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Business Energy Efficiency Project (BEEP): Summative Assessment



business energy efficiency project Durham County Council



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Executive summary

Durham County Council's (DCC) Business Energy Efficiency Project (BEEP) has supported over 200 SMEs to reduce their energy demand through energy efficiency improvements since 2016. The project will be completed on 30th September 2019.

BEEP provides independent analysis of a business's existing practices via an in-depth energy audit and data analysis. The resulting bespoke recommendations report provides the SME with cost-effective options for generating financial savings through energy reductions. Joint funding by ERDF and Durham County Council means this service is delivered free of charge to local businesses.

This joint report by ACE Research and SE² details our summative assessment of BEEP. Our methodology embraced the five key research requirements: project context; progress; delivery and management; impact, and assessing value for money.

Project Context

Overall, BEEP has remained consistent and relevant to both its energy policy and economic contexts. It has built a strong reputation for supporting local SMEs. However, rapid changes in the local economy and energy market, particularly related to digitalisation, and the greater emphasis on decarbonisation driven in part by local declarations of Climate Emergency will create challenges in terms of both the content and scale of future support programmes.

Progress

We consider that BEEP has made excellent progress against the project's ERDF targets, especially considering BEEPs delayed start to delivery.

While BEEP will meet its engagement target, of a total of 240 businesses supported throughout the project, the GHG emissions-based target will not be met. Current GHG reductions are only at 33.7% of the target. This underperformance can be linked to:

- Changing ERDF guidelines on what technologies could be supported by BEEP grants, which resulted in a reduced grant allocation budget. This budget, which ran out quickly, caused disappointment amongst SMEs reliant on grant funding to implement BEEP recommendations.
- Changes in carbon factors for energy saving measures, which meant predicted savings were lower than originally predicted.

Delivery & management

We found that BEEP is delivered by a highly motivated, dedicated and committed team who possess a diverse range of complementary skills. This includes technical knowledge and experience, enabling the delivery of audits, recommendation reports and associated research, and commercial skills in business development and sales to support successful engagement with SMEs and wider stakeholders. The team were very positive about the delivery and impact of BEEP and are proud of the support that the project has offered to SMEs across Durham.

The BEEP process is relatively simple to understand, and SMEs are made aware of the support that is available and what they have to provide in return. While BEEP recommendation reports are technical in nature, SMEs are provided with key information that enables them to make a decision to implement the recommendations. Amongst those SMEs responding to a survey, the support received from BEEP officers was very highly rated, with 90% of respondents saying it was good or very good, closely followed by the

information initially received and the recommendations for their business, both at 86% good or very good.

BEEP uses a wide range of approaches to engage with its target audience. Most stakeholders considered that word of mouth has been the most effective route to engage with SMEs, something that is borne out in referral rates and SME feedback.

The project's marketing materials have several key messages, such as avoiding wasting energy, energy affordability, avoiding pressure on margins and ultimately profits, and improving competitiveness and productivity. Climate change and benefits to the environment are notably absent, but this is usual for the target audience. There are however no references to some of other wider benefits to energy efficiency, such as comfort in the workplace.

BEEP takes a variety of approaches to directly target SMEs across Durham and the team understand the key factors that are central to successful engagement. The team have successfully targeted specific sectors through the use of data and onsite approaches to engagement.

The delivery of BEEP has been supported by a number of strategic partnerships within DCC and the wider region. This includes Business Durham and the Federation of Small Businesses (FSB). Partnership working has had varying degrees of success in terms of generating BEEP referrals, but partners value BEEP and are keen to continue working with the team in an increased capacity with BEEP 2.

The research team identified a number of things that work and things that don't about BEEP. We detail how changes to funding guidelines resulted in project budgets for grants being too small, performance indicators not been able to reflect different sizes of SMEs, and the difficulty in applying for and implementing EU funding. However, what BEEP does deliver on is its enthusiastic and committed delivery team, their success in engaging with SMEs through word of mouth showcasing the trust that SMEs have in the programme, and DCC's approach to decarbonising the local economy.

Impact

The BEEP team are proud to have assisted SMEs across Durham to reduce their energy spend and have made many businesses – from micro businesses to large SMEs – more financially stable as a result.

BEEP has made excellent progress towards the target for number of businesses supported (C1), with a total of 262 businesses engaged throughout the project, and 200 of those getting the full support. However, the GHG emissions-based target will not be met by the 30th September 2019. Current GHG reductions are only at 33.7% of the target.

Of the 262 business engaged through BEEP, 200 have received at least 12 hours of support. The team has spent 3,181 hours supporting these businesses, resulting in 885.48tCO_{2e} saved and £122,557.32 of grants awarded to Durham SMEs.

The research team have also identified several unintended outcomes to BEEP, including increased joint working between DCC teams, new working relationships between SMEs (such as sharing of waste products and joint working on the deployment of low carbon technologies) and the development of BEST (a project based on BEEP, led by Newcastle City Council). We have also identified partnership working with other business energy efficiency projects, influence to change ERDF funding guidelines and the recognition of BEEP and DCC at a national level.

Assessing Value for Money

Data on the monetary savings made by the BEEP SMEs and the delivery metrics of other PA4b projects was not available to the research team. However, we do know that BEEP has resulted in 885.48tCO_{2e} saved: this reduction in energy use and costs will have improved the bottom line of the SME participants and made them more competitive in the marketplace.

As outlined above, the research team identified several unintended outcomes to BEEP, however these are hard to quantify in monetary terms but are proving invaluable to DCC, their stakeholders and SME clients.

Recommendations

The evaluation team have collated recommendations for BEEP 2 from within the BEEP team, SMEs engaged with BEEP and wider project stakeholders. A full list of recommendations is included in section 7 of this report. Highlights include:

- There is a general consensus for BEEP 2 to be more ambitious, including increased funding and more specifically a larger budget for SME grants.
- In terms of BEEP delivery, stakeholders called for variable support levels based around SME size, diversifying the measures and support provided by BEEP (including low carbon technologies, smart and advanced metering technologies, energy brokerage, planning and Power Purchase Agreement (PPA) support).
- Stakeholders felt that while the team should continue to focus on engagement of new SMEs, there should be time spent offering further support to SMEs who went through the programme and those that showed an initial interest but then declined support.
- The team should continue to develop best practice case studies but these should be actively shared across partnerships and existing networks to increase the visibility of BEEP and its success as a programme.
- The team should use national, regional and local datasets on energy demand to target BEEP interventions. This should include targeting commercial buildings with low Energy Performance Certificate (EPC) ratings.
- Finally, in terms of partnership working, BEEP should continue to work with SME and energy focussed stakeholders, building on offers of further joint working identified through our stakeholder engagement. The team should also provide visibility of BEEP referral rates so that the impact of partners can be understood and ultimately prioritised where referral rates decline. The provision of training to key stakeholders, such as business advisors, to promote BEEP services is recommended. We have also recommended that BEEP maintain and strengthen relationships with BEST, and the BEIS Regional Energy Hub, to provide a standard energy service offering for businesses across the region.

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1 Introduction

This joint report by ACE Research and SE² details our summative assessment of Durham County Council’s (DCC) Business Energy Efficiency Project (BEEP).

The report is a requirement of the European Regional Development Fund (ERDF), and is therefore aimed at the ERDF and the Ministry of Housing, Communities and Local Government (MHCLG). However, the report is also aimed at a broader audience, including the BEEP team, other DCC teams and elected members, and wider local stakeholders and delivery partners.

1.1 BEEP

BEEP has supported SMEs to reduce their energy costs with energy efficiency improvements since 2016. The project will be completed on 30th September 2019.

BEEP provides independent analysis of a business's existing practices via an in-depth energy audit and data analysis. The resulting bespoke recommendations report provides the SME with cost-effective options for generating financial savings through energy reductions.

Joint funding by ERDF and Durham County Council means this service is delivered free of charge to local businesses.

1.2 The evaluation of BEEP

Undertaking both desk-based research and stakeholder engagement, our approach gathered both qualitative and quantitative data from the BEEP team and SMEs, as well as from wider stakeholders in the region. We also reviewed BEEP's promotional activities and drew in learnings from other PA4b¹ projects.

Our methodology embraced the five key research requirements:

- **Project Context:** exploring the continued relevance and consistency of the project, in light of any changes in policy or economic circumstances during its delivery period;
- **Progress:** details the progress of the project against contractual targets, any reasons for under or over performance, and the expected lifetime results;
- **Delivery & Management:** exploring the experience of implementing and managing the project and detailing lessons which have emerged from this experience;
- **Impact:** showcasing the economic and emission reduction impacts attributable to the project, including both intended and actual outcomes; and
- **Assessing Value for Money:** an analysis of the cost-effectiveness of the project in light of its intended and unintended outcomes and impacts, and thereby its value for money.

A project Logic Model was provided to us in diagram form to assist with this review, and briefings from the BEEP team and access to project documentation enabled us to understand the context, market failures addresses, project objectives, rationale, inputs, activities, outputs, outcomes and impacts.

¹ PA4b: ERDF Priority Axis 4 workstream supports the shift to a low carbon economy. Investment priority 4b focusses on the promotion of energy efficiency and renewable energy use in enterprises.

1.3 Report structure

The research areas are explored in the sections below:

- Section 2: [Project Context](#)
- Section 3: [Progress](#)
- Section 4: [Delivery & Management](#)
- Section 5: [Impact](#)
- Section 6: [Assessing Value for Money](#)

[Recommendations](#) to the BEEP team are detailed in Section 7, while Appendices detail energy policy, the makeup of businesses across Durham and associated energy demand and carbon emissions, SME survey results and examples of marketing collateral.

2 Project Context

In this section we explore the continued relevance and project context of BEEP, in terms of changes in both policy and economic circumstances during its delivery period.

Overall, BEEP has remained consistent and relevant to both its energy policy and economic contexts. However, rapid changes in the local economy and energy market, particularly related to digitalisation, and the greater emphasis on decarbonisation driven in part by local declarations of a Climate Emergency, will create challenges in terms of both the content and scale of future support programmes.

2.1 Climate change: emergency declarations

Durham County Council declared a Climate Emergency in February 2019². This announcement included reference to BEEP:

Cllr Carl Marshall, Cabinet member for economic regeneration, said:

"As a council we have already proven our commitment in this area, with projects such as the Business Energy Efficiency Project (BEEP) and our extensive street lighting LED replacement programme.

It is important that we take responsibility for our environment, protect our planet and ensure that we leave the county a better place for our children.

Together with our partners we will be working on our Carbon Reduction Strategy, which will set out exactly what it will take to make the county cleaner and greener for generations to come."

It was noted that County Durham has already surpassed its 2020 target, having achieved a 42% reduction in carbon dioxide emissions, and that DCC continues to show foresight and leadership when it comes to addressing climate change.

"One of the good things is that it's demonstrated within the council what the potential is in and around this – it's helped to feed into the wider climate plans that the council has." BEEP Stakeholder

"These types of programmes should be tied into the broader agenda on climate – it's emerging all the time. Maybe these projects were ahead of their time. If we were starting [later], there'd be so much more publicity about the issue and what people and businesses need to do. It'd help to ram the message home a bit better." BEEP Stakeholder

2.2 Businesses in Durham

There are 13,685 registered business in Durham. The number of businesses has generally been growing as part of recovery following the global downturn of 2008. Last year (2018) was unusual in that it saw both an increase in the number of business start-ups and a decrease in the total number of businesses.

Durham's economy has been shifting from one dominated by industry, manufacturing and the public sector, into one of greater diversity. Professional and business services sectors, construction, accommodation / food and knowledge-based industries are growing, whilst the public sector has shrunk significantly.

² We commit to climate change improvements, DCC, February 2019: www.durham.gov.uk/article/21066/We-commit-to-climate-change-improvements

There is a large base of microbusinesses and small businesses across a diverse range of sectors. Whilst these offer scope for carbon emissions reductions in totality, the emissions from each individual business are likely to be small.

Manufacturing businesses are more likely to be operating at scale in Durham: there is a base of 75 medium sized manufacturing businesses and these offer a good target market for energy efficiency interventions. There is a diverse mix of smaller businesses across multiple sectors, with retail businesses, accommodation and food services, construction firms, agriculture forestry and fishing, and professional scientific and technical industries making up more of the business population at smaller sizes.

Most manufacturing businesses are based outside Durham City, which means that BEEP's targeting of this sector has helped to drive business efficiency across the county. Importantly, many of these firms are located in or near to areas of deprivation, which could lead to benefits from improved resilience of local economies.

Appendix A provides more insight into the make-up of Durham's business community, its energy use and its carbon emissions.

Statistics from BEIS indicate that, during the period 2010 to 2016, gas use in the commercial and industrial sector in Durham reduced by 14% and electricity use by 11%. In terms of carbon emissions, those from electricity fell by 50% in the same period, a result of increased efficiency of equipment, greater efficiency in use and behaviour and, most significantly, grid decarbonisation.

Commercial and industrial gas related carbon emissions fell by 20% between 2010 and 2016. This will comprise combinations of upgraded heating systems and improved energy efficiency, for example, through better controls.

Over 6,800 Energy Performance Certificates have been produced for non-domestic premises in Durham, covering over 4.7m m². This dataset is limited to those which have been required to produce an EPC since 2009 so may not be fully representative of the commercial estate in the area. That said, they indicate that 14% of non-domestic properties have an F or G energy rating, with a further 16% having an E rating. The implications of this are discussed in the section on Minimum Energy Efficiency Standards (MEES) below.

BEIS' Business Energy Efficiency Survey (2016) identified that some sectors operate at higher energy intensity than others. In particular, hospitality businesses have a high energy intensity because they are often using multiple energy services (lighting, refrigeration, heating, hot water) and operating for long hours. Manufacturing businesses also tend to have high individual energy use, mainly driven by process energy requirements (pumps, fans, specialised machinery).

2.3 Energy policy

At the time BEEP was created, national energy policy was serving larger businesses more effectively than SMEs. Instruments such as Climate Change Agreements, the Energy Saving Opportunity Scheme (ESOS) and the Carbon Reduction Commitment (CRC) targeted larger commercial and industrial organisations and public sector bodies. At the same time, there was a recognition that policy targeting SMEs was not reaching its intended audience or driving improvements in energy efficiency. This recognition helped to inform the ERDF focus on SMEs, a national review of the business energy efficiency landscape and the creation of local support programmes such as BEEP.

Through the period of BEEP's operation, SMEs have faced (but perhaps not recognised) additional energy costs through the Climate Change Levy (see Table 10 in Appendix B for an indication of typical CCL costs

to different sizes of businesses). Energy prices have also increased significantly, improving the business case for investment in energy efficiency. To offset rising costs, SMEs have from time to time been able to benefit from incentives such as the Feed-In Tariff (FIT), Renewable Heat Incentive (RHI), low interest loans and grants and Enhanced Capital Allowances (ECA). They have also benefited more generally from energy performance standards applied to products such as office and catering equipment. Advice and support from BEEP have helped SMEs in Durham to benefit from these opportunities.

The policy landscape for SME energy efficiency has shifted significantly in the past 12 months and this should inform the design of future projects.

The introduction of Minimum Energy Efficiency Standards (MEES) for rented properties in both the domestic and non-domestic sectors in April 2018, has meant that F and G rated buildings can no longer be let (unless exemptions apply). Further information on MEES can be found in Appendix B. Existing Energy Performance Certificate data indicates that around 14% of the commercial building stock in Durham is F or G rated³. Targeting future support based on tenure and energy rating could unlock further investment in the poorest performing stock. The expected trajectory for minimum standards is that E-rated properties will not be able to be let after April 2023. Further analysis of EPC data suggests that a further 17% of properties in Durham are E-rated, so there is likely to be a market for investment in energy performance improvement in this part of the stock in the early 2020s. Additional commentary and data associated with MEES can be found in Appendix B.

There is some evidence of landlords approaching BEEP in response to the introduction of MEES; however, there is a grey area relating to landlord's eligibility for ERDF support and grant funding. This is linked to the nature of their energy billing relationship with their tenants. MEES has not been a focus of BEEP as a result.

The drive towards digitalisation of the energy system has accelerated with the ongoing rollout of smart and advanced meters to homes and businesses, and also the early indications of the types of services that these can enable (for example, time of use tariffs, demand response services). Smart and advanced meters are discussed with businesses during BEEP audits. However, the roll out of metering services is not a core focus of the BEEP programme to date.

The Green Finance Strategy⁴ outlines how the UK can utilise its position as a leading financial centre to drive decarbonisation and seize its commercial potential. While the focus of the strategy is on larger commercial organisations and those with high energy demands, the strategy does note that BEIS committed to gaining a greater understanding of how banks and energy service companies (ESCOs) can be encouraged to engage in the energy efficiency market for SMEs. A second call for evidence was published in 2019. This asked whether there would be any value in a government guarantee to underpin loans to SMEs from ESCOs, financial institutions, energy efficiency lenders and partner organisations, to de-risk these products. We expect that the Government's response will be published in late 2019 or early 2020.

³ MHCLG, Energy Performance of Buildings Data: England and Wales Open Access Database, accessed July 2019: <https://epc.opendatacommunities.org/>

⁴ Green Finance Strategy: Transforming Finance for a Greener Future, HM Government, (July 2019): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/813656/190701_BEIS_Green_Finance_Strategy_Accessible_PDF_FINAL.pdf. The Strategy builds on the Green Finance Taskforce report published in March 2018.

The strategy also details the launch of the Boosting Access for SMEs to Energy Efficiency (BASEE) competition⁵ in March 2019. This will provide £6 million of funding to accelerate the growth of the energy services market for SMEs by driving down transaction costs and promoting third party investment in energy efficiency projects.

2.4 Economic context

Durham has a number of economic strengths: locational and transport connections; strong educational and research institutions; some thriving sectors such as tourism. The North East economy has a broad industrial base⁶ with strong levels of innovation and increasing levels of employment and business start-ups.

However, the context for this narrative is that the economy is starting from a lower base on many indicators. The local economy in Durham grew during the 2000s but was hit hard by the global economic downturn after 2008⁷: some 10,000 jobs were lost in County Durham between 2008 and 2010. The local economy is growing; there was a 3.2% increase in the number of jobs in the county between 2010 and 2016. This comprised an 11% increase in private sector jobs but a 19% loss in public sector jobs during this period. However, the local economy continues to under-perform relative to other areas, with high levels of unemployment, an aging population and the continuing impact of national austerity policies.

There are positive signs: employment numbers, business start-ups and GVA are rising, but all still remain below the national average. There are issues around the level of education and skills within the region, with a higher than expected level of job vacancies for high skill workers. There are also significant disparities in economic activity and employment between different parts of the county and significant poverty and deprivation in the county and across parts of the wider North East.

BEEP existed within this context of a recovering economy with a growing private sector and shrinking public sector. Cost pressures on businesses have increased: electricity prices have increased by around 15% and gas prices by 10% for SMEs since 2014⁸. BEEP – and wider business support provided by Durham County Council and others – have helped SMEs to address cost challenges, a changing regulatory environment and a more complex energy market.

Stakeholders noted that some SMEs were confusing BEEP with utility brokers, who often offer energy audits as part of their service model. The BEEP team communicate that they work for DCC and that they want to reduce the units of energy used, not the cost of a unit of energy, that support is free, and grants are available. However, two stakeholders did question whether BEEP, or the wider DCC, could offer a brokerage service in the future.

