

Decision Maker: Environment and Community Services Policy Development and Scrutiny Committee

Date: 29 January 2020

Decision Type: Non-Urgent Non-Executive Key

Title: 2029 NET ZERO CARBON STRATEGY

Contact Officer: Lee Gullick, Carbon Programme Manager
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Chief Officer: Colin Brand, Director of Environment & Public Protection

Ward: n/a

1. Reason for report

- 1.1 This report provides a strategic plan for achieving the Council's 2029 Net Zero Carbon target, outlining the scope of the target, different funding options, and governance and reporting processes. Importantly, it shows that the target is indeed achievable through a variety of measures, but will require financial support and continued resource commitment as the plan evolves over the next ten years.

2. **RECOMMENDATION(S)**

The ECS PDS is asked to:

- 2.1 **Review and provide comments on the proposed strategy to reduce the Council's organisational emissions to net zero by 2029.**
- 2.2 **Recommend that the Portfolio Holder approves this strategy and the Carbon Management Programme (CMP3) is developed in detail to deliver it.**
- 2.3 **Support a review by the Carbon Management Team of Bromley's borough-wide emissions and the identification of further opportunities to influence their reduction.**
- 2.4 **Recommend that the Portfolio Holder takes forward an amendment to the Committee report template so that a Carbon implications section is incorporated, that requires officers to consider the Carbon impact (scope 1 and 2 emissions) of the proposal or decision they are presenting to Council committees.**

Impact on Vulnerable Adults and Children

1. Summary of Impact: n/a
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Corporate Policy

1. Policy Status: New Policy
 2. BBB Priority: Excellent Council
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Financial

1. Cost of proposals: See section 3 for indicative estimates
 2. Ongoing costs:
 3. Budget head/performance centre: Carbon Management Team (1.6fte)
 4. Total current budget for this head: £134k
 5. Source of funding: Revenue budget 2019/20 for staffing costs, energy management software and project expenses . Various internal and external funding options for net zero carbon initiatives (see section 6)
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Personnel

1. Number of staff (current and additional): 1.6 fte
 2. If from existing staff resources, number of staff hours:
-

Legal

1. Legal Requirement: Non-statutory – Government guidance
 2. Call-in: Not Applicable
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Procurement

1. Summary of Procurement Implications: None
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Customer Impact

1. Estimated number of users/beneficiaries (current and projected): This strategy will not only benefit the Council by achieving carbon, energy and financial savings, but it will provide broader environmental benefits to the wider local community.
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Ward Councillor Views

1. Have Ward Councillors been asked for comments? No
2. Summary of Ward Councillors comments: n/a

3. COMMENTARY

Background

- 3.1 The Executive established a Carbon Management Programme (CMP) in 2008 to take action to reduce energy consumption, revenue costs and carbon emissions.
- 3.2 To fund initiatives, the Executive established a Carbon Management Fund (£500k), authorising officers to deliver invest-to-save projects. Cost savings derived from these projects are repaid into the fund, thereby creating a self-sustaining source of investment for new energy reduction initiatives.
- 3.3 Since 2008/09, LBB's Carbon Management Team has quantified the Council's emissions each year, following the guiding principles of the internationally recognised World Resources Institute's *Greenhouse Gas (GHG) Protocol Corporate Accounting and Reporting Standard*.
- 3.4 To allow for the comparison of emissions from various GHGs (based on their global warming potential), a generic metric is used which converts amounts of other gases to the equivalent amount of carbon dioxide. This metric is: tonnes of carbon dioxide equivalent (tCO₂e).
- 3.5 The GHG Protocol categorises emissions into three different scopes, which helps define operational boundaries:
- **Scope 1:** Direct GHG emissions occurring from sources that are owned or controlled by the organisation, such as the emissions from burning gas to heat a building, and the emissions directly entering the atmosphere from using company vehicles.
 - **Scope 2:** Electricity indirect GHG emissions produced from the generation of purchased electricity.
 - **Scope 3:** An optional reporting category that allows for the accounting of other relevant indirect emissions (i.e. emissions resulting from the consequence of an organisation's activities, occurring from sources not owned or controlled by the organisation). These emissions will be 'owned' by a different organisation and accounted for under their own scope 1 emissions. For example, emissions from waste disposal, water consumption, and staff commuting.
- 3.6 LBB measures carbon emissions for the activities shown in table 1:

