

<b>Committee(s)</b>	<b>Dated:</b>
Operational Property and Projects Sub Committee	3 <sup>rd</sup> July 2023
<b>Subject: 22/23 Energy &amp; Decarbonisation Performance Q3 Update for the Operational Portfolio.</b>	
<b>Which outcomes in the City Corporation's Corporate Plan does this proposal aim to impact directly?</b>	<b>5,11,12</b>
<b>Does this proposal require extra revenue and/or capital spending?</b>	<b>no</b>
<b>If so, how much?</b>	<b>n/a</b>
<b>What is the source of Funding?</b>	<b>n/a</b>
<b>Has this Funding Source been agreed with the Chamberlain's Department?</b>	<b>No</b>
<b>Report of: The City Surveyor</b>	<b>For Information</b>
<b>Report author: Graeme Low</b>	

### Summary

This report presents the 2022/23 Quarter 4 energy performance for City of London Corporation operational sites. There has been an 19% reduction in energy usage since the 2018/19 baseline year and we remain on track to achieve our net zero carbon targets by 2027. The first phase of our capital programme has been approved and we are now developing the projects towards installation in 2023. Energy prices are softening due to market forces and the Power Purchase Agreement (PPA).

### Recommendation(s)

- Note, that for the rolling year, Q4 22/23 weather corrected energy consumption has reduced by 17% compared to the baseline year 2018/19.
- Note the recent acquisition of Local Energy Accelerator funds totalling £80k to support an investigative project for Guildhall battery storage and Barbican Estate Electrical Flexibility.
- Note the Public Sector Decarbonisation Scheme (PSDS) funded work is complete and the savings are now being monitored and verified.

### Main report

#### Background

1. At OPPSC on 6<sup>th</sup> March 2023 the 22/23 Q3 Energy performance report was presented. This identified the rolling 12-month energy performance to an 18% improvement on the weather corrected values for the Climate Action Baseline year of 2018/19. This saving was due to site disposals, active management of the Building Energy Management System (BEMS) by the Energy Team and ongoing success of the Public Sector Decarbonisation Scheme (PSDS) project, both of which are summarised in this report.
2. The Climate Action Strategy (CAS) year 3 plans have been approved by Policy and Resources Committee. They include the NZ1 plan which is specifically focused on reducing the carbon emissions within the City Corporation's own estate through a range of tasks including: capital works projects, building control improvements, and monitoring and targeting activities.

## CAS target alignment

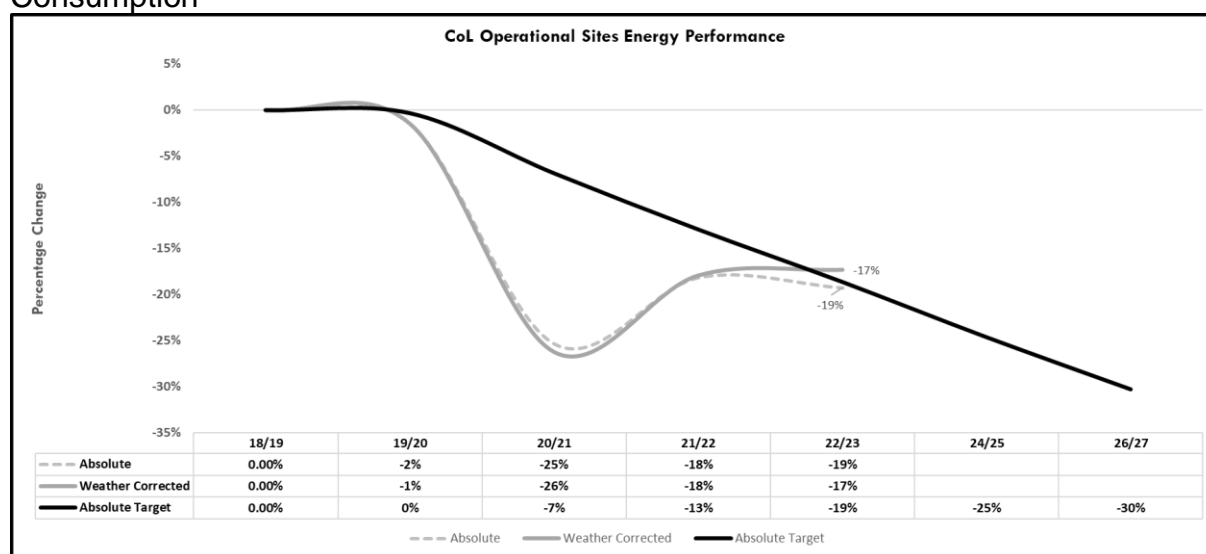
3. The Energy Team and CAS Programme Team use best practise methodologies for reporting KPIs and measuring progress against our Net Zero Carbon (NZC) targets. The CAS buildings baseline includes operational property portfolio, landlord supplies to housing estates and investment properties.
4. To achieve Net Zero CO<sub>2</sub> target by 2027 for our scope 1 and 2 operational emissions, residual emissions are planned to be mitigated via land-based carbon sequestration from our green spaces. These targets are translated into energy and CO<sub>2</sub>e, see Chart 1 and Chart 2 below.