2.5 SME survey results

As detailed in Appendix C, SMEs were asked whether they thought a project like BEEP was still relevant to SMEs. 90% of respondents (19 SMEs) thought it had either more or the same relevance, confirmation of the need for ongoing support through BEEP 2 and other similar projects.

⁵ www.gov.uk/government/publications/boosting-access-for-smes-to-energy-efficiency-basee-competition

⁶ Our Economy, North East Local Enterprise Partnership, 2019: <https://www.nelpe.co.uk/wp-content/uploads/2019/06/nel605b-our-economy-web-v13.pdf>

⁷ State of the County 2018, County Durham Economic Partnership, 2018: www.countydurhampartnership.co.uk/media/26243/2018-CDEP-State-of-the-County-Report/pdf/2018_CDEP_State_of_the_County_Report_Revised1.pdf

⁸ Gas and electricity prices in the non-domestic sector, BEIS, 2019: www.gov.uk/government/statistical-data-sets/gas-and-electricity-prices-in-the-non-domestic-sector

3 Progress

In this section of the report we highlight the progress of BEEP against its ERDF contractual targets and the expected lifetime results. We also detail the amendments made to the grant agreement, provide explanations for any performance issues, and the expected lifetime impact results in both environmental and economic terms.

3.1 ERDF targets

Tables 1 and 2 detail the contractual ERDF project value and targets.

Table 1: Project value

Total project value⁹:	£889,811
ERDF funding:	£533,887
DCC match funding¹⁰:	£255,727
SME match funding¹¹:	£100,197

Table 2: delivery requirements

Businesses engaged:	240
GHG emissions reductions (tCO₂e):	2,620

3.2 Performance¹²

As outlined in table 3 below, BEEP is on target to meet its support target, with a total of 262 businesses engaged throughout the project. However, the GHG emissions-based target will not be met by the 30th September 2019. Current GHG reductions are only at 33.7% of the target, although a significant increase is expected in the final quarter of delivery.

Table 3: BEEP delivery performance

Businesses engaged:	262
Received full level of support ¹³	200
Did not receive full level of support ¹⁴	62
GHG emissions reductions (tCO₂e)¹⁵:	885.48

⁹ As detailed in ERDF Funding Agreement letter, 15 August 2016.

¹⁰ DCC contribution to BEEP: Project Manager salary (3 years) and some additional financial support.

¹¹ SME contributions to measures installed count as match funding.

¹² Data valid at 16th July 2019.

¹³ C1 target: at least 12 hours of support provided to an SME.

¹⁴ C1 target: did not reach at least 12 hours of support provided to an SME. These 62 SMEs either stopped participating in the BEEP process, or the BEEP team were unable to spend 12 hours supporting the SME.

¹⁵ Note that this figure includes GHG emission savings from measures that were deployed by SMEs without the use of a BEEP grant. Some SMEs took up alternative sources of finance and funding.

Table 4: BEEP delivery metrics

Total hours of support delivered to SMEs:	3,181
Value of BEEP grants awarded to SMEs:	£122,557.32
Total identified GHG emissions reductions (tCO₂e)¹⁶:	4,393.49
In terms of identified GHG emissions reductions, solar technologies make up the greatest portion of potential savings (1,641.64tCO ₂ , 56.27%), followed by lighting (825.27tCO ₂ , 28.29%) and behaviour change activities (297.14tCO ₂ , 10.19%). Other measures, including heating and hot water technology and compressor upgrades, make up the remaining potential savings (153.24tCO ₂ , 5.25%).	
Average carbon value of BEEP grant funding (£/tCO₂):	£170.76
Financial savings by SMEs (£):	Data not available at the time of report production

BEEP has evolved over the delivery period and not all elements in the original ERDF bid have been delivered. Amendments via Project Change Requests (PCR) have been made in agreement with ERDF, BEIS and MHCLG. While many of these amendments were around budgeting, some contractual and delivery model amendments were made. These included for example:

- Changes to the C1 KPI, which originally required BEEP to provide onsite support to the SME for 12 hours. This was changed to reflect both onsite and offsite working, as detailed in section 4.2, the team spend some time onsite conducting an audit, but the bulk of time is spent offsite analysing data, producing the recommendations report and undertaking additional research to support the SME.
- The scope of the project was widened to include both water and transport.

A PCR to reduce the GHG emissions reduction targets from 2,620 tCO₂e to 1,900 tCO₂e was declined.

3.3 Impact of changes to ERDF guidance

When the team were preparing for the grant submission, ERDF guidance rapidly changed. Initially the guidance suggested that business support could only be delivered if it related to new and emerging technologies. This definition was not fully specified, however. BEIS hadn't been involved in the drafting of the guidance, while MHCLG were involved but couldn't provide a definition.

The BEEP team therefore detailed in their application that they would undertake assessments for a wide range of SMEs, but that grants would only be offered for new and emerging technologies. As a consequence, only a relatively small proportion of the project budget was set aside for grants.

However, by the time the BEEP grant offer was made, the guidance had changed and support did not have to focus on innovative technologies. The BEEP team found that they could now fund a range of technologies, but they didn't have a large enough budget for grants.

In addition, carbon factors for energy efficiency measures have changed. This means that that predicted lifetime carbon savings of energy efficiency measures have reduced. The BEEP team still need to deliver on GHG emission reduction contractual targets yet are supporting the installation of measures with lower

¹⁶ This includes measures that have been installed (929.43tCO₂), those that are planned or in progress (546.78tCO₂), and those identified by the BEEP team following audits (2,917.28tCO₂).

carbon savings than originally predicted. This means that BEEP will have to install more measures than originally planned in order to meet contractual targets but without additional budget.

3.4 Analysis

We consider that BEEP has made excellent progress against the project's ERDF targets, especially considering BEEPs slightly delayed start to delivery. Performance was slow at the beginning of the project due to a lack of understanding in the team of how EU funding is delivered and claimed.

The GHG emissions-based target will not be met by the 30th September 2019. Current GHG reductions are only at 33.7% of the target. This underperformance can be linked to a range of factors including:

- Changing ERDF guidelines on what technologies could be supported by BEEP grants, which resulted in a reduced grant allocation budget. This budget, which ran out quickly, caused disappointment amongst SMEs reliant on grant funding to implement BEEP recommendations.
- Changes in carbon factors for energy saving measures, which meant savings were lower than originally predicted.

4 Delivery & Management

In this section of the report we highlight the experience of implementing and managing BEEP and any lessons which have emerged from this. Views from stakeholders were gathered through telephone interviews with the BEEP team, DCC and wider stakeholders in the region¹⁷. SME's were surveyed via an online survey, while telephone interviews were also delivered where the SME was happy to be contacted for further feedback.

4.1 From concept to project

DCC began to look at business energy efficiency following the launch of the Green Deal in the domestic sector.

The Federation of Small Businesses (FSB), who regularly survey businesses, identified that energy was in the top three business concerns over the past five years.

Working with Business Durham, DCC identified that local businesses were struggling with energy bills and needed support. A series of SME-focused projects followed but were considered to have had limited effect.

However, the introduction of the PA4b workstream within ERDF enabled DCC to develop BEEP. While difficult, DCC successfully applied for grant funding and were the first PA4b project in the UK.

"There was a plethora of projects over the years where someone would do an energy survey which would sit on the shelf. They'd have a survey but did not know what to do with it. We felt that this was problematic".

"It became increasingly obvious that SMEs didn't have any energy expertise and, even with the information available, they didn't have the time to go and implement the recommendations."

DCC stakeholder

4.2 The BEEP delivery model

BEEP provides independent analysis of a business's existing practices via an in-depth energy audit and data analysis. The resulting bespoke recommendations report provides the SME with cost-effective options for generating financial savings through energy reductions.

Grants are available for up to 40% of capital costs and are paid in arrears.

Joint funding by ERDF and DCC means this service is delivered free of charge to local businesses.

4.2.1 BEEP team

BEEP is currently delivered by a highly motivated, dedicated and committed team:

- **Project Manager:** Calum Baker (2016 – June 2019). Helen Grayshan has taken on this role until the project is completed.
- **Project Support Officer:** Lawrence Callender
- **Lead Energy Officer:** Michael Vasey
- **Energy Officers:** Caroline Hearne and Malcolm Potter

BEEP sits within the Low Carbon Economy Team, led by Maggie Bosanquet, and the Environment Service, headed by Oliver Sherratt.

¹⁷ A total of 12 telephone interviews were conducted within a two week period in late June. This included 3 telephone interviews with SMEs who participated in BEEP.

The team has a diverse range of complementary skills. This includes technical knowledge and experience, enabling the delivery of audits, recommendation reports and associated research, and commercial skills in business development and sales to support successful engagement with SMEs and wider stakeholders. The team were very positive about the delivery and impact of BEEP and are proud of the support that the project has offered to SMEs across Durham.

"I'm incredibly proud of BEEP. We wouldn't have bid for BEEP 2 if we weren't delighted with BEEP 1."

BEEP stakeholder

BEEP is seen as an objective support service with one stakeholder noting that some business support providers forget who their customer is – "it's not about their project, it's about the businesses". The BEEP team are honest with SMEs when they can't support them but do signpost to other services that could provide alternative support.

4.2.2 BEEP process

Following an initial visit (**stage 1**), and checking eligibility (**stage 2**), the BEEP team undertake an audit of the SME's premises¹⁸ (**stage 3**). The BEEP team spend some time on site conducting the audit, but the bulk of their time is spent offsite analysing data, producing the recommendations report and undertaking additional research to support the SME.

The audit findings are presented at a meeting to discuss the BEEP recommendations that would result in the highest returns for investment (**stage 4**). The recommendations are broken down into those with:

- No capital costs. Recommendations are primarily around behaviour change activities.
- Low capital cost recommendations, such as the installation of lighting sensors.
- Higher capital cost recommendations, such as LED lighting retrofits.

Businesses are also provided with longer term recommendations. For example, what they can do in the next 5 years, such as a boiler upgrade.

Following this meeting the SME signs a declaration confirming that BEEP has delivered at least 12 hours of support on their behalf.

SMEs who wish to take forward BEEP recommendations are supported to apply for a BEEP grant to facilitate the installation of measures (**stages 5 and 6 and 7**). This includes support to shortlist and select contractors.

Following installations of energy efficiency equipment, the BEEP team visit the SME (**stage 8**) and the SME signs additional declaration forms (**stage 9**).

An infographic detailing the BEEP process can be found in Appendix D.

"We have had huge freedom to make BEEP into what we think it should be. I appreciate that. We've not been guided down a specific route and we've had a lot of freedom to bend with the wind to meet client demands and needs."

BEEP Team

4.2.3 BEEP tools

The BEEP team have developed tools to support their activity. This includes a lighting matrix, database of research and key data references. A solar matrix is currently in development.

¹⁸ The audit focuses on the SME's building (fabric, lighting, heating and cooling) and not any manufacturing process.

The team also provide guidance to SMEs using factsheets on a wide range of topics:

- How to read meters.
- Metering and monitoring, smart meters and heat metering.
- Insulation for cavity and solid walls, floors and lofts.
- Heating controls.
- LED lighting.
- Compressed air.
- Chilled display cabinets.
- Biomass and photovoltaics.
- Energy Performance Certificates (EPCs).
- Enhanced Capital Allowances (ECAs).

4.2.4 BEEP reports

The BEEP team consider one of their successes was pitching the recommendations report at the right level. While reports are technical in nature, SMEs are provided with key information to enable them to make a decision to implement the recommendations.

"We once had a client who said that they'd been dreading the meeting [to discuss the recommendations report]. They were worried that it was going to be really technical, but it turned out that they enjoyed the meeting and understood our report."

BEEP Team

The BEEP recommendation reports identify measures that can be installed. BEEP requires that SMEs obtain three quotations for the works, and these are then sense checked by the team. BEEP does not recommend individual suppliers, but does inform SMEs that there are a number of local providers offering energy efficiency products and services.

4.2.5 BEEP grants

BEEP can recommend a range of measures, but grant funding is not available for windows, doors or insulation as a standalone measure¹⁹.

Some SMEs followed the BEEP team's recommendations but did not take up grant funding, using alternative finance instead. However, the carbon savings associated with the installed measures were attributed to BEEP.

4.2.6 SME survey results

As detailed in Appendix C, the ACE Research and SE² research team surveyed SMEs involved with BEEP.

There are a number of different stages in the BEEP process, and we were interested to find out how engaged with BEEP the survey respondents were: from just making an initial enquiry or having an introductory meeting, to going ahead with the survey and recommendations, right through to installing measures and in some cases receiving grant funding.

¹⁹ Insulation is only available as part of a package of measures.

SMEs from all stages of the process were sent the survey.

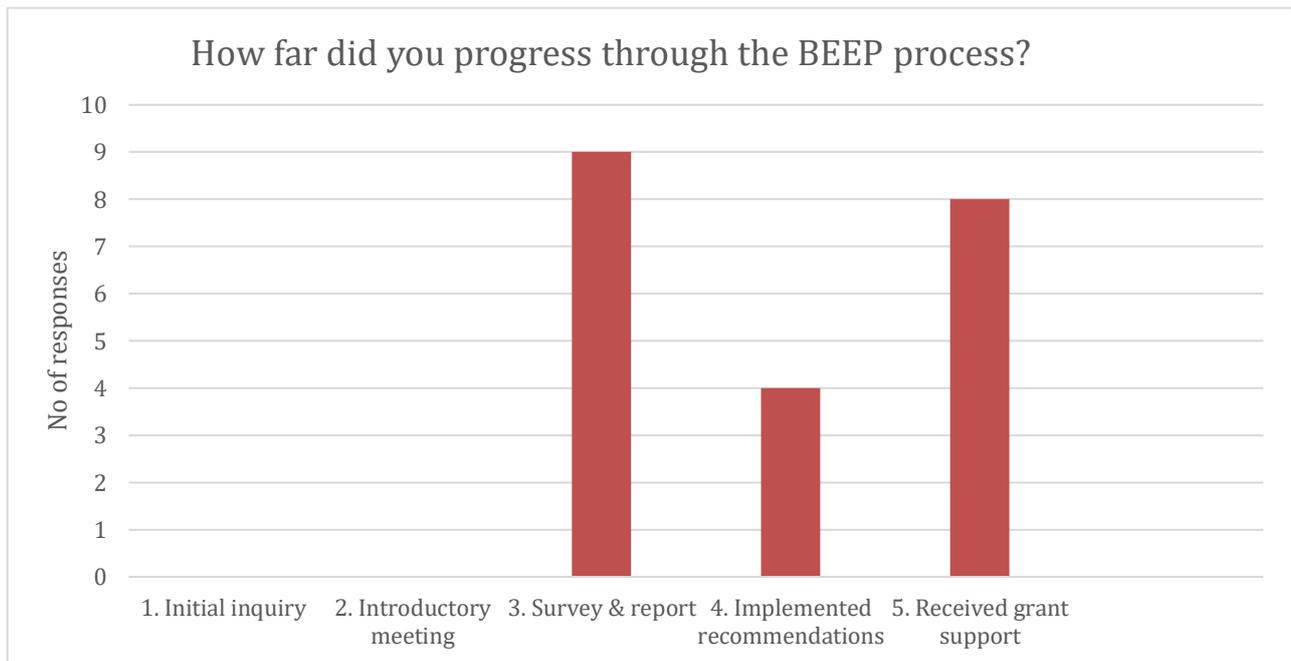


Figure 1. BEEP progression

As Figure 1 above shows, all respondents at least got as far as the survey and recommendations. This is not surprising as those who didn't get past the initial stages are less engaged with BEEP and so less likely to respond to an online survey. Of the 21 respondents, 9 had the survey and recommendations report (43%), 4 had implemented measures (19%) and 8 had implemented measures and received grant support (38%).

SMEs were then asked to rate the different elements of the BEEP process: the information they initially received, the time the process took, the support they received from their BEEP officer and the recommendations made for this business.

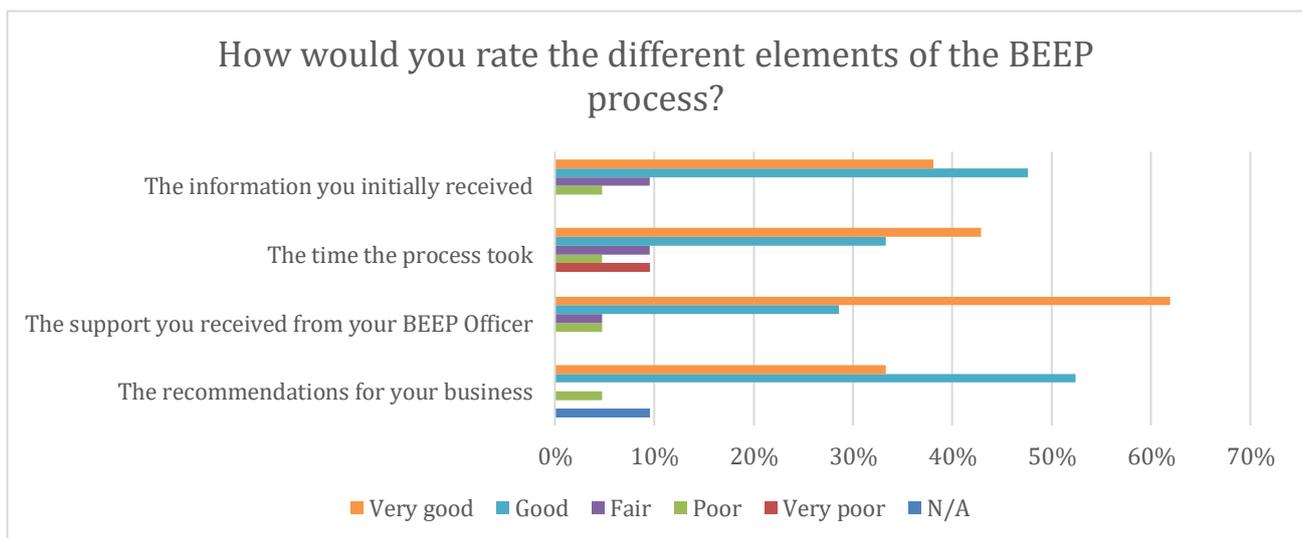


Figure 2. Rating BEEP.

The support received from BEEP officers was very highly rated, with 90% of respondents saying it was good or very good, closely followed by the information initially received and the recommendations for their business, both at 86% good or very good. The time the process took is less well rated, with only 76% of respondents saying it was good or very good.

Two of the respondents added further comments when a low rating was given. Both considered the time the process took to be very poor: one also rated all other aspects as poor:

- One commented “*It went wrong early on - faulty equipment and unreliable data*” This led to the recommendations report being inconclusive. The BEEP team agreed that the failure of monitoring equipment was disappointing for both the SME and the BEEP team.
- The other said: “*Got to the survey and report stage but it became very apparent that it was not going to progress in any sensible time frame to help our business... The fund is supposed to be supporting growth in the North East but is clearly in no way achieving that objective unfortunately.*” They had noted that from start to finish the BEEP process took 3-4 months “*when I had expected it to take a month*”.

While the BEEP team did agree that the process of support is lengthy, all SMEs have to go through the individual steps of the project as agreed with ERDF.

