

Engineering Justification Paper

# Front Office Systems

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## 2 Introduction

This paper provides architectural justification to support SGN's proposal to spend £6 million (over four years starting in April 2021) on maintaining our Front Office Systems.

Our Front Office Applications which include Maximo (our core Asset Repository), ClickSchedule (best of breed work management and scheduling application) and SMP (Sap Mobile Platform, a field-based data capture application) are key for us to ensure that we operate within our licence conditions and keep our customers and staff safe. The applications manage our asset base, ensure timely and efficient dispatch of engineers to site, and enable information capture required for our regulatory reporting and licence conditions.

This paper focuses solely on the minimum investment required to maintaining the current level of operation, keeping these critical applications operating and supported for GD2. The funding will ensure IT software and hardware is kept up to date in line with 3<sup>rd</sup> party support contracts and internal policy designed to ensure the business can operate with minimal risk of IT failure.

The operation of these systems underpins SGN's ability to run and maintain a safe and reliable network as required to meet the needs of its' customers throughout the GD2 period. A failure in these systems could present significant risk to SGN and its customers leading to loss of life and/or breach of licence.

In line with Customer and Stakeholder expectations this paper does not seek to justify enhancing or adding to functionality to those Core systems.

### 2.1 General Background

SGN staff use a number of key Front Office Applications which include Maximo (our core Asset Repository), ClickSchedule (best of breed work management and scheduling application) and SMP (field-based data capture application).

These applications are used to ensure:

- We receive timely notification of gas escapes,
- Dispatch of appropriately skilled engineers to those gas escapes within our one-hour emergency standard,
- We provide engineers with accurate information on the job they are on including the assets they are working on (e.g. material types, work history etc)
- Information is accurately recorded and managed on assets and incidents
- Customers are kept informed about work affecting them

The systems are critical in ensuring safety of both our staff, and the general public. Issues or outages on these systems potentially delay resolution of gas escapes, and therefore increase the risk of injury or damage. Retaining an accurate record of all our assets is critical in managing the associated risk including managing our asset maintenance programme of work and our mains replacement programme

As with all IT systems, the 3<sup>rd</sup> party suppliers of those systems provide regular patches which must be applied to maintain the support agreement and that these systems remain performant and secure. It is vital that patching and maintenance is up to date to ensure that outages on those systems are minimised.

In addition, the following changes must be applied:

- Mandatory change to applications driven by legislative or regulatory requirements
- Upgrade or replacement activity due to applications or infrastructure being deemed 'end of life' by 3<sup>rd</sup> party providers.
- Upgrade or replacement activity driven by the need to remain secure against an ever-increasing cyber security threat through standard software and hardware upgrades.
- Upgrade or replacement activity deemed critical by SGN to ensure we continue to meet our licence obligations and regulatory outputs which would be impacted through a degradation of system performance and/or availability.

## 2.2 Site Specific Background

These systems will be hosted within AWS cloud. Therefore, the associated assets are not specific to any SGN location. All our offices and staff will be serviced by these systems regardless of their location.

## 3 Equipment Summary

Our Front Office systems are provided by 3<sup>rd</sup> parties, including IBM, SAP and Salesforce. The Software is licensed and delivered either as SAAS (Software as a Service) or through perpetual licensing.

The software resides in either our Amazon Cloud, or in the service provider's own Cloud provision.

All the software is provided as high availability (99.95%) with the ability to 'fail-over' to secondary services should the primary service fail.

## 4 Problem Statement

The investment outlined in this paper is considered mandatory by SGN. It relates to the effort required to maintain our Core Front Office Applications to continue to provide the current levels of operation.

The IT systems that are part of this paper are operationally critical, enabling us to ensure that appropriately skilled engineers are sent to appropriate jobs in timely fashion. These systems ensure that we can get to emergency incidents on time.

### **Why are we doing this work and what happens if we do nothing?**

The work is required to ensure that our Core Front Office applications remain in support and continues to operate to the current levels. If we do nothing, there is a significant risk of loss of our Core Front Office Applications for a long period of time. This will result in failure to meet standards and potential loss of life or damage to property due to our inability to attend gas escapes within our licensed condition and/or manage adequately the health of our underground assets.

**What is the outcome that we want to achieve?**

Continued support of our emergency gas escape, repair, maintenance and replacement operations. This requires continued robust Front Office systems to undertake these works in a timely, accurate and safe manner.

