

**BRISTOL CITY COUNCIL  
AUDIT COMMITTEE**

**29 June 2012**

**Report of: Strategic Director - Corporate Services**

**Title: Grant Thornton's Report on ELENA Investment Programme**

**Ward: Citywide**

**Officer presenting report: Will Godfrey, Strategic Director - Corporate Services**

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**RECOMMENDATION**

The Audit Committee note Grant Thornton's report, which along with a number of other specific reviews will inform Grant Thornton's 2011-12 Value for Money conclusion.

**Summary**

The Council successfully applied for £2.5m ELENA technical assistance funding from the European Investment Bank in support of a £140m low carbon investment programme. Grant Thornton were requested to provide an independent review and risk assessment of the Council's application (and supporting financial models) prior to signature of the Funding Agreement.

Grant Thornton's report was included as an appendix to a report to Senior Officers in the ELENA steering group prior to signature of the Funding Agreement on 2 May 2012.

## **Policy**

None affected by this report.

## **Consultation**

**Internal:** Grant Thornton consulted with Responsible Officers before finalising the report.

**External:** not applicable.

## **1 Background and Introduction**

- 1.1 The Council had been negotiating the terms of ELENA technical assistance funding from the European Investment Bank in support of a £140m low carbon investment programme for more than 12 months. During that time there were significant changes in government policy (in particular a reduction in Solar PV Feed-in-Tariffs), which impact the feasibility of elements of the investment programme.
- 1.2 Grant Thornton were requested to provide an independent review and risk assessment of the Council's application (and supporting financial models) prior to signature of the Funding Agreement. In particular, Grant Thornton considered the risk of the Council not achieving the required Leverage Factor of 25:1 (ratio of Eligible Investment to ELENA funding) in a 3 year period, which would result in claw back of the grant funding.
- 1.3 Grant Thornton will be attending the Committee, and will be pleased to answer Members' questions.

## **2 Findings and Conclusion**

- 2.1 The report identifies a number of risks related to the signature of the Funding Agreement and assesses potential mitigating factors. Risks relate primarily to the risk of claw back of the EIB grant if (i) the Council does not adhere to its proposals and/or (ii) the Leverage Factor is not achieved in the required timescale.
- 2.2 On the basis of the review undertaken and assessment of financial risk, Grant Thornton are broadly supportive of the Council's decision to sign the Funding Agreement with the EIB.

2.3 Grant Thornton concluded that it is possible for the Council to successfully manage the financial risks associated with signing the Funding Agreement through the implementation of strong overall programme management arrangements including the careful management of Technical Assistance budgets, improved financial modeling of the overall programme and focussed feasibility work to identify those strands of the investment programme which can deliver the required Leverage Factor.

### **Other Options Considered**

Not applicable.

### **Risk Assessment**

Not as a result of this report.

### **Equalities Impact Assessment**

There are no issues arising from this report.

### **Legal and Resource Implications**

None arising from this report.

### **Appendices:**

Appendix 1: Grant Thornton's Report – ELENA Investment Programme: Review of ELENA Application and Supporting Models

### **LOCAL GOVERNMENT (ACCESS TO INFORMATION) ACT 1985**

**Background Papers:** None

Bristol City Council

Elena Investment Programme

Review of ELENA Application and Supporting Models

17 April 2012

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# 1 Important Notice

## **Use of this report**

This report has been prepared to advise Bristol City Council (the Council) of the matters arising from our work and should not be used for any other purpose or be given to third parties without our prior written consent.

Our report is part of a continuing dialogue between the Council and ourselves and should not be relied upon to detect all opportunities for improvements in management arrangements that might exist. The Council should assess the wider implications of our conclusions and recommendations before deciding whether to accept or implement them, seeking its own specialist advice as appropriate.

We accept no responsibility in the event that any third party incurs claims, or liabilities, or sustains loss, or damage, as a result of their having relied on anything contained within this report.

For the avoidance of doubt it is to be noted that the model review work carried out was not a model audit and we have not independently verified the data that has been supplied to us. The work is limited to that described in this report.

## **Freedom of information**

Where a request is made to the Council ("You") under the Freedom of Information Act 2000 ("the Act") or other legislation which requires the disclosure of any information contained in this report ("the Report"), it is agreed that You will promptly notify Grant Thornton, in writing, of the request and consult with Grant Thornton prior to disclosing such information.

You also agree to pay due regard to any representations made by Grant Thornton and any relevant exemptions which may exist under the Act applicable to the Information. If subsequent to the above, the Information is disclosed in whole or in part, You agree to ensure that any disclaimer which Grant Thornton has included or may subsequently wish to include in the Information disclosed is reproduced in full and in all copies disclosed.

## 2 Executive Summary

### 2.1 Introduction

Bristol City Council (the Council) has been working with the European Investment Bank (the EIB) for more than 12 months to secure funding support for Technical Assistance (TA) to progress a £140m investment programme. The Council has now had its application for ELENA Technical Assistance from the EIB approved and a signature date of early April 2012 has been agreed with the EIB.

**Table 2.1: Elena Investment Programme**

Programme Element	Value £m
Private sector domestic retrofit	10.4
Public sector domestic retrofit	29.3
Domestic PV	39.8
Public buildings PV	27.0
Public buildings retrofit	10.0
District Heating	23.5
<b>Totals</b>	<b>140.0</b>

Our report considers the ELENA proposal (based on the Council's application to the EIB), the draft ELENA Funding Agreement, and the Excel models prepared by the Council and the Centre for Sustainable Energy (CSE). We also consider the Review of the ELENA Programme prepared by CSE in December 2011 and more recent sensitivity analysis. We identify commercial and financial risks and issues we believe the Council should consider in advance of the proposed signature of the Funding Agreement. This includes risks related to achieving the required Leverage Factor (ratio of Investment Programme to technical assistance funding drawn) of 25:1, which based on the technical assistance funding of £2.5m equates to £62.5m.

We are informed that due to EIB ELENA annual budgets the proposed signature date has been arranged for early April 2012. We understand that in order to avoid the need to re-submit its ELENA application and as the policy environment in this field is still changing, the Council intends to sign on the basis of its original application and investment programme. Further feasibility studies will be undertaken using the technical assistance funding to determine the final composition of the programme, and any changes agreed with the EIB.

### 2.2 Elena Funding Agreement

We have reviewed a draft copy of the ELENA Funding Agreement and the review document prepared by BCC Legal Services.

Legal Services has identified the key risks around the Council's fundamental obligations: (i) adherence to the Council's proposals and (ii) achievement of the leverage factor of 25x [within 3 years of project start date]. In relation to these we note the following:



### **2.2.1 Adherence to the Council's proposals**

The Technical Assistance (TA) budget (Annex III of the Funding Agreement) reflects the original ELENA application. Although the feasibility of the original investment programme will be further explored (including solar PV), there is a strong possibility that the final composition will be different. Whilst the Council has flexibility regarding actual spend within the categories of direct and subcontracting costs, there is a risk that the overall split between direct/external costs is not appropriate for the revised programme. Our interpretation of the way in which the Funding Agreement operates is that the Council will not be able to apply to the EIB to alter the split between direct and subcontracting costs until approximately 18 months into the programme and even at that stage only by 10% (approx. £250k).

The Council can partially mitigate against this risk through careful control of TA expenditure and/ or underspend. This includes TA expenditure taking place on a phased basis with gateway reviews before progressing to the next phase of technical assistance expenditure. This reduces the risk to the Council of incurring high levels of TA expenditure on elements, which are not ultimately viable (and therefore do not contribute to the achievement of the Leverage Factor).

### **2.2.2 Achievement of Leverage Factor of 25x**

Based on the TA budget of £2.5m and the leverage factor of 25x, the amount of the Investment Programme required is £62.5m. This figure is well below the Investment Programme included in the ELENA application (£140m) and more recent sensitivities being considered by the Council. In addition, the terms of the Funding Agreement specify that such investment does not have to have occurred during the contract period, provided an appropriate contract notice has been published. This reduces the risk of claw back by the EIB considerably.

#### **2.2.2.1 Wider Council investment activity in energy efficiency and renewable energy**

There would be benefit in further mapping and quantifying the level of committed investment within each Council department, which could count toward meeting the Leverage Factor. An updated mapping exercise would help to bring this information together and should also be designed to link with the TA programme to ensure eligibility. The benefit of this approach is that a level of investment can effectively be "banked" and will contribute to meeting the Leverage Factor.