4.3 Communications and engagement



BEEP used a wide range of approaches to engage with its target audience:

- Most stakeholders considered that word of mouth has been the most effective route to engage with SMEs.
- Other effective channels include adverts placed in DCC’s resident newsletter and local radio.
- Other engagement approaches have been undertaken with varying results:
 - Case studies detailing BEEP activity.
 - Print media, including Seaham Business News, BQ Magazine and the Echo.
 - Social media, including Twitter and LinkedIn.
 - Sector targeting, using business databases to target specific sectors.
 - Partnerships with key local stakeholders. (Partnership activity is detailed in section 4.4).

“Word of mouth works. A great example is Dyer Engineering who changed all of their lights, saving about 103 tonnes of CO₂. We wrote a case study and it led to loads more leads.”

BEEP Team

These approaches were explored as part of the SME survey (see section 4.3.3 for further information).

4.3.1 Communications

Initially the BEEP team undertook communication activities internally. However, since March 2019 this activity has been outsourced to DTW²⁰. The BEEP team continue to deliver direct engagement with SMEs. The research team have reviewed a range of materials provided by DTW and our observations are detailed below.

The key messages of the marketing materials are about:

- Avoiding wasting energy.
- Energy affordability.
- Becoming more competitive and more productive through energy saving.
- The potential to generate financial savings to enable the businesses to thrive and avoiding pressure on margins and ultimately profits.

Climate change and benefits to the environment are notably absent, but this is usual for the target audience.

There are however no references to some of other wider benefits of energy efficiency, such as comfort in the workplace.

²⁰ DTW, a PR and marketing agency: <https://dtw.co.uk/>

Press releases provide an overview of BEEP and high-level case study information (financial savings and quotes). Case studies are shorter, punchy and clearly set out the energy reduction and bill savings that BEEP has delivered.

An overview of the BEEP engagement and communication materials can be found in Appendix E.

Stakeholders interviewed suggested that prior to BEEP, communications from DCC aimed at SMEs was not commercially focussed. BEEP took this on board: their publications include short, sharp, clear messages and outline the benefits to SMEs in terms of economic savings.

The latest DTW communications report²¹ to BEEP details Twitter and LinkedIn activity. This report covers two periods: the 30th December 2018 to the 28th February 2019 (when the service was delivered by the BEEP team); and the 1st March to the 30th April 2019 (when the service moved to DTW). BEEP saw a 3,040% increase in engagement across the two platforms between the two time periods. A breakdown of this engagement can be found in Tables 5 and 6 below, along with example tweets and posts from this time period in Figures 3 and 4.

Table 5: BEEP Twitter activity.

	Increase in activity between time periods
Followers	100%
Tweets sent	1,250%
Mentions received	175%
Organic impressions	1,765%



Figure 3: Example BEEP tweets

Table 6: BEEP LinkedIn activity.

	Increase in activity between time periods
Followers	100%
Publishing behaviour	1,100%
Impressions	418.6%
Engagement	800%



²¹ Provided by DTW. Accessed July 2019.

Business Energy Efficiency Project (BEEP)

A great opportunity has arisen for several fully funded places on a Junior Energy Management course. The course will support your employee to use their knowledge of your business to generate sustainable financial savings through energy use. Delivered by the outstanding Group Horizon and financially supported by npower this fully funded course only has a few spaces left. If you think this course is right for yourself or an employee please get in contact immediately as spaces are running low. Contact Alison Washbourne at alison.washbourne@grouphorizon.co.uk for more information.
#energy #savings #energymanagement #durham #durhambiz #training #apprenticeship



(Update) March 20, 2019 10:13 am

Business Energy Efficiency Project (BEEP)

"BEEP has had a huge impact for the better on the club" - Alan Nelson, Joint Secretary, The Big Club **#DurhamBusiness #EnergySaving** Find out how BEEP can help you: www.beep.uk.net



(Update) by Jess V. April 16, 2019 10:54 am

Figure 4: Example BEEP LinkedIn posts

The BEEP guidance is easy to understand. It provides high level information and guidance for SMEs, including a step by step BEEP process map. It also clearly sets out the SME requirements to participate in BEEP. Administrative forms are clear, concise and provide useful guidance to SMEs.

4.3.2 Engagement

BEEP takes a variety of approaches to directly target SMEs across Durham.

The BEEP team noted that when working with a SMEs there are a number of factors that are key to successful engagement:

- That they are engaging with the right person within the SME. This 'champion' is often enthusiastic about participating in BEEP and is often the source of further leads through word of mouth.
- The SME understands what BEEP can do for them and what data and information they need to provide.
- It was considered that most SMEs are interested in the financial savings aspect of BEEP, not climate change mitigation. Putting the recommendations in economic savings is therefore essential. This includes setting out what they can do at no cost (behaviour change), low cost and higher cost, as well as including longer term options to consider.
- Building relationships with the SME: understanding what they need; explaining what BEEP can and can't do; being realistic and not over promising.

"Getting hold of energy use information can be nightmare. Some SMEs have energy bills filed in order. They are the exception. Most are rummaging around in drawers trying to find the data we need."

BEEP Team

Partnerships with local stakeholders enable the BEEP team to engage directly with SMEs at events:

"In East Durham we had a funding event with over 100 companies attending, and we invited BEEP to come and exhibit at the event. We brought in all of the business support organisations and the commercial market and ran a speed -dating session.

Businesses went around in groups of 4-5 and heard three-minute pitches from each provider. It worked really well. When it had all finished, the businesses could go back to the providers of choice on a 1-2-1 basis. That form of networking would have got BEEP quite a few referrals."

"We've also invited the BEEP team to our 'network with your neighbour' events."

BEEP stakeholder

Targeting is discussed at BEEP team meetings. Activities include:

- Accessing MINT UK²² and FAME Services Limited²³ databases (via Business Durham team logs) to search for Durham based SMEs in particular sectors e.g. food and drink, manufacturing etc.
- Researching specific types of businesses. The BEEP team successfully targeted and engaged with 95% of all golf clubs in the Durham area for example. Another target has been funeral directors.
- Focussing on industrial estates and business parks. This involves visiting SMEs, engaging with SME employees verbally and leafleting.
- 'Cold calling' emails and calls.

"I also spend some time looking at different areas to address. SMEs that have high energy consumption and could be supported. A good example is golf courses, of which there are quite a few in Durham. They are open 8am – 6pm throughout the whole year 7 days a week. They've been a great target to focus on."

BEEP Team

On some occasions, the BEEP team were confused with utility brokers, who often offer energy audits as part of their service model. The BEEP team communicate that they work for DCC and that they want to reduce the units of energy used, not the cost of a unit of energy; that support is free, and grants are available.

"BEEP was advertised on the local radio. However, the BEEP segment was positioned next to an advert by Great Annual Savings (GAS) who are energy brokers who also offer audits."

BEEP Team

²² www.bvdinfo.com/en-gb/our-products/data/national/mint-uk

²³ www.bvdinfo.com/en-gb/our-products/data/national/fame

4.3.3 SME survey results

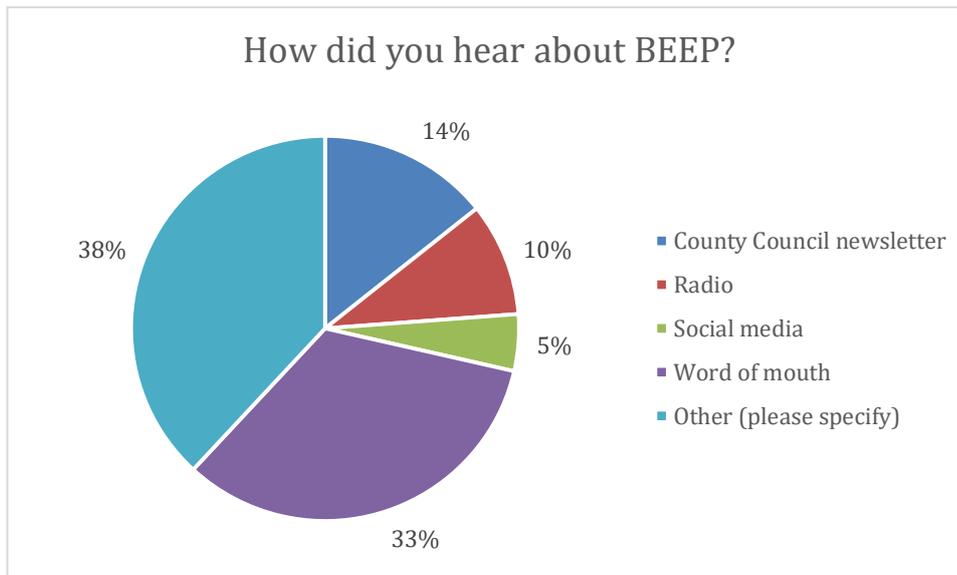


Figure 5. Engagement method

A third of the respondents (33%) heard about BEEP through word of mouth, a good indicator of how useful the referring SMEs found the programme. 14% first heard about BEEP through the County Council newsletter delivered to homes across the area, a low-cost communication route that has wide coverage and a significant response rate. Two SMEs responded to radio adverts (10%) and one to social media (5%). Other ways in which SMEs heard about BEEP were:

- Direct contact from DCC.
- Business Durham email.
- Referral from Sunderland University SAM project²⁴.
- Local publication on Aycliffe Business Park.
- Networking Event.
- Exhibition.

4.4 Partnerships

Delivery of BEEP has been supported by a number of strategic partnerships, including:

- DCC colleagues in the Low Carbon Economy Team (LCET), which is considered to have enabled BEEP to have a greater commercial focus.
- Colleagues in Business Durham²⁵, who engaged with the BEEP team from the outset of the project, facilitating initial relationships with industrial business parks, supporting BEEP at networking events and distributing information about BEEP to SMEs using their services. While stakeholders considered that this has been a successful partnership for BEEP, referrals have ebbed and flowed over time.

²⁴ SAM (Sustainable Advanced Manufacturing) is an ERDF project managed by the University of Sunderland. The aim of the project is to support product / process and technology developments within the SME manufacturing base in the North East LEP area: <http://centres.sunderland.ac.uk/amap/sam-project/>.

²⁵ Business Durham is the economic development arm of Durham County Council. They support businesses with activities that they may struggle with, including property, HR and investment. www.businessdurham.co.uk/about-business-durham.

- The Federation of Small Businesses (FSB), who engaged with the BEEP team from the outset of the project, supporting engagement activities, referring SMEs to BEEP services and acting as a 'critical friend'. This partnership is constrained by limited resources within FSB.
- BEST, BEEPs equivalent programme across Tyne and Wear.

Partnership working has had varying degrees of success in terms of generating BEEP referrals. Stakeholders noted examples of where partnerships had not lived up to initial expectations, including:

- Northern Power Grid (NPG), who were listed as a strategic partner from the outset of the project. However, the team have had limited engagement with NPG during the delivery of BEEP. The team highlighted areas occupied by SMEs where the power grid is constrained but NPG has not responded to this evidence. Some DCC teams do have working relationship with NPG, such as where renewable energy technologies are installed to support grid capacity. It is unknown whether NPG's inactivity is down to a lack of focus on the opportunities available through commercial sector energy efficiency activity, or a lack of resources to engage with partners such as BEEP.
- The North East Chamber of Commerce, who were listed as a strategic partner from the outset of the project. This partnership was thought to have had limited impact.
- The partnership with the North East LEP is thought to have had limited impact.
- Stakeholders considered that meetings and agreements with partners to promote each other's support offerings do lead to referrals for BEEP, but that they soon tail off.
- Some referrals are unsuitable for BEEP to take forward. For example, where the SME doesn't meet BEEP eligibility criteria, or they have recently refurbished their premises.

While stakeholders suggested improvements that could be made for BEEP 2, they also described how much they value BEEP and how they want to maintain and grow the partnership with BEEP 2:

"They're very honest in the sense that they will say 'we're not the right ones for you, but now you're in the business support world, we'll recommend you to the people who are right for you'. BEEP may lose an output, but it will help the business. A lot of support providers forget who their customer is – it's not about their project, it's about the businesses."

BEEP stakeholder

"We'd like to be more involved. We're doing a huge amount around the transition to a low carbon economy. It's broad based work and it's something that we're genuinely wedded to. It's really important to businesses because there are some stark challenges out there with regards the decarbonisation of industry and business. It is one of the biggest challenges we face and it's how do we achieve that and not just deliver the usual energy efficiency stuff."

BEEP stakeholder

"They don't try and compete with other service providers. They'll refer people into those service providers – which is great. And they'll look to where there's other funding that could be brought in alongside BEEP funding, to help businesses match fund to reduce their cost contributions."

BEEP stakeholder

“BEEP hides its light under a bushel - it’s a North East thing - we’re not great at shouting about what we’re doing in the North East!”

“Our broader frustration is that [BEEP] don’t shout loud enough about the successes that they’ve had and the people that they’ve supported. We don’t see case studies. We don’t see stuff pushed around the networks. We’re not asked to push out successes. Our businesses want to know what their competitors and their peer group are up to – BEEP need to be more visible.”

“We host a networking event in Durham once a month and not once has BEEP asked to come along to it or brought a case study along. That’s the one area they could massively improve on.”

BEEP stakeholder

“In fairness, we should be pushing for a more active role within BEEP 2 - we shouldn’t be so passive as to wait for them to come to us. We’ve got to turn that around a little and be a little less passive. We’d like to be more involved.”

BEEP stakeholder

4.5 Successes and lessons learned

4.5.1 An effective team with a diverse range of skills

The BEEP team has a track record in successful SME engagement and programme implementation. The team play to their strengths with a combination of technical and business development skills.

4.5.2 Engagement

Word of mouth has been an effective engagement approach. Other marketing approaches, such as adverts in business newsletters, have not been as effective.

4.5.3 Grants

Stakeholders considered that grants are making a real difference to BEEP businesses. Without it, many SMEs would not have taken action to improve their energy performance.

As noted in section 3, when the team were preparing for the original grant submission, ERDF restricted grant eligibility criteria to ‘new and emerging technologies’. This meant that the grant application was scaled back, only for the criteria to then be extended after the ERDF funding had been awarded. The small budget for grants soon ran out. A number of stakeholders, including SMEs involved in BEEP, did raise this as a key issue that needs to be resolved.

“For those that have accessed the support, they can’t speak highly enough of it.”

“The team aren’t going in with any preconceived ideas about what you do in each sector – it is a very individualised and personalised experience. Inevitably there will be some standard advice but it isn’t just a one size fits all.”

BEEP stakeholder

“The main concern is that because it was popular it ran out of money really early on. It’s always the frustration with these schemes: one minute you’re turning the tap on and stimulating the market; the market becomes stimulated and then you’re just starting to gain that traction and then oops, you’ve run out of money. That is quite damaging, not just to the programme but also it puts a taint on my reputation because I’ve told them to go for it, and they’ve put the effort in and then it’s disappeared.”

BEEP stakeholder

“We got to a point where we didn’t have enough money to continue giving out grants. It was really demoralising, and it made a lot of clients unhappy. I don’t think we saw it coming.”

BEEP

Grants were also initially offered to fund 40% of the SME capital project costs. However, the change in carbon factors (also noted in section 3) meant that carbon savings were less. Therefore, a sliding scale for grants was implemented. This variable intervention rate means that grant funding of up to 40% was available to projects with larger carbon savings, while smaller scale projects received less, with a minimum of 20%.

Grant funding was not available for insulation as a standalone measure²⁶. One stakeholder noted their frustrations.

“One restriction – quite frustrating – can’t work with insulation. Broke first rule of energy management. Over the course of 3 years it’s loosened up.”

BEEP Team

4.5.4 Working with micro-businesses

It was noted by numerous stakeholders that working with micro-businesses was difficult. This was due to a lack of resourcing to work with the BEEP team, many simply wanting a light touch report and access to a grant. In addition, the team can find it difficult to deliver 12 hours of assistance to micro businesses under the C1 KPI. BEEP has been able to support some micro businesses by undertaking additional research on energy saving opportunities linked to their business. There is also an opportunity for the BEEP team to refer micro-businesses into the SME Power Project, as detailed in Section 5.2.2.

“I engaged with a microbusiness recently. All they really needed was some simple boiler management – changing the settings on thermostats and heating programmer. They made 40% savings.”

BEEP Team

4.5.5 C1 KPI

Issues were flagged with the C1 KPI by numerous stakeholders, yet on the whole they considered that the 12-hour support target worked for the majority of SMEs that BEEP works with.

Where energy saving opportunities were limited within SMEs, the BEEP team have provided additional research support to the SME. Stakeholders felt that rather than creating tasks to hit the C1 KPI target, this time should be allocated to a different SME who does require more intensive support. It was suggested

²⁶ Version 4 of ERDF guidance (September 2017) stipulates that ERDF grants can be used to support standard retrofits for an SME and that deep renovations would be delivered through an alternative financial instrument e.g. not ERDF grants. Insulation is classed as a deep renovations measure, although the definition is not clear and concise.

that a sliding scale KPI indicator is used going forward and will be dependent on the size of the business being supported by BEEP.

4.5.6 Applying for and administration of EU funding

BEEP and LCE teams acknowledged that their lack of experience with EU funding led to delays in the delivery of the project. The team also found the reporting requirements complex and spent considerable time understanding the process. While there is a team within DCC that has a great deal of experience in applying for and reporting under EU funding streams, support from this team was said to have been limited.

4.5.7 Cross departmental working

Stakeholders had admiration for BEEP, but also for the wider council, in the way that they have approached decarbonisation. One stakeholder called for further joined up thinking within the council to ensure that links are being made between departments and services.

“When we agitate with councils about the idea of decarbonising the economy, I would generally put DCC up against anyone in the UK to say that’s what you should be doing across the piece. They have the bigger projects but also some less obvious things – like solar panels on bus stops. It’s a simple little thing but it shows they’ve thought about it right across the piece.

It’s not just BEEP on its own, it’s part of a broader picture. But we need more within DCC across the different teams, like the economic team. If I’m ringing up about business rates, you’d kind of hope that someone in that team would say ‘you’ve told us saving cash is your objective. Have you spoken to our BEEP team?’ It feels like a lot of this stuff gets siloed into a department. [DCC] needs more of that – although it’s a big ask within a council.”

BEEP Stakeholder

4.5.8 Partnership working

Delivery of BEEP has been supported by a number of strategic partnerships, both internally within DCC and externally. This joint working has had varying degrees of success, both in terms of collaboration between organisations and in generating referrals for BEEP. While partners described improvements that could be made, there was a desire to maintain and grow their activities within BEEP 2.

5 Impact

In this section of the report we highlight the impacts attributable to the project, including both intended and unintended outcomes.

“A company was afraid it could not pay its bills and received a series of interventions from the DCC of which BEEP was one. We found them significant savings that helped to turn the company around. That’s the icing on the cake.”

BEEP

“Another company changed their lighting. They said that it’s so much better - we can see what we’re doing.”

BEEP Stakeholder

The BEEP team are proud to have assisted SMEs across Durham to reduce their energy spend and have made many businesses – from micro businesses to large SMEs – more financially stable as a result.

Several examples were identified by stakeholders:

- **Crystal Beauty**, a beauty salon: The boiler and fabric performance were both poor. The SME was receiving complaints from customers about cold temperatures and the owner didn’t think the business would make it through another winter. BEEP gave a relatively small amount of grant money to the SME, but it made a significant difference to the SME’s customer feedback and financial standing.
- **The Big Club**, a Working Men’s Club in Newton Aycliffe: It was reported that if it wasn’t for the help of BEEP, the Big Club would no longer be around. BEEP support really helped to turn the business around.

