PA Consulting Group

Evaluating the value of the economic relationship between the United Kingdom and Ireland: VOLUME I

June 2013

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Version	Author	Status	Date
FINAL	PA/CE	Final	28/6

Version no: FINAL
Document Reference UKIreFInalReport
Status FINAL

Document reference: UKIreFinalReport

Executive Summary: A shared economic history, current challenges and future opportunities

This report sets out the findings of PA Consulting and Cambridge Econometrics on the value of the economic relationship between the United Kingdom and Ireland. It has been commissioned (jointly by the Department of the Taoiseach in Ireland and the Department for Business Innovation and Skills in the UK) in response to a commitment set out in the Joint Statement between Prime Minister David Cameron and Taoiseach Enda Kenny of 12 March 2012. It focuses, primarily, on understanding both the macro-economic context and the opportunities for collaboration in the sectors identified in the Joint Statement. This Final Report has been developed based on feedback on an Interim Report which was produced before the UK-Ireland Summit on 11 March 2013.

This is a report to both Governments and the contents are the responsibility of PA and Cambridge Econometrics, not the Departments involved. Although we have drawn on the contributions of industry experts, policy-makers and businesses, in the time available we have been able to do no more than take an initial view of findings at both a macro- and micro-economic level. It is recognised that this is one contribution to a much broader process of collaborative working between the two countries. Any recommendations made are to be seen within that context and will need to be considered and, if accepted, taken forward by Departments in both Governments (triggering further engagement and discussions if deemed necessary).

On this basis it is worth emphasising that the value of this report is intended to be as much in providing a structured and systematic approach to future collaboration as it is in identifying immediate opportunities. Responsibility for policy in each of the sectors addressed in this report lies with different departments in UK and Irish Governments (and for some sectors also Northern Ireland). By setting out an economic analysis of the relationship between UK and Ireland and then building a framework for identifying and prioritising opportunities for collaboration there is now a clear framework through which future collaboration can be assessed and coordinated.

Drawing on analysis in the body of this report, the table below sets out the recommendations for current and future opportunities for collaboration between the UK and Ireland.

Sector	Opportunity for collaboration
Agri-food	• AGR1. Building on current collaboration on food chain security, to establish common basis of standards and practice around priority risk areas of biosecurity and food safety • AGR2. To identify and progress mutually beneficial areas where co-operation on trade, market research and EU funded promotion efforts could benefit both agri-food sectors • AGR3. Building on current relationships, develop a work programme for cooperation on the implementation of the CAP and CFP, to commence after the EU reforms have been agreed
Construction and physical infrastructure	• CPI1. Sharing knowledge around funding for infrastructure to kick-start development projects. This might include: – Green construction and infrastructure (e.g. Green Investment Bank and RE:FIT) – Understanding ways of attracting internationally mobile finance into primary asset markets

Energy	• E1. Exploring opportunities for renewable energy trading as described in the recent Memorandum of Understanding with a view to a) creating larger markets for investment and b) assessing requirements to establish an intergovernmental agreement to the mutual benefit of Ireland and the UK
Financial and Professional Services	• FPS1. Understand areas of common interest which are covered by negotiations on EU/Global financial regulation • FPS2. Sharing knowledge on intelligent funding of Small and Medium Enterprises • FPS3. Exploring the true sources of significant cross-border business to shape activity, policymaking and risk management - in particular where both economies are losing investment. • FPS4. Understand areas of common interest which are covered by negotiations on EU directive on accounting standards • FPS5. Sharing knowledge on activities designed to support public service reform and the role of professional services companies
Research & Development and Innovation	• RDI1. Structuring and facilitating academic-industry research collaborations particularly on issues/sectors where UK/Ireland collaborate on industrial strategy/or grand challenges supported through practical means, such as: – Collaborative research directories – Opening up Knowledge Transfer Partnerships – Share knowledge on fostering the link between research, enterprise and skills. • RDI2. Exploring creation of a mutual 'scale up' facility for ICT and bio-technology Research & Development
Tourism and travel	• TT1. Collaboration to understand how to make a joint product more appealing than competitor destinations to travellers from Asia (particularly China and India); and developing marketing approaches/initiatives on this basis • TT2. Continuing to facilitate travel between GB, Ireland and Northern Ireland. This would include addressing perceived barriers to access to tourists – such as visa recognition/ processing (building on the success of the visa waiver programme)

In addition, it is recommended that officials in both countries give full consideration to taking a scenario-based approach to identifying more radical opportunities for future collaboration - as highlighted at the end of this Executive Summary and in Appendix A.

These recommendations combine both existing work which is underway and new suggestions for collaboration. Where work is already underway, the intention is to highlight its importance and provide a degree of independent review. The recommendations focus, largely, on the structural issues which require close Government collaboration over time. Further research and engagement with a much broader range of stakeholders, particularly from the SME sector may well give rise to additional evidence of specific barriers that act as a brake on trade.

Below we set out a summary of:

- The economic relationships between the UK and Ireland
- Challenges facing both economies
- Current and future opportunities for collaboration
- Conclusions.

See Vol II, Ch 1.2

UK and Ireland are tied closely in macro-economic terms...

The close economic relationship between UK and Ireland is apparent in a range of macro-economic indicators which show connections between the two economies[1]:

Trade and Investment	UK and Ireland's companies both trade and invest in each others' economies and compete in third country markets: • UK remains Ireland's largest export destination with 16% of Ireland's total industrial exports in 2011[2], a position which has not changed since the inception of the Euro[3] . Similarly it is the largest recipient of Irish service exports with an 18.5% share[4] • Ireland is the 5th largest recipient of UK industrial exports with almost 6% of the total in 2011. This is far larger than the relative size of Ireland's population and economy would suggest • The UK's share of Ireland's imports is some 32.5% of total imports in goods (the largest share) and 12% in services (third largest share after US and Netherlands). Ireland's share of UK imports in goods is somewhat lower at 3.3%[5] • UK and Ireland created some $39.42bn of Gross Value Added (GVA) in contributing to each other's final demand in 2009 – UK value add to Irish foreign final demand was worth $15.16bn – Irish value add to UK foreign final demand was worth $24.26bn. This is 2nd only to the US and over three times that of Germany (see Vol II, figures 9 and 10)[6] – 10.27% of total Irish GVA is generated in providing goods & services for final demand in the UK, the third highest ratio (behind Irish exports to the US and Mexican exports to – the US) • The stock of UK's Foreign Direct Investment (FDI) in Ireland in 2011 was $69.21bn; Ireland's stock in the UK was $65.19bn [7] • UK and Ireland share (and compete for) foreign direct investment from key markets such as US, Germany and France and in sectors including software, financial and professional services. However, while UK has significant investment from destinations such as India (and now China), Ireland is currently more reliant on mature markets (Vol II, figure 25) • In export markets - shared strengths lie in financial and business services; while Ireland has developed strengths in chemicals and the UK in transport & storage (Vol II, figure 8) • And according to one forecast, Ireland is set to overtake France as the UK's 3rd largest export market (for goods and services) by 2030[8]

[1] Generally, data in this report is drawn from a limited number of consistent, official sources, so as to enable read-across between the two economies where possible. These sources include Eurostat, CSO (Ireland) and ONS (UK). This, occasionally, leads to the use of data sets which are less recent than alternative sources. In all cases we use the most recent available historical data. In some cases (where we want to directly compare UK and Ireland) we are limited to whichever data source has information for both countries on a consistent basis (for example the long term trends data on GVA and employment, which comes from the EU KLEMS database, for which the last year of consistent historical data is 2007). Due to the manner in which the 'deep dives' into the topics have been undertaken, the most relevant statistics have been sourced in each area, albeit with a 'jagged edge' to the historical data. An alternative approach would have been to have limited data to a small number of 'headline' indicators for each topic. However, this approach would severely limit the narrative that could be derived from the analysis. Also, it was not within scope to produce a forecasting model. Where forecasts have been used these are generally from consistent, official sources.

[2] Data from: OECD STAN Database (2012). However, it is noted that the East of England is the largest recipient of Ireland's exports which suggests that a significant proportion of exports are re-exported to continental Europe

[3] The Euro has strengthened against Sterling over the past decade (from c. 1.6 Euro per £ in 2000, to 1.2 Euro per £ in 2011). In theory this should have an impact on trade flows, although across this period bilateral trade flows moved together, suggesting other macro-economic factors also having an impact

[4] Journal of Cross-Border Studies in Ireland (Spring 2013)

[5] Ibid.

Labour Markets	There is significant exchange of labour in a wide range of sectors (not just the high value-added sectors typically expected of similarly advanced economies): • UK jobs resulting from exports to Ireland in 2009 are estimated at 208,000; jobs in Ireland resulting from exports to UK are estimated at198,000. This represents around 10% of total Irish employment[9] • In 2011, UK nationals represented over 2.5% of total sector employment in Ireland; similarly Irish nationals represented over 0.75% of total sector employment in the UK (see Vol II, figures 18 & 19) • There was a sharp upturn in 2010 in the number of migrants from Ireland (where employment fell sharply) to the UK (where employment remained relatively buoyant) (see Vol II, figure 20)
Knowledge Economy	Both UK and Ireland have a similar focus on the Knowledge Economy and are investing to support greater levels of knowledge based activities. There appears to be a close match between a) higher skill levels and b) R&D expenditure in UK and Ireland: • 33.4% of Ireland's over-25 population had a tertiary qualification (2011), a similar percentage to the UK (36%), both significantly higher than the EU27 average of 23.5% (see Vol II, Figure 21) • In terms of R&D expenditure - UK and Ireland spend similar levels of their GDP on R&D (1.72% in Ireland and 1.77% in the UK in 2011), but while the UK's spend as a proportion of GDP has remained steady since 2000, Ireland's has risen sharply over the same period (see Vol II, Figure 24)
Tourism	The tourism industry in Ireland relies significantly on British visitors, which accounted for over 42.5% of total visitors in 2012 (or 28% by revenues), although recently there has been a rise in visitors from the EU. The number of visitors from Ireland to UK is similar (around 2.5m), but this accounts for only 8.4% of total visitors in 2011 (see Vol II, Figure 75 and 76)

The table below presents basic economic facts about both economies. The UK economy is clearly larger than Ireland's economy - in broad terms, with around 10 times the value of GVA and GDP and around 15 times the volume of population and employment. However, the differences are much less pronounced in terms of the bilateral trading relationship: the UK only exports around a third more to the UK than Ireland does to the UK. FDI positions in each other's economies are similar (either side of $90bn).[10]

Table 1: Both economies at a glance

Measure	UK	IE	Year	Units
GVA	1,788,786	183,261	2010	$m
GDP	2,384,809	203,752	2011	$m
Employment	29,328	1,849	2012	000s
Population	63,233	4,487	2011	000s
Gross Exports	472,096	129,346	2011	$m

[6] Trade in Value Added (TIVA) data (published by the OECD/WTO for the first time in 2012 based on 2009 data) takes into account the domestic value embedded in foreign final demand and aims to support better tracking of global production networks and supply chains

[7] Data from: OECD FDI Positions (2012). While total investment from the UK in Ireland doubled over the period 2001-2011, total Irish investment in the UK increased by a factor of seven over the same period, reflecting the rapid economic growth seen over this period and the increasing expansion of US activities in Ireland, which formed the base for wider EU operations

[8] Oxford Economics for HSBC Global Connections Trade Forecast 2012 (as quoted in The Times 'Going Global Supplement Dec 2012)

[9] Cambridge Econometrics analysis based on TIVA data

[10] This is most likely due to the multi-national firms locating their European HQs in Ireland while also maintaining significant assets in the UK

Bilateral Gross Exports	27,602	20,128	2011	UK to IE / IE to UK ($m)
Total Domestic Value Added embodied in foreign final demand	453,273	116,139	2009	$m
Bilateral Domestic Value Added embodied in foreign final demand	15,157	24,262	2009	UK to IE / IE to UK ($m)
Bilateral Migration	45	242	2012	UK in IE / IE in UK (000s)
Stock of FDI in each other's economy	69,21	65.19	2011	$bn

N.B. $US (converted at current exchange rates) used to ensure consistency. Latest consistent data are used, although national statistical agencies may well have produced more recent data. See footnote 1 and Volume II for further detail

See Vol II, Ch 1.2

...although there are some clear differences in challenges at a macro- and micro-economic level...

Both governments have put into place a number of wide-ranging macro- and micro-economic policies to address the specific economic challenges they face (see Vol I, chapters 2.3, 3.3 et seq and Vol II, Appendix B). Despite close ties, there are critical differences in these challenges, as set out below.

The recent recession has been deeper in Ireland than in the UK…

- GDP in Ireland fell each year between 2008 and 2010 (by 2.1%, 5.5% and 0.8% respectively a more substantial cumulative loss than that experience in the UK where GDP fell by 1% in 2008 and 4% in 2009 before growing in 2010 (see Vol II, figure 4)
- In Ireland, the employment rate dropped by almost 10 percentage points from 2008 while the UK rate dropped 1.5 percentage points (see Vol II, figure 5)
- There was a particularly marked impact in the construction sector in Ireland (where the share of total , as well as the absolute level of, employment accounted for by construction shrank by more than it rose in the boom years of 2000-2007) (see Vol II, figures 6 & 7)

…and both governments are pursuing recovery strategies suited to their context…

- Since taking office in March 2011 the Irish Government has prioritised fixing the public finances, restoring the banking system to health, and supporting job creation and economic growth. Since entering a programme of support with the EU-IMF in late 2010, Ireland has met all the targets agreed as part of the programme[11]. Despite a challenging international environment the Irish economy returned to growth in 2011 with GDP increasing by 1.4 per cent, the first annual increase in GDP since 2007.[12] Ireland remains on target to reduce its deficit to below 3% of GDP by 2015. In early 2012 the Irish Government published its first annual Action Plan for Jobs, which contained over 270 measures aimed at taking action across Government to support enterprises to grow, and to create and retain jobs.[13] The 2013 Action Plan on Jobs published on 22 February contains a further 333 measures to be implemented this year
- The UK Government's economic strategy set out in the June Budget 2010 is designed to protect the economy through the recent period of global uncertainty, to maintain market confidence in the UK and to lay the foundations for a stronger, more balanced economy in the future. The UK Government is taking action through: monetary activism and credit easing, stimulating demand, maintaining price stability and supporting the flow of credit in the economy; deficit reduction,

[11] See http://banking.finance.gov.ie/presentations-and-latest-documents/ for a series of announcements on measures to demonstrate progress against these objectives. Recent announcements (February 2013) include reduction in useage of ECB funding by banks in Ireland and a return of Irish banks to international debt markets

[12] DG ECFIN European Economic Forecast (Winter 2013)

[13] http://www.djei.ie/publications/2012APJ.pdf and http://www.djei.ie/publications/2013APJ.pdf

returning the public finances to a sustainable position and ensuring that fiscal credibility underpins low long-term interest rates; reform of the financial system, improving the regulatory framework to reduce risks to the taxpayer and build the resilience of the system; and a package of structural reforms, rebalancing and strengthening the economy for the future, including an ambitious housing package and programme of infrastructure investment. Although growth has remained sluggish (with most recent estimates suggesting a 0.2% increase in GDP in 2012)[14], employment has remained relatively buoyant. The Government's 2012 industrial strategy, builds on the 2011 Plan for Growth which aims to achieve 'strong, sustainable and balanced growth that is more evenly shared across the country and between industries.'[15]

…and the economies are emerging in slightly different ways

- There is expected to be **a gradual economic upturn in both countries** in the short to medium term with GDP growth estimates in both countries exceeding EU averages[16].
  - In Ireland moderate growth in real GDP (of 1.1% and 2.2%) is anticipated for 2013 and 2014. While unemployment remains high, the most recent quarterly figures show that the large decreases in the numbers in employment has ended. The number of people unemployed has shown the first year on year decline in recent years and is forecast to decline to 14.1% by 2014
  - In the UK GDP growth of 0.9% and 1.9% is anticipated over the same period. Unemployment, which has been less severe in the UK during the recession, is forecast to fall to 7.8% by 2014
- However, the **drivers are likely to be different**:
  - in Ireland growth is predicted to be driven by: resilience of the export sector (forecast growth of 3.0% in 2013 and 4.2% in 2014) supported by a potential increase in business investment and a slight revival in domestic consumption
  - in the UK, domestic consumption and investment are likely to be the primary drivers; with net export growth a smaller contributor to overall growth
  - However, in sectoral terms, business services are likely to be the key driver of growth in both economies[17]
- **The re-emergence of the banking industry** – the banking industry was at the centre of the 2007/08 financial crisis and both governments have put the stability of the industry at the core of their economic policy. While the UK financial sector as a whole has rebounded relatively strongly (although the volume of lending to SMEs remains a live issue), the financial crisis exposed Ireland's property bubble and the high levels of exposure of Ireland's banks to these assets. This led, ultimately to nationalisation of the majority of Ireland's banks which will continue to impact the pace at which the sector can re-develop. Under the EU/IMF Programme, Ireland is adhering to a timeline of targeted measures promoting banking stabilisation, fiscal consolidation and structural reform
- **Productivity** – the UK's productivity has fallen both in absolute terms and relative to the EU27 since the onset of recession. In Ireland, while output continued to fall through 2009 and 2010, worker productivity increased both relative to the EU27 and absolutely, although broadly constant GNP[18] suggests that profit of Irish-based firms that fell, rather than damage to the real economy.

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[14] ONS 2nd Estimate of GDP (2013)

[15] http://news.bis.gov.uk/Press-Releases/Cable-outlines-vision-for-future-of-British-industry-67fdc.aspx

[16] DG ECFIN European Economic Forecast (Winter 2013)

[17] CEDEFOP Future Skills Supply and Demand in Europe (December 2012)

[18] Gross National Product (GNP) measures the volume of goods/services produced, removing financial flows. If GDP is significantly higher than GNP (as it is for the Irish economy) this indicates significant levels of financial flows above the 'real economy'

However, the primary driver of the productivity growth was a rapid deterioration in the labour market. (see Vol II, section 1.2.2)

- In some sectors, we can see **particular patterns in relative supply and demand**:
  - In agri-foods, Ireland is a food producer with a small domestic market and an export orientation (80% of agricultural production exported).[19] UK is a food producer with a large domestic market and a significant import requirement (although more minor in terms of 'indigenous foods').[20] UK – in 2011 this gap rose to some £0.5bn (see Vol II, figure 38)
  - In 2010 Ireland produced around 13% of its electricity from renewable sources compared to 7% in the UK. While both countries are increasing renewables production at a rate expected to exceed 2020 targets, Ireland has the potential to be a net exporter (see Vol II, figure 51)

However, some of these differences give rise to opportunities for collaboration as we discuss below.