#### **2.2.2.2 Domestic Energy Efficiency/Green Deal**

We have a specific concern relating to the achievement of the Leverage Factor in relation to Domestic Energy Efficiency/Green Deal delivered on private homes. When the Council's preferred delivery model for private domestic retrofit is determined, this matter should be discussed with the EIB. If the EIB's position is that only direct investment or the procurement of one or more GD partners will count towards meeting the Leverage Factor, then the Council should ensure that it has sufficient overall headroom in its programme to achieve the Leverage Factor if it decides not to follow either of these options.

### **2.2.3 Meeting Grant conditions**

Failure to meet grant conditions by properly monitoring and reporting on Eligible Expenditure and the Investment Programme activities may result in grant being withdrawn or clawed back. Robust processes must be in place to evidence both eligible expenditure and Leverage Factor and will need to be incorporated internally and in procurement documents and supply chain contracts.

## **2.3 ELENA resourcing issues**

### **2.3.1 Council readiness to mobilise**

The EIB wishes the programme to mobilise in May/June, more quickly than anticipated. The Council can establish a programme delivery unit/team from existing Council resources supported by consultants in the short term, and prioritise the investment programme to achieve quick wins (Council estate).

### **2.3.2 Staff Recruitment**

The ELENA proposal includes the recruitment of 7 staff. As it will not be possible to recruit all staff by the start of the programme on 1 June 2012, we are informed that there are now approvals in place to recruit a Procurement Manager and two Technical Officers in addition to the programme manager. They will manage and support investigation and decision on delivery routes for each investment strand (and continuation of TA to investment). Where the studies identify that the Council should take quite an active role(s), then the relevant investment vehicle or contractual arrangement could potentially support further resource. The Council needs to determine which role(s) it wishes to play in relation to Green Deal/domestic retrofit and district heating before recruiting additional permanent staff related to these tranches of activity. A combination of internal secondments and use of external consultants/secondments can provide flexible, knowledgeable resource whilst this is being established.

### **2.3.3 Consultancy budget**

The ELENA application contains estimates of the consultancy costs (totalling £1,565,000) for the delivery of the programme broken down against the ESCO and the different strands of the investment programme. These have been based on the CSE reports with some amendments by the Council team and are based on the original investment programme. There are clear challenges in devising a consultancy budget especially given rapid policy changes (Feed in tariffs), the introduction of new policies and legislation which are not yet finalised (Green Deal, ECO) and the need to further investigate the viability of different strands of the investment programme before making a decision to proceed. We recognise that at this stage the budget represents more of an overall figure for consultancy spend and it is anticipated there could be significant movement within this budget. There is an opportunity to negotiate with the EIB to revise the technical assistance budget if one or more of the investment strands is not viable.

## **2.4 District Heating**

### **2.4.1 Consultancy budget**

Within the overall budget of £455k for district heating consultancy costs, the £180k budget for procurement could be low though this will depend upon the delivery model and procurement route used. However the Council considers the £250k technical research budget (which will be expended first) to be generous and underspend can be used to increase the procurement budget.

### **2.4.2 Programme**

District heating schemes take time to develop. (Cofely, a leading District Heating/ Energy specialist estimates these projects take 3-5 years from conception to operation). Although the Council needs to commence the procurement (rather than have completed investment) in the 3 year period, given the challenges to other elements of the investment programme, there is probably merit in bringing forward the Development stage for its identified schemes (which is currently shown at 18 months). The Council should consider "what if" scenarios based on a procurement including a smaller number of sites within the 3 year ELENA funded programme period. This could involve an expansion of certain schemes such as the BS1 phase 1 (City centre) site.

## **2.5 Change in Programme composition and impact on risk profile**

CSE prepared a Review of the ELENA programme in December 2011 to reflect changes in FIT's regime as well as Green Deal and ECO consultation. In our view the assessment by CSE does not fully reflect the increased risks associated with the Sensitivity 1 programme in the following respects:

- The issue of the projected Leverage Factor for the investment programme has not been revisited in the review, but is much lower with the removal of solar PV (and payback is longer).
- The balance between investment in council-owned property and other has changed; the Council will clearly have less control of investment occurring outside its own estate, procurement will be more complex, and the private sector and financiers will consider it to be higher risk.

- There is uncertainty in relation to the timing of the Green Deal rollout, which could result in a slow start. There is clear nervousness in the marketplace around take up and this remains a significant risk. This programme carries the added complication that the role of the Council will not be defined until the ELENA programme has been established.
- Access to ECO funding is critical to the success of domestic retrofit. There is now more detail about the likely regulatory framework and funding mechanisms, and as a result of consultation, the government has now agreed that social housing sector can access the affordable warmth subsidies. The limited amount of ECO which will be available across the UK (estimated £1.3bn/pa) means that the funding available for both Hard to Treat and affordable warmth will be rationed, however, and could act as a major constraint to successful implementation. Therefore developing a strategy for attracting the maximum amount of ECO funding to Bristol is critical.

## **2.6 Model Review**

The following key issues are drawn from the model review in section 5.

### **2.6.1 Private Sector Domestic Retrofit**

The take up of Green Deal measures by the private domestic sector is difficult to quantify at this stage. The rationale behind the latest sensitivity figure of £34.2m is not well supported, simply being the mid-point between the original (conservative) £10.4m and the revised £57.9m. Planned feasibility work and the publication of secondary legislation should provide greater confidence around likely market potential. There is a substantial amount of PV in this element of the programme, which will attract FITs. It is not certain that Green Deal finance can be raised for technology supported by the FIT in which case an appropriate private sector debt finance rate is needed for this element.

### **2.6.2 Public sector domestic retrofit**

This package assumes a significant level of ECO funding at £21.5m. Under the Golden Rule, for hard to treat properties, the level of ECO should be limited to the level of subsidy required so that the value of energy savings equals the cost of the Green Deal payments over the life of the measures. The level of ECO funding shown in the model may therefore be overstated and needs to be calculated on the basis of Golden Rule compliance.

### **2.6.3 Public buildings PV**

The model assumes bold reductions in the capital cost of solar PV equipment at 10% year on year. With reference to advice from our technical consultants, these reductions appear to be supported during the current investment period of 2012-2015 but less so after this. Given these assumptions the investment in solar PV does not appear to break even within the modelled time period.

### **2.6.4 Public buildings retrofit**

For public sector buildings, the cost and quantities have been based on existing installation experience, which demonstrates the viability of the measures considered. The modelling of this element is limited, however, and further detail around phasing of the works programme and modelling of RHI income through the renewable heat incentive on biomass boilers would be appropriate.

### **2.6.5 Financing assumptions for the investment programme**

These appear overly optimistic and require revisiting as well as running sensitivities for different funding rates to test that the elements of the programme are financially viable, in particular:<sup>1</sup>

- The level of proposed ECO subsidy in the public sector and private sector domestic retrofit programme elements appear high (£24.3m in aggregate). The models appear to assume ECO

<sup>1</sup> Section 5.6 of the report sets out further comments on the proposed funding structure of the different elements of the investment programme, as reflected in the financial models.

subsidies, which are driven by energy company obligations to deliver ECO Carbon targets rather than substantiated through "Golden Rule" calculations, which may be more prudent.

- The assumption that low cost EIB finance of £27.5m will be available to finance elements of the programme is not felt to be deliverable. This should be replaced in the models by PWLB and/or private sector debt finance as appropriate.
- The cost of private sector finance is assumed to be 6% across the board. The 6% represents the estimated cost of the GDFC finance (not yet established), which has relevance for financing of Green Deal packages only. We recommend sensitivities using rates appropriate to the risk profile of the investment programme.
- There are no financing costs assumed in the public buildings retrofit model. This suggests that the investment is already included within the council's capital budgets. If this is not the case then PWLB finance should be included.

### **2.6.6 Consolidated Programme Model**

There is no consolidated financial model as yet that ties together the various investment programme elements and the cost implications for the ESCO. This will form part of the brief of the outcome of the technical assistance programme, and should aim to work up such a model based on the viability and support needs of each strand of the investment programme.

### **2.7 Conclusion**

On the basis of the review we have undertaken and assessment of financial risk, we are broadly supportive of the Council's decision to sign the Funding Agreement with the EIB. We believe it is possible for the Council to successfully manage the subsequent financial risks associated with signing the Funding Agreement through the implementation of strong overall programme management arrangements including the careful management of Technical Assistance budgets, improved financial modelling of the overall programme and focussed feasibility work to identify those strands of the investment programme which can deliver the required Leverage Factor.

### 3 Introduction

Bristol City Council (the Council) has identified significant opportunities to reduce the Council's energy costs and carbon emissions, as part of its Climate Change and Energy Security Framework, which aims at reducing the emissions from Council services by 40% by 2020.

