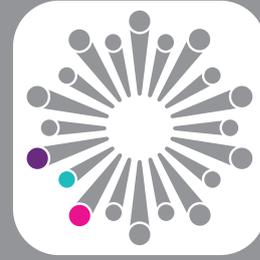


Cornwall and Isles of Scilly Research, Development and Innovation Framework



CORNWALL &
ISLES OF SCILLY
GROWTH
PROGRAMME



EUROPEAN UNION
Investing in Your Future
European Regional
Development Fund 2007-13



convergence
for economic
transformation



CORNWALL &
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Local Economic Partnership



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This document was prepared by AMION Consulting Ltd in partnership with the Cornwall and Isles of Scilly LEP and Cornwall Council

1 Introduction

1.1 Purpose and scope

This report sets out a Smart Specialisation and Research, Development and Innovation (RD&I) Framework for future investment in Cornwall and the Isles of Scilly (C&IoS) including, through the 2014-20 C&IoS European Structural and Investment Fund (E SIF) Programme. As set out in the C&IoS E SIF Strategy¹ (which in turn has to deliver the priorities of the England ERDF Operational Programme 2014-2020), the overall aim is to:

Raise levels of research, development and innovation in business as a driver of growth and productivity across Cornwall and the Isles of Scilly.

This Framework aims to describe the range of activities that could be supported. Two elements to achieving a step change in Cornwall and the Isles of Scilly's innovation culture have been identified.

The first is through Smart Specialisation. This will focus investment on enabling growth in identified markets where C&IoS has an existing asset base and where there is potential for global growth and development in that market.

The markets identified are:

- agri-tech
- digital economy
- e-health and e-wellbeing
- marine technology
- space and aerospace

The second element is through a general uplift in RD&I spending across the business base with a focus on 'high-growth'² and 'growth potential'³ businesses. In C&IoS, investment will be targeted towards companies (existing and new) that can demonstrate opportunities for growth in terms of jobs and Gross Value Added (GVA⁴). This is known as the 'Growth through Innovation' investment strand.

The Framework will serve as the basis under which 'calls' for projects to be supported by European

and other funds will be developed. The principal audiences for this document therefore comprise:

- potential applicants for funds to support relevant activities – including local businesses and relevant agencies and other institutions
- partners in the Programme including the EU, UK Government and local stakeholders

The Framework accords with the objectives of both European and national policy and has been designed to align with the Government's 'Eight Great Technologies' framework. It is informed by the findings of an accompanying Evidence Base Report that has assessed the opportunities and needs associated with RD&I activity and its development in C&IoS. The Evidence Base builds upon previous work and, as well as intensive documentation review and data analysis, entailed extensive consultations and workshops to provide for the active involvement of key stakeholders and, in particular, businesses. This has helped ensure the relevance and the widest possible ownership and awareness of the aims, scope and content of the actions proposed in this Framework.

This Framework is a 'living' document and will be updated to reflect changes in administrative policy, as well as economic and social priorities and contexts. Updates will also be informed by the evolving understanding of successful Smart Specialisation delivery mechanisms at a local, regional, national and European level. The Framework Reviews will be undertaken as part of the structured governance arrangements related to monitoring and evaluation. On-going monitoring is a key element of Research Development and Innovation Strategy.

¹ The C&IoS E SIF Strategy will become the C&IoS ITI Strategy upon ITI Board approval at the end of 2015.

² The Organisation for Economic Co-operation and Development (OECD) definition of 'high growth' businesses is "enterprises with average annualised growth in employees or turnover greater than 20 percent per annum, over a three year period, and with more than 10 employees in the beginning of the observation period".

³ The C&IoS ITI Board has responsibility for defining High Growth in a C&IoS context.

⁴ GVA is a measure of the economic value of goods and services produced in an area. It is defined by the Office for National Statistics (ONS) as "... the difference between the value of goods and services produced and the cost of raw materials and other inputs which are used up in production".

1.2 Structure

The rest of this Framework comprises the following:

Section 2

Overview – a brief review of the role of RD&I in the economy, the Smart Specialisation approach and the factors that influence levels of RD&I activity (the 'innovation ecosystem')

Section 3

Research, development and innovation in Cornwall and the Isles of Scilly – a summary of current levels of RD&I activity and the opportunities and challenges facing C&IoS in its development

Section 4

Investment Framework - the priorities for action

Section 5

Delivering the Framework – including:

- governance and delivery arrangements
- assessment criteria
- indicative funding allocations⁵ and phasing
- indicative outputs and results

⁵ Please note that the Managing Authority can reallocate funding in response to changing circumstances.

2 Overview

2.1 The role of Research, Development & Innovation

'Innovation' in a business context entails intentional change to introduce or create new products, processes and services⁶. It can also be used to refer to a wider set of activities such as in the NESTA definition that innovation is 'the intentional introduction and application within a role, group or organisation of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group, the organisation or wider society'

Research and Development is the discovery of new knowledge about products, processes and services, and the application of that knowledge to create new or improved products, processes, and services that address a market need. Improving the UK's innovation, research and development performance has been a key component of this and preceding Governments' plans for growth. It is also a key objective within the ERDF Operational Programme (OP).

Innovative economies are more productive and faster growing. They deliver higher returns on investment and increased living standards. They are better at responding to changing circumstances through redeploying old activities and jobs. They are more able to find solutions to global challenges such as reducing dependence on fossil fuels, helping people live longer and ensuring healthier lives.

A report produced in 2009 by NESTA⁷ found that innovative businesses grow twice as fast, both in employment and sales, as businesses that fail to innovate. The wider effects of business innovation and growth on social and economic outcomes however go beyond businesses' own productivity and employment. Innovative high-growth firms generate spillovers in their regions, creating jobs over and above their direct effect on employment. Such firms also continue to invest in innovative activity after their initial period of growth

Innovation, therefore, drives the competitiveness of businesses and regions in the global economy. In technology-based sectors, research is a primary driver of innovation. In the wider economy, research can also discover and exploit new technologies,

transforming existing, and sometimes creating new, industries.

2.2 Smart Specialisation

Smart Specialisation is an internationally recognised approach to addressing new growth opportunities. It is based on regions identifying a limited number of priorities for investment where they have a competitive advantage. The Future Economy Board⁸ worked with partners to identify where C&IoS had the potential to exploit new markets and drive growth through research and innovation. A detailed mapping exercise⁹ was conducted that assessed C&IoS':

- physical assets (such as buildings and connectivity)
- knowledge assets (academic and vocational strengths)
- business assets (businesses that can exploit new market opportunities)

Through this process five markets were identified where the area has an existing asset base and where there is potential global growth. These are:

- Agri-tech
- Digital economy
- E-health and e-Wellbeing
- Marine technology
- Space and aerospace

A subsequent econometric modelling exercise¹⁰ was also undertaken to identify growth potential (jobs, GVA and new business creation) at a strategic level to guide decision making and evaluation. Further detail on the scope of these markets is provided in the accompanying Evidence Base Report.