“We have a large piece of plant that requires more energy than the grid can provide, we are limited to 800kVa and it needs a generator. The energy efficiency measures in other parts of the business are hoped to be able to reduce demand so this plant can run - there’s also another smaller piece of plant we have, but both can’t run at the same time.”

BEEP Stakeholder

5.1 Intended outcomes²⁷

BEEP will likely meet its business support targets. The GHG emissions-based target will not be met by the 30th September 2019, although further carbon savings are expected between the date of the assessment and the end of the project. Current GHG reductions are only at 33.7% of the target.

Table 7: delivery requirements

Businesses supported:	240
GHG emissions reductions (tCO₂e):	2,620

²⁷ Data valid from the 16th July 2019.

Table 8: BEEP delivery performance

Businesses engaged:	262
Received full level of support ²⁸	200
Did not receive full level of support ²⁹	62
GHG emissions reductions (tCO₂e)³⁰:	885.48

Table 9: BEEP delivery metrics

Total hours of support delivered to SMEs:	3,181
Value of BEEP grants awarded to SMEs:	£122,557.32
Financial savings by SMEs (£):	Data not available at the time of report production

5.2 Unintended outcomes

5.2.1 Team skills

BEEP has provided the team with experience in applying and administering EU grant funding and given the team a greater commercial focus.

BEEP is delivered by a highly motivated, dedicated and committed team. The team play to their strengths with a combination of technical and business development skills. The team should be proud of the impact of the BEEP programme across Durham and the partnerships that they have developed.

5.2.2 Joint working within DCC

BEEP has provided an opportunity for DCC to further engage with businesses across multiple teams and departments. As a result of BEEP, DCC have developed additional projects:

- The LOCARBO transnational project. The team successfully bid for additional funding to use the learning from BEEP to find ways of reporting the achievements of these projects in a way that people can relate to. For example, the equivalent power stations taken offline by efficiency projects. As part of this, the DCC team went to Hungary with MHCLG to gain an understanding of international approaches to business energy efficiency.
- The SME Power project. The team successfully bid for additional funding to support smaller SMEs that were too small to take up the 12-hour C1 KPI target.

5.2.3 Partnerships between SMEs

Several examples of new working relationships and partnerships between SMEs were identified by stakeholders:

- An interior design company who produce waste wood. The BEEP team provided support to consider whether energy content would be suitable for biomass fuel for SMEs.

²⁸ C1 target: at least 12 hours of support provided to an SME.

²⁹ C1 target: did not reach at least 12 hours of support provided to an SME. These 62 SMEs either stopped participating in the BEEP process, or the BEEP team were unable to spend 12 hours supporting the SME.

³⁰ Note that this figure includes GHG emission savings from measures that were deployed by SMEs without the use of a BEEP grant. Some SMEs took up alternative sources of finance and funding.

- A tyre disposal company that requires a generator to supplement supply is next to a golf course considering the installations of photovoltaics who may be able to further supplement the power supply.
- A company that had waste food. The BEEP team investigated links with Refuse Durham.

5.2.4 New working relationships and partnerships with PA4b project stakeholders

BEEP has enabled the development of new working relationships and partnerships with PA4b stakeholders across the region, and also nationally.

- BEEP provided support to other Tyne and Wear councils to develop the BEST project. This project is directly based on BEEP.



Business Energy Saving Team (BEST)

BEST aims to reduce energy use and costs in small and medium-sized businesses (SMEs) in Gateshead, Newcastle, North Tyneside, Northumberland and Sunderland. Services are delivered by through an external partner, Narec DE. Newcastle City Council leads the project.

Like BEEP, BEST offers free energy audits, however the grants available to SMEs are structured differently. SMEs receive grant funding to one third of the project's capital costs, up to £8,000. SMEs can also continue to work with BEST and secure grant funding for additional recommendations.

- The LOCARBO project in conjunction with the BEEP team delivered two national PA4b conferences for national stakeholders.
- The team helped to encourage the expansion of the BEIS Huddle platform for PA4b projects to support greater information sharing between PA4b projects.
- BEEP lobbied for changes to ERDF grant eligibility rules so that the time spent supporting businesses (the C1 KPI) was not restricted to face-to-face support.

5.2.5 Government profile

BEEP has put DCC 'on the map' in terms of their energy efficiency work with SMEs. Stakeholders noted that when BEIS are looking for an active council in this area, they think of DCC.

The project has also led to an increased profile with BEIS and the wider policy community for Maggie Bosanquet. This has enabled DCC to influence national policy and raise the standing of DCC in low carbon activities.

6 Assessing Value for Money

In this section of the report we analyse the cost-effectiveness of the project considering its intended and unintended impacts, and hence its value for money.

The research team attempted to compare BEEP's project value, progress against targets and delivery metrics with other PA4b projects in the UK. However, this data was unavailable to the research team³¹.

While we know that 200 business have been supported through BEEP, resulting in 885.48tCO₂e saved, we have been unable to determine the economic impact of BEEP in terms of SME monetary savings. This data was unavailable. However, it is likely that a reduction in their energy use and costs will have improved their bottom line and made them more competitive in the marketplace.

Stakeholders, including partners and SMEs involved in the project did consider that the project offered value for money.

"Yes, BEEP offers value for money. With 12 hours assistance and a grant to offer, the team are going out and really helping businesses. SMEs see the results, the effort going in to supporting them and they are very happy as a result. When you see the savings we are making – the value shows." BEEP Team

The BEEP team undertook soft market testing throughout the project to understand how much SMEs valued the support under the programme. The BEEP team asked SMEs how much they would be willing to pay for an energy auditor to assess their business for energy saving opportunities. This was based on the cost per hour of consultancy. Analysis shows that the value of support averages out at £63.32 per hour of consultancy across the three soft market testing exercises.

The cost of delivering high quality advice is significantly higher than this however, suggesting that BEEP has delivered additionality by providing benefits to SMEs who would not otherwise have chosen or could have afforded to pay.

The research team identified several unintended outcomes from BEEP, which are hard to quantify in monetary terms but are proving invaluable to DCC, their stakeholders and SME clients. This includes increased joint working between DCC teams, new working relationships between SMEs (such as sharing of waste products and joint working on the deployment of low carbon technologies and the development of BEST (a project based on BEEP). We have also identified partnership working with other business energy efficiency projects, influence to change ERDF funding guidelines and recognition of BEEP and DCC at a national level.

³¹ Communication with MHCLG in July 2019. Data on other PA4b projects – including project value - is available here: www.gov.uk/government/publications/european-structural-and-investment-funds-useful-resources. However, this data cannot be filtered to show individual PA4b investment priorities and does not provide details on the project outputs which is confidential.

7 Recommendations

In this section of the report we have collated recommendations for BEEP 2 from within the BEEP team, SMEs engaged with BEEP and wider project stakeholders, plus recommendations from the research team.

7.1 Size of BEEP 2

- Stakeholders called on DCC and the BEEP team to be more ambitious with BEEP 2 targets, and to move from output-based targets to outcome-based targets.
- Numerous stakeholders called for increased funding for BEEP 2, both in terms of the overall value of the project, but also a significantly larger SME grant budget. BEEP 2 should continue with a variable rate of grant offered to SMEs based on emission savings.
- Engage with SMEs across Durham as part of the development of the BEEP 2 bid. Provide details on real life SME experiences with energy and performance improvements, using some of the case studies developed by the team.

7.2 BEEP 2 delivery model

- Include a variable level of support (C1 KPI) for different sizes of SMEs:
 - Micro businesses – up to 6 hours of support (or signpost micro businesses to the SME Power Project – mentioned in section 5.2.2 - instead).
 - Small businesses – 6 to 12 hours of support.
 - Larger businesses – over 12 hours of support.
- Diversify the measures and support provided to SMEs, including low carbon technologies:
 - Inclusion of insulation as a standalone measure.
 - Photovoltaic and wind opportunities were frequently mentioned by stakeholders.
 - Support SMEs engaging with Power Purchase Agreements (PPA) for wind, photovoltaic and Combined Heat and Power (CHP) technologies.
 - Consider working with battery and thermal storage options.
 - Look at the integration of electric vehicles (EVs).
 - Support SMEs with any required planning permission applications as part of these activities.
 - Showcase the opportunities and benefits of smart and advanced metering technologies, and wider energy management systems. Both will enable businesses to understand their energy use, but also the potential benefits of engaging in power flexibility markets.
 - Continue to assess opportunities for Demand Side Response (DSR)³².
 - Offer a brokerage service alongside BEEP to enable businesses to procure their energy and reduce the cost of energy further. This could include joint working within the council with both procurement and energy teams to determine the feasibility of this recommendation. This could have limited impact in relation to carbon savings if this solely focussed on energy supply and would be unlikely to be a key priority for the BEEP team.
- Simplify the BEEP process by supporting businesses to complete administrative documents and minimise bureaucracy for the SME e.g. state aid forms.
- Maintain a diverse team with both technical and commercial skills. Take on another BEEP team member to work on SME engagement and marketing. This would include:

³² DSR had been previously reviewed with Northern Power Grid, who had considered that there weren't enough businesses willing to participate in the flexibility market at the time.

- Contacting those that previously declined support.
- Supporting those SMEs that have participated in the project to implement longer term and higher capital cost activities included in the audit report, ensuring that the emissions savings that are attributed to behaviour change activities are recorded against BEEP targets and identifying where activities have been taken forward using alternative finance approaches.
- Communications:
 - Continue to work with communication and marketing specialists, such as DTW.
 - Continue to develop best practice case studies and share across partnerships and existing networks to increase the visibility of BEEP.
 - Consider trying new engagement methods such as blogs and videos.
 - Consider working with the education sector on broader climate change issues and highlight the work that BEEP is doing to support decarbonisation.
- The use of national, regional and local datasets on energy demand to target BEEP interventions. This would include the effective implementation of MEES through targeting inefficient commercial buildings that are rented to tenants.

7.3 Partnership working

- Continue to work with SME and energy focussed stakeholders within County Durham and the wider Tyne and Wear and Teesside³³ areas, building on offers of joint working identified through our stakeholder engagement. Provide visibility of referral rates into BEEP so that impact can be understood and prioritised within these organisations where referral rates decline.
- Re-engage with Northern Power Grid and the North East LEP to gain an understanding of why these relationships did not work within BEEP, and confirm their participation in BEEP 2.
- Engage with suppliers of energy saving and process equipment so that they refer to BEEP during sales meetings.
- Upskill and collaborate with key stakeholders, such as business advisors, to promote BEEP services.
- Engage with Trading Standards within DCC on potential joint working on the implementation of EPC and MEES regulations.
- Engaging with other DCC teams to signpost SMEs to BEEP. For example, when an SME enquires about cash flow issues and business rates, then the council officer should signpost to BEEP.
- Maintain and strengthen relationships with BEST³⁴ and the BEIS Regional Energy Hub to offer a standard energy service offering for businesses across the North East region.

³³ Tees Valley Business Compass: www.teesbusinesscompass.co.uk/how-we-can-help

³⁴ Due to the timing of the grant agreements for both BEEP and BEST projects, it is unlikely that in the immediate future that

8 Appendix A: Understanding make up of businesses in Durham

8.1 Numbers of businesses

There are 13,685 registered businesses in County Durham³⁵ generating a total GVA of £8,754m³⁶. This equates to a GVA per head of £15,475, lower than the North East as a whole (£18,927) and much lower than the average for all England (£26,159)³⁷.

Figure 6 below shows how these businesses are distributed across sectors:

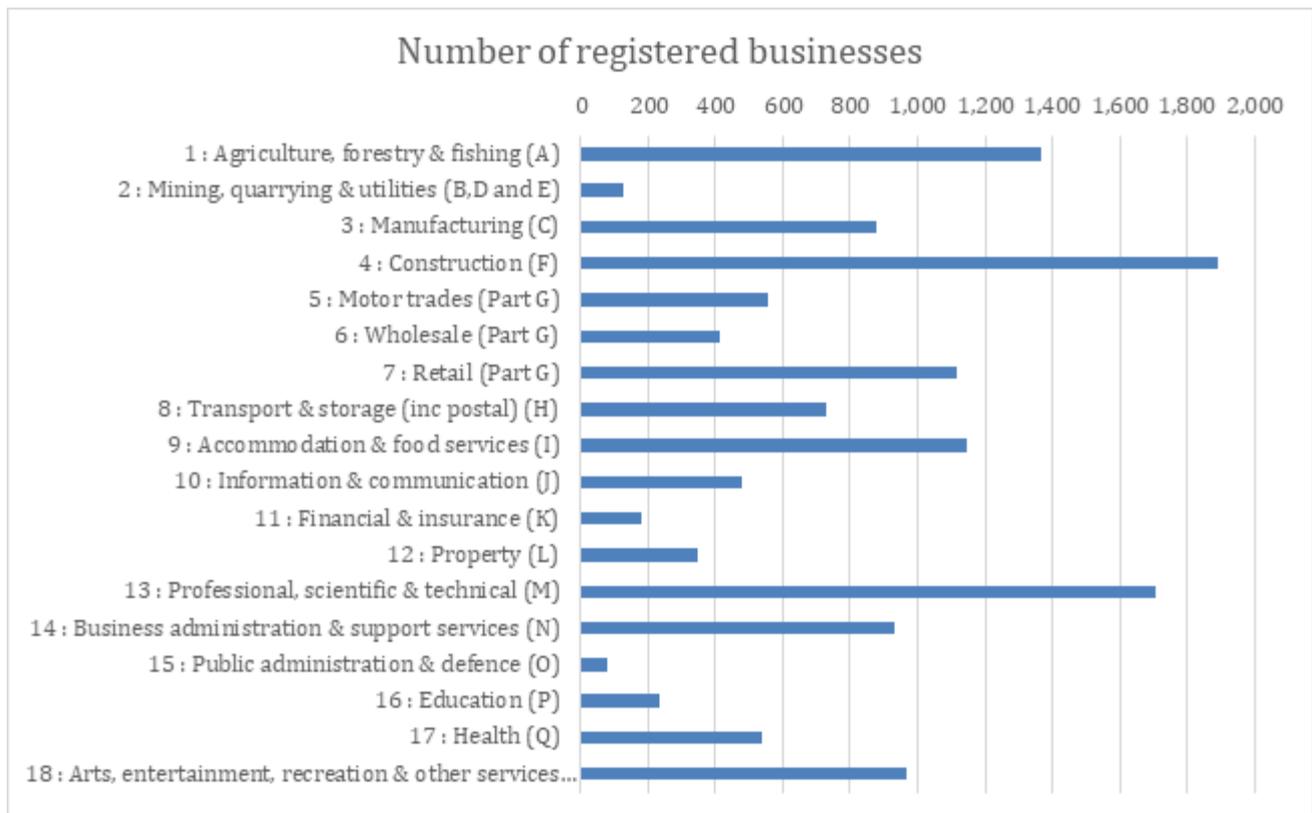


Figure 6: number of registered businesses in Durham

The numbers of businesses in Durham has generally been growing as part of a general trend of recovery and growth following the 2008 global downturn. However, total business numbers declined in 2018³⁸, despite a record number of new businesses starting during that year³⁹.

The chart below shows that most sectors saw some growth in numbers of businesses over the period 2015 - 2018, but the period saw a reduction in the number of retail and wholesale businesses and a small reduction in arts, entertainment and recreation⁴⁰. The period between 2012 and 2016 saw a decline in the number of larger businesses but an increase in micro, small and medium sized businesses. As these

³⁵ www.durhaminsight.info/economy-and-employment/

³⁶ www.durhaminsight.info/economy-and-employment/

³⁷ www.communityfoundation.org.uk/wordpress/wp-content/uploads/2017/10/Vital-Issues-County-Durham-including-Darlington-2017-Local-economy-1.pdf

³⁸ NOMIS Labour Market Statistics.

³⁹ www.informdirect.co.uk/company-formations-2018/durham/

⁴⁰ www.communityfoundation.org.uk/wordpress/wp-content/uploads/2017/10/Vital-Issues-County-Durham-including-Darlington-2017-Local-economy-1.pdf

become a more significant part of the local economy, it is important to be able to offer them appropriate support (such as BEEP).

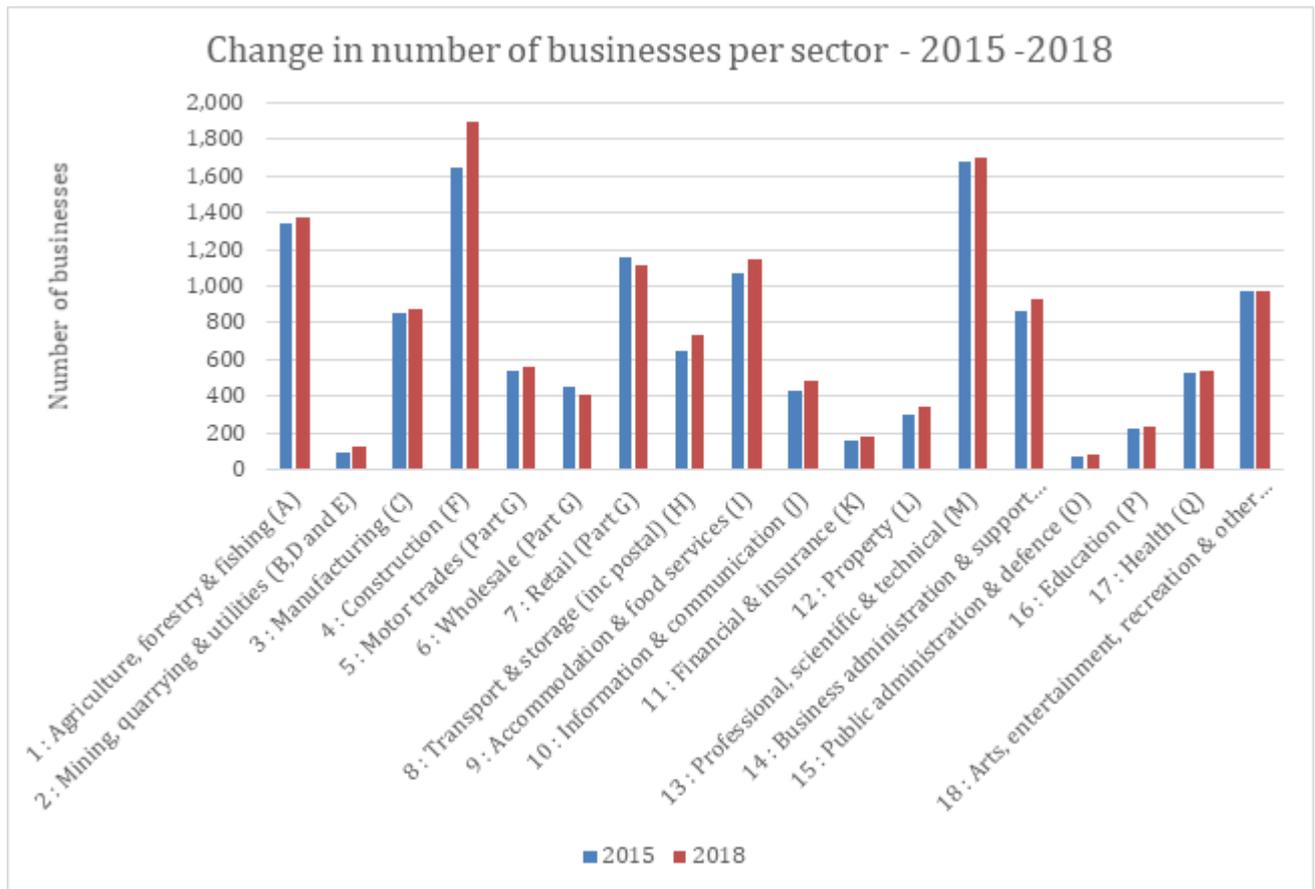


Figure 7: change in number of businesses per sector in Durham

8.2 Sizes of business by sector

BEEP has focused on SMEs. The table below shows the breakdown of businesses in different sectors based on their size⁴¹:

⁴¹ NOMIS Official Labour Market Statistics.

