Executive Board – 17th March 2020

Subject:	Eastcroft Depot Electricity Supply Upgrade
Corporate Director(s)/Director(s):	Andy Vaughan, Corporate Director for Commercial and Operations
Portfolio Holder(s):	Councillor Sally Longford, Portfolio Holder for Energy, Environment & Democratic Services
Report author and contact details:	Katie Greenhalgh, Energy Projects Manager Katie.greenhalgh@nottinghamcity.gov.uk 011587 62460 07904 383073

Subject to call-in: ☒ Yes ☐ No

Key Decision: ☒ Yes ☐ No

Criteria for Key Decision:

(a) ☒ Expenditure ☐ Income ☐ Savings of £1,000,000 or more taking account of the overall impact of the decision

and/or

(b) Significant impact on communities living or working in two or more wards in the City ☐ Yes ☒ No

Type of expenditure: ☐ Revenue ☒ Capital

Total value of the decision: See exempt Appendix A

Wards affected: Meadows

Date of consultation with Portfolio Holder(s): 11 February 2020

Relevant Council Plan Key Theme:

Nottingham People	☒
Living in Nottingham	☒
Growing Nottingham	☐
Respect for Nottingham	☐
Serving Nottingham Better	☒

Summary of issues (including benefits to citizens/service users):

Eastcroft Depot is an operational site to the South East of Nottingham City, with a history of energy innovation through its proximity to the city's incinerator and associated district heat network. Eastcroft Depot is owned by Bridge Estate and is occupied by a number of Nottingham City Council (NCC) Services areas, including Highways, Waste, Neighbourhood Services, Energy Services, Fleet Services, Catering etc. The site is the proposed location for a number of innovation projects, for which funding and approval have already been sought and received:

- **Fleet electrification**: the majority of NCC's fleet is based at Eastcroft, including vans, cage tippers, sweepers and minibuses. This fleet is gradually being converted to the UK's largest LA electric vehicle fleet, with 30% (c.140 vehicles) already converted.
- **Electric RCVs**: Fleet Services have purchased two of the UK's first fully electric Refuse Collection Vehicles and there are scheduled for delivery to Eastcroft in Autumn 2020.
- **Vehicle2Grid:** NCC has secured Interreg NWE funding through the CleanMobilEnergy project to introduce the UK's largest V2G trial, with 40 EV chargepoints to be installed which allow a bidirectional flow of energy, from grid to vehicle and from vehicle to grid and adjacent buildings. This means that electric vehicles can be used as batteries to support the grid at peak times and reduce energy bills on site.
- **Large scale renewable energy and battery storage**: through the CleanMobilEnergy project, deployment of 3 commercial PV systems at Eastcroft has taken place, and a large stationary battery is planned, to bring the site "off-grid" during peak times.

These projects will make significant financial and carbon savings for the Council, estimated to be over £200,000 and c. 45tCO2e per annum.

Through work to deliver these projects and co-ordination between departments at the Depot Strategy Group, it has been identified that a new electricity supply to the site is required. In its current state, the site's electrical infrastructure means that:

- No additional EV charging can be installed at the site, including the eRCVs which would then need to be based at Queen's Drive P&R
- Solar PV installed on the Tamar building is unable to generate at maximum capacity,
- We are unable to install equipment funded through the CleanMobilEnergy project (V2G and battery storage), and
- Basic improvement projects on site such as installation of electric heating in the Medway building are putting electrical infrastructure at risk of being overloaded.
- There is limited ability to take advantage of opportunities and improvements to operations.

Eastcroft Depot is also supplied on a ring main from the substation on site, which is not resilient in the event of failure.

The proposal described in this report (see section 1 "Reasons for recommendations") will facilitate the following:

- It will be possible to convert all fleet based at the Depot to electric and guarantee that there is enough power available to charge them, hugely reducing our environmental impact and improving air quality within the city, as well as significantly reducing costs, with EVs significantly cheaper to operate than diesel alternatives.
- An area of the site has been allocated as our "fleet charging hub", following consultation at the Depot Strategy Group, and additional provision has been allowed for possible conversion of the full RCV fleet to electric in the future.
- The proposal also means that we can fulfil funding obligations and install V2G and battery storage technologies at the site, reducing operating costs and generating new income streams.
- Solar PV will be able to generate at its maximum potential, reducing costs and cutting carbon.
- Importantly, the whole site's electrical infrastructure will be upgraded and futureproofed to improve the safety of operations and building use, and allow for expansion, such as the recent incorporation of Rushcliffe BC operations to the site.

Exempt information:
An appendix to the report is exempt from publication under paragraph 3 of Schedule 12A to the Local Government Act 1972 because it contains information relating to a tender process and, having regard to all the circumstances, the public interest in maintaining the exemption outweighs the public interest in disclosing the information. It is not in the public interest to disclose this information because it would jeopardise the Council receiving best value for money in a competitive tender process, following this approval process.

Recommendation(s):

1 Approve the capital funding allocation required for the new electricity supply, as detailed in the exempt financial Appendix A.