⁶ There is no one single definition of innovation. As described in the Innovation Union plan it broadly means change that speeds up and improves the way we conceive, develop, produce and access new products, industrial processes and services. Changes that create more jobs, improve people's lives and build greener and better societies.

⁷ NESTA (2009), Business Growth and Innovation

⁸ The Future Economy Board is a formally constituted sub-group of the C&IoS LEP Board and is tasked with overseeing the strategic development of research and innovation as a driver for growth across the LEP area.

⁹ Catalys Report (2013)

¹⁰ Strategic Economics Limited (2014), Smart Specialisation Framework

A Research and Innovation Strategy for Smart Specialisation (RIS3) is a recommended step in order to receive R&I funding. The European Commission has established a Smart Specialisation Platform (S3P) to assist the development, implementation and review of RIS3 strategies.

The guidance sets out six steps:

- analysing the innovation potential
- setting out the RIS3 process and governance
- developing a shared vision
- identifying the priorities
- defining an action plan with a coherent policy mix
- monitoring and evaluating

In C&IoS the first four steps have already been undertaken. This Framework is key to completion of the process through the definition of an action plan that will serve as the basis for activities and subsequent monitoring and evaluation.

2.3 The Innovation Ecosystem

The 'Innovation Ecosystem' comprises the key factors that will interact and determine levels of innovation and R&D activity within any given economy. The approach was used in a 2009 NESTA Report¹¹ and its core components - knowledge creation, enterprise, capital and markets - were used as part of the structure for analysis in the Evidence Base Report that accompanies this Framework.

The NESTA ecosystem model has been further modified during preparation of this Framework to identify a typology for the range of actions that could be undertaken to support the development

of RD&I activity both generally and within each of the Smart Specialisation markets (see Figure 2.1 below). These actions are essentially policy objectives supporting development of each of the core components:

Markets:

- to stimulate demand
- to enable access to markets – in particular, markets that are external to C&IoS
- to attract investment from outside of C&IoS

Capital:

- to ensure the availability of finance
- to secure an appropriate skills base
- to provide an advanced innovation infrastructure

Enterprise:

- to enable the commercialisation of RD&I
- to encourage business collaboration

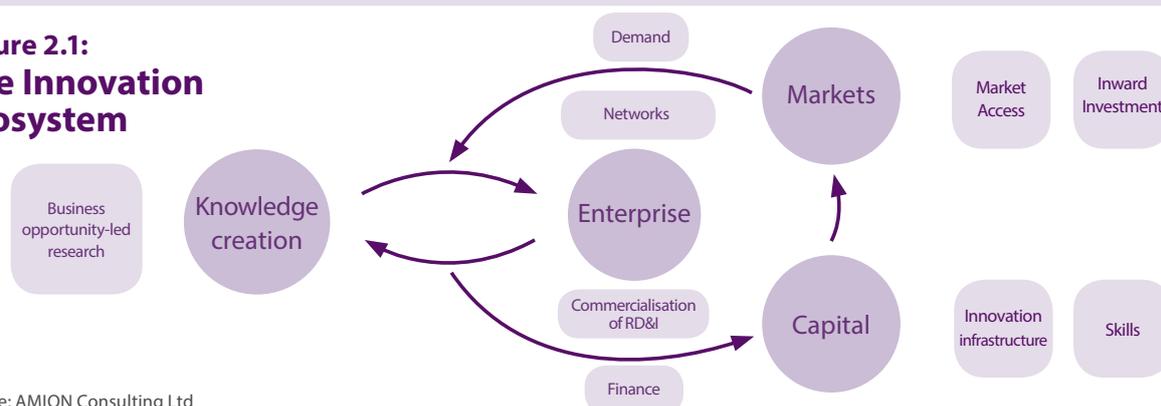
Knowledge creation:

- to promote business opportunity-led research activity

As well as developing the components of the innovation ecosystem, there will be a particular need for actions to promote awareness of both the scope of activities and the market opportunities and economic benefits that will flow from the development of RD&I in C&IoS.

¹¹ NESTA (2009), 'The Wider Conditions for Innovation in the UK'

Figure 2.1:
The Innovation Ecosystem



Source: AMION Consulting Ltd

3 Research, development and innovation in C&IoS

3.1 Existing activity

C&IoS has very low levels of business investment in R&D. In 2012 R&D spend was 0.22% of GDP, the lowest of any LEP area, compared to a national figure of 1.63% and an EU average of 2.09%. In the period 2010-2013 only 20 companies in C&IoS (out of 5,464 nationally) successfully applied for Technology Strategy Board (TSB) funding - with only £4 million of grants being secured out of £922 million nationally.

The results are low levels of competitiveness and the lowest levels of productivity of any LEP area in England. On the 2013 UK Competitiveness Index, the C&IoS LEP area is ranked 34 out of 39 LEP areas (the same rank as in 2010). It is also the lowest of all 39 LEP areas in terms of employment in export intensive industries (13.5% in 2010).

The weak innovation and R&D culture within the C&IoS business base is largely a reflection of the region's economic structure and its geographic peripherality. Critically, the lack of RD&I serves to reinforce those economic imbalances. Key factors are:

- the predominance of small firms and the lack of large businesses - the latter generally have a greater propensity (and more resources) to invest in RD&I
- the area's sectoral composition - with relatively low levels of employment in knowledge-intensive employment - 43.2%, against 53.7% in the UK in 2011
- high levels of self-employment - 20.7% of 16-64 year olds were self-employed in 2012/13, compared with 13.5% in the UK - and significant numbers of 'lifestyle' micro-enterprises
- a dependency upon local markets which, combined with the distance from major centres, means that local businesses tend to be sheltered from competitive forces
- a historic lack of university and research institutions in C&IoS, which has traditionally restricted opportunities to access expertise in RD&I

However a recent report¹² provides further insight, and some source for optimism, concerning factors affecting overall innovation activity in C&IoS. It shows C&IoS ranked 13th out of all 39 LEP areas in terms of overall 'appetite for innovation'. The area scores particularly well on 'collaboration' and 'strategic/marketing innovation' but poorly on RD&I.

3.2 Opportunities and challenges

Despite its current relatively poor performance, C&IoS has, as identified in the Evidence Base Report, a number of significant opportunities to build on in order to significantly develop its RD&I base and realise the resultant economic and social benefits. These are summarised in Table 3.1 over-leaf. While they represent general opportunities for the local economy, in a number of instances they have particular relevance for individual Smart Specialisation markets. Where this is the case, an indication of the relevant market(s) is provided (a summary of the key market-specific assets is included in Section 4).