Table 10: businesses in different sectors based on size in Durham

Industry	Total	Micro (0 to 9)	Small (10 to 49)	Medium-sized (50 to 249)	Large (250+)
1 : Agriculture, forestry & fishing (A)	1,370	1,345	20	0	0
2 : Mining, quarrying & utilities (B,D and E)	125	100	20	5	0
3 : Manufacturing (C)	880	615	180	75	10
4 : Construction (F)	1,895	1,745	130	20	0
5 : Motor trades (Part G)	555	515	40	5	0
6 : Wholesale (Part G)	410	335	60	10	0
7 : Retail (Part G)	1,115	990	115	10	0
8 : Transport & storage (inc postal) (H)	730	655	60	15	0
9 : Accommodation & food services (I)	1,145	915	210	15	5
10 : Information & communication (J)	480	470	10	0	0
11 : Financial & insurance (K)	180	165	10	0	0
12 : Property (L)	345	315	20	10	0
13 : Professional, scientific & technical (M)	1,705	1,605	85	15	0
14 : Business administration & support services	930	850	70	15	0
15 : Public administration & defence (O)	80	65	10	0	0
16 : Education (P)	235	165	35	25	10
17 : Health (Q)	540	325	170	45	5
18 : Arts, entertainment, recreation & other services	970	860	100	10	0
Column Total	13,685	12,040	1,345	270	35

The table shows that there is a significant base of micro-businesses in Durham; whilst these will make a sizeable contribution to the commercial sector's carbon footprint, the carbon associated with each business will be small.

Manufacturing businesses are more likely to be operating at scale: there is a base of 75 medium sized manufacturing businesses, and these offer a good target market for energy efficiency interventions. There is a diverse mix of smaller businesses across multiple sectors, with retail businesses, accommodation and food services, construction firms, agriculture forestry and fishing, and professional scientific and technical making up more of the business population at smaller sizes.

8.3 Employment by size and sector

There were an estimated 172,950 jobs in County Durham in 2015, of which 68% were full-time jobs and 32% were part-time jobs. Employee numbers have increased in recent years, with the Durham economy outperforming the North East and England in terms of increased employment⁴².

Around 78% of jobs were in the private sector and 22% in the public sector; there has been significant shrinkage in the public sector in the period since 2015 as a result of national austerity policies. Growth in private sector jobs has compensated for this, resulting in an increase in overall number of jobs.

Male employment (79%) is higher than female employment (70%). Women are more likely to work part-time, with 38% of women in part-time employment compared to 12% of men⁴³.

There are significant issues of deprivation related to employment, income and education in some parts of the county⁴⁴. The picture is improving overall but there are some areas of deep deprivation particularly in East Durham (Peterlee), and in the north and south of the county (near Bishop Auckland).

⁴² www.durhaminsight.info/economy-and-employment/related-factsheets-economy-and-employment/jobs/

⁴³ www.durhaminsight.info/economy-and-employment/

⁴⁴ www.countydurhampartnership.co.uk/media/22690/County-Durham-Profile-2017/pdf/County_Durham_Profile_2017.pdf

8.4 Geographic spread and clusters or zones

The largest employment centres are in the urban centre of Durham City and in edge-of-town business and industrial parks to the south of Newton Aycliffe (mostly traditional manufacturing) and to the west of Peterlee (automotive manufacturing and call centres).

The major site for knowledge-based employment is also in Durham City reflecting the presence of major hospitals, the university and Durham County Council’s headquarters, as well as the financial and business services sector’s preference for a city centre location which can draw upon a highly skilled workforce.

8.5 Energy use

The chart below shows the trend in final energy consumption in the industrial and commercial sector in Durham from 2010 – 2016⁴⁵. These figures cover all industrial and commercial uses so they include larger businesses and industrial sites that were outside the scope of BEEP. During the period to 2016, gas use in the sector reduced by 14% and electricity use by 11%.

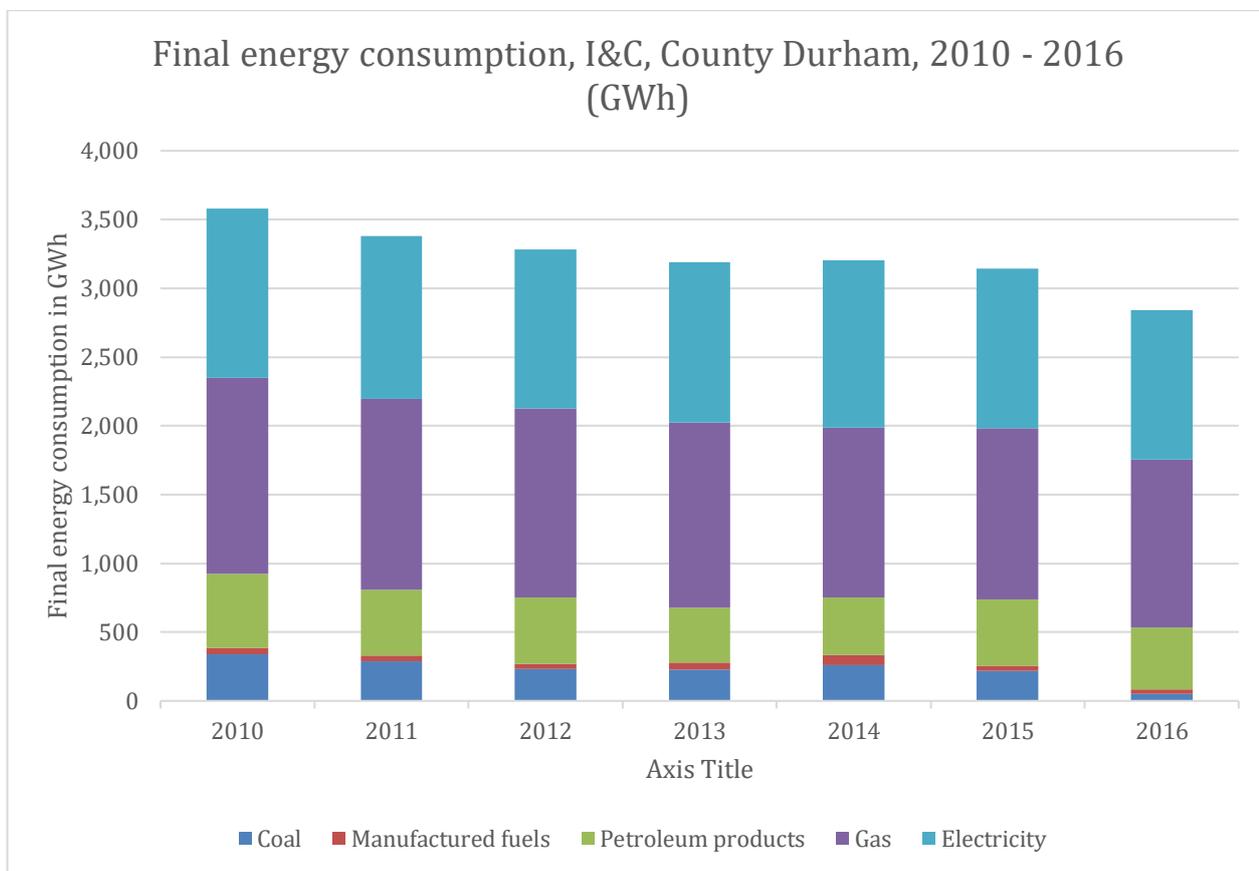


Figure 8: energy consumption in the industrial and commercial sector in Durham (2010 – 2016)

8.6 Carbon emissions

The chart below⁴⁶ shows the trajectory for carbon emissions in the Industrial and Commercial sector between 2005 and 2016.

⁴⁵ www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-2016

⁴⁶ www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-2016

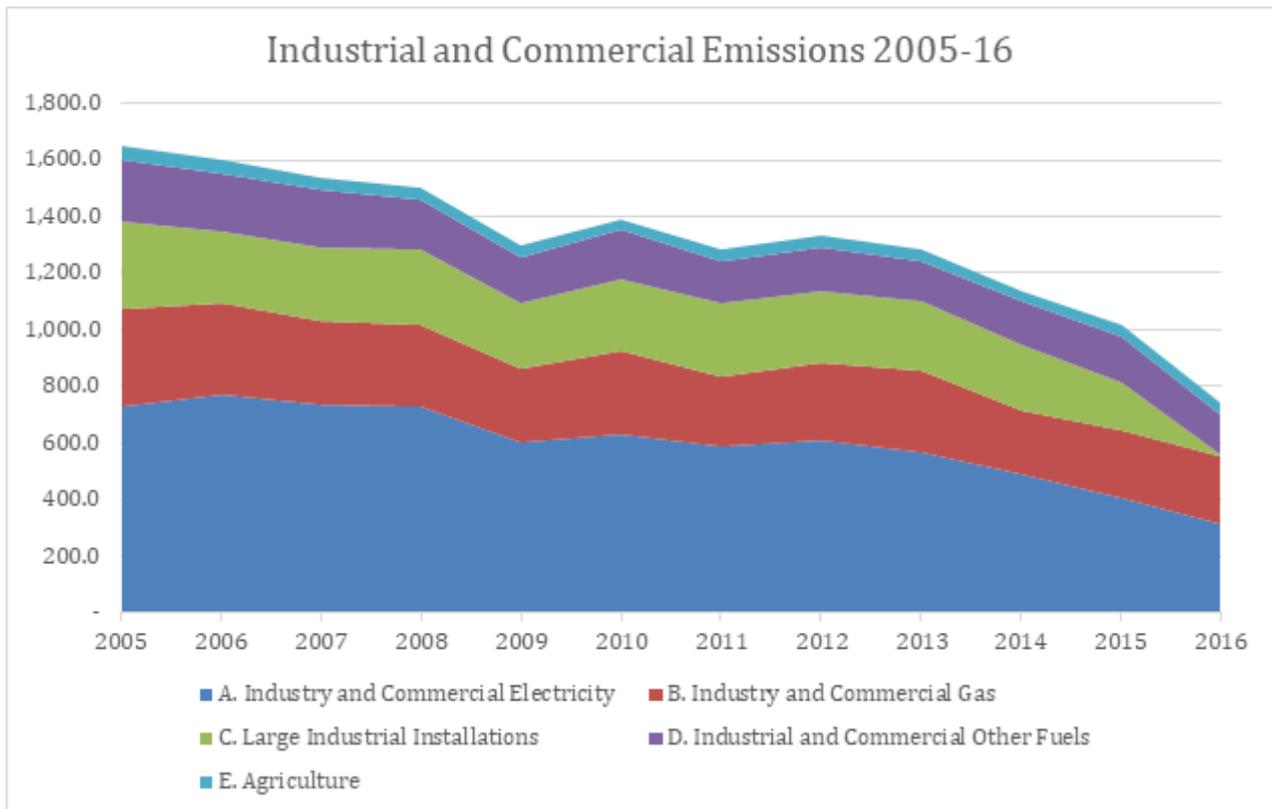


Figure 9: industrial and commercial carbon emissions in Durham (2005-2016)

The chart clearly shows the marked decline in emissions from Large Industrial Installations (the central green stripe) which likely also accounts for the drop-off in use of coal.

The other notable element of this chart is the decline in emissions from electricity. We have already seen that electricity use fell by 11% between 2010 and 2016; carbon emissions from electricity during this period fell by 50%, a result of increased efficiency of equipment, greater efficiency in use and behaviour and, most significantly, grid decarbonisation.

Gas use fell by 14% in the period 2010 -2016, and gas related carbon emissions fell by 20% in that period. This will comprise combinations of upgraded heating systems and improved energy efficiency, for example, through better controls.

8.7 Energy performance of buildings

Energy Performance Certificates provide an energy rating for commercial buildings. Since their introduction in 2009, a total of 6,844 non-domestic EPCs have been generated in Durham, covering in excess of 4.7million m².

The graph below shows the distribution of these Energy Performance Certificates according to their energy rating⁴⁷:

⁴⁷ www.gov.uk/government/statistical-data-sets/live-tables-on-energy-performance-of-buildings-certificates

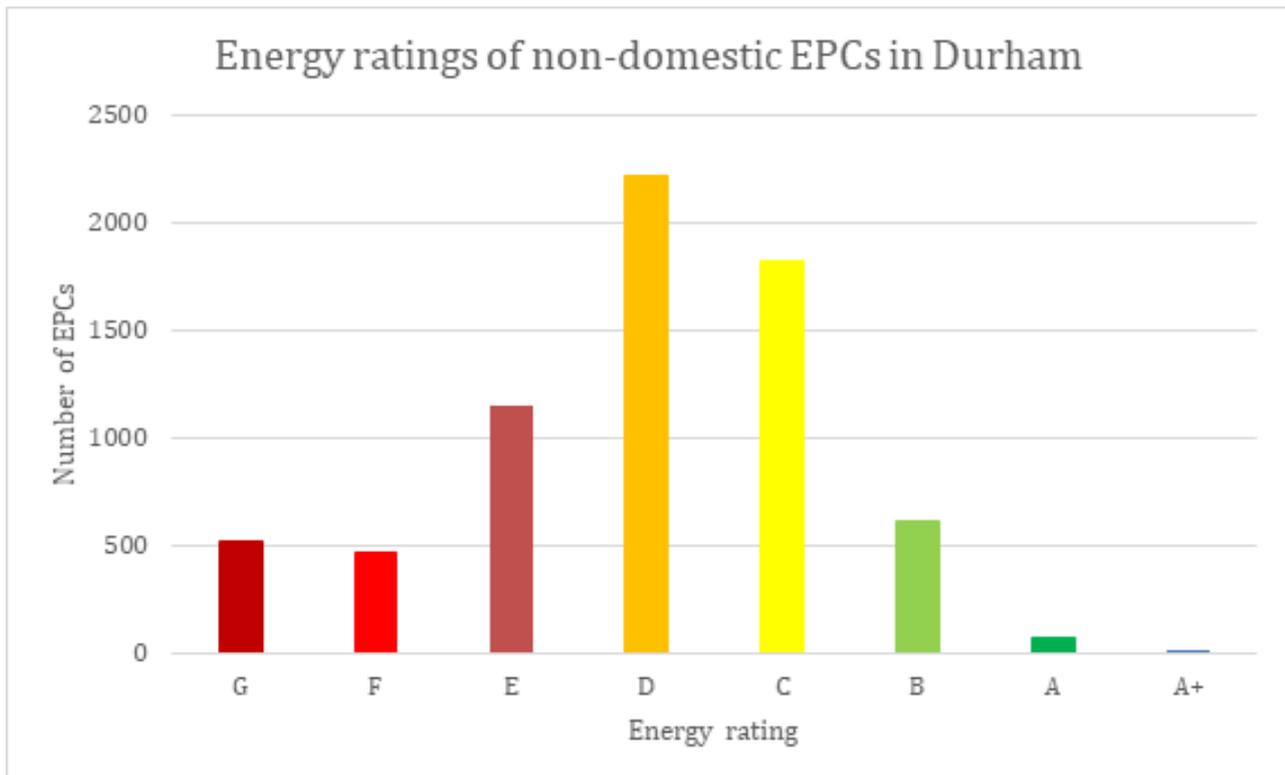


Figure 10: energy performance ratings of non-domestic buildings in Durham

8.8 Energy intensity

Research carried out by BEIS⁴⁸ across England and Wales identifies that some sectors are more energy intensive than others.

Manufacturing businesses are significant energy users and have been a key target for BEEP as a route to supporting major local employers who have the greatest potential to cut energy costs and carbon emissions.

Hospitality / accommodation / food businesses are also highly energy intensive, due to their use of electricity (for lighting, refrigeration etc) but also gas or other fuels for heating and hot water. BEEP's engagement of golf clubs, which have long opening hours and so high energy demand, has demonstrated the value of energy savings to these types of businesses.

Retail sites are electricity-hungry, often combining refrigeration and lighting with cooling systems. Offices and warehouse sites tend to be less energy intensive as they have simpler demands and (in the case of warehouses) a lower emphasis on provision of comfort.

⁴⁸ Building Energy Efficiency Survey, BEIS, 2016: www.gov.uk/government/publications/building-energy-efficiency-survey-bees

9 Appendix B: National policy and regulation around business energy efficiency

This Appendix provides an overview of the policy context within which BEEP was developed and delivered.

9.1 Landscape pre 2017

Most of the energy efficiency policies affecting business at the start of BEEP were developed in the 1990s and early 2000s. These include:

- Performance labelling for products (such as A-G ratings and Energy Star type labelling), which has led to the least efficient products being removed from the market.
- Performance labelling for buildings (implemented through Energy Performance Certificates and Display Energy Certificates where appropriate).
- Climate Change Agreements: long-term agreements put in place with energy intensive (usually primary materials, processing or manufacturing) sectors to support energy reduction and decarbonisation over time.
- Financial incentives such as the Feed-In Tariff, Renewable Heat Incentive, Enhanced Capital Allowances and Low Interest Loans.
- Taxation or financial penalties such as the Climate Change Levy or penalties incurred under the Carbon Reduction Commitment.
- The Energy Savings Opportunity Scheme (ESOS), a mandatory energy assessment scheme for large businesses (which fall outside the scope of BEEP).

The business energy efficiency policy landscape at this time was regarded as complex and ineffective⁴⁹. For example, Government consulted on the business energy efficiency tax landscape in 2015/16. Much of the effective action was targeted at larger organisations, with SMEs excluded by policy design or marginalised by policy complexity.

9.2 2017 - Present

The UK Government's Clean Growth Strategy (2017)⁵⁰ set out the Government's ambition for improving business and industry efficiency. The strategy called for the development of a package of measures to support businesses to improve their energy productivity, by at least 20% by 2030. This includes:

- Improving the energy efficiency of new and existing commercial buildings following the outcome of the independent review of building regulations and fire safety. The Independent Review⁵¹ was published in May 2018; Government published an Implementation Plan related to high-rise buildings in response in December 2018. Note that a proposed review of Building Regulations in 2016, at the start of BEEP, was postponed by Government as part of its goal of reducing regulation.

⁴⁹ A new approach to non-domestic energy efficiency policy, UCL Energy Institute for the Climate Change Committee, 2017: www.theccc.org.uk/wp-content/uploads/2016/10/A-new-approach-to-non-domestic-energy-efficiency.pdf

⁵⁰ Clean Growth Strategy, UK Government, October 2017:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf.