There are already significant levels of economic collaboration between UK and Ireland…

See Vol I, Ch 2.3, 3.3 et seq

Against this backdrop, there is already significant collaboration between and across sectors. This is the case both at a company level (who clearly also compete) and between governments and public sector bodies. In many fields collaboration exists both multilaterally (e.g. through the EU) and on a bilateral basis. Examples of current collaboration or shared activity include the following:

Agri-food (including fisheries)	Significant collaboration exists between regulators and at an EU level, given the Common Agricultural Policy and Common Fisheries Policy. Research collaboration between Ireland/Northern Ireland and Ireland/UK continues to drive innovation in the agri-food sector frequently facilitated by the European FP7 funding programme. An agri-food Knowledge and Innovation Community is being established.[21] A number of MoUs have been signed between Research Performing Organisations in both jurisdictions. There are joint Ireland/UK promotion programmes on dairy and mushrooms. Ireland and Northern Ireland form a distinct epidemiological unit with an agreed plant health strategy, extensive cooperation on animal health issues and co-operation on food safety between FSA (UK) and FSAI (Ireland)[22].
Construction & physical infrastructure	Most examples of collaboration exist at company level, through supply chains, migration of labour, trade and investment. At a governmental level, discussions on applicability of Green Investment Bank to Ireland are in progress. N.B. Collaboration on energy and transport infrastructure is discussed below.
Energy	January 2013 saw the agreement of a Memorandum of Understanding (2013 MoU) between UK and Irish Governments to promote energy cooperation to mutual benefit and achieve closer integration of electricity markets, maximise the sustainable use of low carbon renewable energy resources, meet renewable energy targets in the most cost-efficient way and at least cost to consumers, while maintaining security of energy supply and promoting competition. A key priority for 2013 will be to explore the opportunities for renewable energy trading between the UK and Ireland under this framework.
Financial and Professional Services	In the financial services sector in particular, both Governments will continue to actively co-operate with respective finance departments (both bilaterally, within the EU and globally) to address systemic and strategic challenges in the global banking industry..

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[19] Data from: DAFM, Ireland

[20] According to DEFRA's 2012 Food Farm Pocket Book, overall UK food supply is 51.8% domestic, but for indigenous foods, the figure rises to 78%

[21] http://ec.europa.eu/research/bioeconomy/pdf/ki3111378enc_002_en.pdf. Work is currently underway with a joint UK/Ireland consortium, FoodBest, commissioned to develop proposals.

[22] This is demonstrated by joint audits such as the Joint Traceability Audit between FSAI and FSA in Northern Ireland and the 2010 Memorandum of Understanding signed between the Agri-Food and Biosciences Institute (AFBI) and Animal Health Ireland (AHI).

R&D/Innovation	UK and Ireland's research institutions collaborate extensively, particularly under EU Framework programmes; being each other's leading collaborators as measured by bibliometric analysis. Both governments actively encourage and support collaboration between academia and industry.
Tourism and Travel	Since 1 July 2011, Ireland is recognising UK 'C' visit visas for the purpose of travel to Ireland, from the nationals of 17 countries. This programme - the Irish Short-stay Visa Waiver Programme - has been extended by the Irish Government until the end of October 2016. Work is underway between respective border agencies (INIS (Ireland) and UKBA (UK)) on the development of a Common Travel Area visa and collaboration on visa processing.
Transport	The two Governments cooperate closely on a range of infrastructure and regulatory issues. This includes: the recent upgrade and on-going provision of the Dublin-Belfast Enterprise train service; the recent upgrade to the Belfast-Dublin dual carriageway; development of a joint Intelligent Transport System to measure and report on journey times between Belfast and Dublin; and the development of a Functional Airspace Block

…but there may be significant benefits to further (or faster) collaboration on specific issues

There are significant benefits to collaboration on many issues that are addressed within this report. The tables below set out a summary appraisal of some of the opportunities (or barriers to address) which have emerged from the analysis of specific sectors. A full set of opportunities is set out in chapters 2 to 8. Against each of the opportunities the table identifies indicative benefits, costs, feasibility and timing. It is also recognised that the case for further action generally requires a market or government failure to justify intervention. Taken together the opportunities span a wide range of levers available to both governments, from knowledge sharing to development of joint regulatory frameworks.

See Vol I, Ch 2

Sector: Agri-food (including fisheries)				
Current Status: Ireland and the UK have similar industry profile, the markets and supply chains are interdependent but there are differences in the supply and demand conditions. The agri-food sector is a significantly larger part of Ireland's economy (around 7.7%[23] of GVA in Ireland v 2.5% in the UK[24])				
The prize from further collaboration: Growth, development and improved food chain security are critical in this sector. Recent high profile events have highlighted the importance of food chain security for consumer confidence and the role that effective bilateral and international collaboration is playing in restoring confidence in its integrity.				
Proposals for further collaboration: UK and Ireland Governments should consider prioritising:				
Opportunity/barrier to address	*Benefits*	*Costs*	*Feasibility*	*Timing*[25]
AGR1. Building on current collaboration on food chain security, to establish common basis of standards and practice around priority risk areas of biosecurity and food safety	High – recent events have reinforced the significance to consumers across UK and Ireland of standards and traceability	High – changes of this nature, if comprehensive, need continuous cross-industry engagement and implementation; ultimate responsibility and costs will be for the food business operators (FBO) .	Highly complex - Dependent on scale of change and on long term commitment of FBOs Significant collaboration between Governments and regulators already exists; but must	Short term needs but likely to require efforts over medium and long term, dependent on scale of change

[23] Fact Sheet on Irish Agriculture Dec 2012: Data from: CSO and DAFM

[24] Data from: ONS National Accounts (Blue Book) 2012

[25] Broadly: Short term = 1-3 years; medium term = 4-7 years; long term = 8 years plus

			recognise EU as well as bilateral context.	
AGR2. To identify and progress mutually beneficial areas where co-operation on trade, market research and EU funded promotion efforts could benefit both agri-food sectors	Medium – improved market access, shared costs, particularly on distribution, logistics, market research & procurement-	Low - for logistical offerings Medium – developing joint trade & promotional proposals can incur significant cost; the precise level depending on its nature	Some complexity - Would require a range of bodies (e.g. Bord Bia, Defra, Enterprise Ireland and UKTI) to agree mutual benefit and focus of efforts	Short term for initial proposals, but full effect would depend on common practices being in place
AGR3. Building on current relationships, develop a work programme for cooperation on the implementation of the CAP and CFP, to commence after the EU reforms have been agreed	Medium - particularly beneficial in an all-island context	Low - limited costs involved in sharing implementation issues and experiences	Some complexity - interests will not always be identical	Medium term – work cannot commence until CAP or CFP reforms are agreed

See Vol I, Ch 3

Sector: Construction and physical infrastructure

Current Status: The construction sector remains weak in both economies - with employment having fallen by 13% in the UK and 63% in Ireland over the period 2007-2012. While GVA in Ireland in 2011 was still less than one third of its 2006 peak, the UK sector had largely recovered to pre-peak levels

The prize from further collaboration: Although returning to full growth in this sector will be a long-term undertaking, by focusing on a number of specific opportunities some clear, tangible benefits could be realised in the short to medium term.

Proposals for further collaboration: UK and Ireland Governments should consider prioritising knowledge sharing around means of financing and developing vital economic infrastructure:

Opportunity/barrier to address	*Benefits*	*Costs*	*Feasibility*	*Timing*
CPI1. Sharing knowledge around funding for infrastructure to kick-start development projects. This might include: • Green construction and infrastructure (e.g. Green Investment Bank and RE:FIT) • Understanding ways of attracting internationally mobile finance into primary asset markets (new schemes)	Low – knowledge sharing activities may help, but are unlikely to address low growth in the construction sector on their own	Low – knowledge can be shared at low cost; it is subsequent action which brings significant cost	Straightforward - Could build readily on current Governmental discussions and engage established industry bodies	Short-term - Few barriers exist to starting this work

See Vol I, Ch 4

Sector: Energy

Current Status: The energy sector contributed £18.9bn to UK GVA in 2010 (1.4% of total). In Ireland the sector contributed €2.8bn (1.7% of total) The UK and Ireland are both net importers of energy. The UK exported 760 GWh of electricity (3% of its total EU electricity exports) to Ireland in 2010, and imported from Ireland 378 GWh.

The prize from further collaboration:
Ireland, GB and Northern Ireland have the potential to enhance economies of scale by utilising their geographical

proximity to greater effect. For example increases in electrical interconnection capacity could increase the number of market participants active in energy markets, increase competition and potentially lower prices.
Proposals for further collaboration: Building on the 2013 MoU and extending work in related fields, GB, Northern Ireland and Ireland Governments should consider prioritising:

Opportunity/barrier to address	*Benefits*	*Costs*	*Feasibility*	*Timing*
E1. Exploring opportunities for renewable energy trading as described in the 2013 MoU with a view to a) creating larger markets for investment and b) assessing requirements to establish an intergovernmental agreement between Ireland and the UK to the mutual benefits of all markets.	High – getting the right outcome from an Inter-Governmental Agreement could unlock significant development capital for projects which are construction ready	Medium – if done in the right way, investment costs will fall on industry, not Government. Nevertheless a comprehensive approach to collaboration will require investment of significant time by Governments and their regulators	Potentially complex – integrated & regulated approaches to grid infrastructure investments requires multilateral agreement and detailed analysis. However, project-specific ‘developer-led’ approaches may simplify such complexities, especially in the short-term.	Short-term action is required given the long lead times for delivery in renewables sector

Sector: Financial and Professional Services
Current Status: In both countries the sector contributes significant GVA: €29bn (20.2% of total) in Ireland and £319bn in the UK (24.4% of total) in 2010; however, GVA flattened in the UK in financial services since 2007 and has declined in Ireland. The financial crisis saw government ownership of banks in both economies. Both Governments have major programmes of work underway to address challenges in the banking sector in particular.
The prize from further collaboration: The financial services sector (in particular the banking sector) is critical to the recovery of both economies; the professional services sector will support both private and public sector in improving competitiveness and cutting costs.
Proposals for further collaboration: Based on current collaboration, UK and Ireland Governments should consider prioritising:

Opportunity/barrier to address	*Benefits*	*Costs*	*Feasibility*	*Timing*
In financial services: FPS1. Understand areas of common interest which are covered by negotiations on EU/Global financial regulation	Medium – given importance of sector to both economies and potential impact of regulations	Low –there are limited direct costs involved in understanding shared interests	Some complexity – interests are not likely to be identical on all issues, e.g. given Ireland’s membership of Eurozone	Short-term – negotiations are current
FPS2. Sharing knowledge on intelligent funding of Small and Medium Enterprises	Low - knowledge sharing activities may help, but are unlikely to address SME finance challenges on	Low - knowledge can be shared cheaply; it is subsequent action which brings	Straightforward - Could build readily on current Governmental discussions and engage established	Short-term – challenges are current and solutions are being developed in both countries

	their own	significant cost	industry bodies	
FPS3. Exploring the true sources of significant cross-border business to shape activity, policymaking and risk management - in particular where both economies are losing investment.	Low - knowledge development may help, but are unlikely to address challenges on their own. Larger gains may be available if a clear view of value chains (and their financing requirements are understood)	Low - knowledge can be gained at low cost; it is subsequent action which brings significant cost	Straightforward – would require work to be commissioned	Short-term – challenges are current
In professional services: FPS4. Understand areas of common interest which are covered by negotiations on EU directive on accounting standards	Low-medium – accounting firms are major high-skill employers within both economies; not yet clear as to extent to which their businesses will be impacted	Low –there are limited direct costs involved in understanding shared interests	Some complexity – interests are not likely to be identical on all issues	Short-term – negotiations are current
FPS5. Sharing knowledge on activities designed to support public service reform and the role of professional services companies	Low - knowledge development may help, but are unlikely to address low challenges on their own	Low - knowledge can be shared cheaply; it is subsequent action which brings significant cost	Straightforward - Could build readily on current Governmental discussions and engage established industry bodies	Medium term – public service reform is an on-going commitment

See
Vol I,
Ch 6

Sector: Research & Development and Innovation

Current Status: UK and Ireland both spend around 1.7-1.8% of GDP on R&D activities; with Ireland spending significantly more of its budget on basic research than UK (23% v 9%) in 2010. Research funding by enterprises has declined from 67% in 2000 to 48% in 2011, while in the UK the level was the same at the start and end of that period (although fluctuated in between).

The prize for further collaboration: Greater value extracted by innovative UK and Irish companies and by the research institutions with which they collaborate

Proposals for further collaboration: In an opportunity-led research environment, UK and Ireland Governments should build on this success and consider prioritising:

Opportunity/barrier to address	*Benefits*	*Costs*	*Feasibility*	*Timing*
RDI1. Structuring and facilitating academic-industry research collaborations particularly on issues/sectors where UK/Ireland collaborate on industrial strategy/or grand challenges… …supported through practical	Medium – as well as the value which emerges from additional collaboration there are potential economies from	Low – this is not about new funds, but about helping researchers and industry	Some complexity – requires detailed consideration by national bodies but essentially working with the grain of what is	Short to medium term

means, such as: • Collaborative research directories • Opening up Knowledge Transfer Partnerships • Share knowledge on fostering the link between research, enterprise and skills	collaboration on specific facilities investment	find the right opportunities	already in place	
RDI2. Exploring creation of a mutual 'scale up' facility for ICT and Bio-technology Research & Development capabilities	Medium – potentially significant benefits (based on established models) but benefits from research collaboration are difficult to predict	Medium – research facilities require significant investment	Significant complexity – at all stages from project concept through to design, funding and implementation	Medium-term - significant feasibility work would need to be undertaken

See Vol I, Ch 7

Sector: Tourism and travel				
Current Status: UK and Ireland face similar challenges in attracting visitors from new Asian tourist markets and there are some inter-dependencies between the tourist economies which should be recognised.				
The prize for further collaboration: A greater share of high-spending tourists from emerging economies which have only recently started travelling to Europe in significant numbers				
Proposals for further collaboration: Building on long-term collaboration in this sector, UK and Ireland Governments should consider prioritising:				
Opportunity/barrier to address	*Benefits*	*Costs*	*Feasibility*	*Timing*
TT1. Collaboration to understand how to make a joint product more appealing than competitor destinations to travellers, particularly from Asia (and within Asia, China and India); and developing marketing approaches/initiatives on this basis	Medium – more tourists would benefit both economies in an emerging market	Low – may require work to be commissioned	Straightforward – requires engagement of relevant industry bodies	Short-term - Asian demand is growing now
TT2. Continuing to facilitate travel between GB, Ireland and Northern Ireland. This would include addressing perceived barriers to access to tourists – such as visa recognition/ processing (building on the success of the visa waiver programme)	Medium – more cross-border tourists would benefit both economies, particularly if linked to growing the market as a whole. Removing barriers to travel (even if perceptions) can support increases in tourism	High - policy-related changes can carry significant costs	Significant complexity – these are challenging issues in which economic, social and environmental interests must be weighed. Must also recognise links between Northern Ireland and GB tourist markets	Long-term - Work already underway, but requires long-term commitment

See Vol I, Ch 8

Sector: Transport
Current Status: The UK-Ireland relationship is an extremely important for the Irish economy in terms of passenger movements – 42% of air passenger journeys and 90% of ferry passengers to/from Ireland are from/to the UK. The UK acts as an important land-bridge for Irish freight and passenger movements.
The prize for further collaboration: There is already extensive collaboration between the Governments with respect to transport. There are no obvious 'gaps' at present in the transport infrastructure supporting the movement of freight and passengers between the two countries, though new projects with significant benefits will emerge as economic conditions change
Proposals for further collaboration: None specific beyond current plans. There may be opportunities for further collaboration in the future, for example seeking trans-European network (TENs) funding from the EC for roads in the UK that are of strategic importance for the road freight travelling between the south-east of England and the west coast ports.

…and there are potentially some advantages from exploring a cross-cutting approach

See Vol I, Apx A

The majority of the analysis presented in this report has taken a traditional, macroeconomic and sector-based approach to understanding the links between UK and Ireland and opportunities for collaboration. There is an alternative, scenario-based approach, which may lead to a richer source of collaboration in the future. This approach seeks to understand the drivers of future economic development, many of which may not have crystallised in economic data. In chapter 10 we set out a future-looking analysis of drivers of economic activity.

This analysis suggests a number of flagship themes which could embrace a number of the existing bilateral economic collaborations between UK and Ireland:

Prosperity, jobs and growth	This would be built from trends and drivers in: shifts in global competitiveness; developments in enabling technologies; connectivity and the information economy; demand for sustainable development; life-cycle working patterns; demand for higher life quality and understanding of 'well-being'. All industry and service sectors facing or causing economic disruption would be captured here
Health and Wellbeing	This would be built from trends and drivers in: long life expectancy with public awareness about health, food & nutrition; demand for higher life quality with new disease prevalence; obesity; epidemic risks; and cost of care (which pays for performance and is supported by technology). This will feature strong involvement from sectors including pharmaceuticals & healthcare; ICT & business services
Safe and Secure	This would be built from trends and drivers in: economic instability; terrorism and global crime; unemployment; illegal migration; emerging new diseases; food security (availability and access); energy security (including alternatives); food assurance and medical assurance. This will feature strong involvement from construction; energy; ICT; security, transport and pharmaceuticals and healthcare
Global networks	This would be built from trends and drivers in: global mobility; connectivity (ie between people, business and policy); 'always on' real time information; new models of behaviour; open source social software; networks over hierarchies; terrorism, theft and fraud; and transport and intelligent buildings. This will feature strong involvement from construction; creative industries; education; financial services; ICT; pharmaceuticals and healthcare; security; and transport
Clean and Green	This would be built from trends and drivers in: bio-sphere degradation; demand for sustainable development and food security coupled with resource scarcity; increased regulation; rural impoverishment; diversion of resources; public perception; and 'Greening' of corporations. All sectors driven by the low carbon agenda would be expected to feature strongly here

In all of these areas, the UK and Ireland have the potential to address global influences collaboratively whilst retaining individual competitiveness. By viewing themes in these clusters, the opportunity for a new platform of collaboration could exist. Given the suggestive nature of this analysis we make the following cross-cutting recommendation:

That UK and Ireland Governments consider whether engagement between a number of Departmental and other stakeholders under these cross-cutting themes offers an additional way of adding value to existing collaboration. While this would incur costs (primarily the time of those involved), it could be an important way of signalling a renewed commitment to understanding the future as well as the current economic challenges.