¹²Benchmarking Local Innovation: The Innovation Geography of the UK, ERC, 2015

Table 3.2: C&IoS Opportunities

Opportunities		Relevant Smart Specialisation Markets
O1	Government policy and investment support	All
O2	Previous investments under Objective One and Convergence Programmes	All
O3	Strong knowledge institution and research base	All
O4	Growing markets and demand (both public sector, private sector and consumers)	All
O5	Existing networks and potential for development of collaborative business-to-business activities	All
O6	Retaining a higher percentage of the graduate asset base in Cornwall to drive new start-ups in high growth sectors	All
O7	Examples of good practice in knowledge exchange between research institutions and business	All
O8	Key natural assets (e.g. coastline, open space)	Agri-tech Space and aerospace Marine tech
O9	Existing significant core of relevant business activity	Agri-tech Marine tech
O10	Climate monitoring & change and environmental concerns (new markets)	Marine tech E-health and E-wellbeing Space and Aerospace
O11	Key employers who are keen to undertake RD&I and develop the supply chain	Marine tech Space and aerospace
O12	Innovation infrastructure (e.g. broadband and innovation centres)	Digital economy E-health and E-wellbeing
O13	Drive for efficiencies in public service provision	E-health and E-wellbeing Digital economy
O14	Development of downstream applications and supply chain links	Space and aerospace Marine tech
O15	Strong local labour market/skills base	Agri-tech
O16	Utilising lifestyle and environmental assets to attract footloose investment	Digital economy
O17	Scope for national pilots	E-health and E-wellbeing

The research underpinning this Framework and the accompanying Evidence Base Report have, however, also highlighted a number of challenges that C&IoS will need to address if it is to successfully encourage development of a strong RD&I base. Again an indication is provided of where these challenges have particular relevance for specific sectors.

Table 3.2: C&IoS Challenges

Challenges		Relevant Smart Specialisation Markets
O1	Peripherality of Cornwall	All
O2	Global competition	All
O3	Ensuring effective linkages between business and the research /knowledge base (both internal and external)	All
O4	Establishing clear routeways of support for progression from early stage R&D to commercialisation	All
O5	Promoting business awareness of opportunities to exploit/ undertake research, innovation and supply chain linkages	All
O6	Establishing effective linkages and joint working between key elements of the innovation infrastructure – such as innovation centres and Higher Education Institutions (HEIs)	All
O7	Availability of finance – including often high initial costs and risks associated with innovation and investment	All
O8	Effective promotion of sector and C&IoS capacity/expertise, both within Cornwall and nationally/internationally	All
O9	Development of the sector skills base and entrepreneurship	All
O10	Improving awareness of potential for adoption of new technologies by businesses and major institutions (e.g. NHS)	All
O11	Ensuring a range of suitable accommodation, including space to support all stages of business incubation and development, including incubators, grow-on space and sectoral hubs	All
O12	Insularity and a focus on local markets	Digital economy Agri-tech
O13	Need for businesses to meet requisite quality standards/ requirements	Space and aerospace
O14	Low historic levels of investment	Agri-tech
O15	Low productivity	Agri-tech
O16	Dominance in sector of small businesses with consequential challenges regarding capacity for collaboration, R&D, skills development investment etc.	Digital economy Agri-tech
O17	Climate change and environmental concerns (costs and limitations)	Agri-tech Space and Aerospace
O18	Institutional barriers to market development (e.g. commissioning practices, competing pressures)	E-health and E-wellbeing
O19	Availability of specialist equipment and facilities for business	Digital economy

4 Investment framework

4.1 Overview

Figure 4.1 (overleaf) presents a diagrammatic summary of the key components of the C&loS RD&I Investment Framework. It shows how the key objective of driving sustainable economic growth through RD&I investment will be pursued through the two investment priorities 'Smart Specialisation' and 'Growth through Innovation'. The former will be targeted on the five growth markets whereas the latter will be directed at other innovative businesses elsewhere in the C&loS economy.

Therefore, while there will be a specific focus on the Smart Specialisation markets, actions will also be required to support RD&I across the economy as a whole and in particular those sectors where local businesses need to compete with external firms (particularly in external markets). The interventions across both investment priorities will entail action across all ecosystem components i.e. supporting knowledge creation, growing and accessing markets, promoting enterprise and sourcing capital. While not precluding investment, in major new infrastructure where there is a strong and demonstrable case, the main emphasis will be on maximising existing investment and supporting new and existing businesses to innovate through the provision of a joined-up ecosystem of support.

The development of RD&I can also contribute significantly towards achievement of the Programme's Horizontal Principles¹³ objectives regarding sustainable development and equal opportunities.

All interventions will need to be compliant with the European Commission's rules on State Aid. Various provisions and exemptions apply to RD&I activities (see Appendix B). In relation to the Agri-tech market, further clarification is to be provided by the Managing Authority regarding which activities should be funded from the European Regional Development Fund (ERDF) and which from the European Agricultural Fund for Rural Development (EAFRD).

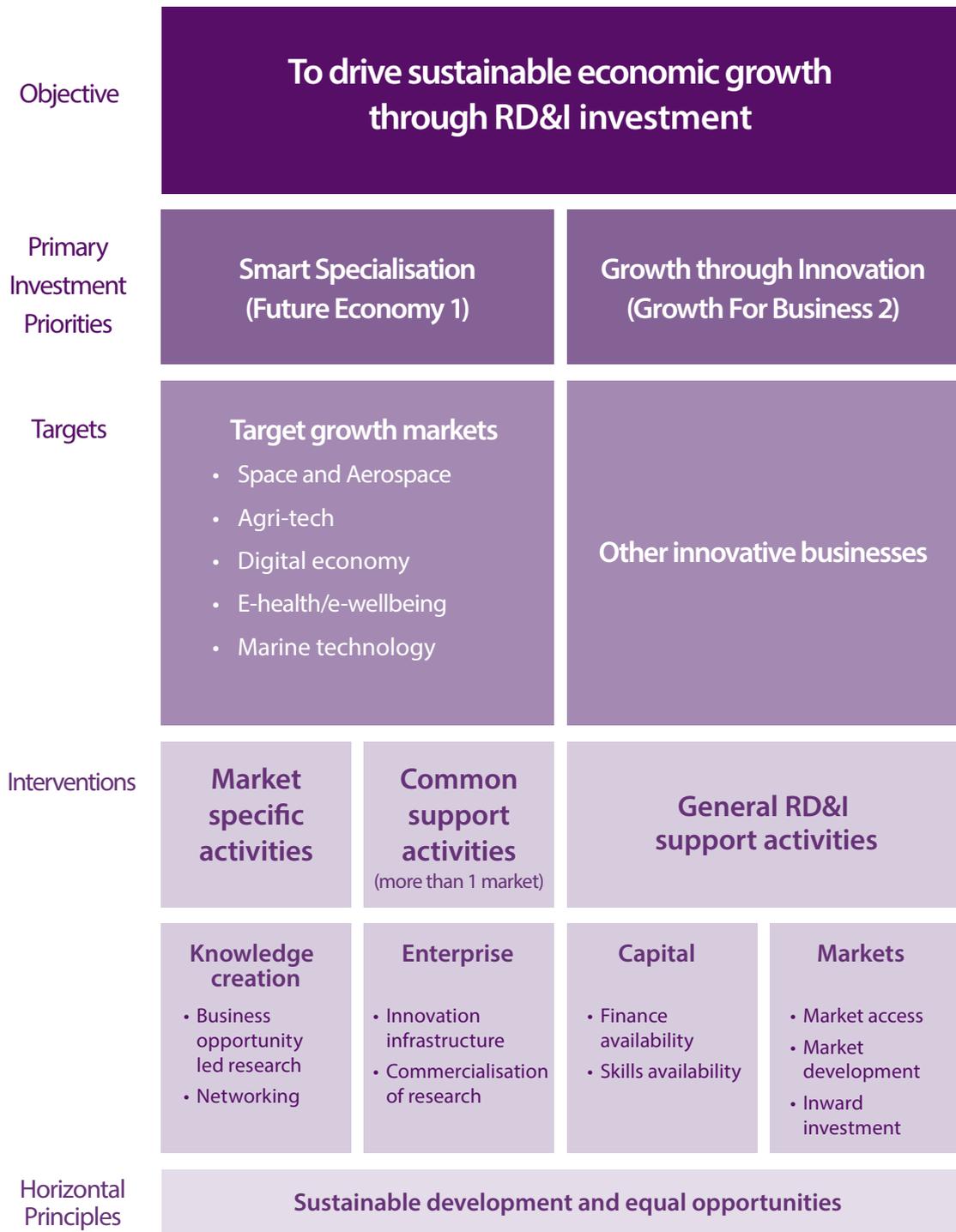
This section continues with a summary of the