## Current position

5. There has been a gradual increase in consumption compared to the previous quarter due to the return to normal operations and greater occupation and use of our buildings. The impact of PSDS energy saving projects will not be fully realised until Q4 23/24, though a high percentage of the related savings are being accounted for in these figures. The City Corporation continues to support investment in energy and carbon saving projects through the recently approved gateway 2 paper focusing on the top 15 energy consuming sites. This is expected to provide an additional 520 tonnes of CO<sub>2</sub>e savings per annum across our scope 1 and 2 emissions.

## Performance update

**Chart 1. Performance Against CAS Target: Absolute and Weather Corrected kWh Consumption**

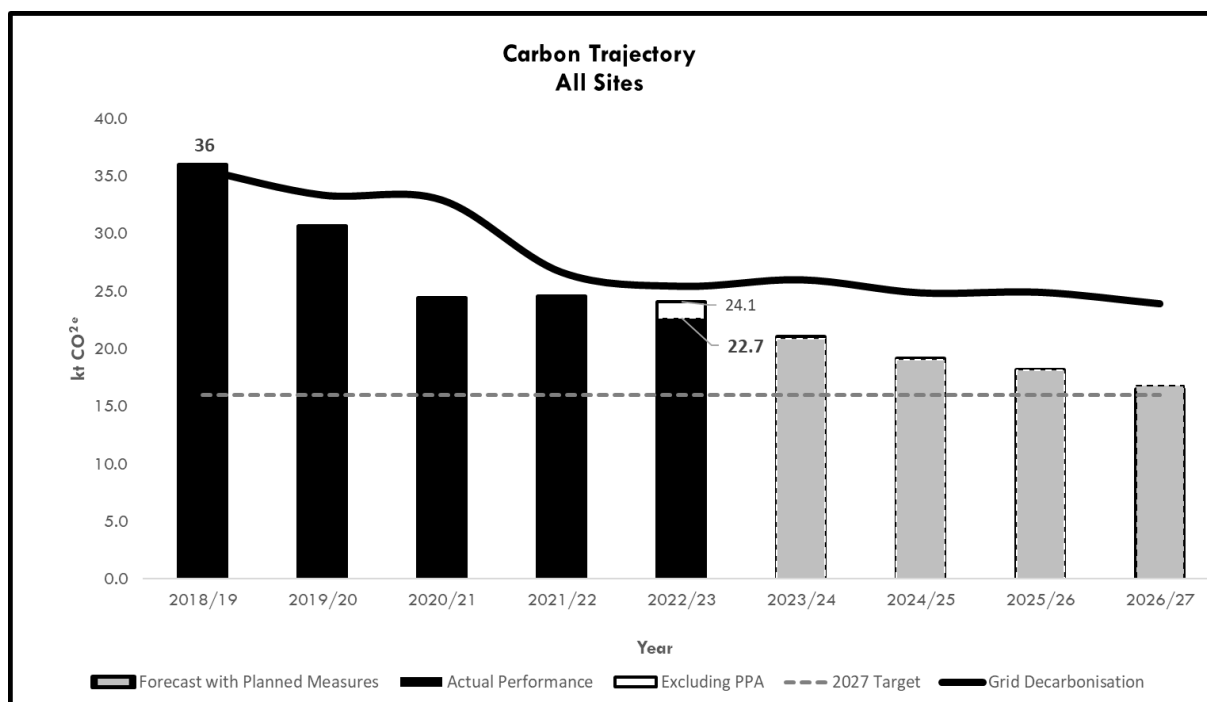


6. **Long term:** Chart 1 presents updated operational building targets to reflect 2018/2019 baseline data in conjunction with the Climate Action Strategy (CAS). It shows continued progress towards the interim target. Compared to the 2018/2019 baseline, the performance up to Q4 2022/2023 indicates:
  - a. A 19% reduction in absolute energy consumption
  - b. A 17% reduction when corrected for the weather

A comparison of rolling year energy performance for the operational properties Q4 2022/23 and Q4 2021/2022 shows an increase in weather corrected values by 1%. This figure excludes the benefit of the PPA. This was expected as we continue a return to normal mode of operations. Further details can be found in table 1 of the appendix.

**Chart 2. Carbon Trajectory** presents progress towards the 2027 carbon target for the Corporation’s portfolio and shows:

- a. A saving of 13,333 tonnes of CO<sub>2e</sub> or a 37% reduction from 2018/2019, based on the last full financial year figures (2022/23). Note this figure includes the impact of the PPA.



The following provides a synopsis of Chart 2:

- 7. The savings since 2018/19 demonstrate a positive trajectory for the Climate Action Strategy 2027 Net Zero Carbon target. Completion of the PSDS projects (table 4 of Appendix) will support continued reduction of emissions. The PPA has contributed to reduced carbon emissions, as demonstrated by the white bar with the black outline. Carbon emissions for the financial year 22/23 would have been 24.1 kt CO<sub>2e</sub> without the PPA.
