

Committee(s)	Dated:
Corporate Asset Sub-Committee (CASC)	30 th September 2021
Subject: 2021/22 Energy Performance Q1 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 1 energy performance for CoL operational sites.

The continued reduction in 2021/22 was largely due to the reduction in building related activities and operations continuing due to lockdown as well as disposal of sites including Snowhill and Wood Street Police stations. In addition, work by the Energy Team, particularly on Building Management Systems has enabled these savings to be secured.

- The Q1 result for 2021/2022 was a 16% reduction in energy consumption from Q1 2020/2021 when corrected for the impact of weather.
- Compared to the 2018/2019 Climate Action Strategy (CAS) baseline year, energy consumption reduced by 23% in absolute terms.
- Since 2018/2019 the entire portfolio CO₂ emissions have reduced by 9832 tonnes (27% reduction), achieved through a combination of grid decarbonisation, energy reduction in buildings, disposals and reduced occupancy levels due to covid.

Recommendation(s)

- Note new carbon and energy targets for the Corporate Property Group (CPG), derived from the CAS targets as shown in the Appendix.
- Note the progress of £9.4m from BEIS grant, covering 100% of capital investment needed for the PSDS project.
- Note good progress towards the completion of PSDS projects.

Main Report

Background

1. At CASC on 22nd June 2021 the 20/21 Q4 Energy performance report was presented. This identified the Q4 energy performance as a 22.8% 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 will support this goal and all projects on the PSDS programme have reached GW5 or beyond. The RA-W project, covering the majority of PSDS works will commence at the end of September. Vital Energi Ltd., who are delivering the RA-W Project works will continue to survey other key CPG assets for carbon reduction measures that can feed into the CAS CPG project plan.

New Target Alignment

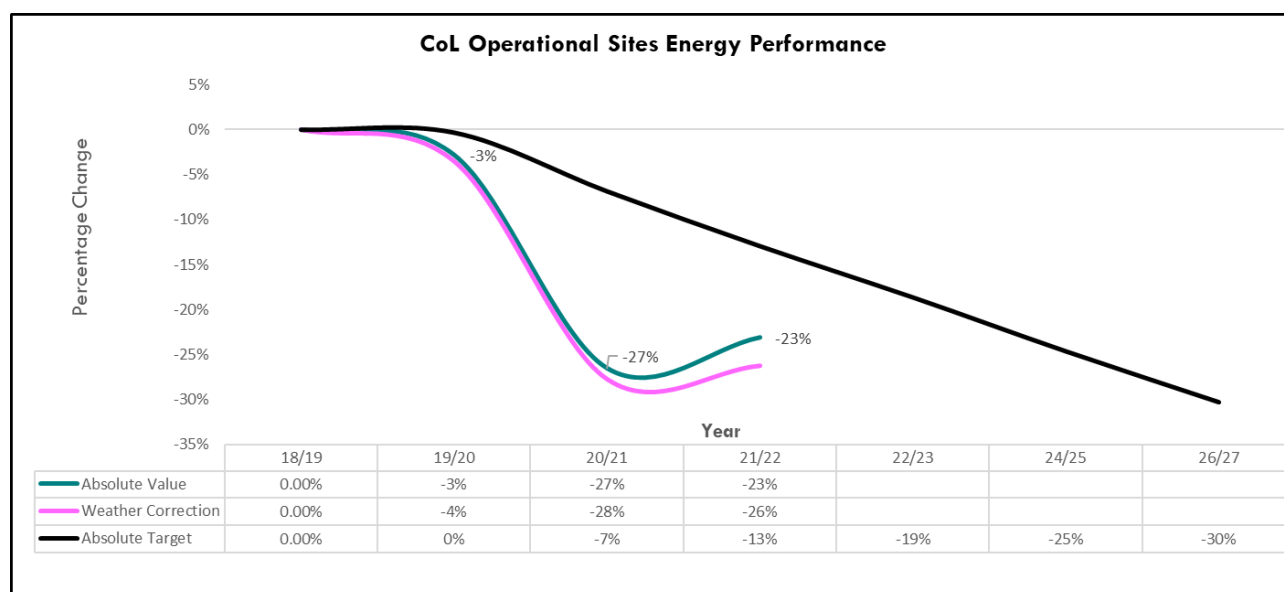
5. The Carbon Descent targets have now been superseded with targets derived from the CAS. We will use the CAS 2018/19 baseline data and interim targets apportioned to the 'baseline' building portfolio through to 2027 for our scope 1 & 2 emissions. The CAS buildings baseline included landlord supplies to housing estates and investment properties, though over approximately 60% of emissions relate directly to corporate properties. This is somewhat mitigated by sequestration for our green spaces. These targets are translated into energy and CO₂, see table 1 in the Appendix.