2 Approve procurement of a Principal Contractor to deliver the works described in this report, through a competitive tender process and to delegate authority to Head of Energy Services,

	to award and sign the contract with the chosen provider following the outcome of the tender process.
3	Approve the spend of capital, as detailed in the exempt financial Appendix A, following the award of the works to a Principal Contractor through the competitive tender process.
4	Approve the budget for fuel and vehicle tax to be transferred from service areas' budget to Fleet Services when a diesel vehicle is replaced with an EV (including the retrospective application of this decision to include EVs already purchased). Approve that this budget transfer is ring-fenced to fund the increased costs associated with the electrification of the fleet, such as the electricity supply upgrade referenced in this report.
5	Approve that all future vehicle purchases will be 100% Battery Electric Vehicles, unless Fleet Services determine that this is not possible, in order to ensure that fuel savings are achieved.
6	To note that these recommendations are subject to approval in relation to the proposed works to the site being separately received from the Trusts and Charities Committee.

1 Reasons for recommendations

1.1 Eastcroft Depot currently has 6 small, independently metered electricity supplies. The majority of these supplies are at capacity, with very limited capacity available on the remainder. The consequence of this, at present, is that no additional EV charging can be installed at the site, including for the eRCV pilot, Solar PV installed on the Tamar building is unable to generate at maximum capacity, we are unable to install equipment funded through the CleanMobilEnergy project (V2G and battery storage) and basic improvement projects on site such as installation of electric heating in the Medway building are putting electrical infrastructure at risk of being overloaded. Eastcroft Depot is also supplied on a ring main from the substation on site, which is not resilient in the event of failure.

1.2 This puts delivery of Council Plan pledges at risk, including achieving a Carbon Neutral city by 2028, improving air quality and generating income and achieving financial savings.

1.3 Energy Services have worked up a solution to this problem and have sought and received permission from Western Power Distribution to consolidate the 6 existing supplies into 1 large High Voltage incoming supply, with a new substation to be located adjacent to the Conway building (see Appendix B). New radial supplies will then be installed from the substation to each building and to feeder pillars to supply EV chargers and other equipment.

1.4 The new electricity supply involves the installation of HV cabling and associated civils to connection points at London Road and Lady Bay Retail Park. It also requires the construction of a new substation on site and electrical and civils works associated with re-cabling the site. This work has been fully costed, including removal of asbestos, contaminated land and the planning application associated with listed buildings on site. Expected project

costs are detailed in the financial Appendix A but will be confirmed through a competitive tender process.

1.5 The proposal will bring the following benefits:

- Improved air quality
- Reduced Carbon emissions
- Increased renewable energy generation
- Reduced energy costs
- Reduced diesel costs
- New income streams provided by supplying Western Power Distribution and National Grid with “grid services”
- Funding obligations met, including reduced risk of “clawback”
- Increased resilience of site’s electrical infrastructure
- Site futureproofed against new operations and working methods
- Creation of an exemplar energy/transport innovation hub

1.6 To ensure value for money, the proposal will be taken through a competitive tender process to source a suitable Principal Contractor to deliver the works. NCC do not have the skills and capacity to deliver the whole solution in house.

2 Background (including outcomes of consultation)

2.1 Go Ultra Low

2.1.1 In January 2016 the Office for Low Emissions (OLEV) announced that Nottingham, partnered with Nottinghamshire County Council and Derby City Council, was one of four successful cities in securing funding for the Go Ultra Low City Programme nationally. As a result, £6.12m of funding has been made available to support measures across the Nottingham and Derby areas for a package of measures to support the uptake of Ultra-Low Emission Vehicles up to 2019/20.

2.1.2 The funding includes allocation for converting NCC fleet to electric with 30% converted to date, including street sweepers, 3.5t cage tippers, the first electric minibuses to be used by a LA in the UK, as well as standard vans and cars, most of which are based at Eastcroft.

2.1.3 NCC has also bought 3 ULEV (Ultra Low Emission Vehicle) taxis to loan out to drivers to encourage uptake, also based at Eastcroft, and is building the first ULEV service centre run by a LA at Eastcroft. Over the last three years, the number of ULEVs on our roads has grown by more than 200% - NEVS (Nottingham Electric Vehicle Services) is being developed to support and encourage these growing numbers, giving drivers the confidence to switch to electric knowing there is a local, knowledgeable and affordable service station to tend to all their needs as they arise.

2.1.4 This concentration of conversion to electric vehicles and the associated charging infrastructure and electricity consumption has put pressure on Eastcroft’s electrical infrastructure, which is now at capacity and requires upgrading to ensure that both existing and future demands can be met.

2.2 CleanMobilEnergy

2.2.1 CleanMobilEnergy is a three year, European funded project which involves many partners across North West Europe working together to develop a

Smart Energy Management System, integrating Renewable Energy and Electric Vehicles.