Conclusions

Historically and currently, the economies of UK and Ireland are connected through the movement of goods, people and capital. The two economies are facing both similar and fresh challenges - in putting public finances and the banking system back on a stable footing; and in remaining globally competitive in a changing world order.

The evidence this report sets out and the recommendations drawn from this will add to the efforts currently supporting the economic relationship between the two countries. It should be noted that, the report contains emerging findings from research inthe period November 2012 to April2013 . It will benefit, undoubtedly, from further scrutiny and a wider range of evidence. Importantly, however, it has aimed to establish a systematic and structured analytical basis to progress further economic collaboration between the UK and Ireland's Governments.

Navigating this report

The remainder of this report is divided into two Volumes: Volume I looks at opportunities (largely by sector), drawing partly on Volume II, which presents a macro- and micro-economic analysis of the context for UK-Ireland collaboration.

Volume I	This volume summarises sector-level findings and the evidence on which they are based: • Chapters 2 to 8 set out for each priority sector: – Economic context of the sector – Rationale for collaboration between UK and Ireland – Current policy issues and collaborative activities – Further collaborative activities which could benefit both UK and Ireland • Chapter 9 sets out potential future lines of enquiry which do not fall existing priority sectors • Chapter 10 sets out a scenario analysis of the drivers and enablers of economic development • Appendix A sets out a summary of stakeholders and consultees • Appendix B sets out a glossary of terms
Volume II	This volume summarises macro-economic and micro-economic analysis. Each chapter sets out: • Long-term trends • Recent developments • Future prospects

Contents

1 This report responds to a commitment in the UK-Ireland Joint Statement

This report responds to a commitment set out in the Joint Statement between Prime Minister David Cameron and Taoiseach Enda Kenny of March 2012. The study on which it is based was commissioned jointly by the Department of the Taoiseach in Ireland and the Department for Business Innovation and Skills in the UK. Below we set out:

- Context, scope and objectives for this research
- Research method and process followed.

1.1 Context, scope and objectives for this research

1.1.1 Context for this research

Ireland and the United Kingdom have remained very strong trade partners over the years with growing and critical interdependencies between the two economies. The UK is Ireland's largest export market, whilst Ireland absorbs a fifth of UK exports.

Prime Minister Cameron and the Taoiseach, Enda Kenny agreed that their Joint Statement of 12th March 2012 would be the starting point for realising the potential over the next decade of stronger relations for current and future generations living on both islands.

Arising from this, the Department of the Taoiseach (for Ireland) and the Department of Business Innovation and Skills (for the UK) have commissioned a research project to evaluate the economic relationship between the UK and Ireland. The outputs from this project will contribute to the evidence base supporting policy development in both countries through highlighting areas for further joint action and closer collaboration.

The study initially covered 6 priority sectors recognised in the Joint Statement, although it also picks up on issues from other sectors. The priority sectors are:

- Agri-Food
- Construction and Physical Infrastructure
- Energy
- Financial and Professional Services
- Research & Development and Innovation
- Tourism.

At a subsequent meeting of UK Permanent Secretaries and Irish Secretaries-General, Transport was added to this list.

1.1.2 Scope of research

The scope of this project comprises research into all aspects of the economic relationship between UK and Ireland which could give rise to continued or future collaboration between UK and Ireland; both between the two States as a whole or between Ireland and Northern Ireland.

It does not include:

- The creation of full policy solutions based on this research or criticism of existing policies - this research focuses on developing the evidence base for current policies or new directions;
- Deep research into aspects of the individual economies which do not raise issues of collaboration;
- Co-operation between public services in both countries (e.g. Health, Education);
- Assessment or alterations of the industrial strategy and associated framework conditions used by both countries to enhance their economic competitiveness;
- Broader social, historical or political research into the entire engagement between the two countries
- Addressing any historical conditions - other than understanding the context for the relationship.

1.1.3 Objectives for this research

The objectives for this research are set out below, as agreed in a Project Initiation Document of 30 November.

Objective 1	To review and evaluate the depth of interaction and interdependence between the Irish and UK economies.	• A full description and assessment of the value of the economic relationship across all dimensions, including in terms of trade, FDI, tourism, and flows of labour, capital and knowledge; and • The identification and assessment of the key drivers that support the economic relationship and any barriers that are acting as a constraint to its development.
Objective 2	To identify common strategic challenges and opportunities facing both economies	• To provide an evidence base as to opportunities and sectors where further joint action and closer collaboration can be undertaken over the short (2-3years), medium (5-7years) and longer term (7 years plus) in support of growth and jobs to the mutual benefit of both countries; • Distinction should be made between temporary challenges and those that are more structural in nature.

Broadly:

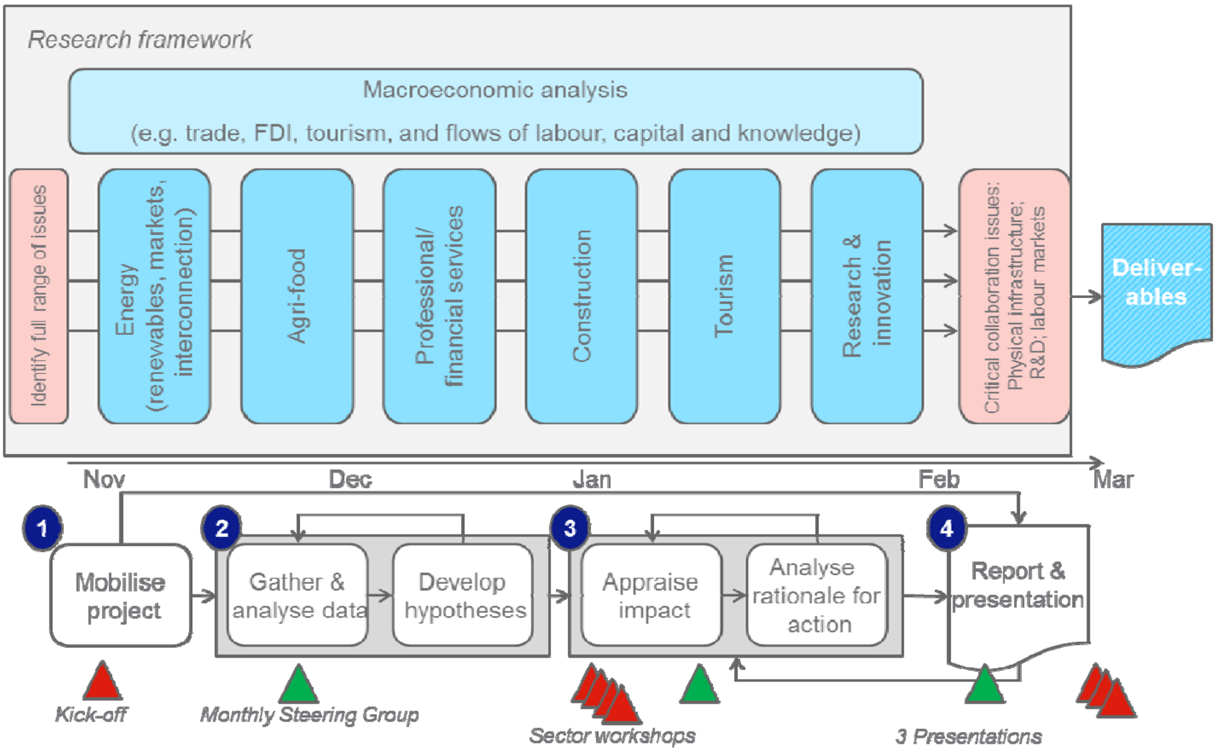
- **Objective 1** is addressed through the macro-economic assessment in Volume II of this report
- **Objective 2** is addressed through the sector-level assessment in subsequent sections in Volume I and supported by micro-economic analysis in Volume II.

In regard to objective 2, there is a clear interplay between a purely economic analysis and the policy environment which it must inform.

1.2 Research method and process followed

This report has been developed on the basis of the framework set out below - working with data sources (see Volume II, Appendix A) and sector experts to provide a macro and microeconomic analysis and then translate this into policy recommendations.

Figure 1: Research framework



This is a report to both Governments and the contents are the responsibility of PA and Cambridge Econometrics, not the Departments involved. Although drawing on the contributions of industry experts, policy-makers and businesses, in the available time, no more than take an initial view of findings at both a macro- and micro-economic level has been possible.

2 Agri-food

In this chapter we set out for the Agri-food sector:

- Economic context of the sector
- Why collaboration is important
- Current policy issues and collaborative activities
- Further collaborative activities that could benefit both UK and Ireland.

2.1 Economic context

The economic context linking the Agri-food sector in the UK and Ireland can be characterised as follows[26]:

- Agriculture, in both countries, is supported by and subject to the Common Agricultural Policy (CAP). This has three objectives: viable food production;sustainable management of natural resources; and balanced development of rural areas throughout the EU (http://ec.europa.eu/agriculture/faq/index_en.htm#2).
- Global growth opportunities from rising population and increased urbanisation. The Food and Agriculture Organisation of the UN estimates that world population will exceed 9 billion by 2050, this allied with rising incomes and calorie consumption will require an increase of around 70% in food production[27]
- In 2011, GVA in the agri-food sector in Ireland was around 7.7% of total Irish GVA and in the UK in 2010 was 2.5% of total UK GVA. GVA rose steadily in Ireland over the years 1970 - 2006; in the UK it declined after a high point in 2005 (OECD)
- In both countries, there has been a downward trend in employment in both agriculture and food, beverage and tobacco manufacturing. Over 2000-11, employment in the UK in the manufacture of food products fell by around 112,000 jobs (a fall of 22%), however overall employment has remained fairly stable since 2009. The number of jobs in agriculture in 2011 was similar to that in 2008 and 2000. In Ireland, employment in agriculture fell by approximately 55,000 (a fall of around 40%) over 1998 – 2011, while employment in manufacturing of agricultural products has remained relatively more steady
- Trade flows between the UK and Ireland are larger than bilateral flows that either has with any other country. Ireland agri-food exports to the UK are slightly larger than the equivalent flow from the UK to Ireland and both have increased steadily (in nominal terms) in recent history
- There are slight differences in skills standards across the two countries. Farmers with only basic training account for around 17% of total farmers in Ireland compared to 11% in the UK. Farmers with practical experience account for 69% of the total farming population in Ireland and 76% in the UK. Ireland has a larger proportion of farmers with full agricultural training, with 14% compared to 12% in the UK.
- In 2009, the UK agriculture and fishing sector spent €9.5m on research and development. This was some €2.5m lower than in 2007. In Ireland, €1.3m was spent on R&D in agriculture on this sector in 2005, a fall of over €2m from its 1999 level (These figures refer to industry's own spend).

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[26] See Volume II, chapter 2 for further detail and sources

[27] http://www.fao.org/fileadmin/templates/wsfs/docs/expert_paper/How_to_Feed_the_World_in_2050.pdf

2.2 Why collaboration is important

The trade data between the two countries and recent events relating to food chain safety show that the agri-food supply chain to the UK and Ireland are intertwined, being dependent on each other's products and ingredients for their respective national demand. UK-Ireland agri-food trade is therefore too important for both countries to be exposed to unnecessary risk. Due to the similarities in productivity, employment and skills and the inter-dependency between the two industries, the two countries can benefit from closer collaboration. Collaboration in jointly approaching non-EU export markets may also result in synergies.

2.3 Current policy context and collaborative activities

The current policy context in the agri-food sector in each country is set out in two key documents:

- 'Food Harvest 2020: A vision for Irish Agri-food and fisheries.' Department of Agriculture, Food and the Marine, Ireland. This sets out 3 key ways for the Irish Agri-food industry to grow and prosper sustainably by 2020: (*1) Sector acting 'Smart' to achieve a competitive critical mass in the international marketplace, (2) Thinking 'Green', achieving efficient environmentally sustainable production and processing, verifying and capitalising on these advantages, (3) delivering significant 'Growth' for producers, processors and exporters.*
- 'Food 2030: Vision for Secure and Sustainable System for 2030.' Department for Food and Rural Affairs, UK. This focuses on the UK's national strategy for Food, concentrating on 6 core issues: *(1) Enabling and encouraging people to eat a healthy, sustainable diet, (2) Ensuring a resilient, profitable and competitive food system, (3) Increasing food production sustainably (4) Reducing the food system's greenhouse gas emissions, (5) Reducing, reusing and reprocessing waste, and (6) Increasing the impact of skills, knowledge, research and technology.*

Both countries are heavily involved in several of the cross-EU Member State R&D Joint Programming Initiatives (JPI's) including 3 in the agri-food & marine space: 'A Healthy Diet for a Healthy Life'; 'Agriculture, Food Security & Climate Change (FACCE)' and 'Oceans'.

There is currently collaboration either active or proposed between the two governments, including:

- Co-operation on the implementation of the new Common Agricultural Policy and Common Fisheries Policy, once reforms have been agreed
- Recognising the joint challenges faced on animal and plant health developing mechanisms for sharing our experiences, information and scientific knowledge, including on improving biosecurity
- Continuing and improving on current collaboration on food safety issues involving UK and Ireland's food standards agencies
- An all-Ireland Animal Health and Welfare Strategy[28] and Food Safety Promotion Board

Consultation with the Department of Agriculture and Rural Development (Northern Ireland) suggests that there is already a naturally high level of collaboration within the Island of Ireland, given the shared agricultural conditions. So, for example, the Agrifood and Bioscience Science Institute (AFBI) in Northern Ireland has put in place of MoU with Teagasc for joint projects and service delivery. This collaboration also manifests itself within an EU context in discussions on standards and trade.

[28] http://www.dardni.gov.uk/all_island_animal_health_and_welfare_strategy_final.pdf

2.4 Further collaborative activities that could benefit both the UK and Ireland

In addition to current activities on which the UK and Ireland are collaborating in this sector, there are further potential areas from which both economies could benefit.[29]

Sector: Agri-food (including fisheries)				
Current Status: Ireland and the UK have similar industry profile, the markets and supply chains are interdependent but there are differences in the supply and demand conditions. The agri-food sector is a significantly larger part of Ireland's economy (around 7.7%[30] of GVA in Ireland v 2.5% in the UK[31])				
The prize from further collaboration: Growth, development and improved food chain security are critical in this sector. Recent high profile events have highlighted the importance of food chain security for consumer confidence and the role that effective bilateral and international collaboration is playing in restoring confidence in its integrity.				
Proposals for further collaboration: UK and Ireland Governments should consider prioritising:				
Opportunity/barrier to address	*Benefits*	*Costs*	*Feasibility*	*Timing*[32]
AGR1. Building on current collaboration on food chain security, to establish common basis of standards and practice around priority risk areas of biosecurity and food safety	High – recent events have reinforced the significance to consumers across UK and Ireland of standards and traceability	High – changes of this nature, if comprehensive, need continuous cross-industry engagement and implementation; ultimate responsibility and costs will be for the food business operators (FBO) .	Highly complex - Dependent on scale of change Dependent on long term commitment of FBOs Significant collaboration between Governments and regulators already exists; but must recognise EU as well as bilateral context.	Short term needs but likely to require efforts over medium and long term, dependent on scale of change
AGR2. To identify and progress mutually beneficial areas where co-operation on trade, market research and EU funded promotion efforts could benefit both agri-food sectors	Medium – improved market access, shared costs, particularly on distribution, logistics, market research & procurement-	Low- for logistical offerings Medium – developing joint trade & promotional proposals can incur significant cost; the precise level depending on its nature	Some complexity - Would require a range of bodies (e.g. Bord Bia, Defra, Enterprise Ireland and UKTI) to agree mutual benefit and focus of efforts	Short term for initial proposals, but full effect would depend on common practices being in place
AGR3. Building on current relationships, develop a work programme for cooperation on the implementation of the CAP and CFP, to commence after	Medium - particularly beneficial in an all-island context	Low - limited costs involved in sharing implementation issues and	Some complexity - interests will not always be identical	Medium term – work cannot commence until CAP or CFP reforms are

[29] While recognising that there are risks both to over-dependence on single export markets and protectionism.

[30] Fact Sheet on Irish Agriculture Dec 2012: Data from: CSO and DAFM

[31] Data from: ONS National Accounts (Blue Book) 2012

[32] Short term = 2-3 years; medium term = 4-7 years; long term = 7 years plus

the EU reforms have been agreed		experiences		agreed

Other potential collaborative activities include:

- Collaboration on skills and systems to address common challenges in the agri-food sector including ageing farming population, farm structures, upskilling and recruitment.
- Extension of existing initiatives in both countries, including research, to improve environmental sustainability
- Collaborative engagement on support for SMEs in food and drink sector to underpin employment generation and recognise SMEs as engines for innovation in the food supply chain. However, initial research identified some challenges to collaboration such as over-coming geographical distance
- Collaboration on healthy-eating and Food for Health campaigns, promoting the value of each other's products.

All these proposals above are based on the findings, issues tested and evidence set out in the table below, developed through desk research, meetings with policy-experts and workshops with businesses and organisations in both UK and Ireland.

