Ministry of Housing, Communities & Local Government

European Union
European Structural and Investment Funds

Scoping of the National Evaluation of the 2014-2020 ERDF Programme for England

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The Ministry of Housing, Communities & Local Government

Contents

1. Summary Overview

1.1 The England programme includes nine Priority Axes (including one for technical assistance) with an overall ERDF allocation of £2.8bn. The vast majority of the ERDF allocation (84%) is located in just three priorities focused on promoting R&I, enhancing the competitiveness of SMEs and the shift to the low carbon economy. The Priority Axes focused on adapting to climate change and improving and protecting the environment have relatively modest allocations.

1.2 The ERDF programme is focused on a wide range of types of investment across the Priority Axes and Investment Priorities (of which there are nineteen and a slightly larger number of Specific Objectives), with a mix of direct and indirect beneficiaries. Many of the direct beneficiaries will have received advice, guidance or finance often associated with setting up or improving the competitiveness of businesses, whilst a range of supporting investments will indirectly support a range of beneficiaries and help contribute to enhanced local economic growth in a variety of ways.

1.3 The proposed approach to the national evaluation covers a number of interrelated and reinforcing strands of activity:

- Review of the continued programme relevance, appropriateness and consistency
- Review of programme financial and output progress
- Process evaluation focused on the efficiency and effectiveness of the approaches to the delivery, management and governance of the programme
- Impact evaluation examining the economic impact which is attributable to the ERDF investments within each of the Priority Axes and the associated intervention types
- Economic evaluation focusing on the measuring the cost-effectiveness of the different Priorities Axes and intervention types

1.4 The nature of the ERDF programme regulations and the nature of its design and implementation in England has a number of important implications for the design of the National Evaluation:

- Programme Duration. The 2014-20 programme is implemented over ten years (and potentially longer for certain projects such as financial instruments) during which economic circumstances and policy can change.
- Scale of Resources. Although the English programme has an ERDF allocation of £2.8bn (which is matched by domestic resources), this represents a fairly modest level of ERDF investment at a macro level in most areas.
- Spread of Resources. As noted earlier, the Programme's resources are heavily concentrated in Priority Axes which will generate the majority of the

business beneficiaries and also a significant proportion of the overall economic impact. Nevertheless, these resources will be spread across more than 1,500 projects in total.

- Eligibility of All Areas. The fact that ERDF resources are allocated across England as a whole means that the scope to use areas within England which do not have access to these resources as a control area is not feasible.
- Time Lags in Impacts. There can be a considerable time lag in the occurrence of economic, social and environmental impacts, especially for certain types of activities such as research and innovation.
- Limitations on Counterfactual Impact Evaluation. The manner in which the interventions are delivered and beneficiaries are selected limits the approaches which can be adopted to counterfactual impact evaluation, especially where the programme is investing in supporting investments rather than directly in beneficiaries. The enhancements to administrative datasets will assist more effective counterfactual impact evaluation (CIE) approaches in some instances.
- Wider Economic Impacts. The ERDF programme has the potential to generate a diverse range and potentially complex mix of positive and negative wider impacts affecting factor and product markets. The current performance of the UK economy and the limited labour market capacity in many parts of England will have implications for the potential overall impact of the investments (e.g. labour substitution may be an issue).

Review of the Programme Relevance, Appropriateness and Consistency

1.5 The assessment of the continued relevance, consistency and coherence is an important and necessary part of the national evaluation of the English ERDF programme. It is one strand of analysis which will help to inform decisions about the future strategy and resourcing of the programme. The analysis outlined in Section Four above is relatively straight forward with reasonable clarity on the sources of the information and data. It is considered suitable for the purpose.

1.6 The main aspect of uncertainty is around the implications for the programme of the outcome of the EU exit negotiations and agreement with the European Union.

Review of Programme Progress

1.7 The proposed approach to the review of delivery progress outlined in Section Five reflects the regulatory requirements, guidance on suitable methods and

consultations with the ERDF policy and evaluation team. The approach is again fairly straight forward using tried and tested analytical techniques and mostly quality assured programme monitoring data. We therefore judge the proposed approach to be achievable.

1.8 It is worth noting that the initial assessment programmed for Spring 2018 has the potential to build on work already being completed by the MA and hence it will be fairly light touch at that stage. Nevertheless it is an important task which will inform the national evaluators' knowledge of the programme and the refinement of the evaluation methods and plan.

Process Evaluation

1.9 The proposed approach to the process evaluation reflect the regulatory requirements, guidance on suitable methods and our own knowledge of and consultations about the ERDF programme. We judge the approach to be entirely achievable within the context of the national evaluation, being based on tried and tested research methods.

Impact Evaluation

1.10 As noted in Section Seven below, effective impact evaluation for the intervention types (and drawing on these to inform conclusions at the level of the priority axes) will require the adoption of a mix of methods including counterfactual impact assessment, primary research and survey, project level evaluation case studies and pilots, plus the analysis of evidence from the project level summative assessments.

1.11 The resource devoted to evaluating the impact will need to vary greatly across the interventions types, reflecting a mix of factors including the overall scale of ERDF grant they are likely to receive, the types of impacts they are expected to achieve and the ease of assessing the impacts in a rigorous way as part of the national evaluation.

1.12 In considering the suitability of the impact evaluation methods, the interventions have been grouped into nine categories. Although it is helpful to consider the suitability of evaluation methods on this basis, it needs to be borne in mind that many of these intervention types cut across the Priority Axes and Specific Objectives:

- Research and Innovation Infrastructure, Facilities and Business Collaboration
- Business Advice, Guidance and Finance for Start-ups
- Business Advice, Guidance and Finance for Established SMEs
- Business Related Infrastructure
- Transport Infrastructure

- Other Infrastructure
- Low Carbon Generation
- Resource/Energy Efficiency
- Community Led Local Development.

1.13 Table 1.1 below summarises the strength of the different evaluation methods both in terms of the national evaluation and also the evidence from the summative assessments. The key observations are grouped into a number of themes:

Table 1.1 Summary of Potential for CIE in National Evaluation

Potential in National Evaluation	Type	Coverage of Spend	Comment
Potential for strong CIE evidence in National Evaluation	Business / enterprise (intervention categories 2 and 3)	Very High (c£1,200 million)	• Likely to be CIE methods accompanied by large scale beneficiary surveys to strengthen impact evidence • CIE methods more challenging for individuals receiving business start-ups • Need to ensure project monitoring systems enable robust CIE through collection of beneficiary data
Limited potential for CIE as part of National Evaluation	Research, innovation & business infrastructure (intervention categories 1 and 4)	Moderate (c£650 million)	• Scope for CIE in national evaluation but challenging to undertake efficiently at this level due to diverse mix projects, need to tailor approaches and data issues (securing details for indirect beneficiaries) • CIE not best use of National Evaluation resource, except possibly for research focused incubators and grow-on space; in these instances the grant recipients, typically HEIs, may be more likely to record occupier information • Scope to pilot approaches and support project evaluators • Where CIE is to be undertaken as part of national evaluation, it is important for Grant Recipients to collect and report occupier information • With high average value, it will be important for grant recipients to use CIE methods as part of their summative assessments.
Very limited potential for CIE evidence through	Place-based low carbon infrastructure	Moderate (c£620 million)	• Important investment area but limited potential for CIE in national evaluation, although there are a few exceptions eg energy efficient treatments

National Evaluation			• SAs important source of evidence, but evidence may be limited
Very limited potential for CIE evidence through National Evaluation	Low volume high value infrastructure (eg broadband, transport)	Low (c£250 million)	• Main source of CIE and other impact evidence will be Summative Assessments, including qualitative evaluation methods; match funders for some of these projects, such as DCMS and BDUK, will have a role in ensuring robust CIE • Scope for National Evaluation to quality assure summative assessments and provide guidance on CIE methods if necessary.
Very limited potential for CIE evidence through National Evaluation	Other place based investment activities such as CLLD	Very Low	• Scope for National Evaluation to quality assure summative assessments

1.14 Section Eight sets out an overview of the proposed methods for assessing the impact of each of the intervention types (and the full discussion is contained within an appendix).

1.15 Whilst we recognise that there are shortcomings in the use of beneficiary surveys in providing self-reported evidence of outcomes for the various beneficiary groups, there is nevertheless merit in providing qualitative information in a consistent format on the manner in which the support received or access to other investments brings about changes in the beneficiary behaviour and to some extent performance.

1.16 The main areas in which large scale surveys are likely to be required are for intervention types 2 and 3, namely potential start-ups and established SMEs receiving business advice, guidance and financial support. The merits of undertaking longitudinal beneficiary and comparator group surveys will differ depending on the impact evaluation approach for each intervention type.

1.17 The project summative assessments are potentially a very valuable source of evidence where done well, providing rich information on delivery approaches, theory of change assessments and robust CIE based assessments in some instances. However, there is a risk that standards of evaluation are poor in some instances; there is a lack of consistency of approach and different formats for the outputs. It is therefore important that:

- MHCLG reinforces the message contained in the summative assessment guidance concerning the need for appropriate and high standard of project evaluations that are commensurate with the overall level of ERDF grant and match funding
- Projects are strongly encouraged to adopt CIE where it is feasible and appropriate
- Ensure that the summative assessment tools provided as part of the summative assessment process are implemented by the projects including the evaluation plan and reporting formats, as these will help to ensure consistency of standards and outputs
- The national evaluators should regularly share examples of good practice in project evaluation, including CIE, for the range of intervention types with grant recipients.

1.18 Where impact evaluation is not feasible, key questions about impact will need to be explored through a variety of supplementary methods. The qualitative analysis project summative assessments will be a key source of this additional evidence. Whilst not enabling the attribution of any quantitative impacts, they will provide valuable qualitative insights into whether those that deliver, experience and benefit from the intervention believe them to have had any impact.

1.19 Table 1.2 provides a simple overview of the sources of impact evaluation evidence by intervention type, whilst Table 1.3 provides a fuller summary.

Table 1.2 Summary of the Sources of Impact Evaluation Evidence by Intervention Type

	National Evaluation Gathered Evidence			Project Summative Assessment Evidence		
	CIE assessment	Beneficiary surveys	Project case studies	CIE assessments	Qualitative assessments	Light touch assessments
Research and Innovation Infrastructure & Facilities	★	★	★★	★	★★★	★
Business Advice/Guidance/Finance for Start-ups	★★	★★	★	★★	★★★	☆
Business Advice, Guidance and Finance for Established SMEs	★★★	★★★	☆	★★	★★★	☆
Business Related Infrastructure			★★	★	★★★	★
Transport Infrastructure		☆	☆	★	★★★	★
Other Infrastructure			★	★	★★★	★
Low Carbon Generation			★	★	★★★	★
Resource/energy/efficieny			★	★	★★★	★
Community Led Local Development			☆	☆	★★★	★

Summary of the Sources of Impact Evaluation Evidence by Intervention Type				
Key: volume of evidence	★★★ = high	★★ = medium	★ = low	☆ = very limited evidence
Key: robustness of impact evaluation evidence	High	Medium	Low	N/A

Table 1.3 Sources of Impact Evaluation Evidence for Interventions Categories and Support Roles of National Evaluators

	Sources of Evidence for National Evaluation	Supporting Roles for National Evaluators

	CIE	Beneficiary Surveys	Analysis of Summative Assessments (inc project level CIE)	Testing of CIE Approaches through Summative Assessments	Advisory Role
Research and Innovation Infrastructure & Facilities	Limited scope for comprehensive CIE. Some scope for robust CIE in specific circumstances (eg HE incubators & grow-on space)	Occupier and comparison group surveys in support of focused CIE activity	SAs will be key source of impact evidence, although use and robustness of CIE methods may be limited in practice. Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Scope of National Evaluators to work with a small number of GRs to develop robust CIE methods	Important role for National Evaluators to raise standards through guidance
Business Advice/Guidance/Finance for Start-ups	Scope for robust CIE as part of national evaluation, covering range of beneficiary types	Need for surveys for beneficiaries and non-treatment groups	Good source of project level evidence including possibly robust CIE evidence for larger projects	Given focus of National Evaluators on CIE at programme level, this is not a priority Some quality assurance of summative assessments	General support role

Business Advice, Guidance and Finance for Established SMEs	Scope for robust CIE as part of national evaluation, covering range of beneficiary types	Need for large scale surveys of beneficiaries and comparator groups	Good source of project level evidence including robust CIE evidence for larger projects	Given focus of National Evaluators on CIE at programme level, this is not a priority Some quality assurance of summative assessments	General support role
Business Related Infrastructure	No specific activity proposed	No specific activity proposed	Key source of impact evidence at programme level, although extent of robust CIE evidence may be limited (broadband investments may be an exception) Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Scope of National Evaluators to work with a small number of GRs to develop robust CIE methods Some quality assurance of summative assessments	Important role for National Evaluators to raise standards through guidance

Transport Infrastructure	No specific activity proposed	No specific activity proposed	Key source of impact evidence at programme level. Important that GRs implement robust impact methods, although track record of robust CIE is limited Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Scope of National Evaluators to work with a small number of GRs to develop & implement more robust CIE methods Some quality assurance of summative assessments	Limited additional role given nature of Priority
Other Infrastructure	No specific activity proposed	No specific activity proposed	Main source of impact evidence at programme level. Given nature of interventions and evaluation challenges, may be limited robust CIE evidence available Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Scope of National Evaluators to work with a small number of GRs to develop & implement more robust CIE methods eg flood defences Some quality assurance of summative assessments	General support role

Low Carbon Generation	No specific activity proposed	No specific activity proposed	Main source of impact evidence at programme level. May be limited scope for CIE approaches Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Not a particular priority Some quality assurance of summative assessments	General support role
Resource/Energy Efficiency[1]	No specific activity proposed	No specific activity proposed	Main source of impact evidence at programme level. May be limited robust CIE evidence available. Risk of low standards of evaluation. Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Scope of National Evaluators to work with a small number of GRs to develop & implement more robust CIE methods eg energy efficiency treatments Some quality assurance of summative assessments	Important role for National Evaluators to raise standards through general support and guidance

[1] Priority Axis 4 includes a mix of interventions including small scale renewable energy generation, energy and resource efficiency, low carbon innovation, and low carbon energy area strategies. The consideration of the impact evaluation methods for low carbon innovation activities falls either under intervention category 1 or above, depending upon their focus. As the activities funded through low carbon area strategies will typically consist of renewable generation (category 7) or energy efficiency (category 8), the suitable impact evaluation methods will be similar.

Community Led Local Development	No specific activity proposed	No specific activity proposed	Main source of impact evidence at programme level, although approaches and standards may vary widely. Scope to draw on case studies of CLLD programmes Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Some quality assurance of summative assessments	General support role

Economic Evaluation

1.20 Given the nature of the programme, strength of the expected evaluation evidence and various other measurement and definitional challenges, the economic evaluation is likely to be focused on a limited number of cost-effectiveness measures related primarily to job creation and increase of turnover. These estimates should ideally be based on net additional economic impacts, but if the available evidence on economic effects such as displacement and substitution is limited or lacks robustness the focus may need to be on gross beneficiary outcomes.

1.21 These estimates should be based on both gross cost to the public sector and gross project costs, allowing for programme management and delivery costs. The availability of comparable unit costs for other interventions to inform judgements on value for money will need to be investigated further by the national evaluators.

2. Introduction

Background

2.1 The England ERDF programme for the 2014-20 programming period was adopted by the European Commission in July 2015. The Operational Programme document provides the national investment strategy for the use of ERDF resources alongside domestic UK economic development resources and private sector investment. The programme covers €3.6bn (£2.8bn) subject to the prevailing exchange rate and the outcome of EU exit negotiations. This covers nine Priority Axes stated in the OP, with a concentration of funding in the Research and Innovation (P1), Business Competitiveness (P3) and Low Carbon economy (P4) priorities. A number of the priorities have much more modest ERDF allocations, although these can nevertheless be very important for the Local Enterprise Partnerships (LEPs) which have prioritised activities covered by these axes.

2.2 The Ministry of Housing, Communities and Local Government (MHCLG) is required by EU regulation[2] to assess the effectiveness, efficiency and impact of the Operational Programme, setting out the approach to evaluation in an Evaluation Plan. The plan is intended to support quality evaluations as well as their effective use by Managing Authorities; facilitate the sharing of knowledge on what works in different policy fields; and ultimately, contribute to the design and implementation of evidence based programmes and policies.

2.3 The 2014-20 Common Provisions and ERDF regulations[3] placed a number of important requirements on Managing Authorities in terms of the design and delivery of the new Structural Fund and ERDF programmes, with a strong focus on improving their economic and welfare impacts (including through greater thematic concentration), stronger performance management (including through an improved performance framework) and improved evaluation.

2.4 The other key dimension to the ERDF programme which is specific to England is the role of the thirty-nine LEPs in determining the economic priorities for their areas and the setting of the priorities for the use of the Structural Funds (alongside domestic resources). Indeed, the Managing Authority for the English Programme (MHCLG) chose to integrate the EU's three categories of region (less developed, transitional and more developed) into a single programme. This has led to a distinct approach to the determination of priorities and the commissioning and contracting of ERDF

[2] Regulation (EU) No 1303/2013
[3] Regulation (EU) No 1301/2013

funded projects. This approach will have a particular implication for the spatial dimension of the national evaluation.

2.5 Alongside meeting the regulatory requirements set out by the European Commission, the evaluation approach must explore the key themes as set out in the ITT for the scoping study:

- Continued relevance, consistency and appropriateness of the Operational Programme strategy
- Adequacy of the baselines and the measurement of results against these
- Effectiveness of programme delivery and management processes
- Robust assessment of performance, economic impact and cost-effectiveness across the Priority Axis, as well as across the target beneficiaries and spatial areas of interest (as far as possible, including the categories of region, the thirty-nine LEP areas, urban/rural, etc.). This should also draw out the contribution to key EU, national and sub-national strategies.
- The contribution of specific aspects of the ERDF programme strategy and delivery including the horizontal themes, integrated territorial investments (such as SUD and CLLD), and the use of financial instruments.

2.6 The need to provide evaluation evidence at the appropriate times in the life of the programme to inform key programme management decisions (such as the rebalancing of resources across priorities), to disseminate performance information and lessons to stakeholders, as well as to provide evidence about the effectiveness and efficiency of delivery models and types of interventions to inform the future evolution of Local Growth policy in England. This needs to be balanced against the most appropriate timing of evaluation activity, given the progress of the programme, the delivery of investment activity and the build up of impacts. The initial discussions point to key outputs from the evaluation being required in:

- Early Spring 2018 – this will be an opportunity to review the progress of the ERDF programme and the nature of the investment to date and future pipeline, to inform any further adjustments to the programme strategy and implementation, as well as to allow the national evaluators and MHCLG to refine the evaluation plan.
- Summer/Autumn 2019 - the output will be an interim evaluation report which will have a strong focus on process issues, but also presenting the emerging evidence of impacts (although this may rely more heavily on primary survey evidence rather than counterfactual impact evidence given the timing of the output). It will also inform the second enhanced annual implementation report to the European Commission.
- 2020/21 - by which time significant impacts should be observable and hence be more suited to counterfactual impact evaluation methods.

This will inform the main summary of programme impact required by the European Commission by the end of 2021.

2.7 There is the need to update the evaluation plan and the associated framework and methods during the life of the programme to reflect changes in circumstances.

National Evaluation Strand

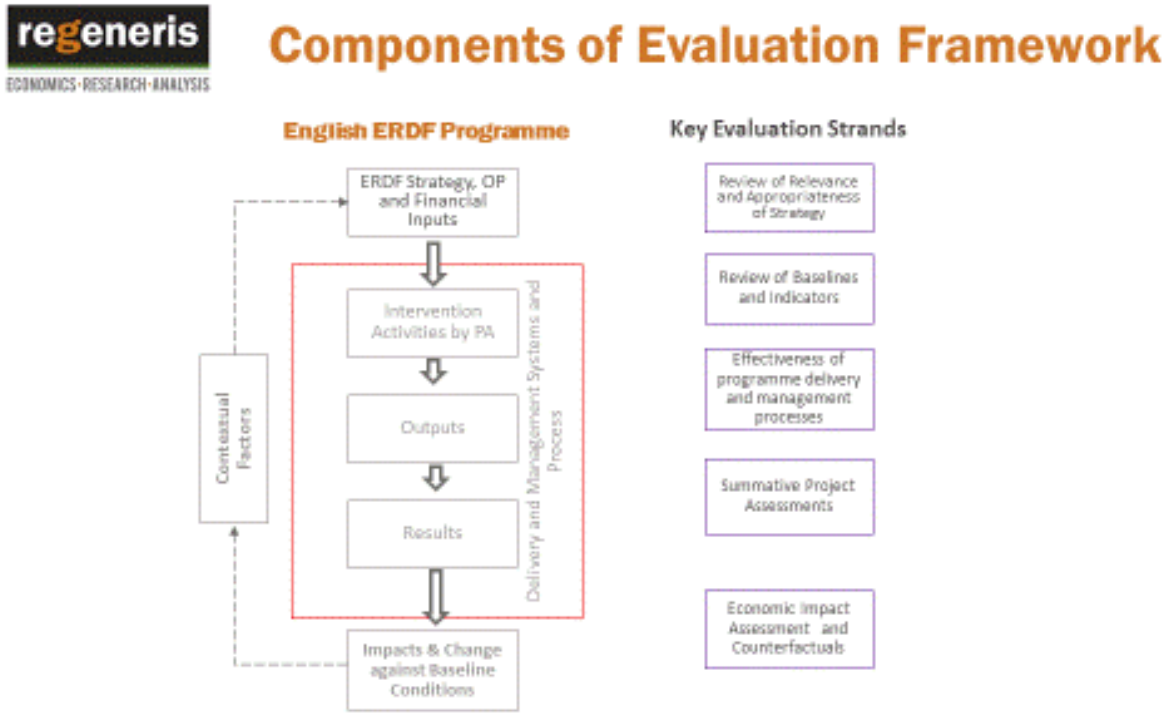
2.8 The ITT sets out the specific requirements for the scoping and design of the National Evaluation strand (the guidance for the project level Summative Assessments are dealt with in a separate report but cross-referenced here where relevant):

- A report setting out feasible costed options for the National Evaluation, making clear recommendations on the optimal approach (subject to the available budget)
- The recommended options should be informed by thorough research and consideration of the different evaluation approaches and research methods which can meet the multiple objectives of the National Evaluation in a robust and cost-effective manner, judging these options against suitable criteria
- Consideration of innovative approaches which may be adopted, including the possibility of testing approaches if this is appropriate and forms part of a managed approach to risks.

2.9 As illustrated in Figure 2.1, this report focuses on a number of evaluation themes which will inform the overall evaluation:

- Review of the continued relevance, consistency and appropriateness of the Operational Programme strategy and the performance framework
- Review of programme financial and output progress
- Assessment of the effectiveness of programme delivery and management processes (i.e. the report refers to this as the process evaluation)
- Assessment of the economic, social and environmental impact of the programme (i.e. the report refers to this as the impact evaluation)
- Assessment of cost-effectiveness of achieving the impacts (i.e. the report refers to this as the economic evaluation).

Figure 2.1 Contribution of the Evaluation Strands to the National Evaluation Framework



Source: Regeneris Consulting

Evaluation Guidance and Good Practice

2.10 In considering each of the requirements and approaches for each of the national evaluation themes, we have drawn on a range of evaluation guidance, as well as reviews of good practice in evaluation in general and for specific intervention types. The guidance which has been drawn upon has included:

- The Magenta Book: Guidance for Evaluation[4]
- Evalsed: Resource for the Evaluation of Socio-Economic Development[5]
- Evalsed Sourcebook: Methods and Techniques[6]
- Guidance on Evaluating the Impact of Interventions on Business[7].

[4] The Magenta Book: Guidance for Evaluation, HM Treasury, April 2011 https://www.gov.uk/government/publications/the-magenta-book

[5] Evalsed: Resource for the Evaluation of Socio-Economic Development, European Commission, September 2013 http://ec.europa.eu/regional_policy/sources/docgener/evaluation/guide/guide_evalsed.pdf

[6] Evalsed Sourcebook: Methods and Techniques, European Commission, September 2013 http://ec.europa.eu/regional_policy/sources/docgener/evaluation/guide/evaluation_sourcebook.pdf

[7] Guidance on Evaluating the Impact of Interventions on Business, Department for Business, Innovation and Skills (BIS), 2011 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/212318/11-1085-guidance-evaluating-interventions-on-business.pdf

2.11 We have also drawn on the meta reviews of evaluation practice, including the identification of good practice, undertaken by the What Works Centre for Local Economic Growth (WWCLEG)[8]. Besides the general lessons it draws for the evaluation of economic development and regeneration policies and programmes, a number of its thematic reviews are relevant to the multi-disciplinary focus of ERDF. These reviews include: area based initiatives; broadband infrastructure; innovation; SME business finance and business support; and transport. Whilst these thematic reviews include what the WWCLEG considers to be robust counterfactual impact evaluations, they do not typically set out the lessons for evaluation practice for each intervention type. This evidence has been supplemented with consultations with evaluation leads in the Government departments and other agencies with responsibility for relevant policy areas.

2.12 We have also drawn on the lessons for evaluation activity which can be drawn from the 2007-13 programme period, including the English regional ERDF programmes, other UK ERDF programmes and to some extent other EU programmes.

Content of the Report

2.13 The remainder of the report is set out in the following sections:

- Section 3: Programme strategy, delivery and management
- Section 4: Framework for considering evaluation approaches and options
- Section 5: Assessing Programme relevance, consistency and appropriateness
- Section 6: Approach to assessing programme progress
- Section 7: Approach to assessing programme delivery and management
- Section 8: Approaches to assessing programme impacts
- Section 9: Approaches to economic evaluation.

[8] http://www.whatworksgrowth.org/

3. Programme Strategy and Delivery

3.1 This section outlines the purpose of the European Regional Development Fund in general and the specific objectives of the English programme for the 2014 to 2020 programming period. It also considers the programme structure and progress to date. This is important context for thinking about the design of the national evaluation.

Purpose of ERDF

3.2 Article 176 of the Treaty on the Functioning of the European Union (TFEU) states that the European Regional Development Fund (ERDF) is intended to help to redress the main regional imbalances in the Union. It is intended to contribute to reducing spatial disparities in economic performance and prospects between regions and across Member States.

3.3 ERDF should also contribute to the European Union's Europe 2020 strategy for smart, sustainable and inclusive growth, thus ensuring greater concentration of ERDF support on the priorities of the Union. The specific EU2020 targets are framed around related themes: an increase in the employment rate, an increase in research and development and investment, the economic and employment contribution of SMEs; and an increase in renewable energy and resource efficiency

3.4 For the 2014-20 period, the regulations state that:

- All interventions supported by the European Structural Investment Funds (ESIF) must relate to one of the 11 Thematic Objectives established by legislation and to one of the 37 Investment Priorities which are sub-divisions of the Thematic Objectives
- Operational Programmes must consist of one or more Priority Axes, which (with the exception of Technical Assistance) should align to one or possibly more of the EU's Investment Priorities, with a financial allocation for each
- Each Priority Axis should also state one or more Specific Objectives which express the Member State's own policy intention of the interventions they will fund (with ideally a specific objective relating clearly to the ERDF Investment Priority in question)
- Result indicators are linked to specific objectives and are intended to illustrate progress against them (rather than the Investment Priorities).

3.5 Operational Programmes are the formal documents through which a Member State sets out its proposals for using part or all of the ESI Funds within its territory. Once agreed with the European Commission, they form the legal basis on which money is drawn down from the EU. The EU's

requirements in terms of the content of Operational Programmes are laid down in legislation.

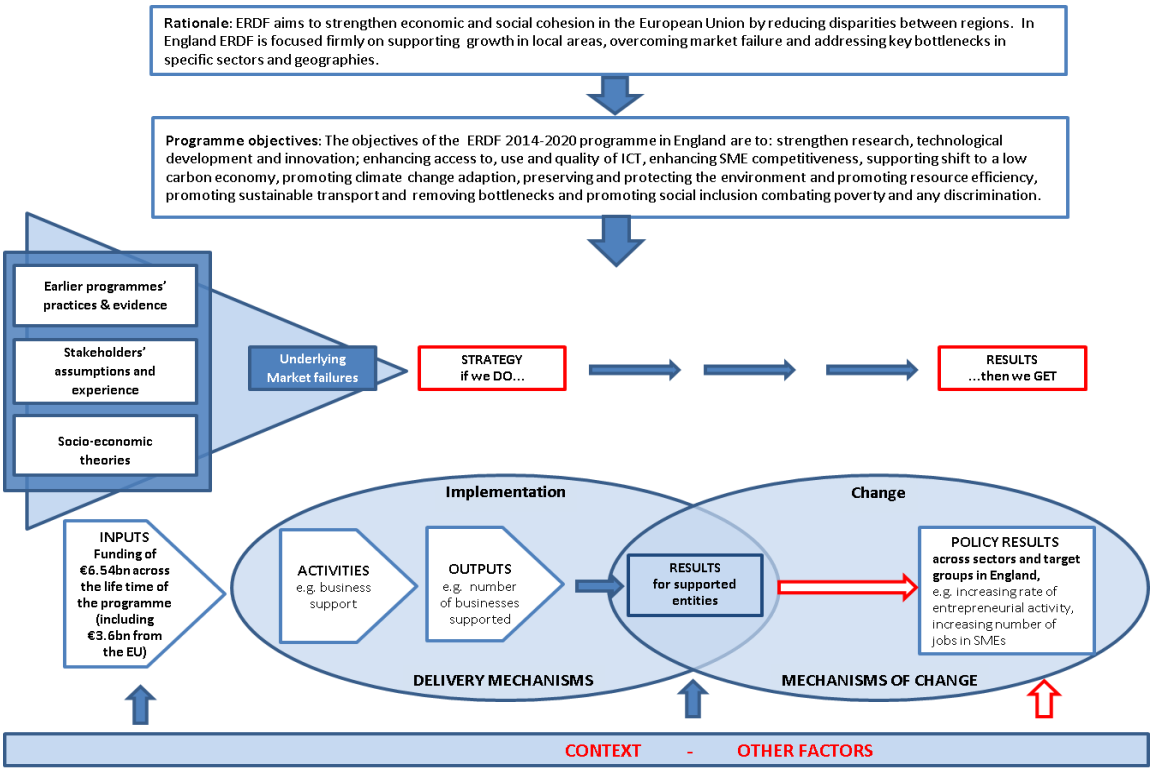
Aims and Objectives of the English ERDF Programme

3.6 The ERDF programme for England consists of a single programme, incorporating Less Developed Regions (LDR), Transitional Region (TR) and More Developed Region (MDR). All areas are eligible for ERDF support and hence the programme includes multiple MDRs and TRs but only one LDR, namely Cornwall and the Scilly Isles.

3.7 The Operational Programme does not specifically set out any overarching objectives, although it nevertheless must contribute towards to the ERDF objectives of supporting growth in local areas, overcoming market failures, and addressing key bottlenecks affecting key sectors and areas. In practice, the scope for ERDF to address spatial disparities may be limited given the level and concentration of resource across England, although the scope to tailor approaches locally may open up opportunities to address issues and achieve potential more effectively.

3.8 The programme has nine Priority Axes: promoting R&I, enhancing access to, use and quality of ICT; enhancing the competitiveness of SMEs; supporting the shift to the low carbon economy; promoting climate change adaptation; preserving and protecting the environment and promoting resource efficiency; promoting sustainable transport; and promoting social inclusion and combating poverty.

Figure 3.1 Programme Objectives and Operations



Source: Draft English ERDF 2014-20 Evaluation Plan (drafted pre-EU referendum result, submitted to European Commission October 2016), MHCLG

3.9 The programme's resources are allocated across the 39 Local Enterprise Partnerships[9] in England (which do not always map neatly onto the categories of region for ERDF programme). MHCLG has sought a strong focus on targeting resource on job creating growth through the framework it has provided to LEPs for the preparation of their European Structural and Investment Funds strategies (including a coordinated approach to the use of ERDF, ESF and other Structural Funds), in line with Europe 2020.

3.10 The approach to the coordination of ESIFs through the LEPs, should in principle provide a good basis for targeting these important resources at the particular economic development needs and opportunities at a local level. However, this approach raises a number of challenges which need to be tested through the national evaluation including:

- The extent to which coordinating the programme through 39 LEPs and ERDF resources utilised across 18 investment priorities has enabled efficient delivery
- The ability to target resource and coordinate interventions at disparities which occur across larger spatial areas and to ensure that individual LEPs select the interventions most appropriate to their specific needs.

Nature of the Programme Architecture and Strategy

[9] There were 39 LEPs before the merger of Northamptonshire LEP and South East Midlands LEP in March 2017.

3.11 The England programme includes nine Priority Axes (including one for technical assistance), with the vast majority of the ERDF allocation (84%) being located in just three priorities focused on promoting R&I, enhancing the competitiveness of SMEs and the shift to the low carbon economy. The Priority Axes focused on adapting to climate change and improving and protecting the environment have relatively modest allocation (£54.6m and £84.2m respectively).

3.12 The ERDF programme is focused on a wide range of types of investments across the Priority Axes and Investment Priorities (of which there are nineteen and a similar number of Specific Objectives), with a mix of direct and indirect beneficiaries (sees Table 3.1 below). The support to these direct and indirect beneficiaries will contribute to enhanced local economic growth in a variety of ways.

3.13 Appendix A includes a fuller analysis of the Investment Priorities and Specific Objectives across the nine Priority Axes. This clearly highlights the diversity of investment objectives and activities within the programme, with the particular mixes of activity varying between LEPs depending on their particular needs and opportunities.

3.14 Given the nature of the ERDF programme's investments, the spatial priorities and the types of beneficiaries, there is a potential role for evaluation methods in assessing:

- The impact on the direct beneficiaries of the investments, chiefly business start-ups and existing SMEs, and the net contribution their improved performance makes to the performance of their local economies.
- The impact of the investments on a range of indirect beneficiary groups, including businesses, universities and workers, and the net contribution to enhanced local economic performance.
- The overall impact on the package of funded investments on the relative economic performance of local economies and to addressing spatial disparities across England as a whole.

Table 3.1 Priority Axes, ERDF Allocation and Beneficiary Types

	ERDF Grant £m	Direct Beneficiaries					Indirect Beneficiaries				
		Potential Start-ups	Start-ups	SMEs	Social-enterprises / charities	Residents / Workers	Researchers	Residents / workers	SMEs	Large Businesses (250 plus)	Students
PA1: Promoting Research and Innovation	£610.0	✓✓	✓✓	✓✓	✓		✓✓		✓✓	✓	✓
PA2: Enhancing Access to and use and Quality of ICT	£107.6	✓✓	✓✓	✓✓	✓✓			✓✓		✓	
PA3: Enhancing the Competitiveness of SMEs	£1,141.9	✓✓	✓✓	✓✓	✓✓			✓	✓✓	✓✓	
PA4: Supporting the Shift toward a Low Carbon Economy	£631.8		✓	✓✓	✓✓ **Social landlords/ public sector bodies**	✓		✓ **Social housing tenants**	✓	✓	
PA5: Promoting Climate Change Adaptation, Risk Prevention and Management	£54.6							✓✓	✓✓	✓✓	
PA6: Preserving and Protecting the Environment and Promoting Resource Efficiency	£84.2	✓	✓	✓	✓			✓✓	✓✓	✓	
PA7: Sustainable Transport and Cornwall and the Isles of Scilly	£45.2					✓✓		✓✓	✓✓	✓✓	
PA8: Promoting Social Inclusion and Combatting Poverty and Discrimination	£39.8	✓✓	✓✓		✓✓						
PA 9 Technical Assistance	£113.1										

Progress to Date

3.15 The programme has a total allocation of £2.8 billion[10] of which around £1.1 billion has been committed to projects. The committed expenditure makes up 39% of the total, whilst if projects in the pipeline are included this rises to 61%. Table 3.2 shows the breakdown of committed expenditure and allocation by Priority Axis.

Table 3.2 Committed Expenditure by Priority Axis, February 2017

	Programme Allocation (millions)	ERDF Committed (millions)	% of allocation
PA1: Innovation	£618	£241	40%
PA2: ICT	£107	£35	32%
PA3: SME competitiveness	£1,166	£610	54%
PA4: Low Carbon	£626	£164	26%
PA5: Climate change adaptation	£67	£6	11%
PA6: Protecting the Environment	£70	£8	9%
PA7: Sustainable transport	£45	£25	56%
PA8: Community Led Local Development	£30	£0.3	1%
PA 9: Technical Assistance	£113	£15	13%
Total[11]	£2,830	£1,104.3	39%

Source: MHCLG, ERDF Programme Delivery, February 2017

3.16 The programme is making fairly strong progress in the two priority axis with the largest allocations, namely PA1 Innovation and PA3 SME Competitiveness. Whilst the low carbon economy priority has a large allocation, it has made relatively slow progress to date. Progress has also been slow for the Climate Change Adaption and Protecting the Environment priority axes.

Table 3.3 Progress against Output Targets, December 2016

	Target (2018)	Contracted	Forecast to Sept 2018	% of 2018 Target
Number of enterprises receiving	31,635	87,237	31,112	98%

[10] Exchange rate of €1 = £0.78
[11] There may be variations in totals due to rounding.

support				
Additional businesses with broadband access of at least 30mbps[12]	11,818	5,909	1,348	11%
GHG reduction: annual decrease of GHG	367,086[13]	359,443	N/A	98%
Businesses and properties with reduced flood risk[14]	21,984	2,326	N/A	11%
Surface area of habitats supported to attain a better conservation status (ha)	273[15]	249	35	13%
Number of local development strategies agreed	15	-	-	-

Source: MHCLG, ERDF Programme Delivery, December 2016

[11] This target is subject to change in the forthcoming Programme modification.
[13] This target is for 2023, the percentage target in the far right cell relates to progress against this 2023 target. There is no GHG target for 2018.
[14] This target is subject to change in the forthcoming Programme modification.
[15] This target is for 2023, the percentage target in the far right cell relates to progress against this 2023 target. The 2018 target does not relate to the number of businesses protected.

4. National Evaluation Framework

4.1 The National Evaluation needs to address a wide range of evaluation objectives, providing a diverse range of evidence to different stakeholders and audiences at different points in time. We have been able to explore all of these aspects as part of the scoping process to ensure there is a shared and agreed understanding. Some of the key points are outlined below:

- The national evaluation framework needs to cover a range of key themes covering the continued appropriateness of the programme strategy, delivery progress, economic impact and value for money.
- Whilst there is a need for the evaluation to explore the overall economic impact of the programme on local growth and spatial disparities, the considerable challenges of doing this robustly need to be recognised. In practice, there is a need to balance this aspect of the evaluation with the EC's primary requirement for evaluation to identify the achievement of result targets at the Priority Axis level.
- There is a desire on the part of the Managing Authority to achieve a high level of robustness in terms of counterfactual impact assessment across the Priority Axes and interventions types, subject to methodological challenges, proportionately in terms of the allocated ERDF in the Priority Axes and available resources for evaluation. The scoping needs to explore the potential to use a range of comparison group methods, including administrative datasets, large scale secondary surveys, as well as the use of primary surveys to reinforce comparison groups drawn from admin datasets. There is a desire on the part of the Managing Authority to explore, test and propose innovative approaches where these are appropriate as part of the scoping exercise.
- The need to ensure that the design of the National Evaluation Framework and the summative assessments are integrated in a way which enables the most effective use of the project level evaluation evidence. This includes strengthening the data which is captured by projects on beneficiaries (in particular SMEs), the types of performance indicators they use and the impact evidence.

4.2 A provisional budget for the evaluation of c.£2m has been identified. This will be used as the basis for considering options and costings of the preferred approach.

Structure of the National Evaluation

4.3 The scoping of the national evaluation is structured into five main themes covering:

- **Programme relevance, appropriateness and consistency** - the National Evaluation will include a variety of tasks related to testing the original design of the Operational Programme, reviewing any changes which have occurred and assessing its continued relevance, consistency and appropriateness.
- **Programme financial and output Progress** – the evaluation will need to report the financial[16] and output progress of the programme as a whole and by priority axis against targets, reasons for under or over performance, and the expected lifetime outturns. The assessment will need to take account of the spatial pattern of performance, both by category of region and LEP.
- **Process evaluation** - the ITT for the evaluation scoping does not set out a precise boundary or definition of the scope of the processes to be covered and reviewed. From our understanding of ERDF and the current programme there are three broad areas that need to be examined and several potential topic/issue areas under each:
    - Project level processes including project calls, assessment and approval
    - Project level processes post approval, including contracting, monitoring and closure
    - Wider programme management, governance and strategic issues.
- **Impact evaluation** - the economic impact evaluation is intended to identify the economic impact which is attributable to the ERDF investments within each of the Priority Axis and the associated Investment Priorities (and Specific Objectives). This is one of the most challenging aspects of the evaluation scoping and a number of the particular issues are highlighted below. This is the main strand in which a range of potential options have been considered.
- **Qualitative evaluation** - where impact evaluation is not feasible, key questions about impact will need to be explored through a variety of supplementary methods. Whilst not enabling the attribution of any quantitative impacts, they will provide valuable qualitative insights into whether those that deliver, experience and benefit from the intervention believe them to have had any impact. The Summative Assessments undertaken by the Grant Recipients will be the key source of this evidence.
- **Economic Evaluation** – there are various ways of measuring the cost-effectiveness of the different Priorities Axes and intervention types.

[16] This will also need to bear in mind the implications of the fall in the value of Sterling. As the programme's financial plan is priced in Euros, the Sterling value of the programme will have decreased.

Factors Influencing the Evaluation Approach

4.4 The nature of the ERDF programme regulations and the nature of its design and implementation in England has a number of important implications for the design of the national evaluation. A number of the key factors are outlined briefly below:

- **Programme Duration**. The 2014-20 programme is implemented over ten years (and potentially longer for certain projects such as financial instruments) – over this time period the economic cycle and changes in government may influence the economic performance and prospects, policy priorities and the availability match funding, all of which can have a major influence on the delivery of the ERDF programme.
- **Scale of Resources**. Although the English programme has an ERDF allocation of £2,830m (which is matched by domestic resources), this represents a fairly modest level of ERDF investment at a macro-economic level in most areas with an average annual allocation as a proportion of GVA of 0.05% across England and a median across LEPs of 0.02%[17,18]. The possible exception is the only less developed region in the programme, namely Cornwall and the Isles of Scilly, which has an allocation of £341m[19] (excluding Technical Assistance) which, annually, makes up 0.5% of GVA, the highest amongst LEPs. Liverpool City Region has the lowest relative allocation making up just 0.004% of GVA. The implication is that whilst ERDF investments might have a significant economic impact in their own right, collectively they may have limited potential to have a major impact on the economic performance of local areas and hence make a contribution to addressing spatial disparities.
- **Spread of Resources**. As noted earlier, the Programme's resources are heavily concentrated in Priority Axes which will generate the majority of the business beneficiaries (mostly direct but also indirect) and also a significant proportion of the overall economic impact. The resources allocated to a number of the other Priority Axes are much more modest and will be used to fund investment activities across England. There is a need for a measure of proportionality in using the available resources for the National Evaluation, with a concentration on the parts of the programme which will generate the greatest measurable impacts. In other parts of the programme, there may need to be a light touch approach and greater reliance on project level summative assessment, case studies and qualitative analysis.
- **Eligibility of All Areas**. The fact that ERDF resources are allocated across England as a whole means that the scope to use areas within

[17] DCLG, Performance Pack, November 2016; Note: this excludes technical assistance allocations
[18] ONS, GVA for LEPs, 2015
[19] Using exchange rate of €1 = 0.78p

England which do not have access to these resources as a control area is not feasible. This is in contrast to other policy instruments, such as the LGF or RGF (or the previous LEGI scheme), where resources have been allocated to bidders on a competitive basis with some not receiving any resource.

- **Time Lags in Impacts**. There can be a considerable time lag in the occurrence of economic, social and environmental impacts. These lags arise from multiple sources which compound each other and can be a major constraint upon the ability to gain evidence on economic impacts within a reasonable period of time. The lags are due to the time it takes to (i) commence investment and project expenditure; (ii) for support delivered to direct beneficiaries and accessed by indirect beneficiaries to impact upon business and economic performance; and (iii) improvements in performance to be reported and picked up in administrative datasets.
- **Limitations on Counterfactual Impact Evaluation**. The manner in which the interventions are delivered and beneficiaries are selected limits the approaches which can be adopted to counterfactual impact evaluation. First, in nearly all instances the beneficiaries of project activity will be self-selected (subject to eligibility and selection criteria). This means there is limited scope to use random control trials, which is the most robust way in which to undertake counterfactual impact evaluations. Second, the decentralised approach to project delivery which is needed to address local requirements has resulted in a great deal of diversity in the selection processes and criteria used for selecting beneficiaries. This limits the scope to use some of the more robust quasi-experimental evaluation approaches (such as Regression Discontinuity Analysis which requires a transparent and ideally common approach across projects for it to be easily implemented at a programme level).
- **Wider Economic Impacts**. The ERDF programme has the potential to generate a diverse range and potentially complex mix of positive and negative wider impacts affecting factor and product markets. The current performance of the UK economy and the limited labour market capacity in many parts of England will have implications for the potential overall impact of the investments (eg labour substitution may be an issue).
- **Enhancement of Administrative Datasets**. The increasing focus of the UK Government on the use of more robust counterfactual impact techniques has led to the enhancement of a variety of administrative datasets (such as the IDBR[20]). In the case of the IDBR, the purpose of the enhancements is to provide a more powerful resource for the use of matching to beneficiaries of business support interventions and the selection of comparison groups. This has required improvements in the coverage of businesses and the scope and timeliness of the data. In

[20] https://www.ons.gov.uk/aboutus/whatwedo/paidservices/interdepartmentalbusinessregisteridbr

addition, BEIS has established an interventions database which records the details of businesses which have received assistance from a variety of public sector backed assistance. However, these enhancements are still being progressed by ONS and BEIS.

4.5 The issue noted above concerning the time lags is a potentially serious constraint on the scope for the evaluation to provide robust evidence of impact in time to feed into future programme or wider policy considerations. Whilst the emerging evidence about the economic impacts would be required in the late summer of 2019, there may in practice be relatively limited scope for the Counterfactual Impact Evaluation (CIE) approaches described in this report to provide this evidence. However, there might be data on outputs, case studies of good practice and qualitative analysis of what seems to be working well.

4.6 An additional approach which should be considered is to revisit the CIE analysis for the business support interventions funded in the 2007-13 programme. It is noted that the EC's guidance on the monitoring and evaluation of the current ERDF programmes note that the 'The Commission encourages Member States to include, on a voluntary basis, the evaluation of the impacts of similar interventions in a previous programming period. This can make sense as for many interventions it takes years before the effects are fully realised (e.g., for large scale infrastructures, RTD projects).'[21]

4.7 Whilst this would clearly not be specific to the current programme, it could provide additional insight into what works for the similar intervention types. For the approach to provide additional insight, there would need to be at least some improvements in a number of aspects of the analysis which limited its robustness previously:

- Building counterfactual impact evaluation in the evaluation plan at the start, alongside other appropriate techniques
- Ensuring that the appropriate beneficiary data is collected to enable the use of appropriate CIE methods
- Working with other organisations like the Office of National Statistics to improve the coverage of administrative datasets (such as the IDBR) for the purpose of evaluation.