Table 1

Scope 1	Scope 2	Scope 3
<ul style="list-style-type: none">• Building heating: gas & oil consumption (LBB estate)• Council owned fleet: petrol/diesel consumption	<ul style="list-style-type: none">• Purchased electricity (LBB estate / borough street lighting)	<ul style="list-style-type: none">• Business travel• Staff commuting• Electricity (transmission & distribution)• Waste (Civic Centre)• Water (LBB estate)• Paper (Civic Centre)• Procured services

- 3.7 A Council Motion on 15th July 2019 unanimously approved a ten year plan to ensure that the council will have net zero carbon emissions by 2029. Essentially, this means reducing emissions produced by the Council to zero in order to achieve carbon neutrality.

- 3.8 This target applies to LBB's scope 1 and 2 organisational emissions only (i.e. those which are directly within the council's operational control such as energy use from buildings and fuel use from the Council fleet). This currently equates to approximately 10,000 tCO₂e per annum.
- 3.9 LBB's net zero carbon target does not include emissions arising from LBB's (Scope 3) procured services/products or borough-wide emissions - see Appendix A and B for more information on how LBB is addressing these.

Carbon Reduction Achievements to Date

- 3.10 LBB's first Carbon Management Programme (CMP1) operated from 2008/09 to 2012/13, resulting in a 14% reduction (5,275 tCO₂e) in the Council's GHG emissions.
- 3.11 LBB's second programme CMP2 (2013/14 to 2017/18) achieved a 33% reduction (12,000 tCO₂e) against a 2013 baseline. This reduction can be accredited to a number of factors including: invest-to-save energy efficiency projects (e.g. LED lighting upgrades to 14,000 street lights and LBB's three multi-storey car parks), a reduction in LBB staff numbers, a smaller property portfolio, changes in carbon emission factors, and the baseline year experiencing a cold winter.
- 3.12 Since CMP2's scope included a larger number of sites, activities and energy/water meters, it is not possible to directly compare performance between CMP1 and CMP2. As such, CMP's performance is measured against its own established target in isolation from other CMPs.
- 3.13 Appendix C provides a brief summary of the invest-to-save projects delivered so far under LBB's CMP. Further details on CMP1 and CMP2 performance and the wider work conducted by the Carbon Management team can be found in the Council's annual '*Bromley's GHG Emissions Reports*' on the Council website via the Sustainability page.
- 3.14 The latest CMP3 (2019/20 – 2028/29) programme builds on the activities achieved and established through CMP1 and CMP2, and continues to deliver energy, carbon and financial savings by decarbonising council operations.
- 3.15 To align with LBB's 2029 net zero carbon target, CMP3 has now been extended to ten years, adopting 2018/19 as the baseline year and zero emissions as the new target.
- 3.16 CMP3's scope no longer includes schools and academies where the Council's influence in energy use is significantly restricted. The main carbon/energy reduction focus will naturally be the two major carbon hotspots: street lighting and energy use in buildings.

Achieving LBB's 2029 Net Zero Carbon Target

- 3.17 LBB's total carbon emissions is a continually moving number due to varying factors such as a changing national grid mix (with more renewables-generated energy becoming available) and carbon reductions achieved from ongoing projects (e.g. the more street lights upgraded to LED, the fewer emissions).
- 3.18 The main vehicle for transitioning to a net zero council will be through CMP3, but will involve the Carbon Management Team working closely with other service departments/teams within the Council to make significant energy efficiency improvements across different service areas.
- 3.19 Since this strategy helps inform a ten year plan that will evolve over time, it is not possible to finalise all of the proposed actions at this stage.