Findings	Issues tested	Evidence
A. UK-Ireland Agri-Food trade is too important for both countries to be exposed to unnecessary risk. Due to the similar industry profile and independency, the two countries can benefit from closer collaboration.	A1. Food chain security is maintained using the most up to date knowledge and practice. Biosecurity ((animal health and welfare and plant health), food chain security and food safety (control of pathogens and contaminants) are priority risk areas for consideration.	**Biosecurity:** Animal and plant health and welfare**:** UK and Ireland must comply with EU regulations, but must be alert to continuing endemic risks and to emerging pathogens and diseases. Close geographical and trade ties are recognised and processes are in place to control preventable transmission. Due to the similar industry profile and independency, the two countries can benefit from closer collaboration. Ireland and Northern Ireland form a distinct epidemiological unit with an agreed plant health strategy, extensive cooperation on animal health issues and on-going co-operation on food safety between the respective food standards agencies FSA (UK) and FSAI (Ireland)[33]. A study by Teagasc revealed that biosecurity is under-utilised in Ireland.[34] 53% of Irish farmers stated that a lack of information prevented them from implementing biosecurity practices. There is a complexity of implementing biosecurity and farmers have a comprehensive and uniform understanding of the meaning of biosecurity at farm level, although there were regional differences in emphasis i.e between the importance of closed herds and disinfection. However, the overall results of this study suggest that little change in approaches to biosecurity has taken place on UK sheep and cattle farms as a result of the 2001 Foot and Mouth Disease outbreak. **Food chain integrity:** work to establish common basis of standards and practice around priority risk areas of

[33] This is demonstrated by joint audits such as the Joint Traceability Audit between FSAI and FSA in Northern Ireland and the 2010 Memorandrum of Understanding signed between the Agri-Food and Biosciences Institute (AFBI) and Animal Health Ireland (AHI)

[34]http://www.teagasc.ie/publications/2009/15/15_tresearch200905.pdf

		traceability, testing and labelling. The recent high profile problems with mislabelling constituents of processed food products have highlighted the importance of bilateral and international collaboration on food traceability systems and solutions. Close cooperation between FSAI (Irl) and FSA (UK) on these issues is ongoing and should continue **Food safety:** Ensuring the highest standards of food safety and hygiene and reductions in bacteria, pathogens, residues and contaminants from the food chain through control measures is a common concern for both countries. Close cooperation between FSA and FSAI on these issues is on-going and improved awareness has resulted. Collaborate to establish a common basis of standards and practice and rapid sharing of information, experiences (including information on food safety issues), risk management and research around this priority area. Areas for enhanced collaboration could include • Contingency planning for Class A diseases • North/South and East/West collaboration and sharing of experiences on non-regulated diseases such as Johnes, BVD • Badger vaccine development • Implementation of priority aspects of joint work programme under North/South Plant Health Strategy • Development of solutions to plant disease threats, e.g. EU FP7 programme on Trichoderma in mushrooms
B. Environmental sustainability is essential for food production systems of the 21st century. The challenge is to maintain food security, increase production levels while also reducing environmental degradation.	B1. Improving efficacy of existing initiatives in both countries will improve environmental sustainability	In Food Harvest 2020, Ireland proposes to use the 'green' association to drive its exports of quality foods into new markets (http://www.agriculture.gov.ie/media/migration/agri-foodindustry/foodharvest2020/2020FoodHarvestEng240810.pdf). Food Harvest 2020 includes significant initiatives to prioritise environmental protection: Strategic Environmental Assessment; Origin Green; Bord Bia/UK Carbon Trust PAS 2050 System for Life Cycle Analysis of beef production; Agriculture Catchment Programme; Involvement in EU Joint Programming Initiative on 'Agriculture, Food Security & Climate Change' and the NZ-led Global Research Alliance of Agricultural Greenhouse Gases; waste prevention initiatives-including food waste.[35] In the UK, DEFRA is working with the farm community to reduce the environmental disbenefits of farming (greenhouse gas emissions, nitrates etc) and to maximise benefits (biodiversity, amenity use of the countryside etc). Both countries aspire to a future economic model in which care for the environment runs parallel to supply chain security and profitability. Exchange and pooling of information, for example by extension of the Landbridge initiative http://www.relu.ac.uk/landbridge/about/project-aims.html could supplement the formal policy initiatives with informal local initiatives.
C. There are opportunities for	C1. A vigorous research community in diet and	There are several EU funded research projects in nutrition and health which involve participants from Ireland and from the

[35] http://www.agriculture.gov.ie/media/migration/agri-foodindustry/foodharvest2020/Report2012Milestonesforsucces021112.pdf

collaboration between UK and Ireland not just in research but also in policy and in the development of healthy eating, exercise and nutrition	health would benefit both countries	UK. Examples include the network of excellence 'European Nutrigenomics Organisation' http://www.nugo.org/everyone , Lipgene http://www.ucd.ie/lipgene/, and the Early Nutrition project http://www.project-earlynutrition.eu/. In addition, there is the Joint Irish NutriGenomics Organisation (http://www.ucd.ie/jingo/) which brings together researchers in Northern Ireland and Ireland. The Strategic Research Agenda of the EU Member State-led joint programming initiative on a Healthy Diet for a Healthy Life also points to the need to further define the dietary needs of the older population, to examine their lifestyles and develop foods that can promote healthy ageing. The proposed EU Knowledge Innovation Community 'Foodbest' in which UK and Irish researchers will collaborate on food and health, sustainability and food security would, if funded, multiply the number of interactions and collaborations between the countries. This Community also aims to boost industrial innovation and competitiveness in both home and export markets. The UK Department of Health has recommended a front of pack nutrition labelling scheme based on colour coding and reference intakes to businesses in the UK (see http://www.bbc.co.uk/news/health-20050420) after lengthy consumer research and discussion with the food supply chain For companies with large retail presence in UK and Ireland (e.g. Tesco), it may mean either common labelling in both countries or having to introduce separate labels for each market, with resultant costs and inefficiencies. Governments may legitimately have different views of the most effective way to promote healthy eating and the efficacy of different approaches. Ireland, for instance, has not adopted the traffic light labelling approach. Food which is produced legally in one EU country must be permitted to be sold in any other EU country. Common approaches at European level are favoured by the Irish and UK industry. Industry views collaboration and common policy initiatives as beneficial to consumers as they would ensure a clear message is conveyed to consumers. Public campaigns to change dietary and exercise behaviour are costly and Governments seek to achieve maximum behaviour change. Evaluation of the 'Sid the Slug' campaign on salt reduction found that the numbers of people checking food labels for salt content and claiming to be making a special effort to cut down on salt increased substantially - by 50 per cent and 73 per cent respectively - following the campaign in autumn 2004 http://www.official-documents.gov.uk/document/cm65/6525/6525.pdf estimated to have cost £4m. In Ireland, the campaign Food Dudes- a school fruit scheme, uses a model of repeat tasting, rewards and per role modelling to achieve a sustained increase in consumption of fruit and vegetable by primary schoolchildren, http://www.fooddudes.ie/ While high level guidelines to reduce obesity are straightforward, translation into widespread benefit through policy, communication and the commercial food supply chain

		are supra-national challenges, as are the issues which link food and quality of life in an ageing population.
D. While food and drink SMEs in the UK and Ireland probably share similar challenges, closer national collaboration would need to take account of the high costs of accessing geographically distant facilities.	D1. SMEs are very important in the agri-food sector because they are the biggest source of rural employment (farms and small food processors) and also the engine for innovation in the food supply chain. Their growth is limited by access to finance, and by the organisations' capability to respond rapidly to new market need	The large percentage of SMEs among food and beverage producers (approximately 90% of all companies in both UK and Ireland) and their importance for the rural community and rural economy make the issues and opportunities of food and beverage SMEs different from those of other SMEs. Rural food can be linked to rural tourism and to sales to visitors when they return home, but the link is arguably under-exploited in UK and Ireland. As reported by DEFRA and Teagasc, the SME food sector faces particular barriers in embracing and applying new knowledge. These include lack of awareness of existing technologies, access to information, and consumer/market needs, as well as operational skills deficiencies. Furthermore, the SME sector is highly fragmented, which contributes to the lack of critical mass in key skills and research capacity There are both government and industry supported schemes to support SMEs: • The Food Works initiative, launched in May 2012, is a strategic alliance of Bord Bia (Irish Food Board; food marketing organisation), Teagasc (food science and technology provider) and Enterprise Ireland (financial assistance) • Loughry College in Northern Ireland has excellent pilot scale facilities for food production and an incubator building for new businesses. The Intertrade Ireland initiative, http://www.intertradeireland.com/ supported by both governments is one scheme to support the financial, marketing and technical needs of SMEs. • Market pull is recognised through commercial initiatives such as Amazon's event to find more suppliers of Scottish foods http://www.thegrocer.co.uk/companies/amazon-calls-for-more-scottish-food-and-drink-suppliers/235258.article and Waitrose's Regional and Local food sourcing group. However, while the value of having 'one-stop-shop' support centres for food SMEs is recognised, geographical constraints - given the community-rooted nature of many SMEs in this sector - limit the opportunities for UK-Ireland sharing of resources. Any further collaboration would need to be designed with this understanding in mind.
E. Collaboration on skills and systems could be beneficial to address common challenges in the agri-food sector including ageing farming population, farm structures, upskilling and recruitment	E1. The dependence of farms on an ageing workforce is recognised in both countries and is a common problem despite different farming structures	The UK and Ireland could collaborate closer and share best practices in order to attract younger farmers starting from existing opportunities such as: • A Professional Diploma in Dairy Management, launched by Teagasc and University College Dublin, includes 2 years work experience on dairy farms at home and abroad. Graduates will have the technical, financial and managerial skills to manage farms or enter share farming arrangements • The College of Agriculture Food and Rural Enterprise (Northern Ireland) accepts students from other parts of the UK and Ireland • The Agri-Food ATP scheme http://www.nottingham.ac.uk/aatp/about.aspx recently launched in the UK could consider allowing Irish students to

		access its modules. Industry-led campaigns (e.g. http://www.fdf.org.uk/campaigns/careers.aspx) to attract fresh talent to the food processing sector could be extended beyond national boundaries, recognising the movement of trained and qualified people in the job market.
F. UK and Ireland frequently compete for export market share but equally there is value in identifying areas which are mutually beneficial.	F1. Collaboration and common policy initiatives could produce synergies when accessing non-EU export markets and could reduce the costs of doing business in these growing markets F2. Separate certification authorities add cost and complexity when exporting, especially if products contain materials from both countries	Starting points for further collaboration could include shared costs, particularly on agri-food distribution, logistics, market research, procurement, EU generic promotion programmes. Practical measures may include jointly levering EU/pan European trade promotions, co-operating on logistical/ warehousing/ shortening routes to markets specially for SMEs, market research and trade fairs. Enterprise Ireland and Invest Northern Ireland/DETI already work together to support SMEs and organise trade missions for the Agri-food companies. Implementation of national schemes beyond the common EU regulatory requirements can cause mixed messages and confusion in a market. UK and Ireland need to find ways to stand out and profit from their high quality agricultural and food products and from the strong traceability which both countries can offer. It is recognised that both countries currently have labelling/branding (UK Red Tractor, Ireland Origin Green) and establishing brands is a complex and costly task. However, industry consultations suggested that there could be value in using these brands in a consistent way to get a message to a wider audience of consumers. Industry consultations also suggested that past collaborative campaigns had been successful and provided a model which could be replicated - especially in markets where consumers may be too distant to differentiate between UK and Irish 'brands'. However it is recognised that this is not intended to undermine healthy competition.

3 Construction and physical infrastructure

In this chapter we set out for the Construction and Physical Infrastructure sector:

- Economic context of the sector
- Why collaboration is important
- Current policy issues and collaborative activities
- Further collaborative activities that could benefit both UK and Ireland.

3.1 Economic context

The economic context linking the construction and physical infrastructure sector in the UK and Ireland can be characterised as follows:[36]

- The construction sector in both Ireland and the UK declined following the 2008 financial crisis and subsequent recession. The number of workforce jobs in the UK fell by 294,000 (13%) over 2007-2012, and by 171,000 (63%) over the same period in Ireland. After a sharp decline in 2007-2008, the rate of decline has slowed down since 2011. The number of UK workers in Ireland and Irish workers in the UK has been falling over this period
- UK productivity levels over 2005-10 were more stable than in Ireland, where productivity decreased rapidly over 2006-09. This was likely driven by the impact of the collapse of the property bubble in Ireland, severely depressing demand for construction activities
- Output in the construction sector in Ireland has declined dramatically due to the falls in employment, which in turn can be attributed to declining demand. In the UK, the decline in output was a lot less pronounced. The volume of production bottomed-out in 2009 and has recovered to close to 2005 levels in 2010 and 2011. The UK sector is expected to return to growth (of 0.8%) in 2014[37]
- On the basis of recently published figures, UK government investment in construction infrastructure (based on projects 'in the pipeline') is expected to total £40bn between 2011/12 and 2014/15. Over 2011/12, total spending was £11.6bn, and is expected to be £10.6bn in 2012/13, £9.9bn in 2013/14 and £8.7bn in 2014/15[38]
- Irish Government capital investment plans total some €17.1bn over 2012-2016; €3.9bn in 2012, €3.4bn in 2013 and €3.3bn forecast in each of the remaining years[39]
- The UK has13 of the top 50 construction companies in Europe, but only one in the top ten. Ireland does not have a top 50 European construction company. Much of the construction industry is comprised of small and medium size enterprises (SMEs) sometimes working under their own banner, sometimes through a supply chain of larger players.[40]

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[36] See Volume II, chapter 3 for further detail and sources

[37] Data from: Experian

[38] http://www.hm-treasury.gov.uk/infrastructure_pipeline_data_update.htm

[39] http://per.gov.ie/wp-content/uploads/Infrastructure-and-Capital-Investment-2012-2016.pdf

[40] Annual European Powers of Construction Survey – http://www.deloitte.com/assets/Dcom-Austria/Local%20Assets/Documents/Studien/TMT/European-Powers-of-Construction-2011.pdf. Note, 2009 version is last to

3.2 Why collaboration is important

Construction industries in both UK and Ireland are still in a state of recovery and both Governments have committed to significant investment in national infrastructure (see section below), consistent with the need to put public finances on a secure footing. In this context, the benefits from collaboration are mostly likely to arise in terms of specific opportunities linked to knowledge sharing linked, for instance, to green construction, specific infrastructure projects between Ireland and Northern Ireland and asset disposal practices. Where recovery is led by international expansion (rather than domestic infrastructure investment) the opportunities for government to intervene are more limited but further exploration of common trade platforms may be value.

3.3 Current policy context and collaborative activities

Ireland's Infrastructure and Capital Investment Plan 2012-2016[41] presents the findings of a Government-wide review of infrastructure and capital investment policy led by the Department of Public Expenditure and Reform. This review assesses the existing capacity of Ireland's infrastructure and identifies remaining gaps which must be addressed to aid economic recovery, social cohesion and environmental sustainability.

Similarly the UK's National Infrastructure Plan[42], published by Infrastructure UK within HM Treasury and updated in December 2012, focused on 'economic infrastructure' (e.g. roads, technology, energy) to a much great extent than the historic focus around 'social infrastructure' (e.g. schools and hospitals).

Most examples of collaboration exist at company level, through supply chains, migration of labour, trade and investment. There are specific collaborations taking place in parts of the infrastructure sector (e.g. Energy and Transport) which are detailed in the relevant sections. Formal collaborative activities between the two countries in the construction sector per se are more limited - e.g. to discussions between Government departments, regulators or industry bodies.

3.4 Further collaborative activities that could benefit both the UK and Ireland

In addition to current activities on which the UK and Ireland are collaborating in this sector, there are further potential areas from which both economies could benefit.

Sector: Construction and physical infrastructure
Current Status: The construction sector remains weak in both economies - with employment having fallen by 13% in the UK and 63% in Ireland over the period 2007-2012. While GVA in Ireland in 2011 was still less than one third of its 2006 peak, the UK sector had largely recovered to pre-peak levels
The prize from further collaboration: Although returning to full growth in this sector will be a long-term undertaking, by focusing on a number of specific opportunities some clear, tangible benefits could be realised in the short to medium term.

include country analysis - http://www.deloitte.com/assets/Dcom-UnitedKingdom/Local%20Assets/Documents/Industries/EIU/Infrastructure/UK_EIU_Epoc2009.pdf

[41] See http://per.gov.ie/wp-content/uploads/Infrastructure-and-Capital-Investment-2012-2016.pdf. and http://www.taoiseach.gov.ie/eng/Building_Ireland's_Smart_Economy/Infrastructure_Investment_Priorities_2010_-_2016

[42] See information on the the UK National Infrastructure Plan at - http://www.hm-treasury.gov.uk/d/national_infrastructure_plan291111.pdf. Also, the UK Government Construction Pipeline spread sheet at - http://www.hm-treasury.gov.uk/infrastructure_pipeline_data_update.htm

Proposals for further collaboration: UK and Ireland Governments should consider prioritising knowledge sharing around means of financing and developing vital economic infrastructure:

Opportunity/barrier to address	*Benefits*	*Costs*	*Feasibility*	*Timing*
CPI1. Sharing knowledge around funding for infrastructure to kick-start development projects. This might include: • Green construction and infrastructure (e.g. Green Investment Bank and RE:FIT) • Understanding ways of attracting internationally mobile finance into primary asset markets (new schemes)	Low – knowledge sharing activities may help, but are unlikely to address low growth in the construction sector on their own	Low – knowledge can be shared at low cost; it is subsequent action which brings significant cost	Straightforward - Could build readily on current Governmental discussions and engage established industry bodies.	Short-term - Few barriers exist

These proposals above are based on the findings, issues tested and evidence set out in the table below, developed through desk research, meetings with policy-experts and interviews with businesses and organisations in both UK and Ireland.