Grouping Intervention Types

4.8 The assessment of the investment performance of the programme will be undertaken in a variety of ways, tailored to the specific aspect of the programme being considered and the purpose of the analysis. It will include financial and output progress, including commitments and achievements

[21] Guidance Document on the Monitoring and Evaluation of ESF and ERDF Programme, European Commission, March 2014 (page 14)

against targets, assessed by Priority Axis, Investment Priority and Specific Objectives (although formal programme targets are set only at the level of Priority Axis).

4.9 In considering the potential economic impact methods which can be adopted and their suitability however, it is often not appropriate to assess these in terms of the Investment Priorities or Specific Objectives as they may combine activities which need to be evaluated in different ways. The alternative approach is to group interventions with similar purposes and beneficiaries, which require broadly similar evaluation approaches. This approach was used to group interventions into broadly similar types and to test these with the evaluation team and MHCLG. This resulted in nine categories (excluding technical assistance).

1. Research and Innovation Infrastructure, Facilities and Business Support

4.10 Interventions will have direct and indirect SME, graduate and HE researcher beneficiaries, as well as improving the research capacity and hence attractiveness of particular economies and business locations. The mix of intervention types are:

- R&I infrastructure & facilities (SO1.1)
- R&I knowledge exchange and collaboration (SO1.2 and SO1.3)

4.11 In practice, capital investments have been grouped with the revenue activities due to the close inter-relationship between the two investment types for R&I. For example, SO1.1 projects may have direct SME beneficiaries. Whilst both capital and revenue activities could be grouped with category 3 and 4 (business support for established SMEs and business infrastructure), they are kept separate due to the fundamentally different nature of the interventions in most instances. However, some R&I focused business advice and guidance is likely to be much more closely aligned in practice to activities under 3.1, and so is grouped there.

2. Business Advice, Guidance and Finance for Start-ups

4.12 This includes a mix of beneficiaries including potential entrepreneurs, new businesses and existing micro businesses. Some of the projects will have a specific sub-LEP spatial dimension where activity is focused on communities with low levels of entrepreneurialism. The mix of intervention types are:

- Business start-up advice, guidance and mentoring (including a spatial focus on deprived communities) (SO3.1)
- Start-up and early stage finance (SO3.1)

4.13 Whilst early stage finance can be placed in a number of the groupings, it is included here due to the relatively young age of many of the businesses which receive support and hence the evaluation issues raised around the counterfactual (and the absence of many from the IBDR).

3. Business Advice, Guidance and Finance for Established SMEs

4.14 This will include substantial numbers of direct SME beneficiaries across a large number of locally delivered projects including a number of cross LEP business finance projects. The mix of intervention types are:

- General growth focused advice and guidance for established SMEs (SO3.3)
- Innovation focused advice and guidance for established SMEs (SO3.2)
- R&I focused business advice and guidance (SO1.2 and SO1.3)
- Business advice focused on use of digital technologies (SO2.2)
- Business advice and grants to encourage low carbon innovation (SO4.5 and SO6.2)
- Early stage business finance (SO1.2/SO1.3)
- Business growth finance (SO3.2/SO3.3).

4.15 This may in practice be too modest to separate out from general business support and we will need to test this by examining the monitoring data.

4. Business Related Infrastructure

4.16 The interventions will indirectly benefit SMEs and potentially larger businesses, as well as enhancing the attractiveness of local economies and specific business locations. The mix of intervention types are:

- Employment land remediation (SO6.1)
- Incubation, commercial and industrial floorspace (SO3.2/SO3.3)
- Broadband infrastructure (SO2.1).

4.17 A major evaluation issue here is about displacement and the relative role of the benefit/infrastructure on business performance. The methodology will need to consider the best way of testing this.

5. Transport Infrastructure

4.18 The interventions will indirectly benefit SMEs and larger businesses, but will also benefit economies and communities within Cornwall and the Isles of Scilly more widely through improved connectivity, reduced

congestion and attractiveness of business locations. The mix of intervention types are:

New and improved strategic road infrastructure (SO7.1)
New and improved integrated public transport, pedestrian and cycling infrastructure (SO7.2)

4.19 These types of transport related interventions are only included in Priority Axis 7 (which is specific to Cornwall and the Isles of Scilly), with a relatively modest ERDF grant allocated to it. However, it is likely that this resource will focus on a small number of larger projects.

6. Other Infrastructure

4.20 The interventions will have indirect SME beneficiaries, but also benefit targeted local economies and communities more widely by improving their resilience and attractiveness as investment locations. The mix of intervention types are:

Flood infrastructure (business focused) (SO5.1)
Habitat improvement (typically linked to employment land) (SO6.1)

7. Low Carbon Generation

4.21 Specific Objective 4.1 related to renewable energy generating infrastructure. There is scope for some direct SME beneficiaries if providing support for micro installation. The main benefit is associated with a general benefit for the UK through reduced carbon emissions associated with the additional renewable generating capacity (whilst allowing for additionality, potential crowding out and potentially local price effects associated with decentralised supply). There could also be potential supply side effects (eg growing the supply chain capacity for more specialist technologies).

8. Resource/Energy Efficiency

4.22 The interventions will include direct SME beneficiaries for SO4.2 and SO6.2 in particular, as well as public sector organisations, social landlords and their tenants (SO4.3 and possibly SO6.2). Whilst many of the improvements which are implemented will be related to properties, other will be focused on business processes and practices. The mix of intervention types are:

- Energy efficiency advice and financial support to SMEs (SO4.2)
- Energy efficiency advice and investment support to social housing and public sectors (SO4.3)
- Resource efficiency advice and guidance (SO6.2).

9. Community Led Local Development

4.23 The investment area will directly support potential entrepreneurs and micro businesses, as well as the economic performance of targeted deprived areas. The intervention types are focused around the production and delivery of integrated strategies and actions to build capacity and entrepreneurism in deprived communities.

Use of Data Sources

4.24 A range of data sources will be drawn upon by the national evaluation, with the requirements varying between the different strands. The key strands include:

- Programme expenditure and output information, including commitments and achievements, analysed at the overall programme level, Priority Axes and Investment Priority/Specific Objectives
- Project level monitoring information including the commitment and achievement of spend and outputs, as well as information for beneficiaries
- Project level summative assessments identifying delivery progress and the achievement of outcomes and impacts
- National administrative datasets (such as the IDBR) which may enable the matching of beneficiaries to reliable and independent sources of performance data for the beneficiaries, as well as the selection of comparison groups
- Secondary published datasets (typically survey based) which may provide access to additional independent data for the beneficiaries
- Specially commissioned beneficiary surveys, as well as consultations with a range of grant recipients and project delivery bodies, and relevant stakeholders (including LEPs and sector bodies).

5. Strategy Relevance, Consistency and Appropriateness

Purpose

5.1 The National Evaluation will include a variety of tasks related to testing the original design of the Operational Programme, reviewing any changes which have occurred and assessing its continued relevance, consistency and appropriateness to economic conditions and relevant policy. This will enable the Managing Authority to consider and make the case for varying the programme (to the European Commission where this is required by the programme regulations).

5.2 Besides being a key input into the national evaluation, this strand will provide information and analysis for:

- The policy and delivery teams within MHCLG managing the Programme on a day to day basis
- The Growth Programme Board given its responsibility for the strategic management of the ERDF programme alongside the other ESIFs
- Other policy and delivery teams across UK government which have responsibility for related areas of local growth.

5.3 This aspect of the national evaluation consists of fairly standard analytical tasks, with few specific options which need to be considered as part of the optioneering process in the scoping of the National Evaluation. There is however a fundamental point concerning how far the evaluation should consider the actual change in policy, funding and economic landscape since the Operational Programme was drafted.

Key Activities and Tasks

5.4 The tasks are set out briefly below.

Broad Type of Analysis	Activities
1. Review of the Operational Programme strategy	• A detailed assessment of the priorities, structure and allocation of resources, including the extent to which it is supported by appropriate socio-economic evidence and policy analysis identifying the issues and opportunities • The review will include the rationale for any particular spatial or thematic priorities within the programme, including selection of interventions, targeting, result

	indicators and horizontal principles. • Linked to the above, the approach to the integrated spatial development including CLLD and SUD • This will include a review of the ex-ante assessment and the extent to which the programme developers took account of the analysis and recommendations, including the role of LEPs in the delivery of the programme
2. Review of the Performance Framework	• A detailed review of the performance framework for the programme, including the full range of output and result indicators and targets, to ensure they are fit for purpose given the nature and scale of investment which is proposed and what has been funded in practice (the design of the PMF was based on certain assumptions about the types of intervention that would happen). • The review of the usefulness of results indicators is particularly important in terms of their suitability as indicators of the intended change sought. within the Investment Priorities / Specific Objectives, as well as the appropriateness of the targets which were set.
3. Policy and Strategy Context	• A desk based review and analysis of the current economic development policy and strategy context at an EU, UK and sub-national level. • This should examine in detail any changes in this context since the programme was drafted and subsequently agreed in the Summer of 2015. For example, the implications of the new Conservative government, the continued role of LEPs and LGF but the ending of RGF, and the new Industrial Strategy. Also the demise of national business support programmes such as MAS, the Growth Accelerator and change in contracts for UKTI amongst other things. • The desk based analysis will need to be supported by consultations and workshops.
4. Macro-economic and Sub-national Economic Context	• Desk based analysis of national and sub-national socio-economic datasets, identifying any significant changes in prevailing macro-economic trends at a national (and global and Europe) and sub-national level. • The assessment also needs to consider the changes in demand and supply conditions at a national and local level which can have implications, directly or indirectly, for the delivery of the range priorities and interventions types. • Up to summer 2016, no significant changes have occurred other than a steady strengthening of the performance of the economy and the labour market,

	but the EU exit vote and fall in value of Sterling has brought considerable new uncertainty about future trade. • This aspect of the evaluation will need to consider the implications of EU exit for the UK economy and hence the programme, but subject to the uncertainty associated with this and the manner in which clarity may be gained over time. • This will need to consider **productivity changes** as a key macro-economic issue.
5. Review of Evaluation Evidence	• An update of the evaluation evidence that was prepared as part of the design of the Operational Programme and its ex-ante assessment. • This will indicate if the latest evidence has any implication for the focus and use of resources within the English programme.
6. Conclusions and Recommendations	• Conclusions about the continued consistency, appropriateness and relevance of the Operational Programme's strategy, financial allocations, delivery and management in light of the analysis, including any potential risks to the delivery and impact of the programme. • Associated recommendations for changes to the Operational Programme if this is appropriate.

5.5 These activities will be informed by a number of research methods, in particular:

- Collection and desk-based analysis of ESIF regulations, ERDF programme documents, policy and strategy documents, economic reports and evaluation evidence.
- Consultations with MHCLG staff involved in the development, negotiation and management of the Operational Programme, government officials in other relevant departments, key stakeholders across the public, business, HE and voluntary sectors, and EC officials involved in the programme oversight.

Timing of the Evaluation Activities

5.6 The approximate timings of the evaluation activities are outlined below.

Activity	Timing of Output	Duration
Initial review of the continued relevance, consistency and appropriateness of the Operation Programme, with a particular focus on recent	Spring 2018	Three months (Jan to March)

changes in local growth policy and delivery and the implications of EU exit (tasks 1, 2 and 4 in particular)		
Fuller analysis and recommendations for changes to the Operational Programme and the fit with emerging approach to local growth given implications of EU exit (all tasks)	End September 2019	Four months (June to Sept)
Light touch update, subject to the status of the Programme at the time and whether a final evaluation report is produced (tasks 3 and 4 in particular)	End September 2021	One month

Initial Assessment of Suitability

5.7 The assessment of the continued relevance, consistency and coherence is an important and necessary part of the national evaluation of the English ERDF programme. It is one strand of analysis which will help to inform decisions about the future strategy and resourcing of the programme. The analysis outlined above is relatively straight forward with reasonable clarity on the sources of the information and data. It is considered suitable for the purpose.

5.8 The main aspect of uncertainty is around the implications of the outcome of the EU exit agreement with the European Union.

6. Programme Financial and Output Progress

Purpose

6.1 The National Evaluation will need to identify the financial[22] and output progress of the programme as a whole and by priority axis against key interim (such as N+3) and lifetime targets, as well as identifying the reasons for under or over performance. The assessment will need to take account of the spatial pattern of performance, both by category of region and LEP area.

6.2 The analysis is a key input into the national evaluation, providing a thorough assessment of the progress of the programme against its

[22] This will also need to bear in mind the implications of the fall in the value of Sterling. As the programme's financial plan is priced in Euros, the Sterling value of the programme will have decreased.

operational spending, delivery and timescale objectives. This context is vital for the evaluators to gain the insight they require into some of the key aspects of programme performance and prospects, as well as the factors explaining under or over-performance. It will also provide the analysis which will link to and provide valuable information for the process and impact evaluations.

6.3 Whilst the Managing Authority prepares regular monitoring reports covering expenditure and outputs, this analysis will add value through the scope it provides for analysing programme performance in more depth or in different ways, as well as the linkages it will be able to draw with other strands of the national evaluation.

Evaluation Activities and Tasks

6.4 The main tasks and specific activities are outlined in the table below.

Broad Type of Analysis	Tasks
1. Implementation Performance	• Analysis of the financial and output lifetime targets, milestones and related profiles • Analysis of the performance in the annual and cumulative commitment and achievement against expenditure and output targets for the Investment Priority, including pattern by Category of Region and LEP • Analysis of pipeline activity and potential contribution to targets subject to assumptions about rate of commitment and implementation • Analysis of gaps between current commitment and delivery and the potential to achieve lifetime targets, including main source of potential short falls • Analysis of output and beneficiary characteristics, including patterns across Priority Axes/Investment Priorities, projects and spatial pattern.
2. Analysis of Change in Result Indicators	• Review of the logic for selecting result indicators, setting associated targets and the appropriateness of the sources of data for updating these • Analysis of how outputs/outcomes will contribution to results indicators • Analysis of the change in result indicators against targets at the level of the Investment Priority/Specific Objective, analysed spatially where possible given the availability of data, and the key observable factors which may have influenced this • Mapping of change in results indicators against expenditure and output progress in order to identify

	aspects of correlation (but nor causation)
3. Analysis of Project Level Outcomes and Impacts	• Drawing on the analysis of logic chains submitted by projects, a mapping of the types of outcomes and impacts for the Investment Priorities/Specific Objectives • This will provide some indication of the extent to which the contracted project activity will contribute towards the objectives of the programme
4. Conclusions and Recommendations	• Conclusions on the rate of progress towards financial and output targets, across the priority axis and spatially, as well as the likelihood of achieving these given the rate of commitments and absorptive capacity of local economies (and delivery capacity of partners) • Recommendations on (i) changes to the financial allocations, (ii) the financial, output and result targets (and milestones where relevant) at a programme and Priority Axis level, (iii) the focus and rate at which projects are commissioned in order to achieve programme objectives.

Timing of the Evaluation Activities

6.5 The approximate timings of the evaluation activities are outlined below.

Activity	Timing of Output	Duration
Potential for light touch analysis to assess progress overall and against targets, primarily to inform evaluator's in-depth scoping of the tasks. Restricted to task 1, 2 and 4	Spring 2018	Three months (Jan to March)
Full breadth of tasks 1-4	End September 2019	Four months (June to Sept)
Light touch update of task 1 and 2	End September 2021	One month

Initial Assessment of the Suitability of Approach

6.6 The proposed approach to the review of delivery progress reflects the regulatory requirements, guidance on suitable methods and our own knowledge of and consultations with the ERDF policy and evaluation team. The approach is fairly straight forward, utilising tried and tested analytical techniques and mostly quality-assured programme monitoring data. We therefore judge it to be achievable.

6.7 It is worth noting that the initial assessments programmed for Spring 2018 has the potential to build on work already being completed by the MA and hence it will be fairly light touch at that stage. Nevertheless it is an important task which will inform the national evaluators' knowledge of the programme and the refinement of the evaluation methods and plan.

6.8 Analysis down to the IP level can only realistically be achieved once E-Claims is online as the current interim management information system does not break investments down to this level.

7. Process Evaluation

Purpose

7.1 This strand of the National Evaluation will focus on the process of implementation and delivery of the projects funded through the ERDF programme. This includes the manner in which the programme is integrated with the delivery of the local growth agenda through the Local Enterprise Partnerships, how project activities are contracted and managed, as well as the wider operational and strategic management of the programme.

7.2 The European Commission's regulations and guidance on programme evaluation does not set out a precise boundary or definition of the scope of the processes to be covered and reviewed. From our understanding of ERDF and the current programme and the scoping consultations we have undertaken, it is clear that there are two broad areas that need to be examined and several potential topic/issue areas under each.

A. Processes at a project level: project call, assessment, selection and contracting

- How applications for ERDF are invited – the process of "call for projects"
- How ERDF applications are assessed by the GDTs at the outline application stage against the gateways and core assessment criteria
- The role of LEP area ESI Funds Sub-Committees in the assessment process
- How feedback is given to successful and unsuccessful applicants at the Outline and Full Application stages
- How ERDF applications are then appraised/assessed at the Full Application stage
- How successful projects are contracted by the Managing Authority and how payments are then made
- How projects are monitored and the nature of reporting arrangements
- Systems for auditing/checking claims.

B. Wider management, governance and strategic questions

- The role of the Growth Programme Board as the Programme Monitoring Committee in England and its National Sub-committees, as well as the role of the LEP area ESI Fund Sub-Committees

- The role of the GDTs/Managing Authority in providing advice and guidance to LEPs and project applicants (on matters such as eligibility) and the approach to providing access to Technical Assistance resources
- The interface between ERDF business processes and those for ESF, EAFRD and other UK domestic funding and the interface between the respective parts of government
- Systems for recording and reporting information from projects on spend and outputs and progress against targets.

Progress to Date and Implementation Issues

7.3 As part of the scoping work, we have interviewed a range of actors involved in the administration and governance of the ERDF programme. We have also reviewed the documents that have been produced on processes. As noted above the Partnership Working Group report considered a range of issues, carried out fieldwork[23] in February to May 2016 and produced a series of recommendations in June 2016 covering:

- The membership of the ESI Funds sub-committees
- The process of partners providing advice on local strategic fit
- The functioning of the working arrangements of the ESI Funds sub-committees
- The flow and format of Programme communication (to partners).

7.4 Inevitably our scoping interviews, which covered the list of topics set out above, identified a range of views about the key issues in the governance and administration of the Programme. Some of these reflected historic concerns about the processes at the start of the Programme, from the first calls for projects in 2015 where the deadline for applications was May 2015 and subsequent assessment and contracting processes. The areas where progress had been made in the processes since 2015 included:

- The process for deciding on, communication of and timing of calls for projects
- The speed with which grant applications were appraised and the level of detail required at the outset from applications (as part of the work on continual improvement of business processes)
- Clarification (and now extension) of the role of ESI Fund sub-committees in decision-making about and assessment of projects
- The quality of the reporting/management information material received by the Growth Programme Board.

[23] Including facilitated discussions with partners in 25 individual LEP area ESI Funds sub-committees

7.5 During the work on the scoping study the new EClaims system[24] was in the final stages of being developed, although aspects of its intended roll-out have been suspended for the time being (including the entry of beneficiary details).

7.6 Another important point is the varied local nature of the Programme and local partners which impacts on processes in practice. This includes;

- The Less Developed Area (Cornwall and the Isles of Scilly) where the relative size of the ERDF allocation and the uses of it is (Integrated Territorial Investments) means that the experiences have been different (for local partners, the GDTs and the Managing Authority alike)
- The role of the Intermediate Body in London
- The varied nature of capacity in the LEPs and associated local government bodies (such as Combined Authorities).

Key main areas where issues were raised

7.7 A series of important themes emerged from the scoping consultations (which are to some degree echoed in the Partnership Working Group report). These covered:

- The process of putting calls together (and role of LEPs and ESIF Sub-Committees) remained a key focus, where getting this right was seen as critical to getting the right projects and minimising projects which are not offering a good strategic fit.
- The role of local partners and ESIF Sub-Committees is very interesting. There remain subtle differences in how they operate, what real power and influence they have and how they interface with GDTs via their nominated officer. This reflects both the capacity/skills of local partners (which tends to be highly variable) and the nature of links with the Growth Delivery Teams (GDTs). There is no standardisation or consistency of the reporting to ESIF Sub-Committees across GDTs.
- There is different emphasis across GDTs in how far the assessment/appraisal teams proactively work with applicants. What is the dividing line between appraisal and project support/advice to help it get over the line?
- A related point is the role of GDTs once projects are contracted. There is an unacknowledged implicit need and role for GDTs to work with projects and local partners to ensure projects deliver and to in effect

[24] To be used to capture information on projects including the details from their application, the GFA, and payments and associated outputs. It will be used, as the name suggests, by projects in submitting grant claims electronically and so capture all information from projects in a consistent manner that can be used to develop management information as well

"programme manage" at a LEP area (looking proactively for solutions to ensure spend and delivery are on track).

- In spite of best efforts, it was reported that the practical alignment and working together of ERDF, ESF and EAFRD remains unsatisfactory except in exceptional circumstances[25]. This reflects the EU rules and regulations and also the different approaches of Departments (and the nature of the programmes and administrative arrangements, so for instance MHCLG has far more local presence and partnership engagement). There appears to be scope to work closer together as one national team across the three departments.
- Guidance and communication emerged, unsurprisingly, as an important issue. That is ensuring consistency of guidance across GDTs and communicating clarification in guidance on eligibility and on the ERDF processes to local partners. The current Programme had seen major efforts to improve this difficult area, but in spite of this it was not always as smooth and consistent as it should be. The technical working groups for Priority Axes for GDTs were helpful as was involving leads in each region for each PA.
- A related point was around the processes and practicalities of collecting information from applicants, and on processing this and using it to develop management information reports. Due to the slow progress in getting EClaims up and running, GDTs and the Managing Authority have had to develop their own systems in the interim.
- Some consultees raised issues about inherent challenges in managing a programme with 9 Priority Axes, three categories of regions, several investment priorities and detailed output targets overall.
- In terms of its remit, the Growth Programme Board has operated well so far, providing considerable challenge to the Manging Authorities and being a prime mover in, for instance, the Partnership Working Review. However there has been some confusion about the role and operation of the sub-committees (how membership chosen, what they report on, etc).
- The London experience is interesting as it is the only full Intermediary Body. This means the ESF and ERDF teams are co-located and this is seen as a big advantage by the GLA. The relationship between the GLA ESIF team and ESIF SC has worked well. So in practice it is much easier to write the narrative for the Calls in London as the LEP and GDT are, in effect, one and the same.

7.8 One reflection that emerges from consideration of the processes is so much (arguably too much) time and effort is on:

- Ensuring funding is committed and spent and ensuring full eligibility/compliance

[25] For instance via the CLLDs which operates a bit like LEADER for rural growth with ESF/ERDF joint strategies and via joined up calls via the ITI in Cornwall

- Consideration of the outputs “bought” and then to be delivered for the funding.

7.9 In comparison, only a small amount of the overall time and effort in the process (management and governance) is focused on the impact of ERDF.

Messages/Lessons for Future Programmes to Explore

7.10 The scoping discussion inevitably touched on potential lessons for any future domestic programmes that would replace ERDF. It would be fair to say that many consultees would welcome a simpler strategic and delivery architecture than that provided by the English ERDF programme (and other ESIFs). The choice of the UK Government to design a programme which is operating as a hybrid between a single complex national programme (with many separate “boxes” of funding and outputs), coupled with the added complexity of 39 local area-based strategies and allocations was also not seen as a good model for the future.

7.11 However, some areas where an assessment of the value of current practice and lessons for the future might cover:

- The value of calls as a way of procuring projects (with the benefits in having to specify what is wanted clearly and the open and transparent element of competition)
- The use of two stage application process in a competitive bidding environment. How to get the right balance in the first stage (just enough detail to quickly weed out poorer projects, but not too onerous for applicants)
- How far skills and economic development funding can truly be integrated to achieve local growth objectives if Whitehall departments need to maintain tight control of purse strings and agendas
- The inherent challenges in having a national “programme” across different departments’ funding streams managed by teams in different departments
- Whether funding in a series of local pots for the delivery of support to businesses (as opposed to area based regeneration activity) can lend itself to streamlined and effective delivery
- Conversely the added value of locally-based strategies to determine funding priorities and the design of packages of intervention
- The benefits and disbenefits of payments linked to delivery of outputs (as opposed to activities or outcomes). The greater sophistication of the outputs framework and menu that many domestic programmes have adopted.
- Value of financial Instruments as a tool generally, ERDF has been instrumental here.

Evaluation Activities and Tasks

7.12 Drawing the points together from above we suggest that the particular focus of the process evaluation could be on:

Broad Type of Analysis	Tasks
1. Role and involvement of local partners	The role of local partners[26] in shaping the design and delivery of the programme: • In setting funding allocations/strategy • In determining calls • In assessing projects • In reviewing progress • In ensuring fit/linkages to other domestic funded programmes (particularly the Local Growth Fund).
2. The applicant experience	The experience of applicants (successful and unsuccessful) in their "customer journey" through the processes: • Applying and interpreting guidance • Getting feedback and support • Agreeing contracts • Reporting, making claims, getting paid and other project delivery issues.
3. Management and governance	• Management structures, roles and responsibilities • The adequacy of the resources (both capacity and capability related) devoted to the management of the programme at different levels • The processes for gathering information on progress, summarising and reporting this to both individual local ESI Fund sub-committees and nationally • With the associated management and governance processes for responding to the information and forecasts of eventual outcomes.
4. Information, advice and guidance	• Methods of developing, sharing, storing and disseminating **advice and guidance** on the Programme both within government and with external partners (local and other) • The approach to using technical assistance to strengthen particular aspects of the programme, including monitoring, summative assessment and horizontal themes
5. National and Pan-LEP approaches	• The benefits/lessons from more **broad-based approaches** to design and delivery eg financial

25 ESI Fund Sub-Committees, LEPs and Technical Assistance staff

	instruments, national opt-in channels (or the lack of them)

7.13 We do not consider that strong focus should be given to the following (although these should be covered in a light touch manner):

- The integration (or lack of it) between ERDF and the other ESI Funds
- The project application appraisal and approval processes.

7.14 There are a number of possible tools that can be used for the process evaluation covering:

- A review of documents including minutes of meetings, terms of reference, guidance manuals and the business process documentation, which will feed into the desk based review of the delivery, management and governance systems and procedures
- Semi-structured interviews with those involved in the management and governance of the programme (at a national and, importantly, local level). Given the variation in local experience (see para 7.4 above) it will be important that the National Evaluation explores the experience in a range of LEP areas covering the size/capacity, spatial character (urban/rural) and relative importance of ESIF in the area.
- Observations of governance processes in operation (for instance sitting in on and observing ESI Fund sub-committee meetings) and reviewing papers
- Semi-structured interviews with a range of project applicants (by successful/unsuccessful), by stage they have reached (contracted/ reporting on progress etc), by type of organisation and type of project and area covering their experiences of the application
- A survey of both successful and unsuccessful project applicants on their experiences, with web based approaches being feasible in this instance
- Review of quantitative evidence on processes including for instance:
    - Ratio of successful to unsuccessful applicants (by Priority Axis, LEP area, size of project, nature of applicant etc)
    - Speed from application to approval to contracting to first claims submitted.

Timing of the Evaluation Activities

7.15 From the work carried out in the Scoping Study it is clear that the processes have been evolving since the start of the programme and will, to some degree, continue to evolve. There has been a Partnership Working Group, instigated to meet a request by the Growth Programme Board, whose recommendation has led to changes in some processes (especially the role of LEP area ESIF Sub-Committees). The Managing Authority has been involved in a process of continual improvement in its business processes

since the start of the Programme. This has led to changes for instance in the forms used for the initial and full application stages and consequential information requirements.

7.16 There may be scope to further change to some degree the administrative and governance processes for what is left of the programme period. There is also scope to learn from the experience of the processes in the design of future (domestic) programmes for economic development. Both these factors point towards the advantage of the process evaluation being carried out sooner rather than later once the National Evaluation has been commissioned, but with the possibility of this being revisited in a light touch way in 2019 to assess the impacts of the changes.

Activity	Timing of Output	Duration
In-depth review of delivery and management processes covering all tasks (1 to 5)	Spring 2018	Three months (Jan to Mar)
Light touch update to identify the benefits/disbenefits of changes following first review and to focus on the management of contracted project and reporting on progress against financial milestones	End of September 2019	Four months (Jun to Sep)

7.17 It will take approximately four months to undertake the process review on the basis of the following indicative timings:

- One month to design research tools, identify and set up the fieldwork needed (mainly consultations)
- Two months to complete the fieldwork, other elements of the research and analyse the results
- One month to prepare a report with recommendations and discuss these with the Managing Authority and other members of the National Evaluation Steering Group.

7.18 It is important to note that significant progress is being made in appraising and approving projects and contracting for future spend and delivery of outputs. To some degree towards the end of 2017 the focus of the overall programme processes will start to shift away from the appraisal approval processes to the management of contracted projects and reporting on progress in commitment of spend/outputs and in actual/forecast claims at different levels.

Initial Assessment of Suitability of Approach

7.19 The proposed approach to the process evaluation reflects the regulatory requirements, guidance on suitable methods and our own knowledge of and consolations about the ERDF programme. We judge the approach to be entirely achievable within the context of the national evaluation, being based on tried and tested research methods.

8. Impact Evaluation

Purpose

8.1 The impact evaluation strand of the National Evaluation is intended to identify the relevant economic, environment or social impacts which are attributable to the ERDF investments within each of the Priority Axis and the associated Investment Priorities (and Specific Objectives). A particular focus is the potential to use counterfactual impact evaluation (CIE) methods to enhance the robust assessment of the additionality of the beneficiary outcomes and impacts.

8.2 As noted in Section 1, the English ERDF programme is both a very large investment programme and complicated in terms of the breadth of its objectives, its spatial focus, types of interventions and intended outcomes. Consequently, there is not a one size fits all approach to impact evaluation. Rather, the methods need to be carefully tailored to the types of interventions, their spatial focus and the scale of their funding.

8.3 The national impact evaluation will need to take account of the combined impacts of both ERDF and matched funding resources, with methods of apportioning the impacts to the respective funding sources when considering value for money issues. The ERDF national evaluation will need to draw on the evaluation evidence which emerges for main domestic programmes (such as RGF and LGF, as well as other ESIF programmes) in due course.

8.4 The assessment has drawn on a review of the lessons for evaluation approaches both for major multi-disciplinary programmes (including the last round of ERDF programmes) and the range of intervention types, as well as consultations with a range of evaluation experts across the UK Government, the European Commission and academia.

Assessing the Achievement of Programme Objectives

8.5 The strategy and underpinning Operational Programme for the English ERDF programme is ultimately focused on ‘supporting the growth of local areas, overcoming market failures and addressing key bottlenecks affecting sectors and geographies’. Whilst the targeted use of ERDF may contribute to the achievement of these objectives, the level of resource and the manner in

which they are allocated across the LEPs[27] means that the scope to make a significant impact on local economic growth and for this to be observable through evaluation may be limited in practice.

8.6 Evaluating the contribution of the ERDF programme to these objectives as part of a national evaluation is particularly challenging for a number of reasons:

- The large number of targeted spatial areas with a total of thirty nine LEPs, covering many diverse economies
- Whilst ERDF projects can have a significant impact locally, the overall level of available resource at a LEP level is modest in terms of the scale of these economies (on average ERDF is less than 0.05% of annual GVA, although it is much higher in some LEP areas, most notably Cornwall which is a Less Developed Area)
- The diverse mix of interventions which can be pursued by LEPs and a large number of projects some of which are modest in scale (at least in terms of their suitability for CIE)[28] – whilst the design of the ERDF programme ensures a degree of thematic concentration on fewer priority axes (linked to the goals of Europe 2020) and the ESIF strategies should ensure an integrated and strategic approach locally, the diversity makes it difficult to capture this as part of a national evaluation.

8.7 There is also a need to evaluate the achievement of the programme against each of its Priority Axes and the Specific Objectives (it is a regulatory requirement of the programme). Whilst still challenging in many regards, this can be easier to achieve as part of a National Evaluation due to the focus on discrete interventions types and greater clarity about the intended cause and effect. Aspects of this thematic approach can lend themselves more readily to spatial analysis, for example when evaluating the economic impact of business support interventions which have been adopted in all LEP areas and which have pursued a limited number of approaches (unlike many of the other interventions types where the diversity of approaches is much greater).

Assessing Outcomes and Impacts

8.8 We have drawn heavily on logic models as a means of identifying the types of outcomes and impacts that the ERDF investments are intending to achieve, as well as the spatial scale. That is, what they are seeking to achieve, how they are intending to achieve this, who they are assisting and at what spatial scale, and finally the changes which they are expecting in terms of particular beneficiary outcomes and local impacts.

[27] That is, all LEPs are allocated ERDF grant, although the amount is determined by a formula related to economic performance and need

[28] The average grant value is currently around £2.5m

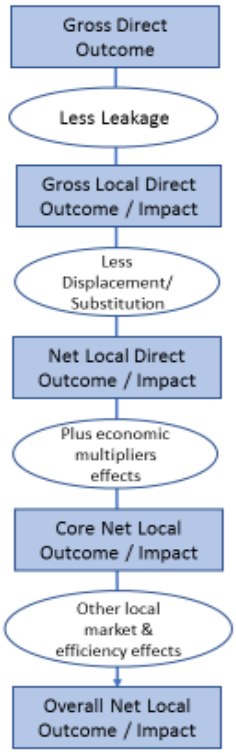
8.9 The logic models clearly identify a number of important components for evaluation purposes:

- Project outputs, beneficiary outcomes and economy level impacts - these economic (and social and environmental) factors and the linkages between them are important for many types of interventions; the evaluation needs to assess their nature and strength if it is to successfully assess the overall impact of the investments
- The outputs, outcomes and impacts which are attributable to the investment and that which is due to other factors (i.e. the deadweight) – this is at the centre of counterfactual impact evaluation methods
- Gross and net impacts allowing for dynamic economic factors such as product and factor market effects (such as displacement and substitution), spatial effects (such as leakage), expenditure effects (that is, multiplier effects) and efficiency effects – these factors need to be accounted for in order to identify the overall change upon beneficiaries and local economies, as well as to understand unintended consequences of the investments (see Figure 8.1)
- Potential wider economic impacts which may arise – these can include other secondary market (factor and products markets), crowding in and out, spillover and distributional effects to those outlined above, with their importance in evaluation terms depending on the purpose and nature of the interventions (for example, business finance interventions often have an important secondary objective of stimulating the supply of finance from the private sector through demonstration effects).

Term	Definition	Example
Inputs	Resources used to deliver the policy	Public sector resources required to achieve the policy objectives.
Activities	What is delivered on behalf of the public sector to the beneficiary in order to achieve objectives	Provision of seminars, training events, consultations etc.
Outputs	A measure of the overall volume of activity delivered to particular beneficiary groups	The number of SMEs receiving advice and guidance or new floorspace provided
Outcomes	The changes which occur in the beneficiary, including intermediate and final changes	Intermediate outcomes – development of new products or services by SMEs Final outcomes – increase in turnover and employment following changes in business practice
Impacts	Overall economic, social and environment benefits/disbenefits in the local economy as a result of the outcomes	Gross and net changes in GVA, employment and earnings, carbon emissions, etc

Source: adapted from Table 2.A in the Magenta Book

Figure 8.1 Components of Local Economic Change



Gross Direct Outcome: changes which occur in a beneficiary, including intermediate and final changes

Leakage effects: outcomes/impacts which provide benefit for beneficiaries or local economies outside the target area

Displacement effects: outcomes/impacts which occur due to reduced economic activity elsewhere in the local economy
Substitution effects: outcomes/impacts which are accompanied by a replacement of one factor of production (capital, labour, land) by another in order to secure public sector assistance

Economic multiplier effects: additional economic activity associated with the outcomes/impacts, arising through additional expenditure in supply chains and employee expenditure

Other market effects: a range of other wider market, efficiency and spillover effects which may arise as secondary consequences of the intervention, having positive or negative impacts

Overall Net Local Impact: the ultimate changes which occur in the local economy

Source: Regeneris Consulting

8.10 Whilst the requirement for the evaluation scoping study clearly and quite rightly places a great deal of emphasis on identifying counterfactual impact evaluation methods in order to attribute impacts to the ERDF investment, these are not always suitable or appropriate as tools for some types of interventions within a national evaluation of a large multi-dimensional national programme.

8.11 It has therefore been necessary to consider these approaches alongside other evaluation approaches such as theory of change and specific evaluation methods. Indeed, the use of multiple methods can improve the robustness and breadth of the evaluation evidence. These methods, all of which can be used to inform theory of change analysis, include:

- Primary research including surveys of direct and potentially indirect beneficiaries, as well as consultations with project managers and other stakeholders
- Case studies of projects which are particularly important
- Systematic analysis of project summative assessments.

Intervention Types

8.12 As outlined in Section 3, we have grouped interventions into nine categories in order to enable us to consider the suitability of evaluation methods. Although it will be helpful to consider the suitability of evaluation methods on this basis, it needs to be borne in mind that many of these intervention types cut across the Priority Axes and Specific Objectives.

1. Research and Innovation Infrastructure, Facilities and Business Collaboration
2. Business Advice, Guidance and Finance for Start-ups
3. Business Advice, Guidance and Finance for Established SMEs
4. Business Related Infrastructure
5. Transport Infrastructure
6. Other Infrastructure
7. Low Carbon Generation
8. Resource/Energy Efficiency[29]
9. Community Led Local Development

8.13 In terms of thinking about evaluation methods, there is an important interface between the nature of the contribution to local policy objectives, whether they are generic or place based, and whether there are direct or indirect beneficiaries:

[29] Priority Axis 4 includes a mix of interventions including small scale renewable energy generation, energy and resource efficiency, low carbon innovation, and low carbon energy area strategies. The consideration of the impact evaluation methods for low carbon innovation activities falls either under intervention category 1 or 3 above, depending upon their focus. As the activities funded through low carbon area strategies will typically consist of renewable generation (category 7) or energy efficiency (category 8), the suitable impact evaluation methods will be similar.

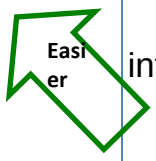
- Manner of the contribution to local growth – the ERDF programme supports interventions which will make a direct contribution to local growth (eg business advice for SMEs), provide important enabling infrastructure or services (eg high speed broadband) to indirectly support local growth or address a wider set of policy objectives which, although important, may make a much more limited contribution to local growth either directly or indirectly (eg the reduction in carbon emissions).
- Place based and non-place based interventions – place based interventions (such as business sites and premises) are more concerned with enhancing the attractiveness of specific business or investment locations and hence may benefit a wide range of beneficiaries often in an indirect manner. Non-place based interventions are more focused on improving the performance and prospects of specific beneficiary groups, often with no or limited spatial targeting below a LEP area, including potential entrepreneurs, early stage businesses or established SMEs.
- Direct and indirect beneficiaries – given the nature of many of the place based interventions, many of the projects do not have direct beneficiaries[30] which has particular implications for evaluation approaches, especially CIE methods. Generally, CIE methods are more feasible where there are direct beneficiary businesses, labour market groups or households.

8.14 Whilst there is a risk in generalising, identifying suitable CIE methods which can be implemented within the National Evaluation for the ERDF programme is more straight forward for the interventions with a primary focus on local growth, no specific place based focus and large numbers of direct beneficiaries. This includes the enterprise and SME competitiveness interventions which account for a substantial proportion of overall programme expenditure across Priority Axes 1 – 4 (as a whole and across the vast majority of LEP areas).

8.15 Identifying suitable CIE methods is more challenging for place based interventions which are investing in supporting infrastructure or facilities and which have no direct beneficiaries. This is the case both at a project level as well as for the national evaluation. Although these types of interventions do not account for the largest areas of expenditure, a number of the strands are particularly important both in terms of expenditure and potential long term economic impact (such as R&I infrastructure and facilities). These interventions are widespread and occur in most Priority Axes with the exception of Priority Axis 3.

Table 8.1 Intervention Objectives, Spatial Focus and Beneficiary Type

[30] That is, the ERDF projects are not providing services, financial support or other forms of assistance directly to businesses, labour market groups or householders.

Contribution to local growth:	Non-place based Interventions		Place based Interventions	
	Direct Beneficiaries	Indirect Beneficiaries	Direct Beneficiaries	Indirect Beneficiaries
Direct contribution to local growth	eg business advice and finance		eg start-up support in deprived communities	
Supporting contribution to local growth		eg specialist research infrastructure & facilities		eg site remediation/ business premises/ green infrastructure/ transport
Primary focus on other objectives	eg energy efficiency advice for SMEs		eg renewable energy capacity	eg social housing energy efficiency treatments

Re-analysis of the 2007-13 Programme

8.16 Before considering the impact approaches for the current programme, we have revisited the previous programme to consider if there is merit in undertaking CIE analysis for the direct SME beneficiaries from the last programme.

8.17 On the face of it, the logic associated with conducting a repeat analysis of beneficiaries of the 2007-2013 ERDF is sound. The impact on firm performance from many types of intervention may take many years to become evident; conducting an evaluation only a short period after the initiation of an intervention will therefore fail to identify the full-extent of any impact. Interventions to increase research and innovation are perhaps the best example. While an effect on increasing the firm's own investment in R&D may occur relatively quickly, and therefore be traceable within the period in which the evaluation is conducted, the ultimate effect on firm performance may not transpire for many years. For other types of investment the time period for the impact on firm performance to arise will be shorter, but may still extend beyond the period of the evaluation.

8.18 This can be described as an issue of 'right truncation', whereby the evaluation stops before the point at which impact is at its maximum, thereby understating the full extent of the long-term impact. This is obviously important because the additional impact that is missed could result in a very different picture in terms of the ultimate return on the investment associated with the intervention. It may tip the balance, ensuring that this return is

greater than the costs associated with intervening. By conducting a new analysis of the 2007-2013 beneficiaries, this longer-term impact might be captured.

8.19 Whilst the number of beneficiaries available will be greater (around 180,000 compared to 90,000 at the time of the previous analysis) and the methods which can adopted for identifying these businesses in the IDBR may be improved (and hence reduce sample attrition), there are a number of factors which might diminish the value of the analysis:

- There is a strong possibility that some of the businesses that were part of the 2007-2013 ERDF have a) deformed and no longer exist, or b) have changed name, address, or have in some other way changed in form, such as through merger or acquisition, meaning they may not be identifiable.
- Businesses that were supported in the 2007-13 programme may also be supported in the current programme. This is especially true if we consider that the businesses that tend to be supported are, to some extent, those with a superior ability to apply for support, implying that 2007-13 beneficiaries are more likely than other businesses to be part of the cohort receiving support over 2014-20. It is not clear how any identified longer-term effects could be disentangled, unless the analysis was truncated in 2014 prior to the new round of the ERDF. However, such a truncation could defeat the very purpose of the exercise.

8.20 On balance, a repeat analysis of the ERDF for 2007-2013 may not provide very useful results by which to guide future regional policy. However, the National Evaluators should examine the beneficiary data to test the proportion that can identified in the IDBR in due course.

Suitability of Impact Evaluation Approaches 2014-20

8.21 A separate appendix presents the first detailed analysis of the suitability of the impact evaluation methods for each of the intervention types. The structure for these assessments is summarised below.

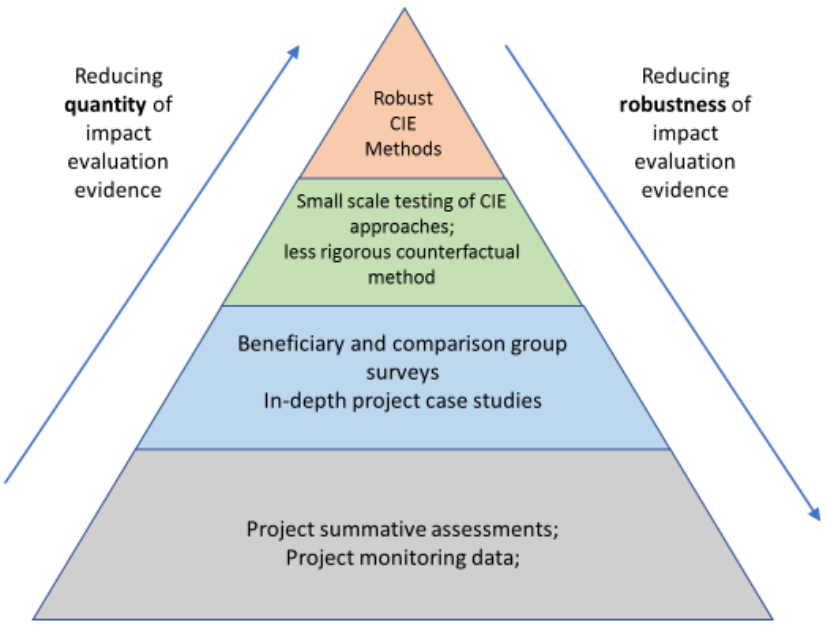
- Coverage of the intervention category (in particular the Programme's Specific Objectives and types of eligible activities)
- Delivery progress to date
- Overview of logic model, especially the intended outcomes and impacts
- Options for the impact assessment
- Use of the project summative assessments
- Assessing other effects (displacement, multipliers, spillovers, etc)

- Monitoring requirements
- Assessment of the suitability of possible impact evaluation approaches, including a recommended approach (where possible at this stage), implications for project monitoring and potential additional options to enhance the proposed approach.

8.22 Each assessment considers the logic model for each intervention type, including the rationale for the interventions and the desired beneficiary outcomes and local economic impacts. Allowing for the intended scale of intervention and the intended and unintended outcomes and impacts, the assessment considers the suitability of evaluation methods in order to provide as robust impact evidence as possible. This includes the use of counterfactual impact evaluation methods, secondary published surveys, specific commissioned beneficiary surveys, the project level summative assessments and specific project case studies. It could also include the piloting of CIE methods for selected projects where the use of CIE methods for an intervention type as a whole might not be suitable as part of the National Evaluation.

8.23 As illustrated in Figure 8.4 there is a trade-off between the quantity and the robustness of the various sources of evaluation impact evidence. However, it does not mean that those studies that use the methods at the bottom of the pyramid are invalid, but rather that they provide a lower threshold of evidence, which in the absence of anything else, is still valuable.

Figure 8.2 Trade-off between Impact Evaluation Evidence Robustness and Quantity



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1. Research and Innovation Infrastructure and Facilities

Focus

8.24 The mix of intervention types covered in this group include: R&I infrastructure & facilities (SO1.1); and R&I knowledge exchange and collaboration (SO1.2 and SO1.3). There is the potential for some investment to be targeted at research and innovation infrastructure through Priority Axis 4 as well (low carbon economy), but this will be less significant in terms of the scale of resource and its expected impact.