- 3.20 There are many areas that the Carbon Management Team could address to reduce the Council's direct operational emissions, but due to the restrictive size of the team (currently comprising 1.6 FTE) a pragmatic approach is required, initially focusing on a mix of initiatives offering the greatest carbon reductions and two initiatives that have already begun. Should the team size increase in the future, their remit could expand to dedicate more effort to areas such as staff behavioural change.
- 3.21 Various factors will help inform which projects to take forward, such as: the potential carbon, energy and cost savings of initiatives; available funding; the priorities identified by Members in terms of mobilising medium to large scale projects.
- 3.22 The approach adopted to achieve net zero emissions will focus on reducing LBB's organisational emissions as far as possible through five key energy efficiency initiatives (that could help reduce up to 75% of LBB's total emissions), then offsetting all remaining residual emissions through the most suitable/viable initiatives (yet to be determined) outlined in table 2:

Table 2

Reduce LBB's Direct Organisational Emissions		
1	Street Lighting	Upgrade remaining 14,000 lights to LED (including dimming capability and photocells).
2	Buildings	The Carbon Management Team will be working closely with the recently appointed Energy Manager to identify energy efficiency and smart technology opportunities across Bromley Council's estate by targeting the most energy intensive buildings with the highest consumption.
3	100% Renewable Electricity	To discount scope 2 emissions credibly this will require switching to a green supply that directly leads to increased renewable generation.
4	Council Fleet	Switch to an electric vehicle fleet.
5	Parks and Greenspaces	Upgrade lighting to LED.
Offset Residual Emissions		
6	Solar Farms	An exercise is currently underway to identify potential sites and assess their suitability. This initiative would help the Council become more resilient to energy price fluctuations and volatile supply chains, as well as generating a revenue stream.
7	Renewables Investment	Joint investment opportunities in offshore/onshore wind and solar installations will be assessed.
8	Mini woodlands	An exercise is underway to identify suitable sites for further tree planting in the borough (i.e. mini woodland areas).
9	Parks and Greenspaces	Possible LBB carbon offset projects to be researched.
10	Certified Carbon Offsets (from UK-based projects)	This is considered a last resort option when all other options have been exhausted, as Bromley's preferred option is to tackle our carbon emissions directly.

- 3.23 Table 3 below outlines the above initiatives with indicative costs and carbon savings. Further in-depth analysis is required to assess the viability of these measures, which will help inform the best mix of projects to drive forward.

Table 3: 2029 Net Zero Carbon Initiatives

Initiative	Estimated Carbon Reduction (tCO ₂)	Reduction of LBB's Total Carbon Emissions (%)	Cost	Time to mobilise & complete (years)	Commentary
Street Lighting: LED upgrade of remaining 14,000 lanterns	1,800	18%	~ £4.5m	5	<ul style="list-style-type: none"> Project approved to upgrade nearly 4,000 lights at a cost of £1.124m that will save over £250k/yr and 500 tCO₂/yr. Upgrade of remaining 10,000 lights now being considered.
Buildings: energy efficiency initiatives	150 - 250	1.5% – 2.5%	tbc	7-8	<ul style="list-style-type: none"> Based on energy efficiency improvements to LBB's most energy intensive buildings within their existing estate.
Parks Lighting: LED Upgrade	Minimal	<1%	tbc	3-4	<ul style="list-style-type: none"> Technical assessments underway for two parks that will help inform an LED upgrade programme to roll out across all parks.
Council Fleet Electrification	tbc	<1%	tbc	5-7	<ul style="list-style-type: none"> Assess electric vehicle options as and when the existing fleet is decommissioned, and the EV market opens up with viable alternatives.
Switch to 100% renewable energy	5,500	55%	£7,500	0.5	<ul style="list-style-type: none"> Review purchase of Renewable Energy Guarantee of Origin (REGO) certificates for electricity, and traceability certificates. Review Power Purchase Agreement options to purchase directly from a renewable energy generator.
LBB Solar Farm	1MW = 430	1MW = 4%	Approx. £700k - £1m per 1MW installation	5	<ul style="list-style-type: none"> Several potential sites being considered Typical ROI: 6 to 8% per year 5 acres required to generate 1MW of electricity
Renewables Investment: wind/solar farms	tbc	tbc	tbc		<ul style="list-style-type: none"> Explore joint investment opportunities with other councils in SE England.
Mini-woodland tree planting	1 tCO ₂ for every 4 trees planted	tbc	Dependent on land size, tree mix, maintenance costs	5	<ul style="list-style-type: none"> Identify potential sites and planting costs. Potential Woodland Trust support opportunities. Assess early years maintenance costs, required to establish woodlands.
Purchase certified carbon offsets or undertake carbon offset projects	tbc	Dependent on residual emissions	From £12/tCO ₂ upwards	0.5	<ul style="list-style-type: none"> Suitable UK-based carbon offset projects to be researched. Possible LBB carbon offset projects to be researched.

