

Project Title: Street Lighting Asset

Business Case

Version No:1.0

Issue Date:

VERSION HISTORY

Version	Date Issued	Brief Summary of Change	Owner's Name
Draft	00.00.00	First Draft Version	Graham Lymbery
Final	03.02.21	Final Version	Graham Lymbery

Contents

1.0. EXECUTIVE SUMMARY.....	7
1.1. Introduction	7
1.2. Strategic Case.....	7
1.2.1. The Strategic Context.....	7
1.2.2. The Case for Change	7
1.3. Economic Case	7
1.3.1. The Long List	7
1.3.2. The Short List	7
1.3.3. Key Findings	7
1.3.4. Overall Findings: The Preferred Option	9
1.4. Commercial Case.....	10
1.4.1. Procurement Strategy	10
1.4.2. Required Services.....	10
1.4.3. Potential for Risk Transfer and Potential Payment Mechanisms.....	10
1.5. Financial Case.....	10
1.5.1. Financial Expenditure.....	10
1.5.2. Overall Affordability and Balance Sheet Treatment	10



1.6.	Management Case	11
1.6.1.	Project Management Arrangements	11
1.6.2.	Benefits Realisation and Risk Management.....	11
1.6.3.	Post Project Evaluation Arrangements	11
1.7.	Recommendation.....	11
2.0.	THE STRATEGIC CASE.....	12
2.1.	Organisational Overview.....	12
2.2.	Business Strategies.....	12
2.3.	Other Organisational Strategies.....	12
2.4.	Investment Objectives	12
2.5.	Existing Arrangements	12
Table 1: Existing Costs		12
2.6.	Business Needs	13
2.7.	Potential Business Scope and Key Service Requirements.....	13
Table 2: Business Scope and Key Service Requirements.....		13
2.8.	Main Benefits Criteria	13
Table 3: Investment Objectives and Benefits.....		14
2.9.	Main Risks	14
Table 4: Main Risks and Counter Measures		15
2.10.	Constraints	15
2.11.	Dependencies.....	16
3.0.	THE ECONOMIC CASE.....	17
3.1.	Critical Success Factors	17
3.2.	Short-Listed Options	17
3.3.	Economic Appraisal.....	18
3.3.1.	Introduction	18
3.3.2.	Estimating Benefits	18



Table 6: Main Benefits.....	19
3.3.3. Estimating Costs.....	19
3.3.4. Net Present Cost Findings	19
Table 7: Key Results of Economic Appraisals	20
3.3.5. Option Ranking.....	21
Table 8: Summary of Results	22
3.3.6. Option Appraisal Conclusions	22
3.3.7. Qualitative Benefits Appraisal.....	22
3.3.8. Methodology.....	22
3.3.9. Qualitative Benefits Criteria.....	23
Table 9: Qualitative Benefits Criteria	23
3.3.10. Qualitative Benefits Scoring	23
3.3.11. Analysis of Key Results	23
Table 10: Benefits Appraisal Results	23
3.3.12. Risk Appraisal – Unquantifiables.....	24
3.3.13. Methodology.....	25
3.3.14. Risk Scores.....	25
Table 11: Summary of The Risk Appraisal Results.....	25
3.4. The Preferred Option	27
Table 12: Summary of Overall Results.....	27
3.5. Sensitivity Analysis	27
3.5.1. Results of Switching Values.....	27
Table 13: Changes (%) Required to Equate with the Preferred Option.....	27
3.5.2. Key Observations	28
3.5.3. Key Observations	28
3.6. Preferred Option.....	28
4.0. THE COMMERCIAL CASE.....	29



4.1.	Introduction	29
4.2.	Required Services.....	29
4.3.	Potential for Risk Transfer.....	29
Table 15: Risk Transfer Matrix.....		29
4.4.	Proposed Charging Mechanisms.....	30
4.5.	Proposed Contract Lengths.....	30
4.6.	Proposed Key Contractual Clauses.....	30
4.7.	Personnel Implications (Including TUPE)	30
4.8.	Procurement Strategy and Implementation Timescales.....	30
4.9.	FRS 5 Accountancy Treatment	30
5.0.	THE FINANCIAL CASE	31
5.1.	Introduction	31
5.2.	Impact on The Organisation’s Income and Expenditure Account.....	31
Table 16: Summary of Financial Appraisal		31
5.3.	Impact on The Balance Sheet.....	31
5.4.	Overall affordability	31
6.0.	THE MANAGEMENT CASE	33
6.1.	Introduction	33
6.2.	Programme Management Arrangements	33
6.3.	Project Management Arrangements	33
6.3.1.	Project Reporting Structure	33
6.3.2.	Project Roles and Responsibilities	33
6.3.3.	Project Plan	33
Table 17: Project Plan.....		33
6.4.	Outline Arrangements for Change and Contract Management.....	34
6.5.	Outline Arrangements for Benefits Realisation	34
6.6.	Outline Arrangements for Risk Management	34



6.7. Outline Arrangements for Post Project Evaluation34

6.7.1. Post Implementation Review (PIR)34

6.7.2. Project Evaluation Reviews (PERs)34

6.8. Contingency Plans35



1.0. EXECUTIVE SUMMARY

1.1. Introduction

This FBC seeks approval to invest £12,750,245 (PWLB) in the Street Lighting Asset Project.

1.2. Strategic Case

1.2.1. *The Strategic Context*

Sefton Council made a Climate Emergency Declaration in July 2019 which has led to the development of Sefton's Climate Change Emergency Plan and associated Action Plan. These seek to reduce Sefton Council's carbon emissions to net zero by 2030. The Council also wants to reduce energy costs as part of good financial management.

1.2.2. *The Case for Change*

The energy used by Street Lighting accounts for 26% of the Council's total carbon footprint (based on 2019/20 figures and conversion rate). These energy costs are increasing year-on-year at a rate above inflation and incur a significant cost to the Council.

The Urban Traffic Control (UTC) Asset also requires upgrading to LED and will reduce energy consumption.

In relation to climate change the energy used accounts for a significant portion of the carbon emissions that the Council seeks to reduce.

1.3. Economic Case

1.3.1. *The Long List*

Options focused around the reduction of energy usage by the street lighting asset, in some cases this requires replacement of life expired assets to facilitate this. Replacement of lantern units with LED units allows for dimming of the units to programmed times. A central management system was initially considered but it was obvious that the cost was disproportionate to the benefits.

The only option considered for UTC was replacement as this is the only viable option.

1.3.2. *The Short List*

The following short list of options emerged:

- **Option 1** – Status Quo, Do Nothing or Do Minimum



- **Option 2** – The Reference Project – Upgrading of all street lighting assets to LED using current technology which includes replacement of life expired assets such as lighting columns.
- **Option 3** – The More Ambitious – Upgrading of all street lighting assets to LED using innovative technology (solar units) which includes replacement of life expired assets such as lighting columns.
- **Option 4** – The Less Ambitious – Upgrading of street lighting assets that use the most energy which does not include the replacement of life expired assets such as lighting columns.