The Council also aims for Bristol to be the most energy efficient city in the UK, offering citizens and businesses secure, affordable energy to meet their needs provided through local and national low carbon systems and creating local jobs. Targets include a citywide reduction of carbon emissions by 40% by 2020. The Council is also keen for the Bristol's businesses and workers to benefit from the growth of the low carbon economy, and to work alongside other partners including neighbouring authorities and community organisations.

The Council is undertaking a wide range of energy related projects to reduce carbon emissions for the Council. At the heart of this are plans for developing an energy services company (ESCO) and a large-scale renewable energy and energy efficiency programme for the whole city and wider sub-region. Through this company the Council intends to use relevant government policy and funding tools including Green Deal, the new Energy Company Obligation (ECO), Renewable Heat Incentive (RHI) and Feed-in-Tariff (FITs) regimes to improve energy efficiency and expand renewable energy generation across a range of both domestic and non-domestic properties in Bristol.

The Council has been working with the European Investment Bank for more than 12 months to secure funding support for technical assistance to progress a £140m investment programme. The Council has now had its application for ELENA Technical Assistance from the European Investment Bank approved and a signature date of early April 2012 has been agreed with the EIB. The original ELENA investment programme comprises:

**Table 3: Elena Investment Programme**

Programme Element	Value £m
Private sector domestic retrofit	10.4
Public sector domestic retrofit	29.3
Domestic PV	39.8
Public buildings PV	27.0
Public buildings retrofit	10.0
District Heating	23.5
<b>Total</b>	<b>140.0</b>

### **3.1 Scope of Report**

The scope of this report is to review the following documentation related to the **ELENA Programme**: the ELENA application, the December 2011 CSE report and financial models related to the different strands of the ELENA investment programme in advance of signature of the Funding Agreement. This includes review of financial model assumptions including interest rates and payback periods, and financial risks associated with signing of the Funding Agreement.

Appendix 6.1 provides the results of a technical benchmarking exercise by Climate Consulting Limited on the cost assumptions contained within the financial models and appendix 6.2 includes a report from Sustain Limited on potential Energy Company Obligation (ECO) strategies and immediate CERT and CESP opportunities.

Other elements of our scope of work related to potential Funding and Delivery structures and recommendations on next steps are to be the subject of a separate report.

## 4 ELENA Programme

### 4.1 Review of the Elena Application

This section of our report considers the ELENA proposal (based on the Council's application to the EIB) and the draft ELENA Funding Agreement. We have also considered the Review of the ELENA Programme prepared by the Centre for Sustainable Energy (CSE) in December 2011. We identify commercial and financial risks and issues we believe the Council should consider in advance of the proposed signature of the Funding Agreement.

### 4.2 Funding Agreement

We have reviewed a draft copy of the ELENA Funding Agreement and the review document prepared by BCC Legal Services.

Legal Services has identified the key risks around the Council's fundamental obligations: (i) adherence to the Council's proposals and (ii) achievement of the leverage factor of 25x within 3 years of project start date (described below). In relation to these we note the following:

#### 4.2.1 Adherence to the Council's proposals

The technical assistance (TA) budget (Annex III of the funding agreement) reflects the original ELENA application. Although the feasibility of the original investment programme will be further explored (including solar PV), there is a strong possibility that the final composition will be different.

Whilst the Council has flexibility regarding actual spend **within** the categories of direct and consultancy costs, there is a risk that the overall split between direct/external costs is not appropriate for the revised programme.

Our interpretation of the way in which the Funding Agreement operates is that the Council will not be able to apply to the EIB to alter the split between direct and subcontract costs until approximately 18 months into the programme and even at that stage only by 10% (approx. £250k)

**Risk:** There may be a deviation of more than 10% between the current budgets for direct staff and external costs resulting in expenditure, which does not constitute eligible expenditure and therefore has to be funded by the Council, or the conditions of the ELENA approval may lead to a sub-optimal resourcing solution.

**Mitigants:** The Council can partially mitigate against this risk through careful control of TA expenditure and underspend. This includes TA expenditure taking place on a phased basis with gateway reviews before progressing to the next phase of TA expenditure. This reduces the risk to the Council of incurring high levels of TA expenditure on elements, which are not ultimately viable (and therefore do not contribute to the achievement of the Leverage Factor).

#### 4.2.2 Achievement of Leverage Factor of 25x

Based on the TA budget of £2.5m and the leverage factor of 25x, the amount of the Investment Programme required is £62.5m. This figure is well below the Investment Programme included in the ELENA application (£140m) and more recent sensitivities being considered by the Council. In addition, the terms of the Funding Agreement specify that such investment does not have to have occurred during the contract period provided an appropriate contract notice has been published. This reduces the risk of claw back by the EIB considerably.

Paragraphs 1.4.4 and 1.4.5 of the Funding Agreement state

*1.4.5 The amount of the Investment Programme corresponds to the sum of:*

*a) the investment occurred during the contract period; and*

*b) the estimated value of the contract for further investment which has been supported by the Project Development Services under this agreement, as published in the relevant notice relating to the procurement procedure for this investment in accordance with applicable procurement rules.*

*To qualify for the inclusion under point 1.4.5.b), the related budget must have been fully secured prior to publication and hence the award cannot be made conditional on the availability of budgetary resources. Evidence to that effect must be provided. An eventual cancellation of the tender procedure in accordance with applicable rules for reasons other than the non-availability of budgetary resources shall not affect the inclusion of the estimated value of the contract in the determination of the amount of the Investment Programme as per 1.4.5. b).*

#### **4.2.2.1 Wider Council investment activity in energy efficiency and renewable energy**

There would be benefit in further mapping and quantifying level of committed investment within each Council department, which could count toward meeting the Leverage Factor. The Council has committed investment activity in relation to its own estate where budget has already been identified, or where it is expecting to fund from internal resources. We have not seen an analysis of the composition and quantum of investment although we understand that some work has been done based on Bristol's Climate Change and Energy Security Framework (although not yet fully completed). An updated mapping exercise would help to bring this information together and should also be designed to link with the TA programme, as there must be clear linkage with TA funded activity in order for such investment to be considered "eligible investment" for Leverage Factor purposes. The benefit of this approach is that a level of investment can effectively be "banked" and will contribute to the achievement of the Leverage Factor. (I.e. £25m investment would support £1m of TA even if the TA provided for the activity was less).

In relation to the Investment Programme we would expect this to include elements of installations on non-domestic Council buildings and Council social housing energy efficiency funded through HRA (for example we note there is £5.7m in the proposed 2012-13 HRA capital budget for installation of heating systems including Air source heat pumps).

#### **4.2.2.2 Domestic Energy Efficiency/ Green Deal**

We have a specific concern relating to the achievement of the Leverage Factor in relation to Domestic Energy Efficiency/Green Deal delivered on private homes as the provisions of the Funding Agreement have not been drafted with the different delivery models of the Green Deal/domestic energy efficiency in mind.

It is important to establish what role the Council intends to play in delivering domestic energy efficiency, particularly for private housing. This then needs to be assessed alongside what the EIB will count towards achieving leverage. The position in the Funding Agreement is clear where the Council is acting as a GD provider/installing measures, or tenders relevant contracts to suppliers or GD providers. It is not clear, however, whether acting as a GD provider is the optimal role for the Council in terms of rolling out GD measures to private housing, since GD for private housing is a nationally defined programme whose success ultimately rests on the level of consumer take-up. The Council will want to consider carefully whether it wishes to assume take-up risk.

An alternative would be a lighter touch facilitating/enabling role – for example through marketing and education campaigns, local engagement and community events or even if the Council acts as GD assessor. However, the position under the Funding Agreement is then unclear. There will potentially be a variety of Green Deal providers operating in Bristol – in what circumstances can the Council take



"credit" for investment in domestic energy efficiency across the city which is not directly attributable to its own investment activity or procurements? This is a particularly significant issue to consider if a larger proportion of the investment programme is intended to be in private domestic retrofit.

**Risk:** The linkage between the Council activity/role in relation to Green Deal/Energy efficiency and investment does not satisfy the EIB and count toward the required Leverage Factor, increasing potential risk of claw back. The Council's choices on finance and delivery options for Green Deal may be limited if it wishes to achieve the Leverage Factor.

**Mitigant:** When the Council's preferred delivery model for private domestic retrofit is determined, the matter should be discussed with the EIB. If their position is that only direct investment or the procurement of one or more GD partners will count towards meeting the Leverage Factor, then it would be prudent to ensure there is sufficient overall headroom to achieve the Leverage Factor if another route is taken.