4. GOVERNANCE AND REPORTING

- 4.1 Performance against LBB's 2029 Net Zero Carbon target will be closely monitored, measured and reported by the Carbon Management Team.
- 4.2 Each new project/initiative will be quantified in terms of carbon, energy and financial savings, and show before and after statistics to help assess project performance.
- 4.3 Carbon Management Performance reports are provided to the Director of Environment & Public Protection on a monthly basis at the Departmental Management Team (DMT) meetings. This report will include information pertaining to the progress of projects and other relevant carbon reduction work.
- 4.4 The Carbon Management team will report biannually to the Environment Portfolio Holder on the progress made towards LBB's net zero target, and annually to the Environment and Community Services Policy Development and Scrutiny Committee.
- 4.5 Approval to spend the Carbon Neutral Fund on suitable projects will be sought through the Executive Committee as and when required.
- 4.6 The annual '*Bromley's GHG Emissions Performance*' report will continue to quantify the Council's performance in reducing their scope 1 and 2 emissions, and provide yearly progress statistics against the net zero target. It will include project specific information and also report on actions taken to help reduce both scope 3 and borough-wide emissions, ensuring that reporting is accurate, complete and transparent.

5. POLICY IMPLICATIONS

- 5.1 This report accords with the Building a Better Bromley's 'Excellent Council' ambition in relation to 'scrutinising everything we do and how we do it to provide efficient services' and 'continue a financial strategy that focuses on stewardship and sustainability'.
- 5.2 This strategy will contribute to achieving the Council's 2029 Net Zero Carbon target commitment.

6. FINANCIAL IMPLICATIONS

- 6.1 At this point in time it is difficult to know the amount of funding required for LBB to become a carbon neutral council due to the uncertainty of which projects will be most suitable. However, table 3 provides an indication of costings for some of the key initiatives. Feasibility assessments will be conducted to identify and help inform the most viable and cost effective projects/initiatives to take forward.
- 6.2 Outlined below are several potential funding streams available to the Council for the initiatives described in this report. It is anticipated that more financial options will become available over time as the government introduces further green deals to accelerate national and regional decarbonisation.
- 6.3 Carbon Management Recycling Fund (£500k): Although the total fund amount has recently been committed to a street lighting LED upgrade project, as soon as the works are completed (estimated to be June/July 2020) LBB will start paying back the fund from the energy savings. Hence, the fund will start building up again, and the money will be made available for further invest-to-save projects.

- 6.4 Salix Energy Efficiency Loan Scheme (SEELS): Salix Finance provides interest-free government funding to the public sector to improve energy efficiency, reduce carbon emissions and lower energy bills. Interest-free loans, from £5k to over £10m, can be used on a wide range of small to large invest-to-save energy efficiency projects, and paid back through the predicted savings on energy usage.
- 6.5 Salix Decarbonisation Fund: An interest-free loan that works in a similar way to the recycling fund in that LBB would have to provide match funding.
- 6.6 The Mayor of London’s Energy Efficiency Fund (MEEF): A new investment fund, established by the GLA, which will help achieve London’s ambition of being a zero carbon city by 2050. MEEF has been developed with Local Authorities as a core sector given their leadership in the low carbon sector. MEEF has access to £500m of financing that can provide funding for up to 100% of the capital cost of a project. Features include: minimum investment size of £1m; fixed term interest rate; as well as funding individual projects MEEF can also fund estate wide maintenance and refurbishment.
- 6.7 Carbon Offsetting Funds (s106 contributions): To be used on a variety of carbon reduction projects across the borough. Projects can include energy efficiency measures on council property and street lighting. The current available balance is £250k with further funding of £800k (from ‘approved’ planning applications) projected.
- 6.8 With all of the above options, projects would need to satisfy certain energy/carbon savings over their lifetime. The Salix/SEELS funding is largely based on payback periods, whilst the Carbon Offsetting Fund (COF) is based on the cost of reducing a ton of carbon.
- 6.9 Carbon Neutral Fund: In recognition of new investment being required to achieve LBB’s net zero target, the Council’s draft revenue budget for 2020/21 includes a proposal to establish a Carbon Neutral Fund. This will provide pump-priming funding of £0.875m for new initiatives to reduce the Council’s carbon footprint whilst reducing its long term energy costs.
- 6.10 Capital Programme Funding: For future energy efficiency initiatives as part of the Environment Work Programme, such as building refurbishment, further street lighting upgrades, and renewable energy projects. Funding through a business case approach will be considered on a scheme by scheme basis in accordance with the Council’s capital programme strategy.