overall investment priorities (for both the target markets and general innovation) followed by a summary of key sector priorities and assets as a guide for the development of specific target market interventions. It concludes with the identification of key linkages with other programmes and consideration of the potential to contribute to the achievement of the Horizontal Principles.

The priorities for the Programme have been designed to address the opportunities and challenges identified in the accompanying Evidence Base Report (and summarised in Table 3.2) that face the area if it is to successfully develop its Smart Specialisation Markets and overall RD&I activities and capacity.

¹³ Horizontal principles or themes reflect cross cutting objectives that need to be considered at all stages of the Programme and individual project development and delivery.

Figure 4.1: The RD&I Investment Framework



4.2 Investment priorities

Table 4.1 summarises the range of interventions proposed under this Investment Framework. It is structured according to the ecosystem components and identifies the key opportunities and challenges that will need to be addressed through cross-reference to Tables 3.2. (Challenges and opportunities). All RD&I interventions will need to demonstrate alignment to at least one of the following Operational Programme Investment Priorities for England.

Smart Specialisation (PA 1)

- ERDF OP: Investment Priority 1A: Enhancing research and innovation (R&I) infrastructure and capacities to develop R&I excellence, and promoting centres of competence, in particular those of European interest (See note: PA 1a)
- ERDF OP: Investment Priority 1B: Promoting business investment in R&I

Growth through innovation (PA 3)

- ERDF OP: Investment Priority 3D: Supporting the capacity of small and medium enterprises to grow in regional, national and international markets and to engage in innovation processes.

In addition relevant activities will potentially be able to draw upon ESF resources through the following Priority Axis¹⁴

Skills for Growth (PA 2)

- European Social Fund (ESF) OP: Investment Priority 2.1: Enhancing equal access to lifelong learning for all age groups in formal, non-formal and informal settings, upgrading the knowledge, skills, competencies of the workforce and promoting flexible learning pathways, including through career guidance and validation of acquired competencies; and
- ESF OP: Investment Priority 2.2: Improving the labour market relevance of education and training systems, facilitating the transition from education to work and strengthening vocational education and training systems and their quality, including through mechanisms for skills anticipation, adaptation of curricula and the establishment and development of work based learning systems, including dual learning systems and apprenticeship schemes.

Table 4.1 indicates which OP objective(s) each activity potentially falls under. It should also be stressed however that a number of the suggested activities may potentially also be aligned with other ERDF and ESF Operational Programme Investment Priorities. These are listed in Appendix A.

¹⁴ The details of this will be covered in the forthcoming Smart Specialisation Skills Strategy

Note: PA 1a

The England ERDF Operational Programme was published in July 2015, after the C&IoS E SIF Strategy, and includes Priority Axis 1a. The C&IoS E SIF Strategy does not include a financial allocation for this priority. This was a considered position and was agreed by partners during the E SIF development process. However, it is also widely considered that delivering significant RD&I investment within C&IoS could be problematic without capital expenditure. In view this, at its meeting on 22 October 2015, the ITI Board agreed:

- To exclude PA 1a from the call specification, due to be published in December 2015 but then to review the situation following the completion of this call. For example, if the applications received do not meet the local strategic fit or related ERDF criteria, or it may be difficult for PA 1 to meet its performance targets, a subsequent call to include IP1a could be published.

Table 4.1 Support activities by innovation ecosystem component

Target Theme	Opportunities (O) and Challenges (C) to be addressed (from Table 3.2)	ERDF / ESF Investment priorities		Examples of potential initiatives
		SMART Specialisation	General RD&I	
1. Markets component				
Stimulating demand	04 Growing demand	IP1B		Working with businesses to promote supply chain development
	011 Key employers			
	013 Need for efficiencies	IP1B		Raising awareness with major public sector bodies of opportunities for piloting applications of new technologies and the capacity of C&IoS business to support such activities
	014 Downstream applications			
	017 Scope for pilots			
	C10 Improving awareness of potential			
C18 Institutional barriers				
Supporting access to markets	03 Research base	IP1B	IP3D	Promoting awareness of market opportunities to C&IoS' businesses – including through mechanism such as reverse trade shows
	05 Network			
	C2 Global competition	IP1B	IP3D	Raising awareness of business requirements and providing support with their compliance
	C5 Business awareness			
	C8 Promotion			
	C9 Developing skills base			
	C12 Insularity			
	C13 Meeting quality standards			
Attracting inward investment	011 Key employers		IP3D	Attracting new investment, particularly in relation to existing hubs
	012 Previous infrastructure investments			
	016 Lifestyle and environment	IP1B	IP3D	Working with businesses to attract additional R&D activities to C&IoS
2. Capital component				
Ensuring availability of finance	C4 Clear support routeways	IP1B	IP3D	Providing flexible financial support for business RD&I activities and the transition to commercialisation - including through the creation of Financial Instruments
	C7 High initial costs			
	C14 Low historic investment	IP1B	IP3D	Assisting business access to venture capital
	C16 Small business dominance			
		IP 3A	Promoting awareness of funding sources	
		IP3D		

Note: Proposals must not duplicate Growth Hub activity. Please see page 18 for description of Growth Hub.

