

<b>Committee:</b>	<b>Dated:</b>
Corporate Asset Sub-Committee (CASC)	13 Feb 2018
<b>Subject:</b> 2017/18 Half Yearly Energy Performance Update	<b>Public</b>
<b>Report of:</b> The City Surveyor	<b>For Information</b>
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## SUMMARY

This report provides the 2017/18 half yearly results of the energy consumption for CoL operational sites, an update on the annual trend to meet the energy reduction targets set out in the Corporation's Carbon Descent Plan 2015 (CDP-15).

The half yearly results show an overall increase of 0.5% (absolute consumption) compared to the same period in 2016/17. The Guildhall Complex continues to provide significant savings, supported by reductions at CoL Police and Guildhall School of Music and Drama. Reductions were offset by increases at the Central Criminal Court, Barbican Arts Centre, and Markets and Consumer Protection.

The 12 months performance estimate when compared to the 2008/09 baseline indicates a reduction of 17.4% in absolute consumption and 13.6% reduction when weather corrected. This indicates the CDP-15 target of 25% by the end of 2017/18 is very unlikely to be met.

## MAIN REPORT

### 1. Performance update

- 1.1 The absolute energy consumption for Apr-17 to Sep-17 was 0.5% higher than the consumption over Apr-16 to Sep-16, as presented in Table 1 below.

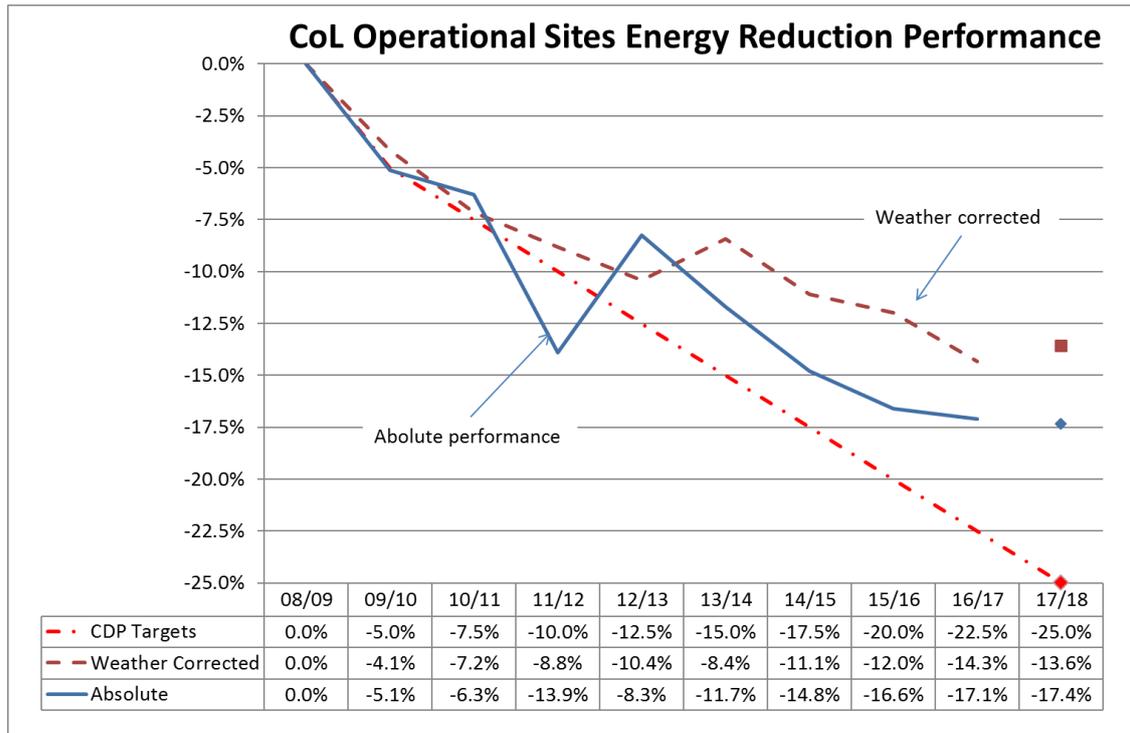
Table 1. Performance comparison: 2017/18 Q1-2 with 2016/17 Q1-2