7. PROCUREMENT IMPLICATIONS

- 7.1 No procurement implications.

Non-Applicable Sections:	Impact on Vulnerable Adults and Children Legal Implications Personnel Implications
Background Documents: (Access via Contact Officer)	Carbon Management Programme: Executive Report ED98067 (7 October 2008) <u>Bromley Council’s GHG Emissions Reporting</u>

APPENDIX A: LBB's (Scope 3) Indirect Procurement Emissions

1. LBB is one of the few councils to have started measuring its procurement emissions, which have now been included as part of CMP3.
2. The carbon impact of the Council's annual spend (i.e. supply chain emissions from the services and products procured by the Council) are twice as large as the Council's own direct emissions.
3. Although not directly responsible for these emissions, the Council recognises that it can influence the reduction of GHGs in its supply chain, but in particular, through closer engagement with its (municipal) waste management contractor and through its internal procurement process.

Procurement

4. Whole life cost and life cycle analysis methodologies, if considered throughout the procurement process, can ensure value for money and environmental stewardship.
5. The Carbon Management Team is currently developing a toolkit and guidance to embed robust circular economy principles into LBB's procurement process (whereby resources are valued and waste is minimised, rather than a linear economy in which we make, use, then dispose). Ultimately, this will help LBB better manage its scope 3 impacts. Once developed, these processes will hopefully be rolled out across other local authorities, and help contribute to a low carbon economy for London.

Municipal Waste Management

6. By prioritising the waste hierarchy and promoting waste minimisation (i.e. subsidising home compost bins) and reuse (i.e. in preference to recycling), LBB aims to reduce the amount of waste that occurs in the first place, thereby reducing supply chain carbon emissions.
7. Biodegradable waste in landfill releases methane which is a harmful greenhouse gas that is 80 times more powerful than carbon dioxide at warming the earth over 20 years. LBB are providing subsidised home compost bins and providing a separate weekly food waste collection service to residents to divert biodegradable waste from landfill (in addition to subsidised water butts so that residents can collect and use rainwater to water plants).
8. Bromley has committed (in partnership with its waste service provider, Veolia) to reducing the amount of waste sent to landfill to just 2% by 2022.
9. Household recycling collections reduce carbon emissions by ensuring the material value of recyclate is captured. In addition, they offset vehicle miles driven by residents taking their recycling to recycling points. As of September 2019, Bromley's household recycling collection service has now been expanded to include batteries, small electrical items and textiles.
10. Veolia's new vehicle fleet are Euro 6 standard and compliant with the Ultra Low Emission Zone (ULEZ).
11. Plastic reduction: the Carbon Management Team are currently developing a public 2020 campaign to encourage the uptake of refillable water bottles, increase the uptake of refillable water stations amongst high street retailers, and reduce single use plastic bottles.