⁵¹ Independent Review of Building Regulations and Fire Safety: Final Report, Hackett Review, May 2018:

www.gov.uk/government/publications/independent-review-of-building-regulations-and-fire-safety-final-report

- Consulting on raising the Minimum Energy Efficiency Standards (MEES) to improve the energy performance of rented commercial buildings (see section 9.4 below).
- Exploring how voluntary building standards could support improvements in the energy efficiency performance of business buildings, and how to improve the provision of information and advice on energy efficiency to SMEs.
- Simplifying the requirements to measure and report on energy consumption, to support businesses to identify where they can make changes to reduce energy spend.

In the 2018 Autumn Budget, Government announced changes to the Climate Change Levy (CCL) rates and the scrapping of Enhanced Capital Allowances (ECA). Further details of these announcements can be found in section 9.3 below.

In March 2019, Government announced a call for evidence around SME energy efficiency⁵². BEIS is now reviewing stakeholder feedback on a range of policy options including an energy company obligation for the business sector, new finance mechanisms and auction schemes.

9.3 Climate Change Levy and Enhanced Capital Allowances

UK Government introduced the Climate Change Levy (CCL) in April 2001⁵³. The CCL is an environment tax charged on the energy used by industrial, public, commercial and agricultural sectors. This tax is designed to incentivise businesses to be more energy efficient and reduce their emissions from buildings and industrial processes. It does not cover transport and business vehicles related emissions.

Energy suppliers collect the CCL through businesses' energy bills, chargeable on units of energy used (kWh). This money is then passed on to HM Revenue & Customs.

The Autumn Budget 2018 announced a move towards equalised gas and electricity rates, so the gas rate reaches 60% of the electricity rate in 2021-22. This measure will be effective from April 2020. Other fuels, such as coal, will continue to align with the gas rate.

Businesses within eligible energy intensive industries can receive discounts on CCL levies⁵⁴ through Climate Change Agreements (CCA). Government announcements have confirmed that the discount for sectors with CCAs will change so participants will not pay more in CCL than they would under the currently expected Retail Prices Index (RPI) increase for that year.

To offset the capital investment required to make energy efficiency improvements, businesses have been able to take up Enhanced Capital Allowances, tax relief on energy saving plant or machinery. However, Government announced in the Autumn Budget 2018 that ECAs would be scrapped⁵⁵.

⁵² Energy efficiency scheme for small and medium sized businesses: call for evidence, BEIS (March 2019):

www.gov.uk/government/consultations/energy-efficiency-scheme-for-small-and-medium-sized-businesses-call-for-evidence

⁵³ The Climate Change Levy (General) Regulations 2001: www.legislation.gov.uk/ukxi/2001/838/contents/made

⁵⁴ 90% on electricity bills and 65% on other fuels.

⁵⁵ The government will end ECAs and First Year Tax Credits for technologies on the Energy Technology List and Water Technology List from April 2020. ECAs are considered to add complexity to the tax system and the government believes there are more effective ways to support energy efficiency. The savings will be reinvested in an Industrial Energy Transformation Fund, to support significant energy users to cut their energy bills and transition UK industry to a low carbon future.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752202/Budget_2018_red_web.pdf

ACE Research and SE² have estimated typical annual CCL costs for businesses⁵⁶ as shown in the table below:

Table 11: Annual CCL cost to businesses by business size and energy source.

Business size ⁵⁷	Electricity CCL	Gas CCL
Very small	£25.30	£181.40
Small	£1,341.30	£2,084.30
Small / Medium	£4,401.60	N/A
Medium	£44,496.10	£17,309.80

9.4 Minimum Energy Efficiency Standards

The Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015⁵⁸ - the Minimum Energy Efficiency Standards (MEES) Regulations - aimed to improve the energy performance of properties in both the domestic and non-domestic private rented sectors.

Since April 2018, landlords of all non-domestic properties in England and Wales that are legally required to have an EPC, have been required to take action under MEES to improve the property's energy efficiency unless a valid exemption applies. The first milestone of the MEES Regulations targets F and G rated properties, requiring improvements to EPC band E.

Landlords are expected to pay to improve the energy efficiency of their property to comply. Fines can be levied for renting out a non-compliant property or for providing false or misleading information.

There are a number of exemptions:

- Where properties that have tenancies under 6 months (and the tenant does not have the right to renewal) or for more than 99 years are exempt, as are properties let on licence, or 'agreement for lease' arrangements.
- Where a relevant energy efficiency improvement does not meet the seven year payback test.
- Where landlords have already undertaken recommended improvements to the property, but it remains below an E EPC rating (sub-standard).
- Where wall insulation, including both cavity and solid wall insulation, cannot be installed.
- Where the landlord is unable to gain consent from a third party, including local authority planning consent, or consent from mortgage lenders, tenants and superior landlords.

⁵⁶ Gas and electricity prices in the non-domestic sector, BEIS, 2018: www.gov.uk/government/statistical-data-sets/gas-and-electricity-prices-in-the-non-domestic-sector

⁵⁷ Size of consumer (very small, small, small/medium) from gas and electricity prices in the non-domestic sector, BEIS, 2018: www.gov.uk/government/statistical-data-sets/gas-and-electricity-prices-in-the-non-domestic-sector. This is a UK classification based on a range of annual energy consumption:

Electricity	(MWh)	Gas	(MWh)
Very Small	0 - 20	Very Small	<278
Small	20 - 499	Small	278 - 2,777
Small/Medium	500 - 1,999	N/A	
Medium	2,000 - 19,999	Medium	2,778 - 27,777

⁵⁸ Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015: www.legislation.gov.uk/ukdsi/2015/978011128350/contents These regulations originate from the Energy Act 2011.

- Where the installation of measures would reduce the market value of the property by more than 5%.
- Where a person has suddenly become a landlord⁵⁹.

From April 2023, the minimum energy performance standard will increase, meaning that landlords will no longer be able to rent out E-rated properties.

The variable nature of commercial buildings makes it difficult to accurately estimate average costs to landlords meeting MEES, or the savings that tenants could expect. The MEES Final Stage Impact Assessment does however provide an overarching average cost estimate of £5,520 per property⁶⁰. The breakdown of costs includes:

- Installation costs vary over a wide range which reflects the variety of energy saving measures available (these range from £30 for hot water tank insulation to £8,400 for solid wall insulation).
- Financing costs (based on interest rates of around 6.9%).
- Assessment costs (estimated at £698).
- Hidden costs (these are estimated at 10% of the installation cost, of which 75% is typically born by the landlord).

There is less data available on the benefits to tenants. The Regulations Impact Assessment estimated total energy savings to tenants of £3,223m.

MHCLG's database of Energy Performance Certificates⁶¹ shows that 6,844 non-domestic EPCs have been issued in Durham (County) since 2008. Note that they are not necessarily a representative sample of the full commercial buildings stock so the following figures are broad indicators only.

Of 6,844 EPCs, 14% have an F or G rating and would therefore need to see energy efficiency improvements (or be exempted) before they can be let in future.

A further 17% of commercial buildings have an E rating, which means that they could not be rented out after April 2023 without improvement (or exemption).

9.5 ESOS, Carbon Reduction Commitment and Streamlined Energy and Carbon Reporting

Whilst these schemes do not apply to SMEs, their principles may come to inform future policy design for medium-sized businesses so we include some discussion of them here.

The **Energy Saving Opportunity Scheme (ESOS)** is a mandatory energy assessment scheme for larger organisations in the UK. Organisations that qualify for ESOS must carry out audits of the energy consumed by their buildings, industrial processes and transport every four years to identify cost-effective energy saving measures. The scheme is administered by the Environment Agency, which can issue both civil sanctions and financial penalties. On average, typical external costs (where consultants are brought

⁵⁹ This exemption provides landlords six months to comply with the regulations before enforcement action can be taken.

⁶⁰ Final Stage Impact Assessment for the Private Rented Sector Regulations, BEIS 2015:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/401379/150202_PRS_Final_Stage_Revised_For_Publication.pdf

⁶¹ MHCLG, Energy Performance of Buildings Data: England and Wales Open Access Database, accessed July 2019: <https://epc.opendatacommunities.org/>.

in to deliver ESOS requirements) incurred by obligated parties are between £6,150 and £14,388⁶². The most common assessor's service cost was found in the range of £7,000 to £10,579.

The **Carbon Reduction Commitment Energy Efficiency Scheme (CRC)** was a mandatory UK scheme aimed at improving energy efficiency and reducing CO₂ emissions in large public sector organisations and quoted companies. The CRC scheme applied to large energy users with annual electricity consumption of over 6,000MWh who were not covered by Climate Change Agreements or the EU Emissions Trading System. Participants were required to buy allowances, from the Government or the market, for every tonne of carbon they reported under the scheme. Organisations that reduced their emissions therefore reduce the cost of compliance. A company that failed to surrender sufficient allowances for the year received a financial penalty (though this element was removed from the scheme).

In the 2016 Budget, the Government announced the closure of the CRC scheme at the end of 2018/19. The Government recovered the tax revenues lost by closing the CRC Scheme through the CCL, while reporting of emissions will be reflected in the forthcoming Streamlined Energy and Carbon Reporting (SECR) framework described below.

The **Streamlined Energy and Carbon Reporting (SECR) framework**⁶³ was introduced in April 2019 and requires quoted companies, large unquoted companies and large Limited Liability Partnerships to report on their energy use and carbon emissions on an annual basis (requirements differ slightly by type of company). All are required to provide a narrative on energy efficiency measures that they have undertaken. Companies outside the scope of mandatory reporting are encouraged to report on a voluntary basis: this could be a lever for SMEs who wish to report on their activities.

9.6 Smart meters

Smart meters are the next generation of gas and electricity meters and offer a range of intelligent functions.

The Government committed⁶⁴ to ensuring that every home and small business⁶⁵ in the country is offered a smart meter by the end of 2020. Non-domestic sites can be offered advanced meters rather than smart meters⁶⁶. Both large and small gas and electricity suppliers are required by their licence to take all reasonable steps to roll out smart meters to all of their domestic and small business customers. Suppliers are generally behind schedule on the roll-out of smart meters across the country.

Smart meters are expected to provide SMEs with a clearer understanding of their energy use, providing half-hourly data so that business managers can identify opportunities for savings (for example, by reducing out of hours usage). Research commissioned by British Gas and carried out by Oxford

⁶² Evaluation of the Energy Saving Opportunity Scheme, BEIS, October 2017: www.gov.uk/government/publications/energy-savings-opportunity-scheme-esos-evaluation-of-the-scheme.

⁶³ Environmental Reporting Guidelines, including Streamlined Energy and Carbon Reporting requirements, BEIS, 2017: <https://www.gov.uk/government/publications/environmental-reporting-guidelines-including-mandatory-greenhouse-gas-emissions-reporting-guidance>.

⁶⁴ Smart Systems and Flexibility Plan, UK Government, 2017: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/633442/upgrading-our-energy-system-july-2017.pdf.

⁶⁵ BEIS guidance defines these as 'business or public sector customers whose sites use low to medium amounts of electricity (defined as a smaller non-domestic site falling within Balancing and Settlement Code Profile Classes 1, 2, 3 or 4) or gas (defined as a smaller non-domestic site using less than 732MWh of gas per annum). The sites therefore range from individual micro- and small businesses to the smaller sites of private and public sector organisations'.

⁶⁶ Advanced meters must, as a minimum, be able to store half-hourly electricity and hourly gas data, to which the customer can have timely access.

Economics in 2012⁶⁷ suggested that savings of 4-5% could be achieved through greater awareness of energy use and simple behavioural changes. Installation of energy saving measures (low energy lighting or more energy efficient equipment) could increase these savings to 7-15%.

To the end of March 2019, around 1.17 million smart meters had been installed in non-domestic premises across Great Britain⁶⁸. Around 90% of these are electricity meters. Data on smart meter installations at a regional or sub-regional level – current and planned – is not available.

⁶⁷ Smart meters to save SMEs billions, IEMA, October 2012: <https://transform.iema.net/article/smart-meters-save-smes-billions>.

⁶⁸ Smart Meters: Quarterly report to end March 2019, BEIS, 2018: <https://www.gov.uk/government/statistics/statistical-release-and-data-smart-meters-great-britain-quarter-1-2019>.

10 Appendix C: SME survey results

An online survey was sent to all SMEs who have had some interaction with the programme since it began. This ranged from those who only made an initial enquiry, all the way through to those who received a grant for installed measures.

The survey link was sent out to the 144 SMEs who have engaged with BEEP. 21 responses were received (14.5%). Three SMEs offered to speak to the team over the phone to explore the reasoning behind their responses.

This appendix summarises the survey findings, with excerpts included within the main report where relevant.

How did you hear about BEEP?

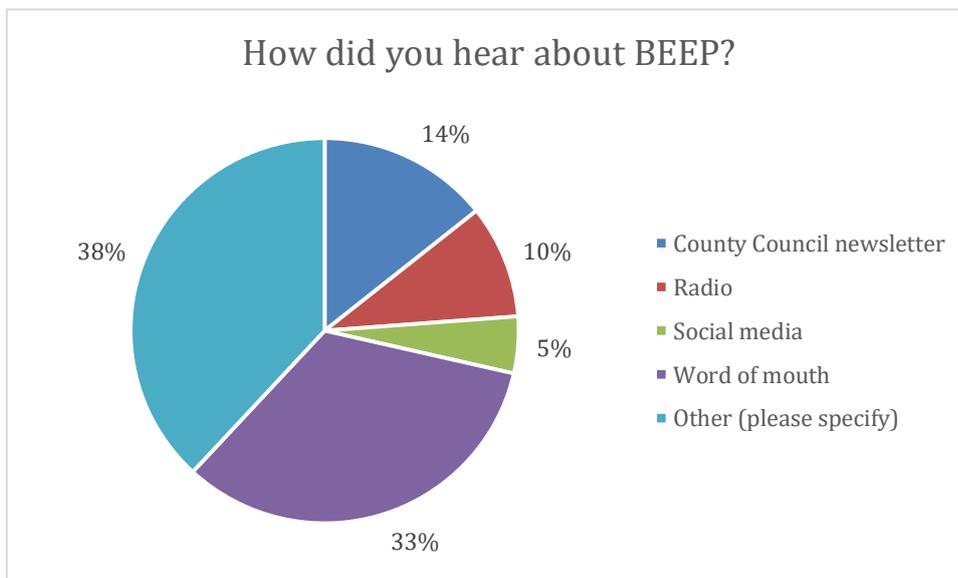


Figure 11. Engagement method.

A third of the respondents (33%) heard about BEEP through word of mouth, a good indicator of how useful the referring SMEs found the programme. 14% first heard about BEEP through the County Council newsletter delivered to homes across the area, a low-cost communication route that has wide coverage and a significant response rate. Two SMEs responded to radio adverts (10%) and one to social media (5%). Other ways in which SMEs heard about BEEP were:

- Direct contact from DCC.
- Business Durham email.
- Referral from Sunderland University SAM project.
- Local publication on Aycliffe Business Park.
- Networking Event.
- Exhibition.

How far did you progress through the BEEP process?

There are a number of different stages in the BEEP process, and we were interested to find out how engaged with BEEP the survey respondents were: from just making an initial enquiry or having an introductory meeting, to going ahead with the survey and recommendations, right through to installing measures and in some cases receiving grant funding.

SMEs from all stages of the process were sent the survey.

As figure 12 below shows, all respondents at least got as far as the survey and recommendations. This is not surprising as those who didn't get past the initial stages are less engaged with BEEP and so less likely to respond to an online survey. Of the 21 respondents, 9 had the survey and recommendations report (43%), 4 had implemented measures (19%) and 8 had implemented measures and received grant support (38%).

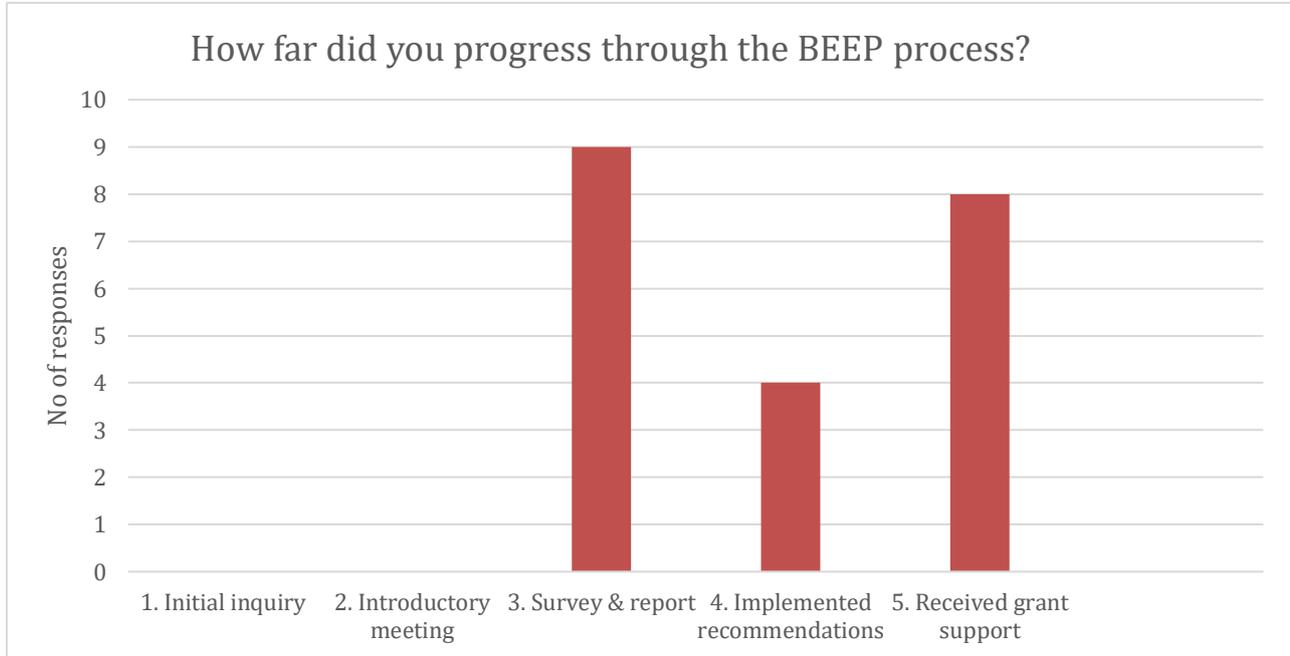


Figure 12. BEEP progression

One SME noted that they hadn't progressed any further than the survey and report as the *“business is going through a transition. The recommendations are good, but will only be implemented when things have settled down”*.

Another who received grant support noted that they had *“installed LED lights, PIRs and motion sensors. This was done in such a way as to not impact customers at all. The lights can be operated by a standard on/off switch when guests are present, or in a 'setup' mode where the sensors operate them.”*

How would you rate the different elements of the BEEP process?

SMEs were then asked to rate the different elements of the BEEP process: the information they initially received, the time the process took, the support they received from their BEEP officer and the recommendations made for this business.