1.3.3. Key Findings

Street Lighting Asset	Undiscounted (£)	Net Present Cost (Value) (£)
Option 1 – Do Nothing/Do Minimum/Status Quo		
Revenue/ current	160,614,561	
Total costs	160,614,561	
	Undiscounted (£)	Net Present Cost (Value) (£)
Option 2 – Reference Project/ Outline Public Sector Comparator		
Capital	12,750,245	
Revenue/ current (incl Borrowing Repayments)	92,845,509	
Total	105,595,754	(25,913,564)
	tCo2 e pa 1,655*	Estimated Annual kWh Savings 7,161,519
	Undiscounted (£)	Net Present Cost (Value) (£)
Option 3 - Reference Project/ Outline Public Sector Comparator (more ambitious)		
Capital Revenue/ current Risk retained Optimism bias	This option cannot be assessed until the on-site testing has been completed.	



Total		
IRR	tCo2 e pa	Estimated Annual kWh Savings
	Undiscounted (£)	Net Present Cost (Value) (£)
Option 4 - Reference Project/ Outline Public Sector Comparator (less ambitious)		
Capital	7,395,814	
Revenue/ current	101,155,525	
Total	108,551,339	(23,922,487)
	tCo2 e pa 1,415*	Estimated Annual kWh Savings 6,128,358

*Using a conversion rate of 0.23104 to convert from kWh to tCO2

Option appraisal conclusions:

- Option 1 – this option ranks 3rd.
- Option 2 – this option ranks 1st.
- Option 3 – this option can't be assessed at this time.
- Option 4 – this option ranks 2nd.

UTC	Undiscounted (£)	Net Present Cost (Value) (£)
Option 2 – Reference Project/ Outline Public Sector Comparator		
Capital	£1,053,853	
Non-cash releasing benefits		
Total		(6,918,928)
	tCo2 e pa 120*	Estimated Annual kWh Savings 517,617

*Using a conversion rate of 0.23104 to convert from kWh to tCO2



1.3.4. Overall Findings: The Preferred Option

Summary of overall results

Evaluation Results	Option 1	Option 2	Option 3	Option 4
Economic appraisals	3rd	1st	NA	2nd
Benefits appraisal	3rd	1st	NA	2nd
Risk appraisal	3rd	1st	NA	2nd
Overall ranking	3rd	1st	NA	2nd

Overall conclusions – option 2 is the preferred option.

1.4. Commercial Case

1.4.1. Procurement Strategy

It is intended to use the existing service contracts.

1.4.2. Required Services

Procurement and installation of LED lighting units and replacement of life expired assets required to undertake replacement of lighting units.

1.4.3. Potential for Risk Transfer and Potential Payment Mechanisms

Payment will be as specified in the existing contract. The main risk transfer is for the contractor to purchase the lantern units removing elements of programming risk from the Council.

1.5. Financial Case

1.5.1. Financial Expenditure

Summary of financial appraisal

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
	£	£	£	£	£	£	£	£
Preferred option:								



Capital PWLB		3,271,750	3,742,035	3,605,580	2,130,880			12,750,245
Capital Highways Maintenance		300,000	300,000	300,000	300,000			1,200,000
Total		3,571,750	4,042,035	3,905,580	2,430,880			13,950,245
Funded by:								
Existing	2,790,700	2,790,700	2,790,700	2,790,700	2,790,700	2,790,700	2,790,700	
Saving		158,913	278,319	455,351	520,362	194,088	91,840	
Total	2,790,700	2,631,787	2,512,381	2,335,349	2,270,338	2,596,612	2,698,860	

1.5.2. Overall Affordability and Balance Sheet Treatment

The business case demonstrates the project is affordable over the life of the project with all capital repayment costs built in, based on the assumptions highlighted in this document. Not carrying out this project will result in further budget issues in the coming year

A contribution from the LTP programme (capital) is being invested in each of the next 4 years, which limits the prudential borrowing costs.

The scheme will generate savings for the first 6 years of the project without increasing the current budget for inflation. It is recommended that these savings are reserved each year which it is anticipated that there should be no revenue implications until year 12 (where the energy price increases will have caught up).

The model assumes an average energy price increase of 8% and other inflationary increases of 2% each year. It also assumes a policy change for prudential borrowing from 10 years to 20 years.

Sensitivity analysis has been provided for changes in energy prices, borrowing rates and capital costs.

For the UTC asset this will be procured and funded by Liverpool City Region Combined Authority. As such it will have no impact on the Council's balance sheet but it will contribute to the Council's carbon reduction target.



1.6. Management Case

1.6.1. Project Management Arrangements

Due to the duration of the project an in-house project team will be established that delivers both this project and the day-to-day functions associated with this service area.

1.6.2. Benefits Realisation and Risk Management

Benefits realisation has been programmed. A risk register has been established and priced risk has been included in the project costings.

1.6.3. Post Project Evaluation Arrangements

Post project review will be undertaken in accordance with best practice.

1.7. Recommendation

It is recommended that option 2 be progressed with delivery by the current service contractors and an in-house project team established to manage the project.



2.0. THE STRATEGIC CASE

2.1. Organisational Overview

Sefton Council is the Highway Authority and as part of this role maintains and operates Street Lighting on the highway network, this includes all street lighting that illuminates the highway and lighting that illuminates signs that provide information for the road user. Sefton Council also operates traffic signals (Urban traffic Control – UTC) on the highway network.

2.2. Business Strategies

The main business strategies that are relevant are as follows:

Sefton Council made a Climate Emergency Declaration in July 2019 which has led to the development of Sefton's Climate Change Emergency Plan and associated Action Plan. These seek to reduce Sefton Council's carbon emissions to net zero by 2030. The energy used by Street Lighting accounts for 26% of the Council's total carbon footprint (based on 2019/20 figures).

Highway Authorities have a duty of care to the road user. This duty of care does not imply any duty on the Highway Authority to keep the public lighting lit. However, an authority responsible for the maintenance of public lighting should be able to demonstrate that they have systems in place to maintain the public lighting equipment in a safe condition, including the detection of dangerous equipment.

As the Highway Authority Sefton Council has to comply with the relevant guidance and legislation relating to highways. This includes legislation relating to the type of equipment used such as the move away from halogen lamps in traffic signals by 2023.

2.3. Other Organisational Strategies

As a Council dealing with public funds we have a duty to use those funds effectively and efficiently. Our approach to setting budgets and some of the financial challenges that the Council face are set out in our budget reports. These clearly indicate that the Council is under financial pressure and as such any savings or cost avoidance that we can make without detriment to our outcomes we should investigate.

2.4. Investment Objectives

The investment objectives for this project are as follows:

- investment objective 1: Reduction of carbon emissions
- investment objective 2: Reduction in energy consumption
- investment objective 3: Reduction in long term maintenance requirements
- investment objective 4: Improvement in the street environment



2.5. Existing Arrangements

Sefton Council has 36,164 street lighting assets. This total comprises a combination of lighting columns, illuminated & non-illuminated bollards, illuminated signs, refuge beacons, ornamental columns, zebra beacons and wall mounted units. The Authority predominantly uses a mix of high-pressure sodium, low pressure sodium, ceramic metal halide and LED lamp types. Residential roads are typically lit with lamps of 70w and below and main routes lit with lamps between 90w and 250w. Although the large majority of this equipment is in good condition approximately 22% of the Authority's Street Lighting stock has exceeded their expected design life, placing such columns in the category of potentially structurally defective. These columns present a much greater risk of catastrophic failure and are categorised as high risk.