Table 4.1 Support activities by innovation ecosystem component

Target Theme	Opportunities (O) and Challenges (C) to be addressed (from Tables 3.1 and 3.2)	ERDF / ESF Investment priorities		Examples of potential initiatives
		SMART Specialisation	General RD&I	
2. Capital component				
Securing an appropriate high quality skills base	O5 Networks	IP1B		Knowledge transfer partnerships
	O6 Graduates	IP1A	IP2.2*	Linking businesses with HE and other skills development initiatives
	O7 Knowledge Exchange			
	O15 Skills base		IP2.1*	Collaborative skills development schemes
	C3 Business/research base links	IP1B		
	C13 Meeting quality standards	IP1B	IP3D	Retention of more graduate talent and skills
	C15 Low productivity	IP1B	IP3D	
C16 Small business dominance	IP1B	IP3D	Schools-business links*	
Provide an advanced innovation infrastructure	O12 Previous infrastructure investments	IP1A		Developing effective mechanisms to promote and undertake joint working between key elements of the existing innovation infrastructure
	C6 Linkages between research bodies			
	C11 Accumulation	IP1A		Developing new physical or virtual hubs/centres of excellence
		IP1A		Ensuring that there is a range of suitable accommodation – including both incubation and ‘grow-on’ space
3. Enterprise component				
Commercialisation of research and knowledge transfer	O3 Research base	IP1B	IP3D	Establishing integrated pathways from R&D to commercialisation
	O6 Graduates			
	O7 Knowledge Exchange	IP1A		Supporting HEI – originated/ supported business incubation including: <ul style="list-style-type: none"> - Spin-outs - Graduation/placement
C3 Business/research base links	IP1B			
C4 Support routeways		IP1B	IP3D	Working with businesses to identify opportunities for innovation and adoption of new technologies
C5 Business awareness				
C6 Joint working				

* To be funded from the ESF programme

Table 4.1 Support activities by innovation ecosystem component

Target Theme	Opportunities (O) and Challenges (C) to be addressed (from Tables 3.1 and 3.2)	ERDF / ESF Investment priorities		Examples of potential initiatives
		SMART Specialisation	General RD&I	
3. Enterprise component				
Encouraging and supporting the development of mutual business support and collaboration	O5 Networks	IP1B	IP3D	Supporting business networks
	O9 Business activity O11 Key employees C5 Business awareness C16 Small firms dominance			IP1B
4. Knowledge creation component				
Promoting business opportunity-led research activity in C&IoS by: HEIs and research bodies Public services Businesses	O2 Previous investments O3 Research base O7 Knowledge Exchange C3 Business/research links C6 Linkages between research bodies C8 Promotion C19 Specialist facilities	IP1B		Promoting awareness amongst C&IoS research and innovation centres of emerging opportunities/needs for new research activity arising from C&IoS business activity and opportunities
		IP1B		Stimulating collaborative working and sharing of experience between C&IoS research and innovation centres.
		IP1B	IP3D	Promoting and enabling affordable business access to specialist equipment and facilities

Within the context of the above framework, there will be potential for the development of innovative actions that actively and directly contribute to the achievement of broader partner objectives regarding social innovation and environmental sustainability. Proposals for such actions will be welcome. Indicative examples could include actions to:

- enable more efficient resource usage by business
- assist the development of new renewable sources of energy
- enhance access to quality services particularly in peripheral areas
- develop applications and services that support assisted living for vulnerable members of the community

4.3 Smart Specialisation target market activities

The preceding section set out the scope of actions that will be supported under this Framework. This section provides further guidance regarding specific targeted priorities for action in support of development of each of the Smart Specialisation markets.

4.3.1 Market-specific assets

Activities need to consolidate and build upon existing sectoral assets as well as address the more general opportunities and challenges identified in Section 3. In particular they will need to address existing gaps in the availability of services (and associated infrastructure) to support the development of both existing and new businesses.

Some of the specific key assets for each market area are set out below (a fuller list of these is included in the E SIF and Evidence Base Report). These provide a potential focus for interventions to build upon in order to promote new RD&I activity. They include:

Agri-tech

- climate and geography
- significant existing levels of agricultural and related activity and employment
- a strong research and educational base, for example: Duchy College, Environment and Sustainability Institute, University of Exeter

Digital economy

- fibre optic broadband network
- existing facilities particularly those associated with the Universities (such as the Academy for Innovation and Research and the Environment and Sustainability Institute) and the innovation centres
- rapid recent business growth and emerging clusters of globally-competitive businesses

E-health and e-wellbeing

- large health and care sectors, combined with an ageing and dispersed population, that provide a significant potential source of demand as well as opportunities for piloting new applications
- research expertise at the European Centre for Environment and Human Health and within the Universities
- strong existing collaborative partnerships including the strategic partnership between BT and Cornwall Council and the Health and Wellbeing Board

Marine Technology

- Coastline, port facilities and harbours
- extensive research expertise and facilities for developing and testing marine and renewable energy technologies such as Wave Hub, PRIMaRe, Fabtest and Falmouth Marine School
- clusters of marine technology, marine civil engineering, marine energy and offshore renewable energy companies with a significant level of private sector RD&I

Space and Aerospace

- Goonhilly Earth Station and its strong existing academic research links
- Newquay Cornwall Airport and the associated Newquay Aerohub Enterprise Zone

4.3.2 Target market-specific priorities

Smart Specialisation requires establishment of an integrated 'eco-system' of support that covers all stages of business formation and growth. Within this context, the following provides some examples of potential priorities for action for each Smart Specialisation market. It includes certain key targeted investments in new infrastructure that may be required. It should be emphasised that these are intended for guidance only and should not be treated as being exclusive. They should be subject to regular review given rapidly changing circumstances. It should also be stressed that there may be significant overlap between activities which may meet development objectives across more than one market area – for example, e-Health actions that involve the development of digital applications and Agri-tech developments involving the use of Unmanned Aerial Vehicles (UAV). This highlights the need for flexibility in resource allocation.