**How will we understand if the spend has been successful?**

Our primary output measures will continue to be met. Retention of our License to Operate.

**4.1 Narrative Real-Life Example of Problem****Failure of System Leading to Loss or Injury**

The systems ensure that appropriately skilled engineers are dispatched in timely fashion to jobs, including emergency jobs. This enables us to ensure that our Engineers arrive safely on site in timely fashion, to deal with emergency gas escapes.

If we have outages as a result of Maximo or ClickSchedule issues, engineers may not be dispatched to jobs on time, or with the right information. This could lead to increased risk of escapes, explosion and therefore damage to property, injury and /or loss of life. Failure of these systems would also affect our ability to view and manage asset condition, work history and therefore affect our repair, maintenance and replacement programmes.

In December 1999, a family of four were killed in Larkhall, Scotland due to a gas explosion. Although, multiple failings led to this catastrophe, one of the contributing factors was inaccurate information about the pipe material and age. This in turn mean that high risk, leaking iron pipe was not identified as a high risk to the general public and not managed accordingly. This information is the key information that is managed through Maximo and SMP - without a functioning Maximo and SMP application engineers cannot work safely.

SGN has consistently met its emergency standards of service. However, during periods of high workloads, if system performance is degraded or if there are periods of unavailability, this has directly affected our operations ability to meet standards. Fortunately, through our programme of system upgrades and refresh policy, despite occasional and rare system issues, SGN has met its standards even during extreme weather conditions such as the “beast from the east”.

**Security Breach**

The Core Front Office systems contain a mixture of critical asset data (where pipes are in the ground), and also customer personal data to enable us to engage with our Stakeholders.

Where appropriate maintenance of systems, including 3<sup>rd</sup> party patching, is not applied, there is an increased risk of security vulnerabilities and exploitation or corruption of our data.

If we do not maintain our systems, there is a real chance of Customer data being lost to a Cyber Security breach. There is also risk that our critical services covered under the Network Information Systems Directive are compromised or affected. This in turn could lead to a fine of up to 4% or revenue in each case.

## 4.2 Spend Boundaries

This paper focuses solely on the minimum investment required to maintain the current level of operation on our Core Front Office Application, ensuring that they are operating and supported for GD2.

## 5 Probability of Failure

SGN are committed to preventing failure of IT assets that underpin critical business services. Probability of failure is linked to technology roadmaps as defined by application and infrastructure providers. If we do not maintain our IT estate as contractually\* required, applications become end of life, support becomes unavailable and SGN would be unable to meet its regulatory outputs due to critical process and system failures. SGN predict the probability of failure to be 100% if we do not maintain our critical systems in line with recommendation from 3<sup>rd</sup> party suppliers, SGN IT policy and agreed architectural principles.

\*Contracts require applications to be upgraded prior to reaching the point where probability of failure indicates systems will fail in one of three ways (functional failure, technical failure or security failure).

### 5.1 Probability of failure assurance

IT industry bodies such as Gartner recognise the fact that the failure rate of systems increases significantly with time when systems are not maintained; this combined with changing security threats mean that we have no option but to maintain and refresh our applications.

## 6 Consequence of Failure

The following table outlines the consequence of failing to invest in ongoing support and maintenance of SGN IT assets.

Reason for failure	Consequence of Failure
Failure to deliver mandatory change to applications driven by legislative or regulatory requirements	SGN's licence to operate requires us to be compliant with the Uniform Network Code and the Supply Point Administration Agreement. It is critical that we can comply with legislation in regard to how we manage our organisation and run operations on a daily basis. Failure to comply could lead to a breach of licence conditions leading to significant fines or a failure to comply with the law which could lead to fines and / or legal action being taken against SGN.
Failure to carry out upgrade or replacement activity required within 3rd party contracts to remain in support	Critical process and system failures ultimately leading to leading to failure in emergency standards, gas

<p>Failure to carry out upgrade or replacement activity due to applications or infrastructure being deemed 'end of life' by 3<sup>rd</sup> party providers</p>	<p>explosion and loss of life (£16m loss of life, up to £100m/10% of turnover fine, unlimited HSE Penalty).                  Loss of licence to operate.                  Loss of gas supply to customers for extended periods.</p>
<p>Failure to carry out upgrade or replacement activity driven by the need to remain secure against an ever-increasing cyber security threat</p>	
<p>Failure to carry out upgrade or replacement activity deemed critical by SGN to ensure we continue to meet our licence obligations and regulatory outputs</p>	

## 7 Options Considered

### 7.1 Baseline - Do Nothing

This option is not viable. This would involve leaving the IT systems to go out of support. This would leave a 100% likelihood of failure on these critical applications.