Sefton Council has 261 Traffic Signal installations comprising of junctions, pelican, puffin, toucan & pegasus crossings. 111 of these installations have LED type lamp bulbs, with the remaining 150 having Non-LED type lamp bulbs. The replacement bulbs for the Non-LED lamp type are being phased out by 2023 with companies currently not manufacturing new stock (Due to European Law). As result the 150 Non-LED type installations we have within the authority are at risk of becoming unmaintainable and requiring switching off / decommissioning. Which represents a risk to both pedestrian and road user safety, and is why we have categorised it as High Risk.

Sefton has four members of staff responsible for the management of the street lighting and UTC assets supported by term maintenance contractors, they also have administrative and management support. The staff members are responsible for design and specification of new street lighting and UTC systems, maintaining the database of the Council's asset, reviewing safety and condition of the asset, issuing instructions to the contractor for maintenance and replacement of the asset, operation of the asset, processing of invoices and responding to requests for service and complaints.

For the purposes of this business case the options for UTC and Street Lighting will be dealt with separately. This is because there will only be two options for UTC and this is likely to be funded via a different route to the Street Lighting.

Table 1: Existing Costs

Existing costs (£)	Street Lighting	Urban Traffic Control	Total
Revenue	2,791,000	407,000	3,198,000
Capital	300,000	135,000	435,000
Duration of contract	HM20 Street Lighting Maintenance and	Term Service Contract Intelligent Transport	



	Installation 2018 - 2024	Systems Maintenance & Installation 2018 - 2028	
--	--------------------------	--	--

2.6. Business Needs

The needs can be split into three key areas:

- The need to reduce energy consumption
- The need to reduce the backlog of assets beyond their design life
- The need to improve the operation of our asset

Expanding on these in turn:

Street lighting and UTC uses 44% of the electricity consumed by the Council and this not only has a significant cost but is a cost that we expect to increase year on year at a rate in excess of inflation. The breakdown of electricity costs is included in appendix 5.

We have circa 8,000 columns that are beyond their design life, this does not mean that they are about to fail but it does mean that they are at higher risk of failure and require regular inspection. The estimate from the technical officers is that 75% of these columns require replacing at this time. New lantern units require less maintenance reducing future costs.

Advances in technology allow modern LED units to be operated much more flexibly either from the column or remotely. This can include dimming at certain times, fault reporting, altering operating parameters. Adoption of this technology could improve the service and make it more adaptive to future needs. New lantern units require less maintenance reducing future costs. Further, the use of LED has environmental benefits to the street environment such as reduced light pollution and improved visibility for road users.

We have a significant proportion of the UTC systems using halogen bulbs which will become unavailable due to legislative changes by 2023. This will effectively mean that these assets are beyond their design life and need upgrading to accept LED lamps. This may also require replacement of poles and controller units.

2.7. Potential Business Scope and Key Service Requirements

The options focus on reduction of energy as this relates to both reduced carbon emissions and operational costs. The initial options for street lighting assets seek to maximise the energy reductions and considers this over a 20 year period (the life span of the typical lighting unit). A subsequent option seeks to maximise the energy reductions for minimum investment so that we can consider the incremental cost benefit for the increased reduction of energy usage in the first option.

- Maximum reduction of energy usage through change in equipment (established technology) with no additional net cost over twenty years



- Maximum reduction of energy usage through change in equipment (innovative technology) with no additional net cost over twenty years
- Maximum reduction of energy usage with minimum investment through change in equipment (established technology)
- Maximum reduction of energy usage with minimum investment through change in equipment (innovative technology)

For UTC the option considered is the replacement of all existing halogen equipment with LED. This combined with the baseline option of continuing as we are comprise the only viable options.

The options within these ranges are considered within the economic cases.

Table 2: Business Scope and Key Service Requirements for Street Lighting Asset

	Minimum	Intermediate	Maximum
Potential business scope	Existing Technology	Innovative Technology	Existing or Innovative Technology
Key service requirements	Reduction of energy usage Provision of suitable illumination on the highway and safe operation of UTC	Reduction of energy usage Provision of suitable illumination on the highway and safe operation of UTC	Maximum reduction of energy usage Provision of suitable illumination on the highway and safe operation of UTC

2.8. Main Benefits Criteria

Satisfying the potential scope for this investment will deliver the following high-level strategic and operational benefits.

Table 3: Investment Objectives and Benefits

Investment objectives	Main benefits criteria by stakeholder group
Investment objective 1	Reduction of Carbon Emissions Contributing to the reduction of climate change and associated risks – global and local benefits.
Investment objective 2	Reduction of Energy Consumption Benefit to Sefton residents through the management of costs incurred to provide the highway service



Investment objective 3	Reduction in long term Maintenance Requirements Benefit to Sefton residents through the management of costs incurred to provide the highway service
Investment objective 4	Improvement in the Street Environment A switch to LED technology for the street lighting asset provides a white light that enables greater depth perception and improved CCTV images. The technology also allows for dimming at certain times which helps to reduce light disturbance in the environment. For traffic signals the lights will be clearer and there will be fewer failures increasing safety.

2.9. Main Risks

The main business and service risks associated with the potential scope for this project are shown below, together with their counter measures.

Table 4: Main Risks and Counter Measures

Main Risk	Counter Measures
Design Solar units are a new technology	Undertake a test of solar units to establish suitability, efficiency and cost.
Development <ul style="list-style-type: none"> • Does current supplier have capacity to deliver • Specification of lantern units • Timescale • change management and project management 	<p>Early engagement with current contractor</p> <p>Mechanism is already established in current contract</p> <p>An experienced project manager has been appointed to develop the business case and establish the project</p> <p>Mechanisms are set out in growth board guidance and in the contract</p>



<p>Implementation risks</p> <ul style="list-style-type: none"> • supplier • timescale • specification and data transfer • cost risks • change management and project management • training and user 	<p>Early engagement following approval of the business case. Planned for circa six months prior to first installation.</p> <p>If current contractor can't deliver we have scope to establish a framework</p> <p>Elements such as development of project team can be undertaken prior to approval of business case</p> <p>Transfer of specification and data is already established under current contract and can be transferred to a new framework</p> <p>Costs are already established in the current contract. There are risks around lantern units associated with Brexit. Contingency and priced risk have been incorporated into the business case.</p> <p>Resilience is being designed into the project management team. The scope of the project is well defined so change management is a minimal risk.</p> <p>An allowance has been made in the programme for training of any new staff members to the project delivery team.</p>
--	---



<p>Operational risks</p> <ul style="list-style-type: none"> • supplier • availability • performance • operating cost • project management 	<p>There are multiple lantern units specified so there will be options. We have the option to develop a framework for delivery of the project.</p> <p>Risk managed through early engagement</p> <p>KPI's are included in the contract and a programme for delivery will be agreed with the contractor. In the event of unsatisfactory performance we can develop a framework for deliver.</p> <p>Operating cost is beyond this projects brief, reduction of energy consumption is the focus. The method used relates directly to the current billing method. Maintenance costs are based on the manufacturer's specification and staff experience.</p> <p>The project team will be developed and appointed to have the skills and capacity required for this project</p>
<p>Termination risks</p>	<p>Alternative supply of service can be procured through a framework</p>

2.10. Constraints

The project is subject to the following constraints:

- Procurement Regulations
- Legal requirements

2.11. Dependencies

The project is subject to the following dependencies that will be carefully monitored and managed throughout the lifespan of the scheme.