Agri-tech

- Networks – across the supply chain
- Actions that support and enable businesses to meet existing market challenges and opportunities in relation to:
 - resource management including improvements and innovations in water and soil management
 - supply chain efficiency improvements
 - animal and plant disease monitoring and management

- UAVs' applications in land management
- mobile technology
- building on existing models to make use of field scale monitoring and Big Data to support land use decision making

Digital economy

- access to technical knowledge and specialist business support and facilities
- virtual and physical communications hub
- engagement with schools¹⁵, colleges and universities to create and retain a sustainable skills pipeline in C&IoS
- provision of intensive support for the incubation of new start-ups

E-health and e-wellbeing

- NHS (and other public sector) commissioning of services
- pilots – based on the demographic structure and dispersed nature of much of the area's population
- facilitating the achievement of quality standards
- collaborative working – involving commissioners, businesses and research

Marine Technology opportunities

- centre of excellence for advanced engineering and manufacturing (potential for linkages with Aerospace)
- new infrastructure to support innovation, development and testing
- Offshore Renewable Energy (ORE) device development and deployment
- sustainability and growth of vessel¹⁶ and marine structure building, repair, maintenance and refit related to emerging markets including cyber security, paint technology, vessel efficiency

¹⁵ This activity is outside the scope of E SIF and needs to be funded via an alternative mechanism

¹⁶ Ship building is an ineligible activity under E SIF and will need to be funded via an alternative mechanism

Space and Aerospace

- mobile investment – particularly in terms of promotion and marketing of key assets
- establishment of Centres of Excellence
- provision of incubation support (product, process, skills development) – potentially linking Aerospace and Marine technology
- supply chain initiatives linked to the hubs (incorporating quality standards)
- network development and promotion of linkages with regional and national networks and knowledge transfer (for example, linked to Catapult Centres).

4.4 Linkages

Activities need to consolidate and build upon existing sectoral assets as well as address the more general opportunities and challenges identified in Section 3. In particular they will need to address existing gaps in the availability of services (and associated infrastructure) to support the development of both existing and new businesses.

Some of the specific key assets for each market area are set out below (a fuller list of these is included in the E SIF and Evidence Base Report). These provide a potential focus for interventions to build upon in order to promote new RD&I activity. They include:

Future Economy Objective 2 Green & Marine Strand – particularly around development of the renewable energy sector

Growth for Business Objective 1 Access to business support – ensuring effective access for businesses in key Smart Specialisation markets to appropriate support services via the C&IoS Growth Hub

Growth for Business Objective 3 Infrastructure – provision of appropriate workspace to assist cluster development and grow-on-space

Growth for Business Objective 4 Skills and career development – for example in the development of higher level skills and graduate placements

Conditions for Growth Objective 1 Investment in digital infrastructure and skills – for example support for pilot projects to test and develop new digital approaches

Conditions for Growth Objective 2 Carbon management – links to offshore renewable energy development

Conditions for Growth Objective 3 Physical barriers to business growth – enhancing connectivity

Conditions for Growth Objective 4 Develop communities that are economically and socially resilient – using technology to build community capacity and overcome problems associated with physical isolation

Conditions for Growth Objective 5 Progression into the labour market – application and testing of new approaches to training and distance learning; incorporation of labour market and other social value stipulations into procurement processes

A critical issue will be ensuring that RD&I interventions are properly integrated into the work of the Growth Hub and operation of financial instruments. The Growth Hub is currently being commissioned and will be a mechanism for businesses to access through a single point with clear signposting a range of support services such as training, finance, start-up advice and export support. It is likely to combine web-based resources, telephone support and locally based experts to help businesses navigate the support on offer. It is due to go live in January 2016 with the C&IoS LEP providing an interim service.

In addition, closer integration between Horizon 2020 and the main E SIF Programmes is a key aim of the European Commission¹⁷. Historically the C&IoS' business base has not accessed Horizon funding streams for a number of reasons, including size. Therefore, a key activity should be to encourage / support businesses to develop to enable them individually or working collaboratively to access these sources of funding. There is considerable

¹⁷ A guide on Enabling synergies between European Structural and Investment Funds, Horizon 2020 and other research, innovation and competitiveness-related Union programmes is available at http://s3platform.jrc.ec.europa.eu/documents/10157/267027/Guide%20on%20synergies_en.pdf

potential for links with this Framework across a range of activities, such as the development of R&D capacity within businesses, access to finance and support for public research.

Moreover a key issue that RD&I investment must address is to enable C&IoS' businesses to access national funding streams and centres of excellence, such as the Catapult Centres. In addition other regions, including neighbouring LEP areas, will have sectoral strengths similar to those in Cornwall. Where appropriate, proposals should explore the scope for linkages to be forged.

4.5 Horizontal principles

The E SIF Strategy establishes two Horizontal Principles for the Programme regarding sustainable development and equal opportunities.

Sustainable development is a key element of the LEP's Growth Strategy and is reflected in its Guiding Principle which emphasises that C&IoS must retain and build on our special and unique assets. A Sustainability Review has been undertaken to ensure that sustainable development is embedded in the E SIF and its constituent actions.

The E SIF also recognises the role that EU funds can play in promoting equal opportunities and empowering people to overcome barriers that they face to economic and social inclusion.

As a result all projects will be challenged to demonstrate how they have integrated sustainable development and social sustainability as part of their project development and delivery. Equal opportunities and access into the labour market should also be embedded into procurement processes.

5 Delivering the Framework

5.1 Overview

This section describes how the programme of RD&I support for the Smart Specialisation markets and other C&IoS businesses will be managed and delivered. It outlines the E SIF project selection criteria and the indicative preliminary allocations of funding for the various strands of activity described and the phasing of this investment. Finally, it presents indicative outputs and results to be delivered by the projects and sets out the monitoring and evaluation responsibilities.

5.2 Governance and delivery arrangements

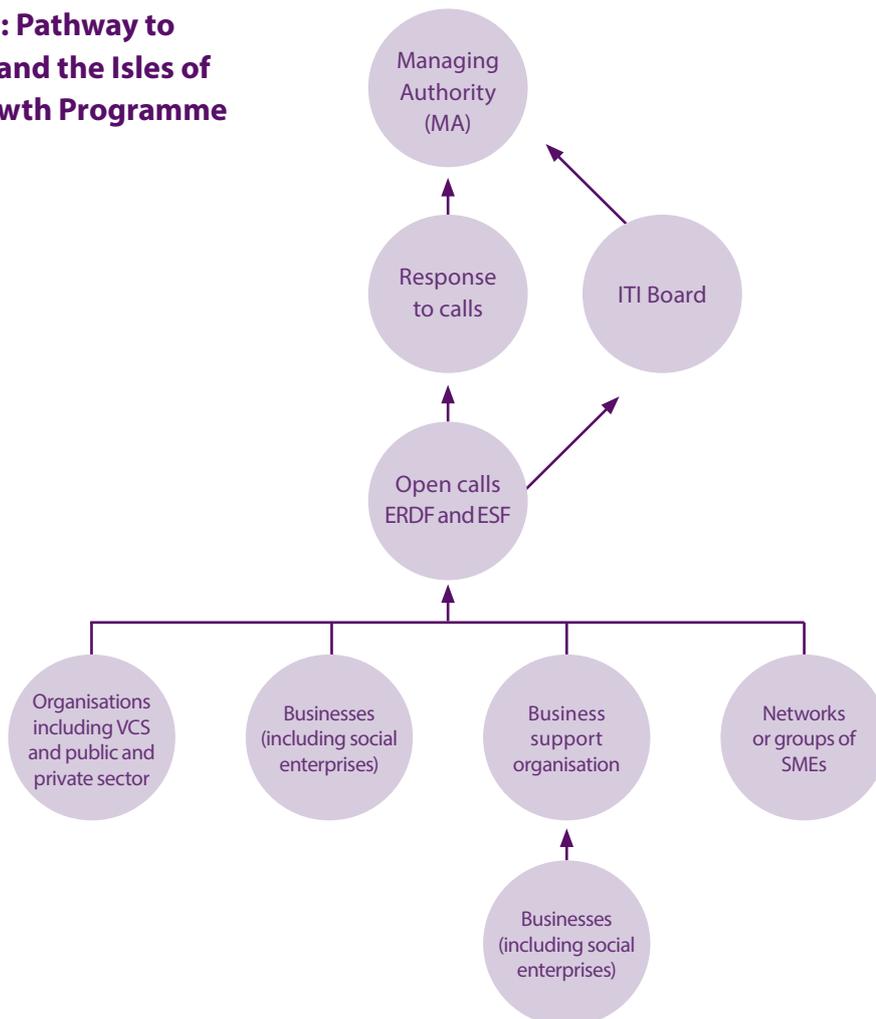
In relation to the 2014-2020 E SIF strategy, the C&IoS ITI Board, administered by the Managing