8.25 Much of the investment will be capital in nature, including new research and innovation facilities, equipment and infrastructure, often located in higher education and research institutes. These capital projects may also include revenue elements focused on more intensive knowledge exchange and collaborations. The types of beneficiaries include university researchers and SMEs who utilise the facilities. These interventions have the potential to improve the research capacity, knowledge exchange and hence attractiveness of local economies as centres of research excellence and business locations.

8.26 More general revenue focused innovation support for SMEs is covered in intervention category 3.

Progress to Date

8.27 Priority Axis 1 has an overall ERDF allocation of £574.1m and we would expect a large proportion of this expenditure to be focused on these intervention types given their capital focus (and more costly nature). By the end of 2016, £178.5m had been approved with an average ERDF grant of around £2.4m. The value of projects was much higher for SO1.1 which presumably reflects its more capital intensive focus. The grant totals for SO1.2 and SO1.3 might include some revenue only projects which are more suited to consideration under category 3 below. There is around £39m worth of projects currently in the appraisal and approval pipeline.

Assessment of the Impact Approach

8.28 For the evaluation of this intervention type it is recommended to triangulate between a number of evaluation approaches, both counterfactual and non-counterfactual, in order to examine the extent to which the evidence from each corroborates each other, thereby building a strong evidence base with regards to overall impact of different types. The below therefore represents a set of approaches which could be implemented in isolation, but for which the full implementation of these options, leading to triangulation between their separate findings, would increase robustness.

- Identification of any beneficiary businesses which may be present in the LSBS, UKIS and/or BERD datasets, via data-linking from the IDBR. An assessment is then made as to whether there are enough of these businesses, and they are sufficiently representative of all beneficiaries, to enable a matched-control group analysis. However, the small sample size of these datasets is likely to mean an insufficient number of beneficiaries are identifiable to make the analysis worthwhile.
- A matched-control group approach focused explicitly on the ultimate impact from changes in innovation behaviour on business performance in terms of employment growth. This can be done in the IDBR without the need to link to other datasets with small sample sizes, so is more viable as an approach. However, it should be noted that any effect on business performance from innovation takes a long time to transpire, and is not a straightforward one.
- A survey-based approach in which either later accessors of new/improved facilities or infrastructure, or those applying for/on a waiting list to access the new facilities, act as a control for those already using the facilities. A comparison between the two groups on important measures such as R&D investment, number of researchers, or level of innovation, is then made.
- A survey-based approach which compares performance of the beneficiary businesses both before and after receipt of support, as well as benchmarking against national innovation surveys such as the LSBS (the whole survey dataset is then used as a comparator, and, where such a comparison is possible for more than one time-point, a Difference-in-Differences estimation is employed). The large number of SMEs which receive support means there is merit in the national evaluation undertaking its own specific surveys, rather than accessing this information through the summative assessments.
- Detailed case studies which trace through the process by which new innovations/research collaborations were enabled by the new/improved facilities and infrastructure, and increased R&D spend leveraged. A sufficient number of case studies need to be conducted to ensure that they are representative of the different types of intervention that fall under this type. Comparison and contrast between case studies should be undertaken to establish the causal effects stemming from varying types of infrastructure investment and support. Where these case studies have been conducted as part of Summative Assessments they need not be duplicated. However, the National Evaluation may need to supplement with additional research where these are not sufficiently representative of the different interventions that fall under this type, or are not of the requisite quality.

8.29 Of these approaches, only the first and second (matched-control group analyses) would meet the minimum SMS level 3 robustness criteria, and it is the one which is most risky in terms of its feasibility (i.e. it may not be feasible in practice). From the other options, the closest to this minimum standard is

the third listed, in which later accessors of a new facility/infrastructure, or those on a waiting list to access the new facilities, control for earlier accessors. However, the approach may not be feasible in practice and the two groups could be systematically different in some way. For example, early accessors might be systematically more innovative as reflected in their eagerness to access the new facilities, meaning the two groups of businesses are inherently different.

8.30 Where a comparison group can be established such as by comparison against an existing government survey – but not one representing a matched control group – a counterfactual-type approach can still be taken by employing Difference-in-Difference estimation. However, because such an approach does not employ a matched-control group, and instead simply deducts the same difference in performance prior to the intervention in the control group from any difference at the end, systematic biases could still affect the estimation of impact. Where such an approach is used, consideration should be given to whether the two groups are genuinely comparable.

8.31 While each of the other evaluation options do not meet this minimum counterfactual robustness criteria (SMS level 3), or are simply not counterfactual in any way, it is recommended that they are nevertheless conducted alongside one or both of the above approaches, so as to build up further evidence of impact of different types, with triangulation between the different listed approaches compensating to a degree for the absence of a fully robust counterfactual.

8.32 In summary, it is recommended to triangulate between a number of evaluation approaches, both counterfactual and non-counterfactual, in order to examine the extent to which the evidence from each corroborates each other, thereby building a strong evidence base with regards to overall impact of different types. There is an important place for a beneficiary survey to supplement this evidence, as well as project case studies and summative evidence. Steps will need to be taken to enhance project monitoring information gathered by grant recipients.

Table 8.2 Review of Impact Assessment Methods

Methods:	Comment
Counterfactual Impact Methods	Limited potential viability in relation to identifying changes in innovation behaviour, but strong potential for identifying ultimate impact on business performance in terms of employment growth, with the caveat that this would take some time to transpire. **SMS = 3**
Beneficiary Surveys	This could come in several forms, including comparing earlier and later accessors of a site; before-and-after comparison of accessors; beneficiary survey and comparison against UKIS/LSBS.

	SMS = 1/2
Summative Assessments and Detailed Case Studies	Combination of review of summative assessments and process tracing through qualitative and case studies to attribute specific changes in innovation behaviour to the intervention. However, different case studies can be compared and contrasted. **SMS = 0. A Theory-of-Change rather than a CIE approach.**
Overall Assessment	A mixed methods approach should be employed that draws on both CIE and process tracing of changes to innovation behaviour identified through detailed case studies.

Monitoring Implications

8.33 In terms of the recommended additional monitoring information, it will be necessary for a wider range of data to be collected by grant recipients including (i) information on the type of facilities, equipment and other facilities accessed, the intensity of other support and the timing or receipt, (ii) contact details for beneficiaries including a variety of related data, (iii) beneficiary selection processes and contact details for unsuccessful applicants (where appropriate).

2. Business Advice, Guidance and Finance for Start-ups

Focus

8.34 The intervention covers two main investment strands:

- Business start-up advice, guidance and mentoring (including a spatial focus on deprived communities) (SO3.1)
- Start-up and early stage finance (SO3.1).

8.35 The interventions are likely to be focused on potential entrepreneurs, new businesses and micro business beneficiaries. The projects may have a targeted spatial dimension, in particular where activity is focused on communities with low levels of entrepreneurialism. Whilst early stage finance can be placed in a number of the groupings, it is included here due to the relatively young age of many of the businesses which receive support and hence the evaluation issues raised around the counterfactual (that is, the absence of many from the IBDR, subject to ONS's planned enhancements to this dataset).

Progress to Date

8.36 By the end of December 2016, around 88 projects had been approved with a total value of £278m and an average ERDF grant of £3.16m (which is around £0.5m above the average across all approved projects). A number of the larger projects are, as far as we are aware, early stage finance projects. There are projects worth around £18m in the project pipeline.

Assessment of Impact Approaches

8.37 Counterfactual Impact Evaluation for this intervention type is rendered difficult by the newness of the businesses supported and the fact that, in some cases, support is given to potential entrepreneurs who have not even started a business yet. We therefore recommend several approaches, with the feasibility of each dependent on the approach taken by delivery organisations to identify businesses/individuals to support. This will need to be investigated further by the national evaluators.

- Regression Discontinuity Design (RDD) for instances in which a clear scoring mechanism has been used to select individuals/businesses to receive support. However, it is currently unknown whether many delivery organisations have used the type of selection procedure needed for such an approach to be feasible. The current expectation is that this may be feasible for some projects providing repayable finance to micro or small businesses.
- Where RDD is not possible because of the absence of a clear scoring mechanism, yet an application procedure has nevertheless been used to select individuals/businesses to receive support, a survey approach should be used to survey both those benefiting from support and those applying for but not being granted support. This removes the self-selection bias associated with seeking support, although many other differences between the supported and unsupported business may remain, since matching is not used to eliminate them, meaning this approach has quite a low level of robustness.
- It will be necessary to undertake an initial review to determine the means by which those delivering support have identified and selected individuals to receive it. The purpose of the pilot study is to understand whether this selection mechanism in any way allows for a quasi-experimental analysis, or at least a comparison between individuals applying for and receiving support and those applying for but not receiving support.
- The adoption of a survey of beneficiaries could also be utilised where the details of unsuccessful applicants are not available. The evidence collected through the survey and possibility for more in-depth case studies could be used in a simplified form of the Theory of Planned Behaviour. This approach would monitor the number of planning and preparation activities undertaken by potential entrepreneurs before-and-after the provision of advice. Alongside this, data should be collected on the proportion of these potential entrepreneurs who actually go on to start a business. This figure might then be compared against the existing literature and available data on this subject, such as, potentially, data from the Global Entrepreneurship Monitor dataset. Potentially, where such a comparison can take place at more than one point in time, a Difference-in-Difference analysis can be used to establish a counterfactual, with the caveat that such an approach does

not eliminate sources of bias to the same extent that a matched-control group approach would do.

- While the newness of businesses provided support under this intervention, or the fact that some have not even yet been started (e.g. potential entrepreneurs), means they will not be present in administrative datasets, rendering quasi-experimental CIE approaches impossible at the National Evaluation level, individual projects may have selected those to receive support in such a way as to make quasi-experimental CIE possible at the project level. In this case, the Summative Assessments of individual projects can be drawn on for an assessment of impact as part of the National Evaluation.

8.38 It is important to monitor the firm deformation rate within a locality as part of this intervention type, since increased firm formation is highly correlated with increased firm deformation. There is therefore the possibility for an overall net aggregate decrease in the population density of businesses in the locality as a result of measures to increase start-ups.

Table 8.3 Review of Impact Assessment Methods

Methods:	**Comment**
Counterfactual Impact Methods	The viability of CIE for this intervention type depends heavily on the mechanism by which individual projects have selected individuals to receive support, which is currently unknown. **SMS = 3 (subject to this point above)**
Beneficiary Surveys	Beneficiary surveys are useful to ascertain how the support provided has affected the individual receiving it (both those which have gone on to set up businesses and those which have not), but only where there is a comparison with non-supported individuals who also applied for support, or, at least, where a before-and-after comparison is possible (this may be harder to achieve for individuals who have not gone on to set up a business). This again depends on how support has been allocated. **SMS = 2**
Project Case Studies	A detailed case-study approach might track individuals over time in order to attribute specific effects (such as an individual following through on the intention to start a business) to the support provided. This does not provide a counterfactual. However, different case studies can be compared and contrasted. **SMS = 1/2**
Summative Assessments	CIE approaches may be more applicable at the level of individual projects, because there will not be a common approach to allocating support across all projects. This places greater onus on encouraging the use of CIE methods by project evaluators as part

	of their Summative Assessments.
Monitoring Information	It is essential to ensure that information on both supported and non-supported individuals is recorded, and both groups tracked over time.
Overall Assessment	The viability of CIE impact evaluation methods will depend on how support has been allocated by individual projects and this will need investigating as part of the National Evaluation.

Monitoring Implications

8.39 In terms of the recommended additional monitoring information, it will be necessary for a wider range of data to be collected by grant recipients, including the type, timing and intensity of support provided. It will also be necessary for grant recipients to provide details of the selection and scoring procedures used and details of unsuccessful applicants.

3. Business Support and Finance for Established SMEs

Focus

8.40 The intervention category covers a range of business support and finance which will typically be provided direct to SMEs and funded across a variety of specific objectives in Priority Axes 1, 2 and especially 3:

- General growth focused advice and guidance for established SMEs (SO3.3)
- Innovation focused advice and guidance for established SMEs (SO3.2)
- R&I focused business advice and guidance (SO1.2 and SO1.3)
- Business advice focussed on use of digital technologies (SO2.2)
- Business advice and grants to encourage low carbon innovation (SO4.5 and SO6.2)
- Early stage business finance (SO1.2/SO1.3)
- Business growth finance (SO3.2/SO3.3).

Progress to Date

8.41 By the end of December 2016, 68 projects had been approved with total committed ERDF grant of £247.3m (around a quarter). The majority of this activity was in SO3.2 and SO3.3 (£238.3m), with an average value of £4.8m and £2.3m respectively. This reflects the large size of many business support projects, but especially the financial instruments providing business finance to SMEs. Whilst the projects providing access to ICT exploitation support were of medium size, few have been approved to date (8). Only one low carbon innovation focused business support project has been approved and this was small in financial size.

Assessment of Impact Approaches

8.42 The What Works Centre for Local Economic Growth (WWCLEG) has recently conducted a systematic review of evaluations of business advice and mentoring programmes with a specific focus on impact evaluation. The review shows the vast majority of evaluations do not incorporate any counterfactual aspect whatsoever; beginning with a long list of 690 evaluations of business advice schemes, only 23 met a minimum counterfactual standard. Of these 23 studies, four constituted full Randomised Control Trials (RCTs), thereby representing gold standard level 5 interventions on the Maryland Scientific Methods Scale. No schemes used quasi-random sources of variation ('natural experiments'), which score 4 on the SMS. All of the remaining 19 schemes achieved a level 3 on the SMS, because they employed robust quasi-experimental techniques such as Propensity Score Matching.

8.43 WWCLEG note by reference to Sherman et al. that an SMS level 3 is the minimum level required for reasonably accurate attribution in CIE, and state that through use of techniques such as matching (i.e. Propensity Score Matching) it is possible to achieve confidence that all observable factors affecting the outcome have been controlled for. However, in contrast to the gold standard RCT approach achieved by just four from 690 evaluations, there remains the possibility that unobservable characteristics, such as managerial talent or firms' desire to grow, may affect the result. SMS level 3 evaluations using PSM therefore still leave the possibility for incorrect attribution of beneficial outcomes. The European Commission's Evalsed evaluation guidebook also acknowledges this, stating that PSM 'is an elegant and powerful process for generating a matching group where this might otherwise be difficult, but it is not a miracle cure' (page 109).

8.44 Nevertheless, even with this caveat, the recommended approach for evaluating ERDF business advice and finance schemes is to target an SMS level 3 evaluation through the use of PSM. This approach is the most robust achievable in the case of this strand of the ERDF because randomisation of treatment, as required by an RCT, has not occurred, so SMS level 5 is unachievable; furthermore, we are not aware of any quasi-random aspect to this intervention type that might allow for the achievement of SMS level 4. We are confident that a PSM approach, in which businesses receiving advice are accurately matched with those not receiving support from the ERDF, can provide for a robust attribution of any beneficial effect from the support provided through this ERDF intervention type.

8.45 However, as noted above in this chapter, highly-accurate matching can actually be detrimental to isolating the 'true' impact of business support under circumstances of displacement, with the potential to overstate or understate impact. Therefore, the recommendation is to primarily rely on PSM but to supplement this, where possible, with other approaches, including Regression Discontinuity Design for schemes in which there is a specific

scoring mechanism for allocating support, and with beneficiary surveys conducted in such a way that non-beneficiaries are also surveyed as a control. Furthermore, the use of productivity-decomposition analysis should be investigated specifically as a way to examine the problem of displacement.

8.46 The recommended approach is therefore one in which PSM constitutes the main thrust of the evaluation, the results of which are then triangulated and verified using other CIE techniques. The options for this intervention type are therefore listed below. A matched-control group analysis using PSM implemented using the IDBR as a spine that is linked to by other datasets, where relevant, and where the provided support relates to specific forms of advice pertaining to, for example, innovation or finance, in which case linking to the LSBS in particular may be useful.

8.47 While this is an intervention type that is highly amenable to CIE carried out on administrative datasets, beneficiary surveys also have an important role in its evaluation, as a means to process trace the mechanism by which business advice and finance impacts business performance, as this will differ from case-to-case. This can provide timely input into the evaluation, since the ultimate effect from advice/finance on the business' performance may take a long time to become evident; new business plans, made in response to advice or associated with an investment, take a long time to implement. Furthermore, beneficiary surveys allow for a tailoring of questions to provide information on issues not easily examined through secondary administrative datasets, such as spillover effects and displacement.

8.48 Summative Assessments can be drawn on to supplement any information resulting from beneficiary surveys for the same purpose. Summary Assessment can provide specific information on how particular instances or examples of advice and finance were employed by individual businesses, and to what effect. This provides causal detail with which to complement a CIE statistical analysis, which may provide an estimation of impact if there is one, but perhaps says little about the reasons for impact, or lack of impact.

8.49 By combining evidence from different sources, such as analysis of administrative datasets, alongside Summative Assessment evidence with regards to how advice/finance was actually used by business, it will be possible to say something about the spatial pattern of impacts and to derive possible reasons for variations in effect. Different localities will have approached and implemented the provision of advice and finance in different ways. By disaggregating the analysis geographically it is possible to get a handle on which types of approach have worked best.

Table 8.4 Review of Impact Assessment Methods

Methods:	Comment
Counterfactual Impact Methods	As there are direct beneficiaries, CIE methods will be a major strand of the evaluation approach for this intervention type. A matched-control group approach implemented using PSM is recommended. There may be scope for RDD in some limited instances. **SMS score = 3**
Beneficiary Surveys	Beneficiary surveys are required to supplement the CIE approach, to provide causal context, more-timely results, and a wider set of variables for analysis. This can include both treatment and non-treatment groups. **SMS score = 1/2**
Project Case Studies	A case study is probably not appropriate in most cases given the potential of the above approaches, unless there are localities or projects which the CIE suggests have been particularly impactful (such as major business finance projects), and which may provide considerable insight. **SMS score = 3 (if using robust CIE approaches)**
Summative Assessments	These can be employed to provide extra causal nuance when examining why particular types of project, or projects in a particular locality, have been more/less impactful. They can also be used to identify the processes by which impact has occurred. **SMS score = 0 – 3 (will vary between projects)**
Monitoring Information	CIE for this intervention requires only records for businesses receiving support directly, since the matching can be done in the BSD. However, it would be advantageous if beneficiary surveys could be issued to non-beneficiaries too, for comparison purposes, requiring information for businesses applying for but not receiving support.
Overall Assessment	Identifying the appropriate approach is relatively straightforward for this intervention type. It is a combination of a matched-control group using PSM in the BSD/IDBR, supplemented by beneficiary surveys and the use of Summative Assessment to provide more timely results and causal analysis.

8.50 In addition to the core analysis outlined above, there are a number of options:

- The use of RDD where there is a suitable scoring process for selecting beneficiaries, in conjunction with a survey of the unsuccessful applicants
- A survey of beneficiaries shortly after completion of receipt of support, in addition to the main follow up survey 8-12 months after support
- Working alongside the project evaluators in undertaking a pilot case study of a small number of the larger or more impactful projects such

as business finance projects in order to test approaches (possibly RDD)
- If judged to be feasible as part of the initial scoping, exploring the potential use of productivity-decomposition analysis should be investigated specifically as a way of testing the assessments of displacement.

Monitoring

8.51 In previous evaluations, such as that of the 2007-2013 ERDF, identification of beneficiary businesses in administrative datasets has been hampered by poor record keeping. These interventions will have a very high volume of beneficiaries and it is essential that consistent and high quality beneficiary data is collected:

- Full details of the businesses to enable their identification in the IDBR (as well as other characteristics), and surveying
- Information on the type, intensity and timing of the support

8.52 It is also desirable that projects provide information on their application and selection process for support, as well as the details of the unsuccessful applicants.

4a. Business Related Infrastructure – Broadband

Focus

8.53 The interventions in this category include investments in broadband infrastructure under Specific Objective 2.1 of Priority Axis 2. The interventions will indirectly benefit SMEs and potentially larger businesses. There is also likely to be indirect benefits to households and public sector organisations, although these are not eligible in terms of ERDF grant.

Progress to Date

8.54 To date around £10.7m has been committed to broadband investment. These projects have an average size of around £3.6m in terms of ERDF grant. There is one further project in the pipeline, which if approved would increase the total amount of ERDF committed to £15.4m.

Assessment of Impact Approaches

8.55 While the assessment is complicated by the need for different types of approaches for established businesses and those that are new to the area, the main conclusions are:

- Although it will add to the cost of the evaluation, a survey of businesses is unavoidable for all options. This is because a survey is the only robust method for measuring business take-up (an outcome indicator) and identifying the specific businesses which have subscribed to broadband.
- Counterfactual approaches to assessing the impact of broadband on the performance of established businesses should be viable. This could be done using administrative datasets, which would be the most robust approach, but could also be done as part of the business survey.
- It will be more challenging to carry out counterfactual approaches for assessing impacts on the number of businesses in an area and the jobs that they support. While possible in theory, we believe it would be very difficult for an evaluation to establish a suitable control area, or to conduct an Instrumental Variable approach which identified and controlled for the wide range of dependent variables which could affect economic outcomes. Therefore a before and after survey based method, which asks businesses about the role broadband played in their location decisions, is likely to be the most pragmatic approach.
- Given the expected requirement for beneficiary surveys to be carried out as part of the summative assessment and the typical size of these projects (which are all fairly large), we believe it is most appropriate for the responsibility for carrying out the counterfactual impact assessment to be with the project evaluators rather than the national evaluation. The national evaluation will have a key role to play in ensuring that these are all carried out in a consistent and robust way.

8.56 Table 8.5 provides an overview. It will be necessary to carry out a mixed methods approach undertaken by the project evaluators rather that the national evaluators. Overall this should provide a fairly robust assessment of impacts but at a high cost. In light of this, the main options for consideration are:

- CIE methods – these could be used to assess the impact on established SMEs but not the impact that broadband has on the overall number of businesses in the area. This will offer robust evidence of impact. We recommend that this approach is adopted. Ideally, this would use administrative datasets to minimise the risk of bias or inaccuracies. If this is not possible, then the business survey should also be used to ask businesses to report their business performance before and after the broadband intervention.
- Theory of change approaches – these should be used to assess the impact broadband has had on attracting new businesses to the area or encouraging more businesses to be set up in the area. We recommend that the business survey evidence is considered alongside business datasets showing how the number of new businesses has changed.

Table 8.5 Review of Impact Assessment Methods

Methods	Established SMEs	New businesses or in-movers
Counterfactual Impact Methods	Viable through a matched control group approach (provided that adopters and non-adopters can be identified through a survey). Potentially also viable through a regression using an Instrumental Variable approach but practically very difficult to control for all explanatory variables and attribute changes in business performance to broadband coverage. **SMS = 3**	Viable in theory but practically very difficult to identify a control area. Potentially also viable through a regression using an Instrumental Variable approach but practically very difficult to control for all explanatory variables and attribute changes in number of businesses to broadband coverage. **SMS = 0**
Beneficiary Surveys	May provide a useful source of evidence for assessing displacement, but not a robust source of counterfactual and therefore should only be carried out in conjunction with CIE methods. **SMS = 1**	Given limited potential of CIE methods for assessing impacts, beneficiary survey is a valuable source of evidence when considered alongside business datasets, but not a robust source of counterfactual. **SMS = 1**
Summative Assessments	Potentially very valuable because business survey would need to be undertaken as part of summative assessment. **SMS = 3 (assuming consistent use of robust CIE methods)**	Potentially very valuable because business survey would need to be undertaken as part of summative assessment. **SMS = 1 (limited scope for use of CIE methods, and therefore limited to beneficiary survey)**
Monitoring information	Need for enhanced monitoring information of roll out areas, broadband speeds and coverage of businesses.	Need for enhanced monitoring information of roll out areas, broadband speeds and coverage of businesses which are new to the area.
Overall Assessment	Need for a mixed methods approach, with good potential for CIE methods to be used to assess impacts on existing businesses, although this would	

	require the use of a survey which would add to costs. To avoid duplication of resources, assessment is best carried out as part of summative assessments.

Monitoring Implications

8.57 If the projects are only providing broadband infrastructure, it may not be possible to obtain the details of the users to enable the approaches described above (due to the nature of the contracts held between the MHCLG, the infrastructure providers and the Internet Service Providers). If financial assistance is provided direct to end users (eg voucher schemes) to encourage take-up, then this would facilitate the CIE approaches. The standard set of beneficiary and support information described above would be required.

4b. Business Related Infrastructure – Land and Property

Focus

8.58 The interventions in this category include investments in a range of place based business related infrastructure, including site remediation, associated site infrastructure and development of premises for SMEs (including incubation, managed workspace and grow-on space). The specific objectives and associated eligible activities are:

- Employment land remediation (SO6.1)
- Incubation, commercial and industrial floorspace (SO3.2/SO3.3).

8.59 The interventions will indirectly benefit SME occupiers and potentially larger businesses, with benefits including additional wealth and employment creation in local economies, including the potential for this to be located in priority spatial areas or sectors, and the growth of local businesses and the attraction of inward investors, wider benefits can include the enhanced economic competitiveness of local economies, the establishment of new investment locations and improved land values and rents for commercial and industrial property.

Progress to Date

8.60 These types of interventions are spread across a number of different Priority Axes and only account for a part of the activities that could be funded in each. This makes it difficult to estimate how much ERDF has been allocated to these types of interventions in practice. To date just over £42m has been committed to incubation, commercial and industrial floorspace projects. These projects have an average size of around £3.5m. There are three further projects in the pipeline. If all of this activity is approved, total ERDF grant committed would be £47.6m.

Assessment of Impact Approaches

8.61 This is a particularly challenging intervention for which to undertake robust impact evaluation. This is due to the large number and diverse mix of investments, the complexity of the local economic and property markets contexts in which they are implemented, the limitations of the local economic and property market data, and the long time period over which delivery occurs and impacts emerge.

8.62 Considering each of the approaches the main conclusions are:

- There is limited scope for the viable use of robust counterfactual approaches of these interventions as part of the national evaluation. Whilst there may be scope to test a mix of approaches as part of the national evaluation, the uncertainty as to their value points to only doing this on the basis of case study pilot.
- If an in-depth case study is to be undertaken to test possible counterfactual approaches, we suggest that this is focused on one of the larger investments namely the North West Evergreen II or similar fund. This has the advantage of being focused in a geographical area for which the availability of property market and economic data is generally very good. The grant recipient is also well placed to gather the type of monitoring data which will be necessary.
- Whilst there may be some merit in undertaking developer and occupier surveys across all or a sample of property projects, this risks unnecessary duplication of effort where the benefits of a national approach may not be justified in practice. The alternative approach is for the national evaluators to work with grant recipients to develop suitable research tools which can help to secure greater consistency of data.
- The summative assessment will provide useful evidence, which may be enhanced if the suggestion to use common survey approaches and tools is adopted.

8.63 In summary, whilst there is a need for a mixed methods approach enabling triangulation of the evidence, the scope for robust counterfactual impact assessment of these interventions at a national level is limited. There is not a strong case for beneficiaries surveys as part of a national evaluation (unlike for business support interventions), instead with the emphasis on raising the standards of surveys undertaken by grant recipients.

Table 8.6 Review of Impact Assessment Methods

Methods:	**Comment**
Counterfactual Impact Methods	Limited potential viability to implement a consistent approach at a national level. **SMS = 0/1 (depending on precise approach)**
Occupier and Developer	Benefits of undertaking national surveys may not

Surveys	merit the cost. Alternative is for national evaluators to provide survey approaches and tools to encourage collection of consistent data. **SMS = 0**
Project Case Studies	Opportunity to test the potential for robust counterfactual approaches for one of the larger property projects. This might provide some evidence to inform conclusions/lessons about the impact of these interventions as a whole. However, the long timescales of these impacts to materialise may limit the usefulness of a case study approach for the given national evaluation timescales. **SMS = potentially 2/3 depending on precise method adopted**
Summative Assessments	Limitations to usefulness, but potentially valuable given shortcomings in other approaches. **SMS = 0 (assuming very limited use of robust CIE methods)**
Monitoring Information	Important to ensure enhanced monitoring information is collected in a consistent format and quality standards, but may be limited scope to ensure coverage by National systems and by grant recipients at this stage.
Overall Assessment	Need for a mixed methods approach enabling triangulation of the evidence. Overall robustness of impact assessment undertaken by the national evaluation may be limited in practice, with more reliance on approaches which provide limited evidence of causality.

Monitoring Implications

8.64 In order to implement the proposed approach, there will be a need to ensure a standard approach to the collection of monitoring information concerning the (i) type of development activity and floorspace, (ii) occupancy data, (iii) details of the occupiers, their origin and selected performance information (more detailed is provided above).

8.66 There may be practical restrictions on the collection and provision of beneficiary information, especially where the grant recipient is not the site or property developer.

5: Transport

Focus

8.66 The interventions in this category include transport interventions in Cornwall, the only Less Developed region in England (and all contained within Priority Axis 7). These include investments in the road and rail

networks and interventions which promote greater accessibility and encourage more sustainable forms of travel. There are no direct beneficiaries but a range of potential indirect beneficiaries including businesses, residents and visitors. The specific objectives and the associated eligible activities are:

- Investments in the TEN-T road and rail network (SO7.1)
- Encouraging modal shift and improving accessibility of employment sites (SO7.2).

Scale of Commitment

8.67 Priority Seven, which includes both of these Specific Objectives, has a total ERDF allocation of £45.2m. To date around £25.3m of ERDF grant has been committed to transport investments, with nearly £20m committed to rail and road investments and the remainder committed to investment in a multi-modal hub at St Erth. The projects are above average in size, which reflects the large-scale nature of many transport infrastructure investments. There are currently no further projects in the pipeline.

Evaluation Options

8.68 The main conclusions are as follows:

- Evaluation methods for transport investments are in need of more development. The guidance on evaluating impacts is limited and there are no well-established CIE methods.
- Recent research has identified some CIE methods which offer potential. These are based around accessibility modelling, in which a pre and post investment matrix of journey times is used to assess the extent to which the transport investment explains variation in small area economic performance. This approach can be applied to investments on rail, road and multi-modal hubs and therefore could be applied for all of the different types of transport interventions which could be funded under this Priority Axis.
- Although these methods offer potential, it is still a novel and thus far untested approach to evaluating the impact of transport investments. It would also require the collection of a very large volume of monitoring data on journey times to populate the pre and post investment matrix. This would therefore be resource intensive, and further work would be required to determine whether the approach is feasible and whether the cost is proportionate to the scale of investment.
- While CIE methods can be explored further, given the focus of the priority just on Cornwall and the Isles of Scilly and the small number of large projects being funded, it is most practical to implement and test these approaches as part of the summative assessments. This reinforces the need for the summative assessment guidance to

encourage these projects to consider the feasibility of adopting CIE methods and for the national evaluation to provide advice and support.

6: Other Infrastructure

8.69 The interventions within this category include infrastructure to tackle flood and coastal flood risk management and green and blue infrastructure to preserve and protect the environment. The specific objectives and the associated eligible activities are:

- Enabling and protecting economic development potential through investment in flood and coastal flooding management, where there is a demonstrable market failure (SO5.1)
- Investment in green and blue infrastructure and actions supporting provision of ecosystem services on which businesses/communities depend to increase local natural capital and support sustainable economic growth (SO6.1).

8.70 These schemes are characterised by having primarily indirect beneficiaries, which include domestic and business land and property owners and tenants, as well as wider users of the space.

Progress to Date

8.71 Priority Five, which only includes Specific Objective 5.1 has a total ERDF allocation of £51.5m. Priority Six, which includes Specific Objective 6.1 has a total ERDF allocation of £79.6m, although this is spread across two investment priorities and their corresponding specific objectives. It is worth noting that the combined total funding of £131m across these two priority axes represents only 4.7% of the total ERDF allocation in the England programme.

8.72 To date around £6m of ERDF grant has been committed to these types of infrastructure projects. This includes just one project under Priority Axis 5, and three relating to green and blue infrastructure. There are few project applications currently in the pipeline. If all of this activity is approved, total ERDF grant committed would still fall short of £7m.

Assessment of Impact Approaches

8.73 It is challenging to implement robust counterfactual impact methods for this intervention, due to a variety of factors including the modest size of some treatments, the potential diffuse impact on local economies or the long time period over which impacts emerge, the shortcomings in the data sets, and the challenges of identifying suitable comparators. The proposed approach for the national evaluation therefore needs to draw on a number of sources of evidence.

8.74 Considering each of the approaches the main conclusions are:

- There is limited scope for the viable use of robust counterfactual approaches of these interventions as part of the national evaluation. There may be a case for piloting a case study for major floor defence treatments in conjunction with the Environment Agency.
- There is merit in undertaking time series analysis (before and after) of the relevant and reliable economic and property data for the treatment and associated defined impact areas. This would need to be supplemented by tailored occupier and property owner surveys. Whilst achievable, this would be a very resource intensive approach which may not be justified by the benefit provided by the evaluation evidence collected, given the relatively modest level of programme resources being devoted to this area.
- The summative assessment will provide useful evidence, although as noted earlier the challenges of evaluating these interventions may lead to poor quality evaluation evidence.

Table 8.7 Review of Impact Assessment Methods

Methods:	**Comment**
Counterfactual Impact Methods	Limited potential viability to implement a consistent approach at a national level. **SMS = 0**
Project Case Studies	There is an opportunity to test the potential for robust counterfactual approaches for one of the larger projects which are implementing significant treatments in a closely defined spatial area, such as flood defence scheme. However, there will be the need to check the suitability of piloting an approach in this instance, given the use of medalling techniques to assess flood risk and occurrence and the shortcomings in local property market data. **SMS = potentially 3 depending on precise method adopted**
Time series analysis	There is merit in undertaking time series analysis for selected indicators in defined treatment/impact areas for suitable projects and the treatments they fund. Not all projects will lend themselves to this approach though. **SMS = potentially 2 if combined with other evidence such as beneficiary surveys**
Occupier and Landlord Surveys	There are benefits in undertaking beneficiary surveys in conjunction with other approaches described above. **SMS = 2 (assuming combined with time series analysis noted above)**
Summative Assessments	Limitations to usefulness in establishing causality, but potentially valuable given shortcomings in other approaches.

	SMS = 0 (assuming limited availability of robust CIE methods)
Monitoring Information	Important to ensure enhanced monitoring information is collected in a consent format and quality standards both to but may be limited scope to ensure coverage by National systems and by grant recipients at this stage.
Overall Assessment	The triangulation of evidence from time series analysis, beneficiary surveys and a pilot case study would provide useful information in gaining insight into impact and causality, it would be partial in its coverage of the investment. Also it would be a resource intensive approach to implement as part of the national evaluation which may not be justified by the quality of the evidence collected.

Monitoring Implications

8.75 As noted above, if the methods are adopted as part of the national evaluation, it will require a range of additional information to be collected on a consistent basis for the different types of projects including (i) geospatial data for the site or treatment area, (ii) full details of the types of treatments and (iii) information on number and type of properties in the treatment areas or an impact area if this is larger.

7. Low Carbon Generation

Focus

8.76 The interventions within this category include investment to enable the development of small scale renewable energy schemes. The specific objective is to 'increase the number of small scale renewable energy schemes in England' (SO4.1). Whilst SO4.1 also includes support to build capability and capacity for supply chains in the renewable energy sector, the focus on advice and guidance support to SMEs means this strand of activity is considered under business support to SMEs above.

8.77 Direct beneficiaries could include SMEs, public sector organisations and social landlords. It is also possible that these organisation types could also benefit indirectly, if they are allowing renewable scheme developers to deploy renewable capacity on their land or premises (and receiving a rent for this).

Progress to Date

8.78 Priority Four, which includes Specific Objective 4.1, has a total ERDF allocation of £593.6m, although this is spread across five investment priorities and their corresponding specific objectives. To date just four projects with a total ERDF grant value of £10.4m have been approved,

although there are likely to be projects in the pipeline following the last call for low carbon projects (Autumn 2016).

Assessment of Impact Approaches

8.79 Whilst there is merit in the national evaluators investigating this intervention type in more detail when more information is available on the types of projects which are being funded, it is unlikely that standard CIE methods will be viable as part of the national evaluation. The focus should be on using the combination of programme monitoring data and summative assessments as the main source of impact evidence, with the possibility of using pilots of CIE approaches or in-depth project case studies for particularly interesting or impactful projects. As with a number of other areas, there may be merit in the national evaluators running workshops or providing good practice guidance on impact evaluation for these types of projects to the grant recipients in order to raise standards.

Table 8.8 Review of Impact Assessment Methods

Methods:	**Comment**
Counterfactual Impact Methods	Probably not viable as part of a national evaluation. SMS = 0
Beneficiary Surveys	Potentially some merit but the cost might not be justified by the benefits. SMS = 0
Project Case Studies	There is the possibility of in-depth case studies of particularly impactful or interesting projects to supplement summative assessment data. There could be the opportunity to pilot a CIE approach in conjunction with a grant recipient.
Summative Assessments	The main source of impact evaluation evidence, although it is unlikely to be provide robust evidence on causality. SMS = 0/1
Monitoring Information	Some aspects may need to be enhanced, but limited case for significant change.
Overall Assessment	Main source of impact evaluation evidence will be the summative assessment, but supplemented with other evidence and efforts to improve quality and consistency of project evaluations.

Monitoring Implications

8.80 As noted above, there is a fairly limited requirement any enhancements to the monitoring information collected. Where relevant, all organisations should capture monitoring data on actual energy output (both electricity and heat) in addition to additional capacity.

8.81 Whist there could be some merit in requiring grant recipients and delivery bodies to capture data to enable the measurement of actual real world net reduction in energy use and hence emissions (where appropriate), it is not appropriate or desirable to insist upon it in this instance.

8: Resource and Energy Efficiency

Focus

8.82 The interventions within this category include energy efficiency measures and to a lesser extent resource efficiency, with a range of direct beneficiaries including SMEs, public sector organisations, and social landlords and their tenants. The specific objectives and the associated eligible activities are:

- Energy efficiency advice and financial support to SMEs (SO4.2)
- Energy efficiency advice and investment support to social housing and public sectors (SO4.3).

8.83 The main impact sought is carbon abatement (more sustainable use of resources and reduced waste), although these measures can also improve energy security, reduced energy costs and reduce fuel poverty in the longer term for SMEs and tenants (both social and SMEs).

Progress to Date

8.84 Priority Four, which includes both of these Specific Objectives, has a total ERDF allocation of £593.6m, although this is spread across five investment priorities and their corresponding specific objectives.

8.85 To date around £56m of ERDF grant has been committed to resource and energy efficiency projects, with two thirds on SME focused activity and the remainder on social housing and the public sector. The projects are above the average size, although the projects providing grant funding towards the actual implementation of resource and energy efficiency measures will typically be larger (compared to projects focused on the provision of advisory support). There are few project applications currently in the pipeline. If all of this pipeline activity is approved, total ERDF grant committed would be just £75m of which £50m would be SME related.

Assessment of Impact Approaches

8.86 Whilst the assessment is complicated by the need for different types of approach across the different mixes of activity and beneficiary, the main conclusions are:

- There is limited scope for the viable use of robust counterfactual approaches of these interventions as part of the national evaluation,

possibly with the exception of the portfolio analysis for interventions with social landlords (although this will need to be tested further as part of the national evaluation). If this is achievable it could gain a SMS score of 3.

- There is merit in piloting a number of counterfactual impact approaches for projects focused on the provision of financial support for energy efficiency to SMEs and social landlords – this is likely to focus on 2-3 projects only given the available resources,
- However, there is scope to use before and post implementation beneficiary surveys covering SMEs, social landlords and tenants to help address shortcomings in other counterfactual impact methods. This would need to be implemented with monitoring of energy/resource use. Whilst resource intensive, this approach could achieve an SMS score of 2 if well implemented.
- The need for enhanced project monitoring arrangements, especially relating to the nature of energy efficiency treatments and changes in energy use.
- The potential limitations of the project summative assessment evidence and hence the limited value of this information to inform the national evaluation.

Table 8.9 Review of Impact Assessment Methods

Methods:	**SMEs**	**Social Landlords**
Counterfactual Impact Methods	Limited potential given data limitations. **SMS = 0**	Best potential offered by portfolio analysis examining treatment and non-treatment properties; but may be limited scope to adopt across projects. **SMS = 3 (but potentially limited applicability)**
Beneficiary Surveys	Given limited potential of CIE methods across projects at national level, beneficiary is a valuable source of evidence but not a source of robust counterfactual. **SMS = 2**	Given limited potential of CIE methods across projects at national level, beneficiary is a valuable source of evidence but not a source of robust counterfactual. **SMS = 2**
Project Case Studies	Opportunity to test CIE approaches on a very limited basis. **SMS = potentially 2/3 depending on precise method adopted**	Opportunity to test CIE approaches on a very limited basis. **SMS = potentially 2/3 depending on precise method adopted**
Summative Assessments	Limitations to usefulness, but potentially valuable given shortcomings in other approaches.	Limitations to usefulness, but potentially valuable given shortcomings in other approaches.

	SMS = 0 (assuming very limited use of robust CIE methods)	**SMS = 0 (assuming very limited use of robust CIE methods)**
Monitoring Information	Need for enhanced monitoring information but may be limited scope to ensure coverage by National systems and by grant recipients at this stage.	Need for enhanced monitoring information but may be limited scope to ensure coverage in approaches at this stage.
Overall Assessment	Need for a mixed methods approach enabling triangulation of the evidence. Inclusion of surveys will mean a combination of high costs and potentially limited robustness. **Overall SMS = 1-3 depending on precise mix of approaches adopted.**	

Monitoring Implications

8.87 The implementation of the approach described above as part of the national evaluation will require projects to record and supply a core set of information including the full name and address of the beneficiaries, as well as the nature of the support provided, a measure of its intensity or value and the timing of the assistance.

8.88 Where the support consists of direct financial support to towards the costs of energy efficiency measures, monitoring data would need to be provided on the address and characteristics of the treatment property, details of tenants, and expected and actual change in energy use. Where only advice is provided rather than direct financial support, then projects should record the details of the properties/businesses which are the focus of the guidance.

9. Community Led Local Development

Focus

8.89 Priority axis 8 seeks to build capacity with communities as a foundation for economic growth in deprived areas, focusing predominantly on the bottom 20% of areas according to the Index of Multiple Deprivation (30% in Cornwall and the Isles of Scilly). The Managing Authority has chosen to deliver this entirely through Community Led Local Development (CLLD), a spatial approach to economic development targeted upon the most deprived communities.

8.90 CLLD adopts a different approach to management and delivery to most other parts of the ERDF programme. There is strong emphasis on a highly targeted spatial approach, local management and delivery of the strategy

involving local partners and communities, and a willingness to adopt innovative approaches.

Progress to Date

8.91 Priority 8 has a total ERDF allocation of £40.1m. By the end of April 2017, twenty one CLLD strategies had been submitted and approved by MHCLG with a total ERDF value of £29.2m (73% of the Priority allocation). The full applications are currently being appraised by MHCLG, with the first approvals expected in June. The average ERDF allocation sought by for the CLLD strategies is just £1.39m. It is our understanding that each of the CLLD strategies consist of multiple projects and hence the average ERDF grant per project is much smaller.

8.92 The intended beneficiary outcomes revolve around: improved start-up, survival and subsequent growth of businesses; improved enterprise readiness for potential entrepreneurs; and improved access to employment amongst residents of the target areas.

Assessment of Impact Approaches

8.93 Given the localised nature of CLLD and the modest scale of the investment, the scope for and merit of undertaking impact evaluation as part of the national evaluation is very limited.

8.94 Whilst the recommended approach is for evaluation activity to be restricted to summative assessments of each CLLD strategy and plan, it is recognised that there will be little scope for LAGs and their local partners to undertake counterfactual impact approaches. The available resources they will have for summative assessment will be modest, whilst the action plans will often include multiple projects which are small in size on average (eg 10 projects with an average value of less than £300,000.

8.95 Whilst the summative assessments need to measure outcomes and impacts locally (in so far as this is possible even in a simple way), they also need to consider the added value which the CLLD approach has provided, including the impact of animation and the benefits of engaging local people and developing local relationships. This is a key aspect of CLLD and it is important for the assessment to capture these potential qualitative benefits. It is apparent from the applications that whilst the CLLD areas all follow the same basic approach there is a lot of variety and some are embracing the ‘spirit’ of CLLD more than others.

Overview of Evaluation Approaches

8.96 As noted above, effective impact evaluation for the intervention types (and drawing on these to inform conclusions at the level of the priority axes) will require the adoption of a mix of methods including counterfactual impact evaluation, primary research and surveys, project level evaluation case

studies and pilots, plus the analysis of evidence from the summative assessments.

8.97 The resource devoted to evaluating the impact will need to vary greatly across the intervention types, reflecting a mix of factors including the overall scale of ERDF grant they are likely to receive, the types of impacts they are expected to achieve and the ease of assessing the impacts in a rigorous way as part of the national evaluation.

8.98 In terms of the use of CIE methods as part of the overall approach to impact evaluation, there is an important word of warning here. There is the potential to waste a lot of effort and resource trying to shoehorn interventions into CIE methods which are not appropriate or sufficiently robust as part of the National Evaluation. A lot of money and effort could be spent for little or no added value. This would reduce the budget available for the impact evaluation of other areas in which these approaches are more appropriate, can provide more useful findings and cover a higher proportion of programme expenditure. Table 8.10 summarises the potential to undertake counterfactual impact evaluation as part of the National Evaluation. If the potential is limited, the scope to undertake CIE through the Summative Assessments is considered. In addition, where CIE is not feasible, qualitative evaluation is proposed as a key method to fill gaps in knowledge. Even though any impacts identified will not be attributable, they will still provide valuable insight, in the absence of anything else. The main source of this qualitative information will be the project Summative Assessments, drawing on desk based reviews and detailed case studies. The manner in which this evidence can be used in conjunction with CIE evidence at a national or project level, or in its own right, is discussed later in the section.

8.99 The key observations are grouped into a number of themes:

Table 8.9

Potential in National Evaluation	Type	Coverage of Spend	Comment
Potential for strong CIE evidence; generally strong	Business / enterprise (intervention categories 2 and 3)	Very High (c£1,200 million)	• Likely to be CIE methods accompanied by large scale beneficiary surveys to strengthen impact evidence • CIE methods more challenging for individuals receiving business start-ups • Need to ensure project monitoring systems enable robust CIE through collection of beneficiary data.
Potential for weak to moderate CIE evidence	Research, innovation & business infrastructure (intervention categories 1 and 4)	Moderate (£650 million)	• Scope for CIE in national evaluation but challenging to undertake efficiently at this level due to diverse mix projects, need to tailor approaches and data issues (securing details for indirect beneficiaries) • CIE not best use of National Evaluation resource, except possibly for research focused incubators and grow-on space; in these instances the grant recipients, typically HEIs, may be more likely to record occupier information • Scope to pilot approaches and support project evaluators • Where CIE is to be undertaken as part of national evaluation, it is important for Grant Recipients to collect and report occupier information • With high average value, it will be important for grant recipients to use CIE methods as part of their summative assessments.
Weak CIE evidence	Place-based low	Moderate	• Important investment area but limited potential for CIE in

	carbon infrastructure	(£620 million)	national evaluation, although there are a few exceptions eg energy efficient treatments • SAs important source of evidence, but robustness may be limited.
Limited potential in national evaluation	Low volume high value infrastructure (eg broadband, transport)	Low (£250 million)	• Main source of CIE and other impact evidence will be Summative Assessments; match funders for some of these projects, such as DCMS and BDUK, will have a role in ensuring robust CIE • Scope for National Evaluation to provide guidance on CIE methods if necessary.
Limited potential for impact evaluation	Other place based investment activities such as CLLD	Very Low	• No role for national evaluators in undertaking CIE methods and limited potential at project level given their modest size • Summative assessment main source of qualitative evidence.