#### **4.2.2.3 Meeting Grant conditions**

The Council has been a recipient of a number of government grants including EU grants and is familiar with the processes and reporting requirements. The requirements of ELENA extend beyond the proper usage and reporting of the use of grant funding for technical assistance.

Tracking eligible investment for "leverage" purposes will be relatively straightforward where the Council is making direct investments. The Council will need to ensure that to the extent technical assistance activities are down streamed to partners (to community organisations for example) that appropriate processes are in place to monitor and report on the basis required by EIB.

**Risk:** Failure to meet grant conditions by properly monitoring and reporting on Eligible Expenditure and the Investment Programme activities may result in grant being withdrawn or clawed back.

**Mitigant:** Robust processes must be in place to evidence both eligible expenditure and Leverage Factor and will need to be incorporated internally and in procurement documents and supply chain contracts.

#### **4.2.2.4 Exchange rate**

We understand that ELENA funding is being provided in Euros whilst the Council's costs are being incurred in £.

**Risk:** There is a risk in adverse currency movements eroding the value of the ELENA grant.

**Mitigant:** The Council should seek advice from its Treasury management function on the need to hedge this exposure.

### **4.3 ELENA resourcing issues**

#### **4.3.1 Council readiness to mobilise**

Initial conversations with the Council indicated that following signature of the funding agreement there would be an interim period before the formal start of the investment programme, which would launch in September/October 2012.

The EIB has recently clarified that it wishes the start date to happen more quickly – May/June is being discussed and this involves a detailed inception report with work programme.

**Risk:** The Council has less lead-in time to evaluate its options and must make decisions more quickly than anticipated, without having required resource in place. The period available to deliver the investment programme and achieve necessary leverage is shorter than anticipated. The time required

for procuring consultancy frameworks under OJEU means that these will not be in place for several months.

**Mitigant:** Establish a programme delivery unit/team from existing Council resources. Prioritise investment programme to achieve quick wins (Council estate). Make use of available frameworks (such as OGC Buying Solutions) and existing consultancy arrangements where these agreements and frameworks can provide the appropriate skills to secure necessary consultancy support in the short term.

#### **4.3.2 Staff recruitment**

The ELENA proposal includes the recruitment of 7 staff, with total costs of €1.1m over 3 years, funded 90% by ELENA this requires minimum leverage of €24.75m.

We are informed that ELENA will not fund existing Council posts/staff and can understand that this may be driving the Council to recruit externally rather than seek to fill roles internally. Consideration is being given to utilising existing staff, who have relevant experience and knowledge of the Council to assist with initial mobilisation (though this will not be ELENA funded).

We are informed that there are now approvals in place to recruit a Procurement Manager and two Technical Officers in addition to the programme manager., which are considered essential to manage and deliver the early stages of ELENA technical feasibility. They will manage and support investigation and decision on delivery routes for each investment strand (and continuation of TA to investment). Where the studies identify that the Council should take quite an active role(s), then the relevant investment vehicle or contractual arrangement could potentially support further resource (e.g. if Council carries out Green Deal marketing or assessments this could be paid for by private sector partner(s)).

The Council needs to determine which role(s) it wishes to play in relation to Green Deal/domestic retrofit and district heating before recruiting additional permanent staff related to these tranches of activity. Secondary legislation and results from Green Deal pilots will further inform the approach and the job and person specification for additional staff required. It is not clear from the application how these resources will be allocated across the different initiatives, and therefore what "leverage risk" is attributable to each area. It is particularly important to understand this given the issue raised regarding the role of the Council in delivering private sector domestic retrofit projects.

**Risk:** The wrong personnel are recruited, or they are recruited at the wrong time (too early or too late). This impacts on the successful implementation of the ELENA programme and the Leverage Factor achieved..

**Mitigant:** At an early stage (next 3 months) greater clarity on the role(s) the Council intends to play in relation to the ESCO, Green Deal and district heating to inform approach to recruitment of additional personnel. A combination of internal secondments and use of external consultants/secondments can provide flexible, knowledgeable resource whilst this is being established. The Council may also wish to consider the use of fixed term contracts in relation to certain posts, which could have a limited life.

#### **4.3.3 Consultancy budget**

The ELENA application contains estimates of the consultancy costs (totalling £1,565,000) for the delivery of the programme broken down against the ESCO and the different strands of the investment programme. These have been based on the CSE reports with some amendments by the Council team and are based on the original investment programme. The profile of consultancy spend contemplates the possibility of the Council playing an investment/delivery role in a number of investment strands although this is to be determined following initial feasibility work.

There are **clear challenges in devising a consultancy budget** especially given rapid policy changes (FIT's tariffs), the introduction of new policies and legislation which are not yet finalised (Green Deal, ECO) and the need to further investigate the viability of different strands of the investment

programme before making a decision to proceed. In addition, because the delivery and finance structures have yet to be developed, later stages of consultancy spend are subject to change.

Furthermore, there could be changes to the planned investment programme (such as the reduction/removal of domestic PV and expansion of the domestic private retrofit) which alter the spend profile. We therefore recognise that at this stage **the budget represents more of an overall figure for consultancy spend** and it is anticipated there could be significant movement within this budget. There is an opportunity to negotiate with the EIB to revise the technical assistance budget if one or more of the investment strands is not viable.

In terms of the approach to consultancy spend there is an initial need to investigate feasibility and delivery models of the different elements of the investment programme. This is a sensible approach given the variety and differing timescales. From a programme management perspective it is important to have oversight of all the strands, identify interdependencies and synergies, and consider whether there is benefit in greater integration of work streams (for example private and public domestic retrofit, or district heating and public buildings retrofit).

At present the investment programme and consultancy studies consider the **potential for working with partners** (NHS and universities) on the public sector and district heating elements of the programme. This could be expanded to include other local authorities/the LEP, housing associations and community organisations where appropriate, especially in the area of domestic energy efficiency.

In relation to the proposed **domestic private retrofit consultancy expenditure**, the activities undertaken will depend upon the role, which the Council proposes to play in relation to the Green Deal. At present the activities appear to be based on the Council acting as a Green Deal provider in its own right. The nature of consultancy support will flow from clarity on the Council role and the chosen delivery model (Green Deal provider, Green Deal Partner, Green Deal Facilitator/enabler).

#### **4.4 District Heating**

In relation to the District Heating scheme element of the programme we make the following comments:

##### **4.4.1 Consultancy Budget**

Within the overall budget of £455k for district heating consultancy costs, the £180k budget for procurement could be low. Whilst it will clearly depend upon the delivery model and procurement route used, we expect external technical, legal and financial advisory costs associated with the procurement of a delivery partner could potentially be 2-3 times the proposed budget particularly if competitive dialogue is used and/or an SPV structure adopted. However the Council considers the £250k technical research budget (which will be expended first) to be generous and underspend can be used to increase the procurement budget.

##### **4.4.2 Programme**

District heating schemes take time to develop (Cofely estimates 3-5 years from conception to operation). Although the Council needs to commit to procurement (rather than have completed investment in the 3 year period, given the challenges to other elements of the investment programme, there is probably merit in bringing forward the Development stage (which is currently shown at 18 months).

The Feasibility Report identifies that the £23.5million capex figure is for 6 schemes but also identifies the need to do further assessments of whether or not they are deliverable. With this in mind the Council should consider "what if" scenarios based on a procurement including a smaller number of sites within the 3 year ELENA funded programme period. This could involve an expansion of certain schemes such as the BS1 phase 1 (City centre) site.

#### 4.4.3 Financial feasibility

The financial information provided to us in relation to the DH scheme is limited to that contained in the November 2010 CSE/Arup report "An Assessment of Bristol's Opportunities for District Heating" and no financial model has been prepared. We can therefore only verify that the Capex figures in the report equate to £23.5m. We also note the simple payback period of between 25-35 years, which is characteristic. The planned technical feasibility studies which include system details and identification of heat load partners and consideration of the most appropriate delivery model are pre-requisites to more detailed financial modelling.