APPENDIX B: Bromley's Borough-wide Emissions

1. The Council reports annually on its borough-wide emissions – the *CO₂ Emissions (Local Authorities) Performance Reports* can be accessed on the Council's website via the Sustainability page.
2. The majority of Bromley's borough emissions comes from domestic properties (53%) compared to road transport (28%) and commercial (19%) emissions. Bromley is the third worst performer in terms of per capita domestic emissions in London. Hence any meaningful programme of works would sensibly focus on helping residents to make their homes more energy efficient, alongside road transport and waste management.
3. However, reducing the borough's emissions in a significant way cannot be achieved by any one organisation – it is a mammoth undertaking requiring transformative action and a collective effort by many organisations, locally and nationally. Importantly, it will depend on urgent government action, leading through national policies and taxation, and providing increased powers and financial resources to help local authorities accelerate their work towards reducing borough-wide emissions.
4. Whilst borough-wide emissions are outside of LBB's 2029 Net Zero Carbon remit, the Council continues to take steps to help local residents and businesses to reduce their carbon emissions through awareness initiatives and the provision of energy efficiency support to homeowners. The Carbon Management Team is currently involved in the following areas to help drive down indirect borough-wide emissions:
 - LBB's Carbon Offset Fund Programme supports low carbon development and innovation by driving new technologies and continuing investment in local energy efficiency projects. This programme is designed to reduce carbon emissions across the borough, whilst benefitting local communities. Money is paid to LBB through local developments as part of the planning process (s106 agreements).
 - Participating in the London Environment Directors' Network (LEDNet) Climate Cluster, which brings together London's Climate Change Lead Officers to agree on a forward plan on how best to tackle/reduce London's emissions and poor air quality.
 - Working with the Transport & Highways team to identify potential opportunities for accelerating electric vehicle charging points infrastructure within the borough.
 - Currently setting up a fuel cost advice and referral service within the borough to help residents reduce their energy bills, avoid cold homes and reduce their carbon footprint through energy efficiency measures and switching suppliers. Similar schemes have made demonstrable carbon reductions in neighbouring Lewisham and Greenwich.
 - Working with the Regeneration team to identify potential opportunities for enhancing the energy efficiency of future temporary modular home accommodation commissioned by the Council.
5. Elsewhere in the Council, the work of other service departments, such as Traffic and Highways, are also playing a key role in reducing borough emissions, including the following examples:
 - Bromley has an extensive programme to enable and encourage residents to walk and cycle and has developed school travel plans to promote walking and cycling to school, as well as equipping the borough's residents with the skills for safe cycling through our adult and child cycle training (Bikeability), DR Bike sessions, and escorted rides.

- LBB continues to invest in walking and cycling infrastructure to make these modes more attractive through the Cycleways programme, the Shortlands Village scheme, and more localised Local Implementation Plan (LIP) funded schemes to address barriers to walking and cycling, as well as improving integration with public transport, such as cycle hubs at stations.
- The use of electric vehicles and charge points are growing in the borough and Bromley will continue to support this initiative including Rapid Electric Vehicle Charge Points.
- The LIP (2019) contains proposals to enhance urban greening through tree planting and green wall trials.
- The LIP (2019) also commits the Council to reducing emissions from its own fleet and encouraging those of contractors working for the Council to do the same.
- The Council has recently approved a street lighting LED upgrade project involving the improvement of a further 4000 lights across the borough, that will not only improve light quality and efficiency, but also reduce maintenance/energy costs, saving the council over £300k each year whilst also significantly reducing carbon emissions.
- Anti-idling measures: The Council are currently working through the most effective and efficient way of undertaking the enforcement, particularly around schools, and hope to have this in place early 2020. Campaign material is likely to include banners, flyers and car-stickers. Additional Civil Enforcement Officers will be utilised for the campaign.

APPENDIX C: CMP1 – CMP3 Invest to Save Projects

Project Status	Project Title	Project Type	Loan £	Project Installation Date	Payback (years)
Fully Paid	Voltage Optimisation Civic Centre	Voltage Management	89,827	2009	2.9
	Retrofit lit signs with PECUs	Street lighting	43,482	2009	1.6
	Retrofit PECUs to lit signs phase 2	Street lighting	49,385	2010	3.4
	Centre Island Posts - Fit Photoelectric Cell Units	Street lighting	17,920	2011	2.5
	North Block Lighting (full)	Lighting - Upgrades	83,920	2011	4.9
	Fitting electronic gear to MI26 lanterns	Street lighting	93,436	2011	4.5
	PECU Controlling Crossing Bollards	Street lighting	19,928	2012	1.7
	Server room - evaporative cooling	Cooling	29,843	2012	1.4
	SON Replacement & Dimming LED	Street lighting	303,069	2013	4.6
	Beckenham Library - heat control and insulation	Multiple project	6,386	2015	5.0
	Civic Centre canteen LED lighting upgrade	LED Lighting	9,495	2015	4.6
	Civic Centre underground staff car park	LED Lighting	4,630	2016	3.1
	Multi Storey Car Parks - LED Lighting Upgrade	LED Lighting	205,587	2016	3.7
Pipeline	Civic Centre - Stockwell building refurbishment	LED Lighting		-	-
	Street Lighting Phase II LED	Street Lighting	1,123,952	2020	3.9
Total			2,080,860		