Current Position

There has been a gradual increase in consumption since the previous reported quarter due to a gradual return to normal operations. However, we remain on track to reach our CAS targets.

Performance Update

Chart 1. Overall performance Q1: Absolute and Weather Corrected kWh Consumption

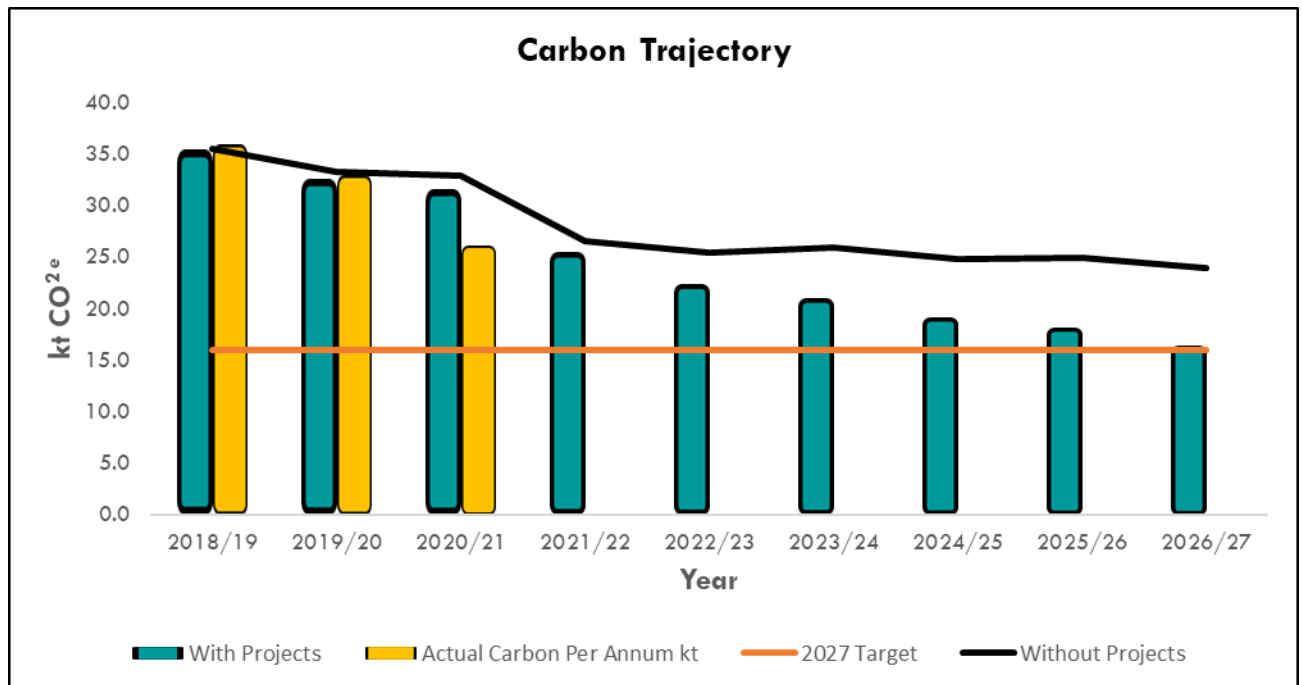


6. **Long term:** Chart 1 presents updated CPG targets to reflect 2018/2019 baseline data in conjunction with the Climate Action Strategy. It shows progress towards the interim target. Compared to the 2018/2019 baseline the performance up to Q1 2021/2022 indicates:

- a. A 23% reduction in absolute energy consumption; and
- b. A 26% reduction when corrected for the weather

Chart 2 presents progress towards carbon and shows:

- a. A savings of 9832 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

7. The savings since 2018/19 demonstrate a positive start for the Climate Action Strategy Net Zero Carbon targets. Focusing on the delivery of PSDS projects in the short-term and developing a full pipeline of projects by 2022 will support the limitation of any short term rises in consumption and emissions and ensure our longer-term goals remain achievable. Refer to Appendix 1 for a list of energy reduction programmes.
8. Whilst we have continued to benefit from energy reductions due to the pandemic, building stock changes and improved control of our energy usage within buildings has played an important role in capturing these savings.
9. As the Climate Action Strategy actions mobilise, starting with site level energy surveys and the procurement of consultancy resource to manage and deliver the programme this Autumn, we will begin to develop a deep fabric retrofit pilot project and begin the roll out of capital works projects in 2022, building from the site level energy surveys. The outsource resource plan (Centre of Excellence) is underway and the Energy Team, with support from the Corporation's Procurement team is discussing tender returns with the bidders, however it is an extremely high demand market and skilled resources are scarce.