#### 4.5 Change in Programme composition and impact on risk profile

CSE prepared a Review of the ELENA programme in December 2011 to reflect changes in FIT's regime as well as Green Deal and ECO consultation the Council has undertaken further sensitivity work and this is shown in the third column of the figures. (CSE's comments relate to the December figures only)

Table 4.1.4: Elena Investment amount

Programme Element	Value £m	Sensitivity 1 £m (Dec 11)	Sensitivity 2 £m (Mar 12)	Changes in risk profile of ELENA application (CSE comments)
Private sector domestic retrofit	10.4	57.9	34.2	Energy price increases and clarification on Golden Rule assessment combine with increased clarity on Green Deal and ECO (incl. subsidies) and government promises of action (and £200 million) to kick-start Green Deal market combine to increase confidence in potential for much greater scale than originally proposed.
Public sector domestic retrofit	29.3	29.3	29.3	Energy price increases enhance attractiveness and ECO consultation increase confidence in anticipated subsidies for solid wall insulation.
Domestic PV	39.8	0	0	FIT changes challenge commercial viability and create need to recover value of electricity generated, making it unattractive to householders.
Public buildings PV	27.0	5.0	4.5	FIT changes challenge commercial viability and create need to recover value of electricity generated, but some remaining potential (if Government provides protection from multiple installation discount for community-oriented schemes).
Public buildings retrofit	10.0	10.0	10.0	Increase in energy prices enhances attractiveness.
District heating	23.5	23.5	23.5	Increase in energy prices and introduction of RHI likely to enhance attractiveness of potential schemes.

Programme Element	Value £m	Sensitivity 1 £m (Dec 11)	Sensitivity 2 £m (Mar 12)	Changes in risk profile of ELENA application (CSE comments)
<b>Totals</b>	<b>140.0</b>	<b>125.7</b>	<b>101.5</b>	Shift from PV to domestic retrofit focuses risks on take-up of Green Deal and success of ECO, though greater clarity on approach and Government commitment of £200 million to 'kick start' Green Deal reduces these risks compared with those at time of original ELENA application. Greater scale of domestic programme also likely to make participation more attractive for financiers, installers, energy suppliers and others in the supply chain.

In our view the assessment by CSE does not fully reflect the increased risks associated with the Sensitivity 1 programme in the following respects:

- The issue of the projected Leverage Factor for the investment programme has not been revisited in the review but is much lower with the removal of solar PV (and payback is longer). Solar PV which represented the lowest risk/highest return element of the investment programme and had an estimated LF of more than 150 has been reduced from £66.8m (48% of investment programme) to £4.5m (4.5%). We have also noted our concerns above regarding Leverage Factor on the domestic private retrofit programme.
- The balance between investment in council-owned property and other has changed from £66.3m/£73.7m (47/53) to £43.8m/£57.6m (43/57). The Council will clearly have less control of investment occurring outside its own estate, procurement will be more complex, and the private sector and financiers will consider it to be higher risk.
- There is uncertainty in relation to the timing of the Green Deal rollout (further detail below) which could result in a slow start. There is clear nervousness in the marketplace around take up and this remains a significant risk. This programme carries the added complication that the role of the Council is not clear.
- Access to ECO funding is critical to the success of domestic retrofit. There is now more detail about the likely regulatory framework and funding mechanisms, and as a result of consultation, the government has now agreed that social housing can access the affordable warmth subsidies. The limited amount of ECO which will be available across the UK (estimated £1.3bn/pa) means that the funding available for both Hard to Treat and affordable warmth will be rationed, however, and could act as a major constraint to successful implementation. Therefore developing a strategy for attracting the maximum amount of ECO funding to Bristol is critical.

#### **4.6 Delay in roll-out of Green Deal and Green Deal Finance Company (GDFC)**

- Latest information suggests that due to the need to enact secondary legislation and secure state aid approval for the Green Investment Bank (GIB) to invest in the GDFC (2Q 2013 considered likely) there will be a "soft" rollout of GD in late 2012/early 2013. In addition, it has been reported that energy companies do not expect to be in a position for GD payments to be incorporated into electricity bills until 1Q 2013.
- **Risk:** Such delays could eat into the time available to implement ELENA investment related to private domestic Green Deal, result in slow take up and increase the risk of not achieving the necessary leverage factor.
- **Mitigant:** Progress other elements of the Investment Programme; alter profile of direct staff recruitment accordingly.

## 5 Model Review

This section provides a review of the financial models that support Sensitivity 2 in the table below and the assumptions provided by the Council and CSE for the projects set out below:

- Private sector domestic retrofit packages combining "Green Deal" energy efficiency measures with (FIT eligible) solar photovoltaic and heat pump systems
- Public sector domestic retrofit, Solid Wall Insulation project using a similar "Green Deal" mechanism
- Public building PV
- Public buildings retrofit

The following section provides analysis of each of the individual models and is intended to identify potential financial considerations that have not yet been taken into account and also those which will require revision for an updated cash flow forecast.

**Table 5: ELENA Application investment level**

Programme Element	Original £m	Sensitivity 1 £m	Sensitivity 2 £m
Private sector domestic retrofit	10.4	57.9 <sup>2</sup>	34.2
Public sector domestic retrofit	29.3	29.3	29.3
Domestic PV <sup>3</sup>	39.8	0	0
Public buildings PV	27.0	5.0	4.5
Public buildings retrofit	10.0	10.0	10.0 <sup>4</sup>
<b>Totals</b>	<b>140.0</b>	<b>125.7</b>	<b>101.5</b>

### 5.1 Private sector domestic retrofit

#### 5.1.1 Background

Within the original application, it was suggested £10.4m was deliverable which represented only 10% of the original ten-year investment potential (£104m) set out within the evidence based study provided by the Centre for Sustainable Energy (CSE), who also estimated a market potential in excess of £1bn. CSE were then asked to re-analyse the potential under ELENA, given some significant changes in the market and/or regulatory frameworks. They provided an estimate that £57.9m was now deliverable within 3 years, based on the following assumptions:

<sup>2</sup> The number of packages is based on installations phased in over a period of seven years with the capital investment value of £57.95m representing the first three years of installations.

<sup>3</sup> We have not reviewed the Domestic PV model as part of our model review.

<sup>4</sup> The original £10m has been split 75% on Council buildings and 25% on non-Council buildings with the same assumptions held across both building types.

- Project start is nearer launch of the Green Deal (Autumn 2012).
- Domestic Renewable Heat Incentive launch alongside Green Deal.
- Increased energy costs improve viability of measures.
- £200m available nationally from DECC from autumn 2012 to support early adopters (Green Deals delivered in first 2 years).

The final revised estimate for Private sector domestic retrofit has been provided at £34.2m. This is based on the mid-point between the initial £10.4m and the revised £57.9m.

### 5.1.2 Model Structure

- This is a basic model, which takes several inputs based on costs and savings achieved per retrofit package and applies financing assumptions to arrive at profit/loss for each measure.
- The technical and financial inputs provided for each package have been benchmarked and the results are set out in appendix 6.1.1.
- The values set out in the table below are based on the revised figures provided by CSE in sheet "private housing retrofit model" within excel workbook "ELENA investment programme modelvpost fit and GD co.xls".

**Table 5.1.2: Outputs – Private Sector Domestic retrofit**

Output	Model Value	Comments
Total number of packages	7200	Predominantly CWI based with a substantial element of PV (5250 packages). SWI makes up 950 packages.
Total investment inc. subsidy	£57.9m	Supplier measure subsidies of £3000 per SWI package gives a total modelled subsidy for this element of £2.85m.
Total admin, maintenance and project management fees	£10.9m	Based on annual charges made up of: admin at £10; maintenance at £25 and a project management fee of £10.
Total energy savings and FIT income	£202m	Based on an average saving per package provided as an input to the model, multiplied by the number of packages and an annual average fuel price rise of 2%.
Total financing costs	£102.5m	Financing costs are a function of the modelled weighted average interest rate of 5.10% and the loan term of 25 years.
Weighted average interest rate	5.10%	The interest rate is given as a combination of 40% private sector finance and 60% EIB loans at rates of 6.00% and 4.50% respectively.
Loan term	25 years	

### 5.1.3 Key risks and analysis

- The take-up of Green Deal measures by the private sector is difficult to quantify at this stage. The CSE study has provided a figure of £57.9m for this element of the programme, which includes a one off management fee of £100 per installation. Subsequently this has been reduced to £34.2m which was the mid-point between £57.9m and the £10.4m figure proposed in the original application. Whilst the £10.4m figure was probably conservative, the rationale behind this adjustment is not well supported at present. Planned feasibility work and the publication of secondary legislation should provide greater confidence around likely market potential.
- There is a substantial amount of PV in this element of the programme. SWI packages make up just 13% of the total installations giving rise to limited opportunity to maximise potential ECO funding.
- Administration, maintenance and project management fees are set in the model at £45 per annum per package and are not inflated over the life of the asset. As such these costs are likely to be understated over the life of the project.