Dept.	16/17 Q1-2 (kWh)	17/18 Q1-2 (kWh)	Diff. (kWh)	Diff. %	
Guildhall Complex	9,822,807	9,015,705	-807,102	-8.2%	Achieved above target
CoL Police	2,636,560	2,427,789	-208,771	-7.9%	
Mansion House	701,712	648,874	-52,838	-7.5%	
GSMD	3,214,589	3,045,310	-169,279	-5.3%	
Walbrook Wharf	696,686	661,635	-35,051	-5.0%	
CoL Boys'	1,175,639	1,134,144	-41,495	-3.5%	
Built Environment	3,159,373	3,121,105	-38,268	-1.2%	Achieved below target
Open Spaces	2,255,902	2,246,930	-8,972	-0.4%	
Culture, Heritage & Libraries	1,280,085	1,278,893	-1,192	-0.1%	
CoL Freeman's	1,078,500	1,096,435	17,935	1.7%	
Markets & C.P.*	14,217,580	14,618,453	400,873	2.8%	
CoL Girls	757,889	784,065	26,176	3.5%	
Barbican Arts Centre	7,793,819	8,212,087	418,268	5.4%	
Courts	3,145,514	3,904,640	759,126	24.1%	
<b>Total</b>	<b>51,936,655</b>	<b>52,196,065</b>	<b>259,410</b>	<b>0.5%</b>	

\*includes tenant's consumption, see Appendix B for Tenant/Landlord breakdown.

- 1.2 The weather over 2017/18 Q1-2 has been slightly milder than over 2016/17 Q1-2. This has lowered heating consumption for many sites, but increased cooling consumption for a few. The overall net impact is a lower consumption than would be expected under the similar weather conditions.
- 1.3 Most departments reduced their energy consumption, but the majority was achieved by the Guildhall Complex with an overall 8.2% reduction.
- 1.4 The Guildhall reduction was mainly due to on-going improved operational management of the steam generators providing a 25% reduction in gas consumption. Other significant Guildhall savings provided included: 16% reduction in electricity for the Justice Rooms due to decanting of servers; 25% reduction in the electricity for cooling the West and East wings which is likely due to control improvements; 17% reduction in East Wing heat consumption partly due to milder weather but also likely control improvements.
- 1.5 Significant reductions at other sites included: a 21% reduction in electricity at Bishopsgate Police Station likely related to milder weather but also the refurbishment and accommodation changes; a 36% reduction in Citigen heat to GSMD due to supply disruption.
- 1.6 Central Criminal Court (CCC), Barbican Arts Centre (BAC), and London Central Market (LMC) were the main sources of increased consumption. CCC increases relate to higher oil and gas consumption for the heating system and the reason is being investigated. A 23% increase in BAC cooling consumption was likely related to increased demands from temporary art exhibitions which are due to continue until end of Jan-18. LCM increases mainly relate to a 47% increase in the Citigen heating demands for the East market likely relate to control issues which are being investigated. More detailed departmental commentary is provided in Appendix A.
- 1.7 Chart 1 below represents the overall performance from the 2008/09 baseline. Annual results are presented for both absolute and weather corrected energy consumption. The reported figures presented in past committee reports have been revised for ongoing improvements in data quality.
- 1.8 The 12 months performance to Q2 of 2017/18 indicates a 17.4% reduction in absolute consumption from the baseline, and a 13.6% reduction when corrected for the weather (based on degree days and in accordance with the previously agreed methodology).

Chart 1. Overall performance change from the 2008/09 base year



## 5. Conclusion

- 5.1 The Q2 results show an overall increase of 0.5% (absolute energy consumption) compared to the same period in 2016/17.
- 5.2 The 12 months performance up to 2017/18 Q2 indicates a reduction of 17.4% in absolute consumption and 13.6% reduction when weather corrected. indicates the CDP-15 target of 25% by the end of 2017/18 is very unlikely to be met.

## 6. Recommendation(s)

- 6.1 It is recommended Members note the contents of this report.

