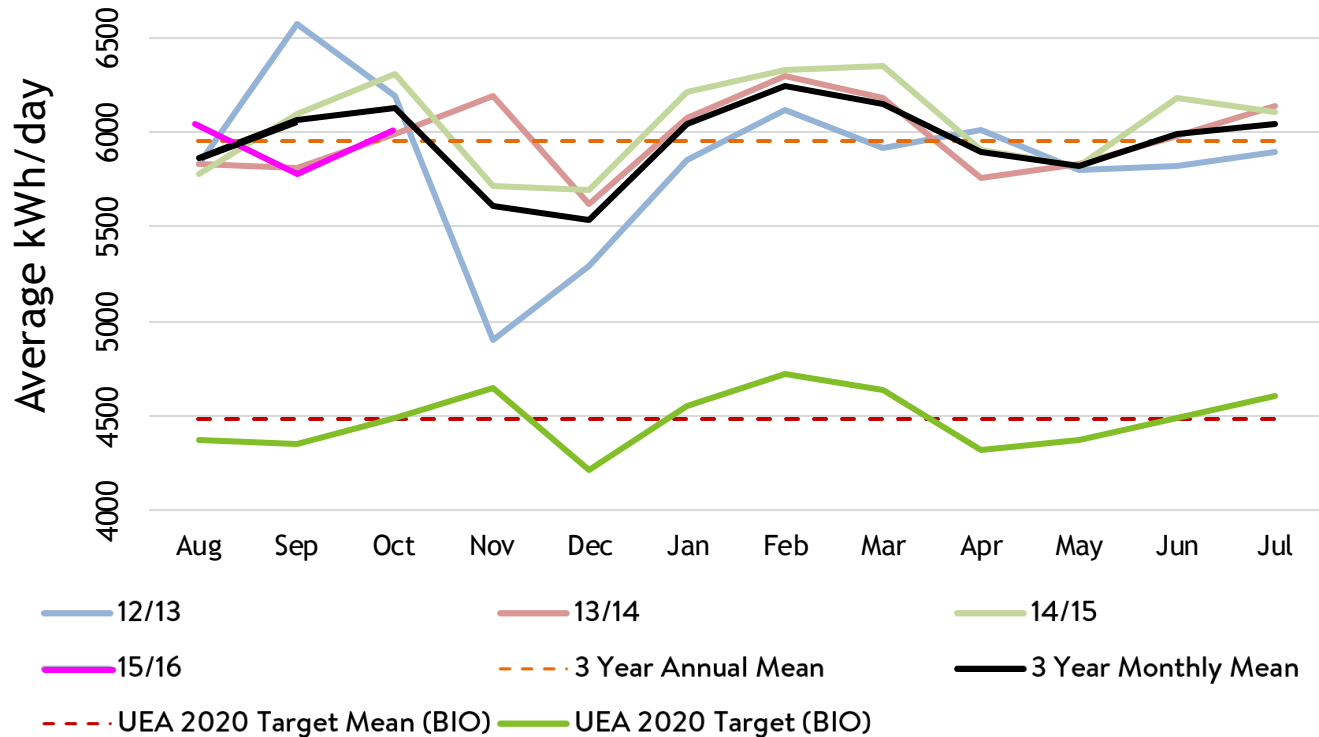


# BIO ENERGY EFFICIENCY CAMPAIGN

## AVERAGE DAILY ELECTRICITY USAGE IN BIO



## UEA GOALS FOR 2020

- ◇ **Carbon:** Reduce our campus carbon emissions by 35% by 2020, against a 1990 baseline
- ◇ **Energy:** Reduce our energy consumption by 25% by 2020, against a 2013/14 baseline.

# BIO ENERGY EFFICIENCY CAMPAIGN

## HEADLINE FINDINGS

- ◇ BIO uses the same amount of electricity annually as 1,444 students living in UEA residences for a year

$$\begin{aligned} &= 2,172,419 \text{ kWh} \\ &= \mathbf{\pounds 245,418.17} \end{aligned}$$

- ◇ The ULT freezers in BIO and BMRC use the same amount of electricity annually as 36 UK households