- Total savings and FIT income are given in the model as £202m for the given installations over a three-year period. This is based on the annual average fuel price rise set at 2% and average savings per package including FIT income which have been revised post consultation. It is not clear how well supported these savings are.
- Total financing costs according to the model are £102.5m. The weighted average interest rate of 5.10% appears low.
- The proportion of EIB funding is given as 60%, which has the effect of lowering the overall weighted average interest rate and total finance cost. EIB funding is unlikely to be available for the private sector domestic retrofit element.
- The loan term is set at 25 years for all packages rather than being tailored to meet the golden rule.

## 5.2 Public sector domestic retrofit

### 5.2.1 Background

An investment level of £29.3m was considered deliverable within the original application, which represented 80% of suitable council homes. Following a review by CSE it is suggested that the financial viability of this element remains unchanged with a similar risk profile to the original proposal and modest growth in confidence in the levels of subsidies assumed to be available for Solid Wall Insulation ("SWI"). As such the revised application sensitivities remain at £29.3m.

### 5.2.2 Model Structure

- This is a basic model similar in nature to the private sector domestic retrofit model taking inputs based on the costs and savings achieved per retrofit package and applying financing assumptions to arrive at a profit/loss for each measure.
- The technical and financial inputs provided for each package have been benchmarked and the results are set out in appendix 6.1.2.
- The investment level of £29.3m represents 80% of the total possible investment in suitable properties over a six-year period. CSE have since provided an updated model with a total, including subsidy of £31.9m, 80% of which would be £25.52m. The key differences between the two models are a reduction in the number of packages along with a reduction in the value of the subsidy and the average annual fuel price rise.
- The values set out in the table below are based on the revised figures provided by CSE in sheet "council housing retrofit model" within excel workbook "ELENA investment programme modelvpost fit and GD co.xls" as these are thought to be the most up to date in terms of the assumptions used.

**Table 5.2.2: Outputs – Public Sector Domestic retrofit**

Output	Model Value	Comments
Total number of packages	5849	100% EWI across three types of accommodation which are houses, low rise and high-rise flats.
Total investment inc. subsidy	£31.9m	Supplier measure subsidies of between £3250 and £4,500 make up two thirds of the total investment at £21.5m.
Total admin, maintenance and project management fees	£13.1m	Based on annual charges made up of: admin at £20; maintenance at £40 and a project management fee of £10.
Total energy savings	£47.9m	Based on an average saving per package provided as an input to the model, multiplied by the number of packages and the annual average fuel price rise of 2%.
Total financing costs	£17.6m	Financing costs are a function of the modelled weighted average interest rate of 4.60% and the loan term of 25 years.
Weighted average interest rate	4.60%	The interest rate is given as a combination of 20% "Non EIB" finance and 80% EIB loans at rates of 5.00% and 4.50% respectively.



Output	Model Value	Comments
Loan term	25years	

### 5.2.3 Key risks and analysis

- The initial study by CSE provided a figure of £36.6m capital expenditure, which included a one off management fee of £100 per installation. This was then reduced by a factor of 20% to £29.3m to provide a degree of comfort towards achieving the modelled numbers.
- Whilst an 80% conversion rate of suitable properties may be difficult to achieve, the Council have strong experience of providing similar works in the past and are confident that this conversion rate is achievable.
- The revised spreadsheet provided by CSE gives a lower total investment including subsidy of £31.9m and does not appear to have had a reduction factor applied to it which would suggest that the degree of comfort/contingency between the revised modelled amount and the £29.3m is reduced.
- This package assumes a significant level of ECO funding at £21.5m. Under the golden rule, for hard to treat properties, the level of ECO should be limited to the level of subsidy required so that the value of energy savings equals the cost of the Green Deal payments over the life of the measures (25 years). The level of ECO funding shown in the model may therefore be overstated and needs to be calculated on the basis of golden rule compliance.
- Administration, maintenance and project management fees are set out in the model at £70 per annum per package and not inflated. As such these costs are likely to be understated over the life of the project.
- Total Income given by the model is £47.9m. This is based on the annual average fuel price rise set at 2% and average savings per package. It is not clear how well supported these savings are.
- Total financing costs according to the model are £17.6m. The weighted average interest rate of 4.60% is low and driven by an increased level of EIB funding at 80%.
- The level of ECO subsidy is not substantiated through a "golden rule" calculation and therefore appears high as indicated by the accelerated payback period.

## 5.3 Public buildings PV

### 5.3.1 Background

The potential for solar PV was estimated in the original application using an analysis of each building under Council control. This was then limited to buildings that could support systems above 10kW<sub>p</sub>, to achieve economies of scale and below 49kW<sub>p</sub> so that they fall within the higher Feed-In-Tariff (FIT) band. Given the likelihood of potentially complicated installations such as conservation status buildings, a factor of 70% was applied to this number to estimate the required resource, which resulted in an initial ELENA application amount of £27m.

Since the original ELENA application, some of the assumptions have had to be scaled back significantly due to a halving of the FIT rate and an additional 20% discount to be applied to multiple installations. The viability of the business model for PV on public buildings is helped by the greater potential for occupiers of the buildings to use the discounted low carbon electricity however, CSE have stated that for the revised scheme to be financially viable the FIT multiple installation discount must be dis-applied and the capital cost of installation needs to have fallen below £2000 per kW<sub>p</sub>.

On this basis a revised sensitivity was produced by CSE, which significantly scaled back the level of investment proposed, with the potential to achieve £4.5m focused on buildings with a high proportion of their electricity use in daylight hours.

### 5.3.2 Model Structure

- This is a basic model, which takes several inputs based on the capital cost, FIT and generating capacity to arrive at profit/loss for the programme element.

- The technical and financial inputs provided for each package have been benchmarked and the results are set out in appendix 6.1.3.
- The values set out in the table below are based on the excel workbook "BCC PV Model 13 Feb 2012.xls".

**Table 5.3.2: Outputs – Public buildings PV**

Output	Model Value	Comments
Total kWp installed	2358	
Total capital investment	£4.5m	Based on a cost per equipment per kWp installed of £2080 in 2012. It has been assumed that this reduces by 10% year on year.
Total insurance, maintenance and project management fees	£2.1m	Based on annual charges made up of: insurance per kWp at £10; maintenance per kWp at £15 and a project management fee of £10.
Total income	£9.4m	Total income is made up of FIT income, electricity consumption savings and the export tariff.
RPI	3.00%	RPI is used to drive annual increases in both FIT and fuel prices.
Total financing costs	£7.5m	Financing costs are a function of the modelled weighted average interest rate of 5.50% and the term of the loan set at 20 years.
Weighted average interest rate	5.50%	The interest rate is given as a combination of 50% private sector finance and 50% EIB loans at rates of 6.50% and 4.50% respectively.
Loan term	20 years	

### 5.3.3 Key risks and analysis

- The revised spreadsheet provided by CSE gives total investment in Public buildings PV at £4.5m. This is based on installations over a three to four year period and includes a one off management fee of £100 per installation.
- The model assumes a year on year capital cost reduction of 10% on solar PV equipment. Our technical consultants have suggested that the cost of equipment per kWp installed in 2013, 2014 and possibly even 2015 is plausible; however the cost in 2019 - 2021 of £995 – £806 is a bold reduction and one that may not be plausible for financial modelling.
- As the investment period for this programme element is phased over year 2012 -2015, it appears that the assumptions used during this period are suitable. It is worth noting though that any delay to the programme timetable may lead to less prudent assumptions currently within the model coming into play.
- The FIT tariff assumed in the model is 8.6 pence per kWh. According to the Government Response to Consultation on Comprehensive Review Phase 1 – Tariffs for solar PV, the multi generation tariff for band 250kW-5MW is given as 8.9. This increase in tariff has a minimal impact on cash flow within the programme element.
- The FITs phase 1 consultation gave a commitment to considering whether more could be done to enable genuine community projects to be able to fully benefit from FITs. Consultations on the second phase of the FITs comprehensive review included a proposed definition of "Community" and a complementary proposal for distinguishing between community aggregated projects and commercial aggregated projects. In which case a more substantial impact on cash flow may be achieved if this programme element was able to satisfy the outcome of any proposed definition of a community aggregated project.
- Administration, maintenance and project management fees are set in the model at £70 per annum per package and not inflated. As such these costs are likely to be understated over the life of the project.

- Total Income is given in the model as £9.4m. This is based on FIT of £5.5m, Electricity consumption savings of £3m and the export tariff of £0.9m. The FIT tariff applied is prudent awaiting the outcome of consultation phase 2. It is not clear if any allowance has been made for degradation of the panels over their useful economic life, which would adversely impact the cash flow of the project.
- The assumed indexation rate for FITs is RPI, which is modelled at 3.00%.
- The consumption savings fuel price rise indexation is also based on RPI at 3.00%. Other project elements have assumed a rate of 2.00% and it would make sense to equalise this assumption across the programme.
- Total financing costs according to the model are £7.5m. The weighted average interest rate is 5.50% based on a 50:50 split of private sector and EIB funding.
- Under current assumptions, this programme element does not break-even.