Potential for Strong CIE in the National Evaluation Covering a High Proportion of Programme Spend on Various Types of Business and Innovation Support

- This includes the large number of projects focused on business support to start-ups and established businesses which account for a high proportion of overall programme spend. It covers both generic business support, innovation support and business finance.
- Whilst there are still significant challenges, there are tried and tested CIE methods and the on-going improvements to monitoring and administrative datasets will help to improve its effectiveness. The usefulness of the analysis can be enhanced with a range of alternative methods including beneficiary surveys, especially where impacts are less likely to be picked up in administrative data within time period (such as with R&I revenue projects).
- Whilst the usefulness of the CIE methods for start-up businesses should be enhanced through improvement in the scope of the IDBR, there is a risk that this is not achieved in a way or sufficient time to benefit this evaluation. There is also a need to ensure that potential entrepreneurs, as opposed to the start-up businesses, are adequately covered by the analysis. These areas have potential for robust CIE but there is a risk of it incurring considerable costs and the robustness of the resulting evidence falling short.
- Ensuring robust CIE which can be implemented across these interventions is therefore a key priority for the National Evaluation.
- Potential for Moderate to Weak CIE Covering a High Level of Overall Programme Spend on Research and Business Infrastructure
- The programme is making a substantial investment in infrastructure to support research and businesses, including employment sites, research facilities and business premises. However, the counterfactual impact assessment to assess these placed based investments is much more challenging and less well developed than the category above. The diverse nature of the projects with both localised and longer term impacts, can significantly limit the scope to assess the impacts as part of the national evaluation.
    - In terms of strengthening the national impact evidence, it should be a priority to develop suitable approaches to ensure a reasonably robust evidence base can be collected, which might involve a mix of:
    - National evaluation level - implementing CIE methods where this is likely to be more feasible at a national level, specifically research focused incubators and grow-on space being implemented by the HE sector (in part due to these organisations being more likely to record and be able to provide occupier information to the evaluators, although this will need to be tested further).

- Summative assessments – encouraging and supporting grant recipients and their evaluators to achieve more rigorous CIE approaches where feasible and higher standards of evaluation at the project level. The Summative Assessment guidance, including the mechanisms out in place to advice Grant Recipients, will help to raise the standard of these impacts assessments.
- If the proposed approach to CIE at both the national evaluation and summative assessment level is to be successful, there will be a need to enhance the scope and nature of the data collected on the occupiers or users of facilities. In most instances these are indirect rather than direct beneficiaries of the support provided and collecting beneficiary information may be particularly challenging for some projects (where the grant recipients have no control over or access to the information).
- Where quantitative impact evaluation is not possible, qualitative evaluation mainly drawing on the Summative Assessments will be important in the absence of anything else to provide valuable insights into the perceived impacts. Caveats regarding attribution of the impacts will however need to be applied.

Potential for Weak CIE Covering a Moderate Level of Programme Spend on Placed-Based Low Carbon Activity

- This category covers the investment in low carbon infrastructure and capacity, rather than the business and innovation support for SMEs to develop technologies, supply chains and markets. This latter category is covered by the business support category noted earlier.
- Whilst there is a lot of project activity and expenditure across a number of low carbon themes, it is diverse and does not particularly lend itself to robust CIE either as part of the National Evaluation or through summative assessment. Many of these activities are primarily concerned with achieving carbon emission reduction, whilst the economic development objectives are secondary objectives.
- There is the potential for strong CIE approaches for energy efficiency treatments to commercial properties, public sector buildings and social housing, although this is better suited to being implemented at the project level as part of the summative assessments. However, this requires mechanisms to be put in place to meet the potentially demanding monitoring data requirements on behaviours and associated energy use. This would need to be gathered from beneficiaries which can be both direct and indirect recipients of the treatments and would require many Grant Recipients to collect additional monitoring information. Then reasonably robust CIE methods could be pursued.
- Where quantitative impact evaluation is not possible, qualitative evaluation mainly drawing on the Summative Assessments will be

important in the absence of anything else to provide valuable insights into the perceived impacts. Caveats regarding attribution of these impacts will however need to be applied.

- Whilst these low carbon infrastructure investments accounts for a large area of programme spend, it is not appropriate for the national evaluation to focus its efforts on conducting CIE for these types of interventions. Evidence on impacts would still be gathered as part of the summative assessments, although its extent and robustness will vary. There is again a valuable role for the national evaluators in providing guidance to Grant Recipients and their evaluators to help improve the quality of CIE as part of the Summative Assessments.

Potential for Weak CIE Covering High Value Low Volume Placed-Based Infrastructure

- There are a number of strands of investment focused on place-based activity where the numbers of projects are low but they are typically high value, such as transport, flood defences or broadband infrastructure. These projects tend not to have direct beneficiaries and the approaches to CIE are, for some types of investment, less well developed in terms of their robustness and would be challenging to implement as part of a national evaluation.
- Although it would be possible to pursue CIE for these projects as part of the national evaluation, this would be expensive and not in our view the best use of the available evaluation resources. There is a strong case for the national evaluation to take only a supporting role here, strongly encouraging projects to adopt and possibly test CIE methods as part of the summative assessments. The national evaluators could provide an advisory input to Grant Recipients to help them develop their approaches, although there is a need to avoid duplication of effort and expenditure. These methods should be supplemented with qualitative evaluation to provide valuable insights into the perceived impacts. Caveats regarding attribution of the impacts will however need to be applied.
- It is also worth bearing in mind that many of these projects will be matched funded by domestic funding streams operated by other Government Departments and national agencies, such as DCMS, DFT, BDUK and the Environment Agency. These organisations may also play an important role in advising on or even leading project evaluation activity.

Weak CIE Evaluation Covering Limited Programme Spend

- There are a range of other relatively low volume, low value interventions, often associated with place based investment activities such as CLLD. The main source of evidence will be the summative assessments, although it may be appropriate for the national

evaluators to provide support, such as a workshop, to help grant recipients to raise the standard of their summative assessments. In these cases qualitative evaluation will be important in the absence of anything else to provide valuable insights into the perceived impacts. Caveats regarding attribution of the impacts will however need to be applied.

Beneficiary Surveys

8.100 Whilst we recognise that there are limitations in the use of beneficiary surveys in providing self-reported evidence of outcomes for the various beneficiary groups, there is nevertheless merit in providing quantitative and qualitative information in a consistent format on the manner in which the support received or access to other investments bring about changes in beneficiary behaviour and potentially performance.

8.101 Although project summative assessments may gather information on processes and outcomes through beneficiary surveys, there will be considerable value, in some instances, in a coordinated approach to gathering this evidence through national surveys. Indeed, the analysis above has identified the role for survey design of both beneficiaries (potentially using surveys prior to support or immediately after, as well as follow-up surveys 8-12 months later) and non-beneficiary comparison groups in a number of instances to enhance CIE approaches.

8.102 Given the recommendations on CIE approaches above, the main areas in which large scale surveys are likely to be required are:

- Established SMEs receiving general business advice and guidance, business finance and more specialist types of research and innovation related support
- Entrepreneurs that establish as business post start-up support, as well as those that do not.

8.103 Surveys will also be a useful source of evidence for other intervention types (including occupiers in new or refurbished property, beneficiaries of energy efficiency treatments including social housing tenants, businesses taking up broadband, businesses benefiting from environmental improvements and researchers in new research facilities) as well as additional sources of funding, these will be the responsibility of the grant recipients to implement as part of their summative assessments.

Summative Assessments

8.104 The project summative assessment are a potentially valuable source of evidence where done well, providing rich information on delivery approaches,

theory of change assessments and robust CIE based assessments in some instances. However, there is a risk that standards of evaluation are poor in some instances, due to a lack of robustness, inconsistency of approach and different formats for the outputs. As a result, MHCLG has already issued project level guidance on the preparation of logic models and will be publishing supplementary guidance on undertaking Summative Assessments and the minimum quality of data and standards of evaluation acceptable. It is therefore important that:

- MHCLG reinforces the message contained in the summative assessment guidance concerning the need for appropriate and a high standard of project evaluation that is commensurate with the overall level of ERDF grant and match funding
- Projects are strongly encouraged to adopt CIE where these are feasible and appropriate
- Ensure that the summative assessment tools provided as part of the summative assessment process are implemented by the projects including the evaluation plan and reporting formats, as these will help to ensure consistency of standards and outputs
- The national evaluators regularly share examples of good practice in project evaluation for the range of intervention types with grant recipients.

Overview

8.105 Table 8.11 provides an at a glance overview of the sources of economic impact evidence for the national evaluation by intervention type, whilst Table 8.12 provides a fuller description and also indicates the roles which the National Evaluators may play in supporting evaluation activity at the project level.

8.106 In order to implement this approach there is a need for additional monitoring information to be collected, covering:

- Output and outcome indicators
- Beneficiary information (including applicants seeking support that do not go on to receive it in some instances)
- Information on delivery approaches in some instances (in particular the selection process through which beneficiaries are selected).

Table 8.11 Summary of the Sources of Impact Evaluation Evidence by Intervention Type

	National Evaluation Gathered Evidence			Project Summative Assessment Evidence		
	CIE assessment	Beneficiary surveys	Project case studies	CIE assessments	Qualitative assessments	Light touch assessments
Research and Innovation Infrastructure & Facilities	★	★	★★	★	★★★	★
Business Advice/Guidance/Finance for Start-ups	★★	★★	★	★★	★★★	☆
Business Advice, Guidance and Finance for Established SMEs	★★★	★★★	☆	★★	★★★	☆
Business Related Infrastructure			★★	★	★★★	★
Transport Infrastructure		☆	☆	★	★★★	★
Other Infrastructure			★	★	★★★	★
Low Carbon Generation			★	★	★★★	★
Resource/energy/efficieny			★	★	★★★	★
Community Led Local Development			☆	☆	★★★	★

Summary of the Sources of Impact Evaluation Evidence by Intervention Type				
Key: volume of evidence	★★★ = high	★★ = medium	★ = low	☆ = very limited evidence
Key: robustness of impact evaluation evidence	High	Medium	Low	N/A

Table 8.12 Sources of Evaluation Evidence for Interventions Categories and Support Roles of National Evaluators

	Sources of Evidence for National Evaluation			Supporting Roles for National Evaluators	
	CIE	**Beneficiary Surveys**	**Analysis of Summative Assessments (inc project level CIE)**	**Testing of CIE Approaches through Summative Assessments**	**Advisory Role**
Research and Innovation Infrastructure & Facilities	Limited scope for comprehensive CIE. Some scope for more robust CIE in specific circumstances (eg HE incubators & grow-on space).	Occupier and comparison group surveys in support of focused CIE activity.	SAs will be key source of impact evidence, although use and robustness of CIE methods may be limited in practice. Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Scope of National Evaluators to work with a small number of GRs to develop robust CIE methods.	Given limited activity at programme level, important role for National Evaluators to raise standards through general support and guidance.
Business Advice/Guidance/Finance for Start-ups	Scope for robust CIE as part of national evaluation, covering range of beneficiary types.	Need for surveys to individuals and start-ups to enhance CIE evidence, including non-treatment groups.	Good source of project level evidence including possibly robust CIE evidence for larger projects.	Given focus of National Evaluators on CIE at programme level, this is not a priority Some quality assurance of summative assessments.	General support role.

Business Advice, Guidance and Finance for Established SMEs	Scope for robust CIE as part of national evaluation, covering range of beneficiary types.	Need for large scale surveys of beneficiaries and comparator groups.	Good source of project level evidence including robust CIE evidence for larger projects.	Given focus of National Evaluators on CIE at programme level, this is not a priority Some quality assurance of summative assessments.	General support role.
Business Related Infrastructure	No specific activity proposed.	No specific activity proposed.	Key source of impact evidence at programme level, although extent of robust CIE evidence may be limited (broadband investments may be an exception) Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Scope of National Evaluators to work with a small number of GRs to develop robust CIE methods Some quality assurance of summative assessments.	Important role for National Evaluators to raise standards through general support and guidance.
Transport Infrastructure	No specific activity proposed.	No specific activity proposed.	Key source of impact evidence at programme level. Important that GRs implement robust impact methods, although track record of robust CIE is limited Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Scope of National Evaluators to work with a small number of GRs to develop & implement more robust CIE methods Some quality assurance of summative assessments.	Limited additional role given nature of priority.

Other Infrastructure	No specific activity proposed.	No specific activity proposed.	Main source of impact evidence at programme level. Given nature of interventions and evaluation challenges, may be limited robust CIE evidence available Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Scope of National Evaluators to work with a small number of GRs to develop & implement more robust CIE methods eg flood defences Some quality assurance of summative assessments.	General support role.

Low Carbon Generation	No specific activity proposed.	No specific activity proposed.	Main source of impact evidence at programme level. May be limited scope for CIE approaches Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Not a particular priority. Some quality assurance of summative assessments.	General support role.
Resource/Energy Efficiency[31]	No specific activity proposed.	No specific activity proposed.	Main source of impact evidence at programme level. May be limited robust CIE evidence available. Risk of low standards of evaluation. Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Scope of National Evaluators to work with a small number of GRs to develop & implement more robust CIE methods eg energy efficiency treatments Some quality assurance of summative assessments.	Important role for National Evaluators to raise standards through general support and guidance.

[31] Priority Axis 4 includes a mix of interventions including small scale renewable energy generation, energy and resource efficiency, low carbon innovation, and low carbon energy area strategies. The consideration of the impact evaluation methods for low carbon innovation activities falls either under intervention category 1 or 3 above, depending upon their focus. As the activities funded through low carbon area strategies will typically consist of renewable generation (category 7) or energy efficiency (category 8), the suitable impact evaluation methods will be similar.

Community Led Local Development	No specific activity proposed,	No specific activity proposed,	Main source of impact evidence at programme level, although approaches and standards may vary widely. Scope to draw on case studies of CLLD programmes Qualitative evaluation evidence will supplement, but not enable attribution of impacts.	Some quality assurance of summative assessments,	General support role,

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Timing of the Evaluation Activities

8.107 The approximate timing of the impact evaluation activities is outlined below.

Activity	Timing of Output	Duration
Potential for light touch review of what works to support MHCLG's wider consideration of longer term policy and delivery approaches and options (there is the risk that this adds little further value in practice) Full review of proposed evaluation methods in light of latest and detailed programme progress data	Spring 2018	3 months (Jan to Mar)
On-going support to grant recipients which are delivering projects which need to adopt more rigorous approaches to CIE due to their size or due to their selection of CIE case studies	Spring 2018 Onwards	
Development and implementation of SME and entrepreneur beneficiary and comparison group surveys	Spring 2019	3-4 months
First tranche of beneficiary surveys (if appropriate)	Autumn 2019	4 months
Interim impact assessment	Summer and Autumn 2019	6 months
Second tranche of surveys Full impact assessment	Summer and Autumn 2021	6 months

9. Economic Evaluation

Introduction

9.1 This section sets out the possible approach to economic evaluation for the English ERDF Programme. Both the Government's Green Book and Magenta Book set out definitions for different approaches to the economic evaluation of public polices or investments, namely Cost-Effectiveness Analysis (CEA) and Cost-Benefit Analysis (CBA):

- Cost-effectiveness analysis values the costs of implementing and delivering the policy, and relates this amount to the total quantity of outcome generated, to produce a cost per unit of outcome estimate
- Cost-benefit analysis goes further than CEA in placing a monetary value on the changes in outcomes as well. This means that CBA can examine the overall justification for a policy (i.e. do the benefits outweigh the costs?), as well as comparing policies which are associated with quite different types of outcome. CBAs monetise as many of the costs and benefits of a policy as possible, including wider social and environmental impacts.

Cost-effectiveness Analysis

9.2 Ideally the cost-effectiveness analysis would relate all of the outcomes or impacts of the ERDF programme to the cost of managing and delivering it. However, there are a number of issues and challenges in undertaking this programme level analysis:

- Mix of Outcomes and Impacts. The ERDF programme generates a very wide range of economic, social and environmental outcomes. There is no single overall outcome measure and it is not practical, or even possible, to sum these into a single measure (unless a CBA framework and approach is used).
- Robustness of Net Additional Impact Estimates. The estimates of cost-effectiveness should ideally be based upon the evaluated net additional outcomes. The coverage and robustness of evaluation evidence on the additionality of outcomes and the net additional impacts at an economy level will vary between types of interventions. In some instances the evidence will be very weak (for a variety of reasons) and not be suitable for informing estimates of cost-effectiveness. However, the impact estimates should be more robust for the business support interventions and should provide estimates of net additional employment and turnover (allowing for displacement and

substitution issues, as these can potentially be large for these types of interventions) which could be used in cost-effectiveness estimates.

- Timing of Impacts. Given the nature of some of the interventions, it will take longer for the outcomes and impacts on local economies to occur and be measurable. These impacts, as well as the impacts associated with other activity implemented later in the life of the programme, will not be observable by the evaluation given its expected timing. Whilst the impacts of interventions may provide some insight to inform conclusions about the impacts arising later, this may be of limited value for the investments with longer lead in and impact periods.
- Apportionment. Most of the ERDF backed investments will be matched funded by other public and private sources. They may also be part of a wider suite of investments, especially where land, property and other infrastructure investments are part of area-based regeneration strategies. Whilst monitoring information on the matched funding will be available in all cases to enable a simple apportionment of the impacts to the funding sources, it is unlikely that account can be taken of the linkages and interdependencies to the other investments and funding streams.
- Measurement and Coverage of Costs. The management and delivery of the ERDF programme will incur a wide range of costs at different levels. The main direct programme costs are the central management and delivery costs incurred by MHCLG and the grant provided to the grant recipients. There are also indirect costs including the staff time of other officers involved in the design and oversight of the programme which are not included in the programme budgets and monitoring of expenditure. The grant recipients and delivery bodies will also incur direct and indirect costs related to both capital assets and operational activity, some of which may be included in the matched funding for projects and hence monitored. The measurement of the additionality of project expenditure can be difficult in practice (although summative assessments may provide some insight), as can the measurement of indirect costs and the appropriate treatment of capital assets. Another consideration is that financial instruments should recycle some if not all of the initial grant to the grant recipient and hence the net costs are lower at a project and programme level (although there is a lot of uncertainty about these returns until later in the life of the programmes and hence can only be accounted for in an ex-post evaluation).

9.3 On this basis, it is reasonable to conclude that it will not be possible to estimate cost-effectiveness at a programme level. However, it may be possible to build up a picture of cost-effectiveness for selected measures of impact, in particular job creation and the increase in turnover. These measures would ideally be estimated on the basis of the net additionality of the jobs and turnover at the level of the English economy, although clearly there are likely to be considerable gaps in parts of the project level evidence. The national evaluators will need to determine whether these estimates can

be undertaken on the basis of gross outcome at the level of SME beneficiary or net additional outcome at the level of the economy, subject to the coverage and quality of the CIE evidence which can be collected.

9.4 There are other important measures of environmental benefit including the reduction in greenhouse gas emissions and the associated economic value of these reductions. However, the scoping study has not been able to determine if these measures can be robustly measured on a net additional basis as part of the evaluation. This will need to be considered further once the national evaluators are appointed and the nature of the projects supported is clearer.

9.5 Turning to the costs of the ERDF programme, we suggest that the estimates of cost effectiveness are based on:

- Gross ERDF project costs, including a share of direct programme management costs
- Gross project costs, including ERDF and other delivery costs (again including a share of programme management costs).

9.6 As noted above, the cost estimates would be gross. That is, they would not allow for the additionality of the programme or project expenditure, nor account for the recycling of repayable finance provided to beneficiaries.

9.7 A further issue is the manner in which the estimates are interpreted and judgements made about whether they provide value for money to the UK Government and the European Commission. It may be possible to benchmark the estimates against other similar intervention types, providing the evaluation evidence meets similar minimum quality standards (especially in terms of the counterfactual). The evaluations of RGF and LGF may provide suitable evidence in due course given the similarities in the context but differences in delivery and funding approaches.

9.8 Some individual project summative assessments will no doubt employ cost-effectiveness approaches. The national evaluators will need to test the approaches used, their robustness and the scope to aggregate these measures in some way.

Cost-benefit Analysis

9.9 Given the significant measurement challenges noted above in terms of the measurement of cost-effectiveness, it is reasonable to assume undertaking a CBA at a programme level or for particular types of interventions would not be possible. The programme is simply too large, diverse and complex to allow this approach to be implemented in a meaningful manner. However, this conclusion should be revisited by the national evaluators once they are appointed.

Overview

9.10 Given the nature of the programme, strength of the expected evaluation evidence and various other measurement and definitional challenges, the economic evaluation is likely to be focused on a limited number of cost-effectiveness measures related primarily to job creation and increase in turnover. Depending on the robustness of the evidence which will be available in due course, these estimates could be based on gross beneficiary outcomes or net additional economy impacts. These estimates should be based on both gross cost to the public sector and gross project costs, allowing for programme management and delivery costs. The availability of comparable unit costs for other interventions to inform judgements on value for money will need to be investigated further by the national evaluators.

9.11 Needless to say, the evaluation and measurements challenges mean that the future assessment will need to be carefully interpreted by evaluators and policy makers.

ERDF National Evaluation Scoping Study Appendix

1. R&I Infrastructure and Business Support

Introduction

1.1 The mix of intervention types covered in this group include:

- R&I infrastructure & facilities (SO1.1)
- R&I knowledge exchange and collaboration (SO1.2 and SO1.3).

1.2 There is the potential for some investment to be targeted at research and innovation infrastructure through Priority Axis 4 as well (low carbon economy), but this will be less significant in terms of the scale of resource and its expected impact.

1.3 Much of the investment will be capital in nature, including new research and innovation facilities, equipment and infrastructure, often located in higher education and research institutes. These capital projects may also include revenue elements focused on more intensive knowledge exchange and collaborations. The types of beneficiaries include:

- University researchers and students (typically at post-graduate level) who utilise facilities
- SMEs who may utilise ERDF funded infrastructure and facilities and work with academic staff and researchers as part of collaborative or knowledge exchange
- As well as SME, graduate and university researcher beneficiaries, these interventions have the potential to improve the research capacity and hence attractiveness of local economies and business locations.

1.4 This category does not include:

- General incubation, innovation or science park floorspace which does not provide access to specialist research or innovation related facilitates – this is considered under intervention category 5
- Less specialist innovation related business support within SMEs – this is considered under intervention category 3.

Progress to Date

1.5 Priority Axis 1 has an overall ERDF allocation of £574.1m and we would expect a large proportion of this expenditure to be focused on the intervention types considered here given their capital focus (and more costly nature).

1.6 By the end of 2016, £178.5m had been approved with an average ERDF grant of around £2.4m. The value of projects was much higher for SO1.1 which presumably reflects its more capital intensive focus. The grant totals for SO1.2 and SO1.3 might include some revenue only projects which are more suited to consideration under category 3 below. There is around £39m worth of projects currently in the appraisal and approval pipeline.

Table 1.1 Table 1.1 ERDF Projects and Spend up to December 2016

	SO1.1	SO1.2	SO1.3	Total
Number of Projects				
Approved	10	18	47	75
Being Appraised	3	1	8	12
Early Stage Development	2	7	3	12
Total ERDF Value (000s)				
Approved	£50,084	£33,156	£95,252	£178,491
Being Appraised	£7,849	£1,454	£8,374	£17,677
Early Stage Development	£4,699	£12,027	£3,519	£20,245
Average Project Value (000s)				
Approved	£5,008	£1,842	£2,027	£2,380
Being Appraised	£2,616	£1,454	£1,047	£1,473
Early Stage Development	£2,349	£1,718	£1,173	£1,687

Source: MHCLG data for period up to December 2016

Logic Model

Rationale

1.7 The rationale, implicitly, is one related to Endogenous Growth Theory, in which lagging regional economies are seen as catching up through investment in research, increased collaboration between universities and industry, leading to increased higher levels of knowledge-spillover, and resulting in increased innovation. A higher level of innovation then improves firm growth, positively affecting regional productivity, GVA and employment.

1.8 At a more basic level, the rationale relates to constraints in the supply of research facilities and infrastructure. The implication is that there is more demand for research facilities and infrastructure than the market is willing to supply - a market failure resulting from information asymmetries and path dependence.

Beneficiary Outcomes

1.9 The main beneficiaries are:

- SMEs seeking to conduct research leading to innovation, but currently constrained because of a lack of access to research facilities
- University research staff and post-graduate students who are able to use the new and improved research facilities.

1.10 In addition, knowledge produced in the process of R&I cannot be entirely appropriated by the knowledge-producing researcher/organisation and therefore spills over, affecting the production possibilities of other firms and actors located nearby. For this reason, the local economy more broadly might be expected to benefit from increased R&I conducted locally.

Intended Impacts

1.11 The range of intended economic impacts include:

- Increased innovation (both new-to-firm and new-to-market) within enterprises receiving support, leading to improved growth, especially in terms of employment
- Increased cooperation/collaboration between enterprise and university researchers, leading to increased and better use of research for the purpose of innovation (i.e. translation of research into marketable innovations)
- Record-keeping in relation to use of new infrastructure/facilities.

1.12 There is a premium on accurate record-keeping in terms of when businesses or researchers began to make use of the new infrastructure/facilities and collaborative research support; their level of innovation at this point in time; their level of R&D investment at this time; and their innovation-related behaviour such as degree of interaction and cooperation with HEIs at this point in time.

1.13 The gathering of this pre-treatment data is very important, so as to provide an accurate 'baseline'[32] against which to compare later on when these businesses have made use of the new infrastructure/facilities for some time, and also for the purpose of accurate matching to businesses not making use of the new facilities/infrastructure, should a matching-control group approach be useful.

1.14 A problem with facilities-related interventions, such as this one, is that there can be a number of intermediaries between the grant recipient and ultimate user-beneficiary. Where, for example, the grant recipient sells on the

[32] DG Regional Policy (2017) Evaluation of innovation activities: Guidance on methods and practices, European Commission: http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/eval2007/innovation_activities/inno_activities_guidance_en.pdf

rights to lease a new/improved facility to another organisation, the grant recipient may not have records on the beneficiaries that ultimately use it. It is therefore essential to emphasise the need to collect such information, and that this requirement be written into leases and other contracts, in order to ensure the information necessary to make the evaluation possible is collected.

Timing of Outcomes and Impacts

1.15 Access to new or improved R&I infrastructure/facilities can be expected to improve businesses' innovation behaviour over a relatively short time-period. This might include, but is not limited to, increases in the business' investment in R&D, and the no. of collaborations (especially with universities) engaged in. These impacts might become evident and recordable within 1-2 years of an investment, or even sooner.

1.16 The ultimate impact of changes in innovation behaviour on improved business performance (via increased innovation) can only be expected to occur over a much longer time-period, and may be difficult to capture within the timeframe of the 2014-20 ERDF evaluation. This is because innovation can take a long time to affect bottom-line performance, subject to the precise nature of the innovation undertaken, and assuming that the innovations produced are accepted by the market. The latter is an important consideration since most innovations fail.

1.17 Two administrative datasets of particular use for evaluating this type of intervention are the UK Innovation Survey (UKIS) and the Longitudinal Small Business Survey (LSBS). Both can be linked to the IDBR and contain information on, for example, whether a business is engaged in any innovation, and the type of cooperation engaged in by businesses seeking to innovate.

1.18 Where businesses indirectly benefiting from this ERDF intervention type are identified in the UKIS or LSBS, the level of innovation of businesses accessing the supported R&I facilities should be readily identifiable. However, it is questionable how many ERDF-supported businesses will be identifiable in these survey datasets and whether this will be sufficient for a robust statistical analysis. For both surveys the sample size is just 10k-15k and this likely means relatively few ERDF supported businesses will be identifiable within these survey datasets. Given that PA1 is only supporting around 0.1% of all SMEs in England the chances of sufficient coverage of the supported SMEs in these surveys is miniscule.

Measuring Gross Outputs and Outcomes

1.19 The core ERDF indicators for these interventions are:

- P1 Number of researchers working in improved research or innovation facilities

- P2 Public or commercial buildings built or renovated
- C001 Number of enterprises receiving support
- C002 Number of enterprises receiving grants
- C003 Number of enterprises receiving financial support other than grants
- C004 Number of enterprises receiving non-financial support
- C005 Number of new enterprises supported
- C006/07 Match funding
- C008 Employment increase in supported enterprises
- C025 Number of researchers working in improved research infrastructure facilities.

1.20 This information should be collected by grant recipients. The above-noted problem of grant recipients not necessarily being the organisation directly responsible for leasing or operating facilities, since these rights can be passed on to third parties, should be noted. It is imperative that grant recipients are made aware of their obligation to collect information related to these indicators, which will be needed anyway for the Summative Assessment.

Options for the Impact Assessment

1.21 The options for counterfactual impact evaluation (CIE) are not as straightforward for this intervention type as they are for some other intervention types in which there are direct beneficiaries. For this intervention type, businesses mostly (though, notably, not in every instance) benefit indirectly by, for example, moving to new facilities; or from improvements made to the facilities where they are presently located; or by accessing new/improved facilities located within a university. In this case, the support is in the form of the facilities used by businesses, and does not go directly to the business itself. In light of this, in this section we set out a number of options for CIE designed to take account of its indirect impact on businesses.

Comparing Earlier and Later Accessors

1.22 The fact that beneficiaries benefit indirectly under this intervention type creates a number of added problems for CIE in terms of additional sources of potential bias that cannot be controlled for in a straightforward way. Take the example of a new laboratory, or other type of building with better facilities, such as a new science park partly funded by the ERDF, to which businesses relocate. Here the selection bias associated with the decision to relocate must also be controlled for, in addition to controlling for the usual observables used as part of the matching criteria in a matched-control group

analysis. A straightforward matching on observables in the IDBR would not eliminate this additional selection bias associated with the decision to relocate to new facilities (and indeed the comparison group may have relocated to other facilities, but this would not be observable).

1.23 It is for this reason that the scoping study of the Local Growth Fund (LGF)[33] recommended that interventions of this type are evaluated by using later accessors of new/improved facilities as a control for the change in innovation behaviour resulting from access to the new/improved facilities of earlier accessors of them. Both groups choose to relocate to access facilities at the new/improved site, and so the selection bias associated with this choice is eliminated. Assuming that the businesses are relatively similar to each other on other criteria, performance on a series of measures can be compared through a survey in which those newly accessing the facilities are surveyed just prior accessing them, and compared against those that have already been accessing them for some time.

1.24 A similar approach recommended as part of the LGF is to use businesses which have sought access to the new facilities, or are on a waiting list, as controls for those that already have access. The logic here is again one of controlling for the selection bias associated with seeking access. Those seeking access have already shown interest in the same way as those already having access, removing this important self-selection bias, but have not yet benefitted from the new/improved facilities, meaning they can act as a control for comparison purposes. The resulting comparison would then be between these two groups of surveyed businesses, representing early and later accessors to facilities, rather than between accessors of the facilities overall and a matched-control group created in the IDBR.

1.25 Careful consideration needs to be given to the appropriate period of time over which impact might be expected. In terms of innovation behaviour - such as, for example, increased collaboration or research investment - the impact might be expected relatively soon after access to new facilities. Whereas the ultimate impact in terms of actual innovation (i.e. new products) might take much longer to transpire. This is especially true in relation to new-to-market innovation; new-to-firm innovation may have a somewhat shorter timeline, since it is partly imitative in nature.

1.26 Overall, the approach is a viable one, as evidenced by it being recommended as part of the scoping of the LGF. However, comparison between early and late accessors of a new facility assumes that the two groups identified are similar to each other in relation to characteristics other than both having selected to access the new/improved facilities. This may not necessarily be so; the fact that early accessors have sought early access might, for example, be indicative of a level of proactivity and managerial

[33] BEIS (2017) Evaluation of policies for local economic growth: scoping study, BEIS Research Paper No. 5.

motivation less present in later accessors, representing an important and unobservable difference between the two groups. In addition, there is a high rate of attrition among all enterprises, but perhaps especially among those trying to innovate, meaning that the group of early accessors that remains in existence at the point of the survey may not be representative of all early accessors to the facilities, since many will no longer exist. Nevertheless, the approach represents a useful means for a counterfactual comparison where standard methods do not allow for this, and one that takes account of the important selection bias associated with seeking to access to the new/improved facilities.

Matched Control-Group Analysis Using Administrative Datasets

1.27 For intervention types in which there are direct beneficiaries and the impact sought is on the businesses' performance in terms of employment or turnover growth, a relatively straightforward approach based on PSM has been recommended, using the IDBR as a spine to which other relevant datasets are linked. The same type of approach may be possible for this intervention type, by linking the IDBR to the UKIS and LSBS, and creating matched-control groups for comparison using PSM.

1.28 However, because of the relatively small sample size of both the UKIS and LSBS, it is likely that there would be an insufficient number of indirect beneficiary businesses identified in these datasets. In addition, their small sample sizes would greatly restrict the pool of businesses that could be used to create a matched-control group, possibly leading to poor-quality matching, thereby compromising the robustness of the analysis. This 'standard' approach to CIE is therefore less useful for this particular intervention, though its use should not be dismissed out-of-hand.

1.29 For example, where the ultimate aim is to leverage increased R&D spend by businesses accessing new/improved facilities, data-linking from the IDBR to the Business Enterprise R&D (BERD) dataset, for the purpose of creating matched control-groups, is possible. BERD also provides data on the number of employees engaged in research by enterprise, which is also useful for this intervention type. However, as is also true of the UKIS and the LSBS, the BERD dataset suffers from a small sample size, in this case of just 5,000 enterprises, greatly diminishing its usefulness for the CIE of this intervention type.

1.30 In sum, there is limited scope to use a matched-control group approach using data-linking and PSM for this intervention type for the reasons outlined above. Where a matched-control group analysis could add

value is in identifying the ultimate effect of changes in innovation behaviour on business performance, since this would not require linking to datasets with limited sample size, discussed above. The indicator of interest in this case is employment change (indicator C008: Employment increase in supported enterprises), which is available in the IDBR.

1.31 It is therefore recommended that a matched-control group approach is limited to an analysis of employment change in directly/indirectly supported businesses, as a check on the ultimate impact on business performance from induced changes in innovation behaviour, which are to be evaluated using other means.

Beneficiary Surveys

1.32 A further evaluation option is to use beneficiary surveys, which can be particularly useful in identifying the changes in innovation behaviour that are the main impact intended by this intervention type. Results from beneficiary surveys can be compared to various variables in the UKIS and/or LSBS as a whole (or relevant sub-sets), without the creation of a matched-control group. For example, a specific result indicator associated with this intervention type is 'proportion of SMEs that are innovation active'. In both the UKIS and LSBS there are questions that ask SMEs whether they have brought any new innovations to market over the past two-year period. By issuing a beneficiary survey and asking exactly the same questions as are in the UKIS/LSBS, these datasets, as a whole, become the control for the 'treated' businesses against which to compare.

1.33 However, there may be some contamination in terms of the LSBS/UKIS datasets containing some businesses that are also part of the 'treated' group. Nevertheless, given that both surveys have a sample size of approximately just 15,000 businesses from across the UK, this contamination is likely to be minimal and is unlikely to greatly affect the robustness of the resulting comparison.

1.34 Of the two datasets, the Longitudinal Small Business Survey is probably preferable as the UKIS does not survey businesses with fewer than 10 employees (microbusinesses), thereby missing out an important section of the SME population.

1.35 Overall, the use of beneficiary surveys is a very viable approach, but efforts must be taken to ensure there is a comparative element. Such a comparison can be achieved by comparing against a government survey in the way described above. Where a suitable comparator group can be established in this way, by comparison against a government survey, or by comparison against those applying for but not receiving support, Difference-in-Difference (DID) can be used to provide an estimate of impact controlling for what would have happened anyway.

Other Impact Assessment Options

Regression Discontinuity Design (RDD)

1.36 For this intervention type, RDD may be applicable where a specific scoring mechanism has been used to decide which businesses will gain access to the new or improved facilities or infrastructure. If the scoring mechanism has a sharp cut-off point, those just above and just below the cut-off point can be compared on relevant indicators using a mix of monitoring data and surveys.

1.37 The devolved approach to the delivery of ERDF projects in England means that common approaches to the selection of beneficiary SMEs are unlikely to exist across these projects. It is currently unclear, however, whether specific scoring mechanisms have been used by some projects and how common they are in practice. This is something that requires further investigation by the appointed national evaluators and the completion of the summative assessments plans by grant recipients.

1.38 In sum, because of the lack of a common approach to identifying businesses that will benefit from the intervention, RDD is an approach that is more applicable at the level of individual projects, to be used as part of summative assessments.

Site Comparisons

1.39 A further counterfactual approach, albeit with a relatively low-level of robustness, might be to compare businesses on a site in which there is now access to improved R&I facilities following ERDF support, with a comparable site in which there has been no improvement to facilities. In the example of a science park used above, two similar parks, one having been improved and one not, might be compared.

1.40 However, great care and attention must be given to whether the businesses on the two sites are genuinely comparable. The more specialist the facilities which are supported the less likely suitable comparators could be identified. As there is no matching involved in such an approach, any variation might simply be the result of systematic observable or unobservable differences between the businesses – hence the lower level of robustness.

1.41 In sum, this approach can be a useful one, but a danger with it is the possibility to cherry pick the comparator so as to provide positive findings. If

such an approach is to be implemented, comparison and contrast against and between a range of comparable sites, both improved unimproved, would be better. This would highlight any common positive impacts that can be identified across improved sites in comparison to unimproved sites. However, a broad comparison of that type would make it a very effortful approach.

Survey Based Before-and-After Comparisons

1.42 If a site has existing businesses on it, and is then improved, a simple before and after comparison using a survey with relevant questions can ascertain the change in innovative behaviour that may have resulted to the surveyed businesses from the improved facilities. In this case, businesses are asked their perceptions as to the role of the improved facilities in assisting them to innovate and, for example, the proportion of businesses innovating prior to the improvements is compared to the proportion innovating afterwards.

1.43 This is a highly viable approach, but does not control for what might have happened anyway in terms of changes to the surveyed businesses' innovation behaviour and performance. However, it is an approach that is in-keeping with a Theory of Change methodology, which seeks to attribute by identifying changes in beneficiary behaviour.

Theory-of-Change Approach Using Detailed Project Case-Studies

1.44 In the case of this ERDF intervention type, the infrastructural spend is quite specific in nature, relating to facilities that enable research and innovation specifically. This contrasts with, for example, investment in a new road, the benefits from which can be highly diffuse and non-specific. In this case then, the expected outcomes, such as increased proportion of businesses able to innovate, may be quite explicitly linked to the new infrastructure. However, this requires bespoke survey work, and perhaps even detailed case studies employing qualitative interview techniques. For this reason, alongside the fact it seeks to bring about a behavioural change (in relation to innovation, or activities engaged in that enable innovation), this intervention type is perhaps may be more conducive to a 'theory of change' evaluation strategy in which attribution is made through qualitative and case-study approaches, rather than through PSM and other CIEs.

1.45 To achieve a specific attribution to the new or improved infrastructure/facilities it is recommended to conduct a number of case studies for a representative group of interventions of this type, in which in-depth interviews and process tracing are used to link specific innovations to the new facilities. The objective is to show, if it is true, that these innovations could not have happened had these facilities not been present - or, at least, that they could not have happened at this time, or would have incurred much

greater costs for the businesses doing the innovating, or would have been rendered much more risky in some way or another.

1.46 By directly tracing through the causal chain by which the new infrastructure/facilities allows the innovation to occur, the role of other factors, including other interventions that may have contributed to the infrastructure spend, can be controlled for, so as to develop a view of the specific contribution of the ERDF. Where such tracing has already been conducted as part of Summative Assessments, it need not be duplicated by the National Evaluation. However, where it is absent from the project-level evaluation, it may need to be conducted as part of the National Evaluation. It is important that any case studies used for this purpose represent an accurate cross-section of the different types of facilities invested in, so as to achieve an acceptable degree of representativeness and therefore generalisability of findings.

Use of the Project Summative Assessments

1.47 Where impact evaluation is not feasible, key questions about impact will need to be explored through a variety of supplementary methods. Whilst not enabling the attribution of any quantitative impacts, they will provide valuable qualitative insights into whether those that deliver, experience and benefit from the intervention believe them to have had any impact.

1.48 The summative assessments could potentially be valuable as part of a more in-depth qualitative and case study approach as part of the national evaluation, allowing an element of attribution of any change in innovation behaviour to specific new or improved infrastructure/facilities.

1.49 The National Evaluation can make use of the Summative Assessments in a number of ways:

- Summative Assessments can conduct in-depth case study research that traces through the processes by which particular innovations were achieved, or collaborations facilitated, and the specific contribution that ERDF-funded new or improved R&I infrastructure/facilities played in their creation. The role of the National Evaluation would therefore be to synthesise these in-depth case studies, and to supplement them in the event they are not sufficiently representative of the different types of R&I infrastructure investment, so as to make an overall assessment of the contribution of the ERDF across interventions of this type.
- The Summative Assessment can provide the qualitative, contextual nuance related to processual aspects of how the new R&I infrastructure/facilities were delivered, accessed, and any problems encountered which may have diminished their value.
- Individual projects may conduct bespoke surveys, such as of the occupants/users of a particular new or improved facility. Where multiple projects have done so in their Summative Assessment this will

provide the opportunity for comparison and contrast across cases, acting as a control of sorts - or, at least, allowing for comparison and judgements to be made as to why one development may have been more successful than another. Causal assertions can then be triangulated through more in-depth research, including using matched-control groups, where this is possible.

Assessing Other Effects

Substitution Effects

1.50 The ultimate purpose of improved R&I facilities, and the underlying logic of this intervention type, is to leverage increased investment in R&D. This is expected to lead to increased innovation, which in turn drives firm growth and productivity, benefitting the local and national economy – albeit, as noted earlier, the period over which such innovation-related economic impact takes place can be very long, if it even transpires at all. However, the amount of R&D will not increase if businesses use the subsidised new/improved facilities to replace those they would have invested in or hired anyway, thereby maintaining their R&D spend at the level it was beforehand, or even reducing it to reflect the resulting cost saving. The intended effect is therefore one of leveraging additional R&D investment that would not have happened in the absence of ERDF support, whereas here a substitutive effect would instead be occurring.

1.51 Substitution can be assessed by comparing businesses' R&D investment prior to accessing the new/improved facilities, and subsequent to their accessing them. This might be done by linking to the Longitudinal Small Business Survey (LSBS) and the UK Innovation Survey (UKIS), or to the Business Enterprise Research & Development (BERD) dataset - although as already noted each has a small sample size, and the latter two are skewed towards larger businesses, meaning an insufficient number of beneficiaries for a meaningful analysis are identifiable. Substitution may also be assessed through a beneficiary survey conducted at a point just before the new/improved R&I facilities are accessed, and then at a later point sometime after they have been accessed, with a sufficient amount of time between the two to allow the business to ramp up its R&D to reflect the support for its research efforts.

1.52 If ERDF support has had the desired effect an R&D multiplier, rather than a substitutive effect, should be identifiable. For example, where businesses accessing the new facilities invested £78m in R&D prior to accessing the facilities, but then invest £93.6m subsequent to accessing them, increased R&D spend has been leveraged. If the new/improved facilities cost £80m to establish then, if the increased R&D spend is continued for several years, a positive cost-benefit ratio will occur, even

without taking into account the ultimate impact of any resulting innovation on business performance.

Product and Factor Market Effects

1.53 Where a new product is only new to the firm introducing it, it may substitute for other products already available on the market, implying no overall aggregate effect on the market, or on local/national economic development. However, where a new product is new to the market, it can provide consumers or intermediary producers with an alternative, new product that serves additional purposes to those previously available. In this case there is less likely to be a substitution effect.

Spillover Effects

1.54 Using R&I infrastructure to conduct R&D results in the creation of knowledge. Knowledge spills over and not only affects the innovation prospects of the business investing in its creation, but also those of other businesses, especially those located within the local economy. By only evaluating the impact on those directly accessing the new/improved R&I infrastructure, only part of the total impact of its use is captured.

1.55 A standard way to look for a spillover effect would be to include in a regression model a covariate for the R&D investment of other businesses located within a certain distance from a focal business, in addition to its own R&D investment. If such an analysis is done for businesses not accessing the new/improved facilities, and the covariate represents the increased R&D investment of businesses located nearby which have benefited from the new/improved facilities, and if this covariate is statistically significant, then a spillover effect may be present. In this case, increased R&D by directly benefitting businesses will also affect the innovation prospects of local businesses that have not directly benefited from the new/improved facilities. Such businesses may also increase their R&D spend in order to improve their absorptive capacity and ability to take advantage of the increased knowledge spillover from direct beneficiaries. Indeed, such a positive feedback effect resulting from investment in research is exactly the logic by which regional economic development occurs under Endogenous Growth Theory.

1.56 A further indirect impact may be to enhance the attractiveness of the local economy to inward investors. Inward investment is often determined by the attractiveness of the local supply chain to the investing business. Enhancements to the innovation and productivity of benefiting businesses may therefore enhance the economic attractiveness of the local economy in this way.

1.57 Spillover effects are probably something that individual project-level Summative Assessments should be looking to identify, since their nature (or

even whether they are present at all) is likely to be idiosyncratic to the nature of the support provided and the research undertaken using it. For very specific types of research undertaken using new/improved facilities, there may be no other businesses operating locally within the same field/sector, to which knowledge could spill over. The national evaluation should therefore focus on the direct effect on businesses receiving support.

Controlling for Other Factors

1.58 R&I infrastructure investments can often be problematic for evaluation because of difficulties related to credibly attributing any improved performance to the improved facilities. There are additional potential selection biases, and it can be difficult to draw a clear distinction between businesses accessing and not accessing new/improved facilities. Also, knowledge from research tends to spillover and affects not only those directly producing it. Moreover, interventions providing new or improved infrastructure/facilities are often funded from numerous different sources (including the Higher Education Investment Fund and the Local Growth Fund), because infrastructure often requires large amounts of investment, and this can further confound attribution of the additionality.

Monitoring Requirements

1.59 The following monitoring information for SME beneficiaries are required to enable the evaluation of this intervention type, requiring that they be collected at the level of individual projects:

- The CRN of businesses accessing new or improved infrastructure/facilities
- Company name and address, including postcode
- Business sector
- Business start-date/age
- Business data prior to accessing facilities or support covering employment and turnover
- Information on R&D spend, innovation activity prior to accessing facilities or support including engagement in innovation, employees engaged in R&D, number of collaborations prior to accessing new facilities
- Nature of facilities/infrastructure and related services accessed, a measure of intensity of support and the duration of the support.
- Contact details and business characteristics of unsuccessful SME applicants.

