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| Board(s) | Dated: |
| Markets Board | 8 th November 2023 |
| Subject: Energy 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 | |

Summary

This report presents an update to the Markets Board on energy and carbon related matters.

We have seen a sustained reduction in energy (29%) and carbon emissions (43%) since 2018/19 across all sites. The rate of this reduction has slowed as Markets recover from the pandemic. These reductions stem from a reduction in operational activity since 2018/19, but also due to energy demand reduction through interventions and the decarbonisation of the national electricity grid.

The impacts of the conflict in Ukraine seen delivered energy prices increase significantly. However, our procurement strategy has enabled the City to avoid the 30% surge in recent energy prices due to the recent conflict in the Middle East that has been seen since early October 2023.

The rebate on energy costs through Power Purchase Agreement (PPA) started in January 2023 and has provided the markets with £1.7M in income and approximately £1.64M in avoided costs.

Recommendation(s)

- Note the reduction in energy and carbon emissions consumption across all three markets since 2018/19.
- Note the increase in energy costs incurred for 2022/23.
- Note the anticipated date for forecast prices for October 23 – September 24 contract year.
- Note the forecast PPA rebate savings for 2023/24.
- Note the impact of the refrigerant gas leak at Billingsgate Market.

Main Report

Background

1. The City of London Corporation (City Corporation) procured a 4-year electricity and gas contract via LASER Energy Procurement Frameworks in October 2021. It was agreed at Project Sub Committee and Finance Committee in October 2020 to adopt a Purchase in Advance (PIA) procurement strategy, allowing for flexible trading of the required energy volume in the months ahead of the contract start date and subsequent contract anniversaries.
2. The use of the LASER framework enabled our existing energy supplier, Total Energies (TE, formerly Total Gas and Power) to be retained using this OJEU compliant framework. This enabled TE to act as a Sleeving supplier, as necessary to support the introduction of a Power Purchase Agreement (PPA). The City Corporation subsequently agreed terms on a 49.9 MW Solar farm (PPA) in January 2021. The data indicates our PPA has provided over 80% of the City's electricity needs in 2023/24.
3. The Solar Farm commenced operation in January 2023. All City Corporation properties, including Smithfield, Billingsgate and New Spitalfields Markets have received credits as well as a unit rate reduction because of this PPA. The City Corporation have contracted with Voltalia UK Ltd. to provide the PPA service for a 15-year term.
4. The City Corporation implemented the Climate Action Strategy in April 2021. It aims to reach Net Zero Carbon (NZC) for the City Corporation scope one and scope two carbon emissions by 2027. This included non-tenanted energy consumption from the Markets. Tenants' emissions are included as part of our Scope 3 value chain which aims to reach NZC by 2040.
5. The Climate Action Strategy is currently in Year 3 of the programme Energy Audits have been completed to identify interventions that will help to reduce energy and carbon emissions. Capital funding has been provisionally earmarked to support these interventions and this funding could be applicable to the Markets, subject to the realisation of the financial return on investment.

Markets Energy Performance

6. Overall energy consumption has reduced by 29% across the markets over 2022/23 compared to 2018/19. Reductions have been achieved across all markets, but Smithfield accounted for 85% of the total reduction. Elimination of the Poultry Market from the portfolio is expected to provide further reductions in consumption and cost.
7. Reductions are a result of a combination of reduced occupancy and energy efficiency improvements. For example, Billingsgate Market was in the top 5 performing sites due to new lighting and draught proofing.

8. Smithfield Market was in the bottom performing sites due to BEMS maintenance/upgrade issues. However, the Energy Team have supported the upgrade project and rectified some software issues with the migration at the West Market. The Energy Team will continue to monitor and provide support.
9. Energy consumption over 2022/23 remained static overall. Billingsgate usage reduced by a notable 9%. Please refer to Appendix 1 for further details.
10. Overall carbon emissions have reduced by 43% across the markets over 2022/23 compared to 2018/19 (the baseline year for the City Corporation's net zero target). Reductions have been achieved across all markets driven by a combination of reduced energy demand, improved energy efficiency, and the national decarbonisation of the electricity grid. Carbon emissions reduced by 7% over 2022/23 on location-based emissions, which excludes the impact of the PPA. See appendix 1 for further details.
11. The City Surveyor's Surveying and Engineering Projects Team have in recent years delivered the following projects through the City Corporation's CWP (Cyclical Works Programme) which will support lower energy consumption:
 - Smithfield West Market BEMS (Building Energy Management System) replacement.
 - Smithfield West Market secondary pump and speed control replacements.
 - Smithfield East Market trader corridor fan upgrades.
 - Smithfield car park (lower level): replacement lighting (with LED) and smart controls.
12. The Energy Team continue to provide support to Smithfield market regarding the operation and maintenance of the Building Energy Management System. The Energy Team have also participated in workshops to inform the design of the new market.

Refrigerant Leak at Billingsgate Market

13. In 2022/23 our annual reporting highlighted a leak of refrigerant gases at Billingsgate Market. The F-gas register indicated a leak of 300kg of refrigerant gas from a single point of failure.
14. Fugitive emissions represent an increased risk and with the accelerated roll out of Heat Pumps they will require close monitoring and careful selection of equipment and their associated refrigerant gases.
15. This occurrence has highlighted the need for ongoing effective, maintenance. This is especially needed where plant failures can compromise our net zero ambitions and the environment. It also serves to

demonstrate the increased risk inherent in operating ageing plant and equipment which is prone to increased failure rates.