10. The City Surveyor has recently appointed, for a time limited period, Arcadis as a critical friend who will provide third party assurance and guidance. They are also looking to see if they can supply the resource.
11. The implementation of a new Energy Reporting system in October will enable the monitoring and targeting of buildings, providing greater insight into energy wastage. Additionally, greater progress for the Barbican specifically may be achieved through the Barbican Renewal Project.

Table 1. Overall performance Q4 Top 5 and bottom 5 sites – Weather corrected

Current Top 5	Jun-20	Jun-21	kWh Difference	% Difference
Barbican Arts Centre	18,646,985	11,473,838	- 7,173,147	-38%
London Central Market (Smithfield)	12,804,819	9,826,936	- 2,977,883	-23%
Guildhall Complex	16,470,236	14,301,936	- 2,168,300	-13%
Streetlighting	2,923,907	2,139,478	- 784,429	-27%
City of London Crematorium	3,021,435	2,273,265	- 748,171	-25%
Current Bottom 5	Jun-20	Jun-21	kWh Difference	% Difference
GSMD - Sundial Court	638,277	1,630,111	991,833	155%
City of London School	2,915,176	3,150,892	235,716	8%
Central Criminal Court	6,038,212	6,197,578	159,366	3%
Mayor's Court	179,044	288,264	109,220	61%
Open Spaces East Heath & Kenwood	102,700	186,346	83,646	81%

12. 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 June, 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.
13. The top sites have continued to show a reduction due to Covid, however the Streetlighting team have actively replaced and upgraded to LED/dimming controls where possible. The Crematorium's energy consumption has improved from June 2020, which saw an increase in consumption due to a rise in the number of cremations. Furthermore, through the first spike of the Pandemic, they were using three aging cremators, with a lower efficiency. The cremators were replaced by early November 2020 allowing for two new and more efficient cremators, limiting energy and emissions from this point forward.

Energy Team & Other Activity

Progress on Energy projects

14. **The PSDS Project:** Our progress with Vital Energi appointed contractor introducing energy saving measures at the Barbican Arts Centre, LMA, GSMD & the Guildhall through the PSDS project is gathering pace and we anticipate saving an additional 1100 tonnes of CO₂e per annum through this project once works are complete. Verification of these savings is expected at gateway 6 in 2022. An estimated date of completion for the PSDS projects is presented in the table appended.
15. **Pandemic Impacts:** The Energy Team remain proactive at managing the energy usage within our buildings during the Pandemic, however we anticipate increased energy consumption in the estate as occupation patterns return to normal.

16. **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. A workshop held with stakeholders in June 2021 engaged with key stakeholders to receive feedback in relation to future strategy.
17. **PPA:** The PPA contract has now been agreed with Voltalia UK Ltd., Work on site at the South Farm Solar site near Blandford Forum has begun with foundation tests, welfare facilities and access roads being established. More recently work has begun on constructing the electricity sub-station. As we are seeing rising electricity prices in the market the current price of £80 MWh for grid electricity means that we have achieved increased financial benefit through the PPA with a raw unit price of £37/MWh lower than this.

Corporate & Strategic Implications

18. **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.
19. **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. We anticipate these will reduce 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 August 2022. For longer sustainable gains the focus needs to be on improving efficient use of energy, through targeted investment in energy saving measures. Note that savings from the PSDS project will be transferred to the Build Back Better fund for re-investment with further projects.

Conclusion

20. The Energy performance within Q1 has seen a sustained reduction in consumption across the Corporation, whilst some of the reductions are being clawed back following the pandemic and we anticipate this will continue in the short term. We continue to mobilise workstream (NZ1) related to Corporate Buildings within the Climate Action Strategy and ensure delivery of the 17 projects that form part of the PSDS project by Q3 / Q4 2021/22. We remain confident that we can absorb the impact of the reoccupation of our building stock. Our new targets are challenging but achievable, requiring action in all areas of the Corporation to ensure we meet our planned objectives.

Report author

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