- Supply chains
- Contractor Performance
- For UTC – Liverpool City Region Combined Authority who will be procuring the works



3.0. THE ECONOMIC CASE

3.1. Critical Success Factors

The critical success factors (CSFs) are as follows:

- Strategic fit – how well does the option meet the investment objectives
- Value for money – how well does the option
 - Maximise the return on investment
 - Minimise associated risk
- Achievability
 - How deliverable is the option by the Council
 - To what extent do the requirements of the option match the skills and resources available
- Supply side capacity and capability
 - To what extent is the option attractive to suppliers
 - To what extent does the option match the supplier's ability to deliver
- Affordability – to what extent does the option
 - Meet our procurement rules
 - Match funding constraints

3.2. Short-Listed Options

Option 1 – the do nothing, do minimum or status quo

This option provides the benchmark for VFM and is predicated upon the following parameters:

Scope: Operation of the Street Lighting and UTC Asset

Solution: Continue with current operation of the street lighting and UTC asset including ad-hoc replacement of life expired assets.

Service delivery: Continuation of current operation with in-house staff and contractor.

Implementation: Continuation of current operation.

Funding: The current revenue budget would need to be increased year on year to meet rising energy costs.

Option 2 – reference project or outline Public Sector Comparator (PSC)

This option provides an outline of the 'preferred way forward' (**not** preferred option) and is predicated upon the following parameters drawn from the long list for:

Scope: Operation of the Street Lighting and UTC Asset



Solution: Improve the assets through the installation of LED technology and replacement of life expired assets

Service delivery: Management by a project team, delivery by a contractor which could be existing contractor or new

Implementation: Could be let as a single contract, as a number of lots or as a rolling programme

Funding: Capital funding secured by the Council and revenue budget for ongoing operational costs

Option 3 – the reference project or outline PSC (more ambitious) option (note – this option can only be assessed when the technology has been tested and costs established)

This option provides an outline of a more ambitious version of the preferred way forward.

Scope: Operation of the Street Lighting Asset

Solution: Improve the assets through the installation of LED technology and replacement of life expired assets along with reduction in energy requirement through the use of innovative technology

Service delivery: Management by a project team potentially with an industry partner, delivery by a contractor which could be existing contractor or new

Implementation: Could be let as a single contract, as a number of lots or as a rolling programme

Funding: Capital funding secured by the Council and revenue budget for ongoing operational costs

Option 4 – the reference project or outline PSC (less ambitious) option

This option provides an outline of a less ambitious version of the preferred way forward.

Scope: Operation of the Street Lighting Assets that consume the most energy

Solution: Improve the assets through the installation of LED technology and replacement of life expired assets

Service delivery: Management by a project team potentially with an industry partner, delivery by a contractor which could be existing contractor or new

Implementation: Could be let as a single contract, as a number of lots or as a rolling programme



Funding: Capital funding secured by the Council and revenue budget for ongoing operational costs

Options 1 and 2 will be presented separately for the Street Lighting Asset and UTC.

3.3. Economic Appraisal

3.3.1. Introduction

This section provides a detailed overview of the main costs and benefits associated with each of the selected options.

3.3.2. Estimating Benefits

Methodology

The energy reduction benefits associated with each option were quantified using a spreadsheet detailing each asset, current energy consumption, future energy consumption under the option and the cost of each option.

Other benefits were identified as part of a risk and benefit workshop held on the 26th of August 2020 and subsequent correspondence with the project team who could not attend on this date. Key attendees were the Project Sponsor, Procurement, Street Lighting, Energy and Project Manager.

Description, sources and assumptions

The benefits identified fell into the following main categories. In each case, the sources and assumptions underlying their use are explained.

Works costs are based on contract rates for both the replacement option and future maintenance with a 2.5% allowance for inflation year on year. Energy costs are based on the current year with an 8% allowance for inflation year on year.

Energy savings are quantified from the above information. Other benefits are qualitative rather than quantitative and are dealt with through description.



Table 6: Main Benefits

Type	Direct to Organisation(s)	Indirect to Organisation(s)
Quantitative <ul style="list-style-type: none"> • Energy reduction • Carbon Reduction 	KWh TCO2	Financial management Contribution to Climate Change Emergency Plan
Cash releasing <ul style="list-style-type: none"> • Energy cost • Maintenance 	£* £*	Financial Management Reliability of asset
	<i>*The above are accounted for in the financial case appraisals</i>	<i>The above are NOT accounted for in the financial case appraisals</i>
Qualitative (or non-quantifiable) <ul style="list-style-type: none"> • Street Environment 	Reduced need for maintenance	Improvements associated with white light, depth perception, safety, etc
	<i>Subject to weighting and scoring – see below</i>	<i>Subject to weighting and scoring – see below</i>

3.3.3. Estimating Costs

Methodology

Costs were based on contract rates for works and top of grade for staff costs.

Description, sources and assumptions

Given that costs have been based on contract rates no optimism bias has been included for the works costs. There is uncertainty around the number of columns that will require replacement but the assessment process for the columns has identified 8,000 that are category 4 (at the end of their life) of which engineering judgement has been used to estimate that 6,000 will need replacing as part of this programme. Costs of the project team are based on an assessment of the tasks that will need to be undertaken and associated estimates of staff time. The potential variability of column replacement and staff costs within the overall costs is minimal so no optimism bias has been applied to these elements.

Costs for illuminated bollards and traffic signs are included in option 2 but not in option 4. Their case for inclusion is weaker in relation to payback period but stronger in relation to energy reduction and maintenance reduction (both backlog and ongoing



maintenance). This allows for options to be tested against all the investment objectives and funding sources.

A further tranche of illuminated traffic signs have been included in option 2. For these the existing 1.3w LED gear tray was installed as part of a very early energy saving initiatives with LED around 2013-14. At the time it was deemed adequate but with hindsight it appears that this is not actually the case. Although significant energy savings were made, on site performance was poor. Upgrading these increases energy usage and therefore does not have a payback period. However, given that it was undertaken as an early approach to switching to LED it is appropriate to put forward the option within this business case to address this issue. There is a further opportunity in relation to illuminated traffic signs as recent changes in guidance mean that some could be replaced with a reflective sign, reducing both energy consumption and maintenance liability.