This would ultimately leave SGN unable to function as a business. Operational and non-operational staff would not be able operate safely. SGN would breach our licence conditions.

### 7.2 Basic Upgrade of Maximo and Refresh of SMP

This is the most basic option and will simply enable the applications to remain in support. Specific solution decisions will be made leading up to point of change based on available technology at the time in line with SGN IT Strategy and Architectural Principles. No additional functionality will be provided.

Robust Cost Benefit Analysis activity will ensure the most appropriate Total Cost of Ownership for the size and scale of the change. Based on GD1 decisions, ClickSchedule has already been moved to a SAAS platform agreement negating the need to fund significant upgrades throughout GD2.

From a technical perspective this will involve applying appropriate patches and upgrades in line with the 3<sup>rd</sup> party release, and SGN Architectural Standards. These upgrades typically involve a full Business Impact Assessment (where changes are made to the user interface for example), detailed design, implementation and release planning (allowing for any outages), testing with all other systems, implementation and warranty. A tender may need to be run to select a partner.

Based on previous upgrades, a single major version or platform upgrade for a Maximo system could take 12 to 24 months and cost in the region of £5m.

We would expect to perform many smaller patches and upgrades throughout the GD2 period as required, so the spend would be spread over the whole GD2 period.

The benefit of this option is that it is the cheapest and simplest in order to maintain our current levels of service.

### **7.3 Implementation of an alternative platform to Maximo ClickSchedule and SMP**

This will involve the selection, purchase and implementation of a different toolset / set of applications.

The delivery would include full process analysis and configuration of the selected tools, and a complete implementation of new interfaces.

The application selection would be handled through a regulated tender process, and would most likely include tools from SAP, IBM and others.

From a technical perspective, this option would require a full set of business analysis, business change analysis, architecture, design, implementation and release planning (allowing for any outages). It would require significant rewriting and redesign of interfaces with other systems (our current FO platform has 55 system interfaces), testing with these other systems, implementation and warranty. A tender would need to be run to select a partner.

SGN previously ran a tender to assess the option of process re-engineering on the current Maximo system leading up to GD1. The external costs for this alone ranged from £12m to £15m.

This option would cost a minimum of £20m including SGN and contract resource and a proven and experienced system integrator. This is more expensive than simply re-configuring our current systems as we would need to purchase and install the new applications, migrate complex data, and perform significant change management with our users. This programme of work would take between 24 months to 36 months to complete.

There are limited benefits to this option but significant additional cost.

### **7.4 Process re-engineering and subsequent redesign of Front Office Applications to provide more efficient processes but retaining existing products**

From a technical perspective this option would require a full set of Business Analysis, Business Change Analysis, Architecture, Design, implementation and release planning (allowing for any outages), testing with all other systems, implementation and warranty. A tender would need to be run to select an implementation partner.

The implementation would be expected to be simpler than 7.2 due to the fact the current software would be used.

As with 7.3, SGN previously ran a tender to assess Process re-engineering leading up to GD1. The external costs for this were around £12m.

This option would cost a minimum of £15m including SGN and contract resource, and would take 24 months to 36 months to complete

The benefit to this option is that the Business Processes would be engineered for efficiency, and the systems implemented to support those processes. This could result in greater productivity, and ultimately better service to customers.

## 7.5 Options Technical Summary Table

Table 1: Technical Options Summary

Option	First Year of Spend	Final Year of Spend	Volume of Interventions	Equipment / Investment Design Life	Total Cost
Baseline - Do Nothing	2025	2025	0		0.00
Basic upgrade of Maximo and refresh of SMP	2022	2025	5	5	6.00
Implementation of an alternative platform to Maximo and SMP	2022	2024	5	8	20.00
Process re-engineering of Front Office Applications	2023	2024	5	8	15.00

Please note the costs outlined in the Options Technical Summary Table are based on the following assumptions:

### Option 1 Assumptions:

- We have assumed that it is possible to refresh all the applications, and that none of the software providers cease support of their products.
- That the spend levels in GD1 are sufficient to fund the level of application refresh required in GD2.
- Asset life is assumed at 5 years, which is on the high end for an IT product.
- Assumes that we have moved Click Schedule to the Cloud as Software as a Service. Only very minimal updates should be required to Click. The majority of spend is on Maximo and SMP.
- Assumes that we only need to upgrade, and not replace, our Maximo and SMP systems. Additional funding would be required to replace.

