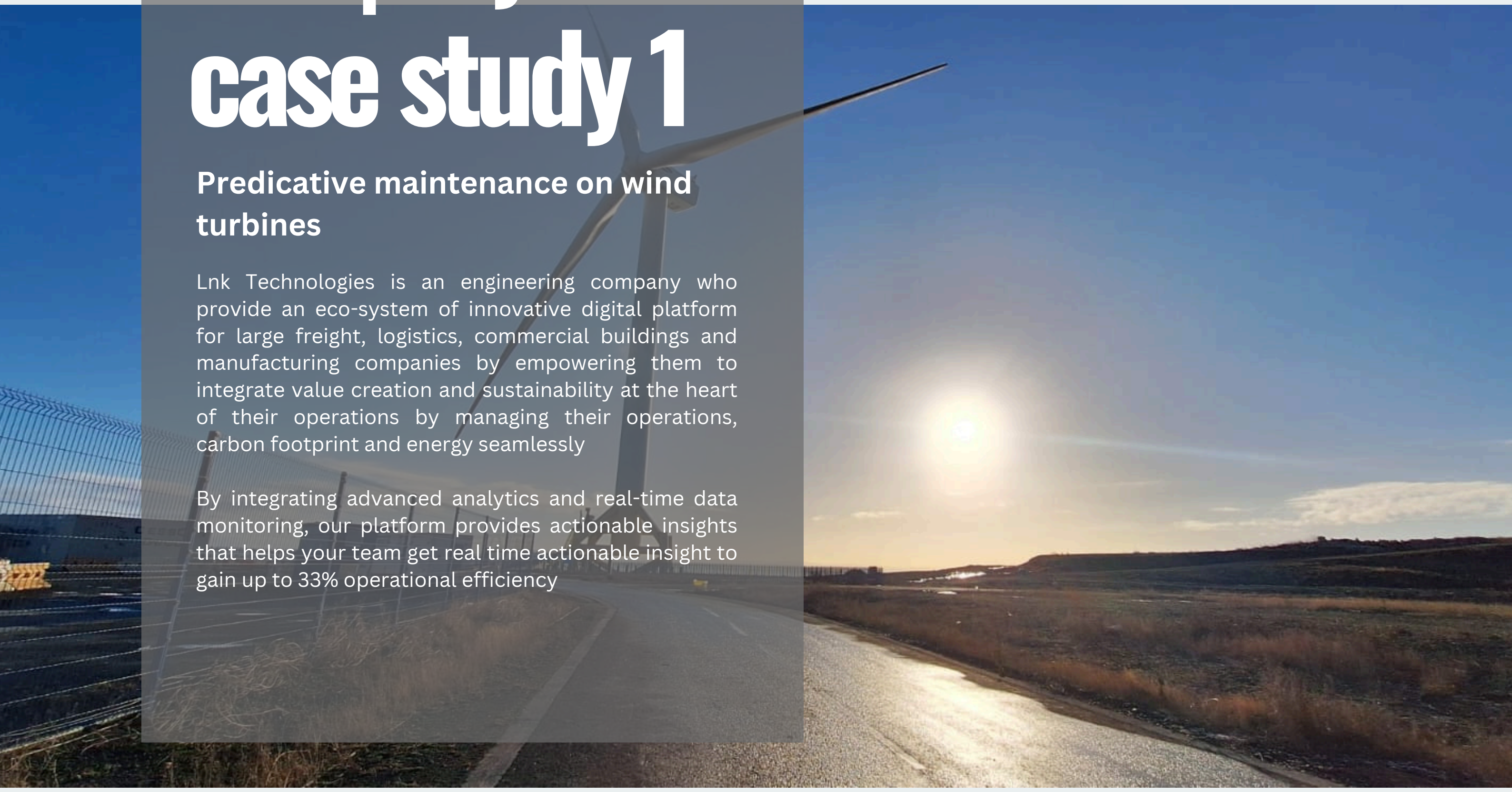
Company case study 1



Predicative maintenance on wind turbines

Lnk Technologies is an engineering company who provide an eco-system of innovative digital platform for large freight, logistics, commercial buildings and manufacturing companies by empowering them to integrate value creation and sustainability at the heart of their operations by managing their operations, carbon footprint and energy seamlessly