Whilst we have initial capital costs for the solar option, based on the specification from an external partner, at this time we do not know what the ongoing maintenance costs would be and can not be confident that the units will perform as expected. For this reason the solar option will be tested first to establish performance and further research will be undertaken to establish maintenance costs. There is nothing in the options using existing technology that precludes later inclusion of the solar option. The business case has been set out to allow for the later inclusion and assessment of this option.

For UTC the cost estimates are from Liverpool City Region Combined Authority (LCRCA) who will tender the works and fund them. Given this the works cost risks are not borne by Sefton.

3.3.4. Net Present Cost Findings

Detailed economic appraisals for each option have been undertaken.

The short-listed options have been risk-adjusted to account for the 'risk retained' (in £s) by the organisation under each option.

The following table summarises the key results of the economic appraisals for each option:



Table 7: Key Results of Economic Appraisals

Street Lighting Asset	Undiscounted (£)	Net Present Cost (Value) (£)
Option 1 – Do Nothing/Do Minimum/Status Quo		
Revenue/ current (24 yr cash flow)	160,614,561	
Non-cash releasing benefits	-	-
Total	160,614,561	
	Undiscounted (£)	Net Present Cost (Value) (£)
Option 2 – Reference Project/ Outline Public Sector Comparator		
Capital	12,750,245	
Revenue/ current (incl cash releasing benefits)	92,845,509	
Non-cash releasing benefits	-	-
Total	105,595,754	(25,913,564)
	tCo2 e pa 1,655**	Estimated Annual kWh Savings 7,161,519
	Undiscounted (£)	Net Present Cost (Value) (£)
Option 3 - Reference Project/ Outline Public Sector Comparator (more ambitious)		
Capital	This option cannot be assessed until the on-site testing has been completed.	
Revenue/ current (incl cash releasing benefits)		
Risk retained*		
Optimism bias*		
Non-cash releasing benefits		
Total		



IRR	tCo2 e pa	Estimated Annual kWh Savings
	Undiscounted (£)	Net Present Cost (Value) (£)
Option 4 - Reference Project/ Outline Public Sector Comparator (less ambitious)		
Capital	7,395,814	
Revenue/ current (incl cash releasing benefits)	101,155,525	
Non-cash releasing benefits	-	-
Total	108,551,339	(23,922,487)
	tCo2 e pa 1,415**	Estimated Annual kWh Savings 6,128,358

**Using a conversion rate of 0.23104 to convert from kWh to tCO2

UTC	Undiscounted (£)	Net Present Cost (Value) (£)
Option 2 – Reference Project/ Outline Public Sector Comparator		
Capital	£1,053,853	
Revenue/ current		
Risk retained		
Optimism bias		
Non-cash releasing benefits		
Total		(6,918,928)
IRR	tCo2 e pa 120**	Estimated Annual kWh Savings 517,617



3.3.5. Option Ranking

The results are summarised and shown in the following Table:

Table 8: Summary of Results

Option	Description	Ranking	
		NPV (£s)	Rank
1	Street Lighting Asset - Do Nothing/Do Minimum/Status Quo	-	3
2	Street Lighting Asset - Reference Project/ Outline Public Sector Comparator	25,913,564	1
3	Street Lighting Asset - Reference Project/ Outline Public Sector Comparator (more ambitious)	-	-
4	Street Lighting Asset - Reference Project/ Outline Public Sector Comparator (less ambitious)	23,922,487	2

3.3.6. Option Appraisal Conclusions

The key findings are as follows:

Option 1 – do nothing/do minimum/status quo

This option ranks 3rd but option 3 has yet to be assessed. It does not reduce carbon emissions, energy, maintenance backlog or future maintenance costs.

Option 2 – reference project/ outline PSC

This option ranks 1st based on its NPV.

It provides a reduction of tCo2 e pa 1,655 (Using a conversion rate of 0.23104 to convert from kWh to tCO2) and estimated annual kWh savings of 7,161,519 as well as clearing the maintenance backlog and having the maximum reduction in future maintenance costs.

Option 3 – reference project/ outline PSC (more ambitious)

This option cannot be assessed until the on-site testing has been completed.

Option 4 – reference project/ outline PSC (less ambitious)

This option ranks 2nd based on its NPV.

It provides a reduction of tCo2 e pa 1,415 (Using a conversion rate of 0.23104 to convert from kWh to tCO2) and estimated annual kWh savings of 6,128,358, it does not clear the maintenance backlog and does not achieve the maximum reduction in future maintenance costs.



3.3.7. Qualitative Benefits Appraisal

A workshop was held on 3rd November 2020 to evaluate the qualitative benefits associated with each option.

3.3.8. Methodology

The appraisal of the qualitative benefits associated with each option was undertaken by:

- identifying the benefits criteria relating to each of the investment objectives
- weighting the relative importance (in %s) of each benefit criterion in relation to each investment objective
- scoring each of the short-listed options against the benefit criteria on a scale of 0 to 9
- deriving a weighted benefit score for each option.

3.3.9. Qualitative Benefits Criteria

The benefits criteria were weighted as follows for each investment objective:

Table 9: Qualitative Benefits Criteria

Investment Objectives	Qualitative Benefits	Weight
Reduction of Carbon Emissions	<ul style="list-style-type: none">• Contribution to Climate Change Emergency Plan	50%
Reduction of Energy Consumption	<ul style="list-style-type: none">• Reduced impact of cost variation of electricity	5%
Reduction in long term Maintenance Requirements	<ul style="list-style-type: none">• Removal of maintenance backlog• Reduction in future maintenance	20%
Improvement in the Street Environment	<ul style="list-style-type: none">• a more controllable light source that concentrates light on where it's needed with less light pollution• a reduction in 'sky glow', glare and light intrusion into homes and gardens• a 'white' light which improves visibility for road users, compared to traditional 'orange' street lights• instant light with no warm-up time	25%



3.3.10. Qualitative Benefits Scoring

Benefits scores were allocated on a range of 0-9 for each option and agreed by discussion by the workshop participants to confirm that the scores were fair and reasonable.

3.3.11. Analysis of Key Results

The results of the benefits appraisal are shown in the following table:

Table 10: Benefits Appraisal Results

Benefit Criteria and Weight	Option 1		Option 2		Option 3		Option 4	
	R	W	R	W	R	W	R	W
Reduction of Carbon Emissions	1	0.5	7	3.5			6	3
Reduction of Energy Consumption	1	0.05	7	0.35			6	0.3
Reduction in long term Maintenance Requirements	1	0.2	5	1			3	0.6
Improvement in the Street Environment	1	0.25	6	1.5			4	1
Total		1.0		5.85				4.9
Rank	3		1				2	

The key considerations that influenced the scores achieved by the various options were as follows:

- **Option 1 – do nothing/do minimum/status quo:**

This option ranks 3rd but at this stage option 3 is yet to be assessed.

This option provides a baseline for comparison, it does nothing to reduce the current energy consumption or contribute to carbon reduction. It continues to address maintenance issues on a reactive basis and does nothing to reduce the backlog or reduce future maintenance. It continues to provide illumination with current lanterns so does not realise any improvements to the street environment.