1.60 An issue that needs to be considered is that these interventions will have a mix of direct and indirect beneficiaries. The approach described here is likely to require information for both groups of beneficiaries, which will require a change of approach to projects with indirect beneficiaries.

1.61 From the above, the ‘intensity’ of access is very important data, but may be that which is most difficult to collect. There is a clear and obvious difference between a business having one short session in a new laboratory, or some other facility in which tests can be conducted, compared to another business that has constant access over a long time-period. However, this is again something which may be more easily documented through the depth case study approach employing process tracing.

Assessment of the Suitability of Impact Approaches

Overview

1.62 For the evaluation of this intervention type it is recommended to triangulate between a number of evaluation approaches, both counterfactual and non-counterfactual, in order to examine the extent to which the evidence from each corroborates each other, thereby building a strong evidence base with regards to overall impact of different types. The proposal below therefore represents a set of approaches which could be implemented in isolation, but for which the full implementation of these options, leading to triangulation between their separate findings, would increase robustness:

- Identification of any beneficiary businesses which may be present in the LSBS, UKIS and/or BERD datasets, via data-linking from the IDBR. An assessment is then made as to whether there are a sufficient number of these businesses, and that they are sufficiently representative of all beneficiaries, to enable a matched-control group analysis. However, the small sample size of these datasets is likely to mean an insufficient number of beneficiaries are identifiable to make the analysis worthwhile.
- A matched-control group approach focused explicitly on the ultimate impact from changes in innovation behaviour on business performance in terms of employment growth. This can be done in the IDBR without the need to link to other datasets with small sample sizes, so is more viable as an approach. However, it should be noted that any effect on business performance from innovation takes a long time to transpire, and is not a straightforward one.
- A survey-based approach in which either later accessors of new/improved facilities or infrastructure, or those applying for/on a waiting list to access the new facilities, act as a control for those already using the facilities. A comparison between the two groups on important measures such as R&D investment, number of researchers, or level of innovation, is then made.
- A survey-based approach which compares performance of the beneficiary businesses both before and after receipt of support, as well as benchmarking against national innovation surveys such as the LSBS (the whole survey dataset is then used as a comparator). The

large number of SMEs which receive support means there is merit in the national evaluation undertaking its own specific surveys, rather than accessing this information through the summative assessments.

- Detailed case studies which trace through the process by which new innovations/research collaborations were enabled by the new/improved facilities and infrastructure, and increased R&D spend leveraged. A sufficient number of case studies need to be conducted to ensure that they are representative of the different types of intervention that fall under this type. Comparison and contrast between case studies should be undertaken to establish the causal effects stemming from varying types of infrastructure investment and support. Where these case studies have been conducted as part of Summative Assessments they need not be duplicated. However, the National Evaluation may need to supplement with additional case studies where these are not sufficiently representative of the different interventions that fall under this type, or are not of the requisite quality.

1.63 Of these approaches, only the first and second (matched-control group analyses) would meet the minimum SMS level 3 robustness criteria, and it is the one which is most risky in terms of its feasibility (i.e. it may not be feasible in practice). From the other options, the closest to this minimum standard is the third listed, in which later accessors of a new facility/infrastructure, or those on a waiting list to access the new facilities, control for earlier accessors. However, the approach may not be feasible in practice and the two groups could be systematically different in some way. For example, early accessors might be systematically more innovative as reflected in their eagerness to access the new facilities, meaning the two groups of businesses are inherently different.

1.64 Where a comparison group can be established such as by comparison against an existing government survey - but not one representing a matched control group - a counterfactual-type approach can still be taken by employing Difference-in-Differences estimation. However, because such an approach does not employ a matched-control group, and instead simply deducts the same difference in performance prior to the intervention in the control group from any difference at the end, systematic biases could still affect the estimation of impact. Where such an approach is used, consideration should be given to whether the two groups are genuinely comparable.

1.65 While each of the other evaluation options do not meet this minimum counterfactual robustness criteria (SMS level 3), or are simply not counterfactual in any way, it is recommended that they are nevertheless conducted alongside one or both of the above approaches, so as to build up further evidence of impact of different types, with triangulation between the different listed approaches compensating to a degree for the absence of a fully robust counterfactual.

1.66 In terms of the recommended additional monitoring information, it will be necessary for a wider range of data to be collected by grant recipients including information for indirect beneficiaries which occupy facilities.

1.67 In summary, it is recommended to triangulate between a number of evaluation approaches, both counterfactual and non-counterfactual, in order to examine the extent to which the evidence from each corroborates each other, thereby building a strong evidence base with regards to overall impact of different types. There is an important place for a beneficiary survey to supplement this evidence, as well as project case studies and summative evidence. Steps will need to be taken to enhance project monitoring information gathered by grant recipients.

Table 1.2 Overview of Impact Assessment Methods

Methods:	Comment
Counterfactual Impact Methods	Limited potential viability in relation to identifying changes in innovation behaviour, strong potential for identifying ultimate impact on business performance in terms of employment growth, with the caveat that this would take some time to transpire. SMS = 3
Beneficiary Surveys	This could come in several forms, including comparing earlier and later accessors of a site; before-and-after comparison of accessors; beneficiary survey and comparison against UKIS/LSBS. SMS = ½
Site comparisons	Comparing an intervened in site with a range of comparator sites, both those also intervened in and those not. SMS = ½
Detailed Case Studies	Process tracing through qualitative and case-study means to attribute specific changes in innovation behaviour to the intervention. SMS = 0. A Theory-of-Change rather than a CIE approach.
Overall Assessment	A mixed methods approach should be employed that draws on both CIE and process tracing of changes to innovation behaviour identified through detailed case studies.

Monitoring

1.68 Impact assessment as part of the national evaluation will require more extensive monitoring information to be collected consistently by grant recipients and delivery bodies.

2. Advice, Guidance and Finance for Start-ups

Introduction

2.1 The interventions cover:

- Business start-up advice, guidance and mentoring (including a spatial focus on deprived communities) (SO3.1)
- Start-up and early stage finance (SO3.1).

2.2 The interventions are likely to be focused on potential entrepreneurs, new businesses and existing micro business beneficiaries. The projects may have a targeted focus spatially or on disadvantaged groups in some instances, in particular where activity is focused on communities with low levels of enterprise and entrepreneurialism.

2.3 Whilst early stage finance can be placed in a number of the intervention groupings, it is included here due to the relatively young age of many of the businesses which receive support and hence the evaluation issues raised around the measurement of the counterfactual (and the absence of many young businesses from the IDBR).

2.4 SO3.1 also investment in incubation and premises targeted at start-ups and small businesses. This type of intervention is considered under the land and business premises intervention type.

Progress to Date

2.5 By the end of December 2016, around 88 projects had been approved with a total value of £278m and an average ERDF grant of £3.16m. A number of the larger projects are focused on early stage finance projects. There are projects seeking around £18m in ERDF in the project pipeline.

Table 2.1 ERDF Projects and Spend up to December 2016

Number of Projects	
Approved	88
Being Appraised	6
Early Stage Development	6
Total ERDF Value (000s)	
Approved	£278,169
Being Appraised	£10,097
Early Stage Development	£8,355

Average Project Value (000s)	
Approved	£3,161
Being Appraised	£1,683
Early Stage Development	£1,393

Source: MHCLG data for period up to December 2016

Logic Model

Rationale

2.6 The rationale for this type of intervention is based on a market failure in the provision of business advice and support for, and a constraint in the financing of, start-up businesses, or recently-started businesses. It implies that more individuals would start a new business were advice and financing more widely available. An assumption is that an increase in business formation in lagging regions will result in their economic development.

2.7 As noted by NESTA in their 2013 report on the impact and effectiveness of entrepreneurship policy[34], there is a widespread lack of awareness on behalf of business owners of the benefits of external business advice. Specialist advice tailored to the individual business can assist in addressing difficult and strategic questions, unlocking business growth.

Beneficiary Outcomes

2.8 The main beneficiaries of this intervention type are entrepreneurs who wish to start their own business, and entrepreneurs who have recently started a business which is still in its infancy. Both groups benefit directly from the intervention, through direct provision of advice and/or financing to them.

Intended Impacts

2.9 The range of intended economic impacts include:

- An increased level of entrepreneurship, leading to increased competition and enhanced competitiveness of local economies, higher levels of productivity growth, and improved employment prospects
- Increased innovation among new, young enterprises, leading to higher levels of productivity and business growth
- A higher level of entrepreneurial readiness among potential entrepreneurs.

[34] Rigby, J. & Ramlogan, R., The impact and effectiveness of entrepreneurship policy, NESTA, working paper no. 13/01.

Timing of Outcomes and Impacts

2.10 In a study to evaluate the impact of business advice on new businesses in Denmark, cited by the European Commission as an example of best practice in relation to CIE[35], Rotger and Gørtz[36] show that basic advice enhances the two-yea year survival rate of new firms by 8%, the three-year survival rate by 6%, and the four-year survival rate by 5%. This provides a helpful indication of the type of timeframe in which impact can be expected.

2.11 Rotger and Gørtz also found that business advice to new businesses improved job creation and sales growth after about three years, with the effect diminishing thereafter. Any improvements to the growth performance of new SMEs from ERDF business advice can therefore be expected to occur over a similar time-period.

2.12 The upshot is that the impact of business support to potential entrepreneurs, start-up and very small existing businesses can take time to materialise. Whilst the regulatory and institutional context may be different between the UK and Denmark, this finding is nevertheless likely to hold for England. For many of the type of entrepreneurs and start-up businesses that seek assistance through the ERDF backed support, it takes time to research, set-up and implement their business plans and then for this to influence marketing, securing contracts and growing the workforce and other forms of investment.

Record-Keeping

2.13 CIE of this intervention type requires the keeping of exact records in terms of when a new business is formed by those delivering support. Identifying when a new business forms through administrative datasets is very problematic, and they should not be relied upon for this purpose. Support given to potential entrepreneurs needs to be followed up on to see if the entrepreneur followed through on any stated intention to start a business, following business advice. Detailed records should be kept of the financing of new businesses, including when the finance was supplied, its extent and its intended purpose.

Measuring Gross Outputs and Outcomes

2.14 The core output indicators for SO3.1 are set out below – these will also be monitored by the projects and reported to MHCLG on an on-going basis:

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[35] European Commission, What are counterfactual impact evaluations teaching us about enterprise and innovation support? DG Regional Policy, 2012: http://ec.europa.eu/regional_policy/sources/docgener/focus/2012_02_counterfactual.pdf

[36] Rotger, G. P. & Gørtz, M, Evaluating the effect of soft business support to entrepreneurs in North Jutland, Danish Institute of Governmental Research, 2009: http://startvaekst.dk/file/61893/evaluering-nin.pdf

- Number of enterprises receiving support including advice, grants and repayable finance (C2)
- Private investment matching public support to enterprises (C6 and C7)
- Employment increase in supported enterprises (C8)
- Number of enterprises supported to introduce new to the market products (C28)
- Public or commercial buildings built or renovated (P2) – as noted above, this is evaluated under the land and property interventions
- Number of potential entrepreneurs assisted to be enterprise ready (P11).

2.15 The only additional indicator that may merit inclusion is business survival in order to allow the calculation of 12, 24 and possibly 36 month rates. However, it can be difficult and time consuming for grant recipients to capture this data and there are often various measurement issues which can undermine its usefulness in practice. For these reasons we do not recommend adding this indicator.

2.16 The manner in which the intended beneficiary outcomes can be measured is set out below for the main types of beneficiaries/support:

- Improved confidence, awareness, key business skills and knowledge, and enhanced networks. This may result in progress of the beneficiary starting up a business, the actual set of a business or some other positive labour market outcome. The ultimate beneficiary outcomes may be employment and additional wealth creation in these businesses, as well as the introduction of new products and services.
- Potential entrepreneurs. The qualitative intermediate outcomes will require surveys to be undertaken with the beneficiaries post support but also ideally pre-support to establish a good baseline against which progress can be assessed. The set-up of businesses, changes in business performance and long term survival should be tracked by grant recipients over time, and potentially supplemented by surveys. Likewise, other changes in labour market position of the beneficiaries can be tracked through post support monitoring or surveys.
- Existing small businesses. The intermediate benefits include improved access to finance, introduction of new goods or services and access to new markets. These are mostly covered by the core ERDF indicators. Whilst the growth in employment which this can generate is also a core indicator, other relevant outcomes such as the growth in turnover and improved survival would need to be collected either through beneficiary monitoring or surveying.

Options for the Impact Assessment

Observing Effects in Administrative Records

2.17 As things stand currently, it can be highly problematic identifying the newest and small established businesses in administrative datasets such as the IDBR. This situation may shortly change as the Office for National Statistics (ONS) is currently creating a comprehensive Statistical Business Register to replace the IDBR that captures all businesses, including those below the VAT threshold and non-PAYE businesses.

2.18 However, while this new dataset is scheduled to come online in mid-2018, it is not clear whether this deadline will be met, or, even if it is, whether the register will be accessible to the national evaluators for the ERDF programme. The evaluation has therefore been scoped on the basis that the IDBR will continue to be the primary dataset for identifying SMEs and their performance. The national evaluators will however need to monitor the progress with the development of the new dataset and the potential to use it in the ERDF evaluation.

2.19 In this case, few of the businesses supported with advice as part of this intervention type are likely to be identifiable in the IDBR. It can take newly-created businesses many years to reach the VAT threshold and become part of the IDBR. Businesses that quickly grow and employ people will become part of the IDBR sooner, however only those that survive and grow will do so, hence biasing any sample taken from this dataset.

2.20 For these reasons, any counterfactual approach set out for this intervention type is likely to require bespoke methods, rather than a more standard matched-control group approach, as recommended for business support to established SMEs below. We consider these bespoke CIE approaches below.

Regression Discontinuity Design

2.21 Where there is a clear application process by which potential new start-ups, or very early-stage businesses, are selected to receive business advice, an RDD approach may be possible. However, a scoring mechanism in which there is a clear and sharp cut-off point determining which businesses/individuals are supported must have been used for this method to be feasible. In this case, the approach compares those businesses/individuals just above and below this cut off point, which are deemed to be very similar, with those just below the cut off acting as a control for those just above.

2.22 However, for this technique to be viable there is the need for a structured application process with eligibility criteria considered by those delivering support, as well as a clearly defined scoring mechanism. Given the devolved approach to the delivery of ERDF, it is doubtful a consistent

approach will exist, with a scoring mechanism often not being required as a means of selection.

2.23 However, one type of intervention where these criteria may be common place is for business finance projects. The use of an internet based application process with credit scoring as the main mechanism for reaching lending decision (although the approach to equity based investments will usually be different from this).

Use of Unsuccessful Applicants as a Control Group

2.24 Where there is an application procedure, but not an explicit scoring mechanism for deciding which businesses do and do not receive support, a counterfactual approach may be possible, albeit one that is not as robust as RDD. This can be achieved by issuing surveys or monitoring data to assess the performance and survival of supported businesses, as well as surveys of unsupported businesses that applied for support but did not receive it. In this case, the selection bias associated with applying for support is eliminated, since both groups did so. Nevertheless, there could still be systematic differences between the two groups, since there is no matching to eliminate this, thereby reducing the robustness of the analysis.

2.25 However, checks could be undertaken to understand how comparable the two groups are in terms of, for example, the qualifications of the business owner, the type of business model, the sector in which the business is started etc. Rudimentary checks for similarity of this sort might increase the robustness of the analysis slightly, but it still does not constitute a SMS level 3. Where checks show the two groups to be relatively comparable a Difference-in-Differences (DID) estimation can be used to further eliminate the difference between the two groups, isolating the effect from support given.

2.26 A further potential shortcoming concerns further bias associated with the response rate for the surveys of unsuccessful applicants. Response rates are usually low as the potential entrepreneurs and existing businesses do not have a strong incentive to participate and may even be disgruntled by not receiving the support.

Comparisons to National Surveys

2.27 Some of the Specific Objectives that apply to this intervention type, such as SO3.1, relate to increasing levels of entrepreneurship in areas of low levels of enterprise, and amongst under-represented groups. In this respect, a survey which may at least provide a benchmark against which to compare is the Global Entrepreneurship Monitor (GEM). It could be used to benchmark levels of entrepreneurship in different areas, as well as the diversity of the individuals starting new businesses in them, although this is not available below a regional level. It is also possible to use ONS Business

Demography data or commercial business datasets such as DueDil, although these are focused on businesses rather than the working age population resident.

2.28 As the Specific Objectives may also encourage greater innovation and improved access to finance amongst new and smaller businesses the Longitudinal Small Business Survey (LSBS) may be a useful data source. It includes a variety of questions on finance and a smaller number on innovation. It will probably not allow for a matched-control group analysis due to its sample size, as well as being biased towards more established businesses (containing few very new businesses). However, there may be a sufficient number at least to provide a benchmark for comparison purposes. Using a survey-based approach in which the same questions are asked of beneficiary business are asked in the LSBS may have some merit.

Theory of Planned Behaviour

2.29 Theory of Planned Behaviour (TPB) is a theory of intention that has been used to understand the factors that influence potential entrepreneurs to follow through (or not follow through) on their stated intention to start a new business. It is therefore highly relevant to this intervention type, in which one of the core output measures relates to potential entrepreneurs assisted to become enterprise ready.

2.30 A simplified form of analysis could be used as TPB has quite a high threshold in terms of the data required. Strictly speaking, the central focus of TPB is the explanation of how intentions (such as that to start a business) emerge, with the assumption that intention is the immediate antecedent of action (together with perceived behavioural control). Whereas a more simplified approach, as described below, might focus mostly on the intention-action relation, which is only one part of TPB.

2.31 At a very basic level, TPB asks potential entrepreneurs what gestation activities they have undertaken in relation to a stated intention to start a business. These might include factors such as 1) developed a business plan (written or unwritten), 2) developed a product or service, 3) planned marketing efforts, 4) talked with potential customers, 5) collected information about competitors, 6) produced financial projections, 7) approached financial institutions or other people for funds, 8) acquired equipment, supplies, premises or other concrete things, and 9) dealt with administrative issues related to starting a business. TPB then seeks to uncover the relationship between these stated intentions, gestation activities and other actions, and the ultimate outcome (i.e. whether a business is actually started).

2.32 Under a simplified TPB-based approach, a survey of the number of gestation activities conducted before, and then sometime after, business advice has been received might be used to assess the change in entrepreneurial readiness that results from the advice provided. Where

advice is provided to some potential entrepreneurs and not others, a simple record-keeping of the proportion of potential entrepreneurs that follow through on their intention to start a business, compared to those that do not, could be kept for both groups, and a simple comparison carried out.

2.33 A full-scale TPB analysis of the sort carried out by Kautonen et al.[37] should not be ruled out for this intervention type as it would provide a high degree of robustness even where standard CIE methods are not possible for the reasons outlined previously. However, it is very data-intensive and can be complicated to implement. The simplified approach described above might therefore be more realistic.

2.34 A similar stream of research to TPB is that on 'implementation intentions'(II). The concept first featured in the work of the psychologist Peter Gollwitzer[38], who showed that thinking through simple plans can have a strong effect on whether the intended outcome is achieved or not. Therefore, simply prompting potential entrepreneurs to think through their plans, as in some of the interventions under this type, could have an effect on whether they are realised or not. While not making explicit reference to II theory, the European Commission's report on the impact of entrepreneurship programmes in higher education makes reference to changes in entrepreneurial intentions that result from education, essentially adopting an II perspective in all but name.[39]

2.35 A simplified TPB or an II approach would be one way to measure the effect of interventions to support potential entrepreneurs to become enterprise ready. However, it would require those delivering support to adopt quite a specific approach to its provision, essentially adopting quasi-experimental or random methods at the level of the individual project, and to keep detailed records on outcomes. It would be necessary to have a control group of individuals who want the support but do not receive it, against which to compare. This may not be very feasible.

Use of Summative Assessments

2.36 Where impact evaluation is not feasible, key questions about impact will need to be explored through a variety of supplementary methods. Whilst not enabling the attribution of any quantitative impacts, they will provide valuable qualitative insights into whether those that deliver, experience and benefit from the intervention believe them to have had any impact.

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[37] Kautonen, T. & van Gelderen, M. & Fink, M. (2015) Robustness of the Theory of Planned Behavior in Predicting Entrepreneurial Intentions and Actions. Entrepreneurship, Theory and Practice 39 (3), 655-674: http://onlinelibrary.wiley.com/doi/10.1111/etap.12056/abstract

[38] Gollwitzer, P. M (1999) Implementation intentions: Strong effects of simple plans, American Psychologist 54, 493-503.

[39] European Commission, Effects and impact of entrepreneurship programmes on in higher education, 2012, Brussels, DG Enterprise & Innovation, European Commission.

2.37 The summative assessments can be used to explore the theory of change amongst the projects, the approaches which have been adopted by them and the progress made, as well as more detailed review of any which have adopted robust counterfactual approaches. In addition, they can usefully draw on for the following purposes:

- To understand the beneficiary selection process and possible use of a scoring mechanism to enable RDD
- To understand the process by which support is delivered, and whether this is conducive to monitoring the number of activities undertaken by an individual to start a business before and after advice has been provided, and to monitor whether a business has actually been started, so as to facilitate a simplified Theory of Planned Behaviour analysis.

Assessing Other Effects

Displacement

2.38 An issue with this intervention type, as with many others, is its potential to bring about displacement in local economies, leading to a negative net effect. Firm formation is highly positively correlated with firm deformation, which means that, by increasing the rate of new-business formation, the rate of existing-businesses that deform is very likely to increase too. The question is whether the newly-formed firms are stronger and more productive than the existing firms pushed out of the business stock by them, in which case the net effect for the economy is positive; or whether, as has often been the case in the past, interventions to support individuals to establish businesses result in the creation of many poor quality, low-survivability businesses in those sectors with the lowest entry barriers.

2.39 To take account of this displacement-related issue, it is essential that deformation of businesses is monitored. One approach might be to identify businesses which are likely competitors of a supported business and to use a qualitative or survey-based approach to understand the effect of the new business on the demand levels experienced by other established businesses in the local economy. However, this is a very resource intensive approach and for this reasons can probably not be justified.

2.40 Other possible approaches include:

- Using beneficiary surveys to gather information on the products and services of these businesses and the geographical pattern of their current or target markets. This allows for a very approximate estimate of the potential for short term displacement amongst local businesses.
- Comparing the gross and net business start-up rates and existing business density rates by sector and location to those of the beneficiaries (both new start-ups and existing small businesses).

Whilst this might indicate whether the supported businesses are located in high density sectors, it would in practice provide limited insight into potential displacement in its own right.

Factor Market Effects

2.41 Where newly or recently started businesses supply inputs in the form of intermediate goods or services used as factors by other businesses, increased competition, leading to reduced factor costs, can increase productivity broadly across the local economy.

Spillovers

2.42 Individuals creating new businesses are testing out new ideas, including new products, on the market. By doing so, they provide a signal to others as to the extent of the market for particular goods and services, potentially leading to an improved allocation of entrepreneurship to those activities/sectors in which the greatest demand and profits exist. This signalling effect may result in increased entrepreneurship in sectors in which the supply of goods and services is currently constrained and reduced entrepreneurship where there is an over-supply.

2.43 Knowledge and advice provided to potential and early-stage entrepreneurs may spill over to others not directly receiving it; knowledge is not an excludable good and its use by one individual does not preclude its use by others. Entrepreneurs may pass on received knowledge and advice to others if they intend on establishing a business that does not directly compete with that of the direct knowledge beneficiary. In this case, business advice and support may result in a wider increase in the entrepreneurial preparedness and capability of individuals other than those directly receiving the advice.

Multiplier Effects

2.44 Increased financing of start-ups can signal confidence in the local economy, alongside expectations for higher levels of future economic activity and profits, leading private finance providers to increase their lending.

2.45 The ecological model of firm formation implies that firm formation is a function of the number of businesses that already exist within a locality, since individuals currently employed within existing businesses gain experience and insights relevant to the identification/creation of new opportunities. In this case, an increase in firm formation that is not negated by an associated increase in firm deformation, such that there is an overall increase in the business density within the local economy, would result in a positive cycle of increasing entrepreneurship over time. Business formation tends to beget further business formation.

2.46 Similarly, there may be an encouragement effect, whereby individuals who would not consider entrepreneurship are encouraged to do so because of their observation of others starting businesses and making them successful.

2.47 From a Schumpeterian perspective, increased firm formation may result in increased creative destruction, whereby new businesses compete with and drive out of existence existing businesses with lower levels of productivity, resulting in an aggregate increase in productivity levels.

Controlling for Other Factors

2.48 There are multiple factors that affect start-up survival and growth. One factor that is likely to be very important - and one which would anyway not be controlled for by a matched-control group approach, if one were possible - is the human capital possessed by the entrepreneur. Entrepreneurs have varying levels of education, work experience, and prior business experience. Such factors are likely to affect survivability and growth, although the complexity of business growth is reflected in the difficulty associated with identifying its drivers, with few if any studies managing to isolate the specific influence of human-related factors of this type.

2.49 While this factor is unobservable in government datasets, delivery organisations have an opportunity to record it through the application process individuals/businesses must go through to gain ERDF support. If this is done on a sufficiently wide scale (i.e. across many projects) then this may allow the evaluation, somewhat unusually, to say something about the types of individual or business that might benefit most from support.

2.50 In terms of controlling for support from other interventions, a beneficiary survey can ascertain if the individual/business has received support from an intervention other than the ERDF.

Monitoring Requirements

2.51 As noted above the programme has a reasonable mix of output indicators. Whilst there is some merit in gathering monitoring data to enable the estimate of survival rates, the measurement challenges make this on balance impractical (unless payments by result were introduced).

2.52 Monitoring data that should be gathered by grant recipients for beneficiaries include:

- Full name and address of supported individual/business
- CRN for businesses which already exist
- Start date of business, where it already exists
- Labour market status of individual pre-support
- Nature of support provided and a measure of the intensity of support

- Exact dates of support provided
- The nature and number of activities undertaken to plan for creating a business (according to a standard categorisation)
- Post-support tracking of potential entrepreneurs to establish if a business is started and labour market status if they don't.

2.53 As with a number of other intervention types focused on businesses, grant recipients should record the contact details for the applicants which do not receive support and the reasons for this. The use of screening mechanisms to filter out potential applicants which are unlikely to meet a set entry threshold should also be noted.

Assessment of the Suitability of Impact Approaches

Overview

2.54 Counterfactual Impact Evaluation for this intervention type is rendered difficult by the newness of the businesses supported and the fact that, in some cases, support is given to potential entrepreneurs who have not even started a business yet. We therefore recommend several approaches, with the feasibility of each dependent on the approach taken by delivery organisations to identify businesses/individuals to support. This will need to be investigated further by the national evaluators.

- Regression Discontinuity Design (RDD) for instances in which a clear scoring mechanism has been used to select individuals/businesses to receive support. However, it is currently unknown whether many delivery organisations have used the type of selection procedure needed for such an approach to be feasible. The current expectation is that this may be feasible for some projects providing repayable finance to micro or small businesses.
- Where RDD is not possible because of the absence of a clear scoring mechanism, yet an application procedure has nevertheless been used to select individuals/businesses to receive support, a survey approach should be used to survey both those benefiting from support and those applying for but not being granted support. This removes the self-selection bias associated with seeking support, although many other differences between the supported and unsupported business may remain, since matching is not used to eliminate them, meaning this approach has quite a low level of robustness.
- It will be necessary to undertake an initial review to determine the means by which those delivering support have identified and selected individuals to receive it. The purpose of the pilot study is to understand whether this selection mechanism in any way allows for a quasi-experimental analysis, or at least a comparison between individuals applying for and receiving support and those applying for but not receiving support.

- The adoption of a survey of beneficiaries could also be utilised where the details of unsuccessful applicants are not available. The evidence collected through the survey and possibility for more in-depth case studies could be used in a simplified form of the Theory of Planned Behaviour. This approach would monitor the number of planning and preparation activities undertaken by potential entrepreneurs before-and-after the provision of advice. Alongside this, data should be collected on the proportion of these potential entrepreneurs who actually go on to start a business. This figure might then be compared against the existing literature and available data on this subject, such as, potentially, data from the Global Entrepreneurship Monitor dataset. Potentially, where such a comparison can take place at more than one point in time, a Difference-in-Differences (DID) can be used to establish a counterfactual, with the caveat that such an approach does not eliminate sources of bias to the same extent that a matched-control group approach would do.
- While the newness of businesses provided support under this intervention, or the fact that some have not even yet been started (e.g. potential entrepreneurs), means they will not be present in administrative datasets, rendering quasi-experimental CIE approaches impossible at the National Evaluation level, individual projects may have selected those to receive support in such a way as to make quasi-experimental CIE possible at the project level. In this case, the Summative Assessments of individual projects can be drawn on for an assessment of impact as part of the National Evaluation.

2.55 It is important to monitor the firm deformation rate within a locality as part of this intervention type, since increased firm formation is highly correlated with increased firm deformation. There is therefore the possibility for an overall net aggregate decrease in the population density of businesses in the locality as a result of measures to increase start-up.

Table 2.2 Overview of Impact Assessments

Methods:	**Comment**
Counterfactual Impact Methods	The viability of CIE for this intervention type depends heavily on the mechanism by which individual projects have selected individuals to receive support, which is currently unknown. **SMS = 3 (subject to this point above)**
Beneficiary Surveys	Beneficiary surveys are useful to ascertain how the support provided has affected the individual receiving it (both those which have gone on to set up businesses and those which have not), but only where there is a comparison with non-supported individuals who also applied for support, or, at least, where a before-and-after comparison is possible (this may be harder to achieve for individuals who have not gone on to set up a business). This again

	depends on how support has been allocated. **SMS = 2**
Project Case Studies	A detailed case-study approach might track individuals over time in order to attribute specific effects (such as an individual following through on the intention to start a business) to the support provided. However, this does not provide a counterfactual. **SMS = ½**
Summative Assessments	CIE approaches may be more applicable at the level of individual projects, because there will not be a common approach to allocating support across all projects. This places greater onus on encouraging the use of CIE methods by project evaluators as part of their Summative Assessments.
Monitoring Information	It is essential to ensure that information on both supported and non-supported individuals is recorded, and both groups tracked over time.
Overall Assessment	The viability of CIE impact evaluation methods will depend on how support has been allocated by individual projects and this will need investigating as part of the National Evaluation.

Monitoring

2.56 In terms of the recommended additional monitoring information, it will be necessary for a wider range of data to be collected by grant recipients, including the type, timing and intensity of support provided. It will also be necessary for grant recipients to provide details of the selection and scoring procedures used and details of unsuccessful applicants.

3. Business Advice, Guidance and Finance for Established SMEs

Introduction

3.1 The intervention category covers a range of business support and finance which will typically be provided direct to SMEs and funded across a variety of specific objectives Priority Axes 1, 2 and especially 3:

- R&I focused business advice and guidance (SO1.2 and SO1.3)
- Early stage business finance (SO1.2/SO1.3)
- Business advice focussed on use of digital technologies (SO2.2)
- Innovation focused advice and guidance for established SMEs (SO3.2)

- General growth focused advice and guidance for established SMEs (SO3.3)
- Business advice and grants to encourage low carbon innovation (SO4.5 and SO6.2).

Progress to Date

3.2 Table 3.1 presents a best fit analysis of the projects which have been approved, are nearing approval or in the initial stage of appraisal for the interventions in this category. It is not possible to include all projects, as some business support interventions are part of broader investment priorities/specific objectives.

3.3 By December 2016, 68 projects had been approved with total committed ERDF grant of £247.3m. The majority of this activity was in SO3.2 and SO3.3 (£238.3m), with an average value of ERDF grant of £4.8m and £2.3m respectively. This reflects the large size of many business support projects, but especially the financial instruments providing business finance to SMEs. Whilst the projects providing access to ICT exploitation support were of medium size, few have been approved to date (8). Only one low carbon innovation focused business support project has been approved and this was small in financial size.

Table 3.1 ERDF Projects and Spend up to December 2016

	SO2.2	**SO3.2**	**SO3.3**	**SO4.5**	**Total**
Number of Projects					
Approved	6	40	21	1	**68**
Almost Approved			4		**4**
Early Stage	1	1	3	1	**6**
Total ERDF Value (000s)					
Approved	£8,394	£190,689	£47,613	£614	**£247,310**
Almost Approved	£0	£0	£8,401	£0	**£8,401**
Early Stage	£1,400	£600	£2,693	£1,600	**£6,293**
Average Project Value (000s)					
Approved	£1,399	£4,767	£2,267	£614	**£3,637**
Almost Approved	£0	£0	£2,100	£0	**£2,100**
Early Stage	£1,400	£600	£898	£1,600	**£1,049**

Source: MHCLG data for period up to December 2016

Logic Model

Rationale

3.4 This category encompasses a variety of investment types and cuts across numerous Priority Axes and Investment Priorities. The activity is intended to address a variety of market failures which constrain the growth of SMEs both in general, in specific sectors and particular locations. These included imperfect information, information asymmetries and path dependencies in particular locations, affecting both the perceived need and hence demand for business advice and finance as well as the supply of them by the private sector.

Approaches and Activities

3.5 The activity types covered here include both SME focused advice and guidance services and various types of financial support for SMEs. We would expect to see substantial variation within this category on the basis of:

- The focus of activity: financial support and advice and guidance services might be broadly cast and seeking to support general improvements in business growth. Equally, they might have a more specific and targeted focus for example upon research, development and innovation, exporting and trade, use of digital technologies or resource efficiency etc.
- Delivery mechanisms: various mechanisms for delivering financial support (including grants, loans and equity investment) and similarly advice and support services could be delivered on a consultancy or ongoing coaching / mentoring basis.
- Intensity and duration: some interventions could be delivering relatively light touch support of modest amounts of investment but there is scope within this category for more intensive and longer term support or very substantial sums of investment (relative to business size).

3.6 Although the specific characteristics of interventions will vary, all will provide direct assistance of one type or another to established SME beneficiaries.

3.7 The specific nature and timing of the changes within individual SME beneficiaries will vary according to the nature of each intervention and the particular purpose of the project. In some instances, the change within individual beneficiaries could be transformational whilst in others the effects could be more modest.

Beneficiary Outcomes

3.8 In practice, this means that there will be substantial variation in the specific sequences of beneficiary level outcomes. Although the sequences will vary, the majority of interventions will be seeking to support improvements in the performance and growth of SME beneficiaries. In light of this, a core set of beneficiary level outcome indicators are relevant across the category. These are:

- business turnover
- business productivity (measured in terms of profitability, or labour productivity)
- number of employees/salary expenditure.

Intended Impacts

3.9 These core beneficiary level outcomes will, in theory, support impacts on the level of output, GVA and employment either at the level of the local economy or within particular target sectors.

3.10 The ERDF investments can also help to generate a range of wider economic impacts which need to be assessed as part of the overall evaluation, including:

- Improvements in the supply side of various markets including business finance to SMEs in particular locations, particular sectors or stages of business development
- Agglomeration or efficiency effects through the growth of the business base in particular locations, sectors or technologies
- Multiplier effects arising through the additional business and personal expenditure in local economies.

3.11 It is important to note that the extent to which outcomes at the beneficiary level give rise to improvements in national or local economic performance will depend upon a number of factors. The level of displacement is a central consideration here but other factors (including leakage and multipliers) are also relevant in assessing the impacts at the level of the economy.

3.12 In addition, the extent to which any impacts on the baseline performance of national or local economies can be detected will be heavily dependent on the scale of ERDF investment in activities in this category relative to the size of the local economy (although ERDF is a substantial investment stream its contribution is likely to be modest relative to national and local economies).

3.13 Deadweight in relation to this type of intervention would therefore occur if the provided support in the form of advice and finance did not result in the business growing more than it otherwise would in the absence of support. Herein we see the counterfactual implicit in this type of intervention. Since the growth that would have happened anyway obviously cannot be directly observed, it must be inferred through comparison with similar businesses that did not receive support.

3.14 However, as discussed subsequently, while business support in the form of advice and finance can unlock growth potential of businesses, with the result being an improvement in competitiveness and a beneficial effect on the economy, the opposite effect is also possible, as is no effect at all. A negative effect can transpire through displacement, in which lower-productivity businesses that would not be able to achieve higher levels of productivity of their own accord are able to do so, not because of an inherent competitive advantage, but because of the support provided to them. The effect under these circumstances might appear, in the short term, as a boost to the regional economy, but if the beneficiary business' growth is achieved at the expense of that of a previously more competitive business that has not received support, thereby implying displacement to be occurring, the longer term effect might be negative for the regional economy, as well as the national economy as a whole. This issue of displacement is also discussed further in this chapter.

Timing of Outcomes and Impacts

Record-Keeping

3.15 It is very important to keep accurate records of when business support is provided, in order that accurate baselines (i.e. comparisons before treatment) can be taken, one purpose of which is to check the accuracy of any counterfactual matching procedure that may be used. Issues associated with accurate identification of supported businesses in the IDBR reduced the level of robustness achieved by the evaluation of 2007-13 ERDF; this was partly because accurate records were not kept regarding to whom support was given, and when. This problem is already partly mitigated by the introduction of the Eclaims systems for the 2014-2020 ERDF, but still requires those responsible for delivering support to be conscientious in the use of this new system. The timing of delivered support is a relatively straightforward issue in relation to general business advice, but may be more problematic if the support provided includes finance, which may be delivered in tranches rather than all at once. In this case it is essential that accurate records are kept of the timing of each tranche, not just when financial support began.

Timing of Outcomes and Impacts

3.16 In a systematic review of business-advice related impact evaluations, WWCLEG expressed concerns over the baseline year used in the analysis for some evaluations, because it was in some cases post-treatment, and in others simply unknown. If the baseline is post-treatment, and any positive treatment effects are immediate, the study will underestimate the effect. Conversely, if provision of business advice initially worsens performance (e.g. because an entrepreneur is busy implementing the advice, and reorganising the business in light of it, which takes time), then the study will overestimate the impact. Timing of outcomes and impact can therefore be crucial to robust evaluation for this reason. It is worth emphasising the perhaps counter-intuitive possibility that provided support can initially worsen performance as new plans are implemented.

3.17 Advice can be expected to result in changes to the advised business, perhaps in the form of a reorganisation of some sort, or the implementation of a new strategy which takes time to implement. Effects might therefore be 'right truncated' in the event that the study measures impact before the full effects of support have materialised, and this would lead to an underestimation of the full positive impact of the ERDF. On the other hand, any positive effect on performance might be expected to peak at some point, and then to diminish thereafter, such that, eventually, the business' performance is no longer superior to that of unsupported businesses. In this case, analysing impact too late - subsequent to the scheme's impact having peaked and begun to diminish - may result in an understating of the full positive effect of the ERDF, which has been and gone.

Observing Effects in Administrative Records

3.18 Business advice targeted at established SMEs, if it is appropriate and effectual, can be expected to impact the SME's performance relatively quickly. This contrasts with some intervention types, such as those related to increasing R&D, in which any positive effect on performance may only transpire some considerable time after the intervention has occurred. However, the impact of business advice on performance might not be so immediate in the case of some forms of advice, meaning that relatively rapid impact cannot be assumed across the board, depending instead on the type of advice administered. For example, business advice in the ERDF programme can take the form of guidance in relation to the obtaining of finance for investment. In this case, depending on what investment the finance is used for, impact may be less immediate than, say, advice pertaining to a new marketing strategy, or some other form of advice that is readily implementable.

Measuring Gross Outputs and Outcomes

3.19 The core output indicators used within the programme for these intervention types are:

- Number of enterprises receiving support (C1)
- Private investment matching public support to enterprises (C6)
- Number of enterprises receiving IDB support (P13)
- Employment increase in supported enterprises (C8)
- Number of enterprises supported to introduce new to firm products (C29).

3.20 These include a number of beneficiary outcome indicators, in particular the introduction of new to firm products and services, as well as the increase on gross employment. The achievement of SMEs against these indicators are all monitored through the project monitoring systems that MHCLG have put in place.

3.21 There are a variety of other intermediate and ultimate SME beneficiary outcomes which need to be assessed as part of the impact evaluation including:

- adoption of new operational processes and practices
- adoption of new technologies
- new investment in capital equipment and facilities
- entry into new geographical markets
- longer term growth in turnover and employment, as well as improvements in productivity.

3.22 The assessment of a number of these beneficiary outcomes require either the breadth of the grant recipient’s monitoring to be systematically broadened, or for them to be assessed through beneficiary surveys.

Options for Impact Assessment

3.23 In this section we discuss the options for counterfactual impact evaluation. It should be noted that, for interventions of the type covered by this strand, the beneficiary tends to be a direct recipient, such as an SME, and furthermore, the recipient has been 'established' for some time. For these reasons, the approach to CIE is more straightforward than it is for

some other interventions types, meaning a prime candidate is a matched control-group approach using Propensity Score Matching (PSM).

3.24 Much of this section is therefore devoted to a discussion of this technique; however, towards the end of the section we also touch upon other methods which can be used in conjunction with PSM to triangulate and verify findings, or to acquire additional variables.

Matched Control-group Approach

3.25 When using a matched control-group approach businesses receiving advice or business finance are matched in the IDBR with businesses not receiving ERDF funded support, so as to assess if there is a difference in performance between the two. The basic procedure can be described as follows:

- Projects keep and report accurate monitoring data for the type of support received, an objective measure of the intensity of the support and the period over which support was provided.
- The list of businesses is provided to the evaluation team and should include each business' Company Registration Number (CRN) or another unique identifier. In this case, this should be relatively unproblematic because the businesses to which advice is given are established SMEs that have been in existence for some time, not new businesses or latent businesses not yet established. However, we later describe some fuzzy-matching techniques that can be used in circumstances in which the CRN has not been identified.
- By providing the list of businesses to the administrators of ONS' Virtual Microdata Laboratory (the data-centre in which the technical aspects of the evaluation will be conducted), the CRN is converted into the Enterprise Reference Number used by the IDBR.
- Using the dataset as a whole, or an adequate subset (such as a 10% randomly-selected, and therefore representative, sample for ease of use), the observable characteristics that affect whether a business receives support or not can be ascertained using a probit or logit regression. As noted in the subsequent discussion of 'matching criteria', size, sector and location are likely to be amongst the matching criteria.
- These characteristics are then used by the PSM algorithm to match the businesses receiving advice with counterparts that did not. As discussed below, matching by location can be problematic because it i) reduces the pool of businesses against which to match, increasing the possibility of a poor-quality match ii) a highly-accurate matching process including a criterion such as locality can increase the chance

that displacement effects result in an over-or-under-statement of impact.

- Checks on key variables are conducted to ensure that treated and matched control businesses are similar on these key characteristics in the time period immediately prior to the treatment. The matching procedure can be iterated using different matching criteria until a satisfactory match is achieved. Treated and control groups should be indistinguishable in terms of their performance prior to treatment.
- When a satisfactory matching is achieved, a comparison of the key outcome variables is conducted between the treated and control group, using a standard statistical technique such as a t-test. This might, for example, be a comparison of turnover growth, or employment growth, or whichever outcome is expected to have improved given the logic of the particular business support provided.

Matching Criteria

3.26 We do not wish to prejudge the selection of the key matching criteria, since identification of these is an essential part of the process to be conducted as part of the evaluation. However, it is likely that characteristics such as firm size, sector and locality will be among those that are important in determining whether a business is 'treated' with advice or not. Locality is an obvious factor determining treatment since the ERDF is a place-based intervention that specifically targets particular localities.

3.27 Two problems with using locality (such as local authority) as a matching criterion, however, are that: i) the pool of potential matches is reduced and this may lead to poor-quality matching and ii) the potential for displacement to lead to an overstating or understating of the effect is increased (i.e. if the performance of the non-treated businesses is affected by the treatment group). We say more about the latter issue towards the end of this chapter, recommending a productivity-decomposition analysis to overcome this problem. With regards to the first issue, one way this problem might be overcome is by including a classification of local authorities of different types in the analysis, and matching with businesses not necessarily from the same local authority as the treated business, but from a local authority with similar characteristics, as identified in the Index of Multiple Deprivation.

Challenges of Using the IDBR

3.28 The evaluation of the 2007-2013 ERDF was hampered by problems identifying beneficiary businesses in the IDBR. As a result, only a low identification rate was achieved. This was partly due to poor record-keeping

in relation to tracking to whom support was given at the project level, but was also partly because of long-standing issues surrounding the identification of smaller (i.e. below the VAT threshold) and non-PAYE businesses in the IDBR. For the 2014-2020 ERDF evaluation, we therefore recommend the use of the fuzzy-matching techniques pioneered in the ongoing evaluation of the Regional Growth Fund by BEIS, conducted on their behalf by IFF Research, Belmana, University of West of England and Middlesex University.

3.29 For that intervention, a three-stage fuzzy-matching approach was used to increase the number of businesses successfully identified. In the first stage of the three-stage fuzzy-matching approach, the beneficiary name was matched to a case on the Companies House register, using an algorithm to identify businesses based on their name, providing a score for the quality of the match. A high threshold of similarity filters out those that were poorly matched, and there was then a further check on postcode to confirm the match.

3.30 For businesses not already successfully identified in the first stage, in the second stage the business's postcode was used to filter the matching, by name only, to those businesses located near to the surveyed business's location. This restricts the name-matching, ruling out businesses with similar names but clearly in a different locale, thereby reducing the number of possible matches returned, and rendering it easier to identify the relevant record. This further increases successful identification. The final stage matches on geography and name, with the difference being that it simultaneously used the full postcode and the name.

3.31 The usefulness of this three-stage technique is evidenced in that, for the RGF, only about 37 per cent of 13,223 observations initially included identifiers such as Companies House registration, VAT or PAYE numbers, allowing for immediate identification. However, the identification rate was increased to 68 per cent after deployment of the above fuzzy-matching techniques. A matching rate of 68 per cent is somewhat higher than that achieved without these fuzzy-matching techniques in the 2007-2013 ERDF evaluation. For this reason we recommend the use of fuzzy-matching techniques.

Supplementary Analysis for Specific Types of Support: Finance

3.32 In general, regardless of the type of advice provided, it will be desirable to identify recipients in the IDBR for the purpose of matching through PSM, leading to a controlled comparison and the isolation of impact. However, what might add value beyond this is an analysis of the effect of specific types of advice and financial support - and this might require the use of more bespoke datasets beyond the IDBR.

3.33 This is true, in particular, in relation to business finance provision, for which the IDBR provides little information. In this case, it is desirable to supplement a more general analysis using the IDBR with one more specifically tailored to finance. What was formerly the Small Business Survey (SBS), and is now the Longitudinal Small Business Survey (LSBS) is likely to prove useful for this purpose - although the new longitudinal survey is still in its infancy, so far only tracking businesses for two years. Both tend to suffer from a lack of data on younger businesses, but that is less problematic for this evaluation strand, since its focus is on established SMEs.

3.34 It is possible to link the LSBS to the IDBR and then to use the linked variables from the SBS/LSBS to say something about the difference between the treated and control groups in terms of the proportion of businesses applying for finance of one sort or another, which some interventions are designed to increase, as well as the effect of this finance on performance. The LSBS has a large number of questions pertaining to finance, so is a useful dataset for analysing the effect of advice on that subject; its sample size of approximately 15k businesses means that it is likely that some ERDF beneficiary businesses, and perhaps some matched control business, will be identifiable in it, but it is unclear at this stage whether this number will be sufficient for a highly robust analysis.