Findings	Issues tested	Evidence
A. Three aspects were considered – trade between the two countries, trade to the rest of the world and tactical opportunities. Benefits from collaboration are mostly in terms of tactical opportunities. NB: for construction we have considered: 1) construction; 2) infrastructure; 3) facilities management; and 4) infrastructure funding	A1. The major economic challenges that both countries face within construction and infrastructure means bilateral trade alone is unlikely to make a major contribution to recovery.	Construction sectors in both UK and Ireland have been through a protracted period of down-turn since 2007. As a whole, the construction sector in Ireland has declined from €38bn in 2007 to €7.5bn in 2012 and the decline is expected to continue until 2014. Within the sector, infrastructure construction is down 50% from its peak in 2007 with residential construction down 90% from the same date. In the UK context there is set to be a slow recovery, with predicted growth of 0.4% in 2013, then growth of 3.8% in 2014.[43] The sector in both countries faces some similar issues: low access to finance, low consumer and developer confidence and government budget cuts - although both Governments have set out significant plans for investment in infrastructure through their respective capital investment plans. The on-going structural weakness of the construction and infrastructure markets in the UK and Ireland, suggests that neither economy has the strength in this sector to offer mutually beneficial trade opportunities. This view was reached following discussions with representatives from: Economic, International and Northern Ireland Division, Department of the Taoiseach; UK's Dublin Embassy; HM Treasury - Infrastructure UK; the Government Property Unit, within the UK Cabinet Office; the Business Services Association; the Construction Industry Training Board; UKTI construction specialists and PA's infrastructure funding experts.
	A2. However, there are specific opportunities for collaboration. There are a number of specific collaborations which could give rise to mutual benefit:	

[43] See Volume II, chapter 3 for further details and sources

	a) Sharing knowledge on…	a) Green construction and infrastructure: • The renewable energy sub-sector is one of the few sectors that is growing in both countries • Building on current discussions, both governments have taken a number of initiatives from which the other could learn, including: engagement around the UK's Green Investment Bank; consideration of a national infrastructure investment fund in Ireland; the UK's 'Green Deal' policy, which came into effect in 2013, and the 'RE:FIT' framework that focuses on the public sector's estate. • In considering energy infrastructure it is useful to differentiate between supply side initiatives to fix market failure (e.g. the Green Investment Bank) and demand side management (e.g. 'Green Deal'). b) Construction skills: • There is already a degree of cooperation between the construction skills bodies in GB, Northern Ireland and Ireland. This is important, given the economic circumstances of the sector and the flows of construction workers between the two economies • Each body has strengths in specific sectors and is extending its training to reflect changing construction technologies (e.g. into energy efficiency infrastructure and renewable energy). Joint consideration of gaps across UK and Ireland and who is best placed to fill them could lead to value for money solutions c) Innovative models of infrastructure finance: • Both UK and Ireland have developed some innovative models for infrastructure finance. Potentially sharing government expertise between UK and Ireland would be helpful. For example, consideration of how the UK's new Private Finance (PF2) model might roll out • The UK Government has recently worked intensively with overseas investors with a view to them investing in primary assets in the UK (rather than in the secondary asset market). This is a challenging undertaking and one in which shared experience could be valuable d) Reform of water industry • Ireland has committed to a major reform of its water industry, creating a state body, Irish Water which will take over the investment and maintenance programmes of local councils.[44] This will also have relevance to collaboration between Ireland and Northern Ireland. Similarly, the UK is entering a period of reform to the water industry[45], although against the backdrop of a privatised sector in the UK.
	A3. There may be a case 'in principle' for a combined trade offer made globally, but practical challenges would need to be overcome	The UK Government (through UKTI) has an established programme of High Value Opportunities in which UK companies (often in the construction sector) are given advice on engaging in the supply chain for such opportunities which emerge from countries overseas. Seen through the lens of collaboration, then there is a case for engaging both UK and Irish companies in this activity. It is understood that Enterprise Ireland is keen to

[44] http://www.environ.ie/en/Environment/Water/WaterSectorReform/

[45] http://www.defra.gov.uk/environment/quality/water/legislation/whitepaper/

		start a dialogue on this, with the first stage being to identify which Irish companies should be involved Within this potential, based on consultation with the programme's construction specialists, there are a number of practical challenges to be over-come, including: • Understanding the projects in which substituting an Irish company for a UK company would increase the value of the offer as a whole, rather than favour an equally well qualified Irish company over a UK company (in a programme paid for by the UK Government this might have limited attraction). This would suggest looking for skill sets which are present in the Irish construction sector, but limited in the UK. Given the similarities in the sectors in both economies, the value-add tends to be in similar (high-end) disciplines such as contracting, engineering, design, programme management, finance, legal and insurance • The additional complexities from attempting to form consortia across different jurisdictions; it is already challenging to form consortia among companies within a single geography
	A.4 Infrastructure investment involving collaboration between Ireland and Northern Ireland	Based on existing understanding and interviews with companies and bodies in the sector it is recognised that inter-connectedness of energy, transport and communications infrastructure is a key issue, particularly for the Irish and Northern Irish economies. There are multiple challenges which arise: such as: financing; regulatory regimes; EU and EIB programmes and funding. It has not proven possible to research these issues to sufficient depth within the timeframes of this project, other than in specific cases (such as electricity inter-connection). Reference is therefore made to existing studies, such as those set out in Volume II, Appendix B.

4 Energy

In this chapter we set out for the Energy sector:

- Economic context of the sector
- Why collaboration is important
- Current policy issues and collaborative activities
- Further collaborative activities that could benefit both UK and Ireland.

The electricity market in in the Ireland of Ireland is part of the Single Electricity Market (SEM) which went live in 2007.[46] The implications for this are set out below in sections 4.2 and 4.3 in particular.

4.1 Economic context

The economic context linking the energy sectors in the GB, Northern Ireland and Ireland can be characterised as follows:[47]

- Employment in the UK energy sector has been in decline since the 1980s. In 1980, over 610,000 people were employed in the energy sector, while by 2011 employment had fallen to only 171,000. There have been significant changes in the makeup of employment in the energy sector, as the focus has shifted towards green energy and renewables
- Employment in the energy sector in Ireland increased in the first half of the 2000s, although the impact of the recession resulted in employment returning to similar levels to that seen at the start of the decade at just under 14,000 in 2009
- Employment prospects for the sector in both the UK and Ireland are mixed; while the shift to renewables is likely to create jobs, these will be in the construction and manufacturing sectors, rather than in occupations historically associated with the energy sector[48]
- Primary energy consumption in Ireland has increased at a much faster rate than in the UK. Ireland's consumption levels were 50% higher in 2010 than what they were in 1990. This shows the growing demand in Ireland for energy and the need for a growing energy generation sector. By contrast, the UK's energy consumption level was only 2% higher in 2010 than in 1990; energy consumption in the UK has been fairly stable over the last 20 years. However, there is considerable uncertainty regarding future energy consumption patterns given the impacts of energy efficiency, price elasticity and the extent to which primary fuel consumption associated with heating and transportation will be electrified
- Public sector policy, both domestically and from the EU, will necessitate increased levels of energy generation from renewables. Both countries are working towards challenging targets regarding renewable generation by 2020.

[46] Under the SEM arrangements, a Committee (the SEM Committee) has responsibility for oversight of the arrangements for regulation, The Northern Ireland Utility Regulator has equal representation on that Committee, alongside CER and Ofgem. These arrangements must be taken into account as relevant in proposals for collaboration.

[47] See Volume II, chapter 4 for further detail and sources

[48] The renewables market is largely capital based and there is a very low labour ratio once construction is completed (for example, wind farms are largely unmanned and primary employment opportunities are in construction and maintenance).

4.2 Why collaboration is important

Collaborative energy policy in the Island of Ireland has its roots in the signing of the All-Island Energy Market Development Framework in 2004.[49] The Framework initiated the development of harmonised trading arrangements for electricity on an all-island basis, resulting in the creation of the wholesale Single Electricity Market (SEM) in 2007. SEM put in place a new competitive and sustainable wholesale electricity market covering Northern Ireland and the island of Ireland, set in the context of the European Union's policy on the creation of an EU-wide internal market for electricity. Creation of the wholesale market was based on a formal Memorandum of Understanding in 2004 (2004 MoU) between the UK and Irish Governments.

Ireland, GB and Northern Ireland may have great potential to enhance economies of scale by utilising their geographical proximity to greater effect. Currently, in addition to the Single Electricity Market; the East-West and Moyle interconnectors allow electricity exports in both directions and in addition facilitates the integration of renewable generation on the all-island electricity system.

Within the EU legislation on renewables generation, there exists the capacity for co-operation between countries. Only Italy and Luxembourg have set out detailed plans to use the cooperation mechanisms when trying to reach their renewable energy target. Luxembourg plans to import a large proportion of biofuel, and nearly 2/3 of Luxembourg's renewable energy target will be fulfilled through biofuel imports and the cooperation mechanisms. Clearly, Luxembourg represents a special case, with limited geographical scope for renewables generation. However, this mechanism does show the potential for collaboration through trade in energy and it shows how this can maximise the benefits of each countries generation.

Collaboration in renewables is likely to take the form of shared expertise and enlarged infrastructure delivery capability; deploying specialists between the two countries to advise and assist in the development of renewables projects in both countries. This may facilitate both increased generation and also increased productivity, reducing the required levels of public sector subsidies.

4.3 Current policy context and collaborative activities

Ministers specifically recognise that certain policy areas, which can have a direct impact on the achievement of the All-Island Energy Market, are outside the immediate control of the two Departments and Regulatory Authorities in Ireland and Northern Ireland. Ministers therefore confirmed that any policy, legislative, structural, institutional or resource issues that may unfavourably affect the development or effective functioning of the All-Island Energy Market, would be carefully examined and addressed. The 2004 MoU also committed to ensuring that trading arrangements would be transparent, integrated and would facilitate free-flowing trade in energy on an island-wide basis, creating a clear and stable environment in which informed and sound investment decisions can be taken. And, that this would require a harmonised approach to ensure investors locating in either jurisdiction were afforded equal treatment on access and charges.

In summary, the 2004 MOU recognises that:

- The Single Energy Market (SEM) is an All-Ireland market
- Northern Ireland is a full and equal partner in the operation of that market

Legislative changes in both jurisdictions must be harmonised to the extent possible to reflect the common objectives under SEM.

[49] http://www.dcenr.gov.ie/NR/rdonlyres/BCF98EC4-7321-4E3F-8685-BFFCA2BF2DF4/0/All_island_Energy_Market_Development_Framework.pdf

More broadly, the Annual Energy Statement sets out the UK Government's vision is for a thriving, globally competitive, low carbon economy as guided by the following objectives: energy security, climate change, affordability, growth and fairness.[50] The Irish Government's energy policies are set out in its Strategy for Renewable Energy[51] and the National Energy Efficiency Action Plan.[52] Both jurisdictions have set Renewable Energy targets as per the EU Directive 2009/28/EC. Dedicated action plans have been designed at the national level to reach these targets.

Focusing on collaboration, the January 2013 Memorandum of Understanding (2013 MoU) between the Irish & UK Governments on cooperation in the energy sector has been hailed as a positive development. The importance of building on the current momentum is also recognised to promote energy cooperation to mutual benefit. This 2013 MoU confirms that the Department of Communications, Energy and Natural Resources (DCENR) and the Department of Energy and Climate Change (DECC) will explore opportunities for renewable energy trading between the UK and Ireland to confirm whether such trading could lead to more cost efficient use of resources, reduce deployment costs, sustainable long-term benefits and reduced dependence on fossil fuels. Consideration will then be given to establishing an intergovernmental agreement between the UK & Irish governments should such benefits be confirmed. Any eventual Inter-Governmental Agreement and changes which result from this must fully understand costs and benefits including impact on Northern Ireland.

Finally, it is also understood that work is in progress on formalising arrangements for co-operation at times of gas supply emergency.

4.4 Further collaborative activities that could benefit GB, Northern Ireland and Ireland

Most recently, and in the context of the arrangements to deliver EU Target Model compliance, the SEM Committee has completed industry consultation on a proposed High Level Design (HLD) which will underpin the structural and operational changes that need to be made to SEM. The Committee presented a draft decision paper to both DETI and DCENR seeking agreement to proceed to the HLD phase and requiring the Departments' input on governance arrangements.[53]

A key aspect of the Decision Paper was a commitment from the SEM Committee to recognise stakeholder concerns that there should be stability in the SEM as the work to deliver compliance proceeded. Nothing can be done to the market which impacts negatively either:

- Northern Ireland's security of supply; or
- Costs to consumers.

It is in this context that further potential areas from which both economies could benefit should be explored.

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[50] UK Annual Energy Statement, November 2012, DECC

[51] Strategy for Renewable Energy: 2012 – 2020, Department of Communications, Energy and Natural Resources

[52] Maximising Ireland's Energy Efficiency: The National Energy Efficiency Action Plan 2009 – 2020

[53] SEM Committee Decision Paper – Implementation of the European Target Model for the Single Electricity Market http://www.allislandproject.org/en/TS_Current_Consultations.aspx?article=5dc5e905-db0a-4cde-b3bb-5cf9b1873559&mode=author; SEM Committee Decisions: SEM Design Stability to 2016 'We commit to maintaining the current structure of SEM until 2016 where possible and will not approve material market changes between now and then'. This is both to protect citizens and industry from uncertainty. If any changes are mooted, then they will need to be done in full consultation with all three Governments

Sector: Energy				
Current Status: The energy sector contributed £18.9bn to UK GVA in 2010 (1.4% of total). In Ireland the sector contributed €2.8bn (1.7% of total) The UK and Ireland are both net importers of energy. The UK exported 760 GWh of electricity (3% of its total EU electricity exports) to Ireland in 2010, and imported from Ireland 378 GWh.				
The prize from further collaboration: Ireland, GB and Northern Ireland have the potential to enhance economies of scale by utilising their geographical proximity to greater effect. For example increases in electrical interconnection capacity could increase the number of market participants active in energy markets, increase competition and potentially lower prices.				
Proposals for further collaboration: Building on the 2013 MoU and extending work in related fields, GB, Northern Ireland and Ireland Governments should consider prioritising:				
Opportunity/barrier to address	*Benefits*	*Costs*	*Feasibility*	*Timing*
E1. Exploring opportunities for renewable energy trading as described in the 2013 MoU with a view to a) creating larger markets for investment and b) assessing requirements to establish an intergovernmental agreement between Ireland and the UK to the mutual benefits of all markets.	High – getting the right outcome from an Inter-Governmental Agreement could unlock significant development capital for projects which are construction ready	Medium – if done in the right way, investment costs will fall on industry, not Government. Nevertheless a comprehensive approach to collaboration will require investment of significant time by Governments and their regulators	Potentially complex – integrated & regulated approaches to grid infrastructure investments requires multilateral agreement and detailed analysis. However, project-specific 'developer-led' approaches may simplify such complexities, especially in the short-term.	Short-term action is required given the long lead times for delivery in renewables sector

Other potential collaborative activities include:

- Collaboration in renewable energy on supply chain development, skills development and research - initially sharing knowledge on each others' initiatives
- Sharing knowledge on energy efficiency initiatives to refine support mechanisms, subsidy design and regulatory treatment

The proposals above are based on the findings, issues tested and evidence set out in the table below, developed through desk research, meetings with policy-experts and workshops with businesses and organisations in both UK and Ireland.

Findings	Issues tested	Evidence[54]
A. Closer collaboration within the energy sector through increased electrical interconnection capacity and through investment in renewable energy can bring benefits	A1. Increases in electrical interconnection capacity could increase the number of market participants active in GB & all-Ireland energy markets, increase competition and potentially lower prices.	Greater interconnection capacity will enable more electricity trading between the two markets effectively enlarging both markets and, therefore, competition can be enhanced. A study by EIRGRID forecasts that by increasing interconnection capacity from 900MW to 1400MW would lead to lower average marginal electricity prices for Ireland (from €60.3/MWh to €60.1/MWh) and would contain the growth of electricity prices in the UK (from €58.4/MWh to €58.45/MWh).[55] The EIRGRID 'Interconnection Economic Feasibility report' estimates that the East-West Interconnector is forecast to bring production cost savings (reduced fuel costs) in the range €50m-€75m in 2025. Now that the Interconnector is operational, forecasts will be refined over time.
	A2. Increases in electrical interconnection capacity could broaden the range of power generation sources serving the all-Ireland & GB markets with the potential to influence the underlying generation mix. Dependent on future power generation portfolios, greater electrical interconnection has the potential to increase fuel diversity.	Ireland's main electricity sources are: gas 62%, coal 14%, oil 2.5% renewables 14%. In 2011 the UK's main electricity sources were: gas 40%, coal 30%, nuclear 19%, renewables 9%. Therefore, through increased interconnection, different production sources can be combined thus diversifying respective generation mixes.
	A3. Increases in electrical interconnection capacity could facilitate increased energy resource sharing between the two countries (where there are production surpluses/deficits), particularly with respect to intermittent renewable energy and thus ease delivery of emission reduction targets	Ofgem has forecast that power generation capacity margins in the UK could fall below 5% by 2015/2016. Consequently, there is likely to be increasing short-term incentives for neighbouring markets to share resources across borders where production deficits and surplus capacities are apparent. In principle, increasing electrical interconnection capacity would allow Ireland to export surplus production to Britain, particularly during low demand/high wind conditions and vice versa.
	A4. Significant future investment in intermittent renewable energy can result in curtailment of production under certain operating conditions. To avoid increasing the costs of renewable energy, it is important to minimise levels of output curtailment. In future,	A study by EIRGRID estimates that increasing the interconnector capacity from 900MW to 1400MW will reduce wind curtailment in Ireland by 1-2% by 2025.

[54] While recognising Northern Ireland's energy policy remit, evidence often relies on data stated on a UK and Ireland basis, which it has not proven possible to disaggregate

[55] These forecasts should be cross-validated with independent studies which has not been possible within the timescales for this report.

	increased electrical interconnection can effectively reduce levels of renewable output curtailment and thus mitigate upwards pressure on production costs from intermittent renewables.	
	A5. Investment in renewable energy in both markets can reduce dependence on fossil fuels. However, the extent to which security of supply can be enhanced will depend on the characteristics of the different generation technologies (e.g. intermittent) and the sources of back-up & balancing power	DECC forecasts that alongside energy efficiency, nuclear, and carbon capture and storage, renewable energy will help reduce UK emissions in line with the 2050 target – an 80% cut in emissions (UK Renewable Energy Roadmap, July 2011). Much renewable electricity production is set to come from wind energy (72% in UK and 86% in Ireland). Therefore, despite the reduction in fossil fuel dependence, the impact on security of supply could be limited from a real-time system balancing perspective.
	A6. Implementation of increased electrical interconnection between the GB, Ireland and Northern Ireland needs further consideration	There are a number of critical implementation issues requiring further consideration before any strategy can be put into practice, including: • Quantification of interconnection capacity requirements against a range of different generation & demand scenarios. • Timing of investment to increase interconnection capacity • Location and routes of new interconnectors between Great Britain, Ireland and Northern Ireland • Onshore grid reinforcement requirements • Funding arrangements for new interconnectors: Merchant or regulated? If regulated, alignment of regulatory frameworks. • Cost recovery principles and charging mechanisms
B. Increased investment in renewables would reduce costs and increase the capacity of the renewables supply chain	B1. Combined and coordinated investment in renewable energy could maximise economies of scale and learning benefits to reduce production costs for renewable energy technologies, thus increasing the competitiveness and attractiveness of renewable energy relative to other sources. B2.The challenging 2020 targets for renewable energy production set by	Learning benefits - The UK Government has launched a number of initiatives designed to address critical skills shortages within the industry. Such initiatives can be shared. Limited access to finance: Since 2010, reduced access to finance combined with rising capital costs, have slowed project delivery and decreased competitiveness e.g. delays during the construction of the 250MW Lincs project, where a range of suppliers have been working 'at risk'. Coordinated investment in renewable energy (e.g. offshore wind) could improve the economics of renewable energy investment, help share risks and thus improve investor confidence. Job creation: 15.1 jobs (for a year) are created in the EU for every MW installed per year.[56] Cost Reduction- The UK Offshore Wind Cost-Cutting Task

[56] EWEA 'Wind at Work' (2009). As this comes from a renewables' trade association it may be at the more optimistic end of a range of estimated values.