- **Option 2 – reference project/ outline PSC**

This option ranks 1st.

This option uses established technology to maximise the reduction of energy consumption and therefore contribute to carbon reduction. It maximises the reduction of the backlog of column replacement and future maintenance. It provides illumination across all stock with white light and so realises maximum improvements to the street environment.

Key considerations influencing its score are that It provides a reduction of tCo2 e pa 1,655 and estimated annual kWh savings of 7,161,519 as well as clearing the maintenance backlog and having the maximum reduction in future maintenance costs. And maximising environmental benefits.

- **Option 3 – reference project/ outline PSC (more ambitious)**

This option cannot be ranked until the trial is completed and relevant information collated.

This option uses established and innovative technology to maximise the reduction of energy consumption and therefore contribute to carbon reduction. It maximises the reduction of the backlog of column replacement. Future maintenance is reduced compared to the baseline option but the innovative technology requires more maintenance than established technology. It provides illumination across all stock with white light and so realises maximum improvements to the street environment.

- **Option 4 – reference project/ outline PSC (less ambitious)**

This option ranks 2nd

This option uses established technology to reduce energy consumption and therefore contribute to carbon reduction. This option focuses on those assets with the highest energy usage so focusses on works to the assets with the shortest pay back periods. It does not contribute to the reduction of the backlog of column replacement and only reduces some of the future maintenance. It provides illumination with white light across some of the asset and so realises some improvements to the street environment.

Key considerations influencing its score are that it provides a reduction of tCo2 e pa 1,415 and estimated annual kWh savings of 6,128,358, it does not clear the maintenance backlog and does not achieve the maximum reduction in future maintenance costs. It does not maximise the environmental benefits.



3.3.12. Risk Appraisal – Unquantifiables

A workshop was held on 26th August 2020 to evaluate the risks associated with the project and each option.

A review of the risk register shows that those risks that are quantifiable relate to programme leading to a potential delay in cost avoidance and procurement where if a new framework is required there may be a change in rates. In relation to programme it is considered reasonable to cost in a 6 month delay which would relate to the financial cost of 6 months of potential costs avoided from the cash flow forecast, estimated to be £150,000. In relation to a new framework whilst there is a risk of a cost uplift there is equally a possibility of a cost reduction due to the scale of the work. A cautious approach to this would be to include 10% of the works cost as priced risk. It would be normal to include a further contingency sum of 10%.

3.3.13. Methodology

Risk appraisal has been undertaken and involved the following distinct elements:

- identifying all the possible business and service risks associated with each option
- assessing the impact and probability for each option
- calculating a risk score.

3.3.14. Risk Scores

The workshop assigned the risk scores shown in the following table on the basis of participants' judgment and assessment of previous procurements. These relate to option specific risk. A more detailed assessment of the individual risks is shown in the risk register and covers risks that apply to all options for do-something.

The range of scales used to quantify risk was as follows:

- low equals 2
- medium equals 3
- high equals 5.

Table 11: Summary of The Risk Appraisal Results

Summary of Risk Appraisal Results (Pr = probability)	Risk category no.	Impact	Option 1 – do minimum		Option 2 – PSC		Option 3 – PSC more ambitious		Option 4 – PSC less ambitious	
			Pr.	Tot.	Pr.	Tot.	Pr.	Tot.	Pr.	Tot.



Failure to deliver Sefton's Climate Change Emergency Plan		5	5	25	2	10			3	15
Energy Price inflation		2	5	10	2	4			3	6
Life expired asset failure		5	2	10	1	5			2	10
Total				45		19				31
Rank				3		1				2

The key considerations that influenced the scores achieved by the various options were as follows:

- **Option 1 – do nothing/ do minimum/ status quo**

This option ranks 3rd but option 3 can't be assessed until the on-site testing is completed.

This option provides a baseline for comparison, it does nothing to reduce the current energy consumption or contribute to carbon reduction. It continues to address maintenance issues on a reactive basis and does nothing to reduce the backlog or reduce future maintenance.

- **Option 2 – reference project/ outline PSC**

This option ranks 1st.

This option uses established technology to maximise the reduction of energy consumption and therefore contribute to carbon reduction. It maximises the reduction of the backlog of column replacement and future maintenance.

Key considerations influencing its score are that this option maximises carbon, energy and maintenance reductions.

- **Option 3 – reference project/ outline PSC (more ambitious)**

This option cannot be ranked until the trial is completed and relevant information collated.

This option uses established and innovative technology to maximise the reduction of energy consumption and therefore contribute to carbon reduction. It



maximises the reduction of the backlog of column replacement. Future maintenance is reduced compared to the baseline option but the innovative technology requires more maintenance than established technology. It cannot be assessed until such time as on-site testing has been completed.

- **Option 4 – reference project/ outline PSC (less ambitious)**

This option ranks 2nd.

This option uses established technology to reduce energy consumption and therefore contribute to carbon reduction. This option focuses on those assets with the highest energy usage so focusses on works to the assets with the shortest pay back periods, given this it does not maximise energy and carbon reduction. It does not contribute to the reduction of the backlog of column replacement and only reduces some of the future maintenance.

Key considerations influencing its score are that this option does not maximises carbon, energy and maintenance reductions.

3.4. The Preferred Option

The results of investment appraisal are as follows:

Table 12: Summary of Overall Results

Evaluation Results	Option 1	Option 2	Option 3	Option 4
Economic appraisals	3rd	1st	NA	2nd
Benefits appraisal	3rd	1st	NA	2nd
Risk appraisal	3rd	1st	NA	2nd
Overall Ranking	3rd	1st	NA	2nd

Conclusion: the preferred option is option 2.

3.5. Sensitivity Analysis

The method used was switching. The key uncertain cost assumption was energy costs increasing by 8% per year so this was modelled to see at what value the options would switch.

3.5.1. Results of Switching Values

Table 13 shows the value (in %) that the assumed 8% annual increase of energy costs would have to be reduced by for the preferred option to change in the overall ranking of options based on the NPV.



Table 13: Changes (%) Required to Equate with the Preferred Option

Change in Costs (%)	Option 1	Option 2 Preferred Option	Option 3	Option 4
NPV		62%*		

(*This equates to an assumed annual increase of energy costs of 3%).

A further sensitivity analysis has been undertaken to assess the impacts of changes in interest rates and changes in the rate of inflation for energy costs.

