

Committee(s)	Dated:
Corporate Asset Sub-Committee (CASC)	24 th November 2021
Subject: 2021/22 Energy Performance Q2 Update	Public
Which outcomes in the City Corporation's Corporate Plan does this proposal aim to impact directly?	5,11 & 12
Does this proposal require extra revenue and/or capital spending?	No
If so, how much?	£ n/a
What is the source of Funding?	n/a
Has this Funding Source been agreed with the Chamberlain's Department?	n/a
Report of: The City Surveyor	For Information
Report author: Graeme Low / James Rooke	

Summary

This report presents the 2021/22 Quarter 2 energy performance for CoL operational sites.

The reduction to date in 2021/22 is largely due to the reduction in building related activities and operations continuing due to the pandemic, but also the disposal of Police stations. In addition, work by the Energy Team, particularly on Building Energy Management Systems has enabled these savings to be secured. Works currently being delivered through the PSDS project will help secure energy savings further within 2021/22 and throughout future years.

- Since 2018/2019 the entire portfolio CO₂ emissions have reduced by 9,901 tonnes (27% reduction), achieved through a combination of grid decarbonisation, energy reduction in buildings, disposals, and reduced occupancy levels due to covid.
- Compared to the 2018/2019 Climate Action Strategy (CAS) baseline year, energy consumption reduced by 21% in absolute terms in the 12 months to September 2021.
- The Q2 result for 2021/2022 was a 10% reduction in energy consumption from Q2 2020/2021 when corrected for the impact of weather.

Recommendation(s)

- Note the progress of PSDS project, supported by £9.4m, 100% grant funding from BEIS.
- Note the progress towards the 2026/7 CAS targets.

Main Report

Background

1. At CASC on 24th September 2021 the 21/22 Q1 Energy performance report was presented. This identified the Q1 energy performance as a 16% improvement on previous weather corrected values for the same period in 2019/2020.

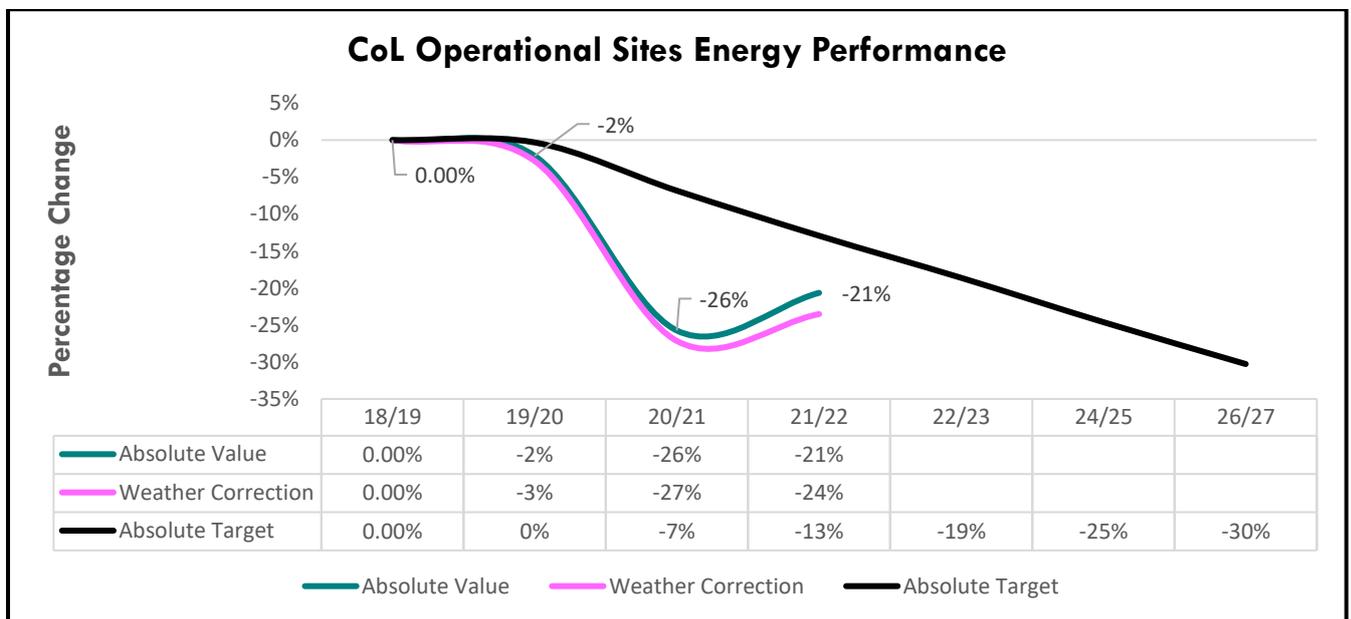
2. This saving was largely due to the closure of buildings due to the Covid-19 lockdown which occurred across this period, as well as active management of the BEMS by the Energy Team.
3. The CAS targets have now been incorporated into the Energy Performance report, replacing the previous Carbon Descent Plan targets for the CPG buildings.
4. The PSDS projects support the CAS and all projects on the PSDS programme have reached GW5 or beyond. The RA-W project, covering the majority of PSDS has commenced. Vital Energi Ltd., who are delivering the RA-W Project works are surveying the top 15 CPG assets for carbon reduction measures that will feed into the CAS CPG project plan.