3.35 Beyond this, the only other large scale SME survey related to finance is the UK SME Finance (UKSMEF) survey, which is available through the UK data archive and so might also potentially be linked to the IDBR. The UKSMEF survey has a relatively small sample size, however, so it is questionable how many beneficiary businesses might be identified through it. The national evaluation should endeavour to carry out such supplementary counterfactual analyses (i.e. supplementary to an aggregate analysis for all forms of support), tailored to specific types of support, since this allows more scope to comment on the specific types of advice and support that may or may not be impactful.

3.36 While what is being scoped is a national evaluation, the ERDF is a place-based strategy. The devolved approach to delivery implies that the spatial aspect of the evaluation is potentially of key importance for identifying spatial variations in the effectiveness of support of different types in different locations. Supported businesses can be disaggregated and re-aggregated to appropriate spatial-analysis levels using their postcodes. Matched control-group analyses can be conducted at these different spatial levels where the pool of potential control businesses is sufficiently large to allow for this, and notwithstanding the increased danger of over-stating impact as a result of displacement this might lead to, which we discuss further subsequently.

Regression Discontinuity Design (RDD)

3.37 Regression Discontinuity Design (RDD) tackles the problem of isolating a treatment effect from a different angle to PSM. Consider circumstances in which there is an application procedure for businesses to receive business-advice support from an ERDF project, requiring the business to apply for support on the basis of a set of criteria. Information on the business itself, and its recent performance, is also available. Furthermore, there is a very clear scoring mechanism to decide which businesses to support and which not to support. An assessment is made and a score allocated for each applicant, resulting, for example, in a score out of 100 for each SME applicant. It is then decided that all businesses with a score of 60 or more will receive support, and all businesses scoring less than 60 will not receive support. We therefore have a clear cut-off point in terms of whether 'treatment' is allocated or not.

3.38 The logic of RDD is that combined businesses and projects scoring in-and-around 60 (in this case) must be 'similar' (i.e. of similar quality), such that those just below the threshold can act as a control group for those just above the threshold. If the businesses in-and-around this threshold (i.e. on both sides of it) have not performed in a significantly different way, then the treatment has had little or no effect. If there is a significant difference between the performances for these very 'similar' businesses, then we can have some confidence that it is down to the treatment, since they are so similar.

3.39 However, RDD may be more applicable to specific instances of support within individual projects, rather than the national evaluation, which seeks to identify the overall impact of the ERDF. Where support has been decided using an explicit scoring mechanism in the way described above, RDD may indeed be a useful way to identify impact robustly. However, given the devolved approach to project selection and delivery within the ERDF programme (e.g. there are typically multiple business-support projects in each LEP area), there is no common scoring mechanism across these projects. RDD may however be more relevant for projects providing debt based finance which use credit based scoring mechanisms or as part of the Summative Assessments rather than the National Evaluation since these will examine the specific impact of individual projects in which business advice has been provided.

3.40 Nevertheless, where specific scoring approaches have been used to allocate treatment, as it has in some RGF projects, RDD could be used to provide supplementary analysis of particular business-support type projects, to complement the aggregate assessment of impact identified through PSM. In this case, where a PSM-based analysis has perhaps identified particular types of business-support project, or particular localities in which support of a particular type seem to be highly impactful, and where a specific scoring mechanism exists for identifying the beneficiaries as part of these projects,

an RDD-type analysis could be used to further corroborate and triangulate the impact implied at an aggregate level by PSM-based analysis.

Bespoke Beneficiary Surveys

3.41 It may be desirable to capture aspects of a particular type of support and its impact that cannot be observed through the IDBR, or other datasets linked to it, by using bespoke beneficiary surveys. For example, these might be especially useful in terms of accruing information on processual aspects of the support related to how well it was administered, from a beneficiary's perspective. A problem in this regard, however, is that it is usually only beneficiaries that are surveyed, since only they can answer questions about how well support was administered; a comparative or counterfactual approach can therefore be lacking.

3.42 Useful insights, however, might still be achieved despite this, by comparing and contrasting within cases receiving treatment, or between different, comparable projects in different localities. Such comparison and contrast between cases - where 'cases' represent, for example, businesses within the same project and receiving similar types of advice, or similar projects administered in different localities - can provide useful insights to supplement an aggregated analysis of impact using matched-control groups. In this case, beneficiary surveys leading to comparison within and between cases is used to say something about variations in impact identified by the aggregated analysis, such as on the basis of geography, for which the observable factors that were the basis of the matching provide little or no information.

3.43 A beneficiary survey has the advantage of providing this information at a time when the results from the counterfactual impact assessment using PSM or RDD will not be available. For these reasons it is highly recommended to use a large scale beneficiary survey.

Assessing Other Effects

3.44 A multiplier effect may result from the expansion of established SME businesses within a locality if these businesses get their inputs from other businesses in the locality. In this case, any business growth in direct beneficiaries that may result of the provision of advice and/or finance may affect the growth prospects of non-beneficiaries. This should be evident at an aggregate level in the outturn for GVA and employment growth for the focal area.

3.45 Where advice or finance results in an increased level of research and development within a direct beneficiary, this may affect the production possibilities of non-beneficiary businesses resulting in a spillover effect, since knowledge is not an excludable good. This might be detected through a statistical analysis in which the R&D investments of direct beneficiaries are used as a covariate in a regression model of the growth performance of non-beneficiaries.

3.46 Where increased lending to business takes place as a result of the ERDF, this may act as a signal to private finance providers of the possibility for returns on investment, increasing the amount of lending to business. This might be assessed through, for example, monitoring of surveys that provide information on the ease with which businesses are able to access finance. The LSBS contains a number of questions on this issue. It has a small sample size but may nevertheless be able to provide an indication as to any changes in the ease of access to finance over time, though these may take some time to transpire.

3.47 Meldgaard et al. (2016), in a study for BIS on 'Exploring the feasibility of a productivity-based approach for evaluating business support interventions', explore the use of a productivity-decomposition analysis for evaluating the impact of business support. They note the need to take account of displacement because the effect of business support does not necessarily only affect the performance of the business receiving the support. Any reallocation of resources resulting from business support could see businesses with a productivity-advantage capturing further market share at the expense of less productive businesses.

3.48 Whether businesses already with a productivity-advantage capture further market share as a result of business support, implying a positive outcome for the local economy, or businesses with no inherent competitive-advantage instead capture additional market share, implying a negative outcome for the local economy, can be ascertained using a productivity-decomposition approach. What such an analysis essentially amounts to is an approach for ascertaining whether displacement is occurring as a result of a particular intervention.

3.49 Perhaps counter-intuitively, the evaluation approach recommended for this intervention type (which, as discussed below, is a matched-control group established using PSM) can, if rigorously implemented, leading to a highly-accurate matching, actually increase the likelihood of displacement distorting the analysis, resulting in an overstating or understating of impact. Again somewhat counter-intuitively, a less accurate matching can produce more accurate assessment of impact. This problem can be easily conceptualised in relation to the ERDF by giving consideration to the fact that it is a place-based intervention designed to improve the economic performance of particular localities.

3.50 For this reason, a likely matching criterion might be, for example, 'local authority', meaning that businesses of a similar type from the same geographic area are matched. If a supported business that was previously of lower-productivity is therefore taking market share from a geographically-close, unsupported business that previously had higher-productivity, and the former therefore begins to grow more quickly than the latter, the growth of which is then severely curtailed, this will give the appearance of a strong effect from the treatment. Yet it is not a desirable effect, since it represents a negative outcome for the local economy.

3.51 Productivity-decomposition analysis gives consideration to the sources of any improvement in productivity that appears to result from an intervention. Its supplementary use should be considered in addition to PSM for a cross-section of projects and beneficiaries, in order to understand whether any positive impact from the ERDF is stemming from displacement. This represents a very important cross-check. However, because a productivity-decomposition analysis might be difficult to implement in some circumstances, beneficiary surveys might also be used to ascertain from where beneficiary businesses are taking any additional market share following business support. In some cases, non-beneficiaries may also be surveyed to understand their perception of the effect of support provided to businesses that are, in effect, their competitors.

Controlling for Other Factors

3.52 A business may receive advice from more than one source, funded by more than one intervention. For example, it may receive support from the UK government's Regional Growth Fund (RGF) in addition to the ERDF. The problem with this is multiple sources of support can confound the attribution of any effect from support provided specifically by the ERDF - by which is simply meant that it renders it difficult to disentangle the effect of one intervention from the other.

3.53 The 'interventions database' that is now available - the use of which has been pioneered in the RGF evaluations undertaken by BEIS - provides historic firm-level data about business support. This data can provide some useful information on the type of businesses applying for and receiving government support, thereby rendering it more possible to identify if there are systematic differences between these businesses and those not applying and not receiving support. The database includes information on businesses benefitting from BIS, CLG and other agency-led interventions, including the Growth Vouchers scheme, Enterprise Capital Fund, Enterprise Finance Guarantee, Growth Accelerator, Intellectual Property Office scheme, those run by the Technology Strategy Board, by UK Trade and Investment, and by the Manufacturing Advice Service.

3.54 It is recommended that this database is used to identify systematic differences between businesses that tend to seek and acquire support and those that do not, which can be fed into the matching criteria when using PSM, thereby taking account of it in the analysis; and also for the purpose of disentangling effects and achieving attribution. However, another approach which should be considered alongside this, is the use of beneficiary surveys specifically designed to ask businesses receiving advice about the effect on the business, the extent to which any project or initiative undertaken following the provided advice may have happened anyway, and the role of the advice in achieving the desired outcome, leading to growth of the business.

3.55 It is particularly important for attribution that, where possible, such a beneficiary survey is also sent to non-beneficiaries in the form of those applying for but not receiving support, where these exist (since not all projects have a specific application procedure, and records are not always kept for unsuccessful applicants), to see if their proposed initiatives went ahead anyway, allowing for comparison between the two groups. Such a beneficiary survey can also explicitly ask about the sources of support the business was receiving at the same time as that from the ERDF, further assisting attribution.

Monitoring Requirements

3.56 For the recommended approach (see sub-section 7.12 below) to be feasible, good record-keeping needs to have taken place at the level of individual projects. Essential information required for the recommended analysis to be possible:

- The CRN of the supported business
- Full name and address, including postcode
- Sector in which the business operates
- An accurate date of business incorporation and age
- Initial number of employees (i.e. at point of application)
- Initial size in terms of turnover (i.e. at point of application)
- Type of support provided
- Dates of support provision
- 'Intensity' of support provided, such as a measure of value
- Where financial support is provided, the amounts, type and date.

3.57 Of the above data, the 'intensity' of support provided is particularly important but often constrained by the form of measurement and the information recorded by delivery bodies. By 'intensity' is simply meant the extent in terms of frequency, quality or value of the advice provided; it might, for example, be measured in terms of the cost of advice-services provided,

though other means of measurement are possible. The beneficiary-level outcome indicators for this intervention type tend not to take this intensity into consideration, instead representing an absolute number in terms of the quantity of enterprises receiving advice of any intensity. The absolute nature of this indicator may therefore obscure important differences in quality and intensity of provided advice and it is therefore essential that efforts are made to incorporate intensity in the analysis where possible. The ability to do so depends on accurate record-keeping by those delivering services.

3.58 Identifying an accurate start date for a business can be trickier than it appears, because businesses change name, are bought and sold, or are parts of groups of businesses, all of which obscure this issue. This can render analysis of length of survival (from start) problematic, although this is a problem that is perhaps less relevant to this intervention type, which is aimed at established businesses, and for which survival length is therefore a less-useful outcome measure.

Additional useful information: Non-beneficiaries

3.59 It would also be advantageous if records were kept for businesses both applying for and receiving advice, and applying for but not meeting the criteria for receiving advice. In the case that a beneficiary survey is needed to provide additional indicators, those that applied for but did not receive advice can act as a ready-made control group, where this is possible. This requires those responsible for delivering services at a project level to keep accurate records for businesses not receiving support.

Use of the Summative Assessments

3.60 Where impact evaluation is not feasible, key questions about impact will need to be explored through a variety of supplementary methods. Whilst not enabling the attribution of any quantitative impacts, they will provide valuable qualitative insights into whether those that deliver, experience and benefit from the intervention believe them to have had any impact.

3.61 A key source of this qualitative evidence is the project Summative Assessments. The National Evaluation can make use of the Summative Assessments in a number of ways:

- Robust CIE should also be the aim of project-level evaluations. A PSM-based approach, as recommended here for the National Evaluation, is likely also to provide a robust analysis of impact, and therefore to be the method of choice, at the project level too. Where such an approach to CIE has been adopted at the project level as part of Summative Assessment, this is of obvious relevance to the National

Evaluation, which employs the same approach at a more aggregated level.

- The Summative Assessment can provide the qualitative, contextual nuance related to processual aspects of the support delivered, which will allow the National Evaluation to go beyond a simple statement of whether the ERDF has had a positive or negative impact, or no impact, at the aggregate level. The National Evaluation must consider how projects have been delivered and the impact of this on any aggregate impacts; the Summative Assessment is key to this.
- The Summative Assessment can provide for qualitative comparison and contrast drawing on variations in support delivered, type of recipient, and locality of intervention, by which to build up a picture, drawing also on variations identified in the aggregated statistical analysis, by which to draw causal conclusions. A PSM-based approach, as recommended here, controls for all observable sources of variation, thereby leaving little to say from a causal perspective. This variation can be reintroduced, allowing for the building of causal narratives, by drawing on the Summative Assessments.

Assessment of the Suitability of Impact Approaches

Overview

3.62 The What Works Centre for Local Economic Growth (WWCLEG) has recently conducted a systematic review of evaluations of business advice and mentoring programmes with a specific focus on impact evaluation. The review shows the vast majority of evaluations not to incorporate any counterfactual aspect whatsoever; beginning with a long list of 690 evaluations of business advice schemes, only 23 met a minimum counterfactual standard. Of these 23 studies, four constituted full Randomised Control Trials (RCTs), thereby representing gold standard level 5 interventions on the Maryland Scientific Methods Scale. No schemes used quasi-random sources of variation ('natural experiments'), which score 4 on the SMS. All of the remaining 19 schemes achieved a level 3 on the SMS, because they employed robust quasi-experimental techniques such as Propensity Score Matching.

3.63 WWCLEG note by reference to Sherman et al. that an SMS level 3 is the minimum level required for reasonably accurate attribution in CIE, and state that through use of techniques such as matching (i.e. Propensity Score Matching) it is possible to achieve confidence that all observable factors affecting the outcome have been controlled for. However, in contrast to the gold standard RCT approach achieved by just four from 690 evaluations,

there remains the possibility that unobservable characteristics, such as managerial talent or firms' desire to grow, may affect the result. SMS level 3 evaluations using PSM therefore still leave the possibility for incorrect attribution of beneficial outcomes. The European Commission's Evalsed evaluation guidebook also acknowledges this, stating that PSM 'is an elegant and powerful process for generating a matching group where this might otherwise be difficult, but it is not a miracle cure' (page 109).

3.64 Nevertheless, even with this caveat, the recommended approach for evaluating ERDF business advice and finance schemes is to target an SMS level 3 evaluation through the use of PSM. This approach is the most robust achievable in the case of this strand of the ERDF because randomisation of treatment, as required by an RCT, has not occurred, so SMS level 5 is unachievable; furthermore, we are not aware of any quasi-random aspect to this intervention type that might allow for the achievement of SMS level 4. We are confident that a PSM approach, in which businesses receiving advice are accurately matched with those not receiving support from the ERDF, can provide for a robust attribution of any beneficial effect from the support provided through this ERDF intervention type.

3.65 However, as noted above in this chapter, highly-accurate matching can actually be detrimental to isolating the 'true' impact of business support under circumstances of displacement, with the potential to overstate or understate impact. Therefore, the recommendation is to primarily rely on PSM but to supplement this, where possible, with other approaches, including Regression Discontinuity Design for schemes in which there is a specific scoring mechanism for allocating support, and with beneficiary surveys conducted in such a way that non-beneficiaries are also surveyed as a control. Furthermore, the use of productivity-decomposition analysis should be investigated specifically as a way to examine the problem of displacement.

3.66 The recommended approach is therefore one in which PSM constitutes the main thrust of the evaluation, the results of which are then triangulated and verified using other CIE techniques. The options for this intervention type are therefore listed below. A matched-control group analysis using PSM implemented using the IDBR as a spine that is linked to by other datasets, where relevant, and where the provided support relates to specific forms of advice pertaining to, for example, innovation or finance, in which case linking to the LSBS in particular may be useful.

3.67 While this is an intervention type that is highly amenable to CIE carried out on administrative datasets, beneficiary surveys also have an important role in its evaluation, as a means to trace the mechanism by which business advice and finance impacts business performance, as this will differ from case-to-case. This can provide timely input into the evaluation, since the

ultimate effect from advice/finance on the business' performance may take a long time to become evident; new business plans, made in response to advice or associated with an investment, take a long time to implement. Furthermore, beneficiary surveys allow for a tailoring of questions to provide information on issues not easily examined through secondary administrative datasets, such as spillover effects and displacement.

3.68 Summative Assessments can be drawn on to supplement any information resulting from beneficiary surveys for the same purpose. Summary Assessment can provide specific information on how particular instances or examples of advice and finance were employed by individual businesses, and to what effect. This provides causal detail with which to complement a CIE statistical analysis, which may provide an estimation of impact if there is one, but perhaps says little about the reasons for impact, or lack of impact.

3.69 By combining evidence from different sources, such as analysis of administrative datasets, alongside Summative Assessment evidence with regards to how advice/finance was actually used by business, it will be possible to say something about the spatial pattern of impacts and to derive possible reasons for variations in effect. Different localities will have approached and implemented the provision of advice and finance in different ways. By disaggregating the analysis geographically it is possible to get a handle on which types of approach have worked best.

Table 3.2 Overview of Impact Assessment Methods

Methods:	
Counterfactual Impact Methods	As there are direct beneficiaries, CIE methods will be a major strand of the evaluation approach for this intervention type. A matched-control group approach implemented using PSM is recommended. There may be scope for RDD in some limited instances. **SMS score = 3**
Beneficiary Surveys	Beneficiary surveys are required to supplement the CIE approach, to provide causal context, more-timely results, and a wider set of variables for analysis. This can include both treatment and non-treatment groups. **SMS score = ½**
Project Case Studies	A case study is probably not appropriate in most cases given the potential of the above approaches, unless there are localities or projects which the CIE suggests have been particularly impactful (such as major business finance projects), and which may provide considerable insight **SMS score = 3 (if using robust CIE approaches)**
Summative Assessments	These can be employed to provide extra causal nuance when examining why particular types of project, or projects in a particular locality, have been more/less impactful. They can also be used to

	identify the processes by which impact has occurred. **SMS score = 0 – 3 (will vary between projects)**
Monitoring Information	CIE for this intervention requires only records for businesses receiving support directly, since the matching can be done in the BSD. However, it would be advantageous if beneficiary surveys could be issued to non-beneficiaries too, for comparison purposes, requiring information for businesses applying for but not receiving support.
Overall Assessment	Identifying the appropriate approach is relatively straightforward for this intervention type. It is a combination of a matched-control group using PSM in the BSD/IDBR, supplemented by beneficiary surveys and the use of Summative Assessment to provide more timely results and causal analysis.

3.70 In addition to the core analysis outlined above, there are a number of options:

- The use of RDD where there is a suitable scoring process for selecting beneficiaries, in conjunction with a survey of the unsuccessful applicants
- A survey of beneficiaries shortly after completion of receipt of support, in addition to the main follow up survey 8-12 months after support
- Working alongside the project evaluators in undertaking a pilot case study of a small number of the larger or more impactful projects such as business finance projects in order to test approaches (possibly RDD)
- If judged to be feasible as part of the initial scoping, exploring the potential use of productivity-decomposition analysis should be investigated specifically as a way of testing the assessments of displacement.

Monitoring

3.71 In previous evaluations, such as that of the 2007-2013 ERDF, identification of beneficiary businesses in administrative datasets has been hampered by poor record keeping. These interventions will have a very high volume of beneficiaries and it is essential that consistent and high quality beneficiary data is collected:

- Full details of the businesses to enable their identification in the IDBR (as well as other characteristics) and for surveying purposes
- Information on the type, intensity and timing of the support

3.72 It is also desirable that projects provide information on their application and selection process for support, as well as the details of the unsuccessful applicants.

4. Business Related Infrastructure: Broadband

Introduction

4.1 The interventions in this category include investments in broadband infrastructure under Specific Objective 2.1 of Priority Axis 2. The interventions will indirectly benefit SMEs and potentially larger businesses. There is also likely to be indirect benefits to households and public sector organisations, although these are not eligible in terms of ERDF grant.

Targets and Progress to Date

4.2 To date around £10.7m has been committed to broadband investment. These projects have an average size of around £3.6m in terms of ERDF grant. There is one further project in the pipeline, which if approved would increase the total amount of ERDF committed to £15.4m.

Table 4.1 ERDF Projects and Spend up to December 2016

	SO2.1
Number of Projects	
Approved	3
Almost Approved	1
Early Stage	-
Total ERDF Value (000s)	
Approved	£10,777
Almost Approved	£4,600
Early Stage	-
Average Project Value (000s)	
Approved	£3,592
Almost Approved	£4,600
Early Stage	-

Source: MHCLG data for period up to December 2016

Logic Model

Rationale

4.3 Although the majority of the country (c. 90%) now has access to superfast broadband (SFB, defined as download speeds of at least 30 Mbps), there remain a large number of SMEs which do not have access and are unlikely to receive access through the private sector roll out because they are in isolated areas. Furthermore, many high growth firms do not have access to ultrafast broadband (UFB, defined as speeds of at least 100 Mbps), which is acting as a barrier to their growth. There is a large evidence base demonstrating the economic benefits of broadband and the EU has identified universal coverage of SFB and 50% coverage of UFB by 2020 as a priority. The main market failure arguments relate to equity, since those areas which do not have access are at a competitive disadvantage.

Approaches

4.4 SO2.1 aims to address these issues by providing financial support for projects to extend availability of both SFB and UFB. This could take a number of different forms, although the most popular to date has been a gap funded model, where a commercial provider receives a public subsidy to address remaining gaps in coverage, thus reducing risk and overcoming the commercial viability barrier. However different approaches could also be used, such as purely community led approaches. In the case of UFB, the most common approach to date has been to rely on the market to invest in the core network and then issue vouchers to SMEs which cover the cost (or part of the cost) for connecting to this network. However, again, alternative approaches could also be used in the future, including investment in the core infrastructure in areas where the market is unable to deliver.

Beneficiary Outcomes

4.5 SMEs could be either direct or indirect beneficiaries from broadband investments, depending on the approach used. In voucher schemes, the businesses are direct beneficiaries (they are effectively being given a grant to improve their broadband speed), while in area based projects, such as gap funded models, the beneficiaries are indirect (the broadband infrastructure is made available to all premises in the area and it is the choice of local businesses whether they wish to subscribe to high speed broadband). In the latter case, there are also likely to be a number of other indirect beneficiaries including larger businesses, households and public organisations who also benefit from the wider coverage of broadband networks in their area. The outcomes here are focused on the business beneficiaries. These are:

- Increased coverage of broadband results in an increase in the number of businesses subscribing to faster broadband. This could include existing businesses, businesses that have moved in to the area to take advantage of the faster broadband, and new businesses which are

created because the faster broadband has overcome a barrier to starting a business in the area (eg home based businesses).

- The subscription to high speed broadband enables businesses to increase productivity by allowing them to carry out existing processes more efficiently or to adopt new processes or business models. Examples could include:
- adopting cloud computing which removes the need to invest in a server
- manufacturers/distributors switching from physical to online platforms which reduces the need to have showrooms or shops, or
- reducing business travel costs by making use of skype conference calls and other collaborative tools.
- The access to high speed broadband could also enable businesses to grow turnover, profitability and employment by allowing businesses to access new markets (eg by being able to market their goods and services online or making greater use of social media) or by enabling them to develop new products and services.

Intended impacts

4.6 The intended impacts which need to be assessed by the evaluation are focused around:

- The gross and net change in GVA which is the cumulative effect of the improvements in productivity (from efficiency savings and adoption of new processes and business models) and the growth in turnover and profitability which results from improved access to markets and innovation.
- The gross and net change in employment, which would arise as a result of improved access to markets and innovation and the increased demand for goods and services that this would generate.

4.7 The net change in these variables will be influenced by a number of factors which will need to be measured. These include:

- Displacement: broadband investment has the potential to displace economic activity in both product and labour markets. For product markets, displacement could occur if broadband enables firms to access clients in other parts of England which are currently served by other domestic businesses. Displacement of labour could occur as a result of productivity gains and the structural change that broadband

may cause in an economy, with the loss of jobs in some sectors and the growth of others.

- Spillover effects: a benefit of access to broadband is that it permits greater interaction, collaboration, the forming of working relationships and the sharing of ideas (knowledge spillovers) and in that sense is similar to the agglomeration benefits of transport investments. These can increase the productivity of areas or sectors and contribute to GVA.
- Multiplier effects: businesses that grow as a result of increased access to broadband could cause multiplier effects through their supply chain expenditure and the expenditure of their employees.

Timing of Outcomes and Impacts

4.8 The timing of outcomes and impacts are likely to vary and will depend on a range of factors. A key determinant will be the rate at which businesses subscribe to high speed broadband. For voucher schemes this should occur shortly after the business has received support, and for area based projects there are always likely to be a number of early adopters. However the experience of SFB and UFB to date is that take-up has built up slowly and incrementally; take-up of SFB among all businesses employing ten or more people is currently at 20%. This has risen slowly but consistently from 5% in 2010[40]. Take -up rates of UFB among these businesses is lower, at 10%, up from 5% in 2010[41]. We are likely to see a similar slow build up in take-up of broadband in those areas which benefit from intervention, meaning the majority of benefits are not likely to occur until several years after the investment and even then may be continuing to grow.

4.9 Once businesses have subscribed to high speed broadband, businesses could begin to see cost savings after a very short amount of time, particularly if this does not require any further large scale investment or major changes to business models or processes (for instance through exploitation of time or money saving applications such as Skype or other online software packages). Other benefits are likely to take longer to accrue as businesses adjust to high speed broadband and take the time to explore and assess the benefits that it offers, and then make business decisions on how best to exploit it (for instance by switching to online sales). The timing of benefits will also depend on when web based applications which require high speed broadband are developed and brought to market. These applications can often be a key driver of take-up. For instance, take-up of SFB in the residential market accelerated once web-based applications such as TV and film streaming became mainstream.

[40] Total take-up of SFB, including all businesses with fewer than ten employees was at 17% in 2015. However no time series data is available for these small businesses meaning it is not possible to analyse how this has grown

[41] Total take-up is 6% if all small businesses are included. Again, no time series data is available.

4.10 In summary, given the likely timing of the national evaluation, the capture of the full economic benefits of broadband investments will most likely be outside its scope. However, the summative assessment of projects should assess the potential for these longer term benefits to occur, potentially using modelled estimates of impact.

Measuring Gross Outputs and Outcomes

4.11 The output measures for these interventions are:

- Number of enterprises receiving support
- Number of new enterprises supported
- Additional businesses with broadband access of at least 30Mbps.

4.12 Although not identified as an output indicator in the OP, projects which are aiming to increase the coverage of ultrafast broadband should also monitor the number of additional businesses with broadband access of at least 100Mbps. Data for these indicators will be captured through project level monitoring.

4.13 The main outcomes which will be measured are:

- Coverage of superfast broadband (>30Mbps) across England – there is some overlap here with the core output indicator. We therefore assume that this will draw upon the monitoring undertaken by the grant recipients. However there are other independent data sources that can be used to verify this, such as Point Topic or data provided by internet service providers.
- Percentage of businesses which have taken up broadband with speeds of at least 30Mbps – this data can be collected through monitoring data for voucher schemes where there is a direct beneficiary. It is likely to be more complex for area based projects, where there is no straight forward way of estimating how many businesses have subscribed. Internet service providers would be able to provide the number of business subscriptions, but we know that a large number of small businesses (particularly self-employed people who work from home) will use residential subscriptions instead. These are likely to make up a large number of the businesses that benefit from these projects, which will mostly take place in rural areas. The only way to gather this information would therefore be through beneficiary surveys. These surveys would need to be limited to those areas which have received broadband as a result of the intervention. This is a further challenge because the roll-out areas are often highly fragmented and based around the coverage of individual cabinets, which means some properties on a street may be included in the roll out area, while neighbouring properties are not. In determining the sample, the evaluators would therefore need access to very detailed

business databases which identify the postcode of businesses and capture even the smallest businesses (such as those based on Companies House records).

4.14 The summative assessments will provide useful project level information on these outcomes. Since the only way of robustly estimating business take-up is to carry out a local survey, we would expect most summative assessments to have followed this approach, and to share this information with the national evaluation. This survey is also best undertaken as part of the summative assessment because the organisation involved will have a clear understanding of the specific geographical definition of the roll-out area (which may well be highly fragmented).

Options for the Impact Assessment

4.15 The assessment of impacts needs to establish the causal effects of access to SFB or UFB on the economic performance of a local area. This requires consideration of: (i) the net change in business performance among existing SMEs that can be attributed to take-up of superfast broadband and (ii) the extent to which improved broadband access and speeds has attracted businesses to the area or encouraged new businesses to be set up. These in turn require different approaches which are set out below.

Existing SMEs

Use of administrative datasets

4.16 The majority of studies which have made use of administrative datasets to assess the impacts of broadband have looked at its impact on firm level performance, rather than the impact on local areas. The latter approach is often not feasible because of the difficulties in identifying a suitable control area. This will be even more challenging when evaluating the 2014-2020 Operational Programme because the roll out areas of projects may be highly fragmented, and area based datasets on economic performance are not available at this spatial level. There is also the further complication that coverage is already high (>90%) and many areas will receive broadband over the next few years.

4.17 A recent study carried out for Broadband Delivery UK did suggest an area based approach for assessing the economic impacts of broadband investment. This recommended an econometric approach, which would involve regressing economic outcomes (such as productivity or growth in the number of businesses) on a measure of broadband quality (such as

coverage of superfast broadband in an area), together with other explanatory variables in order to estimate the change in outcomes attributable to changes in broadband coverage. To overcome the risk of endogeneity[42], it recommended an 'instrumental variable' approach, which uses the weighted mean size of BT cabinet in an area as the instrument. This is recommended because there is a positive correlation between superfast broadband coverage and the size of a cabinet and because the size of cabinets can be viewed as pseudo random (an 'accident' of local BT network design decisions which can be assumed not to have any correlation with economic outcomes other than through its affect on broadband coverage. This avoids the need to identify a control group area. However we can see a number of challenges with the approach in the context of ERDF investment. These are:

- It would be very difficult to construct a model which identified and measured the full range of other explanatory variables which could affect the economic dependent variable. The effect of broadband coverage could be quite small relative to other local factors, such as transport improvements or major investments nearby.
- Some of the benefits from broadband may not manifest themselves in improved business performance. Some business owners may choose to use the enhanced flexibility it offers to increase their leisure time. Other business owners may make other investments to capitalise on the benefits of broadband which could take a long time to emerge. It would be difficult to capture these effects without understanding which businesses have taken up broadband and how they are using it.

4.18 Assuming that businesses that subscribe to broadband could be identified in the IDBR, then it should be possible to assess the impact of broadband on individual SMEs' employment and turnover over time through a matched control-group approach similar to the one described for Intervention Category 3 (SME Business Support). This would be subject to the same limitations (which are not repeated again here). However, as a means of assessing impacts on existing firms, this method would provide more robust results than approaches based exclusively on surveys, which ask businesses to self-report the performance of their business.

4.19 Although administrative datasets could be used to track business performance, it will still be necessary to undertake a survey since this is the only way of identifying those businesses which have adopted broadband and those that have not (to construct the control group). As we note above, it will be necessary to carry out this survey in any case to measure overall business take-up, which is an outcome indicator. Therefore this should not

[42] Endogeneity can occur if the broadband coverage variable is correlated with the error term in the model. This may be the case if there are unobserved variables not included in the model which are correlated with the economic outcome and the broadband coverage variable, or if there was 'reverse causality' between the economic outcome variable and the broadband coverage variable (eg high growth in business numbers in an area could lead to an accelerated roll-out of superfast broadband)

add significantly to the cost of the evaluation. It does mean, however, that the details of adopters and non-adopters would need to be recorded so that they could be identified in the IDBR.

4.20 Establishing a suitable control group from the non-adopters would also be complex and subject to bias using this approach. Even if it was possible to achieve a reasonably representative split by size and sector, there is still a danger of omitted variable bias (an unobserved variable which influences a business's decision whether or not to subscribe to broadband). However, this would also apply to other options such as the survey based approach described below. It therefore represents one of the most robust ways of assessing impact on business performance.

Surveys of adopters and non-adopters

4.21 A variant of the above approach, which could be used if it was not possible to identify businesses in the IDBR, would be a purely survey driven method. This would typically involve the following steps:

- carry out a survey of businesses in the roll-out area after a suitable period of time (to allow for the build-up of adoption and exploitation)
- include a screening question to identify adopters and non-adopters, with a quota set for the minimum number of each (the non-adopters would then be the control group).
- set targets to ensure that the sample is, as far as practical given the quota on adopters/non adopters, matched to the spatial, sector and size distribution of firms.
- survey businesses on how their business has performed over this period, and use difference in difference approaches to assess the contribution of broadband to performance.
- gross up the survey results across the area, weighting to take account of business take-up and size/sector.

4.22 The main drawback to this approach is that it relies on businesses reporting their performance over the study period, which may be subject to inaccuracies and bias (it would be difficult to overcome this by carrying out a baseline survey before the intervention, since it would not be known which businesses would go on to subscribe to broadband). As with the administrative datasets method, there would also be a danger of omitted variable bias.

4.23 This approach may be helpful as part of the collection of evidence on SME impacts as part of the national evaluation. The findings would not be as robust as an approach which used administrative datasets, but could be applied if there were practical difficulties in matching to the IDBR.

Surveys of Non-Treatment areas

4.24 This approach would involve a longitudinal survey in the roll-out area and a suitable control area where businesses could not access broadband. This survey would collect data on economic performance in the two areas over time (and take-up and use of broadband in the study area), with the key difference being that one area has access to broadband while the other does not. This would avoid the problem of omitted variable bias described above, since businesses in the control area would not have the option of subscribing to broadband even if they wished to do so.

4.25 However this approach would be more resource intensive (since it would require a longitudinal survey) and would run in to the challenge described above of finding a comparable control area in the 10% of the country that does not have access, and which would not receive any further broadband investment over the course of the study period. The fact that the roll out areas and remaining areas without access to broadband would be very fragmented would make it even more difficult to identify a suitable control area. We are not aware of any other studies that have successfully implemented this approach.

4.26 This is likely to be the most costly approach and would need to overcome a number of practical challenges. We therefore recommend that this is not considered further as part of the national evaluation.

Theory of Change Approaches

4.27 This method would involve analysis of change in economic performance in an area which has received broadband and then aim to understand the extent to which this can be attributed to the broadband investment. This would need to triangulate the following sources of information:

- Change in businesses, employment and GVA (with some public data sources there may be a time lag in collecting this data). It may also be difficult to obtain data on GVA at an appropriate spatial level.
- Business surveys. As with the other approaches, a survey would be used to provide an estimate of take-up, but in this case it would also be used to understand how business subscribers have used their faster broadband connection and what the impact has been on their business. The sample should also aim to include new businesses or businesses which have recently moved to the area to understand the role that broadband played.
- Broadband impact models. These can be used to estimate potential economic impacts by drawing upon evidence in previous studies and applying this to the characteristics of businesses that have subscribed to broadband. These can be useful for understanding what the longer term impacts might be, although this would be based on modelled rather than observed data.

4.28 The benefits of this approach are that it would be low cost and relatively straight forward to implement, since it would avoid the need to identify a control group. However it would provide the least robust results, since it would not involve any established CIE methods. Attribution could only be assessed and estimated through businesses' own views of how broadband has affected their performance, which will be subject to inaccuracies and bias, and through evidence from other studies on the impact of broadband. These studies tend to show that impacts of broadband are uncertain and context specific, and are influenced by a number of factors including business size, sector, managerial culture and skills. This would make it difficult to apply the findings in the context of the areas which have benefitted from broadband investment which would need to be caveated.

4.29 In summary, this approach may be helpful as part of the collection of evidence on SME impacts as part of the national evaluation. However, it is the least robust option and should therefore only be used in conjunction with other approaches which use established counterfactual methods.

New or Incoming Businesses

Administrative Datasets

4.30 The approaches described above, which use administrative datasets to track the performance of individual businesses over time would fail to capture the effect of broadband on the number of businesses in an area or the jobs that they support. This would require the use of area based datasets and the identification of suitable control areas which have not benefitted from broadband investment.

4.31 As described above, it may be difficult to identify suitable areas from the remaining areas that have not benefitted from broadband investment. Important factors that would need to be considered include the industrial mix, transport connections, availability of skills and availability of suitable business premises. Assuming that suitable areas could be found, then it should be possible to use business datasets which are available at postcode level such as the IDBR to assess the relationship between access to broadband and business stock. We would note however that we have not been able to identify any UK studies which have successfully implemented this method.

4.32 In summary, the national evaluation may wish to consider this method, however we would note the practical difficulties in establishing a control group area and the fact that it would be a novel approach.

Theory of Change Approach

4.33 A theory of change approach which combined analysis of business datasets, such as the IDBR, with a business survey which included new or recently moved businesses as part of its sampling approach would be the most practical method for assessing these effects. As above, this method would still be reliant on businesses' opinions to attribute impacts to the availability of broadband. It would therefore be subject to bias. However this would be less of an issue here than it is for impacts on business performance because it would not be asking for them to quantify the impacts on their business, which are more likely to be inaccurate. Rather it would ask them about the role that broadband played in their decision to relocate or to set up in the study area. This would also help to establish displacement effects (see below).

4.34 Although this method would be less robust than other approaches which use established CIE methods, we believe it is a sensible and pragmatic way to assess impacts on business stock which should give reliable evidence on the role that broadband has played.

Assessing Other Effects

4.35 As described above, there is potential for other economic effects to occur. These include:

- Displacement could relate to turnover/expenditure from other areas and displacement of jobs through 'creative destruction', as well as relocation of firms and jobs from other areas.
- Spillover benefits through greater collaboration and knowledge sharing
- Multiplier effects from the supply chain and salary expenditure of firms which grow.

4.36 The CIE approaches described above would fail to capture issues of displacement and would therefore need to be supplemented with a business survey which asked businesses about how broadband has benefitted their business. This should be most straight forward for assessing relocation effects, which can be assessed by asking those businesses which have moved in to the area about their origin as part of the survey. Displacement of turnover/expenditure for those firms which have used broadband to access new markets could be assessed by asking businesses about the location of new customers and what proportion of these are located outside the study area. It is more complex to assess the displacement of jobs through creative destruction effects, however these effects tend to occur at a national level and therefore should not be a concern for impacts on local study areas.

4.37 Some of the spillover benefits might be captured through CIE methods if the benefits were internalised by firms, however there are also likely to be positive externalities which could only be observed at a macro level. The only way of estimating these effects would be to apply the findings of studies

which have previously measured them (although we have not been able to identify any examples). Again, if these effects did occur, it is likely that they would play out over a wide area. Therefore these effects are not likely to be a concern when assessing the impact on local areas.

4.38 It is challenging to assess multiplier benefits through CIE methods, plus the potentially diffuse nature of these impacts suggests that it should not be a priority for the national evaluation. However, they could be estimated using established benchmarks from the HCA's additionality guidance.

Use of Summative Assessments

4.39 Where impact evaluation is not feasible, key questions about impact will need to be explored through a variety of supplementary methods. Whilst not enabling the attribution of any quantitative impacts, they will provide valuable qualitative insights into whether those that deliver, experience and benefit from the intervention believe them to have had any impact.

4.40 A key source of this qualitative evidence is the project Summative Assessments. The summative assessments will need to play a key role in providing information for the national evaluation. As noted above, we believe a survey of businesses is unavoidable since this is the only way of robustly measuring business take-up of broadband. Each summative assessment will need to carry out a business survey for this reason because business take-up is an outcome indicator for this priority.

4.41 Given that a business survey is also the only means of identifying adopters and non-adopters which is required for application of a CIE method, we believe the most sensible approach would be for the summative assessments to lead the counterfactual assessments. The typical size of these projects, which vary from £3m to £4m in ERDF (but which will have a total project value much larger) means that these summative assessments should have sufficient resources to follow a CIE methodology. If these were carried out using an agreed and consistent approach, this would mean that the national evaluation would not need to carry out its own business surveys, which would be an inefficient use of resources and would mean businesses are being surveyed twice.

4.42 The risk here is that there would be inconsistencies in the approach taken by different summative assessments. It is therefore essential that the national evaluation works closely with the summative assessment evaluators in designing the approach, which could be carried out through workshops. The national evaluation will then need to provide written guidance on how to carry out the summative assessments including a standard questionnaire and the requirements for sampling.

Monitoring Requirements

4.43 Where there are direct beneficiaries (voucher schemes), it will be necessary for projects to record and supply a core set of information including the full name and address of the business, as well as the value of the voucher and estimated broadband speed that the business will be able to obtain. If possible, it would also need to monitor the date at which the voucher is redeemed to establish the rough date when the business can access high speed broadband.

4.44 For area based interventions, the key monitoring information will be the postcodes which are covered by the roll-out area and the speeds that premises will be able to access. ISPs should be able to provide this information. This data will need to be combined with business datasets such as IDBR to estimate the number of SMEs that have received coverage. This would also need to identify businesses which are new to the area (either because they have been recently established or have moved in to the area).

4.45 If the summative assessments were to use administrative datasets as part of its CIE method, the business surveys would also need to record the full names and addresses of businesses and whether they have subscribed to broadband. This is so that the businesses can be identified in the IDBR.

Assessment of Suitability of Impact Approaches

4.46 Table 4.2 provides an overview of the possible approaches. While the assessment is complicated by the need for different types of approach for established businesses and those that are new to the area, the main conclusions are:

- Although it will add to the cost of the evaluation, a survey of businesses in the area with improved coverage is unavoidable. This is because a survey is the only robust method for measuring business take-up (an outcome indicator) and identifying the specific businesses which have subscribed to broadband.
- Counterfactual approaches to assessing the impact of broadband on the performance of established businesses should be viable. This could be done using administrative datasets, which would be the most robust approach, but could also be done as part of the business survey.
- It will be more challenging to carry out counterfactual approaches for assessing impacts on the number of businesses in an area and the jobs that they support. While possible in theory, we believe it would be very difficult for an evaluation to establish a suitable control area or to construct a model using an instrumental variables approach which took account of the full range of explanatory variables. Therefore a survey based method, which asks businesses about the role broadband

played in their location decisions, is likely to be the most pragmatic approach.

- Given the expected requirement for beneficiary surveys to be carried out as part of the summative assessment and the typical size of these projects (which are likely to be few in number but all fairly large in financial value), we believe it is most appropriate for the responsibility for carrying out the counterfactual impact assessment to be with the project evaluators rather than the national evaluation. Each project evaluation would need to be carried out separately, rather than as one overall evaluation and the amount of local data that would need to be collected and shared for each would introduce a number of challenges if this was all done centrally as part of the national evaluation. The national evaluation will have a key role to play in ensuring that these are all carried out in a consistent and robust way, providing guidance to Grant Recipients alongside match funders such as BDUK.

Table 4.2 Overview of Impact Assessment Methods

Methods	Established SMEs	New businesses or in-movers
Counterfactual Impact Methods	Viable through a matched control group approach (provided that adopters and non-adopters can be identified through a survey) **SMS = 3**	Viable in theory but practically very difficult to identify a control area **SMS = 0**
Beneficiary Surveys	May provide a useful source of evidence for assessing displacement, but not a robust source of counterfactual and therefore should only be carried out in conjunction with CIE methods **SMS = 1**	Given limited potential of CIE methods for assessing impacts, beneficiary survey is a valuable source of evidence when considered alongside business datasets, but not a robust source of counterfactual **SMS = 1**
Summative Assessments	Potentially very valuable because business survey would need to be undertaken as part of summative assessment. **SMS = 3 (assuming consistent use of robust CIE methods)**	Potentially very valuable because business survey would need to be undertaken as part of summative assessment. **SMS = 1 (limited scope for use of CIE methods, and therefore limited to beneficiary survey)**
Monitoring information	Need for enhanced monitoring information of roll out areas,	Need for enhanced monitoring information of roll out areas, broadband

	broadband speeds and coverage of businesses	speeds and coverage of businesses which are new to the area
Overall Assessment	Need for a mixed methods approach, with good potential for CIE methods to be used to assess impacts on existing businesses, although this would require the use of a survey which would add to costs. To avoid duplication of resources, assessment is best carried out as part of summative assessments.	

5. Business Infrastructure: Land and Property

Introduction

5.1 This covers support to bring forward brownfield employment sites, develop associated infrastructure (including access roads and green infrastructure), and new and refurbished premises including incubation, work space and grow on space. To date around £42m ERDF has been committed to incubation, commercial and industrial floorspace projects with an average amount of ERDF invested per project of £3.5m.

5.2 We expect the level of ERDF commitment to these interventions to increase significantly in the coming 12 months as projects in the pipeline, including a number of large financial instruments, are approved. In general terms, it can take longer to both develop and implement these projects than average.

Logic Model

Rationale

5.3 The interventions are underpinned by the need to support private sector investment in brownfield employment sites and premises in order to better meet the land and property requirements of local businesses, to support the attraction of new businesses and new sectors, and to promote new business locations in some instances. These interventions are ultimately intended to promote the growth of businesses, the generation of additional employment and wealth creation (and access to this amongst local residents) and the growth and competitiveness of local economies.

5.4 The need for intervention arises from a variety of forms of market failure which limit the willingness of the private sector to bring forward the

sites and premises to meet the needs of the local economy, including negative and positive externalities, information and coordination failures, and path dependencies.

Approaches

5.5 The approaches adopted by the ERDF programme reflect the available evidence concerning the need to carefully target support upon particular types of activity (remediation, supporting site infrastructure and development of particular types of floorspace), targeting geographical areas and sectors where the interventions can make the greatest difference (and often linked to wider area based strategies), and the provision of incubation alongside business support. The activity supported does not cover housing, although it can be part of an area based approach to regeneration which can include housing.

5.6 The ERDF programme is also supporting large scale financial instruments in some instances, such as the North West Evergreen Fund II, which provides commercial development finance to developers to help them bring forward schemes which are unable to access to sufficient finance from commercial markets. Under this model the finance is recycled into other property developments either in the current or future programme periods.

Beneficiary Outcomes

5.7 The main beneficiaries of ERDF support are entrepreneurs seeking incubation and managed workspace, growing businesses seeking a higher quality or larger premises, and businesses locating into an area. This should enable these businesses to increase their turnover and employment as they grow, to enhance their productivity through occupying more suitable premises (and potentially from co-location with similar businesses or support providers) and to invest/relocate into a new location which provides new business opportunities.

