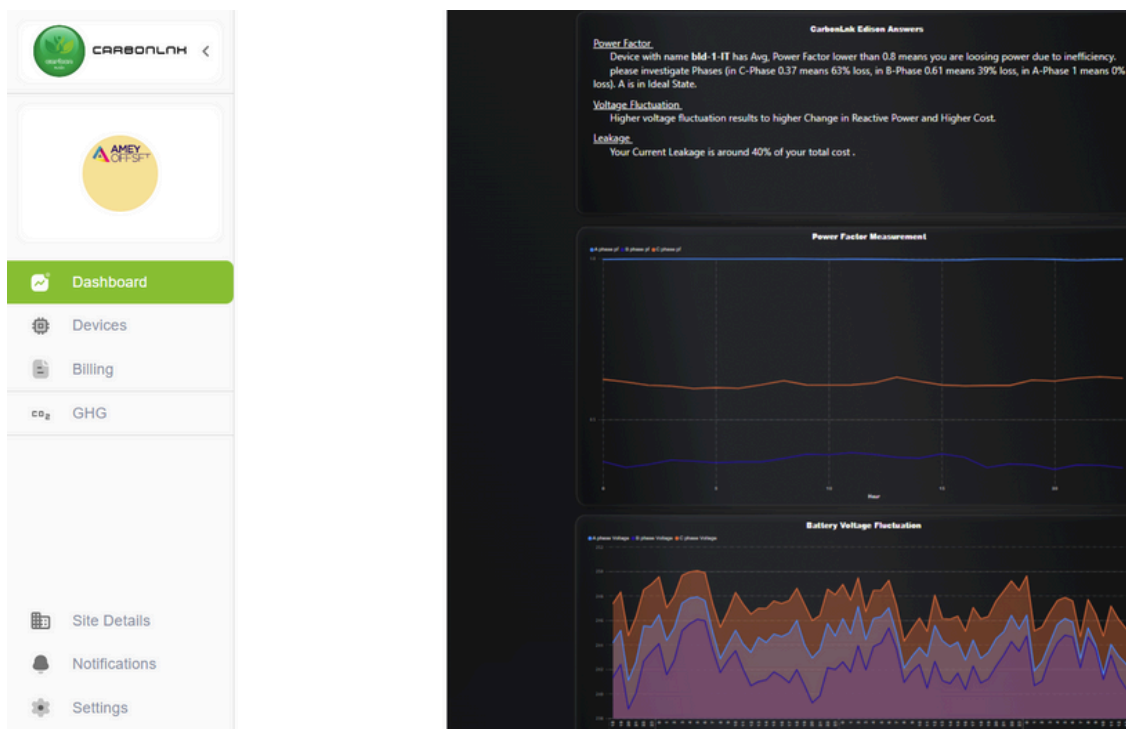


Fig 2: Battery Voltage fluctuation, charge and discharge (by months-minute accuracy) Also Ai Feature providing automated analysis.