Current Position

There has been a gradual increase in consumption since the previous reported quarter due to the ongoing return to normal operations. However, we remain on track to reach our CAS targets, with a 10% reduction in weather corrected energy consumption (comparing the rolling 12 months to Q2 21/22 with Q2 20/21). We anticipate further savings materialising in Q3/4 following the implementation of PSDS measures.

Performance Update

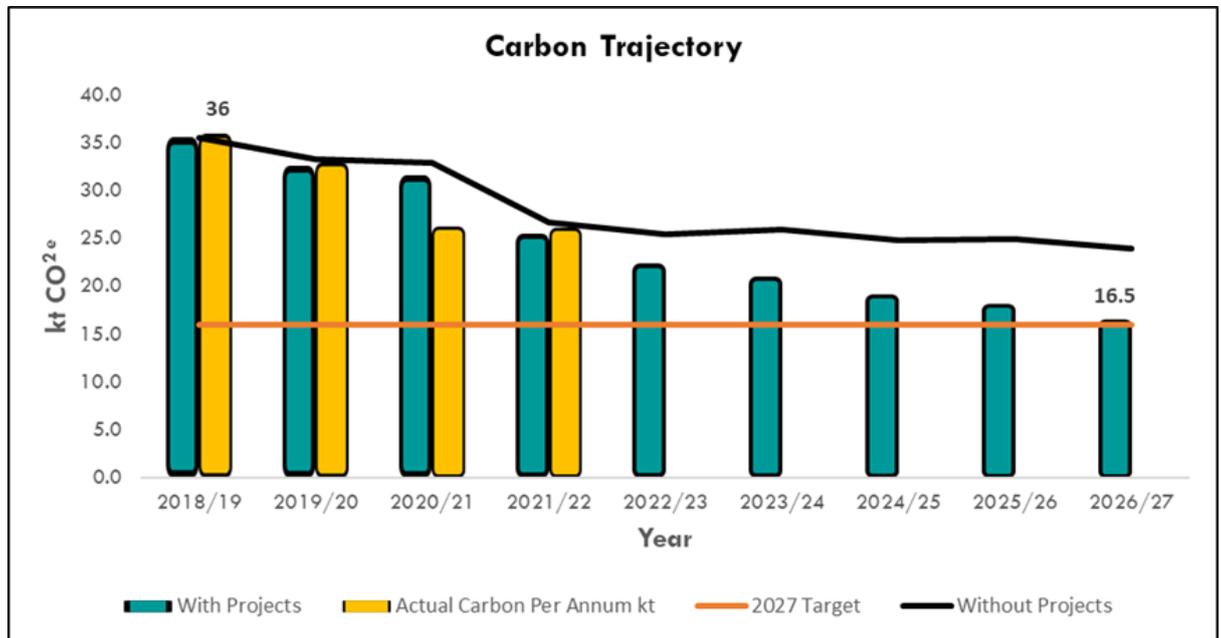
Chart 1. Overall performance Q2: Absolute and Weather Corrected kWh Consumption