5.8 In terms of the ERDF programme, these business occupiers are indirect beneficiaries and their details are not routinely collected as part of the project monitoring systems. This raises an issue about how the occupiers can be engaged with as part of the evaluation process. This is considered later in this section.

Intended Impacts

5.9 The range of intended economic impacts include:

- Additional wealth and employment creation in local economies, including the potential for this to be located in priority spatial areas or sectors, and the growth of local businesses and the attraction of inward investors
- Enhanced economic competitiveness of local economies and the closing of the performance gaps with more prosperous areas
- The establishment of new investment locations, often as part of a wider masterplan and in conjunction with other substantial investments from public and private sources
- Improved land values and rents for commercial and industrial property through the removal of negative externalities and increased demand in property markets (however, the increase in supply can also put downward pressure on property markets in the short term).

5.10 The investments can have a variety of other economic effects which need to be considered as part of an assessment of overall net economic impacts. These include:

- Investment deadweight – the extent to which developers would have made the particular investments which they did in the absence of ERDF support
- Occupier deadweight – the extent and nature in which the provision of the sites and premises influenced the locational and business decisions of the occupiers
- Relocation effects – the extent to which the provision of the ERDF backed sites and premises led to the relocation of business activity from other sites and premises, thus leaving vacant floorspace elsewhere. The impact is less likely to be negative in terms of displacement if:

- the new occupiers are from outside the local area (especially if they are international)
- the move of local businesses' facilities growth and improved productivity they otherwise would not have achieved
- the freed up sites and premises enables the growth of other local businesses.
- Wider displacement and substitution effects – the enhanced performance of the occupiers, if this is achieved, may lead to a variety of wider dynamic market and factor effects including the displacement of activity of other local businesses or increased competition for labour and skills. There may also be multiplier effects associated with increased expenditure.

5.11 The contribution that the interventions make to the level of SME jobs created will be easier to measure in both gross and net terms, although estimating these gross and net effects at a local level will nevertheless be

challenging. Given the modest scale of the overall level of investment in this area of the programme, the employment effects will be very modest compared to the scale of overall employment and potentially the rate of change locally, as well as other drivers of employment growth (such as investment by the private sector).

5.12 Likewise, whilst it might be possible with suitable evaluation approaches to identify the gross and net impact of these investments upon the productivity of occupiers, it would be very challenging to distinguish this from other drivers of change nationally and sub-nationally (and hence the contribution to the change in productivity baselines for SMEs for England and category of regions).

Timing of Outcomes and Impacts

5.13 Although it is possible for some property schemes to be delivered and occupied fairly quickly (with lead in times of a minimum of two years), the delivery of remediation, site infrastructure, premises and marketing and the subsequent occupation by SMEs usually takes much longer. This is particularly the case where the programme is funding major remediation and site infrastructure improvements, major new business locations or investment in areas where property markets are particularly weak.

5.14 Consequently, it is not uncommon for the full range of economic impacts to take between five and ten years to materialise. It raises the fundamental issue about the ability of both project summative assessments and the national evaluation to robustly measure these impacts.

Relationship to Specific Objective Result Indicators

5.15 The relevant programme level result indicators for these interventions are:

- Total entrepreneurial activity (SO3.1)
- Total SME jobs created and reduction in SME productivity gap (SO3.2 and SO3.3).

5.16 In practice, it is unlikely that the potential ERDF investment will have any discernible impact on the baseline for entrepreneurial activity either at the England or sub-national levels. Indeed, it is likely to be difficult to identify the contribution of these types of interventions, which will tend to be lower volume compared to general business advice for example, on entrepreneurial activity.

Measuring Gross Outputs and Outcomes

5.17 The core ERDF output indicators for these interventions are:

- C22 Total area of rehabilitated land
- P2 Public or commercial buildings built or renovated.

5.18 It is desirable for monitoring information to be collected by grant recipients which also distinguishes between:

- Land remediated for employment and non-employment uses
- Type of employment floorspace provided (new, refurbished; office, industrial; incubation, managed workspace, grow-on, other)
- Rate of development on employment sites and occupancy rate of premises
- Location of the site and the address of the developed or refurbished premises (to help determine the development rate if this isn't available directly from the grant recipient).

5.19 We recommend that this information is collected by grant recipients, both to inform the project summative assessments and the national evaluation.

5.20 The key SME beneficiary outcomes which need to be systematically monitored are:

- The level of output, employment and a measure of labour productivity of the occupiers of the ERDF backed sites and premises and the change over time. This needs to be measured at a point prior to or at the time of occupation of the site or premises and measured again sometime in the future.
- The geographical origin of these occupiers, including whether they have relocated within the local area or have relocated into the area from somewhere else in England or internationally.

5.21 One of the key challenges is that the details of the SME occupiers and the associated information outlined above are not systematically recorded. This information could be filled in a number of possible ways:

- Requiring grant recipients to collect this information, even where they are not the actual developer of the employment premises or the sites/promises are sold on to third parties. It might not however be possible to impose this retrospectively on grant recipients.
- Analysis of the project summative assessments, although this type of information will not necessarily (and indeed it is unlikely) be collected and reported in a standard way.
- A desk based search of sites and premises databases and other sources to identify the occupiers.

5.22 We propose that grant recipients are required to gather a standard set of information on occupiers and arrangements are put in place for this requirement to be passed onto developers where they benefit from ERDF grant or repayable finance.

Options for the Impact Assessment

5.23 The impact evaluation should identify the causal effects of the site and property development on occupiers, property markets and local economy performance. This should allow for:

- Extent to which development might have occurred in the absence of ERDF support
- The displacement of other development activity by the ERDF backed activity
- The role of the sites and property development in facilitating the growth amongst local SMEs, the retention of this activity or the attraction of new activity.

5.24 The RGF economic impact evaluation scoping report considers the potential approach which could be used to assess the economic impact of a similar mix of investment for employment sites and premises. The methods and the conclusions it reaches are outlined below.

Firm Level Approach

5.25 This approach focuses on the locational decisions of occupiers drawing on longitudinal data for firms relocating or establishing new locations through the IDBR. The propensity of relocation in areas with employment site and premises investment is then compared to comparable areas (possibly based on areas with schemes completed at an earlier and a later stage).

5.26 The approach is considered to have limited viability for a number of reasons:

- The sites will have very different characteristics and reasons for them being brought forward which it is difficult to control for
- Other factors may have a major influence on relocation effects, such as the attraction of a large company to the local economy which might attract suppliers to the ERDF backed sites
- It will not always be possible to identify occupiers of the ERDF backed schemes in the IDBR, especially start-ups and younger companies.

5.27 A simpler variant of this approach is to identify the change in turnover and employment amongst occupiers through the IDBR and to compare this

to a matched comparison group from the same locality identified through this database (matched on the basis of size, sector, location). However, there would be no information on the property and location choices of the comparison group and hence it would provide little insight into causality. Again the method would not provide any evidence for start-up businesses.

Site Level Approach

5.28 The establishment of a counterfactual by identifying a similar group of employment sites with similar characteristics in the local area in order to establish causality between ERDF funding and the rate and nature of development. However, the RGF report notes a number of challenges to this approach which would significantly limit its viability including:

- The absence of a comprehensive national database of brownfield sites and the withdrawal of this type of site monitoring activity by many local authorities locally over the past decade
- Selection bias given the potential for ERDF backed sites to significantly differ in terms of the attractiveness to developers compared to other sites which would not come forward in absence of public sector support
- The potential for some of these differences to be unobserved in the absence of detailed analysis of site conditions and local market context.

5.29 The approach would also provide no information on the change in business performance of the occupiers and the economic benefits they provide. The approach would need to be supplemented by other research methods to provide this information.

Spatial Approach

5.30 This approach is based on comparing local areas in which ERDF backed projects are implemented with other comparable local economies without these schemes. There are various ways of defining the areas based on Lower Super Output Areas containing the developments and a series of rings around these areas. The counterfactual is based on rings further from the treatment centre and the variation in when treatments were completed.

5.31 The approach has significant limitations which reduce its viability as a counterfactual method including:

- Limited variables available at a local level which can be used to measure economic change with employment being the main one (property prices may also be available although there are measurement issues with this including time lags)

- The absence of policy-off areas which are similar with ERDF being available across England (although at different levels of intensity to some respect) or some other local growth initiatives (RGF, City Deal etc) being available in areas with similar economic development needs
- The impact of smaller scale developments might be difficult to isolate
- Changes in land use designations at a local level which may impact significantly in some instances upon the change in the development rate.

Time Series Development Rates

5.32 A simpler variant of the spatial approach would be to examine the rate of change in development activity, rentals and economic indicators (employment, unemployment, etc) in a defined local area before and after the investment. Whilst this could potentially be useful contextual analysis, the absence of a counterfactual would limit its usefulness in establishing causality. Many of the shortcomings in terms of the potential counterfactual for the spatial approach noted above apply here as well.

Occupier Surveys

5.33 Whilst occupier surveys will provide useful contextual information on their land and property requirements, their ability to meet them and contribution of the ERDF investment and evidence to inform judgements on displacement, the usual limitations of self-reported evidence on impact will apply. Surveys can also be used to gather evidence on impact from the developers, including whether they would have developed the same sites to the same scale and standard in the absence of ERDF support.

5.34 The approach to the survey also needs to allow for the SMEs not being direct beneficiaries of the ERDF grant, with low response rates often being an issue.

Summative Assessments

5.35 Where impact evaluation is not feasible, key questions about impact will need to be explored through a variety of supplementary methods. Whilst not enabling the attribution of any quantitative impacts, they will provide valuable qualitative insights into whether those that deliver, experience and benefit from the intervention believe them to have had any impact.

5.36 A key source of this qualitative evidence is the project Summative Assessments. The summative assessments will provide useful information on the local economic and market context, the objectives of the investments, the nature and progress with the developments, take-up rates and type of

occupiers, and possibly estimates of gross and net impact. The assessments will provide evidence to establish the extent to which aspects of the theory of change have applied in practice. However, it is unlikely that many of the assessments will achieve high standards of counterfactual impact evaluation and hence causality, for many of the same reasons highlighted above.

5.37 Given the scale of the investment in the property focused financial instruments there may be merit in the National Evaluators working closely during the evaluation design phase for a major financial instrument (such as Evergreen II) to develop and test possible counterfactual impact approaches.

Assessing Other Effects

Displacement

5.38 A number of the impact methods noted above (the spatial methods in particular) provide a basis for accounting for property market displacement. However, these are subject to analytical shortcomings and would need to be supplemented by other sources of evidence from developer and occupier surveys and triangulation with the summative assessment evidence.

Wider displacement and substitution effects

5.39 The impact analysis outlined above will provide limited information on the wider displacement and substitutions effects which may arise from the improved performance of the occupiers. This could be supplemented by evidence from any occupier surveys undertaken and the summative assessments, although the evidence may be of only limited value in practice.

Rentals Levels

5.40 Whilst an analysis of the change in land and property values and rentals can provide useful contextual information, identifying causality is much more challenging in practice. The relationship between ERDF investment and changes in property values is complex (eg investment may induce both increases and decreases depending on the circumstances), and the limitations of the data and the shortcomings in the analytical approaches further exacerbate the challenges for evaluators.

Controlling for Other Factors

5.41 There are a variety of other interventions which will need to be taken into account including the Regional Growth Fund, Local Growth Fund and the City Deals. Whilst RGF has been allocated on a competitive basis across England, LGF covers all LEP areas, whilst City Deals are focused on particular locations. The ERDF investments will often be taking place alongside or in close proximity to schemes using these other funding sources.

5.42 Another consideration is that some locations will have had a long history of large scale public sector backed investments (often alongside complementary investment into transport and public realm), especially where local economies have been restructuring and property markets have been historically weak. Many of these past investments have taken more than a decade to some to fruition and the benefits are only now being seen. It will be challenging to disentangle the effects of these past investments from the current ERDF investments.

Monitoring Requirements

5.43 In addition to the core indicators, it will be important for the monitoring information required by MHCLG to be enhanced in a number of ways (outlined in more detail above):

- Consistent information on the type of development activity and floorspace being provided, development and occupancy rates and location of premises
- Collection of data by grant recipients on the geographical origin of the SME beneficiary and selected outcomes (in particular the change in business output and employment).

Assessment of the Suitability of Impact Approaches

Overview

5.44 This is a particularly challenging intervention for which to undertake robust impact evaluation. This is due to the large number and diverse mix of investments, the complexity of the local economic and property markets contexts in which they are implemented, the limitations of the local economic and property market data, and the long time period over which delivery occurs and impacts emerge.

5.45 Considering each of the approaches the main conclusions are:

- There is limited scope for the viable use of robust counterfactual approaches of these interventions as part of the national evaluation. Whilst there may be scope to test a mix of approaches as part of the national evaluation, the uncertainty as to their value points to this being undertaken only on a limited basis and probably through the national evaluators providing guidance to the grant recipients and their evaluators.
- If an in-depth case study is to be undertaken to test possible counterfactual approaches, we suggest that this is focused on one of the larger investments namely the North West Evergreen II or similar fund. This has the advantage of being focused in a geographical area for which the availability of property market and economic data is generally very good. The grant recipient is also well placed to gather the type monitoring data which will be necessary.
- Whilst there may be some merit in undertaking developer and occupier surveys across all or a sample of property projects, this risks unnecessary duplication of effort where the benefits of a national approach may not be justified in practice. An alternative approach is for the national evaluators to work with grant recipients to develop suitable research tools which can help to secure greater consistency of data, although this may now be impractical given the different stages they are at their own evaluation activity.
- The summative assessment will provide useful evidence, which may be enhanced through the provision of guidance to grant recipients.

Table 5.1 Overview of Impact Assessment Methods

Methods:	
Counterfactual Impact Methods	Limited potential viability to implement a consistent approach at a national level **SMS = 0/1 (depending on precise approach)**
Occupier and Developer Surveys	Benefits of undertaking national surveys may not merit the cost, although current assumption is that a beneficiary survey is undertaken. Alternative is for national evaluators to provide survey approaches and tools to encourage collection of consistent data **SMS = 0 (potentially 1/2 if before and after surveys of beneficiaries)**
Project Case Studies	Opportunity to test the potential for robust counterfactual approaches for one of the larger property projects. This might provide some evidence to inform conclusions/lessons about the impact of these interventions as a whole. However, the long timescales of these impacts to materialise may limit the usefulness of a case study approach for the given national evaluation timescales **SMS = potentially 2/3 depending on precise method adopted**
Summative Assessments	Limitations to usefulness, but potentially valuable given shortcomings in other approaches

	SMS = 0 (assuming very limited use of robust CIE methods)
Monitoring Information	Important to ensure enhanced monitoring information is collected in a consent format and quality standards but may be limited scope to ensure coverage by National systems and by grant recipients at this stage
Overall Assessment	Need for a mixed methods approach enabling triangulation of the evidence. Overall robustness of impact assessment undertaken by the national evaluation may be limited in practice, with more reliance on approaches which provide limited evidence of causality.

5.46 In summary, whilst there is a need for a mixed methods approach enabling triangulation of the evidence, the scope for robust counterfactual impact assessment of these interventions at a national level is limited. There is not a strong case for beneficiaries surveys as part of a national evaluation (unlike for business support interventions), instead with the emphasis on raising the standards of evaluation undertaken by grant recipients.

5.47 The summative assessments will be a key source of evaluation evidence for this intervention type in the national evaluation. Given the challenges of CIE for these interventions types and the likelihood of variable standards across grant recipients, the national evaluation may not be able to provide robust conclusions on attribution.

Monitoring

5.48 In order to implement the proposed approach, there will be a need to ensure a standard approach to the collection of monitoring information concerning the (i) the type of development activity and floorspace, (ii) occupancy data, (iii) details of the occupiers, their origin and selected performance information (more detailed is provided above).

5.49 There may be practical restrictions on the collection and provision of beneficiary information, especially where the grant recipient is not the site or property developer.

6. Transport Infrastructure

Introduction

6.1 The interventions in this category include transport interventions in Cornwall, the only Less Developed Region in England (and all contained within Priority Axis 7). These include investments in the road and rail networks and interventions promoting greater accessibility and encouraging more sustainable forms of travel. There are no direct beneficiaries, but a range of potential indirect beneficiaries including businesses, residents and visitors. The specific objectives and the associated eligible activities are:

- Investments in the TEN-T road and rail network (SO7.1)
- Encouraging modal shift and improving accessibility of employment sites (SO7.2).

Progress to Date

6.2 Priority Seven, which includes both of these Specific Objectives, has a total ERDF allocation of €58m. To date around £25.3m of ERDF grant has been committed to transport investments, with nearly £20m committed to rail and road investments and the remainder committed to investment in a multi-modal hub at St Erth. The projects are above average in size, which reflects the large-scale nature of many transport infrastructure investments. There are currently no further projects in the pipeline.

Table 6.1 ERDF Projects and Spend up to December 2016

	SO7.1	SO7.2	Total
Number of Projects			
Approved	2	1	**3**
Almost Approved	-	-	**-**
Early Stage	-	-	**-**
Total ERDF Value			
Approved	£19,900	£5,400	**£25,300**
Almost Approved	-	-	**-**
Early Stage	-	-	**-**
Average Project Value (000s)			
Approved	£9,950	£5,400	**£8,433**
Almost Approved	-	-	**-**
Early Stage	-	-	**-**

Logic Model

6.3 The section focuses on investments in the TEN-T road and rail network (SO7.1) rather than activities to encourage modal shift such as the multi-modal hub. However, we believe the implications in terms of impact evaluation approaches are broadly the same in both cases.

Rationale

6.4 The main objective of rail and road investments is to improve integration with the TEN-T road and rail network, which connects Cornwall and the Isles of Scilly with national and European markets. At present, a lack of capacity on the rail network and bottlenecks on the road network means that parts of Cornwall suffer from poor accessibility for many of these markets. The market failure case for intervention is based on negative externalities (which can lead to congestion) and the fact that transport infrastructure has features of a public good (non-excludability and non-rivalry) which would result in under provision if left to the market.

Approaches

6.5 Priority Axis 7 aims to address these issues through targeted investment in the Comprehensive TEN-T road and rail networks. Given that funding can only be committed to projects in Cornwall and the Isles of Scilly, the Priority Axis in the Operational Programme can be specific about the types of projects which will be funded. These include addressing a key bottleneck on the A30 by upgrading a 12.5km stretch of road between Carland and Chiverton Cross from a single lane to a dual carriageway, and improving the signalling infrastructure on the mainline rail network, which will increase the number of services. These are the two projects which have already had funding approved under SO7.1.

Beneficiary Outcomes

6.6 The indirect beneficiaries include businesses, commuters, residents, visitors and public sector organisations who could all use and benefit from the new infrastructure. These groups could all benefit indirectly from the improvements even if they don't use the improvement, as a consequence of reduced congestion on the network as a whole, improved attractiveness to investors, and so on.

The main outcomes are as follows:

- Journey times would be reduced and reliability improved, making it easier for all types of traveller to access different locations in Cornwall, including key employment and service centres.
- Generalised travel costs[43] (GTCs) would be reduced for all types of users. For business users and public sector organisations, this would translate into improved productivity, both as a result of financial cost savings and the time saved through the reduced journey time, which could be spent on alternative productive uses. For residents and

[43] Generalised travel costs are the sum of the monetary and non-monetary costs of a journey. Monetary costs might include a fare on public transport or the costs of fuel. Non-monetary costs refer to the time spent undertaking the journey. Time is converted to a money value using a value of time figure.

visitors, the reduction in GTCs would translate to an increase in welfare as a result of the financial saving and an increase in the time available for leisure pursuits. This may also be the case for commuters, although they could equally choose to use the time saving to work more, which would increase productivity.

- Productivity could also be increased through agglomeration effects by improving the matching of businesses and workers and creating the conditions for greater interaction and knowledge sharing between various economic actors (businesses, clients, suppliers, workers and collaborators).
- Existing firms could grow as a result of improved access to markets, for instance by improving access to parts of Cornwall to visitors.
- New firms could be attracted to the area due to improved access to markets or because the investment has improved access to an employment site.
- In the case of rail investment projects, this could promote modal shift by encouraging some people to reduce the number of trips made by car and increase trips by rail, reducing congestion and carbon emissions.

Intended Impacts

6.7 The intended impacts which need to be assessed by the evaluation are focused around:

- The gross and net change in GVA/GDP which is the cumulative effect of the improvements in productivity (from GTC savings and agglomeration effects) and the growth in turnover and business investment which results from improved access to markets (after accounting for displacement and other factors influencing additionality).
- The gross and net change in employment, which would arise as a result of business investment from new and existing firms and the increased demand for goods and services as a result of increased access to markets.
- The change in welfare for non-business users caused by the reduction in GTCs, which are not captured through economic measures such as GDP/GVA.
- The gross and net change in CO2 emissions that results from modal shift (from road to rail) in the case of transport investments.

6.8 The primary focus of the evaluation should be on assessing the change in GDP/GVA and employment. Although changes in welfare and CO2 emissions are both very relevant, they are secondary priorities for this SO, which is focused on economic growth through better integration with wider markets. There are also practical challenges in assessing these impacts with CIE methods.

6.9 There is potential for displacement effects for some of the impacts described above, which would reduce the scale of net economic benefits. This particularly relates to increases in growth in a particular location which arise as a result of improved access to client markets following a transport intervention. If these client markets are predominantly based within the study area (Cornwall) then displacement is likely to be high and would also need to be assessed as part of an evaluation.

6.10 There is also potential for multiplier effects as a result of businesses' increased access to new markets, which would also need to be assessed.

Timing of Outcomes and Impacts

6.11 The timing for outcomes will vary depending on which is being considered. User benefits arising from reduced GTCs should start to accrue fairly quickly from the date the investment is completed, assuming that this immediately starts to reduce journey times or make travel easier (for instance by alleviating congestion). Although it could take up to 60 years for the full extent of user benefits estimated through WebTAG to be realised.[44]

6.12 Other outcomes could take longer to arise initially. Agglomeration effects will depend on how long it takes firms and workers to adjust their behaviour in response to greater connectivity (e.g. widening search areas or forming new relationships with clients or suppliers) and the time it takes for this to translate in to higher productivity. A study which carried out a meta-analysis of evidence from studies assessing the agglomeration effects of transport investment compared the scale of agglomeration elasticities over different time periods, distinguishing between the scale of effects in the short term (one year), medium term (up to five years) and long term (more than five years) (Melo et al, 2013).[45] The study found positive agglomeration elasticities over each time period, but that these were "considerably stronger in the long run than in the short or medium run", which suggests that these effects should ideally be assessed over a period of at least five years, but preferably longer.

6.13 The timing of growth and investment effects are also likely to vary. There may be immediate benefits if the intervention results in an increase in demand for businesses through improved accessibility (eg an increase in visitor numbers). Other effects may take longer to occur, and will depend on the time it takes existing firms and potential investors to adjust their investment decisions in response to the new road infrastructure. It will also depend on other practical factors, such as the time it takes to gain consent (if applicable) and for new commercial premises to be developed. There is no

[44] This is the time period used to estimate all benefits in WebTAG

[45] Melo, P., Graham, D. and Brage-Ardao, R. (2013). The productivity of transport infrastructure investment: A meta-analysis of empirical evidence, Regional Science and Urban Economics, Volume 43, Issue 5, September 2013, p 995-706

guidance on how long these effects might take to occur, although again it is likely to be around five years before the full scale of benefits can be assessed.

6.14 Given the likely timing of the national evaluation, the capture of the full economic benefits of transport investments will most likely be outside its scope.

Measuring Gross Outputs and Outcomes

6.15 The output measures for road interventions are:

- Total length of newly built roads (km)
- Total length of additional lane capacity (km)
- Total length of improved and/or resurfaced road (km)
- New junctions/junction improvements.

6.16 For rail investments, they are:

- Number of additional services
- Total length of newly built rail (km)
- New/refurbished stations.

6.17 We do not believe there is a need to collect any further output indicators. The main outcome measures which will be measured are:

- All year average vehicle journey time (east and west bound) – grant recipients should be able to provide this data which can be monitored through DfT Traffic Master data
- Improved service frequency - grant recipients should be able to provide this data which can be monitored through rail timetables.

Options for the Impact Assessment

Accessibility Modelling

6.18 Although there is extensive guidance on appraising the impacts of transport investments (eg WebTAG guidance), the guidance on evaluating impacts is limited and there are no well-established CIE methods.

6.19 A 2015 Department for Transport presentation recognises that the approach to ex-post evaluation "needs more development" (DfT, 2015).[46] It identifies the main challenge as being the robust measurement of impacts against a counterfactual. It concludes that experimental approaches (such as randomised control trials) are generally not feasible (or desirable) for transport. Quasi-experimental approaches, which control for characteristics of treatment versus comparison groups and analyse the difference in outcomes, offer potential, but it notes "only a handful of studies in the world have successfully delivered this approach".

6.20 A recent evaluation scoping report for LGF (BEIS, 2017)[47] explored the feasibility and robustness of a range of potential quasi-experimental approaches for transport investments. The approach that they considered to be most fit for purpose for both rail and road investments was accessibility modelling. This would involve the construction of a pre and post-investment matrix of journey times to identify potentially significant travel time savings between relevant origin-destination pairs. These and other relevant control variables would then feed into a fixed-effects modelling framework designed to assess the extent to which the transport investment explains variations in small area economic performance between locations at varying distances from the scheme as a basis for assessing their impacts.

6.21 Although the authors saw no reason why such an approach could not be successfully applied, they did note that this was a novel and thus far untested method for the evaluation of transport impacts and also that "some further development is required" before such an approach could be employed.

6.22 By measuring changes in turnover, employment, productivity and firm numbers and attributing this to the transport investment, this method should capture each of the main economic outcomes identified above (business user benefits, agglomeration effects and investment effects). However, it would not capture the full range of user benefits from transport investments (i.e. those benefits from reduced GTCs that accrue to non-business-users), which would need to be modelled separately.

6.23 The key challenge arising from this approach (aside from it being untested) is:

- The limited scale of the road investment (although the concentration of resources in a few schemes is helpful)

[46] Department for Transport (2015). Ex-post evaluation at the UK Department for Transport. Presentation to CGEDD, 24th June 2015

[47] Department for Business, Energy and Industrial Strategy (2017). Evaluation of policies for local economic growth: scoping study

- The wide range of control variables that would need to be identified which could potentially affect congestion (eg other public or private investments nearby, other traffic calming measures, weather and its effect on visitor traffic, and so on)
- The need for a considerable volume of monitoring data to be gathered by the delivery bodies on the volume and type of road user (for the treatment and comparator roads or spatial areas).

6.24 Whilst there is potential for the use of CIE methods on these schemes, these will need further testing. We believe this is best undertaken as part of the project-level summative assessment, although the national evaluation should offer advice and support on how this could be developed.

Post Completion Surveys

6.25 Other well-established methods for assessing the impacts of major road schemes include the approach taken in Highways England's Post Opening Project Evaluations (POPEs). This involves a three-stage process:

Collection of pre-scheme baseline data

- '1 year after' evaluation
- '5 years after' evaluation.

6.26 Each POPE compares the ex-ante forecast with the ex-post result for each scheme's objectives. For example, reducing journey times, improving journey time reliability or reducing congestion. By carrying out an assessment of journey times and traffic flows after the project has been completed, POPEs can provide updated outturn forecasts of user benefits post implementation (such as a reduction in GTCs) based on observed rather than predicted data. User benefits can also be estimated separately for business and non-business user benefits.

6.27 If a counterfactual impact method was employed to estimate economic effects, such as the one above, this method can be used to estimate the scale of the non-business user benefits from a reduction in GTCs.

6.28 The approach taken by POPEs is of limited use when assessing wider economic impacts, such as agglomeration and growth or investment effects. Although some POPEs do carry out an assessment of their contribution to economic growth, for instance by improving access to potential employment centres, this is largely done through qualitative assessment. While it is possible for POPE surveys to monitor an increase in economic growth in a particular location or the development of a particular site after a transport investment is completed, it is difficult to attribute this to the transport investment unless accompanied by other evidence.

6.29 This approach would provide valuable information on the potential scale of user benefits, although it would be of limited value for assessing economic effects. The project level summative assessment may wish to consider this approach as long as it was in conjunction with, and not instead of, a CIE based approach.

Theory of Change Approaches

6.30 These types of approaches can help to understand the role that a particular transport scheme has played in allowing development and/or

employment change observed in an area to go forward. This could include evidence that development in a location would have been very unlikely to go ahead in the absence of the investment, either because:

- it was on land that could not previously be accessed
- it would have been blocked through the planning process, or
- it would not have attracted a private investor.

6.31 This type of evidence can be taken from a wide range of sources and then triangulated with each other to form conclusions on the degree to which outcomes can be attributed to the scheme. This could include monitoring data on employment levels, take-up rates of employment sites and inward investment data provided by local authorities. This can be combined with consultations with a range of different organisations including developers, commercial agents, landlords, economic development officers and investors. In some cases it may also be desirable to carry out a survey of local businesses to understand growth trends and the degree to which this can be attributed to a transport investment, although this would add to the cost.

6.32 The main weakness of this approach is that it would not capture productivity impacts associated with user benefits or agglomeration effects. Rather it represents a complementary source of evidence for understanding the potential scale of investment or growth effects from transport investment.

6.33 These types of approaches would also need to consider the extent to which benefits have been displaced from other locations or other businesses in the study area (Cornwall). This is potentially very complex, but would need to consider the types of businesses and sectors which have benefitted from the scheme (eg the occupiers of newly developed sites), considering where their main client markets are located. This could also be established through a business survey.

6.34 This approach could provide useful evidence of investment effects, but would be of limited value for assessing other economic effects of transport investment. The project level summative assessment may wish to consider this approach as long as it was in conjunction with, and not instead of, a CIE based method.

Agglomeration Modelling

6.35 Alternative methods for estimating agglomeration effects from transport investments rely on applying average agglomeration elasticities to the change in effective density before and after a transport intervention. Effective density is a proxy for the level of agglomeration in an area and measures accessibility of an area x to jobs in all destination areas y.

6.36 TAG Unit A2.4 of WebTAG sets out the methodology for calculating these impacts in transport appraisals.

- Transport model data should be used to calculate average generalised travel costs between each origin and destination zone. Each zone to zone journey should have one value of GTC, weighted by travel mode and journey purpose.[48]
- Average generalised travel costs are then fed in to the calculation of effective density by dividing total employment by the average generalised travel cost (from step 1). Effective densities are calculated for four industry groups (manufacturing, construction, consumer services and producer services), with a different distance decay parameter applied to the average generalised costs for each sector group (reflecting the fact that agglomeration diminishes with distance and that this varies for different sectors).
- The effective densities before and after the intervention are compared to calculate a percentage change in effective density. An elasticity of productivity is then applied to this change. Different elasticities are provided for each sector group and are taken from Graham (2006).[49]
- This is multiplied by the average GDP per worker in each industry to calculate the productivity impact which accrues to that industry from the denser urban economy. This is then multiplied by employment to estimate the total zonal value of the productivity impact. The overall productivity impact is then calculated by summing the impacts for each industry and zone.
- The same approach could be applied as part of an ex-post evaluation, although this would be based on modelled rather than observed data. In theory it would be possible to collect new data after the intervention, although this would potentially be very resource intensive since it would need to collect data on the number of trips between different origin/destination pairs by different modes and for different purposes before and after an intervention across a large area. Even then, the differences would need to take account of a wide range of other potential variables. Given that these interventions will take place in Cornwall, an area with very few urban agglomerations, it is likely that agglomeration impacts would be modest, and therefore this type of approach would not be a sensible use of resources.
- Again, it should be noted that the impacts identified under this approach will only assess one specific type of impact (agglomeration). These impacts would not be additional to those measured through the CIE approach described above.

[48] It is recommended that generalised costs are estimated for two modes; public and private transport and only for business and commuting trips; leisure trips are not included as it is assumed they do not impact on productivity

[49] Graham, D. (2006): Wider economic benefits of transport improvements: link between city size and productivity, Department for Transport

6.37 While the project level summative assessment may wish to consider this approach to estimate agglomeration effects of transport investment, this should only be done in conjunction with a CIE method.

Land Value Uplift Approaches

6.38 Land value uplift approaches measure the difference between the price of land in its new and former uses and represents the private gain to land owners. This can be monitored through analysis of Land Registry data. This approach will capture any impacts which are capitalised into land values and could include user benefits and wider economic impacts such as dependent developments and agglomeration economies. TAG Unit A2.1 of WebTAG recommends that this approach should only ever be used in the appraisals of dependent developments, and even then, notes a number of significant drawbacks which could equally apply to transport evaluations:

- The relationship between land rents and GTCs is ambiguous; land rents need not necessarily increase in response to reductions in travel costs.
- Land value uplift will capture any impacts capitalised into land, which makes it is difficult to understand how much of the uplift can be attributed to the transport intervention and how much is due to other factors, such as other economic development interventions in the area.
- It is a local site specific measure, as such it will not account for the loss of land value on other sites which might occur if there is a relocation of economic activity. In other words it fails to take account of displacement. Furthermore there is a lack of robust evidence on displacement factors – the extent to which uplift on one plot is at the expense of another plot – which could lead to inaccurate estimates of the net land value change.

6.39 Given the many limitations of this approach it is not considered to be a robust method for evaluating impacts and should not form part of the summative assessment.

Assessing Other Effects

6.40 As described above, there is potential for other economic effects to occur, including:

- Displacement, as a result of firms relocating following transport investment or accessing markets which were previously served by other firms
- Multiplier effects associated with the supply chain or salary expenditure of firms which grow or relocate following the transport investment.

6.41 The CIE approach described above (accessibility modelling) should capture displacement effects since it would be based on analysis of variations in small area economic performance between locations at varying distances from the scheme, after controlling for other variables. It should therefore capture any deterioration in economic performance which is explained by the relocation of economic activity from those areas remote from the scheme to those areas which are close to it. Likewise, any expenditure multiplier effects which occur within the study area should also be captured through this approach.

Controlling for Other Factors

6.42 There are a wide range of other factors and interventions which influence the economic performance of small areas and would therefore need to be taken in to account in the evaluation and any CIE approaches. Besides general economic and labour market trends, these include:

- Other interventions being funded by ERDF (and also ESF) which affect the performance of small area economies and people's access to employment.
- Other transport investments and changes, including the construction of new routes, minor roadworks, changes in the quality or frequency of public transport services.
- Other public and private investments which might generate localised economic impacts including urban regeneration initiatives, Enterprise Zones, investments in new visitor attractions, large housing and employment sites.

Use of the Summative Assessments

6.43 Given that this Priority Axis can only fund projects in Cornwall and the Isles of Scilly, and the fact that there are likely to be a small number of projects overall, the summative assessments will provide a crucial source of evidence for the national evaluation.

6.44 As noted above, CIE methods can be tested for these schemes but it is most practical to implement these as part of the summative assessments. This reinforces the need for the summative assessment guidance to encourage these projects to consider the feasibility of adopting CIE methods and for the national evaluation to provide advice and support.

Monitoring Requirements

6.45 In addition to the key output indicators, the CIE method described above would also require the delivery bodies to gather a considerable

amount of monitoring data on journey times to populate the pre and post investment matrix. Given the number of potential origin-destination pairs, this could potentially be a large undertaking with significant resource implications.

Assessment of Suitability of Impact Approaches

6.46 The main conclusions are as follows:

- Impact evaluation methods for major transport investments are, in general, in need of more development. The guidance on evaluating impacts is limited and there are no well-established CIE methods.
- Recent research has identified some CIE methods which offer potential. These are based around accessibility modelling, in which a pre and post investment matrix of journey times is used to assess the extent to which the transport investment explains variation in small area economic performance. This approach can be applied to investments on rail, road and multi-modal hubs and therefore could be applied for all of the different types of transport interventions which could be funded under this Priority Axis.
- Although these methods offer potential, it is still a novel and thus far relatively untested approach to evaluating the impact of transport investments. It would also require the collection of a very large volume of monitoring data on journey times to populate the pre and post investment matrix. This would therefore be resource intensive, and further work would be required to determine whether the approach is feasible and whether the cost is proportionate to the scale of investment.
- While CIE methods can be explored further, given the focus of the priority just on Cornwall and the Isles of Scilly and the small number of large projects being funded, it is most practical to implement and test these approaches as part of the summative assessments. This reinforces the need for the National Evaluators to provide guidance on counterfactual impact evaluation methods to grant recipients and their evaluators to encourage the development, testing and implementation of these approaches.

7. Other Infrastructure

Introduction

7.1 The interventions within this category include infrastructure to tackle flood and coastal flood risk management and green and blue infrastructure to preserve and protect the environment. These schemes are characterised by having primarily indirect beneficiaries, which include domestic and business land and property owners and tenants, as well as wider users of the space.

7.2 The specific objectives and the associated eligible activities are:

- Enabling and protecting economic development potential through investment in flood and coastal flooding management, where there is a demonstrable market failure (SO5.1)
- Investment in green and blue infrastructure and actions supporting provision of ecosystem services on which businesses/communities depend to increase local natural capital and support sustainable economic growth (SO6.1).

Progress to Date

7.3 Priority Five, which only includes Specific Objective 5.1 has a total ERDF allocation of £53m. Priority Six, which includes Specific Objective 6.1 has a total ERDF allocation of £80m, although this is spread across two investment priorities and their corresponding specific objectives. It is worth noting that the combined total funding of £131m across these two priority axes represents only 4.7% of the £2.8bn funding in the England ERDF programme. The level of programme evaluation dedicated to this intervention type should therefore be proportionate to the scale of investment activity.

7.4 To date around £6m of ERDF grant has been committed to projects in this category. This includes just one project under priority axis 5, and three relating to green and blue infrastructure. There are relatively few project applications currently in the pipeline and if all of this activity is approved, total ERDF grant committed would still fall short of £7m.

Table 7.1 ERDF Projects and Spend up to December 2016

	SO5.1	**SO6.1**	**Total**
Number of Projects			
Approved	1	3	4
Being Appraised	1	0	1
Early Stage Development	-	-	-
Total ERDF Value (000s)			
Approved	£500	£5,323	£5,823
Being Appraised	£947	£0	£947
Early Stage Development	-	-	-
Average Project Value (000s)			
Approved	£500	£1,774	£1,456
Being Appraised	£947	-	£947

Early Stage Development	-	-	-

Source: MHCLG data for period up to December 2016

Logic Model

Rationale

7.5 This category encompasses two main activity types – investment in flood and coastal flooding risk management, such as flood defences, and investment in enhancing environments through green and blue infrastructure. In both cases the investments represent public goods whereby the benefits of these investments accrue to directly and indirectly to businesses (and potentially to householders, shoppers, etc), but usually not sufficiently for these businesses and individuals to invest in the interventions alone. In addition, target beneficiaries may lack full information about when floods might happen, how high the risk is and what the costs of flooding would be, including the consequences for these risks associated with climate change.

Approaches

7.6 The specific objectives in the operational programme aim to overcome these issues through public sector led infrastructure investment targeted at areas of greatest need (flood risk) and opportunity (with a focus on environmental improvements acting as a catalyst to local economic growth).

Beneficiary Outcomes

7.7 Whilst the grant recipients will typically be public sector organisations, in most cases the beneficiaries will be the owners of land and property and business occupiers benefitting from reduced flood risk or enhanced environment will be more significant. Although local residents may also benefit from both types of intervention, they are not specifically targeted through these interventions.

7.8 The operational programme identifies research on green infrastructure demonstrating a wide range of potential catalytic roles for economic growth, including roles in attracting investment, visitor spending, environmental management cost savings, health improvement, increasing market sales from produce grown, and employment creation in environmental management. These have been incorporated where appropriate in the benefits below.

7.9 The benefits for the direct and indirect beneficiaries are likely to include:

- Increase in land and property values for non-domestic properties, as a result of reduced flood risk and enhanced environment and natural capital (including quality of water, air and soil, and levels of biodiversity) and higher development rates in some instances. This needs to take account of net additional change, taking account of deadweight.
- Long term financial savings for non-domestic property and land owners and tenants, as a result of reduced risk of damage and disruption due to flooding occurrences. This can only be based on modelling of risks and costs which were not incurred.
- Net environmental impacts, including enhanced air, water and soil quality and improved biodiversity. These will need to include full consideration of any adverse effects on environmental factors as a result of any catalytic impacts of the scheme leading to increased economic activity.
- Wider benefits may include benefits for users of the space, including health benefits and enjoyment of a more pleasant environment. In some cases, schemes may support enhanced resilience of road and rail links which might otherwise be affected by flooding. In cases where this is a significant aspect of the project, it could be analysed as part of the transport resilience related projects under Intervention type 6.

Intended Impacts

7.10 The intended impacts which need to be assessed by the evaluation are focused around:

- The overall gross and net additional increase in land and property values for non-domestic land and properties. This factor will give the clearest indication of intended impacts, and should be the focus of CIE.
- The overall value of avoided damage to assets, on a net present value basis. This is the monitoring measure employed by the Environment Agency in assessing flood risk schemes and represents economic value safeguarded for businesses. This impact can only be modelled based on reduced risk however, as actual occurrences of flooding prevented will not be known.
- The economic value of net additional environmental impacts, where it is possible to quantify these. Quantification approaches will be more advanced for some measures (for example air quality, but less so for others), which would make comprehensive analysis of these impacts challenging for counterfactual impact evaluation.

7.11 Major investments in flood defences can have a significant and direct impact on property value and development potential, especially where areas have been blighted by past flooding. However, many of the uplift effects associated with other forms of green and blue infrastructure and actions supporting provision of ecosystem services can be very challenging to measure and to isolate from the role of other investments and local factors.

Timing of Outcomes and Impacts

7.12 The timing of outputs and impacts can be grouped into a number of categories:

- The infrastructure activities under this intervention type are typically large schemes, often needing protracted design and consultation processes as well as time to secure the match funding required for implementation. The delivery of outputs is unlikely to happen quickly after funding is allocated.
- Although outcomes for environment enhancements, including air quality and enhanced biodiversity will be delivered to a degree immediately after scheme completion, in many cases further growth and development of greenery in new schemes will mean these outcomes will increase further over a longer period, assuming the environment is managed effectively.
- MHCLG appraisal guidance on land value uplifts suggests an assumption should be made that the effects on land value uplift are immediate, however in practice there is likely to be a degree of lag for market adjustment following scheme implementation, before impacts can be seen on land and property values. Impacts should therefore be tested after a reasonable (perhaps a 2-3 year period, to allow for market adjustment).

7.13 Given the likely timing of the national evaluation, the capture of the full benefits realised by beneficiaries for the schemes supported is most likely to be constrained by the long term timing of project approval, delivery and benefit realisation. For those projects that commenced earlier in the life of the programme (of which there are few to date), it will be more realistic to potentially capture the main outcomes and impacts. For others, the summative assessment of these projects should aim to make reasonable estimates of the expected lifetime impacts on the basis of the emerging evidence.

Relationship to Specific Objectives Result Indicators

7.14 The results indicators for the two specific objectives are:

- Number of non-residential properties better protected from flood and coastal risks (SO5.1)
- Increase the area of green and blue infrastructure (SO6.1).

7.15 Whilst there are definitional issues with the accurate and consistent measurement of both indicators, they are both very closely related to the core output indicators which have bene adopted for these objectives. The first indicator can be assessed against Environment Agency baseline data on properties at risk of flooding, whilst there is not a suitable national baseline for the latter indicator.

Measuring Gross Outputs and Outcomes

7.16 The range of core programme outputs are:
SO5.1

- Surface of habitats supported to attain better conservation status (C23)
- Business with properties with reduced flood risk (P6)

SO6.1

- Total surface area of rehabilitated land (C22)
- Surface of habitats supported to attain better conservation status (C23).

7.17 Most of these particular indicators do not provide information on directly or specifically related to the beneficiary outcomes. However, the indicator for businesses with reduced flood risk provides a simple measure of the potential businesses which could benefit from reduced flood risk.

7.18 The assessment of flood defence related outcomes therefore requires a range of methods including the modelling of reduced flood risk for businesses in the target area, together with the monitoring of the actual reduced occurrence of floods over time, the avoidance of associated costs and the uplift in property values. Given the periodic nature of flooding and the associate risk, the evaluation of these changes may require an approach which combines modelling with monitoring.

7.19 The beneficiary outcomes for the ERDF backed investments in other types of green and blue infrastructure are particularly challenging to measure due to their indirect, dispersed and often more intangible nature. The uplift in land and property values, development rates and intensity of use (and hence the gains for particular beneficiary groups) can be measured where investments are expected to have tightly defined spatial impact areas, although as noted these outcomes can be too diffuse to assess in this way.

Options for the Impact Assessment

Main Impact Approaches

7.20 The key impacts which need to be measured through counterfactual approaches are the uplifts in property values, an increase in development rates and intensification of land use in an area in reasonable proximity to the interventions, although these will vary depending on the precise nature of the treatments. Many of the techniques are similar to the methods discussed above for land and property interventions.

Site Level Approach

7.21 The approach is based on the establishment of a counterfactual by identifying a similar group of employment sites with similar characteristics in the local area in order to establish causality between ERDF funding and the rate and nature of development. However, there are a number of challenges to this approach which would significantly limit its viability including:

- The potential for differences in location / site conditions and local market context, and hence the attractiveness to developers, users and occupiers, some of which can not be observed or controlled for
- The absence of a comprehensive national or local monitoring of database of development activity and rentals levels, as well as gaps, inconsistencies and quality issues with the data that may be available
- The resource intensive nature of selecting and monitoring comparator areas as part of a national evaluation – as such, the approach is better suited to a project level approach
- The impact of smaller scale developments, especially for non-flood related improvements, would be difficult to isolate locally.

7.22 The approach would also provide no information on the change in business performance of the occupiers and the economic benefits they provide. The approach would need to be supplemented by other research methods to provide this information.

Spatial Approach

7.23 This approach is based on comparing local areas in which ERDF supported blue and green infrastructure projects are implemented with other comparable area without these schemes. There are various ways of defining the areas based on Lower Super Output Areas containing the developments and a series of concentric rings around these areas. The counterfactual is based on rings further from the treatment centre and the variation in when treatments were completed.

7.24 The approach has significant limitations which reduce its viability as a counterfactual method including:

- Limited variables available at a local level which can be used to measure economic change; whilst property prices may be a useful indicator, the gaps in the availability of this information for commercial properties and the time lags are significant issues
- The absence of policy off areas which are similar, with ERDF being available across England or some other local growth initiatives (RGF, City Deal etc) being available in areas with similar economic development needs
- The impact of smaller scale developments, especially for non-flood related improvements, would be difficult to isolate locally
- Changes in land use designations at a local level which may impact significantly in some instances upon the change in the development rate.

Time Series Analysis

7.25 A simpler variant of the site level and spatial approach would be to examine the rate of change in development activity, rentals and possibly economic indicators (employment, unemployment, etc) in a defined local area before and after the investment. Whilst this could potentially be useful contextual analysis, the absence of a counterfactual would limit its usefulness in establishing causality. Many of the shortcomings in terms of the potential counterfactual for the spatial approach noted above apply here as well.

