

Committee(s)	Dated:
Corporate Asset Sub-Committee (CASC)	22nd June 2021
Subject: 2020/21 Energy Performance Q4 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?	Yes
Report of: The City Surveyor	For Information
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Summary

This report presents the 2020/21 quarter 4 energy performance for CoL operational sites.

The Q4 result for 2020/21 was a 22.8% reduction in energy consumption from Q4 2019/20 when corrected for the impact of weather. Compared to the 2008/09 baseline the energy consumption reduced by 36.1% in absolute terms.

Since 2008/9 the operational CO₂ emissions have reduced by **28,67** tonnes, through a combination of energy reduction in buildings and grid decarbonisation.

This continued reduction in 2020/21 was largely due to the reduction in building related activities and operations as a result of the coronavirus lockdown. Work by the Energy Team, particularly on Building Management Systems has enabled these savings to be secured.

Recommendation(s)

- Note the performance of Corporate building stock in quarter 4.
- Note the progress of £9.4m from BEIS grant, covering 100% of capital investment needed for the PSDS project.

Main Report

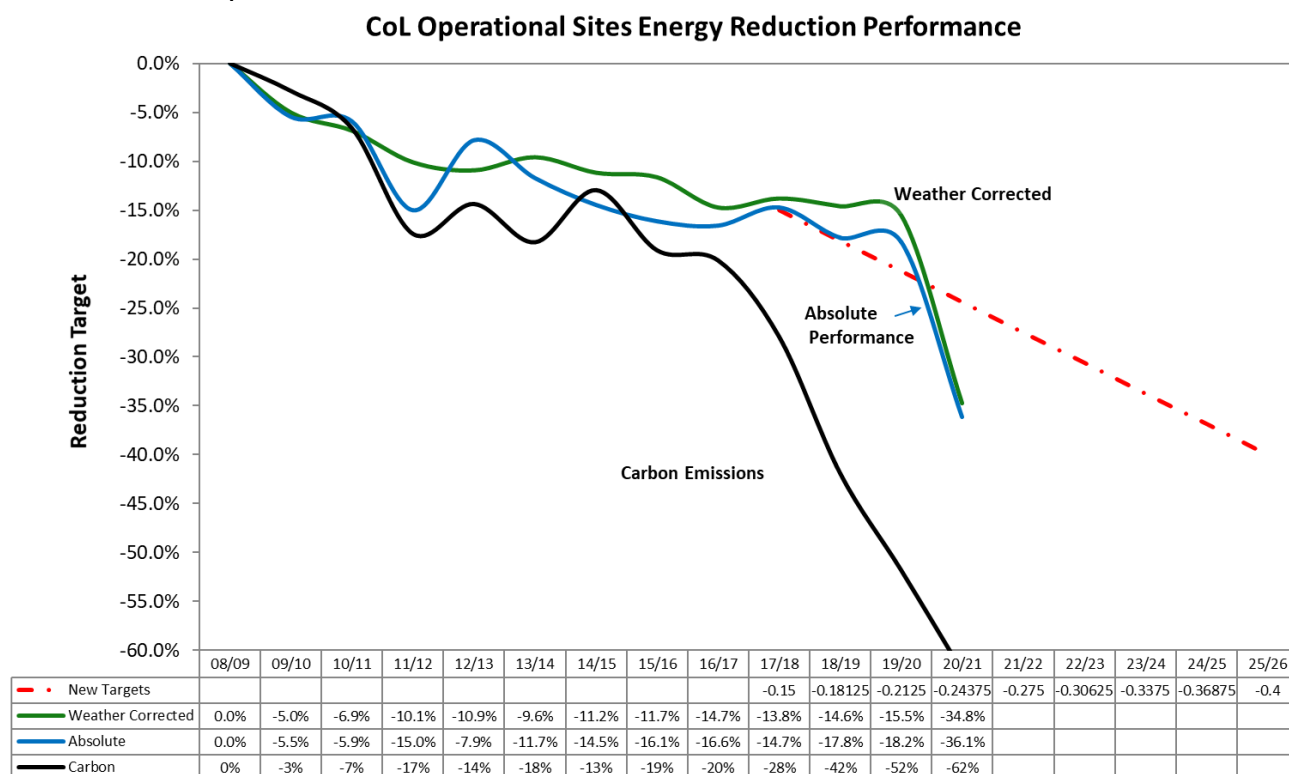
Background

1. At CASC on 28/04/21 the Q3 Energy performance report was presented. This identified the Q3 Energy Performance as a 14.3% improvement on previous the same period in 2019/20. This saving was largely due to the closure of buildings due to the Covid-19 lockdown which occurred across this period. The Carbon Descent Plan aims to reduce our weather corrected energy consumption by 40% by 2025/26. Aligned to the aims of the Carbon Descent plan, the recently adopted Climate Action Strategy has a goal of reaching Net Zero Carbon for Operational emissions by 2027. At the July CASC committee we will presenting more detail on the format for reporting the scope of the Climate Action Strategy targets alongside the existing Carbon Descent targets.

Current Position

Performance Update

Chart 1. Overall performance Q4



- Long term:** Chart 1 presents an update on the long-term performance against target, including the interim performance up to Q4 20/21. Compared to the 2008/09 baseline the performance up to Q4 2020/21 indicates a 36.1% reduction in absolute energy consumption, translating to a 34.8% reduction when corrected for the weather and a saving of 28,677 tonnes of CO₂ or a 62% reduction from 2008/9. Additionally, our CO₂ emissions have reduced by 35% or 9,341 tonnes since 2018/19.