5. **Long term:** Chart 1 presents updated CPG targets to reflect 2018/2019 baseline data in conjunction with the Climate Action Strategy. It shows progress towards the interim target. Compared to the 2018/2019 baseline the performance up to Q1 2021/2022 indicates:
 - a. A 21% reduction in absolute energy consumption; and
 - b. A 24% reduction when corrected for the weather.

Chart 2 presents progress towards carbon and shows:

- a. A savings of 9,901 tonnes of CO₂ or a 27% reduction from 2018/2019



The following provides a synopsis of Chart 2:

- The black line represents grid decarbonisation
- The orange line represents the 2027 target
- The turquoise bar represents our project savings and grid decarbonisation
- The orange bar represents actual carbon emissions.

6. The savings since 2018/19 demonstrate a positive start for the Climate Action Strategy Net Zero Carbon targets. The delivery of PSDS projects in the short-term and a full pipeline of projects by 2022 will limit of any short term rises in consumption and emissions and safeguard our longer-term goals. Refer to Appendix 1 for a list of energy reduction programmes.
7. Whilst we still see benefit from energy reductions due to the pandemic, the removal building stock and improved control of our energy usage within buildings has played an important role in securing these savings.
8. Climate Action Strategy actions have mobilised, with site level energy surveys and resources coming on board to manage and support the programme this Autumn, we will begin to develop pilot projects initially and then roll out capital projects in 2022, building from the site level energy surveys, six of which have been initiated. The resource plan (Centre of Excellence) is being implemented following a review with the City Surveyors department, and we are well placed to introduce resources in time to meet the needs of the programme.
9. The City Surveyor has recently appointed, for a time limited period, Arcadis as a critical friend who will provide third party assurance, guidance, and potential further support to the Centre of Excellence.

10. The new Energy Reporting system is expected to be rolled out from November with the Energy Viewer module and training. This will enable greater insight into energy wastage.

Table 1. Overall performance Q2 Top 5 and bottom 5 sites – Weather corrected

Current Top 5	Sep-20	Sep-21	kWh Difference	% Difference	Performance Overview
Barbican Arts Centre	17,384,466	12,988,109	- 4,396,357	-25%	This reporting period represents a large period of lockdown, during which time the Barbican has been closed.
London Central Market (Smithfield)	11,785,831	9,996,693	- 1,789,138	-15%	The pandemic has an ongoing impact on the market, especially where a number of commercial offices that were previously occupied remain vacant, and this trend may continue for a while. Car park LED lighting project is progressing. There has been reduced cooling and reduced landlord/tenant electricity consumption. HVAC monitoring continues by the Energy Team.
Guildhall Complex	16,085,645	14,434,214	- 1,651,431	-10%	The building was shut down, coupled with Energy Team actively managing the BEMS (shut down and start up).
New Spitalfields Market (Landlords)	6,454,378	5,783,149	- 671,228	-10%	A reduced occupancy is suspected as the reason for the decrease.
Bishopsgate Police Station	3,112,496	2,455,624	- 656,871	-21%	A reduced occupancy is suspected as the reason for the decrease. The energy team is in communication with the site.