- 8. Item 8 of the appendix provides an overview of the Operational property carbon performance, without landlord emissions for Housing and IPG portfolios. This currently shows 15.5 KtCO<sub>2e</sub> of emissions, a reduction of 6.6 KtCO<sub>2e</sub> or 30% since 2018/19. This keeps the Operational property portfolio on track to support the City Corporation’s net zero carbon targets for 2026/27.

**Table 1. Overall performance Q4 Top 5 sites – weather corrected**

Top 5 Best Performing Sites Weather Corrected	Mar-22	Mar-23	Difference kWh 23 vs 22
Guildhall Complex	14,319,976	13,041,092	- 1,278,884
Central Criminal Court	6,624,980	5,568,390	- 1,056,590
Mansion House	2,250,048	1,725,984	- 524,064
Open Spaces Golders Hill &	454,447	239,749	- 214,698
GSMD - Sundial Court	1,648,327	1,450,305	- 198,022

**Table 2:** Overall performance Q4 bottom 5 sites – weather corrected

<b>Bottom 5 Performing Sites Weather Corrected</b>	<b>Mar-22</b>	<b>Mar-23</b>	<b>Difference kWh 23 vs 22</b>
Barbican Arts Centre	15,004,662	16,609,177	1,604,515
London Central Market (Smithfield)	10,491,520	11,433,828	942,307
Bishopsgate Police Station	2,769,529	3,453,913	684,384
City of London Freeman's School	4,586,124	4,940,940	354,816
Tower Bridge	2,015,186	2,325,066	309,880

9. Table 2 above provides a snapshot of the highest energy reductions and the greatest increases within the top thirty buildings over the past 12 months to 31<sup>st</sup> March 2023, when compared to the previous 12 months. The full list of the top thirty site performance and performance overview for bottom five increases can be found within table 1 of the Appendix.
10. The top sites have continued to show a reduction due to improved controls and implementation of energy saving measures. Descriptions can be found in the Appendix.
11. The bottom sites have seen increases in heating demand and occupancy levels, increased refurbishment activities as well as possible maintenance issues. Metering issues within the portfolio, including the Barbican Arts Centre, have resulted in the use of estimated data which could negatively impact on their reported performance. The energy team continue to collaborate with these sites to optimise their performance. Further information can be found in the Appendix.