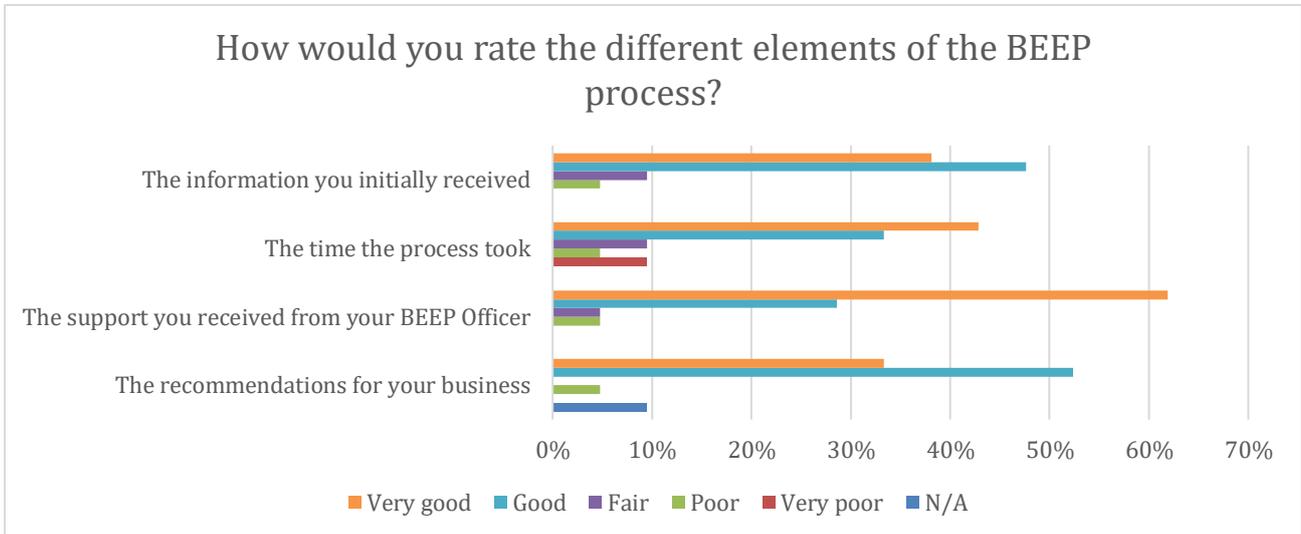


Figure 13. Rating BEEP.

The support received from BEEP officers was very highly rated, with 90% of respondents saying it was good or very good, closely followed by the information initially received and the recommendations for their business, both at 86% good or very good. The time the process took is less well rated, with only 76% of respondents saying it was good or very good.

Two of the respondents added further comments when a low rating was given. Both considered the time the process took to be very poor: one also rated all other aspects as poor.

One commented *“It went wrong early on - faulty equipment and unreliable data”* This led to the recommendations report being inconclusive. The BEEP team agreed that the failure of monitoring equipment was disappointing for both the SME and the BEEP team.

The other said: *“Got to the survey and report stage but it became very apparent that it was not going to progress in any sensible time frame to help our business... The fund is supposed to be supporting growth in the North East but is clearly in no way achieving that objective unfortunately.”* They had noted that from start to finish the BEEP process took 3-4 months *“when I had expected it to take a month”*.

While the BEEP team did agree that the process of support is lengthy, as detailed in Figure 13 above, all SMEs have to go through the individual steps of the project as agreed with ERDF.

What difference has BEEP made to your business?

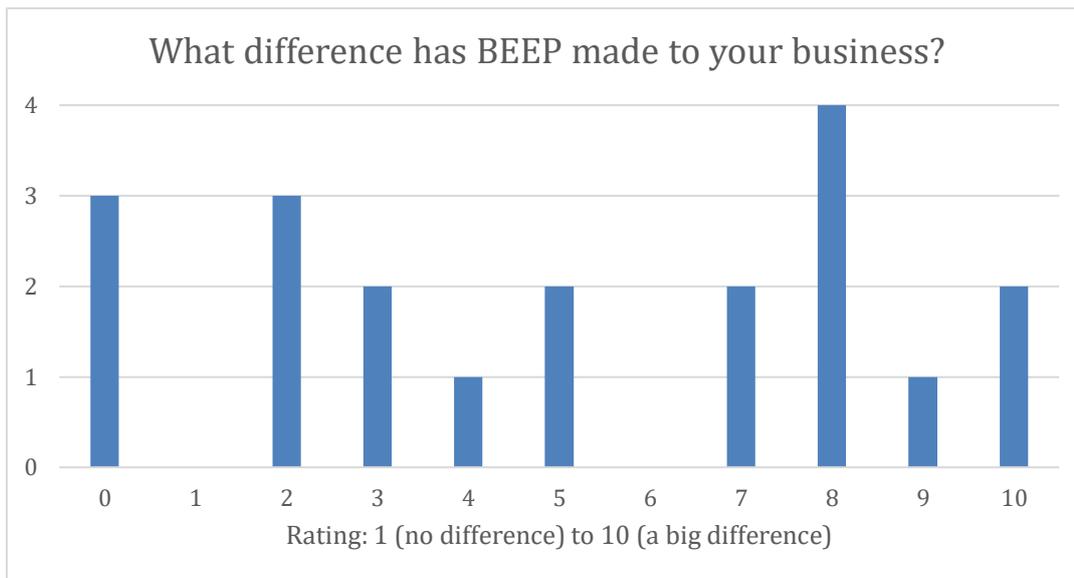


Figure 14. Impact of BEEP.

When asked to rate the difference BEEP had made to their business, there was a wide range of responses. 7 SMEs rated the difference that BEEP had made at 8 or above: 9 rated it at 4 or below, including 3 who ranked it as 0. The average score was 5.

Respondents were also asked if they thought there had been any **unexpected outcomes** following the BEEP support, for example partnership working with neighbouring businesses or being able to expand their own business. On the whole, respondents either didn't respond or said no, one of whom explained "There was little we could afford to implement even with grant help. A few small adjustments can be made but that will have little effect on our costs going forward". However, one respondent said 'possibly' (although didn't expand on what) and another welcomed the wider 'knowledge of available support'. Another noted that "while BEEP wasn't able to solve our engineering issue, we are now more aware of the energy we use".

Another SME noted that "there had been no impact on the customers - which is good - but there has been a marked improvement in energy bills, particularly overnight usage, and the equipment has probably paid for itself already".

Implementing measures

15 respondents answered the question 'Did you **encounter any difficulties** in implementing the BEEP recommendations?' Of these, 8 (53%) said they'd encountered no problems and 4 (27%) said either 'not yet' or that they haven't reached implementation stage yet. Of the 3 other respondents, 2 (13%) said the main difficulty had been cost. The other said there was 'no follow up and unclear', however it should be noted that this SME and the BEEP team experienced difficulties with monitoring equipment and data analysis, which meant that the recommendations were not entirely relevant.

SMEs were also asked if they'd **taken any further action** since their BEEP support ended. 16 SMEs answered this question, of which 7 (44%) said no. 6 (38%) said not yet: two of these respondents expanded further saying "Not yet had time to reflect and implement anything from this as it has only been 6 months" and "Just kept the report in case we might get the grant for work next time". However, three of the respondents (19%) said that they have taken further action:

- “We upgraded the lights in our warehouse and paid for it ourselves without the grant.”
- “Installed more efficient compressors.”
- “Continue working mainly as we were but asking staff to be more aware, such as turning off lights, boiling the kettle with what was needed etc.”

Relevance and replication of BEEP

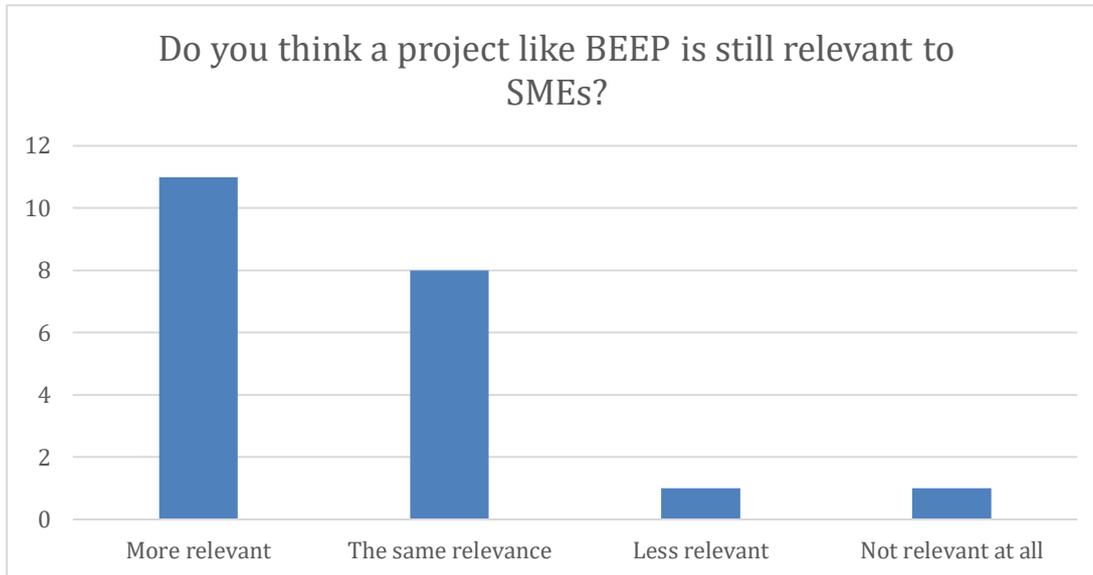


Figure 15. Relevance of BEEP.

Our next question asked if respondents thought a project like BEEP is still relevant to SMEs. 90% of respondents (19 SMEs) thought it had either more or the same relevance, confirmation of the need for ongoing support through BEEP 2 and other similar projects. 1 respondent considered a project like BEEP to be less relevant and 1 considered it not relevant at all: these are the same respondents that gave low ratings for the different elements of BEEP in Q3 above.

We also asked if respondents would **recommend BEEP to other SMEs**: 18 (86%) said they would. Of the other three, two were the same respondent who thought a project like BEEP was less relevant or not relevant at all to SMEs (above). The other did not expand on their answer but elsewhere said they ‘could not find fault with BEEP’.

One SME considered that the BEEP is highly relevant to SMEs. “100% - it has been useful to us, so it certainly should be useful to others”.

Recommendations for improving BEEP

We explained to respondents that DCC is applying for funding for BEEP 2 and asked for their ideas as to how the scheme could be improved. 11 SMEs gave a response, which can be split into two broad categories:

Promotion

- “Improve awareness of the scheme. We only found out about it by chance when it details were passed on to us”.
- “Marketing and getting the message out”.
- “Advertise it more widely to businesses – we only heard about it via word of mouth, so better publicity could enable more people to benefit”.

- *“Making people aware it’s available”.*
- *“Disseminate information to local businesses. We only found out via a recommendation”.*
- *“Little more marketing”.*

Funding

- *“More financial support to improve small businesses and help them to drive growth”.*
- *“Supporting further investments in other energy saving projects”.*
- *“Make sure there is enough funds to cover all projects”.*
- *“Actually having some money to spend with SMEs before publicising the scheme”.*
- *“Increase the grant levels”.*
- *“If really want to make small companies more efficient I think funding should be increased as the cost of carrying out work is not only the direct cost but also the cost of lost labour and production in the factory etc. Fully funded options would make it more likely for companies to consider the additional costs as worthwhile”.*

Any further comments?

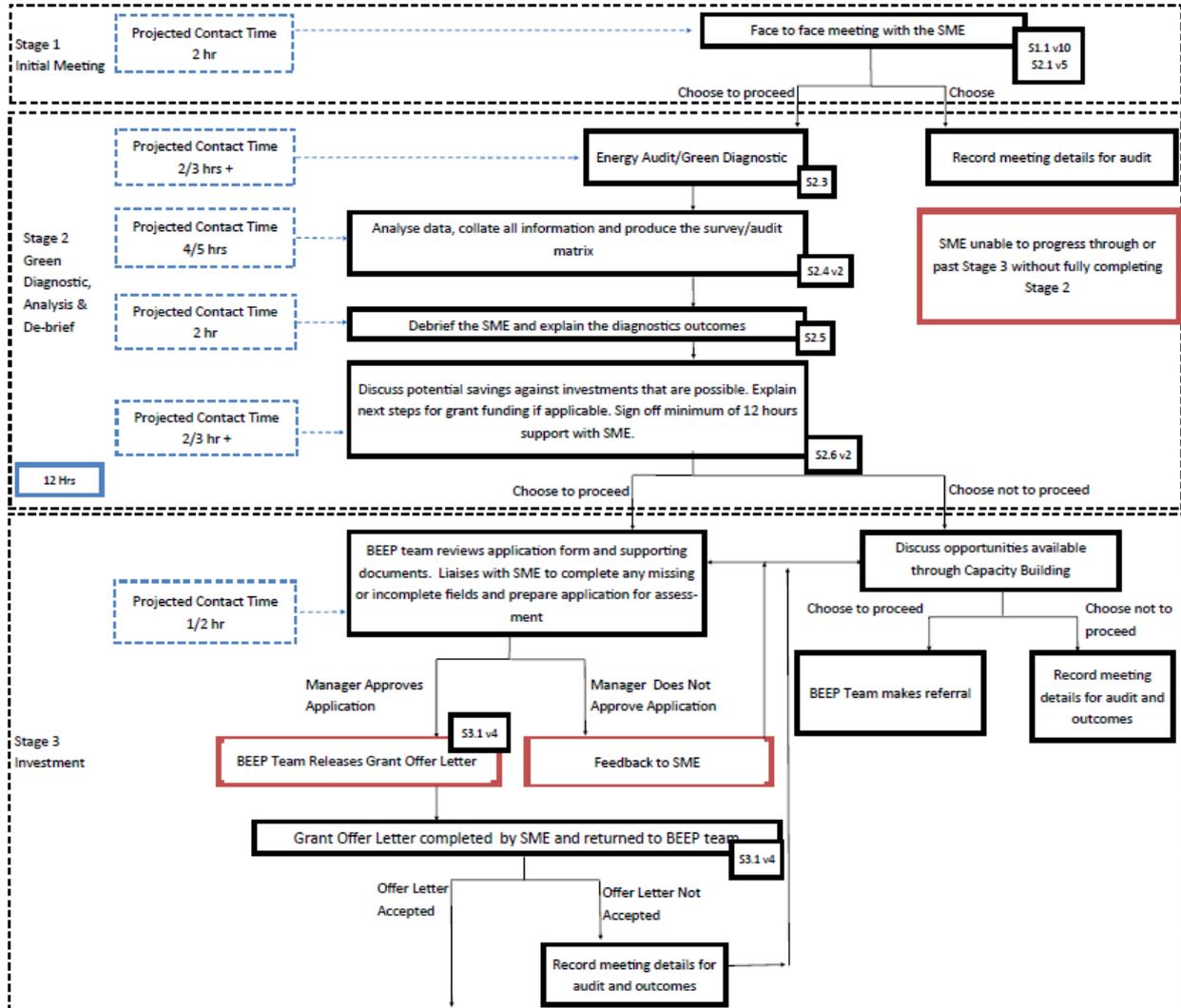
Finally, SMEs were asked if there were any general comments they would like to make, and they responded as follows:

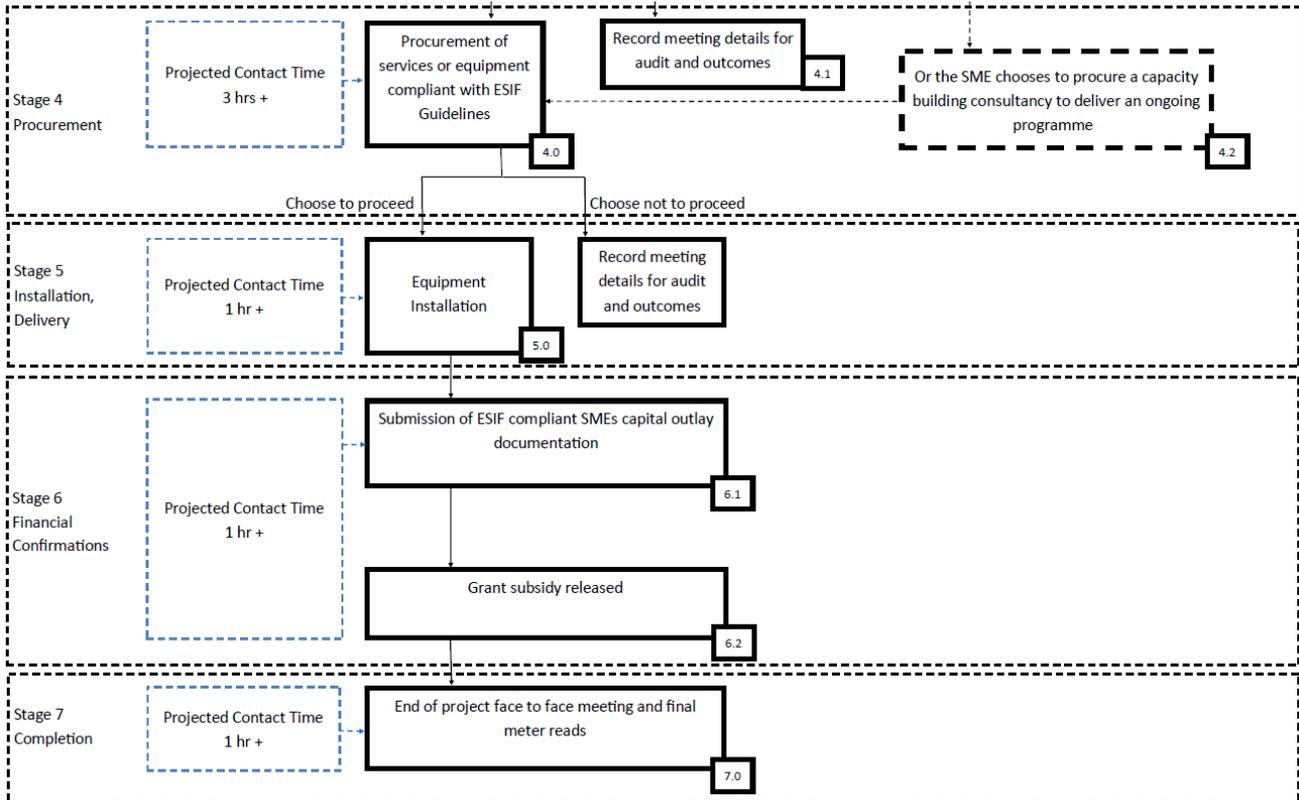
- *“It has been a really useful process so far and has got us to think about things in a different way. We look forward to progressing and seeing the difference”.*
- *“Just like to say that Malcolm Potter helped us in every step of the grant and gave 100%. He made it so simple”.*
- *“It was a smooth process”.*

11 Appendix D: BEEP process infographic



Business Energy Efficiency Project (BEEP)





12 Appendix E: Examples of BEEP marketing collateral

12.1 Case studies

12.1.1 Castle Eden Brewery



CASE STUDY

Castle Eden Brewery

Originally established in 1826, Castle Eden Brewery re-opened in Seaham with new management and refreshing plans. Castle Eden not only brew their own beer but brew on behalf of several well-known brands.

After its re-launch, Castle Eden Brewery began making strides at its new home in Seaham, but as they grew the cost of energy became an increasing problem. They called the BEEP team who were happy to help. The BEEP team installed sub metering equipment and conducted a fully funded energy audit; a range of cost effective energy improvements were identified including reducing the lighting requirement of unused by Castle Eden alongside replacing the current lighting used directly by the brewery for LEDs.

The BEEP team also identified that updating the current caustic soda and hot liquor tanks could generate an approximate saving of up to 70%!