By integrating advanced analytics and real-time data monitoring, our platform provides actionable insights that helps your team get real time actionable insight to gain up to 33% operational efficiency

OBJECTIVES

- To use Predicative Artificial Intelligence, building modelling & data analytics to understand better energy production and reduce maintenance costs.
- To create a technology platform capable of measuring carbon avoidance value in real time.
- To produce financial rewards in the form of LnkCoins

Lnk Technologies delivered an innovative project to install IoT sensors on the Levenmouth Wind Turbine, operated by ORE Catapult, from November 2024 to February 2025. This project aied to enhance the functionality and efficiency of wind energy production through advanced sensor technology and data analytics. This project not only aimed to test and validate the performance of our IoT sensors but also seeks to leverage predictive AI and data analytics to optimize energy production and reduce maintenance costs.

RECOMMENDATIONS

Key findings were:

Notable spikes in early 2021 and mid-2022 may indicate unexpected load surges or system failures. A sharp increase in anomalies could point to potential maintenance needs or energy theft / loss. There are dips in energy consumption that may suggest downtime in operations, equipment shutdowns, or power-saving measures. Management should investigate whether these are intentional (planned maintenance) or due to unexpected failures. The actual energy consumption often diverges from the predicted forecast, meaning operational changes impact energy usage. If the deviations are frequent, there might be inefficiencies in the production process.

- 0203 026 0623
- www.lnktechnologies.co.uk

Lnk Technologies

step by step process

Manage - Measure - Sustain

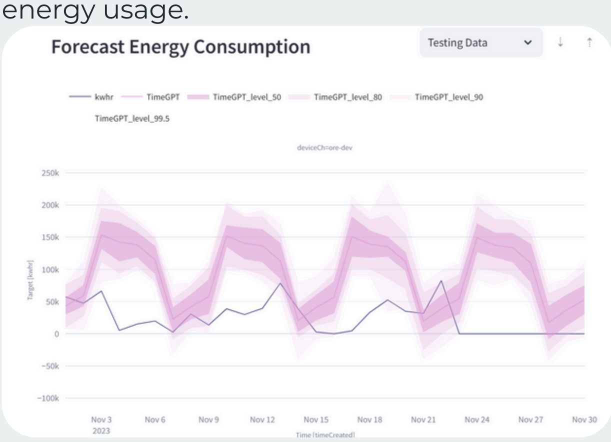
FINDINGS

Frequent anomalies detected → Possible equipment failures or operational inefficiencies

Sudden spikes → Unexpected energy surges due to peak loads or faults Sharp drops → Indicate downtime, maintenance, or power-saving measures

Significant deviation from forecast → Suggests inefficiencies or unplanned energy consumption

There are dips in energy consumption that may suggest downtime in operations, equipment shutdowns, or power-saving measures. Management should investigate whether these are intentional (planned maintenance) or due to unexpected failures. The actual energy consumption often diverges from the predicted forecast, meaning operational changes impact energy usage.



Installation of CarbonLnk Sensors:

We tested IoT sensors on the wind turbine in Levenmouth for 3 months, we installed our main ADW210 sensors and gateway relay module on 13th December 2024. The installation required one engineer and took 4 hours. The gateway connection initially failed due to a connectivity issue with ORE network and the data could not be sent. However, our back up sensors had a separate connection which worked and allowed us to receive without interruptions despite the loss of connection in the main sensors. When ORE's network was re-established, we managed to re-establish connectivity remotely for the main sensors and this has now given us a full set of data.

CONCLUSION

LnkCoin technology is pegged against stable Fiat currencies, connecting to Bloomberg FOREX in real time, leveraging the use of digital technology connectors. The above has been achieved, currently in Alpha state. With the ORE historical data, we mapped the historical renewable energy produced. This is then linked to the decentralized LnkCoin server in real time. The output of this is the production of LnkCoins on the dashboard / wallet. **LnkCoins awarded were: 15,618.31.**

- 0203 026 0623
- www.lnktechnologies.co.uk