	Recommended Option Option 2 - Full Scheme	Capital Cost Sensitivities					Energy Sensitivities		
		Sensitivity 1	Sensitivity 2	Sensitivity 3	Sensitivity 4	Sensitivity 5	Sensitivity 6	Sensitivity 7	Sensitivity 8
		Borrowing Rate increases by 0.5%	Borrowing Rate increases by 1.0%	Capital Costs Increase by 5%	Capital Costs Increase by 10%	Capital Costs Increase by 15%	Energy Inflation Reduced from 8% to 7%	Energy Inflation Reduced from 8% to 6%	Energy Inflation Increased from 8% to 10%
	£000s	£000s	£000s	£000s	£000s	£000s	£000s	£000s	
Initial Investment									
(a) Capital Cost	(12,750)	(12,750)	(12,750)	(13,388)	(14,025)	(14,663)	(12,750)	(12,750)	(12,750)
(b) Interest Payments	(2,905)	(3,669)	(4,454)	(3,051)	(3,196)	(3,341)	(2,905)	(2,905)	(2,905)
Other Costs									
(c) Operating Costs	(20,368)	(20,368)	(20,368)	(20,368)	(20,368)	(20,368)	(20,368)	(20,368)	(20,368)
Benefits									
(d) Energy Savings	73,113	73,113	73,113	73,113	73,113	73,113	64,076	56,225	95,491
(e) Energy Costs	(129,935)	(129,935)	(129,935)	(129,935)	(129,935)	(129,935)	(112,981)	(98,390)	(172,528)
(f) Net Council funding over the term	(92,846)	(93,610)	(94,394)	(93,628)	(94,411)	(95,194)	(84,929)	(78,189)	(113,060)
Variance from the Recommended Option - (Increased) / Reduced Funding Requirement	0	(764)	(1,548)	(783)	(1,566)	(2,348)	7,917	14,656	(20,215)

3.5.2. Key Observations

This is a significant reduction of the assumed annual rate of inflation for energy costs but still results in a positive NPV for options 2 and 4. Option 2 would still be preferable in relation to other benefits.

3.6. Preferred Option

The preferred option remains option 2.



4.0. THE COMMERCIAL CASE

4.1. Introduction

The service to be procured can be considered in two parts, the equipment such as the lantern units and the installation. There are a range of suppliers and contractors who can provide these services but the Council currently employs contractors on term maintenance contracts which includes rates for this type of work. Procurement of equipment can be undertaken by either the contractor or the Council.

A key element of the service provision will be the capacity and capability to deliver and as such the phasing and packaging of the works will be an important consideration.

4.2. Required Services

These are as follows:

- Supply of equipment including lighting units, poles and control units
- Installation of equipment and other assets

4.3. Potential for Risk Transfer

The general principle is that risks should be passed to 'the party best able to manage them', subject to value for money.

This section provides an assessment of how the associated risks might be apportioned between the Council and the Contractor

Table 15: Risk Transfer Matrix

Risk Category	Potential allocation		
	Public	Private	Shared
1. Design risk	✓	✓	✓
2. Construction and development risk			✓
3. Transition and implementation risk			✓
4. Availability and performance risk			✓
5. Operating risk	✓		
6. Variability of revenue risks	✓		
7. Termination risks	✓		



8. Technology and obsolescence risks			✓
9. Control risks	✓		
10. Residual value risks	✓		
11. Financing risks	✓		
12. Legislative risks	✓		
13. Other project risks	✓		

4.4. Proposed Charging Mechanisms

The organisation intends to make payments in relation to the proposed products and services as per the current contract.

4.5. Proposed Contract Lengths

The work will be divided into lots based on management areas. These will broadly represent 12 months work which gives the client the opportunity to review quality and if necessary put in place alternative delivery methods.

4.6. Proposed Key Contractual Clauses

As per the current contract.

4.7. Personnel Implications (Including TUPE)

It is anticipated that the TUPE – Transfer of Undertakings (Protection of Employment) Regulations 1981 – will not apply to this investment as outlined above.

4.8. Procurement Strategy and Implementation Timescales

It is anticipated that the procurement strategy will make use of the existing contracts for both works and lantern units with an option to develop a separate framework if required.

It is anticipated that the implementation milestones to be agreed for the scheme with the service provider will be an overall programme with agreed short-term objectives for completion of lots based on maintenance areas.

4.9. FRS 5 Accountancy Treatment

It is envisaged that the assets underpinning delivery of the service will be on the balance sheet of the organisation.



5.0. THE FINANCIAL CASE

5.1. Introduction

The purpose of this section is to set out the forecast financial implications of the preferred option (as set out in the economic case section) and the proposed deal (as described in the commercial case).

5.2. Impact on The Organisation's Income and Expenditure Account

The anticipated payment stream for the project over its intended life span is set out in the following table:

Table 16: Summary of Financial Appraisal

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
	£	£	£	£	£	£	£	£
Preferred option:								
Capital PWLB		3,271,750	3,742,035	3,605,580	2,130,880			12,750,245
Capital Highways Maintenance		300,000	300,000	300,000	300,000			1,200,000
Total		3,571,750	4,042,035	3,905,580	2,430,880			13,950,245
Funded by:								
Existing	2,790,700	2,790,700	2,790,700	2,790,700	2,790,700	2,790,700	2,790,700	
Saving		158,913	278,319	455,351	520,362	194,088	91,840	
Total	2,790,700	2,631,787	2,512,381	2,335,349	2,270,338	2,596,612	2,698,860	

5.3. Impact on The Balance Sheet

The proposed expenditure will have the following impact:



	2020/21 Year 0	2021/22 Year 1	2022/23 Year 2	2023/24 Year 3	2024/25 Year 4	2025/26 Year 5	2026/27 Year 6	2027/28 Year 7	2028/29 Year 8	2029/30 Year 9	2030/31 Year 10	2031/32 Year 11	2032/33 Year 12	2033/34 Year 13	2034/35 Year 14	2035/36 Year 15	2036/37 Year 16	2037/38 Year 17	2038/39 Year 18	2039/40 Year 19	2040/41 Year 20	2041/42 Year 21	2042/43 Year 22	2043/44 Year 23	2044/45 Year 24	
Fixed Assets	0	3,271,750	7,013,785	10,619,365	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245	12,750,245
Depreciation		163,588	350,689	530,968	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512
Net Assets		3,108,162	6,499,508	9,574,120	11,067,488	10,429,976	9,792,464	9,154,952	8,517,440	7,879,928	7,242,416	6,604,904	5,967,392	5,329,880	4,692,368	4,054,856	3,417,344	2,779,832	2,142,320	1,504,808	867,296	393,372	106,544	5	5	
Interest		37,275	79,908	120,987	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264	145,264
Short Term Borrowing		163,588	350,689	530,968	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512	637,512
Long Term Borrowing		12,986,658	12,235,968	11,705,000	11,067,488	10,429,976	9,792,464	9,154,951	8,517,439	7,879,927	7,242,414	6,604,902	5,967,390	5,329,878	4,692,366	4,054,854	3,417,342	2,779,830	2,142,318	1,504,806	867,294	393,370	106,540	0	0	
Total		12,787,520	12,666,566	12,356,955	11,850,264	11,212,752	10,575,240	9,937,728	9,300,216	8,662,704	8,025,191	7,387,679	6,750,166	6,112,654	5,475,142	4,837,629	4,200,117	3,562,605	2,925,093	2,287,580	1,650,068	975,281	458,723	130,821		
Reserves tot. () from (+)		158,913	278,219	456,351	530,262	384,088	91,840	45,801	165,509	293,903	421,656	579,569	782,502													
Reserves Cumulative		158,913	437,232	892,583	1,412,945	1,607,033	1,698,873	1,653,072	1,487,563	1,193,661	762,005	182,502														

5.4. Overall affordability

The business case demonstrates the project is affordable over the life of the project with all capital repayment costs built in, based on the assumptions highlighted in this document. Not carrying out this project will result in further budget issues in the coming year

A contribution from the LTP programme (capital) is being invested in each of the next 4 years, which limits the prudential borrowing costs.