### **Progress on energy projects**

12. **PSDS Project:** In 2021 the City Corporation were awarded £9.5m of government grant funding through the Public Sector Decarbonisation Scheme (PSDS) to deliver a range of energy efficiency works across Guildhall, Barbican Arts Centre, Guildhall School of Music and Drama, London Metropolitan Archives and Walbrook Wharf. The scope of works included lighting upgrades, ventilation upgrades, building control upgrades and improvements, sub-metering, new energy management and building analytics software. These works are now complete. Verification of the savings is expected at gateway 6 in Q4.
13. **CAS Capital Programme:** NZ1 of the Climate Action Strategy includes for the development and delivery of a capital works programme to invest in carbon saving projects across the scope 1 and 2 emissions within our buildings. In December 2022 Policy and Resources Committee approved a Gateway 2 paper setting out a programme of projects across our operational portfolio. The total capital cost is estimated at £5,338,615 (excluding risk) and is targeting savings of 520 tCO<sub>2</sub>/annum and energy cost saving of £550,000 per annum. The Energy Team are currently developing the first projects to Gateway 5 by June 2023 and aim to have the first projects completed by December 2023.

14. **BEMS:** Improved control of our energy usage through Building Energy Management System (BEMS) within buildings has played a key role in improving operational energy efficiency, supported further through the deployment of a new Building Analytics Platform at the Guildhall and LMA with a further roll-out of the software to CCC and Mansion House in the next two months. The transition of the BEMS to a new platform has continued with projects due to for completion shortly at LMA, Walbrook Wharf, Tower Bridge and Guildhall East Wing and Smithfield West Market. These projects are enablers for further energy efficiency projects at these sites. The management of the BEMS maintenance contract is now under the remit of the Energy Team, this allows for better service provision with a focus on identification and implementation energy efficiency opportunities and measures via the BEMS. Outside of this the energy team continue to review and optimise plant control on various sites, with the savings to be reported via the NZ Intervention Management Plan.
15. **PPA:** The PPA contract with Volitalia UK Ltd. is now complete and fully operational January 2023. The PPA will provide over 60% of our electricity at £42.89 MWh in 23/24 compared to the current market rates for electricity of ~£320MWh at current rates.
16. **Battery storage:** The Energy and Sustainability Team have recently been awarded a £80k grant towards reviewing the options for battery storage and flexibility services at the Guildhall and Barbican Estate. The study aims to provide detailed information about options and benefits in relation to the delivery of flexibility services to support energy security and will conclude in July 2023.

### **Corporate and strategic implications**

17. **Strategic implications:** Energy performance is linked to resilience and helps ensure business continuity through reduced pressure on the energy infrastructure within the square mile. We support a thriving economy through ensuring environmental responsibility in this way. Our energy performance helps to shape outstanding environments through the reduction of CO<sub>2e</sub> emissions and our commitment to procuring clean renewable energy. In this way our energy performance helps shape outcomes 5, 11 and 12 of the Corporate Plan.
18. **Financial implications:** The savings in this report detail reductions in energy consumption and not against agreed budgets. For longer sustainable gains the focus needs to be on improving efficient use of energy, through targeted investment in energy saving measures. Note that future savings as a result of lower energy spend related to the PSDS project will be transferred to the Build Back Better fund for re-investment with further projects.

### **Conclusion**

19. The energy performance within Q4 remains on track with the long-term trajectory needed to meet our CAS targets for 2027. We continue to mobilise workstream (NZ1) related to operational buildings within the Climate Action Strategy. We have absorbed the impact of the reoccupation of our building stock. Our new targets are challenging but the current data indicates achievable, requiring action in all areas of the City Corporation to ensure we meet our planned objectives. Our focus is now on ensuring the next phase of climate action projects can be implemented in a timely and effective manner.

### **Report author**

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