	Governments will require a significant expansion of the supply chains for particular renewable technologies, e.g. offshore wind. An enlarged portfolio of suppliers could increase levels of competition (thus reducing costs) and simultaneously alleviate construction bottlenecks.	Force report identified that the cost of electricity from offshore wind would have to fall significantly by 2020, reaching levelised costs of £100 per MW/h. The Crown Estate's Offshore Wind Cost Reduction Pathways Study shows that there could be a potential reduction in levelised costs of up to 16% by 2020 (based on the cost baseline of 2011), through interventions in the supply chain. This would mean increasing competition in the supply chain, increasing the supply chain capacity (eg. the Scottish Government will provide £70m to strengthen port and manufacturing facilities for offshore wind turbines and components in Scotland), greater collaboration across the sector, and creating a stronger and more consistent pipeline of projects
C. All economies could learn from existing initiatives and greater co-ordination in parts of the sector…	C1….In the implementation of energy efficiency initiatives	Very similar challenges are faced regarding Energy Efficiency in terms of housing stock, climate, working patterns & supply chain constraints. There are opportunities to learn lessons from each other and the opportunity to refine support mechanisms, subsidies and regulatory treatment learning from previous initiatives in this field, e.g. Warm Front, Green Deal, CERT,CRC etc.
	C2…. In alignment & compatibility of wholesale and renewables trading arrangements to facilitate increased trading & resource sharing	Alignment is being addressed by the current SEM Committee project aimed at identifying the changes to the Single Energy Market necessary to ensure compatibility with the European target model[57]
	C3…. In increased commitment & coordination of energy related R&D in certain fields	Mainstream renewable technologies (e.g. wind & solar) are well served for R&D funding internationally. However it could be advantageous to pursue combined R&D for the less mature technologies, such as marine renewables (e.g. wave, tidal & biofuels).
	C4…. In standardisation of energy system modelling techniques & methodologies	There is an International Energy Agency (IEA) framework which could provide the basis for standardisation, which would enable more effective planning across jurisdictions. There may be benefit from a requirement to establish common frameworks for use in GB, Northern Ireland and Ireland and more widely across Europe.

The findings above focus on the opportunities and challenges associated with renewable electricity exports from Ireland to GB via new links. However, additional collaboration opportunities regarding the future role of gas in the energy mix, energy efficiency initiatives, 'smarter' energy usage (including smart meters & grids) and technical/R&D co-operation for promising new energy technologies were also recognised but not explored in depth through stakeholder workshops. The issues are therefore raised separately below.

4.4.1 Market & trading arrangements

Modifications to the electricity trading arrangements in Great Britain and the island of Ireland are required to enable increased cross-border energy trading. The existing SEM market arrangements in the island of Ireland and GB's EMR proposals will also need to be aligned with the European Target Model market requirements. However, wider European considerations do not preclude changes to

[57] www.allislandproject.org/en/TS_Current_Consultations.aspx?article=5dc5e905-db0a-4cde-b3bb-5cf9b1873559&mode=author

GB/all-Ireland market rules in the short-term which could provide opportunities for the UK & Ireland to demonstrate leadership in relation to European energy market integration. A comprehensive programme of work has been agreed between Member State regulators for European Target Model alignment.[58] However, there could also be scope for GB/all-Ireland regional market development in the interim (although the SEM committee has agreed that the all-Ireland market should remain stable until 2016 to enable Target Market Compliance). Frameworks to trade and reward renewable generation according to different national incentive mechanisms will be fundamental to successful renewable exports. Work needs to progress in the short-term to establish robust rules and procedures to facilitate such trades.

4.4.2 Integrated planning frameworks

Improved cross-border collaboration and planning frameworks can be used to inform infrastructure investment decision-making through improved understanding of capacity requirements, locational factors, timing optimisation and better cost estimation. It will be important to minimise regulatory and market uncertainties in order to maximise investor confidence and secure project finance, particularly in the short-term. Limitation on the availability of finance reinforces the need for efficient resource & capital planning to ensure renewable energy targets can be delivered cost-effectively and affordably.

4.4.3 Grid investments and system operation

There is a risk that co-ordinated approaches to regulated grid investments could delay infrastructure projects to the detriment of national renewable targets. Consequently, there is a need to simplify and potentially align the regulatory arrangements governing large-scale grid investment in the UK and Ireland - onshore & offshore. Whilst policy development is underway in the UK to refine the OFTO tendering arrangements and through the Integrated Transmission Planning and Regulation (ITPR) project, there is a need to accelerate such initiatives and to identify joint solutions for application with Ireland.

Frameworks for anticipatory investment in regulated grid infrastructure have been adopted to reduce uncertainty and shorten project lead times at Member State level. Anticipatory investment frameworks for cross-border regulated grid infrastructure could be similarly evaluated with the caveat that final regulatory approvals would remain subject to thorough Cost-Benefit Analysis. New operational arrangements between Transmission System Operators (TSOs) will need to be established with detailed working practices and procedures. It is anticipated that such arrangements can be developed jointly by the GB, Irish and Northern Irish TSOs reflecting input from a range of stakeholders and market participants.

4.4.4 Supply chain expansion

The supply chain for renewable energy infrastructure in both the UK and Ireland requires significant expansion to deliver the capacity required to achieve 2020 production targets. Barriers include planning & permitting, regulatory framework uncertainty and a lack of relevant skills and resources. Mechanisms are required to catalyse supply chain expansion, both in Ireland and the UK, for large-scale project implementation.

4.4.5 National considerations

A number of country specific constraints require resolution to accelerate energy infrastructure investment in Ireland and the UK. Significant examples in each jurisdiction include foreshore licensing

[58] A date of 2014 has been agreed for most EU Member States, with a derogation of 2016 for the island of Ireland

arrangements in Ireland and the GB Electricity Market Reform programme. Requirements to understand the detail of EMR implementation has been highlighted as a particular source of uncertainty for investors requiring prompt clarification in 2013.

5 Financial and professional services

In this chapter we set out for the financial and professional services sector:

- Economic context of the sector
- Why collaboration is important
- Current policy issues and collaborative activities
- Further collaborative activities that could benefit both UK and Ireland.

5.1 Economic context

The economic context linking the financial and professional services sectors in the UK and Ireland can be characterised as follows:[59]

- The sector encompasses a wide range of activities, comprising: financial services (such as banking and insurance); professional services (such as accountancy, legal, management consultancy, marketing and real estate services) and business services (such as ICT/digital content services)[60]
- In both countries the sector contributes significant GVA: €29bn (20.2% of total) in Ireland and £319bn in the UK (24.4% of total) in 2010; however, GVA flattened in the UK in financial services since 2007 and has declined in Ireland.
- Within the banking industry, the years since the 2007/08 financial crisis have seen major changes to the industry, including government ownership of banks in both economies. While the UK banking sector is already rebounding in terms of GVA and employment, the Irish Government is pursuing a strict programme of structural reform. Its objectives comprise: 'provid[ing] a secure financial system for deposits and ensure the flow of credit to Irish consumers and businesses; ensur[ing] that Irish banks are viable financial institutions which can fund themselves without continued support from the State or the ECB/Central Bank; and dispos[ing] of the State’s shareholding in these institutions to release funds either to ease the debt burden on the State or to make other investments which will support the Irish economic recovery. [61] [62]
- In the UK, the number of people employed in financial and insurance activities industry is 1,100,000 and in Ireland, 56,000. The number has been relatively stable over the last decade in the UK; with the exception of the losses due to the recession, whereas in Ireland it increased fairly consistently over the period 2000-06. The International Financial Services Centre (IFSC) has been long established in Ireland as a centre for financial services activity, in a range of internationally-traded services and has contributed a significant proportion of this employment[63]
- Productivity, in terms of GVA per person employed, in real estate activities has consistently been higher in the UK and Ireland than the EU27 average. In professional, scientific and technical

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[59] See Volume II, chapter 5 for further detail and sources

[60] http://www.bis.gov.uk/assets/BISCore/business-sectors/docs/10-798-professional-business-services-2020-vision-for-growth.pdf

[61] http://www.finance.gov.ie/documents/pressreleases/2011/mn001presrev.pdf

[62] See also http://banking.finance.gov.ie/presentations-and-latest-documents/ for a series of announcements on measures to demonstrate progress against these objectives. Recent announcements (February 2013) include reduction in useage of ECB funding by banks in Ireland and a return of Irish banks to international debt markets

[63] The IFSC was established in 1987 under legislation designed to boost activity and employment in the Irish economy. Its own estimates suggest that around 32,700 are employed in businesses within it http://www.ifsc.ie/page.aspx?idpage=6

activities, productivity in the UK has been consistently higher than in Ireland, and broadly in line with the EU27 average.

- After the US, the UK's second largest export market for financial intermediation is Ireland, although it is only the fourth largest export market for the UK for business services. Over 2005-09, Ireland's share of UK exports for both sectors have increased. The UK was Ireland's largest export market for financial intermediation in 2009.

5.2 Why collaboration is important

The macro-economic data shows that there are deep trade relations between the two countries in this sector. In the financial services sector, the global nature of the banking industry in particular means that inter-connection is ever-present. There is already close collaboration at the highest levels between the two governments on financial services and between UK and Irish regulators - on both strategic and operational issues. Given the rapid changes in the financial services market, there are potential benefits from active discussions and exchange of best practice between the UK & Ireland governments, regulators and industry associations that could help banking sector development and reform in both countries.

5.3 Current policy context and collaborative activities

The current policy context and collaborative activities in financial services is set out in the reports below:

- 'Strategy for the International Financial Services Industry in Ireland 2011-2016.' Department of the Taoiseach 2011 - The report sets-out the strategy to '*create more than 10,000 net new jobs, protecting existing employment and business, over the next 5 years, built on sustainable and responsible foundations*'. In respect to UK and Ireland relations, it highlights pursuing mutually beneficial initiatives on a North/South basis, in particular to ensure access to as large a financial services skills pool. This builds on the arrangements in respect of undergraduate training that already exist. Enhancement engagement between industry and educational institutions in Northern Ireland, and common North/South initiatives will be pursued where possible.
- 'UK International Financial Services: The Future.' The Bishoff Report, HM Treasury 2009. The report states that the UK's financial services sector can continue to be a world leader by working as a genuine partner of British business and emerging economies while embracing the need for global regulatory reform. It highlights the financial sector opportunities presented by a local skills base in Belfast.

There is currently collaboration either active or proposed between the two governments, including:

- Discussions between relevant Departments on EU dossiers of particular economic and financial interest (including MFF, Structural Funds/ Cohesion AIFM, plans for future banking union Peace IV).
- Co-operation with the UK Green Investment Bank

5.4 Further collaborative activities that could benefit both the UK and Ireland

In addition to current activities on which the UK and Ireland are collaborating in this sector, there are further potential areas from which both economies could benefit.

Sector: Financial and Professional Services				
Current Status: In both countries the sector contributes significant GVA: €29bn (20.2% of total) in Ireland and £319bn in the UK (24.4% of total) in 2010; however, GVA flattened in the UK in financial services since 2007 and has declined in Ireland. The financial crisis saw government ownership of banks in both economies. Both Governments have major programmes of work underway to address challenges in the banking sector in particular.				
The prize from further collaboration: The financial services sector is critical to the recovery of both economies; the professional services sector will support both private and public sector in improving competitiveness and cutting costs.				
Proposals for further collaboration: Based on current collaboration, UK and Ireland Governments should consider prioritising:				
Opportunity/barrier to address	*Benefits*	*Costs*	*Feasibility*	*Timing*
In financial services: FPS1. Understand areas of common interest which are covered by negotiations on EU/Global financial regulation	Medium – getting an outcome which favoured UK and Ireland's interests (given importance of sector to both economies)	Low –there are limited direct costs involved in understanding shared interests	Some complexity – interests are not likely to be identical on all issues, e.g. given Ireland's membership of Eurozone	Short-term – negotiations are current
FPS2. Sharing knowledge on intelligent funding of Small and Medium Enterprises	Low - knowledge sharing activities may help, but are unlikely to address SME finance challenges on their own	Low - knowledge can be shared cheaply; it is subsequent action which brings significant cost	Straightforward - Could build readily on current Governmental discussions and engage established industry bodies	Short-term – challenges are current and solutions are being developed in both countries
FPS3. Exploring the true sources of our significant cross-border business to shape our activity, policymaking and risk management - in particular where both economies are losing investment.	Low - knowledge development may help, but are unlikely to address challenges on their own. Larger gains may be available if a clear view of value chains (and their financing requirements are understood)	Low - knowledge can be gained at low cost; it is subsequent action which brings significant cost	Straightforward – would require work to be commissioned	Short-term – challenges are current
In professional services: FPS4. Understand areas of common interest which are covered by negotiations on EU directive on accounting standards	Low-medium – accounting firms are major high-skill employers within both economies; not yet clear as to extent to which their businesses will be impacted.	Low –there are limited direct costs involved in understanding shared interests	Some complexity – interests are not likely to be identical on all issues	Short-term – negotiations are current

FPS5. Sharing knowledge on activities designed to support public service reform and the role of professional services companies	Low - knowledge development may help, but are unlikely to address low challenges on their own	Low - knowledge can be shared cheaply; it is subsequent action which brings significant cost	Straightforward - Could build readily on current Governmental discussions and engage established industry bodies	Medium term – public service reform is an on-going commitment

These proposals above are based on the findings, issues tested and evidence set out in the table below, developed through desk research, meetings with policy-experts and workshops with businesses and organisations in both UK and Ireland.

Findings	Issues tested	Evidence
A. Given the rapid changes in the financial services market, there are potential benefits from active discussions and exchange of best practice between the UK & Ireland governments, regulators and industry associations that could help banking sector development and reform in both countries.	A1. Joint exploration of the true sources of significant cross-border business to shape activity, policymaking and risk management	Some aspects of the UK and Ireland sectors have heavy dependency on activity and institutions in other EU countries (e.g. the processing of significant volumes of global market transactions). Yet there is little knowledge of the nature or concentration of the dependencies or the associated risks. Similarly, each economy has succeeded in separate parts of the Asset Management value chain - e.g. asset management and administration. Irish banks' UK operations have helped them raise funding from the markets in recent months and Bank of Ireland UK has been the Post Office's exclusive partner since 2004.
	A2. Joint exploration of intelligent funding of SME sector	In the UK in 2012, SMEs accounted for 99.9 per cent of all private sector businesses, 59.1 per cent of private sector employment and 48.8 per cent of private sector turnover. In Ireland, 52 per cent of Gross Value Added and investment in 2012 was from SMEs. The latest British SME Business Monitor, giving data for Q3 of 2012, has revealed that the number of SMEs using any form of external finance has dropped once more to the lowest recorded levels. Only 40 % of SMEs reported using a source of external finance, down from 43 % in Q2 SMEs are in need of funding support, and this has been recognised by both Governments. This could be both 'traditional' bank lending and equity based products or indeed financing through supply chains. With SMEs so vital to both economies and both Governments exploring new ways of supporting their finance there may be value in sharing knowledge across government, regulators and industry bodies, building on existing discussions on access to finance. This could be extended to understanding the support for 'micro-nationals'. There is significant growth and penetration arising from small, usually online companies reaching global markets from their 'office garages'; some suggest this heralds a sea change in economic structure. In this context it is understood that discussions are on-going between the Irish stock exchange and the UK stock exchange to understand how collaboration could help to support growth in high growth companies that are publically listed.
	A3. There is a case for sharing data, applying regulation and sharing financial	UK and Ireland's economies are sufficiently close, and co-dependent, to profit from wider data availability and consistency, for example on credit and price trends. Similar data is already collected in both economies. Consultations with industry suggest that both the costs of

	infrastructure	establishment in each country (as opposed to simply replicating the same structures/processes) and the continued cost of responding to two regulatory regimes are burdensome; although evidence on this is partial and often anecdotal. Properly understanding the duplicated costs and setting these against the additional benefit gained from control over individualised sets of specific establishment and operational regulations could lead to cost efficiencies. And to the extent that much financial infrastructure is (a) commoditised ie a player cannot gain competitive advantage by somehow doing it a different way and (b) can reduce capital and operating costs via scale, it may be time to consider single providers eg in relation to the payments system. The exploration would yield a benefit regardless because it would help establish the relative merits of a traditional structure (eg CHAPS, TARGET) vs technology-driven binary systems ie where each party transacts directly rather than through some form of Automated Clearing House.
	A4. Joint exploration of the viability of community lending, both in itself and as a stimulus to growth.	At present both economies have growing community finance (or crowd-sourcing) initiatives. There would be value in a 'light-touch' co-ordination and migration to an intelligent level of control. Inasmuch as providers are generally small, there could be a case for supplying relevant macro data (even say social media 'trends') to enable them to design offerings, prices and focus effectively. In the UK alone there are around 80 community development finance institutions, which have financed 15,000 businesses and sustained or created 33,000 jobs. However, some commentators suggest that without further government support, the market could fail to take further root. On some estimates, 54 per cent of CDFIs will cease to lend to microenterprises (lending below £10,000), which made up 76 per cent of CDFI clients in the past 12 months. At a different level, both economies have to solve the twin challenges of delivering banking services to rural communities and rendering post office networks economically viable. It seems likely that any viable solutions/hard decisions will be applicable in both countries and substantiated in similar ways. Industry consultation, however, suggested that this was not a major issue, compared to the scale of other challenges.
	A5. Joint evaluation of smart risk evaluation and financing of infrastructure.	There is currently an historically rare coincidence of interests between physical infrastructure providers (governments, transport companies etc.) and investors, who have an unsatisfied need for stable, reasonable-yield long-term assets.
	A6. As appropriate, co-ordination may be merited on international negotiations and best practice in Europe having regard to the interconnectedness of the UK and Irish financial systems.	There is significant interconnectedness of Irish and UK Banks. Co-dependency on trade reinforces this. Ireland is one of the most exposed financial centres (relative to GDP) to a shock in the UK domestic banking system as of September 2010. Ireland has 'upstream exposure' (a measure of countries' vulnerabilities to rollover risks from bank lending between the two economies, and lending by foreign affiliates) to the UK exceeding 50% of its GDP. There are currently negotiations at both a global and European level on the future of the banking system and its regulation - including significantly stronger powers for a European Central Bank and the more stringent liquidity and capital requirements emerging under

		Basel III (which inter alia have a big impact on trade finance). Collectively this will have a fundamental impact on the way that banks in both UK and Ireland operate. Given the inter-connected nature of the sectors, UK and Ireland could benefit significantly from continuing to take a co-ordinated approach to issues arising within the international negotiations.
B. Both countries could learn from each others' experience in attempting to transform the delivery of public services through private and third sector **business and professional service** provision	B1. Both UK and Ireland face similar drivers to transform the way in which public services are delivered, the outcomes achieved and the associated costs. B2. Collaborating in addressing these challenges could support developments in both countries and benefit the professional services sector.	Governments in both UK and Ireland are seeking radical reductions in Government expenditure on public services and increases in the efficiency of delivery Both Governments are looking for new ways to address chronic public service delivery challenges (e.g. an ageing population; higher dependency ratios; advances in healthcare and demand for care; changes in the labour market and the existence of chronic/localised unemployment) Developments in technology and its uses (e.g. the Internet) have given rise to new ways of doing things. The private sector (supported by professional services firms) have often been at the leading edge of these developments Both UK and Irish Governments are therefore engaged in 'experiments' between private, public and third sector agencies to transform delivery By collaborating in initiatives to transform public services, UK and Ireland would both increase the professional services firms able to participate and increase the applicability of the results to both industry and government
C. The professional services sector (between the two economies) suffers from limited market failure - but there may be some scope for collaboration between governments and trade bodies	C1. The professional services sector in general suffers from limited market or government failure The areas in which it does - e.g. in accounting standards and practice - there is likely to be value in sharing information and negotiating positions between governments and trade bodies in both countries	In most parts of the professional services sector there is strong competition (many firms and few barriers to entry) and few externalities. And in some parts (e.g. marketing, consultancy, business software services) regulation is light. Labour is highly mobile in these sectors and there are few restrictions The picture is different some parts of the sector where the market can be more concentrated (e.g. the Big 4 penetration of FTSE100 companies in the accounting sector) and in these sub-sectors there are both national and international regulations involving both government and industry. In the parts of the sector where market failures may exist, there may be the case for sharing information (e.g. on regulatory regimes and qualification standards). This will help to address failures arising from information asymmetries and enable the market to operate more effectively across jurisdictions. The accounting sector is one part of the market where this is likely to be the case. Accountancy firms are currently concerned about the weight of forthcoming EU Directives and believe Ireland and the UK have a common interest in a more appropriate level of regulation for the sector - avoiding a scenario in which over-zealous regulation harms the global competitiveness of international firms.