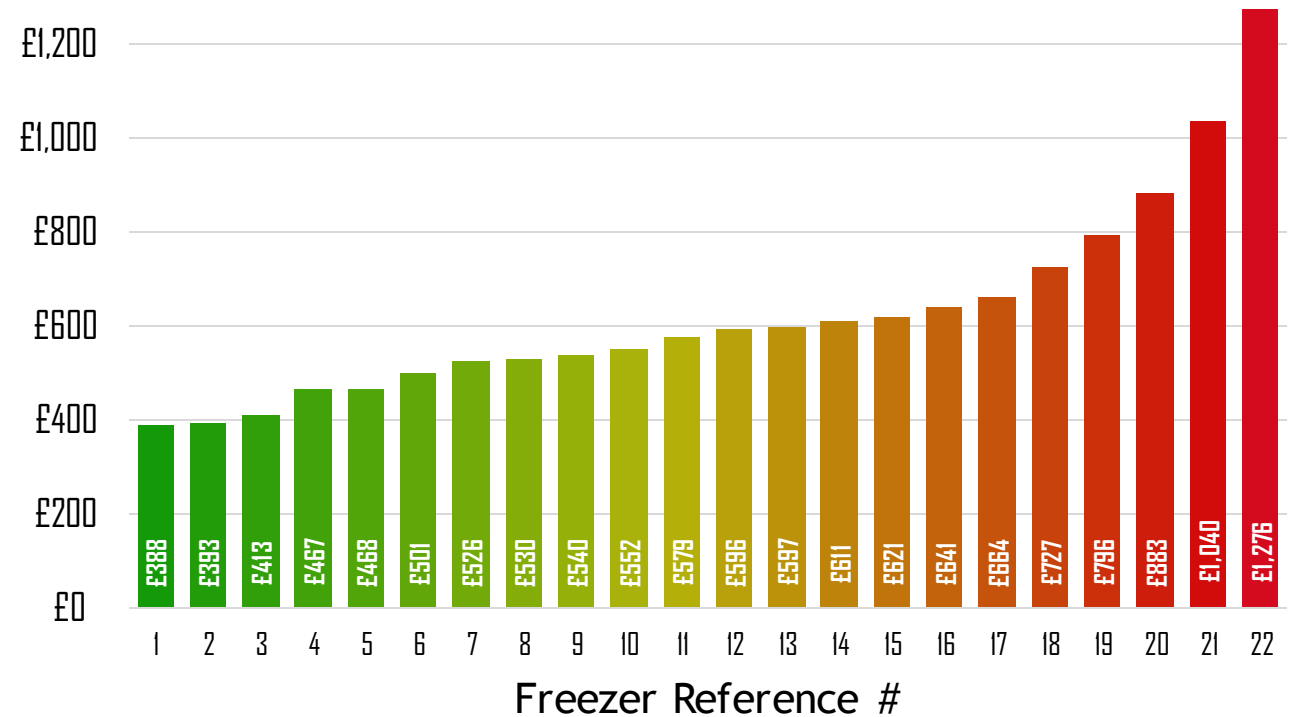
$$\begin{aligned} &= 144,448 \text{ kWh} \\ &= \mathbf{\pounds 16,318.29} \end{aligned}$$

# BIO ENERGY EFFICIENCY CAMPAIGN

## BIO ULT FREEZER AUDIT

- ◇ **Main issues identified:** Excessive ice build-up and poor storage/management of samples.
- ◇ **How we are helping:** ULT freezer guidance document will be sent out in BIO School bulletin.

OVERALL COST TO RUN BIO'S ULT FREEZERS PER YEAR



# BIO ENERGY EFFICIENCY CAMPAIGN

## EXPECTED DATA

- ◇ **Daily profiles:** Electricity usage across BIO is being logged at 15 minute intervals as of December 1<sup>st</sup>
- ◇ **Granular metering:** Electricity meters are to be installed at a floor-by-floor level providing more granular data
- ◇ **Temperature sensors:** Installation in key locations in order to establish areas of inadequate/excessive heating
- ◇ **Lab audits:** Monitoring and analysis of electricity usage by small lab equipment.

# BIO ENERGY EFFICIENCY CAMPAIGN

## CAMPAIGN PLANS

- ◇ **Infrastructure changes:** Alterations to fume cupboard extraction infrastructure.
- ◇ **Equipment review:** Potential to replace energy inefficient equipment as identified by audits (upgrade to replace, not provide additional equipment).
- ◇ **Regular updates:** The core team will report at each School Board meeting, and notify you of floor-level data to see who can achieve the biggest relative savings.
- ◇ **Green Impact:** All labs are invited to join the Green Impact programme, gaining recognition through an easy environmental toolkit. Awards for each team will be presented by Prof David Richardson in April.