The scheme will generate savings for the first 6 years of the project without increasing the current budget for inflation. It is recommended that these savings are reserved each year which it is anticipated that there should be no revenue implications until year 12 (where the energy price increases will have caught up).

The model assumes an average energy price increase of 8% and other inflationary increases of 2% each year. It also assumes a policy change for prudential borrowing from 10 years to 20 years.

Sensitivity analysis has been provided for changes in energy prices, borrowing rates and capital costs.

The proposed cost of the UTC asset project is to be funded by the Liverpool City Region.



6.0. THE MANAGEMENT CASE

6.1. Introduction

We need to consider the options by which we can achieve delivery of this scheme and which is the best option. We already have staff members who are skilled and knowledgeable who could deliver this project but their time is already committed, given this we will have to bring in additional resource. The choices are whether to bring this additional resource in as additional members of staff or appoint a consultant; whether to apply the additional resource to the project, to current commitments or to both.

6.2. Programme Management Arrangements

The scheme is an integral part of the Growth and Strategic Investment programme, which comprises a portfolio of projects for the delivery of Economic Growth, Public Service Reform, Service Options and Strategic Investment.

These are set out in the Programme Manual for Growth and Strategic Investment (GSI) agreed in October 2019.

The Growth and Strategic Investment Programme is Led and Managed by an Executive Director and supported by a Programme Manager. The Programme reports to the Programme Board, Chaired by the Chief Executive. The Programme may also report to the Investment Board, where items of a commercially nature, primarily reporting of live commercial operations, need to be considered.

6.3. Project Management Arrangements

The project will be managed in accordance with Programme Manual for Growth and Strategic Investment.

6.3.1. Project Reporting Structure

The reporting organisation and the reporting structure for the project are as follows:

- Monthly reports from the Project Owner to the Project Sponsor.
- Quarterly reports to Growth & Strategic Investment Board from the Project Owner

6.3.2. Project Roles and Responsibilities

These are as follows:

Project Owner - The Project Owner is the person Accountable for the overall project delivery, from concept to closure. The owner is responsible for the day to day delivery of the project, including but not restricted to Charter Production and delivery of agreed milestones and deliverables, these will form the project owner objectives.



The Project Owner is the first point of call for project specific information and actions.

The project owner is responsible for production and delivering all relevant project documentation e.g. (Charter / Business case production) ensuring process compliance and reporting structures are followed throughout the delivery of the project. The Project Owner will also ensure stakeholder management is relevant and timely. The Project Owner should ensure communication of project progress is also timely and relevant and creates “no surprises”.

Project Sponsor - The Project Sponsor is the “Project Champion” and should be first point of call for the Project Owner to discuss project detail. The sponsor will have a good working knowledge of the project and may be expected to manage some elements of the day to day project delivery. The Sponsor will support the project through the delivery process advising and supporting in respect to the stakeholder management, (opening sticking doors). The sponsor will give direction and advice in respect to the project stakeholder management and communications in accordance with agreed communication channels of FFC Helps address and remove barriers to delivery.

The Project Sponsor is responsible for identifying the resources required to deliver the project, for keeping both the Growth & SI Board and relevant Heads of Service apprised of progress and assuring of effective project management, progress and risk management. The Project Sponsor will identify any risk that require escalation to the Growth & SI Board or immediate corporate awareness.

The sponsor is expected to support the project at presentation through the phases of the project lifecycle e.g. presentation and Growth & SI and Programme boards, and advise during Business case production. The sponsor will also agree with the project owner any requirements in respect to scope changes, prior to formal agreement at relevant body e.g. Growth & SI Board. The Project Sponsor is not a line management role, but may carry that role through Service Organisational structures.

Critical success factors for these roles include:

- Transparency and openness – full disclosure of project related information
- Accurate data and recording with a clear audit trail to development
- Effective allocation and utilisation of resource
- Integration of activity across many service areas
- Strong stakeholder engagement – planning, communications and direction
- Team development – knowledge, skills, innovation, improvement and collaboration



- Leadership which demonstrates behaviours of compliance with policy and best practice and supports and maintains a strong and effective Programme management environment

6.3.3. Project Plan

This is as set out in the following table:

Table 17: Project Plan

Milestone Activity	Week No.
Confirm with Term Contractor that they would like to undertake the work	0
Preparing the JD and PS	0
Undertaking JE	
Business Case approved – including the decision to proceed with an in-house project team	1
Establishment control approval and union consultation	4
Staff consultation (incl ring-fencing)	8
Recruitment - internal	
Project workshop with Contractor and Lantern supplier	12
Issue order for equipment	
Recruitment – external if required	12
Appointment	17
Induction and training	25
Project team ready to commence project	30
Project workshop to agree working methods and programme	30
Issue first Lot(s) to Contractor	35
Contractor commences work on site	39
Anticipated works programme of 4 years	39-247
Monthly reports to project sponsor	
Quarterly reports to Growth Board and Cabinet Member	
Project close-down including project evaluation	247-273



6.4. Outline Arrangements for Change and Contract Management

The strategy, framework and plan for dealing with change and associated contract management is as set out in the Programme Manual for Growth and Strategic Investment and in the contract.

Any changes to the Project in respect to - scope / cost / quality / time. Must be reported via a variance report and agreed at next available Growth &SI Board. The variance may be so significant that it must be escalated to Programme Board, SCIG, Cabinet Member or Cabinet.

6.5. Outline Arrangements for Benefits Realisation

The strategy, framework and plan for dealing with the management and delivery of benefits is as set out in the Programme Manual for Growth and Strategic Investment and in the contract.

The benefits register sets out who is responsible for the delivery of specific benefits, how and when they will be delivered and the required counter measures, as required.

6.6. Outline Arrangements for Risk Management

The strategy, framework and plan for dealing with the management of risk are as follows is as set out in the Programme Manual for Growth and Strategic Investment and in the contract.

The risk register details who is responsible for the management of risks and the required counter measures, as required.

6.7. Outline Arrangements for Post Project Evaluation

The outline arrangements for post implementation review (PIR) and project evaluation review (PER) have been established in accordance with best practice.

6.7.1. Post Implementation Review (PIR)

These reviews ascertain whether the anticipated benefits have been delivered and are timed to take place at the completion of each maintenance area and at the end of the project.

6.7.2. Project Evaluation Reviews (PERs)

PERs appraise how well the project was managed and delivered compared with expectations and are timed to take place on a half yearly basis and at the end of the project.



6.8. Contingency Plans

In the context of this project failure will relate primarily to energy reduction which impacts on achievement of carbon reduction and cost avoidance. In relation to carbon reduction any residual energy requirement will be met through a green tariff. In relation to cost avoidance this will be dealt with through the Council's budget making procedures.