6 Research & Development/Innovation

In this chapter we set out for the R&D/Innovation sector:

- Economic context of the sector
- Why collaboration is important
- Current policy issues and collaborative activities
- Further collaborative activities that could benefit both UK and Ireland.

Note that analysis of R&D in each of the industry sectors considered is presented in appropriate sections in Volume II.

6.1 Economic context

The economic context linking research & development/innovation in the UK and Ireland can be characterised as follows:[64]

- In the UK, expenditure on R&D as a percentage of GDP has hovered around 1.75%, below the EU average in every year since 2000. The UK's expenditure on R&D increased year-on-year from 2000 until the onset of recession in 2007 when it dipped sharply. However, the proportion of business funded R&D carried out by large businesses in the UK is among the highest in the EU, at around 73%[65]
- Ireland's intramural expenditure on R&D in 2011 was €2,741m (1.72% of GDP) up from €1,176m in 2000. Ireland's per capita spending on R&D expenditure overtook the UK in 2003, and by 2011 the gap in expenditure was over €100 more per capita
- In the UK, the largest growing area in terms of research and development spending has been the private non-profit sector, with €740m invested in 2011. The higher education sector in Ireland now makes up over 28% of total spending in Ireland, up from 21% in 2000. This is an increase of €516m in nominal terms. Ireland's financing from business enterprise sectors has decreased as a percentage of total financing, from 67% in 2000 to 48% in 2011, despite an increase of €881m in nominal terms. Ireland spends a significantly larger proportion of its R&D expenditure on basic research. The UK spent around 9% of its total expenditure on basic research in 2010, compared to 23% in Ireland.
- The rapid increase in R&D spending in Ireland over 2000-09 was accompanied by a greater increase in full-time equivalent workers engaged in R&D than the UK. In 2011 in the UK, the number of full time personnel was approximately 360,000 and 22,000 in Ireland.
- UK and Ireland's research institutions are significant collaborators, particularly within EU Framework programmes. Because of the size of its research capacity, the UK can be identified as a 'node' around which other countries collaborate. Based on bibliometric analysis, Ireland is clustered solely with the UK in the period 2000-2004. By the period 2005-2009, although the

[64] See Volume II, chapter 6 for further detail and sources

[65] Eurostat - http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/R_%26_D_expenditure_in_business_enterprises#R_.26_D_expenditure_by_technological_intensity_of_enterprises

relationship with the UK remains strong, Ireland has additionally developed links with France and Germany[66]

- Over 20% of Ireland's exports are high tech, one of the highest in the EU, whereas for Britain it is over 16%.[67]

6.2 Why collaboration is important

Research collaboration is a reality and both UK and Irish research institutions appear successful at establishing consortia and winning research funding. However, the value of research is increased through effective industry-academic partnerships.[68] Given the potential range of partnerships, funding agencies in both countries must be highly selective in identifying investment in collaborative programmes. This requires a potential value of the collaboration opportunity (in terms of access to world leading complementary expertise, new markets for businesses that are opened up through the collaboration and ability to tap into wider R&D funding) and the barriers to establishing these. One barrier which UK and Ireland can overcome easily is the proximity of geography and commonality of language. Both governments are experienced in promoting these partnershi and further access to each others experience (and markets) could prove valuable. In addition, there is an important Ireland/Northern Ireland dimension given geographical proximity of institutions and their research communities. Finally, both UK and Ireland fund significant research activity in areas of 'grand challenges'; collaboration which builds on respective strengths could lead to more effective and cost-effective research.

6.3 Current policy context and collaborative activities

UK and Ireland's research organisations collaborate extensively with each other and in academic-industry partnerships; particularly through EU-funded research. Both countries have developed targets and strategies for achieving them; the papers are summarised below. Addressing the key points from each of the strategies reveals similarities in policy aims. Further, both sets of policies also highlight the need for international collaboration but do not necessarily focus on the UK-Ireland relationship.

- 'Innovation and Research Strategy for Growth.' Department of Business, Innovation and Skills Paper - This paper analyses how the government can strengthen the UK's current assets in Innovation and research. It highlights the follow approaches: 1) Collaboration between organisations in the private, public and third sector at every geographical level – from international to local – to generate and apply new knowledge 2) Need to maintain and develop a full scale knowledge infrastructure – the university science system, research labs and organisations 3) Importance of driving business innovation in all sectors of the economy, in high-tech but also in our large service sector, and in low and medium-tech activities 4) Focus on very large sectors such as health, transport and urban development
- 'Report of the Research Prioritisation Steering Group.' Ireland November 2011 -The report identifies 14 priority areas around which future investment in publicly-performed research in Ireland should focus. These include ICT, Health and Pharma, Agri-food and Manufacturing. It asserts the

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[66] http://ec.europa.eu/research/evaluations/pdf/archive/fp7-evidence-base/experts_analysis/j.%20adams_-_bibliometric_analysis.pdf

[67] http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tin00140

[68] See, for example, the Wilson Review into University-Business Collaboration (2012) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32383/12-610-wilson-review-business-university-collaboration.pdf

priority areas cannot and should not be pursued within an exclusively national context; in most instances they already connect to established European and global research agendas. It also addresses the duplication of effort in the area of applied research between Ireland and Northern Ireland (for instance both Ireland and Northern Ireland are in the process of setting-up technology centres/competence centres in the areas of Connected Health and Sustainable Energy). It asserts stronger impact could be delivered through better cooperation between the two jurisdictions. This aspect is already covered as part of the hypothesis formulated through this study.

- There is currently collaboration either active or proposed between the two governments, including
  - Intertrade Ireland believe that they have had a very positive role in terms of ensuring the effective use of EU funding between Ireland and Northern Ireland, made possible by their strongly collaborative mandate. This applies to the trade as well as R&D
  - Understanding the nature and extent of existing collaborations currently taking place between the two countries and the scope further potential in this area, including in relation to operation of EU R&D programmes
  - Assessing the scope for collaborating on attracting R&D operations of third country multinationals with an existing presence in the UK and Ireland.

6.4 Further collaborative activities which could benefit both UK and Ireland

In addition to current activities on which the UK and Ireland are collaborating in this sector, there are further potential areas from which both economies could benefit.

Sector: Research & Development and Innovation				
Current Status: UK and Ireland both spend around 1.7-1.8% of GDP on R&D activities; with Ireland spending significantly more of its budget on basic research than UK (23% v 9%) in 2010. Research funding by enterprises has declined from 67% in 2000 to 48% in 2011, while in the UK the level was the same at the start and end of that period (although fluctuated in between).				
The prize for further collaboration: Greater value extracted by innovative UK and Irish companies and by the research institutions with which they collaborate				
Proposals for further collaboration: In an opportunity-led research environment, UK and Ireland Governments should build on this success and consider prioritising:				
Opportunity/barrier to address	*Benefits*	*Costs*	*Feasibility*	*Timing*
RDI1. Structuring and facilitating academic-industry research collaborations particularly on issues/sectors where UK/Ireland collaborate on industrial strategy/or grand challenges… …supported through practical means, such as: • Collaborative research directories • Opening up Knowledge Transfer Partnerships • Share knowledge on fostering the link between research, enterprise and skills	Medium – as well as the value which emerges from additional collaboration there are potential economies from collaboration on specific facilities investment	Low – this is not about new funds, but about helping researchers and industry find the right opportunities	Some complexity – requires detailed consideration by national bodies but essentially working with the grain of what is already in place	Short to medium term
RDI2. Exploring creation of a	Medium –	Medium –	Significant	Medium-term -

mutual 'scale up' facility for ICT and Bio-technology Research & Development capabilities	potentially significant benefits (based on established models) but benefits from research collaboration are difficult to predict	research facilities require significant investment	complexity – both in conception and in the realisation of any plans	significant feasibility work would need to be undertaken

Other potential collaborative activities include:

- Over the medium term, the development of a joint framework for the assessment and prioritisation of collaborative R&D areas, linked to a range of impacts including the development of Human Capital, Intellectual Property, and industry impacts would support more effective collaboration in line with economic growth aspirations.
- In a shorter term horizon there may be opportunities to extend some basic support mechanisms, such as Innovation Vouchers, i.e. allowing such vouchers to be used across the UK and Ireland to provide greater access to support for SMEs in particular. This already exists with regard to Northern Ireland.

All these proposals above are based on the findings, issues tested and evidence set out in the table below, developed through desk research, meetings with policy-experts and workshops with businesses and organisations in both UK and Ireland.

Findings	Issues tested	Evidence
A. Closer cooperation between research performers, institutes and public funding bodies in the UK and Ireland could bring opportunities to improve the value of research - but will be dependent on specific fields in question	A1. Knowledge exchange, identification of common priorities in science and innovation and consequent collaborative programme funding can produce benefits in specific sectors A2. The additional cost of collaboration could be funded where strategically or politically important areas are concerned within the 'grand challenge' fields of: • Global food security and food traceability • Global uncertainty, including climate change • Sustainable energy • Digital Economy, including informatics • Chronic disease and ageing	At both an EU and national level, there is strong support for: • The alignment and strengthening of research competence • Better utilisation of science facilities • Improved engagement of and funding from industry • Support for policy ambition in tackling societal issues However, the European Research Area Board has called for strengthening of the European 'grand challenges' approach in research - potentially using additional EU funding in support (cf. Joint Institute for Innovation Policy (Jan2012)) The 7 Research Councils in UK are the major funders of basic research in the UK. The combined annual budget of these councils is approx. £2.6 billion annually, with the wider science budget at over £4.5 billion. Irish Councils funding: In 2010, spend on publicly funded R&D was over €800m through Irish Research councils Both countries' science and innovation funding organisations (e.g. SFI, Research Councils, TSB) recognise that three overarching barriers have been identified as critical factors impacting negatively on levels of business expenditure on R&D. These are (in order of impact): 1. A shortage of high quality industry relevant skills 2. The high cost of R&D and 3. The effectiveness of academic-business interactions However, research institutions have choices over

		where and how to collaborate and this is likely to be dependent on the field in question. Any push for greater UK-Ireland collaboration would need to meet the following criteria: – Where either UK or Ireland has a clearly identified innovation capability and ability to achieve international commercial success – A clear source of value that the other party brings to this opportunity – Strong fit with stakeholder (research institutions, funders etc) goals – Clear champions on both sides committed to making it happen – Conducive conditions - e.g availability of resources, clear focus. The common language and geographical proximity of UK and Ireland are a helpful starting point. The question of EU Framework funding remains and both countries need to further augment their activities to achieve higher levels of engagement in European programmes. Closer cooperation between the Ireland and Northern Ireland might reduce duplication of effort in terms of applied research ~ For instance both Ireland and Northern Ireland are in the process of setting-up technology centres/competence centres in the areas of Connected Health and Sustainable Energy.
B. Supporting collaboration between researchers and business in both UK and Ireland could enhance the economic impact of research and the innovation capacity of businesses	B1. UK and Irish researchers should be encouraged to collaborate in projects, through mechanisms such as: • UK-Ireland Knowledge Transfer Partnerships and broader business-academic collaborations • A 'Collaborative Research Directory' • Cross-border measurement of impact • Extension of the Innovation Partnership Scheme to access UK institutions	The value of contributions by UK universities to the UK economy was £3.3 billion during 2010-11, an increase of £0.2 billion as compared to the value in 2009-10. Some of the services provided by universities include services to business, including commercialisation of new knowledge, delivery of professional training, consultancy and services. There are currently over 700 active Knowledge Transfer Partnerships in the UK. With the scheme well-established and flourishing, opening this programme to industrial and academic collaborators from Ireland could be a cost-effective measure to increase knowledge flow. Business spend on university services increased 7 per cent from £587 million in 2009-10 to £629 million in 2010-11.UK and Irish Universities have research excellence directories at a national but not supra-national level. The challenge facing companies locating research and innovation services in Europe is to identify providers of services in multiple domains. A collaborative 'Research directory' for UK/ROI universities could increase collaboration between companies and universities. While impact evaluation is now becoming standard practice (cf. RCUK's March 2010 impact strategy), few countries have developed a good impact assessment and measurement system to evaluate whether international collaboration policies have desired effects.

		Furthermore, there are still large gaps in the data provision that could support these assessments.
	B2. Large, R&D-intensive companies spend significant resources on identifying research and innovation partners which can address different domain skills. A shared strength strategy could reduce the opportunity cost to both investing companies and the universities vying for funding. B3. Collaboration could also offer an opportunity to link UK and Irish firms to enterprise skills training.	From the Wilson Report: '*The Technology Strategy Board (TSB) should work with universities, research funders and business to establish a boundary-scanning capability with intelligent brokering to facilitate innovation. This could include open innovation projects exposing existing research information on challenge areas, providing a valuable resource for business. When established, this facility should have the capability to reciprocate its service, linking companies in relevant sectors to universities seeking collaboration to develop applications for its research.'* This is also supported by Forfas and Enterprise Ireland (Maximising the Environment for Company Research and Development, March 2010) Funding provided by bodies/mechanisms such as Ireland's Science Foundation Ireland (SFI) and Technology and Innovation Development Award (TIDA) currently look to increase science and engineering collaboration and resource could be found to link them with UK measures (and vice versa)? The Innovation Academy (TCD/UCD and Queen's Belfast) is a successful example of enterprise skill acquisition through cooperation between UK and Ireland and exchange along what has been dubbed Ireland's 'Innovation Corridor' The UK and Ireland have buoyant seed funding but poor first round Venture Capital. Growth capital is disproportionately significant to industrial output in both the UK and Ireland. According to NESTA (2010): 'The venture capital industry saw further entrenchment in 2009 across all areas. Investment activity has now seen an overall 40 per cent reduction over the past two years, the number of exits has fallen by 40 per cent and fundraising fell by over 50 per cent (both in terms of the number of new funds and total amounts raised)'. Finally and most ambitiously, given the challenges and cost involved, the link between R&D and the 'scaling-up' of collaborations between academia and industry should be considered. Investment in facilities and the expertise required to exploit them is expensive - and spreading the cost between UK and Ireland (and companies which operate in both economies could be attractive). Initial consultation suggests that the areas which might give rise to greatest benefit are in ICT and bio-technology.

7 Tourism and travel

In this chapter we set out for the tourism and travel sector:

- Economic context of the sector
- Why collaboration is important
- Current policy issues and collaborative activities
- Further collaborative activities that could benefit both UK and Ireland.

7.1 Economic context

The economic context linking the tourism and travel sector in the UK and Ireland can be characterised as follows:[69]

- In 2011 tourism employment[70] in both the UK and Ireland was around 7-8% higher than in 2000. The period 2000-2008 included a period of growth in the sector for both countries (particularly high in Ireland with a growth of more than 20% in the period) followed by the sharp decline until now.
- Total employment in tourism in the UK has been fairly stable over the past few years, fluctuating between 3,285,000 and 3,050,000 over 2006-11.
- GVA has remained relatively robust in tourism related industries in the UK, reinforcing the robust performance of employment levels in the sector through the recession.
- The tourism industry in Ireland has traditionally been significantly dependent on British visitors, which accounted for over 42.5% of total visitors in 2012 (2.77m) or 28% by revenues; conversely, visitors from Ireland to GB accounted for only 8.4% of all visits to the UK
- However, the largest increase in the number of visitors to Ireland since 2000 has been from countries in Europe other than Great Britain. The effect of the recession on visitors is clear, seen most strongly among tourists from Great Britain, with 1.29m fewer visiting in 2012 than in the peak year of 2006 (4.06m).

7.2 Why collaboration is important

While the number of bilateral visitors between the two countries has declined steadily since the recession, both countries link the long term growth of the sector with long-haul visitors from emerging markets. This is an area where collaboration will mutually benefit both countries as they are perceived as a single destination by long-haul visitors from emerging markets; this includes:

- Facilitating access (transport and visas) between the countries
- Developing joint products/offers across both jurisdictions
- Marketing the joint offers effectively between the two countries.