### Baseline Assumptions:

- SGN manage its IT estate in line with the HSEs ALARP (as low as reasonably practicable) risk management principles. On that basis SGN have assumed a failure to invest in required (see engineering justification paper for more detail) upgrade, replacement or refresh activity for safety critical systems, would lead to catastrophic system failure as well as a lack of 3<sup>rd</sup> party support (based on support contracts, 3<sup>rd</sup> party roadmaps, architectural standards and internal policies, designed to ensure upgrade, replacement or refresh activity is carried out

at the appropriate point in time to in order to prevent a non-recoverable functional, technical or security failure).

- SGN have assumed that a lack of investment combined with a lack of support would prevent the reinstatement of systems should they fail.
- SGN have assumed a catastrophic failure of safety critical systems and an inability to reinstate systems after failure would lead to an inability to respond to gas emergencies, an inability to know where our assets are and an inability to track performance and regulatory outputs.
- SGN have assumed an inability to respond to gas emergencies, an inability to know where our assets are and an inability to track performance and regulatory outputs would inevitably lead to a catastrophic incident e.g. explosion and loss of life (£16m). This assumption is supported by section 2 of the Health and Safety at work act which identifies scenarios that would result in loss of life.
- SGN have assumed an inability to respond to gas emergencies, an inability to know where our assets are and an inability to track performance and regulatory outputs would inevitably lead to an inability to operate. This would lead to a catastrophic breach of license conditions (up to £100m fine)
- SGN have assumed catastrophic failures in regard to loss of life (£16m), a breach of license conditions (up to £100m) will occur within a year of failing to adhere to support contracts, 3<sup>rd</sup> party roadmaps, architectural standards and internal policies designed to ensure upgrade, replacement or refresh activity is carried out at the appropriate point in time to in order to prevent a non-recoverable functional, technical or security failure

## 7.6 Options Cost Summary Table

Table 2: Cost Summary Option 1

Option	Template	Cost Breakdown	Total Cost (£m)
<b>Basic upgrade of Maximo and refresh of SMP</b>	IT Capex	Resources	5.40
		Software	0.60
		Hardware	0.00
		Contingency	0.00
		<b>Total</b>	<b>6.00</b>

Table 3: Cost Summary Option 2

Option	Template	Cost Breakdown	Total Cost (£m)
<b>Implementation of an alternative platform to Maximo and SMP</b>	IT Capex	Resources	16
		Software	4
		Hardware	0
		Contingency	0
		<b>Total</b>	<b>20.00</b>

Table 4: Cost Summary Option 3

Option	Template	Cost Breakdown	Total Cost (£m)
Process re-engineering of Front Office Applications	IT Capex	Resources	13.5
		Software	1.5
		Hardware	0
		Contingency	0
		<b>Total</b>	<b>15</b>

## 8 Business Case Outline and Discussion

The Business Case here is based on the need to maintain our critical Core Front Office Applications so that they operate at our current levels. If we do not maintain these applications, we are predicting a significant risk of loss of our specialist applications for a long period of time. This will result in failure in emergency standards, gas explosion and loss of life (£16m loss of life, up to £100m/10% of turnover fine, unlimited HSE Penalty).

By investing in the maintenance of these Applications, we will ensure that they remain in support and in good working order.

### 8.1 Key Business Case Drivers Description

Table 5: Summary of Key Value Drivers

Option No.	Desc. of Option	Key Value Driver
1	Basic upgrade of Maximo and replacement of SMP	Ability for SGN to respond to incidents Protects our data – customer and asset Enables us to meet our outputs and license conditions
2	Implementation of an alternative platform to Maximo and SMP	Ability for SGN to respond to incidents Protects our data – customer and asset Enables us to meet our outputs and license conditions
3	Process re-engineering and subsequent redesign of Front Office Applications to provide more efficient processes	Ability for SGN to respond to incidents Protects our data – customer and asset Enables us to meet our outputs and license conditions Potential improvement to operations