Authority, has a local role in ensuring its delivery. The Board is made up of a broad range of partner interests as stipulated by EU regulations. The role of the Board is to advise the relevant Managing Authority (DCLG) in respect of RD&I on both call development and the 'strategic fit' of applicant responses to calls. It has been agreed by the C&IoS ITI Board that this Framework will be used as the basis for determining the content of RD&I Calls.

The Future Economy Board of the C&IoS Local Enterprise Partnership have supported the development of this RD&I Framework and is committed to reviewing implementation progress from all investment sources.

The overall process for accessing E SIF funding is set out in Figure 5.1.

Figure 5.1: Pathway to Cornwall and the Isles of Scilly Growth Programme funding



5.3 Project selection

5.3.1 Calls for proposals

The ERDF funding identified for the development of the Smart Specialisation markets and other general innovation support for businesses within C&IoS, will be allocated to projects following calls for proposals to be issued by the Managing Authority. The timetable for calls has been set by DCLG centrally, and will be delivered on a rolling basis throughout the lifetime of the E SIF programme. The process for applying for ERDF funding and selection of projects will be managed by DCLG through a two-stage application process - outline applications, and if successful, full applications.

5.3.2 Selection criteria – national and local

The Managing Authority will be responsible for assessing proposals against:

- the Gateway criteria – applicant eligibility; activity and expenditure eligibility; and fit with the national operational programme and the local development need
- core selection criteria
- the specific call requirements

The ITI Board will advise the Managing Authority on how well the project aligns with local economic needs and opportunities and fits with the E SIF / ITI Strategy and the RD&I Delivery Framework, at both the outline and full application stages.

Following the submission of an application, the Managing Authority will first check the Gateway criteria to identify whether the project applicant and activity are eligible and whether it meets the objectives of the Operational Programme and local development need. Only eligible projects will be taken forward to an assessment of the following core selection criteria: strategic fit; value for money; management and control; deliverability; compliance; and cross-cutting themes.

In addition, it is envisaged that specific criteria will be included in the specifications for calls. These may include contribution to one or more of the following:

- high value added and sustainable growth - to have the capacity to grow the business, increase productivity and/or generate high value and durable jobs for residents in the local economy
- maximisation of existing assets – where appropriate projects should build on existing activity, including the utilisation of facilities and assets that received funding through the Convergence and/or Objective 1 Programmes
- high levels of additionality - to secure high levels of additional activity and in particular promote expansion of C&IoS business activity in growing external markets so that the level of local competition is minimised and economic growth is maximised

If the outline application is successful, applicants will then be invited to submit a full application, providing a more detailed plan for the delivery of the project. This will form the basis of the funding agreement between the applicant and the Managing Authority. A full technical appraisal will be undertaken at this stage, drawing on independent expert advice where required. The Managing Authority will use qualitative and quantitative approaches in assessing projects against the criteria.

5.4 Funding allocations and phasing

An indicative allocation of ERDF funding to develop the overall themes of the Smart Specialisation and General Innovation framework is set out in Table 5.1. In addition an overall allocation range for each Smart Specialisation Market is identified.

These allocations will need to be reviewed as the Programme progresses. They comprise 91 million Euros from IP1b¹⁸, a notional 43 million Euros from IP3d 'Growth through Innovation' including 2.9 million Euros (50% of the Financial Instruments allocation for IP3d).

Table 5.1: Indicative allocation of ERDF funding for C&IoS (Euros m)

Investment Framework: Overall themes and objectives		Phase 1: 2015-2018		Phase 2: 2019-2020	
		Smart Specialisation	General Innovation	Smart Specialisation	General Innovation
Markets	Stimulating demand	9.3	5.8	4.6	3.5
	Supporting access to markets				
	Attracting inward investment				
Capital	Ensuring availability of finance	16.4	1.9	8.2	1.0
	Securing an appropriate high quality skills base	3.5	2.3	2.3	1.2
	Providing an advanced infrastructure	15.6	10.2	7.8	5.0
Enterprise	Commercialisation of research and knowledge transfer	7.0	4.7	4.7	3.5
	Encouraging and supporting the development of mutual business support and collaboration				
Knowledge Creation	Promoting business opportunity-led research activity in C&IoS by: <ul style="list-style-type: none"> • HEIs • Public services • Businesses 	7.0	4.7	4.7	2.3
Total ERDF		58.8	29.6	32.3	16.5
Market Specific Priorities	Agri-tech	10-15m Euros			
	Digital	15-20m Euros			
	E-Health	10-15m Euros			
	Marine	20-25m Euros			
	Space and Aerospace	20-25m Euros			

These allocations have been derived on the basis of the assessment of growth potential carried out by Strategic Economics Ltd in 2014, updated to reflect more recent developments in each market as documented in the Evidence Base Report. The

results have been further modified to reflect a headline assessment of the relative capital intensity and resource needs of the likely actions designed to address the opportunities and challenges within each market.

¹⁸ Please note that the Managing Authority can reallocate funding in response to changing circumstances throughout the life of the EU Programme

5.5 Indicative outputs

Table 5.2 presents the outputs that the Smart Specialisation and General Innovation investments are expected to generate during the lifetime of the Programme. The outputs for Smart Specialisation represent the totality of the expected outputs for PA1. The outputs set against General Innovation are derived from a pro-rata of the funding for PA3 IP3d (at 68.9 million euros) and the associated outputs against the funding for the Growth

through Innovation strand of PA3 IP3d plus 50% of its Financial Instrument support allocation (i.e. 43.2 million plus 2.9 million euros). For the output of 'enterprises supported to introduce new to the firm products' a higher proportion (85% rather than 68%) of the total PA3 IP3d output target is allocated to the funding provided for Growth through Innovation strand as it is expected that innovation support should have a greater impact on this type of activity.