- These figures show we are ahead of the target for the year and we are also ahead of our target to reach a 40% reduction in energy consumption by 2025/26. The savings since 2018/19 demonstrate a positive start for the Climate Action Strategy 2027 Net Zero Carbon targets, though the Carbon Descent Target does not represent the total scope for the Climate Action Target for Corporate Buildings, which also includes scope 1 & 2 emissions from our housing estates.
- 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. Our progress with 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 1,500 tonnes of CO₂e per annum through this project once works are complete towards the end of 21/22.

5. As the Climate Action Strategy actions begin to mobilise, starting with the procurement of resource needed to manage and deliver the programme and site level energy audits, we will be building a pipeline of projects and a timeline for delivery. This will enable the Climate Action Targets to be met. In doing so, these actions will similarly support a reduction in our energy consumption, facilitating the Carbon Descent Plan in reaching its targets. It is anticipated that this investment alongside close control of Building Energy Management Systems (BEMS), and promoting behaviour change through an energy awareness campaign, will enable us to keep on track to meet the 40% reduction target by 2025/26.

Table 1. Overall performance Q4 Top 5 and bottom 5 sites.

Weather corrected rolling 12-month comparison: 12 months to Mar-21 (20/21) compared to 12 months to Mar-20 (2019/20)				
Site Name	Mar-20	Mar-21	kWh Diff. ¹	Diff. %
Top 5				
Barbican Arts Centre	20,570,700	10,807,772	-9,762,928	-47.7%
Smithfield Mkt (LL & tenant)	14,207,833	9,994,899	-4,212,934	-29.7%
Guildhall Complex	17,304,930	13,788,114	-3,516,816	-20.3%
CoL Freeman's School	4,886,784	3,660,782	-1,226,002	-25.1%
New Spitalfields Market	6,691,218	5,853,222	-837,996	-12.5%
Bottom 5				
OS Epping Forest	650,071	710,574	60,503	9.3%
OS Parliament Hill	311,907	318,267	6,360	2.0%
Animal Reception Centre	781,972	781,710	-262	0.0%
Mayor's Court	218,730	170,988	-17,459	-5.5%
Upper Thames St. Tunnel Ltg.	548,716	494,364	-47,742	-21.8%