Energy Procurement

16. Despite energy consumption remaining similar in 2022/23 compared to 2021/22 the cost of energy increased by 95%, resulting in c.£2.3mil additional costs. This was due to the increases in the wholesale market price of all forms of energy.

17. We are currently awaiting final prices from our broker, LASER for 2023/2024 which are expected late October. However, it should be noted that due to our purchasing strategy the City was able to avoid the 30% increase in costs seen in October due to conflict that has arisen in the Middle East. Furthermore, Smithfield is benefiting from lower forecast energy costs through the City Corporation’s tariff agreements with Citigen for heating and cooling. Please see appendix 3 for details on recent costs.

18. The City Corporation’s Power Purchase Agreement (PPA) commenced in January 2023. The agreement provides for a proportion of the total City Corporation electricity to be supplied at a significantly lower rate than the current wholesale market. This benefit is currently being shared with all City Corporation sites which are supplied through our corporate contract and delivered as a rebate on their energy costs.

19. The Markets PPA rebate is £1.7M (January to August) highlighted in Figure 1 below. The estimated cost avoidance (in other words, the cost the site would have paid if the City did not have the PPA) is included in Table 1 below.

Figure 1: Markets Electricity Consumption & PPA Credits

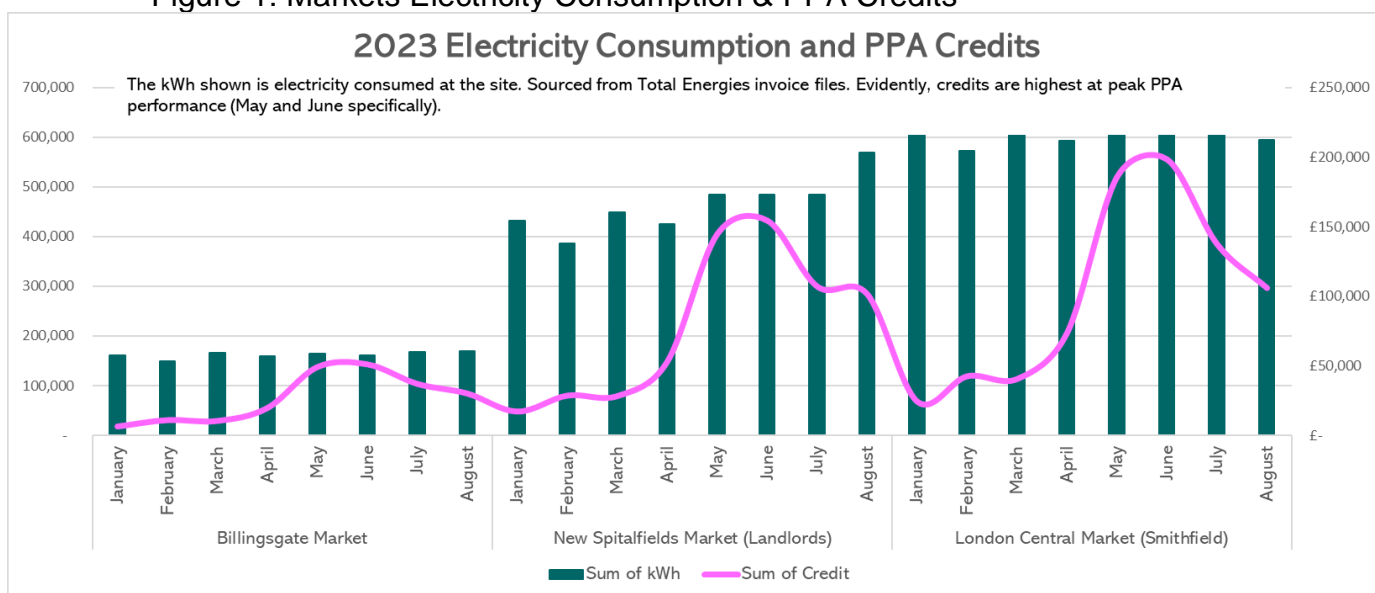


Table 1. Estimated Cost Avoidance due to lower unit rate because of the PPA (based on actual and estimated consumption data)

| | Jan 23-Dec 23 | |
|------------------|---------------|--|
| New Spitalfields | £621,800 | |
| Billingsgate | £213,700 | |
| Smithfield | £808,400 | |
| Total | £1.64M | |

Corporate Risk

Energy price risk for Corporation is currently managed within the City Surveyor's Senior Management Team. Whilst prices remain high for the year ahead, the introduction of the PPA from January 2023 has helped to significantly reduce price impact.

Corporate & Strategic Implications

20. **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_{2e} 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.

21. **Financial implications:** The information in this report detail reductions in energy consumption and not against agreed budgets. Significant increases in the wholesale cost of electricity and gas over 2022 due to the war in Ukraine has meant that whilst consumption has decreased the overall energy costs have risen. While we are still waiting for the prices for October 2023 to September 2024's contract, LASER have advised approximately a 3% reduction in energy costs. The PPA will continue to provide some measure of relief. Members should note for longer sustainable gains the focus will need to be on improving efficient use of energy, through targeted investment in energy saving measures.

Conclusion

22. The Energy Team and wider City Surveyor's department continue to support the markets with capital investment in works and building control to improve the services alongside delivering energy efficiency. Energy costs are expected to remain elevated in the coming year despite the impact of the PPA, and on-site demand reduction. We continue to plan with the Markets Team to advise tenants of this impact.

Appendices

- Appendix 1 – Energy Performance
- Appendix 2 – Carbon Performance (Tonnes CO_{2e})
- Appendix 3 – Energy Costs

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