## 5.4 Public buildings retrofit

### 5.4.1 Background

The financial viability remains unchanged from the £10m provided for in the initial application which identified up to £10.25m of investment possible in Council owned public buildings. Based on a combination of building stock analysis and work carried out on energy efficiency measures, this value was scaled back by approximately 25% to provide a degree of comfort.

NonCouncil public sector buildings such as health and higher education represent a major retrofit opportunity and with the ELENA offer in place it is the Council's intention to organise wider public sector stakeholder workshops to drive Capital investment into this area. Based on the available information, the Council believe that £2.48m (the remaining 25%) is almost certainly an underestimate of the potential for capital investment in this area. As such the total investment for this programme element has been held at the £10m mark.

### 5.4.2 Model Structure

- This is a basic model which takes several inputs based on % of treatable Gross Internal Area (GIA) per property type, and costs and savings per treatable GIA to arrive at Capital cost and savings per property type for up to ten different technologies types from CWI to Voltage Optimisation. This accounts for approximately £5.6m or the total capital cost with a further £4.5m allocated to Biomass and £0.2m to Solar thermal.
- The technical and financial inputs provided for each package have been benchmarked and the results are set out in appendix 6.1.4.

**Table 5.4.2: Outputs – Public buildings retrofit**

Output	Model Value	Comments
Total retrofit investment	£5.6m	Includes Boiler replacements at 25% of total and lighting upgrades at 36%.
Total Biomass	£4.5m	10 x 500 kW Biomass Boiler
Total Solar Thermal	£0.2m	20 x Solar thermal installations
Total Capital Investment	£10.3m	
Total MWh saved	18,894	Retrofit investment only

### 5.4.3 Key risks and analysis

- The installation of each technology drives out energy savings for the public buildings. The energy savings are based on an input from a separate model, which we do not have access to and is therefore difficult to verify.
- For public sector buildings, the cost and quantities are based on existing installation experience, which has demonstrated that the measures are viable hence the reduced sophistication of the financial model for this programme element. However, the following comments are still valid:
  - It is not clear from the model if administration, maintenance or project management fees are included;
  - There are no income assumptions included within the model which is acceptable for the standard retrofit measures, but we would have expected to see an RHI tariff modelled for the non-domestic Biomass boiler installations;
  - Energy savings are modelled but there is no equivalent monetary value assumed. The savings generated are a function of an emission factor which has been benchmarked as acceptable;
  - There are no financing costs assumed within the model suggesting that this programme element is to be self-funded by the Council through its existing capital budgets;
  - There is no indication of the possible phasing of the installation works that will drive the numbers in the model.

### 5.5 General comments applicable to all models

- There are no net present value calculations in the models provided
- There is no indexation of the capital cost, administration, maintenance and project management fees associated with each of the packages.
- There is no working capital or equity shown in the models requiring finance.
- There is no Tax or Vat shown in the models.

### 5.6 Investment Programme Funding Assumptions

The table below summarises the funding sources that have been assumed for the different elements of the programme

**Table 5.6: Programme funding – Private sector domestic retrofit**

Funding source	Funding requirement £m	Details
ECO	2.8	£2.8 million of ECO funding is required for this part of the programme - it represents circa 5% of the value of the measures
Private sector funding	12.5	Assumed lending rate of 6% per annum over 25 years
EIB	18.9	Assumed lending rate of 4.5% per annum over 25 years
<b>Total</b>	<b>34.2</b>	

**Table 5.6: Programme funding – Public sector domestic retrofit**

Funding source	Funding requirement £m	Details
ECO	21.5	73% of total costs assumed to be funded by ECO i.e. £21.5 million
EIB	6.2	80% of non-ECO funded measures assumed to be funded by EIB loan at 4.5% per annum over a 25 year period
Non EIB	1.6	20% of non-ECO funded measures assumed to be funded by "non-EIB" funding at interest of 5% per annum over a 25-year period. (the Council to verify is this is HRA or PWLB)
<b>Total</b>	<b>29.3</b>	

**Table 5.6: Programme funding – Public buildings PV**

Funding source	Funding requirement £m	Details
Private	2.25	Assuming 50% of the capex cost is funded using "private" finance at a cost of 6% per annum
EIB	2.25	Assuming 50% of the capex cost is funded using EIB finance at a cost of 4.5% per annum
<b>Total</b>	<b>4.50</b>	

**Table 5.6: Programme funding – Public buildings retrofit**

Funding source	Funding requirement £m	Details
Existing Council budgets	10	The Council to verify.
<b>Total</b>	<b>10.0</b>	

**Table 5.6: Programme funding – District heating**

Funding source	Funding requirement £m	Details
Not yet decided	23.5	The Council has yet to form a view on how the District Heating project opportunities could be funded.
<b>Total</b>	<b>23.50</b>	

A summary of the funding sources for the programme as a whole is set out in the table below:

**Table 5.6: Funding sources**

Funding source	Total amount £m	Breakdown by project
ECO	24.3	Private sector domestic retrofit: £2.8 million; Public sector domestic retrofit: £21.5million
EIB	27.4	Private sector domestic retrofit: £18.9million; Public sector domestic retrofit: £6.3 million; Public buildings PV: £2.5 million
Private - non EIB	16.4	Private sector domestic retrofit: £12.5 million; Public buildings PV: £2.5 million; Public sector domestic retrofit: £1.6 million
Existing budgets	10.0	The Council to verify
Not yet decided	23.5	District heating not modelled at present.
<b>Total</b>	<b>101.5</b>	

### 5.6.1 ECO

The ECO funding requirement that is currently assumed for the Public Sector domestic retrofit element of the programme is extremely significant. We have commented above on the risks and issues regarding the ECO and how developing a strategy for attracting the maximum amount of ECO funding to Bristol is critical.

### 5.6.2 EIB

The Council has met with the EIB to discuss how and under what terms the EIB could provide debt funding for the programme. We understand from these discussions that the EIB would be prepared to lend to the Council directly (provided the overall funding requirement was a minimum of £140m with EIB lending 50%) but not to any other entities, which might serve to fund elements of the programme. The 4.5% interest rate modelled for EIB lending was based on fixed 25-year interest rates.

By modelling EIB funding for parts of the programme, the implied assumption is that the Council would be borrowing from the EIB and then become a lender to the project(s) and take project risk.

From our discussions with the project team to date, we do not believe that the Council wishes to lend money to the project(s) in this way.

**Risk:** there is therefore a need to assess what alternative sources of funding could replace the "EIB" labelled funding and what impact the cost of this funding will have on the financial and commercial feasibility of the projects.

**Mitigant:** EIB finance could be replaced by assuming Green Deal finance for the £18.9million of Private sector domestic retrofit measures it was modelled as intending to fund. The increased reliance on Green Deal is a key risk already identified above. It could be replaced by the Council using its own funding sources (PWLB) to borrow to fund the modelled £6.3million of public sector owned domestic retrofit measures and £2.5 million of PV on its own buildings.

### **5.6.3 Private Sector - non EIB**

The "private sector - non EIB" lending rate of 6% per annum appears to be based on the Green Deal Finance company's targeted rate of interest. We have set out our views in Section 4.6 of the likely delay in the rollout of Green Deal and the Green Deal Finance Company (GDFC) above.