Table 6: Summary of CBA Results

Option No.	Desc. of Option	Preferred Option (Y/N)	NPVs based on Payback Periods (absolute, £m)					
			Total Forecast Expenditure (£m)	Total NPV	2030	2035	2040	2050
Baseline	Do Nothing / Do minimum	N	0.00	-117.73	-117.73	-117.73	-117.73	-117.73
1	Basic upgrade of Maximo and refresh of SMP <b>Absolute NPV</b>	Y	-6.00	-28.57	-7.43	-11.10	-14.51	-20.37
2	Implementation of an alternative platform to Maximo and SMP <b>Absolute NPV</b>	N	-20.00	-65.22	-17.21	-26.92	-36.51	-47.61
3	Process re-engineering of Front Office Applications <b>Absolute NPV</b>	N	-15.00	-49.14	-11.25	-20.30	-27.56	-36.10
1	Basic upgrade of Maximo and refresh of SMP <b>NPV relative to Baseline</b>	Y	-6.00	-28.57	110.29	106.63	103.21	97.35

2	Implementation of an alternative platform to Maximo and SMP <b>NPV Relative to Baseline</b>	N	-20.00	-65.22	<b>100.52</b>	<b>90.80</b>	<b>81.22</b>	<b>70.11</b>
3	Process re-engineering of Front Office Applications <b>NPV Relative to Baseline</b>	N	-15.00	-49.14	<b>106.47</b>	<b>97.43</b>	<b>90.17</b>	<b>81.62</b>

## 8.2 Business Case Summary

This project is driven by the potential loss for life following failure of Core Front Office Applications resulting in delayed or failure to resolve gas escapes.

Table 7: Business Case Matrix

	Basic upgrade of Maximo and refresh of SMP	Implementation of an alternative platform to Maximo and SMP	Process re-engineering of Front Office Applications
GD2 Capex (£m)	6.00	20.00	15.00
Number of Interventions	5.00	5.00	5
Carbon Savings ktCO <sub>2</sub> e (GD2)	0.00	0.00	-
Carbon Savings ktCO <sub>2</sub> e /yr	0.00	0.00	0
Carbon Emission Savings (35yr PV, £m)	0.00	0.00	0.0
Other Environmental Savings (35yr PV, £m)	0.00	0.00	0
Safety Benefits (35yr PV, £m)	17.73	17.73	17.7
Other Benefits (35yr PV, £m)	100.00	100.00	100.0
Direct Costs (35yr PV, £m)	-23.03	-54.44	-41.3
NPV (35yr PV, £m)	94.70	63.28	76.4
<b>High Carbon Scenario</b>			
Carbon Emission Savings (35yr PV, £m)	0.00	0.00	0.0
High Carbon NPV (35yr PV, £m)	94.70	63.28	76.4

## 9 Preferred Option Scope and Project Plan

The preferred option is the Basic upgrade of Maximo and replacement of SMP. This requires the least amount of investment to enable us to maintain our current levels of operation.

This option requires ongoing spend to patch and upgrade our Core systems throughout the GD2 period. SGN will assess when and how to implement the upgrades and patches once 3<sup>rd</sup> parties release their technical roadmaps and bundle the patches into appropriate releases. Each release will be cost justified.

As such, there is no fixed project plan.

### 9.1 Project Plan Outline

See above – this option requires ongoing patching throughout the GD2 period.

### 9.2 Asset Health Spend Profile

Table 8: Asset Health Spend Profile

Asset Health Spend Profile (£m)						
	2021/22	2022/23	2023/24	2024/25	2025/26	Post GD2
Basic upgrade of Maximo and refresh of SMP	1.00	2.00	2.00	1.00	0.00	Spend Profile to continue post GD2

### 9.3 Investment Risk Discussion

As previously discussed the recommended option assumes investment will be required at the same level in GD2 as GD1.

There is a risk that the phasing, effort and costs may change based on changing technology trends and requirements from the 3<sup>rd</sup> party software providers. This risk will be mitigated through timely analysis and delivery of technology Roadmaps and close engagement with those software providers. Dependent on the requirements, the complexity of delivery may also vary.

Table 9: Risk Table

Risk Description	Impact	Likelihood	Mitigation / Controls	Comments
Impact on Capital Expenditure	Capex expenditure	<=20%	Thorough Project Management, design and testing, risk and issue management. Appropriate budget assigned for delivery taking into account lessons learnt from previous upgrades.	Impact of upgrades on ability to operate business as usual processes and deliver regulatory outputs.
Impact on Capital Expenditure	Capex expenditure	>40% & <=60%	Investment in technology roadmaps, ensuring early sight of any changes.	Changing technology trends including operating systems and applications impact the cost and timelines for delivery of the option.