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## Appendix A. Departmental commentary

Dept.	16/17 Q1-2	17/18 Q1-2	Diff. kWh	Diff. %	Comments
Barbican Arts Centre	7,793,819	8,237,006	443,187	5.7%	Majority of change due to a 23% increase in Citigen coolth, and increases in some electricity consumption. Consumption has been increasing since May-17 and this likely relates to a temporary arts exhibition which is due to continue until end of Jan-18. The Energy Rep is investigating further.
Built Environment	3,159,373	3,118,190	-41,183	-1.3%	Main savings from UTST lighting and ventilation improvements. Increase in electricity at Tower Hill Coach & Car Park by about 20% since Jun-17 (FM have been asked to investigate), and St Paul's Churchyard Floodlighting (trying to establish who manages this).
CoL Boys	1,175,639	1,134,144	-41,495	-3.5%	Lower electricity consumption over summer 2017 compared to 2016 when it was higher than average due to contractor works. Ongoing reduction in gas consumption for catering since Oct-16 (waiting for Energy Rep response on possible reasons).
CoL Freeman's	1,078,500	1,096,435	17,935	1.7%	Increased electricity for the sports hall over summer, likely due to higher occupancy (waiting for Energy Rep to confirm possible reasons).
CoL Girls	757,889	784,065	26,176	3.5%	Electricity consumption continues to be elevated since late 2016 (waiting for Energy Rep to confirm possible reasons).
Courts	3,145,514	3,904,640	759,126	24.1%	Significant increase in Central Criminal Court oil and gas for the heating system. Have requested the site investigate their heating controls and potential reason for this.
Culture, Heritage & Libraries	1,280,085	1,278,893	-1,192	-0.1%	Significant electricity and gas reductions at LMA related to HVAC control improvements; this was countered by a large "catch-up" invoice for Shoe Lane Library which lacks regular meter readings due to accessibility issues.
GSMD	3,214,589	3,045,310	-169,279	-5.3%	Most of the reduction relates to lower Citigen heat supply, likely related to a supply disruption. Higher electricity consumption at Milton Court may relate to the use of temporary heating during the supply disruption.
Guildhall	9,822,807	9,015,705	-807,102	-8.2%	Reduction was mainly due to on-going improved operational management of the steam generators providing a 25% reduction in gas consumption. Other significant Guildhall savings provided included: 16% reduction in electricity for the Justice Rooms due to decanting of servers; 25% reduction in the electricity for cooling the West and East wings which is likely due to control improvements; 17% reduction in East Wing heat consumption partly due to milder weather but also likely control improvements.
Mansion House	701,712	648,874	-52,838	-7.5%	Electricity consumption has reduced over recent months. This seems to relate to a change in ventilation/chiller plant equipment operation. Waiting feedback from site on possible reasons.
Markets & CP	14,217,580	14,674,619	457,039	3.2%	Consumption increased mainly due to increased heating and cooling at Smithfields and higher electricity within the Poultry market.
Open Spaces	2,255,902	2,245,998	-9,904	-0.4%	Gas and electricity consumption increased at the new crematorium, presumably due to increased service demands. This was offset by reductions due to the closure of West Ham Park Nursery, Ten Keats Grove due to new boilers, Queen Elizabeth's Hunting Lodge, and Kenwood.
Police	2,638,760	2,431,234	-207,526	-7.9%	Significant reduction in electricity and gas at Bishopsgate Police Station, likely related to milder weather but also the refurbishment and accommodation changes. This was partly offset by a significant increase in gas consumption at Snowhill. We have asked the Energy Rep to investigate

					reasons further.
Walbrook Wharf	696,686	661,635	-35,051	-5.0%	A reduction in electricity to the Amy industrial area due to a ventilation system fault, was partly offset by a small increase in the gas for space heating and hot water for the offices. FM have been advised to investigate potential improvements to the heating controls.

## Appendix B. Markets energy consumption breakdown

Over 75% of the total energy consumption for the Markets and Consumer Protection department relates to electricity consumption within the three markets. Of this about 70% relates to tenant supplies and 30% to landlord services.

Table B1 below compares the Q1-2 electricity consumption and shows the landlord consumption reduced by 0.1% and the tenant consumption reduced by 0.4%, resulting in a total reduction of 0.3%.

Table B1. Electricity split between tenants/landlord

	16/17 Q1 kWh	17/18 Q1 kWh	Diff. kWh	Diff. %
M&CP Landlord	3,072,689	3,070,614	-2,075	-0.1%
M&CP Tenants	8,473,038	8,436,984	-36,054	-0.4%
<b>Total</b>	<b>11,545,727</b>	<b>11,507,598</b>	<b>-38,129</b>	<b>-0.3%</b>