Table 5.2: Smart specialisation and general innovation outputs 2014-2020

Indicators	Smart Specialisation (PA1) Outputs	General Innovation Outputs (PA3 IP3d)
No. of enterprises receiving support	558	433
No. of enterprises receiving grants	390	289
No. of enterprises receiving financial support other than grants	19	32
No. of enterprises receiving non- financial support	136	112
No. of new enterprises supported (subset of above)	48	139
Private investment matching public support to enterprises (grants)	471,369 (Eur)	2,008,954 (Eur)
Private investment matching public support to enterprises (non- grants)	772,256 (Eur)	680,496 (Eur)
Employment increase in supported enterprises	45 FTE	181 FTE
No. of enterprises co-operating with research institutions	303	N/A
No. of enterprises supported to introduce new to the market products (subset)	45	N/A
No. of enterprises supported to introduce new to the firm products (subset)	89	69
Public or commercial buildings built or renovated	240 square metre	53 square metre
Number of potential entrepreneurs assisted to be enterprise ready	N/A	N/A
Number of enterprises receiving information, diagnostic and brokerage	N/A	N/A

5.6 Monitoring and evaluation

The ITI Board is a key partner in overseeing the successful delivery of the overall E SIF strategy within the context of the England Operational Programmes (OP). A key aspect of this role will involve agreeing and delivering ongoing monitoring and evaluation of performance.

An overall evaluation strategy and action plan is being developed for the England OP which could incorporate longitudinal, investment level and priority level evaluations. As a minimum, successful applicants will be required to submit regular monitoring returns to DCLG (the managing authority) and the ITI Board, detailing achievement of outputs, spend and outcomes against milestones.

Appendix A: Operational Programme Investment Priorities

ERDF - England Operational Programme 2014 - 2020

Priority Axis	Investment Priority
PA 1 – Strengthening research, technological development and innovation	1.a. enhancing research and innovation (R&I) infrastructure and capacities to develop R&I excellence, and promoting centres of competence, in particular those of European interest
	1.b. promoting business investment in R&I; developing links and synergies between enterprises, research and development centres and the Higher Education sector; promoting investment in product and service development, technology transfer, social innovation, eco-innovation, public service applications, demand stimulation, networking, clusters and open innovation through smart specialisation; and supporting technological and applied research, pilot lines, early product validation actions, advanced manufacturing capabilities and first production, in particular in key enabling technologies and diffusion of general purpose technologies
PA2: Enhancing access to, and use and quality of, ICT	2 (a) extending broadband deployment and the roll-out of high-speed networks and supporting the adoption of emerging technologies and networks for the digital economy
	2.(b) developing ICT products and services, e-commerce, and enhancing demand for ICT
PA3: Enhancing the Competitiveness of SMEs	3a promoting entrepreneurship, in particular by facilitating the economic exploitation of new ideas and fostering the creation of new firms, including through business incubators
	3c supporting the creation and the extension of advanced capacities for product and service development 3d supporting the capacity of SMEs to grow in regional, national and international markets, and to engage in innovation processes
PA4: Supporting the shift towards a low carbon economy in all sectors	4a promoting the production and distribution of energy derived from renewable sources

	<p>4b promoting energy efficiency and renewable energy use in enterprises</p> <p>4c supporting energy efficiency, smart energy management and renewable</p> <p>4e promoting low-carbon strategies for all types of territories, in particular for urban areas, including the promotion of sustainable multimodal urban mobility and mitigation-relevant adaptation measures</p> <p>4f promoting research and innovation in, and adoption of, low-carbon technologies</p>
PA5: Promoting climate change adaptation, risk prevention and management	5b promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems
PA6: Preserving and protecting the environment and promoting resource efficiency	6d protecting and restoring biodiversity and soil and promoting ecosystems, including through Natura 2000 and green infrastructure
	6f promoting innovative technologies to improve environmental protection and resource efficiency in the waste sector, water sector and with regard to soil, or to reduce air pollution
PA7: Promoting sustainable transport and removing bottlenecks in key network infrastructures	7(a) supporting a multimodal Single European Transport Area by investing in the Trans European Transport Networks
	7(c) developing and improving environmentally-friendly (including low-noise) and low-carbon transport systems, including inland waterways and maritime transport, ports, multimodal links and airport infrastructure, in order to promote sustainable regional and local mobility
PA9 Promoting social inclusion and combating poverty and any discrimination	9(d) undertaking investment in the context of community led local development strategies

Appendix A: Operational Programme Investment Priorities

ESF - England Operational Programme 2014 - 2020

Thematic objective	Investment Priority
08 Promoting sustainable and quality employment and supporting labour mobility	8i access to employment for job seekers and inactive people, including the long term unemployed and people far from the labour market, also through local employment initiatives and support for labour mobility
	8ii Sustainable integration into the labour market of young people (ESF), in particular those not in employment, education or training, including young people at risk of social exclusion and young people from marginalised communities, including through the implementation of the Youth Guarantee
09 Promoting social inclusion, combating poverty and any discrimination	9i active inclusion, including with a view to promoting equal opportunities and active participation, and improving employability
	10iii enhancing equal access to lifelong learning for all age groups in formal, non-formal and informal settings, upgrading the knowledge, skills and competences of the workforce, and promoting flexible learning pathways including through career guidance and validation of acquired competences
10 Investing in education, training and vocational training for skills and lifelong learning	10iv improving the labour market relevance of education and training systems, facilitating the transition from education to work, and strengthening vocational education and training systems and their quality, including through mechanisms for skills anticipation, adaptation of curricula and the establishment and development of work based learning systems, including dual learning systems and apprenticeship schemes

Appendix B: State aid

Table B1 summarises the allowed aid intensities under the new Framework for State aid for research and development and innovation (RD&I) and the General Block Exemption Regulation (GBER).

Table B1: Aid Intensity – European Commission Framework for State aid for RD&I and GBER				
	Range of allowed aid intensity level			
Type of activity	Small Enterprises	Medium-sized Enterprises	Large Enterprises	Threshold (£)
Fundamental research				
GBER	100%	100%	100%	40 million
Framework				
Industrial research				
GBER	45-60%	35-50%	25-40%	15 million
Framework	80-90%	70-80%	60-70%	
Research infrastructure				
GBER	50%	50%	50%	20 million
Framework	60%	60%	60%	
Feasibility studies		60%	50%	7.5 million
Innovation clusters	50-65%	50-65%	50-65%	7.5 million
Process/organisation innovation	50%	50%	15%	7.5 million
SME innovation	50%	50%	Not eligible	5 million