Impact on Capital Expenditure	Capex expenditure	>40% & <=60%	Investment in technology roadmaps, ensuring early sight of any changes.	Suppliers may alter their roadmaps or completely withdraw their applications from service. The costs are based on suppliers continuing to provide applications and support of existing products. A product replacement would increase costs.
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Table 10: CAPEX Sensitivity Analysis

	Low	Mid	High
GD2 Capex (£m)	5.70	6.00	9.00
Number of Interventions	5	5	5
Carbon Savings ktCO <sub>2</sub> e (GD2)	-	-	-
Carbon Savings ktCO <sub>2</sub> e /yr	0	0	0
Carbon Emission Savings (35yr PV, £m)	0.0	0.0	0.0
Other Environmental Savings (35yr PV, £m)	0	0	0
Safety Benefits (35yr PV, £m)	3.5	17.7	17.7
Other Benefits (35yr PV, £m)	20.0	100.0	100.0
Direct Costs (35yr PV, £m)	-21.9	-23.0	-34.5
NPV (35yr PV, £m)	1.7	94.7	83.2

SGN IT believe the preferred option is the basic upgrade of our Maximo and SMP platforms.

For the purpose of sensitivity analysis, the following has been applied to the preferred option of pre-emptive replacement:

**Low Case:** SGN have applied a reduction of 5% costs – The assumptions are that low cost assumes a decreased level of rigour e.g. governance, test, risk, but a greater risk of failure and may ultimately lead to increased cost as a result. Furthermore, an 80% reduction has been applied to the Safety Benefits associated with the risk of a fatality and Other Benefits associated with the impact of a Breach of Licence Conditions.

**Mid Case:** no changes have been applied, this is the expected output required for the GD2 time period.

**High Case:** SGN have applied an additional 50% on the expenditure, as this is believed to be the potential cost increase if SGN are required as a result of the 3rd party's maintenance schedules to increase the number of releases of patches or upgrades.

Project payback has not been carried out as part of this analysis due to the effect of the Spackman approach. For a cash-flow traditional project payback period please see scenario 4 of our Capitalisation Sensitivity table.

### Capitalisation Sensitivity

Consumers fund our Totex in two ways – opex is charged immediately through bills (fast money – no capitalisation) and capex / repex is funded by bills over 45 years (slow money – 100% capitalisation). The amount deferred over 45 years represents the capitalisation rate. Traditionally in ‘project’ CBA’s the cashflows are shown as they are incurred (with the investment up front which essentially is a zero-capitalisation rate). Therefore, we have developed scenarios that reflect both ways of looking at the investment – from a consumer and a ‘project’.

The scenarios are summarised as follows:

- Scenario 1 - we have used the blended average of 65%, used in previous iterations of this analysis.
- Scenario 2 - we have represented the Capex and Opex blend for the two networks, as per guidance.
- Scenario 3 - addresses our concerns on capitalisation rates whereby Repex and Capex spend is deferred (100% capitalisation rate) and Opex is paid for upfront (0% capitalisation rate).
- Scenario 4 - this reflects the payback period in ‘project’ / cash-flow terms and provides a project payback.

We have taken a view of the NPV in each of the scenarios, with the exception of scenario 4, at the 20, 35 and 45 Year points, to demonstrate the effect of Capitalisation Rate on this value.

Table 11: Capitalisation Rate Sensitivity Results

Scenario	1	2 SGN	3	4
Capex (%)	65	41	100	0
Opex (%)	65	41	0	0
Repex (%)	100	100	100	0
<b>Output</b>				
NPV (20yr PV, £m)	104.76	102.92	107.44	
NPV (35yr PV, £m)	96.01	94.70	97.92	
NPV (45yr PV, £m)	91.66	90.74	93.01	
Payback	3.00	3.00	3.00	3.00

## Appendix A - Acronyms

Acronym	Description
CEG	Customer Engagement Group – members of the public who provided feedback into their expectations of SGN
SAAS	Software as a Service – Software provided effectively on a rental basis to SGN. The Software provided hosts the software on their hardware.
SMP	SAP Mobile Platform