7.26 Nevertheless, this approach would provide an SMS of 2 and would provide a feasible approach.

Occupier and Property Owner Surveys

7.27 In conjunction with the possible approaches described above, occupier surveys would provide useful contextual information on the constraints imposed by flood risk or other environmental issues prior to investment, as well as the perceptions of the impact of investments on their local area and their business plans, performance and prospects. The usual limitations of self-reported evidence on impact will apply. Surveys can also be used to gather evidence on impact from local land and property owners.

7.28 The approach to the survey also needs to allow for the SMEs not being direct beneficiaries of the ERDF grant, with the need to identify relevant occupiers and property owners.

Summative Assessment and Case Study Pilots

7.29 Where impact evaluation is not feasible, key questions about impact will need to be explored through a variety of supplementary methods. Whilst not enabling the attribution of any quantitative impacts, they will provide valuable qualitative insights into whether those that deliver, experience and benefit from the intervention believe them to have had any impact.

7.30 A key source of this qualitative evidence is the project summative assessments. The summative assessments will provide useful information on the local economic and market context, the objectives of the investments, the nature and progress with the improvements, local property market and economic activity effects, and possibly project level estimates of gross and net impact. The assessments will provide evidence to establish the extent to which aspects of the theory of change have applied in practice. However, it is unlikely that many of the assessments will achieve high standards of counterfactual impact evaluation and hence causality, for many of the same reasons highlighted above.

Assessing Other Effects

Displacement

7.31 A number of the impact methods noted above (the spatial methods in particular) provide a basis for accounting for property market displacement. However, these are subject to analytical shortcomings and would need to be supplemented by other sources of evidence from property owner and occupier surveys and triangulation with the summative assessment evidence.

Rentals Levels

7.32 Whilst an analysis of the change in land and property values and rentals can provide useful contextual information, identifying causality is much more challenging in practice. The relationship between environmental investment and changes in property values is complex (eg investment may induce both increases and decreases depending on the circumstances), and the limitations of the data and the shortcomings in the analytical approaches further exacerbate the challenges for evaluators.

Controlling for Other Factors

7.33 There are a variety of other domestic policies and programmes which will need to be taken into account including the Regional Growth Fund, Local

Growth Fund and the City Deals. Indeed, the ERDF investments will often be taking place alongside or in close proximity to schemes using these other funding sources. If comparator sites or location are used as part of a CIE approach, these may be benefiting from grant aid form these sources.

7.34 Also, as noted earlier for land and property interventions, another issue is that some locations will have had a long history of large scale public sector backed investments (often alongside complementary investment into site reclamation and transport), especially where local economies have been restructuring and property markets have been historically weak. Many of these past investments have taken more than a decade to some to fruition and the benefits are only now being seen. It will be challenging to disentangle the effects of these past investments from the current ERDF investments.

Monitoring Requirements

7.35 In addition to the core indicators, it will be important for the monitoring information required by MHCLG to be enhanced in a number of ways:

- Precise information on the location of the treatment area, including Ordinance Survey grid references and area or site red line boundaries in GIS base file format
- The types of treatments implemented by the projects
- Data on number and type of properties in the treatment area in or in close proximity [although this is not easy to define].

Assessment of Suitability of Impact Approaches

Overview

7.36 It is challenging to implement robust counterfactual impact methods for this intervention, due to a variety of factors including the modest size of some treatments, the potential diffuse impact on local economies or the long time period over which impacts emerge, the shortcomings in the data sets, and the challenges of identifying suitable comparators. The proposed approach for the national evaluation therefore needs to draw on a number of sources of evidence.

7.37 Considering each of the approaches the main conclusions are:

- There is limited scope for the viable use of robust counterfactual approaches of these interventions as part of the National Evaluation. There may be a case for the National Evaluators providing guidance to help the grant recipients and their evaluators develop and test CIE

approaches for major investments such as floor defence treatments (working in conjunction with DEFRA and national agencies such as the Environment Agency).

- At a project level, there is merit in undertaking time series analysis (before and after) of the relevant and reliable economic and property data for the treatment and associated defined impact areas. This would need to be supplemented by tailored occupier and property owner surveys. Whilst this can inform theory of change approaches, it will provide limited robustness in terms of attribution of change to the interventions.
- The summative assessment will provide useful evidence, although as noted earlier the challenges of evaluating these interventions may led to poorly quality evaluation evidence.

7.38 In summary, the National Evaluation will need to rely primarily on the impact evidence collected through the summative assessments. There is benefit in the National Evaluators working with a small number of grant recipients to enable them to implement more robust CIE methods (eg flood defences), as well as providing more general guidance on evaluation methods.

Table 7.2 Overview of Impact Assessment Methods

Methods:	
Counterfactual Impact Methods	Limited potential viability to implement a consistent approach at a national level **SMS = 1**
Project Case Studies	There is an opportunity to test the potential for robust counterfactual approaches for one of the larger projects which are implementing significant treatments in a closely defined spatial area, such as flood defence scheme. However, there will be the need to check the suitability of piloting an approach in this instance, given the use of medalling techniques to assess flood risk and occurrence and the shortcomings in local property market data. **SMS = potentially 2-3 depending on precise method adopted**
Time series analysis	There is merit in undertaking time series analysis for selected indicators in defined treatment/impact areas for suitable projects and the treatments they fund. Not all projects will lend themselves to this approach though. **SMS = potentially 2 if combined with other evidence such as beneficiary surveys**
Occupier and Landlord Surveys	There are benefits in undertaking beneficiary surveys in conjunction with other approaches described above. **SMS = 1-2 (assuming combined with time series analysis noted above)**
Summative Assessments	Limitations to usefulness in establishing causality,

	but potentially valuable given shortcomings in other approaches **SMS = 1-2 (subject to methods used by project evaluators, but risk that approaches lack robustness)**
Monitoring Information	Important to ensure enhanced monitoring information is collected in a consent format and quality standards both to but may be limited scope to ensure coverage by National systems and by grant recipients at this stage
Overall Assessment	The triangulation of evidence from time series analysis, beneficiary surveys and a pilot case study would provide useful information in gaining insight into impact and causality, it would be partial in its coverage of the investment. Also it would be a resource intensive approach to implement as part of the national evaluation which is unlikely to be justified by the quality of the evidence collected.

Monitoring

7.39 In order to aid CIE approaches as part of the summative assessments, it will be necessary for a range of additional information to be collected on a consistent basis for the different types of projects including (i) geospatial data for the site or treatment area, (ii) full details of the types of treatments and (iii) information on number and type of properties in the treatment areas or an impact area if this is larger.

8. Low Carbon Generation

Introduction

8.1 The interventions within this category include investment to enable the development of small scale renewable energy schemes. The specific objective is to ‘increase the number of small scale renewable energy schemes in England’ (SO4.1). Whilst SO4.1 also includes support to build capability and capacity for supply chains in renewable energy the sector, the focus on advice and guidance support to SMEs means this strand of activity is considered under business support to SMEs above.

8.2 Direct beneficiaries could include SMEs, public sector organisations and social landlords. It is also possible that these organisation types could also benefit indirectly, if they are allowing renewable scheme developers to deploy renewable capacity on their land or premises (and receiving a rent for this).

Progress to Date

8.3 Priority Four, which includes Specific Objective 4.1, has a total ERDF allocation of £593.6m, although this is spread across five investment priorities and their corresponding specific objectives. To date just four projects with a total ERDF grant value of £10.4m have been approved, although there are likely to be projects in the pipeline following the last call for low carbon projects (Autumn 2016).

Table 8.1 ERDF Projects and Spend up to December 2016

Number of Projects	
Approved	4
Being Appraised	
Early Stage Development	-
Total ERDF Value (000s)	
Approved	£10,244
Being Appraised	
Early Stage Development	
Average Project Value (000s)	
Approved	£2,561
Being Appraised	
Early Stage Development	-

Source: MHCLG data for period up to December 2016

Logic Model

Rationale

8.4 This category encompasses a range of investment types which ultimately aim to increase renewable energy generation and reduce carbon emissions in response to the challenges of climate change. The barriers which prevent SMEs and public sector organisations from making those changes include underdeveloped markets with too few companies supplying small scale renewable energy products and services, low consumer awareness of investment options and benefits and high up-front costs for low carbon and renewable energy generation infrastructure, with often long pay-back periods.

Approaches

8.5 The specific approaches in the ERDF programme aim to overcome these issues through a variety of tailored approaches including investment in enabling infrastructure for renewable energy. The types of eligible activity include:

- Measures to support increased production of renewable fuels and energy, in particular wind energy, solar and biomass;
- Demonstration and deployment of early stage renewable energy technologies
- Investing in decentralised energy networks
- Measures to support the wider deployment of renewable heat, anaerobic digestion plants and other biomass or landfill gas schemes.

Beneficiary Outcomes

8.6 The intended beneficiaries include SMEs and public sector organisations, while indirect beneficiaries could include domestic and business property owners and tenants which could benefit from whole place low carbon strategy implementation. The benefits for the direct and indirect beneficiaries are likely to include:

- Reductions in energy use or increase in renewable energy generation which leads to reductions in carbon emissions. This needs to take account of overall net additional reduction in carbon emissions which allows for deadweight, and unintended consequences leading to increased emissions (eg heating of previously unheated space due to perceptions of low carbon/low cost energy, importing new renewable energy equipment could incur carbon emission costs in transportation).
- Long term financial savings for the energy end user, allowing for the upfront investment costs (and depending on who bears these costs and if a financial incentive is provided) and the discounted financial value of the fuel savings over time. This also needs to take account of any adverse effects, as well as the manner in which these savings are utilised (although assessing the latter effect is challenging).

Intended Impacts

8.7 The intended impacts which need to be assessed by the evaluation are focused around:

- The overall gross and net additional reduction in energy use and new renewable energy generation and hence the associated net reduction in carbon emissions at the local and England level. This is the main expected impact and should be the focus of CIE.
- The economic benefits which arise from the re-use of financial savings arising from the energy use reduction If there are any such benefits). These are likely to be longer term gains and depending on the focus of ERDF investments could be fairly modest in practice.
- The wider economic benefits of the extra demand for renewable technologies and associated supply chains (eg feedstocks,

manufacture, installation and operations and maintenance). However, the scale of operation is insufficient to have much effect in this specific regard, or in terms of the knock-on effect for other factor or product markets.

8.8 The CIE would need to focus on assessing the addition of renewable energy generation capacity (both electricity and heat) and hence the gross and net change in energy use and the associated carbon emission reductions (and potential air quality improvements). The key evaluation issues relate to:

- The potential deadweight associated with developers', SMEs' and the public sectors' investment in renewable heat and electricity capacity, namely the extent to which they would have deployed similar or comparable capacity irrespective of the ERDF support
- Unintended consequences which might include a variety of market distortions and preserve effects including:
- Rebound effects – for the perception of low carbon energy or subsidised fuel may lead to an increase in energy use
- Market for feedstocks – the potential increase in demand for feedstocks for renewable heat to push prices up or to displace the cultivation of other important stocks and food stuffs, leading to reduced renewable energy use, etc
- Supply chain gaps – for newer technologies, the efficiency of the technologies or the supporting supply chain (eg installation, O&M) may constraint the efficient operation of the technologies in situ
- Knowledge gaps – insufficient attention to the knowledge that consumers require to use the micro renewable technologies which may limit their efficient operation.

Timing of Outcomes and Impacts

8.9 In the case of more mature renewable technologies, the deployment of the technologies should be fairly straight forward although it may be subject to the usual financial decision on the part of beneficiary organisations and potentially planning consents for larger schemes.

8.10 The timescale for early stage technologies (such as wave and tidal technologies for example), heavily regulated technologies (geothermal for example) or those requiring detailed feasibility assessments (heat distribution networks for example) will take much longer to implement and to see the generation and carbon abatement benefits. It is not unusual for if take to 6-8 years for the schemes to be implemented and for significant energy generation and climate change benefits to be realised.

Measuring of Gross Outputs and Outcomes

8.11 The core output indicators for SO4.1 are:

- Number of enterprises receiving support (C1) and the number of new enterprises supported (C5)
- Additional capacity of renewable energy production (C30)
- Estimated annual decrease of greenhouse gas emissions (C34).

8.12 The indicators relating to the support to existing and new enterprises will primarily be associated with advice and guidance focused on supply chain development, although it may also include SMEs benefiting directly from support to invest in renewable technologies. This will be monitored directly by the grant recipients.

8.13 The outputs for deployed renewable capacity and reduction in greenhouse gas emissions are also beneficiary outcomes. Deployed capacity can be measured directly by the grant recipient as part of their investments and on-going monitoring. Our expectation is that the gross reduction in greenhouse gases will be estimated in most instances on the basis of the typical reductions in emissions associated with the capacity and load of the mix of technology deployed. Assessing the actual real-world net reduction in energy use and emissions for the beneficiaries requires a combination of data on the performance of technology types in-situ, the monitoring of energy generation/use by beneficiaries and surveys of users.

Options for the Impact Assessment

8.14 The potential for CIE and other methods for the different types of projects are considered below:

- Larger Scale Renewables Schemes or Enabling Infrastructure
- ERDF could support enabling infrastructure or in some instances directly support the deployment of the generating capacity in its own right. In either case, these investments are likely to be focused on earlier stage technologies or support enabling infrastructure for low volume technologies, often testing new approaches or deployment in different circumstances.
- There is unlikely to be a large volume of comparable schemes or locations which can act as counterfactuals. Even where there are good comparators, they will typically be grant aided from other domestic sources or ERDF in different programme areas (eg Wales, Scotland, Northern Ireland).

- A counterfactual approach is not well suited to the national evaluation. However, there is merit in using the programme monitoring data and the summative assessments in combination to assess progress against key gross renewable capacity and carbon emission reduction objectives, as well as wider economic and social objectives.
- Smaller Scale Renewables Deployment
- These ERDF backed projects are likely to be focused on encouraging the take-up of small scale renewable energy technologies (both electricity and heat) by SMEs, the public sector and social landlords.
- There isn't an obvious counterfactual group whose actions are not subsidised in some way, although it might be possible to test whether ERDF support encourages greater deployment in 'order to address deficits in specific territories as well as development opportunities in places and sectors', eg off grid closed networks & marine where development costs are much higher.

8.15 This area will need further investigation by national evaluators once the types of projects being funded is clearer, but we expect that standard CIE methods are not viable as part of the national evaluation. Also, the scale of ERDF support for these interventions (possibly around £150m on the basis of £1m per installed MW and a target of 150 MW) points to not using national evaluation resources in this area.

8.16 Where impact evaluation is not feasible, key questions about impact will need to be explored through a variety of supplementary methods. Whilst not enabling the attribution of any quantitative impacts, they will provide valuable qualitative insights into whether those that deliver, experience and benefit from the intervention believe them to have had any impact. A key source of this qualitative evidence is the project Summative Assessments.

8.17 There needs to be a focus on encouraging a higher standard of project summative assessment and using these as the main source of evaluation evidence to inform the national evaluation.

8.18 In addition, there may be benefit from the national evaluators working with a few larger scale or more innovative projects if they lend themselves to testing more robust impact evaluation approaches or provide valuable insight to aspects of delivery.

8.19 There could be merit in the national evaluation undertaking a beneficiary survey tailored to the types of beneficiaries which are supported in practice by the mix of approved projects. We assume this will primarily be SMEs, but this would need to be confirmed in due course. The advantage of a survey is that it can provide a more comprehensive and consistent source of information across projects, which can supplement the evidence provided by the summative assessments. However, we do not see this as a priority.

Monitoring Requirements

8.20 For larger scale renewables schemes or associated enabling infrastructure, there is merit in capturing additional information on the types and numbers of generating technologies, associate infrastructure or parts of the supply chain being tested, including collaboration projects with HEIs or other research institutes.

8.21 Where the additional renewable energy capacity funded through ERDF projects is used by the beneficiaries, there could be some merit in requiring grant recipients and delivery bodies to capture data to enable the actual real world net reduction in energy use and hence emissions. However, this requires the capture of a combination of data on the performance of technology types in-situ and the monitoring of energy generation/use by beneficiaries. Whilst it might be appropriate to encourage the capture of this information, it might not be appropriate or desirable to insist upon it in this instance.

Assessment of the Suitability of Impact Approaches

Overview

8.22 Whilst there is merit in the national evaluators investigating this intervention type in more detail in due course, it is unlikely that standard CIE methods will be viable as part of the national evaluation. The focus should be on using the combined programme monitoring data and summative assessments as the main source of impact evidence.

8.23 The scope for CIE approaches may also be limited as part of the summative assessments. However, as with the energy and resource efficiency measures considered in the next section, the project level summative assessments can, nevertheless, use theory of change approaches to test and better understand the causal chains through which outcomes and impacts may be secured. The use of beneficiary surveys and case studies by the grant recipients and their evaluators provides an opportunity to test these assumptions and capture this learning.

8.24 As with a number of other areas, there may be merit in the national evaluators running workshops or providing guidance on impact evaluation to the grant recipients for these types of projects in order to raise standards.

Table 8.2 Overview of Impact Assessment Methods

Methods:	
Counterfactual Impact Methods	Probably not viable as part of a national evaluation. SMS = 0

Beneficiary Surveys	Potentially some merit but the cost might not on be justified by the benefits SMS = 0
Project Case Studies	There is the possibility of in-depth case studies of particularly impactful or interesting projects to supplement summative assessment data. There could be the opportunity to pilot a CIE approach in conjunction with a grant recipient.
Summative Assessments	The main source of impact evaluation evidence, although it is unlikely to be provide robust evidence on causality SMS = 0/1
Monitoring Information	Some aspects may need to be enhanced, but limited case for significant change
Overall Assessment	Main source of impact evaluation evidence will be the summative assessment, but supplemented with other evidence and efforts to improve quality and consistency of project evaluations

Monitoring

8.25 As noted above, there is a fairly limited requirement for any enhancements to the monitoring information collected.

8.26 Whist there could be some merit in requiring grant recipients and delivery bodies to capture data to enable the measurement of actual real-world net reduction in energy use and hence emissions especially where SMEs are being supported to introduce small scale renewable capacity.

9. Resource and Energy Efficiency

Introduction

9.1 The interventions within this category include energy efficiency measures and to a lesser extent resource efficiency, with a range of direct beneficiaries including SMEs, public sector organisations, and social landlords and their tenants. The specific objectives and the associated eligible activities are:

- Energy efficiency advice and financial support to SMEs (SO4.2)
- Energy efficiency advice and investment support to social housing and public sectors (SO4.3).

Progress to Date

9.2 Priority Four, which includes both of these Specific Objectives, has a total ERDF allocation of £593.6m, although this is spread across five investment priorities and their corresponding specific objectives.

9.3 To date around £56m of ERDF grant has been committed to resource and energy efficiency projects, with two thirds on SME focused activity and the remainder on social housing and the public sector. The projects are above the average size, although the projects providing grant funding towards the actual implementation of resource and energy efficiency measures will typically be larger (compared to projects focused on the provision of advisory support). There are few project applications currently in the pipeline. If all of this activity is approved, total ERDF grant committed would be just £75m of which £50m would be SME related.

Table 9.1 ERDF Projects and Spend up to December 2016

	SO4.2	**SO4.3**	**Total**
Number of Projects			
Approved	16	5	**21**
Being Appraised	3	1	**4**
Early Stage Development	1	0	**1**
Total ERDF Value (000s)			
Approved	£37,516	£18,708	**£56,224**
Being Appraised	£6,502	£1,497	**£7,999**
Early Stage Development	£500	£0	**£500**
Average Project Value (000s)			
Approved	£2,345	£3,742	**£2,677**
Being Appraised	£2,167	£1,497	**£2,000**

Early Stage Development	£500	£0	**£500**

Source: MHCLG data for period up to December 2016

Logic Model

Rationale

9.4 This category encompasses a variety of investment types which are ultimately intended to reduce carbon emissions in response to the challenges of climate change. The barriers which prevent businesses, the public sector and social landlords and their tenants from making these changes include negative externalities, a lack of awareness, the availability of information about the technologies and process of change, the upfront financial costs and longer-term uncertainties, and a lack of control over the premises in the case of residential and commercial tenants.

Approaches

9.5 The specific objectives in the ERDF programme aim to overcome these issues through a variety of tailored approaches including energy and resource audits both for premises and production processes, the provision of information and advice, as well as direct financial incentives (with the potential for both a traditional grant and a repayment basis).

Beneficiary Outcomes

9.6 The intended beneficiaries include SMEs, public sector organisations and social landlords. In all cases, there could also be indirect beneficiaries who are tenants of the properties which receive energy efficiency measures, including SMEs and residential tenants.

9.7 The benefits for the direct and indirect beneficiaries are likely to include:

- Reductions in energy use (and potentially other forms of resource use) which leads to reductions in carbon emissions. This needs to take account of overall net additional reduction in carbon emissions which allows for deadweight, changes in consumer behaviour and adverse disincentives which may arise as changes in the efficiency of energy use occur.
- Long term financial savings for the energy end user allowing for the upfront investment costs (and depending on who bears these costs

and if a financial incentive is provided) and the discounted financial value of the fuel savings over time. This also needs to take account of any adverse effects, as well as the manner in which these savings are utilised (although assessing the latter effect is challenging). Reductions in fuel poverty may also be an outcome for some social tenants on low incomes.
- Stimulation of demand for supply chain sectors associated with energy and resource efficiency.
- Wider benefits to these user groups from meeting their climate change obligations and the CSR benefits of more environmentally friendly practices, as well as wider levels of awareness of climate change issues and responses. Social landlords may also see the marketability and hence demand for properties which have received energy efficiency treatments improve.

Intended Impacts

9.8 The intended impacts which need to be assessed by the evaluation are focused around:

- The overall net additional reduction in energy (and other resource) use and hence the associated net reduction in carbon emissions at the local and England level. This is the main expected impact and should be the focus of impact assessment.
- The economic benefits which arise from the efficiency gains including improved business productivity and profitability (and reductions in fuel poverty in the case of social housing tenants). These are likely to be longer term gains and depending on the focus of ERDF investments could be fairly modest in practice.
- Possible supply chain benefits linked to the investments stimulating extra demand for particular energy or resource efficiency technologies and processes. The decentralised approach to ERDF in England and the diverse range of potential project activities may reduce the potential for these types of impacts across England, whilst other national initiatives may have a greater scope to achieve these impacts in practice.

9.9 The impact assessment needs to focus on assessing the energy and resource approaches and practices, the changes in the measures put in place and the actual changes in net energy and resource use which are realised in practice. Whilst the associated economic efficiency effects are relevant, they are secondary objectives of the intervention and in practical terms challenging to assess.

Timing of Outcomes and Impacts

9.10 The timing of outputs and impacts can be grouped into a number of categories:

- Short term to medium term – planning for and investments in energy efficiency measures can occur fairly quickly following receipt of guidance or financial support, although more substantial investments can take much longer to implement given the need to secure the necessary internal approvals within beneficiary organisations and external financing where appropriate
- Medium term – once implemented the measures will take additional time for the changes to bed in, users to become fully acquainted with their operation and for energy savings to arise.
- Longer term – although some financial savings (and the reuse of these resources) can arise quickly, it can take many years for the up-front investments to show an overall positive return (eg 4-6 years). Whilst these financial returns can be assessed as part of the applications for support from beneficiaries (and modelled subsequently), they would not be picked up in beneficiaries' financial accounts until much later in the process (if they are discernible at all).

9.11 Given the likely timing of the national evaluation, the capture of the full financial benefits realised by the beneficiaries and the manner in which they utilise the savings will most likely be outside its scope. However, the summative assessment of these projects should assess the potential for these financial savings and the wider benefits they can bring.

Measuring Gross Outputs and Outcomes

9.12 The output measures for these interventions are:

- Number of enterprises receiving support which can include both advice and grant support
- Estimated gross reductions in greenhouse gas emissions.

9.13 Data for these indicators will be captured through project level monitoring.

9.14 The main outcomes which will be measured are:

- Reduction in energy use and greenhouse gas emissions – the reduction in gashouse gas emissions overlaps with the core output indicator. We assume this will be gather through the monitoring

undertaken by the grant recipients, although there may not be common practice in the manner in which this is done and hence the reliability of the data may vary. There is also a need to collect information on the reduction in energy use although this should be collected as a matter of course if projects are to be able to provide data on greenhouse gas reductions. The reduction in greenhouse gas can then be translated into a measure of economic benefit which allows for the externalities associated with fossil fuel use.

- Financial savings to SMEs – there may be financial savings for SMEs as a result of firms adopting more energy and resource efficient processes and practices, although as noted above these may only occur into the longer term as the financial benefit exceeds the costs of changes and capital investment. The best way of gathering on the manner in which firms respond to the support provided as part of a national evaluation is to conduct a survey of businesses. Whilst this type of information may be reliable, the information on the financial costs and benefits to the firms will be self-reported and subject to a range of measurement challenges. However, it would provide helpful information on changes in energy use which could be compared to the monitoring data.
- Financial savings to social housing tenants – similar measurements issues apply to social housing tenants, although evidence from other evaluations of interventions with this group have highlighted the challenges of measuring financial savings in a robust way. Whilst a survey of tenants would be helpful, it can be particularly difficult to collect reliable information on changes in energy use and financial savings. The survey would need to be combined with on-site review of energy bills which is costly to undertake. This would also need to be combined with a survey of social landlords.

9.15 The summative assessments will also provide useful project level information on these outcomes, although this will be more qualitative in its nature and will be subject to differences in data gathering approaches and the robustness of the underpinning evidence. The summative assessments would also provide additional information on some of the wider benefits noted above.

Options for the Impact Assessment

9.16 The assessment of impacts needs to establish the casual effects of advice and financial support on energy and waste efficiency to SMEs and social housing tenants in particular. This requires consideration of: (i) the extent to which the changes or investment would have occurred in the absence of the ERDF support; (ii) the extent to which gross changes in energy use may have been accompanied by factors such as rebound effects; and (iii) net change in business performance measures such as profitability

and reduced energy bills for social housing tenants and/or fuel poverty. The suitability of the methods for measuring these are considered below.

SME Impacts

SME Surveys

9.17 As noted above, there will be a need to undertake surveys of the SME beneficiaries if these interventions are to be assessed as part of the national evaluation. These will be useful in terms of better understanding the support received, changes adopted and perceptions of the changes in energy use. They will also provide information on the likelihood of the beneficiaries making these changes in the absence of the support, as well as qualitative data on wider effects such as rebound effects (eg compensating increase in energy resources in others part of the business due to reduced energy bills) and displacement effects (eg other productive investments being displaced by energy efficiency investments). However, the self-reported nature of the evidence will mean that the robustness of the evidence, especially any conclusions on causality, will be low.

9.18 The collection of reliable information on net energy use would require a survey to be supplemented by other methods of data collection, such as on-site visits and examination of records for energy and resource use over time (there are national data sets on property related energy use, but these are partial in their coverage and not necessarily approach to all of the interventions types being considered here). This is clearly costly to undertake possibly requiring multiple visits.

9.19 Despite some of the shortcomings noted above, SME surveys are a helpful source of evidence as part of the collection of evidence on SME impacts, especially given the challenges of quasi experimental approaches outlined below.

Surveys of Non-Treatment SMEs

9.20 Whilst it might be possible to construct a comparison group and to undertake a survey of them, there are a range of practical difficulties in cost-effectively implementing this approach as well as issues of reliability of data collected.

9.21 One approach would be to undertake an initial screening exercise of businesses to determine their suitability for inclusion in the comparison group and then to subsequently conduct the survey. It would be a very resource intensive exercise to undertake the initial comparison group selection and then to undertake the necessary survey.

9.22 An alternative approach is to use the unsuccessful applicants as a comparison group and to survey these using comparable methods. Whilst not ruling out the feasibility of this approach on a limited basis, the decentralised approach to the delivery of these interventions means that the application process will vary between projects with low levels of interest and hence applications not being uncommon. The consequence may be that it is difficult to implement this method as part of a national evaluation.

9.23 This could be a costly approach which provides limited benefit in terms of establishing a counterfactual and robust evidence. However, it may need further investigation as part of the implementation of the national evaluation to confirm this.

Use of Administrative Datasets

9.24 Providing the SME beneficiaries can be identified in the IDBR, then changes over time in a limited number of financial and employment variables could be identified. Data on the changes in energy and resource use would however need to be gathered for the beneficiaries through either monitoring returns, more costly beneficiary surveys or national energy use data related to properties which is only partial in coverage. These methods could however provide the range of variables which are required from beneficiary SMEs for the evaluation.

9.25 Whilst there may be some merit in this approach, especially when combined with other data sources, the major issue is that the IDBR does not include data on SME costs or profitability which are much better measures of the potential benefits of energy and resource efficiency measures.

9.26 Where grant support is specific to the industrial and commercial properties of SME beneficiaries it might be possible to match beneficiaries to similar SMEs which have a similar need for energy efficiency related support but have not applied. These approaches have been tested as part of a small number of other energy efficiency and renewable energy initiatives, but with mixed results in terms of their robustness. In broad terms the approach would consist of:

- The data on applicants and the treatment properties would be the starting point for the dataset matching exercise required to build a set of adequate control variables. Based on the treatment addresses, the properties would be identified in the Ordinance Survey Address Base (OSAB) as the BS7666 compliant national gazetteer. This would provide a Unique Property Reference Number (UPRN) and hence specific location.
- Other geospatial datasets could be matched to this UPRN, such as the ONS Output Area or could be more complex (altitude, geology, closest weather data source, etc.).

- UPRNs would also give us a direct link into other datasets that use UPRNs as a cross-reference field, for example the Non-Domestic NEED dataset[50] which records information on energy use and efficiency characteristics of properties and other address based datasets (for example EPCs, VOA non-domestic rating list data, Experian, ESOS & meter data).
- Due to the potential requirement to match multiple datasets, there would be a need to use fuzzy matching techniques to improve the quality of the match.

9.27 In theory, the approach can link datasets for the energy use of properties to the performance data of SMEs and geospatial and climate data (although not public sector organisations due to their coverage in the IDBR). A comparator group can be selected on the basis of a selected of pre-treatment energy use variables, property type and company characteristics.

9.28 Whilst potentially feasible for SMEs, this approach has not been widely used or tested as part of other evaluations as far as we are aware (although it is being used as part of the Renewables Heat Initiative evaluation which is being undertaken by a consortium including Regeneris Consulting). There is clearly the need to test the feasibility of the approach further.

9.29 There may be a need to supplement the method with beneficiary and non-beneficiary surveys to gather information for potentially important variables which are not available through these administrative datasets (such as behavioural characteristics in the approach to the use of energy and changes over time) which would make this a costly approach.

9.30 In summary, a quasi-experimental approach based on identifying business beneficiaries in the IDBR and energy use datasets and the subsequent selection of a comparison group would be challenging to implement and may not be viable in practice.

Project Case Studies

9.31 Given the limitations of the methods noted above, there is a case for exploring, developing and piloting quasi experimental approaches for a small number of projects. There is a very limited track record of these types of approaches across the UK and hence the case studies could provide a valuable evidence base on the suitability of methods. The selection could be made on the basis of a project providing grants and another offering just advice and guidance.

[50] That is, the non-domestic National Energy Efficiency Data-Framework (NEED) which is produced and managed by BEIS

9.32 The case studies would ideally need to be undertaken in cooperation with the grant recipients and the precise basis for this would need to be agreed in due course.

Impacts on Social Landlords and Tenants

Surveys of Social Landlords and Tenants

9.33 The conduct of surveys of landlords and their tenants in treated properties would be a useful source of information on the rationale for the treatments, the type and the pre and post energy use. However, this would need to be combined with monitoring data gathered by the projects as well as, ideally, examination of the actual records of energy use. The self-reported nature of much of the evidence will mean that the robustness of the evidence, especially any conclusions on causality, will be low.

9.34 In summary, this is potentially the best approach to the impact assessment in terms of the national evaluation. However, it is costly and it may not merit the expense depending on the likely scale of the investment being made by the ERDF programme.

Use of Unsuccessful Applicants as a Comparison Group

9.35 The problems of using unsuccessful applicants for ERDF grant support as a comparison group has been noted already. In this instance, the limitations of this approach is also further influenced by the small volume of social landlords which are likely to be seeking support from the funded projects. However, in so far as there are unsuccessful applicants, a survey of these social landlords would provide helpful information on the counterfactual in the absence of the ERDF grant support.

9.36 This is potentially a useful approach to supplement the survey of beneficiary landlords; however, the robustness of the counterfactual will be limited in practice.

Use of Administrative Datasets to Select Comparison Groups

9.37 In theory, a similar counterfactual approach could be adopted to that outlined above for the identification of a comparison group, this intervention type lends itself to an alternative approach. This approach would use the Domestic NEED dataset which provides information on property

characteristics and metered energy use. Again, this can be combined with geospatial datasets. However, the gaps in the coverage of social housing in the dataset, as well as information on treatments, is potentially a serious shortcoming.

Housing Portfolio Comparisons

9.38 An alternative approach which might be feasible in certain circumstances is to compare changes in energy use for similar properties in the social landlords' property portfolio which have not received treatment. This approach could provide a readily available comparison group, provided the necessary information could be collected on the availability and suitability of non-treatment properties from the social landlords. Where social landlords are systematically implementing treatments across their entire property portfolio, the option may be limited. It would be desirable to use surveys of both treatment and non-treatment group residents to test changes in behaviour and fuel poverty issues.

9.39 This is potentially a valuable but costly approach if done robustly. It is costly due to the need for extensive research with the social landlords and tenants, with only limited potential to use administrative datasets for energy use.

Project Case Studies

9.40 As with the projects focusing on SME beneficiaries, there is a case for piloting a quasi-experimental approach which compares both treatment and non-treatment properties within social landlords' portfolios. This could focus on suitable social landlords within a single project or possibly across a small number of projects. The adoption of a case study approach has the advantage of piloting the suitability and viability of the approach, without the need for large scale resources to be focused on it.

9.41 There is a strong case for the piloting of a quasi-experimental approach based on the housing portfolio approach noted above.

Assessing Other Effects

9.42 There is the potential for these interventions to generate a variety of wider economic effects including:

- Displacement of other expenditure within the beneficiary organisations
- Expenditure multiplier effects associated with the additional expenditure arising from spend with supply chains and associated personal expenditure effects
- Spillover benefits associated with the development of supply chains supporting the energy and resource efficiency sector.

9.43 There is undoubtedly the potential for investments in energy and resource efficiency measures to displace other types of economic activity, as the priorities of SMEs, public sector organisations and social landlords change. For example, businesses may delay or cancel other investment projects which have a knock effect on the beneficiaries themselves and the local economy through reduced expenditure. However, the primary purpose of these interventions is to reduce carbon emissions and consequently displacement issues are less of a consideration here. Whilst the need to measure displacement is not a sufficient requirement to justify commissioning specific surveys, if these surveys were taking place anyway then the topic would need to be covered.

9.44 The investments in energy and resource efficiency will have a variety of other expenditure effects, supporting direct employment in installation activities and indirect and induced multiplier effects. However, as with the discussion of the displacement effects above, it is unlikely that estimating these economic multiplier effects will be a particular priority here.

9.45 It is challenging to rigorously assess supply chain benefits through CIE methods, plus the potentially diffuse nature of the impacts arising from these interventions suggests that it should not be a priority for the national evaluation. However, the summative assessments should provide a useful source of evaluation evidence for at least the larger projects.

Controlling for Other Factors

9.46 There are a variety of other regulatory, legislative and policy factors which may influence the deployment of energy and resource efficiency measures. These include climate change obligations placed on larger businesses and those in energy intensive sectors, the public sector and social landlords. The CIE methods described above, provided they involve the use of suitable comparison group, should address these considerations.

9.47 However, there are a host of other public sector led interventions which are seeking similar or overlapping policy goals. These include the Green Deal which had a major energy efficiency strand but has now been withdrawn, as well as the Renewable Heat Initiative and Feed-in Tariffs which are more focused on encouraging the deployment of small scale renewable energy. Also, the 2007-13 ERDF programme invested in a number of similar projects to those being pursued under the current programme, including a particularly strong focus in some localities (including East Anglia and London). To some extent BEIS's ND-NEED and D-NEED datasets will provide some evidence of previous energy efficiency treatments to properties, but will not provide any indication of whether public sector initiatives were used to provide advice or financial support.

Use of Summative Assessments

9.48 Where impact evaluation is not feasible, key questions about impact will need to be explored through a variety of supplementary methods. Whilst not enabling the attribution of any quantitative impacts, they will provide valuable qualitative insights into whether those that deliver, experience and benefit from the intervention believe them to have had any impact.

9.49 The summative assessments will provide useful qualitative impact evaluation evidence at a project level, although given the challenging nature of evaluation in this area, it may be of limited robustness and consistency of approach. Nevertheless, the summative assessments will provide potentially valuable information to support the national evaluation in a number of regards:

- General evaluation evidence, with more in-depth project evaluations for some of the larger projects
- More qualitative evidence on the existence and potential importance of wider economic effects to supplement the CIE assessment
- Evidence relating to environmental or social impacts for which CIE methods may be less suitable.

9.50 Whilst the summative assessment guidance will provide a steer on the requirements for counterfactual impact evaluation methods, we have to be realistic about what they can achieve. Consequently, we favour an approach which involves the national evaluators providing guidance to the grant recipients and their evaluators to develop and implement counterfactual approaches.

Monitoring Requirements

9.51 In all instances it will be necessary for projects to record and supply a core set of information including the full name and address of the beneficiaries, the nature of the support provided, a measure of its intensity or value and the timing of the assistance.

9.52 Where the support consists of direct financial support towards the costs of energy efficiency measures, monitoring data will also need to include:

- Address and characteristics of the treatment property
- Name and address of the social housing tenant (in the case of social housing)
- Pre-treatment and expected change in energy use
- Actual monitoring data on the change in energy use (eg meter readings).

9.53 Where advice is provided rather than direct financial support, projects should record the details of the properties which are the focus of the guidance. However, this will only be practical where energy audits are undertaken or advice is clearly specific to one property, as opposed to more general advice.

9.54 The basis on which beneficiaries are selected needs to be fully documented, as well as the names, addresses and contact details for unsuccessful applicants.

Assessment of the Suitability of Impact Approaches

Overview

9.55 Whilst the assessment is complicated by the need for different types of approach across the different mixes of activity and beneficiary, the main conclusions are:

- There is limited scope for the viable use of robust counterfactual approaches for these interventions as part of the national evaluation.
- Whilst it may be possible to implement reasonably robust CIE methods for some types of energy and resource efficiency measures (in particular where social landlords and SMEs are implementing treatments to properties), this may in practice be fairly challenging as the financial value of the projects and hence their evaluation budgets may be too small to implement the types of methods required (involving enhanced monitoring of energy use and surveys of landlords and occupiers).
- The project level summative assessments can, nevertheless, use theory of change approaches to test and better understand the causal chains through which outcomes and impacts may be secured. The use of beneficiary surveys and case studies by the grant recipients and their evaluators provides an opportunity to test these assumptions and capture this learning.
- The National Evaluators will therefore need to rely on the evidence collected through the summative assessments, although this in practice may not provide very robust impact evidence. There is scope for the National Evaluators to work more closely with a small number of grant recipients to help them develop and implement more robust CIE methods, as well as providing more general guidance to the others.

Table 9.2 Overview of Impact Assessment Methods

Methods:	SMEs	Social Landlords
Counterfactual Impact Methods	Limited potential given data limitations	Best potential offered by portfolio analysis examining

	SMS = 0	treatment and non-treatment properties; but may be limited scope to adopt across projects **SMS = 3 (but potentially limited applicability)**
Beneficiary Surveys	Given limited potential of CIE methods across projects at national level, beneficiary is a valuable source of evidence but not a source of robust counterfactual **SMS = 2**	Given limited potential of CIE methods across projects at national level, beneficiary is a valuable source of evidence but not a source of robust counterfactual **SMS = 2**
Project Case Studies	Opportunity to test CIE approaches on a very limited basis **SMS = potentially 2/3 depending on precise method adopted**	Opportunity to test CIE approaches on a very limited basis **SMS = potentially 2/3 depending on precise method adopted**
Summative Assessments	Limitations to usefulness, but potentially valuable given shortcomings in other approaches **SMS = 0 (assuming very limited use of robust CIE methods)**	Limitations to usefulness, but potentially valuable given shortcomings in other approaches **SMS = 0 (assuming very limited use of robust CIE methods)**
Monitoring Information	Need for enhanced monitoring information but may be limited scope to ensure coverage by National systems and by grant recipients at this stage	Need for enhanced monitoring information but may be limited scope to ensure coverage in approaches at this stage
Overall Assessment	Need for a mixed methods approach enabling triangulation of the evidence. Inclusion of surveys will mean a combination of high costs and potentially limited robustness.	

Monitoring

9.56 The implementation of the approach described above as part of the national evaluation will require projects to record and supply a core set of information including the full name and address of the beneficiaries, as well as the nature of the support provided, a measure of its intensity or value and the timing of the assistance.

9.57 Where the support consists of direct financial support towards the costs of energy efficiency measures, monitoring data would need to be provided on the address and characteristics of the treatment property, details of tenants, and expected and actual change in energy use. Where only

advice is provided rather than direct financial support, projects should record the details of the properties / businesses which are the focus of the guidance.

10. Community Led Local Development

10.1 Priority Axis 8 seeks to build capacity with communities as a foundation for economic growth in deprived areas, focusing predominantly on the bottom 20% of areas according to the Index of Multiple Deprivation (30% in Cornwall and the Isles of Scilly). The Managing Authority has chosen to deliver this entirely through Community Led Local Development (CLLD), a spatial approach to economic development targeted upon the most deprived communities.

10.2 CLLD adopts a different approach to management and delivery from most other parts of the ERDF programme. Local partners submit a strategy setting out their approach and the fit with the following criteria:

- A population of between 10,000 and 150,000 in the target area
- Prioritisation of the most deprived 20% areas (30% for Cornwall and Isles of Scilly)
- Implementation lead by a Local Action Group (LAG)
- Complementarity but not duplication with LEADER and FLAG initiatives
- £3m public sector contribution strategy threshold
- A strong focus on local community needs/opportunities and innovative at a local level
- A coordinated approach to the use of ESF and ERDF (involving joint appraisal by MHCLG and DWP).

Progress to Date

10.3 Priority 8 has a total ERDF allocation of £40.1m. By the end of April 2017, 21 CLLD strategies had been submitted and approved by MHCLG with a total ERDF value of £29.2m (73% of the Priority allocation). The full applications are currently being appraised by MHCLG, with the first approvals expected in June. The average ERDF allocation sought for the CLLD strategies is just £1.39m. It is our understanding that each of the CLLD strategies consist of multiple projects and hence the average ERDF grant per project is much smaller.

10.4 MHCLG do not intend to issue any further calls for CLLD strategies and hence the Priority Axis ERDF allocation will not be fully committed.

Table 10.1 ERDF Projects and Spend up to April 2017 £m

	Total

Number of Projects:	
Approved	
Appraisal Stage	**21**
Early Stage	
Total ERDF Value of Projects	
Approved	
Appraisal Stage	**£29,191**
Early Stage	
Average ERDF Value of Projects	
Approved	
Appraisal Stage	**£1.39**
Early Stage	

Source: MHCLG data for period up to April 2017

Logic Model

Rationale

10.5 The Operational Programme identifies that spatial disparities in England are relatively large, persistent and have been increasing. Household income and earnings, relative rankings across areas have not changed in many of these most deprived areas over many years. For example, in 2009 differences in gross domestic product per capita between NUTS 2 areas in England were largely the same as those of 2000. It also notes that:

- Over 5 million people live in the most deprived areas in England in 2008 and 38% of them were income deprived
- 98% of the most deprived LSOAs are in urban areas but there are also pockets of deprivation across rural areas
- 56% of Local Authorities contain at least one LSOA amongst the 10% most deprived in England.

Approaches and Activities

10.6 Priority 8 CLLD is intended to address need resulting from these persistent spatial disparities in economic performance and the prospects of local residents. Reflecting the nature of these challenges, CLLD adopts a different approach to management and delivery from most other parts of the ERDF programme. There is strong emphasis on a highly targeted spatial approach, local management and delivery of the strategy involving local partners and communities, and a willingness to adopt innovative approaches. Local partners submit a strategy setting out their approach and the fit with the following criteria:

- A population of between 10,000 and 150,000 in the target area
- Prioritisation of the most deprived 20% areas (30% for Cornwall and Isles of Scilly)
- Implementation lead by a Local Action Group (LAG)
- Complementarity but not duplication with LEADER and FLAG initiatives
- £3m public sector contribution strategy threshold
- A strong focus on local community needs/opportunities and innovative at a local level
- A coordinated approach to the use of ESF and ERDF (involving joint appraisal by MHCLG and DWP).

10.7 The activities which can be undertaken through CLLD have a strong focus on advice and mentoring for business and social enterprise (and training through ESF), business incubation facilities and premises, small scale community hub facilities, improved connectivity between areas with high unemployment and employment growth, and capacity building. Intended Beneficiary Outcomes.

10.8 The intended beneficiary outcomes revolve around:

- Improved start-up, survival and subsequent growth of businesses (the result indicator focuses specifically on the number of new enterprises and the level of employment)
- Improved enterprise readiness for potential entrepreneurs, as well as improved labour market outcomes for those who may choose not to go on to start their own business (but have accessed the support)
- Improved access to employment amongst residents of the target areas (although these will often not be direct beneficiaries of the ERDF support).

Intended Impacts

10.9 The intended impacts of CLLD are improved levels of enterprise, employment creation and access to jobs in the most deprived communities. Ultimately these impacts should enable the gaps in economic performance between these communities and better performing areas (or national averages) to be reduced.

10.10 However, the level of ERDF resources available within Priority Axis 8 as a whole and the average allocations to the CLLD strategies and action plans are modest. Whilst local partners are encouraged to integrate the CLLD plans with actions under other programme priorities, the ESF programme and other mainstream domestic funding sources (such as LGF and City Deal and the devolution agreements), securing these impacts at a

local level at a time of declining public-sector budgets and general economic uncertainty will be challenging.

Impact Evaluation Approach

10.11 Given the localised nature of CLLD and the modest scale of the investment, the scope for and merit of undertaking impact evaluation as part of the national evaluation is very limited.

10.12 Whilst the recommended approach is for evaluation activity to be restricted to summative assessments of each CLLD strategy and plan, it is recognised that there will be little scope for LAGs and their local partners to undertake counterfactual impact approaches. The available resources they will have for summative assessment will be modest, whilst the action plans will often include multiple projects which are small in size on average (eg 10 projects with an average value of £300,000.

10.13 Whilst the summative assessments need to measure outcomes and impacts locally (in so far as this is possible even in a simple way), they also need to consider the added value which the CLLD approach has provided Including the impact of animation and the benefits of engaging local people and developing local relationships. This is a key aspect of CLLD and it is important for the assessment to capture these potential qualitative benefits. It is apparent from the applications that whilst the CLLD areas all follow the same basic approach there is a lot of variety and some are embracing the ‘spirit’ of CLLD more than others.

10.14 In implementing summative assessments, LAGs should consider the available evaluation guidance for CLLD from the European Commission and possibly lessons which have been learnt from the evaluation of the LEADER action plan