2.2.2 Nottingham City Council has secured funding to deliver a City Pilot demonstrator as part of the project and will install an innovative 'vehicle to grid' (V2G) commercial electric vehicle charging at Eastcroft Depot. The project is Project Managed by Energy Services and is a collaboration between Fleet, Transport Strategy and Energy teams. The project will seek to install:

- 40 battery electric V2G compatible vans and cars
- Up to 40 V2G bi-directional units to enable the vehicles to be used for energy storage and grid balancing
- A minimum of 88kW of solar photovoltaics at Eastcroft Depot
- A large lithium ion battery,
- A purpose built 'Interoperable Energy Management System' to control energy flows

2.2.3 The demonstrator aims to maximise the use of locally generated renewable generation to cut the carbon emissions and costs associated with charging electric fleet vehicles, as well as reducing peak demand by using vehicles for short-term storage.

2.2.4 The total project budget is €7.2 million which is partly funded by Interreg North West Europe, of which €1.6 million will be allocated to Nottingham during the project lifetime from September 2017 until March 2021.

2.2.5 In order for the equipment to be installed, Western Power Distribution, Nottingham's DNO (Distribution Network Operator), have confirmed that a new electricity supply is required at Eastcroft which is capable of the import and export demands required by the project.

2.3 **Depot Strategy Group**

2.3.1 The Depot Strategy Group ensures the effective operation of Eastcroft Depot, with input from all Service areas based at the site and other key stakeholders.

2.3.2 The Group has been consulted with to ensure that any upgrades to the site's electrical infrastructure are delivered with minimal impact on operations and are resilient to current and future demands of site users.

3 **Other options considered in making recommendations**

3.1 **Do nothing** – this option was discounted due to the risk to existing projects and funding streams, including electrification of fleet and installation of renewable energy solutions, which could include clawback of funds already spent. This option would also exclude a range of identified benefits including reduced costs, opportunity for new income streams and carbon reduction.

3.2 **Install charging and renewable infrastructure and equipment at other sites** – this option was discounted, as electrical infrastructure at other sites was found to have similar conditions and was unable to accommodate the equipment to be installed. This option would also have significant operational impacts, including increasing travel distances for fleet vehicles and lack of parking availability.

3.3 **Source alternative funding** – this option has been thoroughly explored, including liaising with funding bodies (Go Ultra Low, Interreg NWE, BEIS etc) to see if extra funding could be sourced, as well as requesting funding from the Bridge Estate that owns the site. An allowance had not been made for this work in funding bids due to the detailed technical feasibility required to assess the electrical infrastructure and potential loadings, which ultimately identified this issue, and funders were unable to commit additional funds. The work is also outside the remit of the Bridge Estate's landlord responsibilities. A capital loan was found to be the only available option.

4 Finance colleague comments (including implications and value for money/VAT)

4.1 See exempt appendix A.

Matthew Connell – Commercial Business Partner (Commercial & Operations)
Tom Straw – Senior Accountant (Capital Programmes)
Claire Gavagan – Strategic Business Partner (Commercial & Operations)
03/03/2020

5 Legal and Procurement colleague comments (including risk management issues, and legal, Crime and Disorder Act and procurement implications)

Procurement

5.1 Procurement colleagues will assist with process of contracting with a suitably qualified and experienced contractor to carry out the electrical works referenced in this report.

Paul Ritchie, Procurement Category Manager, 26/02/2020.

Legal comments

5.2 The site is not currently capable of supporting the energy and fleet services projects proposed to be delivered from it.

5.3 The network extension will enable the Council to deliver the projects, each of which seek to ensure the Council meets its carbon neutral agenda and objectives.

5.4 Doing nothing will not only prevent the delivery of the projects practically but will also result in the withdrawal of funding offered to the Council for these projects.

5.5 Due to the specialist nature of the works, a contractor will need to be procured following an EU compliant tender process, which legal colleagues will support procurement colleagues with.

5.6 As it is understood that the depot site sits on Bridge Estate land, the works will need to be additionally approved by the Trusts and Charities Committee so that they can be satisfied the works will ensure continued adherence to its charitable objectives.

Dionne Screaton, Legal, Solicitor 26/02/2020

6 Strategic Assets & Property colleague comments (for decisions relating to all property assets and associated infrastructure)

6.1 Property supports the recommendations within this report.

6.2 The fragility of the current infrastructure limits the potential development opportunities of the Eastcroft site.

6.3 Infrastructure improvements must also be looked at in the context of City power infrastructure as a whole and, more specifically, the lack of capacity to support major developments in the south side gateway.

6.4 In general asset management terms and future-proofing, the site will be enhanced by implementing the recommendations.

Philip Dawes, Strategic Assets and Property, Business Partner 26/02/2020

7 Social value considerations

7.1 N/A

8 Regard to the NHS Constitution

8.1 N/A

9 Equality Impact Assessment (EIA)

9.1 Has the equality impact of the proposals in this report been assessed?

No ☒
An EIA is not required because:
(Please explain why an EIA is not necessary)
N/A - No significant change to policies or practices or potential for discrimination; infrastructure project on NCC commercial property.

Yes ☐
Attached as Appendix x, and due regard will be given to any implications identified in it.

10 List of background papers relied upon in writing this report (not including published documents or confidential or exempt information)

10.1 N/A

11 Published documents referred to in this report

11.1 Go Ultra Low: Executive Board report May 2018

11.2 Leader's Key Decision 3202 - CleanMobilEnergy (Commercial Renewables and Electric Vehicle Pilot)