Current Bottom 5	Sep-20	Sep-21	kWh Difference	% Difference	Performance Overview
GSMD - Milton Court	2,572,852	3,006,352	433,500	17%	A semi return to normal practices coupled with good shutdown practices is suspected. GSMD Sundial Court is still showing an improvement in consumption versus Sept 2019 when consumption was 3.4M kWh.
Central Criminal Court	6,044,649	6,325,765	281,115	5%	A semi return to normal practices coupled with good shutdown practices is suspected. It should be noted that the Central Criminal Court has improved as values in 2019 were 7.3 M kWh.
GSMD - Sundial Court	1,462,352	1,739,046	276,694	19%	A semi return to normal practices coupled with good shutdown practices is suspected. GSMD Sundial Court is still showing an improvement in consumption versus Sept 2019 when consumption was 1.8M kWh.
City of London School	2,916,539	3,136,383	219,843	8%	A semi return to normal practices is thought to be the reason for the uptick, as it should be noted that 2019 consumption was recorded as 3.3M kWh.
Mansion House	1,800,099	1,985,776	185,677	10%	Although Mansion House was shut down, an AHU and BEMS upgrade could be the reason for the increase. It should be noted that 2019 consumption was recorded as 2.2M kWh

11. Table 1 provides a snapshot of the highest energy reductions and the greatest increases within the top 30 buildings over the past 12 months to September, when compared to the previous 12 months. The full list of the top 30 site performance and performance overview for bottom 5 increases can be found within Appendix 1.

12. The top sites have continued to show a reduction due to the pandemic, but also implementation of energy projects and the implementation of control changes to BEMS systems.

Energy Team & Other Activity

Progress on Energy projects

13. **The PSDS Project:** Our appointed contractors, Vital Energi and BTU, have completed mobilisation, site setup and have begun installation works onsite. Project managers on both the contractor side and City of London side have been established and are familiar with the project and the installation environment. Successful trials have been carried out for lighting at Guildhall and Barbican to finalize the arrangements there. Asbestos surveys are currently being carried out in the areas which will be subject to installation works before construction proceeds. Communications campaigns have begun and meetings with key stakeholders are being held to finalise work programmes. Due to a national supply shortage of computer chips, some items of equipment are subject to delivery delays - the team are mitigating this by expediting the approval process for purchasing, such that orders are placed as early as reasonably possible. Verification of these savings is expected at gateway 6 in 2022.
14. **Energy Supply contract procurement:** Gas and Electricity Contracts have been procured for the period October 2021 -2025 and we have fixed our commodity price for the next 12 months. Whilst prices have increased, the reduction in energy usage coupled with savings from the PPA have helped to reduce budgetary pressure going into 2021/22
15. **PPA:** Work continues on South Farm, the location of our Power purchase agreement's solar farm in Dorset. Completed work to date includes foundation tests, welfare facilities and access roads being established. More recently work has been completed to connect the solar farm to the Grid, with the electrical sub-station continuing to be constructed. Voltalia are proactively managing constraints to the supply of modules that is currently being felt throughout the industry to mitigate any impact on the commercial operations date.

Corporate & Strategic Implications

16. **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 CO₂ 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.
17. **Financial implications:** The savings in this report detail reductions in energy consumption and not against agreed budgets. They remain largely due to reduced energy usage due to the pandemic, though increasingly capital projects will become an important element of any reduction. We can observe pandemic related savings reducing as staff return to work. In addition, energy costs are projected to increase over the next year due to external factors, although the PPA agreement is expected to provide some relief commencing September 2022. For longer sustainable gains the focus needs to be on improving efficient use of energy, through targeted investment in energy saving measures. Note the intention is that any net savings from the PSDS project will be transferred to the Build Back Better fund for re-investment with further projects This will, however, depend on the level of energy prices compared to assumptions in revenue budgets.

Conclusion

18. The Energy performance within Q2 has seen a continued reduction in consumption across the Corporation, whilst some of the reductions are being eroded as staff return to their place of work. We continue to mobilise workstream (NZ1) related to Corporate Buildings within the Climate Action Strategy and deliver the 17 projects that form part of the PSDS project by Q4 2021/22. We are confident that we can absorb the impact of the reoccupation of our building stock and meet our ambitious net zero carbon targets.

Appendices

- Appendix 1 – Top 30 Energy Performance & Bottom 5 Performance Overview

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