## 6 Appendices

### 6.1 Model Review – Input Benchmarking Exercise

#### 6.1.1 Private sector domestic retrofit

Table 6.1.1: Data Book - Private sector domestic retrofit

Data	Number of packages	Full cost per package	Average saving per package	Technical Comments & Assumptions
CWI - Package 1.1 Cell ref. C6	1000	£2400	£196	The figures are difficult to comment on as they have been bundled together. Bundling is sensible with regard to the Green Deal however it is difficult to comment on the average savings per package.
CWI - Package 1.2 Cell ref. C7	5250	£7,200	£610	
SWI - Package 2.1 Cell ref. C9	225	£6,600	£189	
SWI - Package 2.2 Cell ref. C10	325	£17,400	£848	
SWI - Package 2.3 Cell ref. C11	200	£16,839	£607	
SWI - Package 2.4 Cell ref. C12	200	£32,588	£1,626	

#### Potential model errors

- The phasing of the installations is based on a seven-year programme and may not be realistic.
- Cell C42 and D42 are hardcoded and are not based on the phasing % above
- Line 50 and Line 86, the timeline headings are incorrect and still reference 2011



### 6.1.2 Public sector domestic retrofit

Table 6.1.2: Data Book - Public sector domestic retrofit

Data	Number of packages	Full cost per package	Average saving per package	Comments & Assumptions
EWI Houses Cell ref. C6	2,000	£7,500	£264	EWI for houses - £7000, for low rise - £5672 and for high rise £4800. Benchmark amounts not far off and are probably acceptable. Given the fact that CERT funding is becoming more freely available at low costs and given the scale of the programme, it possible that this might be much less. The CERT funding issue will also apply to cavity wall and loft insulation and for private housing.
EWI low rise flats Cell ref. C7	1,849	£4,250	£144	
EWI high rise Cell ref. C8	2,000	£4,250	£144	
New boiler and heating controls. Cell ref. C9	0	£4,000	£132	The boiler payback appears high, especially when combined with heating controls. It is one of the measures that appear suitable for Green Deal and we might expect a 20-25 year payback.
Maintenance per installation per year Cell ref. C25		£40		Maintenance costs for SWI are high. We would not expect much in the way of maintenance. The contractors would have a degree of liability to ensure that a job was completed successfully in the first place.

#### Potential model errors

- Line 32,50 and 86, the timeline headings are incorrect and still reference 2011

### 6.1.3 Public buildings PV

Table 6.1.3: Data Book - Public buildings PV

Data	Model	Comments & Assumptions
Cost of equipment per kWp installed at April 2011 Cell ref. C7	£2,080	From our forward thinking we have been using figures of between £1700-1800. This is not an unrealistic target given the total size of the kWp installations – the Council will have to take into account the size of the individual installations.
Real reduction in Capital cost achieved per year Cell ref. C9	10.00%	The cost of equipment per kWp installed in 2013, 2014 and possibly even 2015 is plausible. The cost in 2019 - 2021 of £995 – £806 is a bold reduction and one that we would not currently suggest as we

Data	Model	Comments & Assumptions
		do not think that it is plausible for financial modelling as the 'risk' to the client is too high. The impact on the business model and overall project would be considerable.
Feed in tariff April 2012 Cell ref C13	0.86	The income from the FIT is based on the feed in tariff at outset figure of 0.086. We think that this figure is incorrect. It is likely that a better figure is 0.152. However, the recommended rates for this scale beyond 2012 are also under consultation and there are currently 3 options of: 0.089, 0.114 and 0.119. This will be index linked but will almost certainly be reduced annually. Estimating this reduction is very challenging. We suggest using a 20% reduction annually.
Export tariff at April 2010 Cell ref. C26	0.03	The export tariff is incorrect and should be 0.031 however Phase 2 consultation is still in process and DECC have stated that they are reviewing this and that it could go up or down, be a flat rate or indexed linked i.e. very inconclusive.
Indexation rate of tariffs – RPI Cell ref. C27	3.00%	Could assume the long run rate of inflation to be 2.50%
% of generation exported Cell ref. C29	40%	We suggest that you use 50% as this is the figure that is currently allowed to be 'deemed' (unless export or smart meters have already been installed). It is more realistic and will help the profit /loss, is currently acceptable and will remain so until smart meters are installed.
Assumed cost of 'saved' electricity Cell ref. C30	0.10	The price per kWp for commercial buildings is higher than the figure we use which is 0.08-0.09 per kWp commercial.
Project management fee - one off Cell ref. C33	100.00	We feel that this might be a little low and suggest using £145. However, £100 might be appropriate if the number of installations is low as the average size of installation is large.
Project management fee - per annum Cell ref. C34	10.00	We presume that this is a fee for paying an organization to manage and monitor the installations, to ensure that the panels are operating in order to achieve the FIT. If so, then this seems acceptable.
Interest rate Cell ref. C35	5.50%	A blended rate of 50% private and 50% EIB funding both set at rate of 4.50%.
Consumption savings Line ref. 59		The consumption savings appear to take into consideration the export percentage and we are not sure that it should. If the export is deemed then it is independent of the actual use. We suggest that using a figure of 70% of energy costs as consumption savings is an appropriate figure for council and commercial buildings. This is a variable figure though and is open to debate.
Profile of installations 2011/12/13 Cell ref. C40-E40	20%/40% /30%/10%	

### Potential model errors

- Cell E16, error in tariff rate indexation formula

### 6.1.4 Public buildings retrofit

Table 6.1.4: Data Book - Public buildings retrofit

Data	Model	Comments & Assumptions
<b>Cavity Wall Insulation</b> Cost per treatable GIA m2 Savings in kWh per treatable GIAm2	£3.50 £25.00	<p>The key figures are those in the column headed, 'Savings kWh'. It is this column that is determining the figures in the column headed 'Savings kWh per treatable GIA m2'. We do not have access to the additional table from which these figures appear to have originated and we have not been provided with the total energy consumption for each building type so analysing the figures in this column is challenging.</p> <p>However, using CIBSE benchmark data for some of the building types it would appear that the savings figures used may be higher than might be anticipated.</p> <p>For example the savings figures for the primary schools is approximately 20% of the typical electricity energy use per m2 for a primary school if we use the GIA treated m2 for 'roof' insulation (we assume this means loft insulation). When using SAP the figure, which does depend greatly on specific archetype, this would be closer to 15%.</p>
<b>Roof Insulation</b> Cost per treatable GIA m2 Savings in kWh per treatable GIAm2	£4.00 £33.00	
<b>Cooling/ventilation upgrades</b> Cost per treatable GIA m2 Savings in kWh per treatable GIAm2	£11.60 £57.00	
<b>Heating controls</b> Cost per treatable GIA m2 Savings in kWh per treatable GIAm2	£4.00 £15.00	
<b>Pipe insulation</b> Cost per treatable GIA m2 Savings in kWh per treatable GIAm2	£2.00 £6.00	
<b>Pumps, VSDs</b> Cost per treatable GIA m2 Savings in kWh per treatable GIAm2	£2.00 £3.00	
<b>Boiler replacements</b> Cost per treatable GIA m2 Savings in kWh per treatable GIAm2	£30.00 £50.00	
<b>Lighting upgrades (inc. LED)</b> Cost per treatable GIA m2 Savings in kWh per treatable GIAm2	£15.00 £15.00/£10.00	<p>Our analysis suggests that the lighting upgrades could be unnecessarily high, but this is difficult to say with any confidence, as the exact nature of the measures would need to be known. Fittings, if included, could more than double any cost.</p>
<b>Voltage optimisation</b> Cost per treatable GIA m2 Savings in kWh per treatable GIAm2	£10.00 £20.00	<p>The Voltage optimisation savings in kWh might appear to be considerably out. Voltage optimization might be expected to reduce consumption figures by approximately 10% and is thought to be particularly appropriate for the types of buildings that have been listed. However, we might have suggested a figure of approximately 100kWh/m2 reduction through Voltage optimization in swimming pools for example (the figure that you currently have is 25kWh/m2).</p>

### Potential model errors

- Lighting upgrades (inc. LED), cells J18-J40, possible error on the spreadsheet where the savings in kWh per treatable GIAm2 changes from £15.00 to £10.00

### 6.2 Bristol City Council - ECO funding strategy

Please see attached document provided by technical consultants Sustain Limited.

*Sustain report on ECO CERT and CESP Bristol CC ELENA programme 220312.doc*

### 6.3 Source Documents

ELENA draft Bristol City Council 22 08 11 .DOC

ELENA Application Appendices:

Climate Change and Energy Security Framework[1].pdf

Bristol Energy Master-plan [2].pdf

Bristol City Council EU Funded Projects [3].pdf

Bristol Sustainable Energy Study[4].pdf

Bristol ESCO Key success factors and issues[5].pdf

Bristol public buildings energy savings potential [7].pdf

Investing in PV for Bristol's largest roofs[8].pdf

Bristol DH Opportunities Assessment[9].pdf

Bristol ELENA Technical Assistance Programme [10].pdf

Bristol domestic energy demand reduction investment programme – technical report v2.pdf

Review of Bristol City Council ELENA Programme December 2011 v proofed.pdf

ELENA Resource planning – final.doc

Risk Analysis ELENA updated version 09.01.12.doc

ELENA contract2011-021 Bristol CC\_EN

ELENA investment programme model v4.1 - copy.xls

ELENA investment programme modelvpost fit and GD co.xlsx

Public building retrofit - less optimum case pb 061211.xls

BCC PV Model 13 Feb 2012.xls



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