"This is an exciting and busy time for us, knowing where we can make savings through better equipment without compromising quality has been a huge win for the Castle Eden team. With BEEPs support we know where to invest and where to make savings."



Cliff Walker and David Travers of Castle Eden Brewery

Through the BEEP teams metering and monitoring solution the team identified that one of Castle Eden's production machines is responsible for **40%** of their annual consumption



12.1.2 Dyer Engineering Limited



CASE STUDY

Dyer Engineering Limited



Dyer Engineering Limited are a fabrication and machining specialist based in County Durham

Following an energy audit, the BEEP team identified a range of cost saving options for Dyer Engineering. Of all the options available the most cost-effective area for improvement was to replace the existing high bay metal halide lighting and fluorescent tubes across all of their seven production facilities.

As a result of the lighting upgrade recommended by the fully funded BEEP energy audit, Dyer Engineering reduced their total lighting related energy consumption by more than 220,000kWh per year.

Due to the large kWh savings, the BEEP team were able to further support Dyer Engineering with a 40% grant to help reduce the payback period of their LED lighting improvements to under 12months.

"The BEEP team have been great. The process was quick, straightforward and reliable...everything you want when you're running a busy business. Furthermore the improvement to the quality of light has been remarkable"
Graeme Parkins - Managing Director.

As a result of the BEEP energy audit and the savings being generated by the LED lighting upgrades, Dyer Engineering are now looking at their improving the energy efficiency of their heating system.



Presenting the cheque.

Left to right: Calum Baker (BEEP), Malcolm Potter (BEEP) and Graeme Parkins (Dyer Engineering)



12.1.3 Peterlee Glass



CASE STUDY 

PLG Glass – Commercial Glass Suppliers

Peterlee Glass took advantage of the fully funded and personal support offered by the Business Energy Efficiency Project Team (BEEP) to drastically reduce their energy consumption and in-turn generate financial savings.

Following an in-depth energy audit the BEEP team identified the most cost effective solution for Peterlee Glass was to replace the old high bay metal halide lighting within the main factory area for highly efficient LED alternatives. This simple replacement would achieve significant savings.

Peterlee Glass also took full advantage of the BEEP recommendations report by adopting many of the cost effective solutions the BEEP team suggested. The Peterlee factory now boasts improved lighting controls throughout, LED lighting throughout the office areas, improvements to the heating system and DE stratification Fans within the main factory area.

Peterlee Glass received a £9,808 grant towards the cost of the highly energy efficient new lighting.

“The process was clear and straight forward, even the paperwork was simple. The support we’ve received from the BEEP team has been excellent, they’ve helped us make sustainable financial savings.” Said Graeme Hawes, Managing Director.

i The energy efficiency benefits from the LED lighting installation recommended within the report is projected to give a 46% energy savings on lighting within the factory, office and staff areas.



i Peterlee Glass installation at the Sage, Gateshead




12.1.4 Newton Aycliffe Workingmen's Club and Institute Ltd



CASE STUDY

Newton Aycliffe Workingmen's Club & Institute Ltd

The Big Club.

The Big Club took advantage of the fully funded and personalised support offered by the Business Energy Efficiency Project (BEEP). Following a change in the clubs management, the new management committee wanted to identify areas where money was being wasted.

Following an in-depth energy audit the BEEP team identified a number of cost effective solutions including lighting, general good housekeeping and improvements to the cellar chiller units. The most cost effective solutions for the Club was to replace the inefficient internal and external cellar chiller units and to encourage the brewery to replace the outdated and inefficient beer/soft drinks pump chiller units in the cellar and bar areas.

With the assistance of a 40% grant from the BEEP team, the Club replaced the cellar chiller units for their modern efficient equivalents. The Club also worked with the brewery to replace the pump chiller units, and taking the BEEP teams advice replaced the lighting throughout the building with LEDs.

The energy efficient improvements recommended by the BEEP team has seen the Big Clubs energy consumption reduce by over 85%.

"The BEEP team have been very helpful and always on hand to advise and guide us. We are delighted by the financial saving we are seeing through the better energy management and efficient equipment the BEEP team recommended." said Alan Nelson, Joint Secretary.

Below is a picture of the new external fridge chiller unit which has more modern upto date digital controls enabling it be much more efficient than the old unit.



The BEEP Team presenting the Grant Offer to The Big Club



www.bEEP.uk.net



12.2 BEEP engagement and communication materials

12.2.1 BEEP poster



European Union
European Regional
Development Fund



bEEP
business energy
efficiency project



Durham County Council are in receipt of European Regional Development Fund (ERDF) to deliver financial savings, energy efficiency and CO² reductions to County Durham's SMEs through our Business Energy Efficiency Project (BEEP)

BEEP is operating within the European Structural and Investment Fund (ESIF) programme 2014-2020

www.bEEP.uk.net

12.2.2 BEEP flyer

A flyer graphic with a large orange circle in the center containing the text "Fully funded SME energy audits". Surrounding this central circle are four smaller circles: a grey one with a document icon, a purple one with a water drop icon, a green one with a pound sign and a person icon, and a lime green one with a hand pointing icon. The background is a light orange gradient.

Fully funded SME energy audits

Every SME is different and therefore every solution is different, but generating financial savings through reducing your energy consumption is a relatively quick win.

www.beep.uk.net

The County Durham Business Energy Efficiency Project (BEEP) has been designed to help SMEs find financial savings by reducing their energy consumption.

In many cases energy efficiency is a relatively simple quick win for business, delivering short paybacks and year on year cost savings compared to 'business as usual'.

BEEP can offer fully funded advice, guidance, expert insight, equipment monitoring and financial support for the installation of efficient equipment.

Do you want to continue wasting money?



If you would like more information get in touch with the BEEP team who will be happy to help

business energy efficiency project Durham County Council

03000 265547 | beep@durham.gov.uk | DCCBEEP

www.beep.uk.net

Our partners



North East England
Chamber of Commerce



12.2.3 BEEP 'showreel'



European Union
European Regional
Development Fund

beep | business energy
efficiency project



European Union
European Regional
Development Fund

beep | business energy
efficiency project



European Union
European Regional
Development Fund

beep | business energy
efficiency project



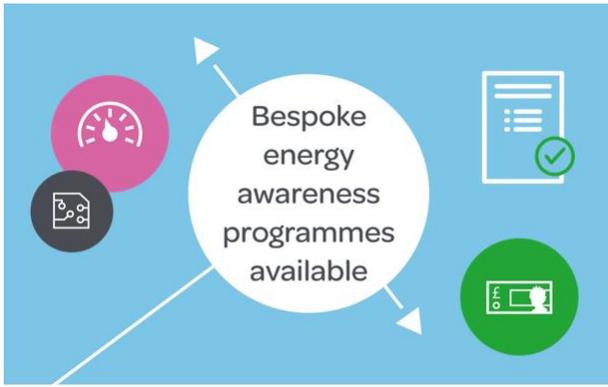
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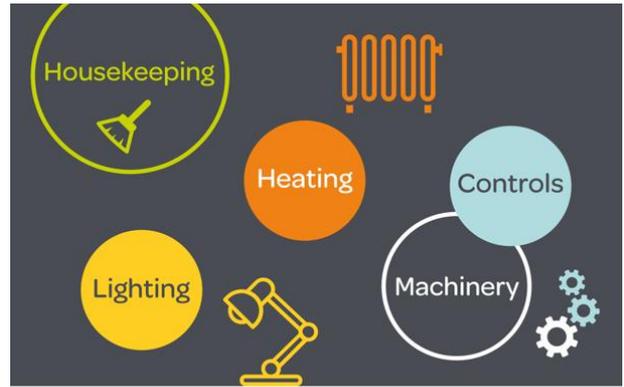
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European Regional Development Fund

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Our partners



12.2.4 BEEP guidance booklet⁶⁹

I want to make savings, how does the project work?



Once we have confirmed that your business meets the eligibility criteria we will undertake the audit. We will walk around your building(s) to take photos, make notes and ask questions about your operating hours and any machinery you operate.



During our initial visit we will give you more details about the project and explain what we can do, what we can't do and, most importantly, discuss what you would like to get out of it.

We need to confirm your business is compliant with the rules we need to adhere to, so during the visit we will ask questions about your business to collect information.

We need to be certain of the total amount of state aid you have received within the previous three consecutive financial years. You will be provided with a list of examples of what type of support constitutes state aid, but it does include activities like consultancy support, finance and equipment.

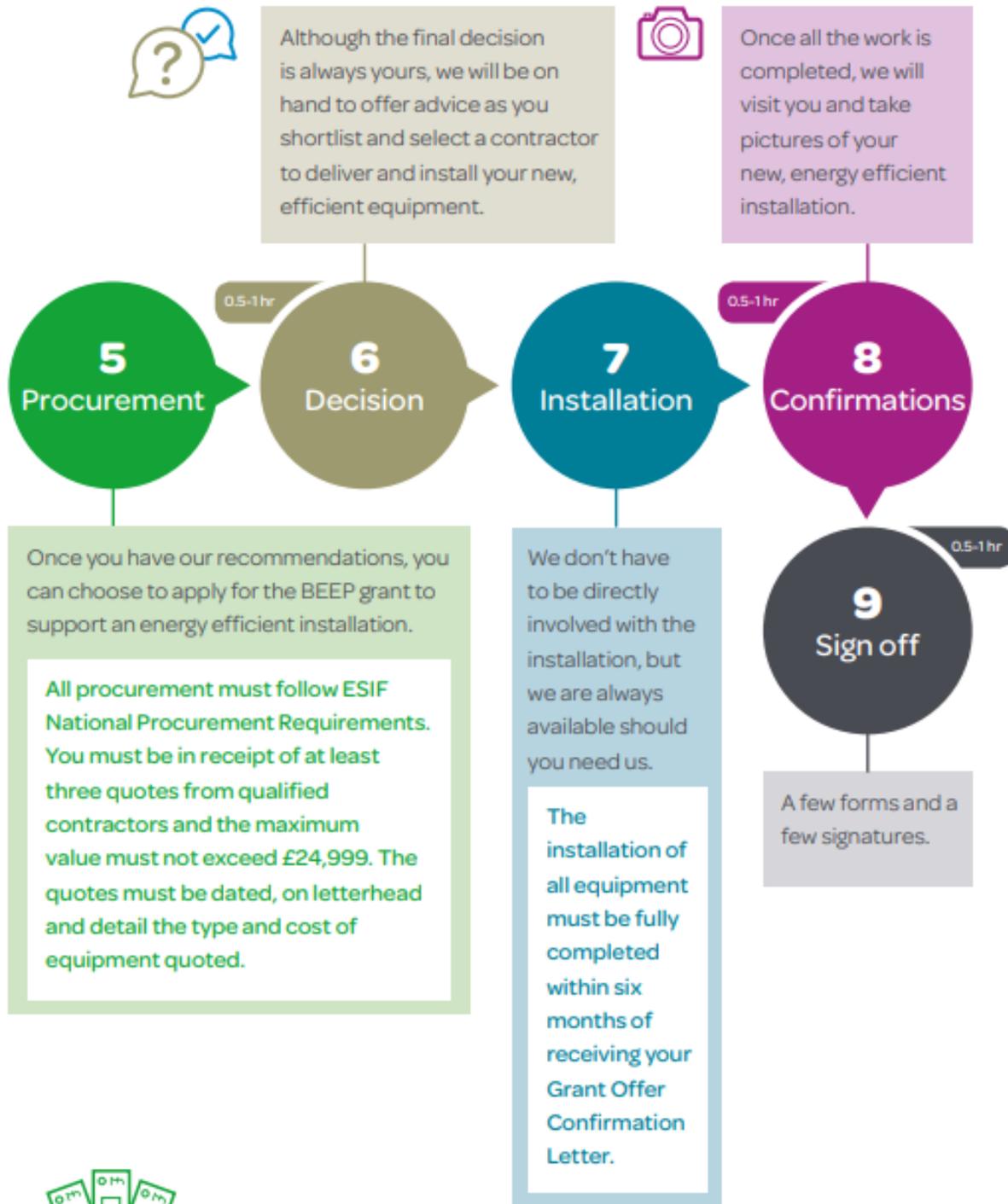
Take a little time to think and search your records relating to any public funded support you may have received. Read the BEEP State Aid Declaration form and if there are any questions please do not hesitate to ask the team. Complete the form with as much accuracy as possible, including your signature and the date of completion.

We will present you with our findings and recommendations. We will talk you through the actions we believe would result in the highest returns for investment and that will allow you to recoup your money back the quickest.



Read the BEEP State Aid Declaration form and if there are any questions please do not hesitate to ask the team.

⁶⁹ www.durham.gov.uk/media/26985/BEEP-Information-Booklet/pdf/BEEPInformationBooklet1.pdf?m=636845428616170000



You must be in receipt of at least three quotes from qualified contractors and the maximum value must not exceed £24,999.



12.2.5 Behaviour prompt cards

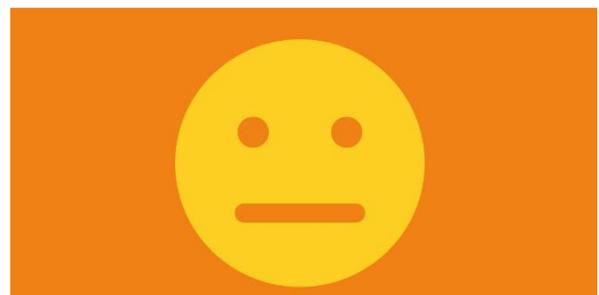


Outstanding effort!

By eliminating wasted energy we become more **competitive** and more **productive**.

We are working hard to **eliminate wasted energy** and generate financial savings so the business thrives.

The Business Energy Efficiency Project (BEEP) helps County Durham SMEs to identify and eliminate wasted energy. For more information or support please visit: www.beep.uk.net or email beep@durham.gov.uk



You've been caught!
You **know** better!

We are working hard to **eliminate wasted energy** and generate financial savings so the business thrives.

The Business Energy Efficiency Project (BEEP) helps County Durham SMEs to identify and eliminate wasted energy. For more information or support please visit: www.beep.uk.net or email beep@durham.gov.uk



Come on!
You **know** better!

Lets stop wasting money by wasting energy.

We are working hard to **eliminate wasted energy** and generate financial savings so the business thrives.

The Business Energy Efficiency Project (BEEP) helps County Durham SMEs to identify and eliminate wasted energy. For more information or support please visit: www.beep.uk.net or email beep@durham.gov.uk

12.2.6 Bus and street liners

Is your business switched on to energy savings?

Contact BEEP for a **FREE energy audit** or visit www.beep.uk.net

European Union European Regional Development Fund | Durham County Council | beep | business energy efficiency project | 03000 265547 | beep@durham.gov.uk | @DCCBEEP | in

Is your business switched on to energy savings?

European Union European Regional Development Fund | Durham County Council | beep | business energy efficiency project | www.beep.uk.net

12.2.7 Factsheets⁷⁰

The ever-increasing cost of energy continues to be a concern for businesses across the country, not least, County Durham.

Could reducing your ongoing business expenses and freeing capital benefit your business?

This factsheet and our wider Business Energy Efficiency Project aims to provide practical, introductory advice to micro, small and medium sized businesses. Our project aims to demonstrate that investing in energy efficiency can generate financial savings, strengthen your business, and support growth.

Being aware of how your business uses energy and, more importantly, where your business wastes energy, will make a difference to your bottom line.

UK Government figures suggest that the average SME could reduce its energy bill by 18-25% by installing energy efficiency measures, with an average payback of between one and three years ([DECC, 2015](#)).

This factsheet describes Metering and Monitoring.

⁷⁰ www.beep.uk.net/factsheets/

Accurate measurement of energy consumption allows a business to:

- Be confident about the accuracy of their billings and, therefore, what it is having to pay
- Make informed decisions about patterns of energy use, the efficiencies of equipment and working practices
- Schedule production in the most energy efficient way.

Metering and monitoring of energy usage can be undertaken at different levels of intensity. An individual business should, therefore, decide:

- 1 How much data is required? Too much can be as problematical as too little.
- 2 What data is currently available? For example, are energy invoices scrutinised? Are the readings estimated or actual?
- 3 How many meters do you have? What parts of the business do they measure?
- 4 How is the data analysed, who takes responsibility for it and how and to whom is it reported?
- 5 How much more data is needed for effective energy management?

The solution to a need for more data may be to replace the existing meters with new **RD** or **MID** approved meters that would be more accurate, provide half-hourly data and can be read remotely, removing the problematical 'estimated' bills.

If the business wishes to understand consumption in key, high usage areas, or between departments, business units or specific equipment in more depth, sub-metering could be installed on the customer-side of the main meters permanently or temporarily to identify the cost of one or more specific operations.



On a national level, the UK is on the cusp of a metering and monitoring 'revolution' with a 'roll-out' of smart and advanced metering

The vision is for 'smarter markets' that are more efficient and competitive. This will not be realised without changes to the arrangements that underpin how consumers interact with each other and the Utilities.

Ofgem has established the Smarter Markets Programme to help drive these changes. A more dynamic market, in which consumers use energy more efficiently through **demand-side response (DSR)**, is an essential part of the vision.

DSR can help to reduce consumer bills, including by delaying or avoiding investment in generation and network capacity. It can also lower carbon emissions and enhance security of supply.

With smart and advanced metering, many of these consumers will have meters that can record their half-hourly (HH) consumption for the first time.

This presents an opportunity to improve accuracy in the allocation of energy and network costs across the Utilities. It will allow for suppliers to be charged for the electricity their customers have actually consumed, as opposed to the current system that uses estimates of need.

Smart and advanced meters can also be remotely read so settlement can happen more quickly and efficiently. Ofgem consider that it is in consumers' interests to be invoiced from HH consumption data from smart and advanced meters. Using HH data for settlement will place stronger incentives on Utilities to help customers move load to periods when electricity is cheapest.





Jargon Buster

Demand-side response (DSR) – is the modification of consumer demand for energy through various methods such as financial incentives and behavioural change.

Usually, the goal of demand side management is to encourage the consumer to use less energy during peak hours, or to move the time of energy use to off-peak times such as night-time and weekends. Peak demand management does not necessarily decrease total energy consumption, but could be expected to reduce the need for investments in networks and/or power plants for meeting peak demands. An example is the use of energy storage units to store energy during off-peak hours and discharge them during peak hours. A newer application for DSM is to aid grid operators in balancing intermittent generation from wind and solar units, particularly when the timing and magnitude of energy demand does not coincide with the renewable generation.

Any gas or electricity meter used for the purpose of billing must be of an approved design; either RD or, since 2006, MID.

Regulatory Delivery (RD) – UK body responsible for the accuracy of gas and electricity meters.

Measurements Instruments Directive (MID) – is a European standard that harmonises measurement instruments so they can be used across European borders.

HH – refers to half-hourly monitoring or reading of consumption through a meter. 48 readings a day provide the business with a huge amount of data that can be translated into almost a ‘running commentary’ about how much electricity is being consumed, illustrating the peaks and troughs of usage. It is particularly useful for the identification of anomalies in consumption, e.g. why was more energy consumed on that Tuesday, compared to other Tuesdays or other days of the week.

The Business Energy Efficiency Project (BEEP)



BEEP helps County Durham SMEs generate financial savings through energy efficiency.

Contact the team to find out if we can help your business.



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