6. **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 March, 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.
7. The Energy team are in contact with sites in the bottom 5 sites, however only 2 sites overall, Epping Forrest and Parliament Hill have recorded increases in consumption. Investigation has highlighted increased electrical consumption at Jubilee Retreat Golf Course Shed, and Queen Elizabeth Hunting Lodge (ground floor). Poor housekeeping is likely to be the issue at Jubilee retreat and estimated meter readings at the hunting lodge have led to a subsequent increase at the Hunting Lodge. Gas increases at The Warren House and Office has also added to the overall position these show perhaps that gas usage is not adequately controlled at site and further investigations are being held to ascertain the cause. Upper Thames St. Tunnel Lighting has been included in the bottom 5 list for the first time, though it has registered a saving of approximately 22%. This site has limited opportunity for further savings due to lighting standards that must be maintained for safety and security reasons.

¹ kWh difference is used to determine the order for **Table 1**. In Q4, this highlights Barbican Arts Centre as the best performing site and OS Epping Forest as having the highest increase in energy usage.

Energy Team Activity

Progress on Energy projects

8. **The PSDS Project:** Good progress has been made on the 17 individual projects that make up the PSDS Programme. A separate paper presenting the PSDS project in more detail will be presented to CASC.
9. **Pandemic Impacts:** The Energy Team remain proactive at managing the energy usage within our buildings during the Pandemic. In the 12 months to March 2021, we have seen a **22.8%** reduction in weather corrected energy consumption compared to the previous 12 months. The UK has seen a rise in demand, which we expect to continue as we exit lockdown restrictions. The Energy Team anticipate that as buildings are re-occupied, our recent gains will be eroded. Alongside our pipeline of energy saving projects, it is key to capture the impact of the changing use of our buildings and we will ensure that key plans & projects such as the Guildhall Masterplan and the Combine Markets Project are closely examined in relation to their effect on reaching our future targets. Uncertainty in relation to the longevity of building assets can translate into lost opportunity for investment in energy saving measures, leading to difficulty in delivering these savings in the longer term.
10. **Energy Supply contract procurement:** Gas and Electricity Contracts have been procured for the period October 2021 -2025. A workshop is to be held with stakeholders in June to engage and receive feedback in relation to future strategy. Additionally, we have procured a new Meter Operator Contract under the LASER framework for the period 2021 – 2025. Savings of £20k are expected for the contract duration and will improve visibility to our energy data, through improved deployment of Automatic Meter Reading (AMR) for our smaller supplies. AMR will increase our ability to identify and react to changes in consumption and measure and verify savings made through investment in Energy Saving Measures.
11. **PPA:** The PPA contract has now been agreed with Volitalia 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 in May. 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 unit price 54% lower than this.

Corporate & Strategic Implications

12. **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.
13. **Financial implications:** The savings in this report remain largely because of reduced energy usage due to the pandemic. We anticipate these will be eroded as staff return to work. For longer sustainable gains the focus needs to be on improving efficient use of energy, through targeted investment in energy saving measures.

14. **Climate implications:** Energy performance has a direct impact on the Climate. Improvements in energy usage and CO₂ emissions will have a beneficial effect on this. Our CO₂ targets represent an important goal in mitigating the worst effects of climate change and falling short of these could contribute to global temperatures rising above a sustainable level.

Conclusion

15. The Energy performance within Q4 has seen a sustained reduction in consumption across the corporation. Whilst the impact of the pandemic has been positive in respects to the energy consumption over the last 12 months, we anticipated a bounce back in consumption as we reoccupy our buildings. With the mobilisation of the workstream (NZ1) related to Corporate Buildings within the Climate Action Strategy beginning in Q1 of 2021/22 and the 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. As we transition to Climate Action Strategy targets for 2021/2022, our targets will become increasingly challenging, requiring action in all areas of the Corporation to ensure we meet our planned objectives.

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