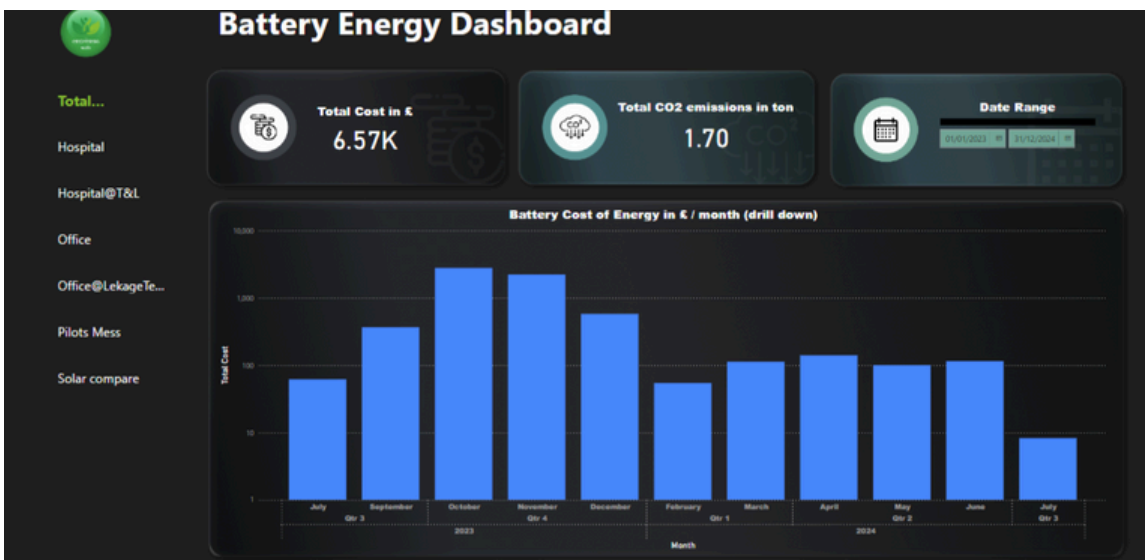
# EXAMPLES OF CURRENT CAPABILITY

Fig 3 : Battery Voltage fluctuation, charge and discharge by months-minute accuracy on all 3 phase power



Fig 4: Total Battery Energy Dashboard for all environments showing: Real time usage over time and areas,

- Total cost of battery energy in £/\$/Euro,
- Total Co2 emissions generated from charge source (non-renewable or renewable energy source) for all areas and environments and cost of Co2.
- Date range visibility from Minute to Month
- Charge and discharge and leakage inefficiencies within each area of consumption



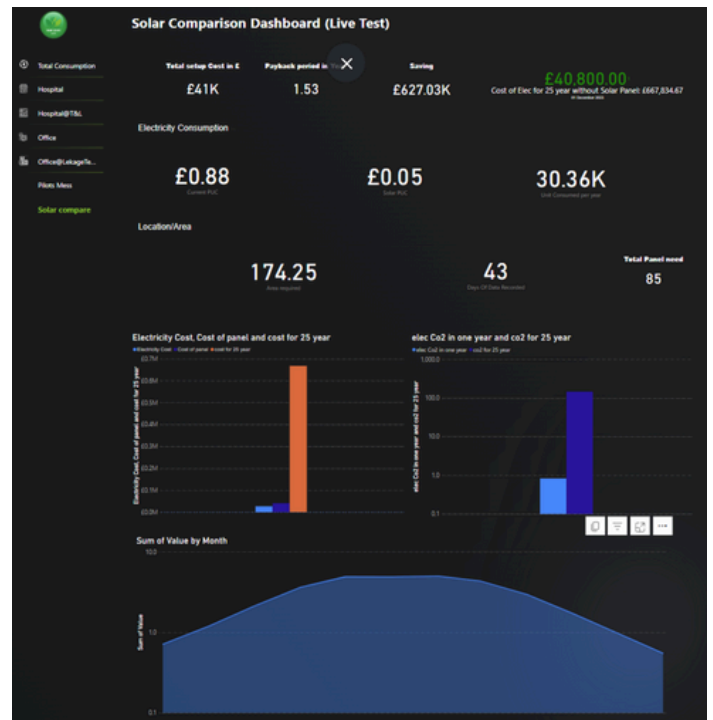


# EXAMPLES OF CURRENT CAPABILITY



fig 5 : Electricity cost over time = total energy

fig 6 : solar energy production / battery performance / ROI calculations and financial projections



Proposed improved capability: CarbonLnk detailed Minute to Month secure role-based access allows for us to develop further the billing capability, if the project was to go ahead.

# WHO WE ARE



**Ranjit Singh, C.E.O**

Member of the Royal British Legion  
Ex-military, served in the British Special Forces  
Senior IT architect, engineer, test pilot, inventor



**Audrey Roos, C.O.O**

15 years of experience leading front-line services in Public sector. Expert in culture change. Trained in systemic leadership, development Management and business sustainability leadership



**Amol Bhosale, Lead Cloud engineer**

Lead cloud computing expert, IOT innovation and AI. Expertise in software engineering and design. He has a passion for climate change.



**Chris Corfield, CFO**

Engineer, Chartered accountant, 15 yrs CFO of large companies





*LET'S DISCUSS A  
TRIAL IN SITU*

NO OBLIGATIONS

TRY BEFORE YOU BUY