7.3 Current policy context and collaborative activities

Key policy and related documents across jurisdictions include:

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69 See Volume II, chapter 7 for further detail and sources

70 Tourism is defined by Eurostat as 'the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes'.

- 'Trading and Investing in a Smart Economy.' Department of Enterprise, Trade and Investment, Ireland September 2010. The report set out the situation across three key aspects of trade (Transport, Tourism and Innovation) and sets-out a strategic plan until 2015 for developing further these three key components of trade. From a tourism perspective, the report highlights the need to modify the Irish visa regime to facilitate access from entrepreneurial, business and tourist travellers to Ireland. Significant progress has been made against these objectives since the report's publication, e.g. on the Short-Term visa programme; high visa grant rates for business and tourist targets in particular; residency programmes for entrepreneurs and investors; attracting students and language students
- 'GB Path to Growth' The Tourism Recovery Task Force, Failte Ireland, ITIC, Northern Ireland Tourist Board, Tourism Ireland, October 2012. GB Path to Growth outlines a new strategy for how Ireland can attract visitors from the GB market. It highlights the issue of joint product development: *'The Tourism Recovery Task Force needs to take a much sharper focus on developing specific and compelling experiences that match the needs, interests and motivations of consumers'*.
- 'Government Tourism Policy'. John Penrose MP, Minister for Tourism and Heritage, Department for Culture, Media and Sport. This policy document highlights the target of 4 million extra visitors to the UK by 2016.

Irish and UK policy departments have both produced evidence of widespread collaboration, including the development of a Common Travel Area and joint visa application and processing centres.

There is currently collaboration either active or proposed between the two governments and public bodies, including:

- Agreement of an MoU governing co-operation between Visit Britain and Tourism Ireland to encourage closer collaboration, especially in encouraging visitors to either country to consider a stop-over in the other
- Reviewing progress since signature of the joint Ministerial Statement by Damian Green M.P. and Alan Shatter T.D. on the development and implementation of a reciprocal Common Travel Area visa arrangement for nationals who are visa required for both the UK and Ireland (on the basis of an application system subject to biometric checks and of greater cooperation on external border security, to facilitate travel to and within the Common Travel Area priority markets).

It is important to note that a number of issues relating to travel and tourism, which are raised by industry are either related to the UK and Ireland's status and relationship with the EU (e.g. migration and car hire costs) or are properly dealt with at a national level (e.g. tax policy or runway strategy). Nevertheless the section below reflects the issues which were raised by industry through the course of consultation on this project and the evidence which does exist to support those assertions.

7.4 Further collaborative activities that could benefit both the UK and Ireland

In addition to current activities on which the UK and Ireland are collaborating in this sector, there are further potential areas from which both economies could benefit.

Sector: Tourism and travel
Current Status: UK and Ireland face similar challenges in attracting visitors from new Asian tourist markets and there are some inter-dependencies between the tourist economies which should be recognised.
The prize for further collaboration: A greater share of high-spending tourists from emerging economies which have only recently started travelling to Europe in significant numbers
Proposals for further collaboration: Building on long-term collaboration in this sector, UK and Ireland

Governments should consider prioritising:				
Opportunity/barrier to address	*Benefits*	*Costs*	*Feasibility*	*Timing*
TT1. Collaboration to understand how to make a joint product more appealing than competitor destinations to travellers, particularly from Asia (and within Asia, China and India); and developing marketing approaches/initiatives on this basis	Medium – more tourists would benefit both economies in an emerging market	Low – may require work to be commissioned	Straightforward – requires engagement of relevant industry bodies	Short-term - Asian demand is growing now
TT2. Continuing to facilitate travel between GB, Ireland and Northern Ireland. This would include addressing perceived barriers to access to tourists – such as visa recognition/ processing (building on the success of the visa waiver programme)	Medium – more cross-border tourists would benefit both economies, particularly if linked to growing the market as a whole. Removing barriers to travel (even if perceptions) can support increases in tourism	High - policy-related changes can carry significant costs	Significant complexity –these are challenging issues in which economic, social and environmental interests must be weighed. Must also recognise links between Northern Ireland and GB tourist markets	Long-term - Work already underway, but requires long-term commitment

These proposals above are based on the findings, issues tested and evidence set out in the table below, developed through desk research, meetings with policy-experts and workshops with businesses and organisations in both UK and Ireland.

Findings	Issues tested	Evidence
A. By continuing to collaborate closely together in terms of Visa practices and procedures, the UK and Ireland can continue work together to maximise future benefits	A1. Single Visa for Ireland & UK can benefit both countries	Since 1 July 2011, Ireland is recognising UK 'C' visit visas for the purpose of travel to Ireland, from the nationals of 17 countries. This programme - the Irish Short-stay Visa Waiver Programme - has been extended by the Irish Government until the end of October 2016. The Programme has contributed to a 21% increase in trips to Ireland, from the countries covered by the Programme, in the twelve months following its introduction.[71] Work has been on-going between the two governments and their respective agencies on the development of a Common Travel Area visa (a single visa for travel to and between Ireland and the UK); although that work is now at an advanced stage, it is recognised that there is still a lot to be done given the complexities of the issues. The importance of bilateral co-operation is heightened given the long-held decisions of both governments to opt out of the EU Common Visa Policy and not to join the Schengen Zone.

[71] Data from: Department of Justice and Equality, Ireland

	A2. Joint Visa application centres can drive down costs, free people from admin tasks and serve the customers better	It has already been proposed that Ireland could use the application centres already servicing the UK government (VFS and CSS) offering more access points to customers and outsourcing the administration work. Parallel to these discussions, collaborative work has been on-going in the area of biometric capture (electronic fingerprints) for all applications for Irish visas and, ultimately, for CTA visas. Work is at an advanced stage between INIS and the UK authorities on an agreement for the capture of biometric data for Irish visa applications, through the UK visa application centre network. Allied to this is a proposal to have joint application centres in place to process such visas which is also under discussion.
B. There are some benefits in closer collaboration in promoting a dual destination but Government's role will need to be tightly identified in a well-functioning commercial market	B.1 Britain and Ireland could work together to better understand how to make their product more appealing to Long Haul travellers from Asia (particularly China and India) than competitor destinations, and marketing it effectively on this basis	Based on interviews undertaken for this report, tourist agencies recognise that the Chinese market in particular has huge potential, but that the British product needs to be re-positioned or re-developed in order to be more attractive to these consumers. According to some estimates, global tourism is forecast to grow by up to 60% by 2030, and half of that growth will come from China. At the moment, France is estimated to receive a quarter more Chinese tourists - known for being high-spending - than the UK per year, although recognise that data are not necessarily directly comparable.[72] Resources could be pooled to understand why both countries' products are not as appealing as they could be. Britain and Ireland could use this enhanced knowledge to develop a 'perfect product fit.' Both countries could then work with the tour operator community to identify an enhanced distribution opportunity and identify marketing opportunities on this basis. One opportunity may be English language training, given strong demand for this in Asia and both countries' competitive advantage. The particular position of Northern Ireland should be recognised. Northern Ireland is promoted internationally by Tourism Ireland. Northern Ireland Tourist Board promote Northern Ireland to an Irish audience. Northern Ireland has a set of inspiring assets (e.g. Giant's Causeway and the Mourne Mountains) that could be used to enhance Britain and Ireland's existing reputations and potentially drive more growth. However it is not growing its share of tourism – it has stabilised and there is no sign of further growth.[73]

[73] Data from: Tourism Ireland

	B.2. There is less value in collaborating to promote Britain & Ireland in short-haul markets. The majority of short haul visitors are Europeans who travel for a short break (less than a week) and therefore are not looking to combine both destinations in one trip.	79% of all visitors to Ireland come from Europe. The respective figure for the UK is 73%. These visitors take short breaks from Europe and are likely to pick one place (London or Dublin or Paris) and stay for on average 2-3 days 27% of all visits to Ireland are between 1-3 nights (the biggest segment) and 72% are between 1-8 nights. Respectively, 42% of all visits to the UK are between 1-3 nights (the biggest segment), while 73% are between 1-7 nights. [74]
	B.3. There is some potential for joint collaboration to promote UK & Ireland as a dual destination in the USA. However, there is no real market failure given the maturity of the market, and therefore, any opportunity for further collaboration should be carefully investigated	North America is an important market for both the UK and Ireland. North American (US and Canadian) visits accounted for 15.6% of all visits to Ireland in 2012 (1,017,000 visits). And there has been a 5% increase in tourism from the US to the UK between 2010-2011.[75] Although there are no official statistics available for the number of visits from the US to Ireland, the size of the US population makes it particularly important . There is further capacity in the routes between UK and Ireland. 72% of tourism between the two states comes by air. CAA's UK airline statistics (2012), reveal that the average utilisation of UK airliners is 63% (both mean and median) indicating spare capacity. However, Britain & Ireland is already a well-developed route in mature long-haul markets and has been sold as a package tour for some time. There is a solid distribution system in place with all major tour operators (Globus, Collette, Brendan) selling 15 day tours of Britain and Ireland. There is no evidence of market failure or clear rationale for further joint Government intervention so action in this regard would need to be carefully investigated
C. By collaborating on policy issues, Britain and Ireland can improve their product and subsequently make it easier for the commercial sector to sell Britain and Ireland as a single product.	C.1 There are a range of issues which arise or are perceived to arise for visitors travelling between Northern Ireland and Ireland (and vice versa) which mean that tourists may not see the Island of Ireland as a single tourist product.	Through consultation with industry, a number of issues emerged which are perceived as 'irritants' that could impede travel between the jurisdictions of Ireland, Northern Ireland and GB. These included: • Increased car hire costs for journeys which pick up in one jurisdiction and drop off in the other[76] • Differentials between Air Passenger Duty which is higher in the UK than in Ireland (although this has recently been reduced in Northern Ireland) • The risk that the lack of airport Hub capacity in South East England could limit onward travel to Ireland and Northern Ireland (although there are now multiple global hubs which serve Ireland, Heathrow is still important in terms of global air traffic both to Ireland and particularly to Northern Ireland) It is recognised that: tax issues are a matter for individual governments; the car hire issue is a commercial decision taken by car hire companies and future airport strategy in

[74] Data from: International Passenger Survey 2012

[75] Data from: CSO, ONS

[76] See, for example, TripAdvisor forums

		the UK is a policy issue for the UK Government. However, industry consultations did raise these as a potential barrier to expanding tourist numbers. In an industry where perception is vital, it is important to pay attention to these and similar 'irritants' on an on-going basis.

8 Transport

In this chapter we set out for the transport sector:

- Economic context of the sector
- Why collaboration is important
- Current policy issues and collaborative activities
- Further collaborative activities that could benefit both UK and Ireland.

For this section, the transport sector has been defined as those businesses which are directly involved in the building, maintenance, operation and regulation (if appropriate) of transport infrastructure (specifically road, rail, air and sea travel).

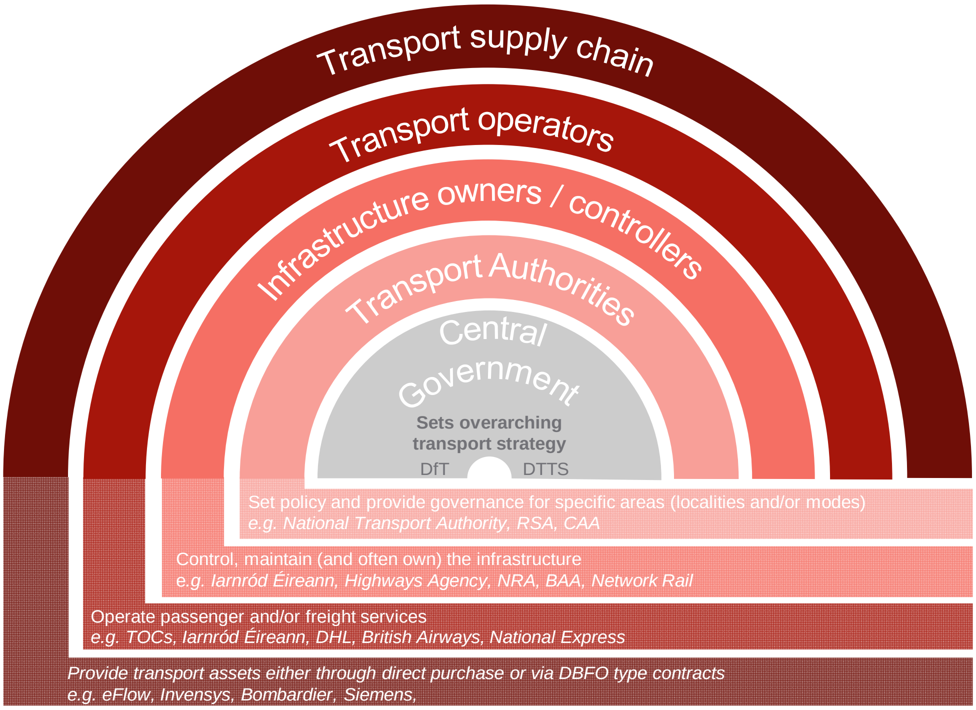
8.1 Economic context

The economic context linking the transport sector in the UK and Ireland can be characterised as follows:

- The transport sector is a significant element of both economies, However the importance of transport to the economy is much greater than simply the direct contribution - transport is critical to trade, international tourism (as highlighted in the previous section), economic growth and social mobility. Transport inefficiencies lead to lost economic benefit. For example it has been estimated that road congestion in UK costs an estimated £7bn in lost GDP per annum and, if unchecked, this will rise to c. £30 billion in lost GDP per annum by 2025.[77]
- Further, transport is seen to provide a 'multiplier-effect' to all the other sectors of an economy and that this has an indirect economic value. By way of example of the potential size of this multiplier effect, the British Chambers of Commerce estimated a transport infrastructure multiplier effect worth around three times the cost of a powerful package of road, rail and airport improvements, which will deliver economic benefits worth a projected £86.3 billion for an outlay of £30.1 billion.[78]
- Both the UK and Ireland have a well-developed transport infrastructure. Both economies are dependent on the road network for transporting the vast majority of person trips and freight movements. Unsurprisingly, both economies are heavily dependent on their ports for international trade - approximately 95% of freight enters/leaves the United Kingdom by sea (75% by value), with a similar proportion entering/leaving Ireland by sea.
- The transport sector is made up of a wide range of bodies and organisations, working within national, European and international regulations and legislation. The diagram overleaf summarises the complex relations across the sector.

[77] The Eddington Transport Study, 2006

[78] www.britishchambers.org.uk/6798219246897588197/transport_priorities.pdf



8.2 Why collaboration is important

The relationship with the UK is extremely important for Ireland – 45% of all of Ireland's trade, 42% of air passenger journeys and 90% of ferry passengers to/from Ireland are from/to the UK. Robust data does not exist on the proportion of goods and passengers from/to Ireland who travel through the UK (i.e. use the UK as a land-bridge to Europe and the rest of the world), however it is thought to be significant.

Consultations with policy officials highlighted that there are no capacity issues at airports or seaports in Ireland at the moment and none foreseen in the short- to medium-term. While previous studies had suggested that Ireland's ports could face capacity issues,[79] the economic downturn has meant that these capacity issues are not considered relevant in the medium term.

8.3 Current policy context and collaborative activities

Key challenges that policy makers in both UK and Ireland are currently face relate to:

- Funding the cost of infrastructure updates/refresh. In the current economic environment, both countries have challenges about how they fund infrastructure refresh and the development of any new transport infrastructure programmes. The UK Government is currently considering the feasibility of innovative funding mechanisms for the motorway network, for example road charging. The National Roads Authority in Ireland already has some tolls in place (e.g. M50, M1, and M6). At a European level, the EC introduced the European Electronic Toll Service (EETS), which will allow interoperability of tolling services on the entire European Union road network. EETS will enable road users to easily pay tolls throughout the whole EU with only one subscription contract with one

[79] Department of Transport, Ireland, 'Information Paper based on Report of Fisher Associates consultants regarding future seaport capacity requirement for unitised trade in Ireland', Department of Transport, Ireland, (2006)

service provider and a single on-board unit.[80] Should wider road charging be introduced in the UK, then there will already be the systems in place to facilitate use by Irish hauliers

- Reduction in carbon emissions. Both Governments are committed to reducing greenhouse gases, in particular carbon emissions. Transport is a major contributor in this respect and both Governments are supporting various green transport projects
- Price stability, cost and availability of carbon-based fuels. The UK Government has also recognised the higher fuel duties in the UK and is seeking to reduce the impact of these on UK based hauliers through the introduction of a lorry road user charging scheme[81]. This will place additional charges on foreign-registered commercial vehicles
- Requirement for greater transport security/resilience in response to greater security threats and to manage the impact of extreme weather/environmental circumstances on the transport systems.

Much of the operation of the transport sector in UK and Ireland is regulated by common bodies. This includes regulation at a:

- Global level, for example the International Maritime Organisation is the United Nations agency with responsibility for the safety and security of shipping and the prevention of marine pollution
- European level (e.g. European Aviation Safety Agency)
- National level (e.g. the Road Safety Authority and the Vehicle and Operator Services Agency). In practice many of the national regulatory and delivery bodies share good practice and work together to agree common standards (for example in the delivery of Intelligent Transport Systems - ITS).

These regulations (and the motivation for public intervention) relate primarily to ensure minimum levels of safety (that are in the wider public interest) and interoperability.

8.4 Further collaborative activities that could benefit both the UK and Ireland

In addition to current collaboration activities in the transport sector, there are limited potential areas from which both economies could benefit.

Sector: Transport
The prize for further collaboration: Collaboration on transport – particularly infrastructure – requires significant investment based on rigorous appraisal. New projects with significant benefits will emerge as economic conditions change
Proposals for further collaboration: There is already extensive collaboration between the Governments with respect to transport. There are no obvious 'gaps' at present with respect to transport infrastructure supporting the movement of freight and passengers between the two countries, though new projects with significant benefits will emerge as economic conditions change. For example, there may be opportunities for further collaboration in the future, for example seeking trans-European network (TENs) funding from the EC for roads in the UK that are of strategic importance for the road freight travelling between the south-east of England and the west coast ports and therefore of strategic importance for Ireland.

It is worth recognising that the UK and Irish Governments cooperate in many areas across transport, including funding, regulation and service provision on cross-border transport issues/activities, for example:

- The two Governments continue to cooperate closely on the development of a Functional Airspace Block (FAB) under the European Single European Sky (SES) legislation. Since inception the

[80] http://ec.europa.eu/transport/media/publications/doc/2011-eets-european-electronic-toll-service_en.pdf

[81] HGV Road User Levy Bill (Bill 77 of 2012/13)

UK/Ireland FAB has delivered significant operational, environmental and cost-benefits considerably exceeding initial projections, with the full involvement of the airspace users

- Both the UK and Irish governments provide support to the Commissioners of Irish Lights in its drive to achieve domestic financing of its activities in Ireland by 2015/16 and beyond. The Commissioners of Irish Lights has operational, historic and relevance in the provision of marine aids to navigation for the whole of Ireland and its activities and achievements demonstrate what the UK and Ireland can accomplish through collaborative working
- The upgrading and provision of the Dublin-Belfast Enterprise train service
- Development of joint Intelligent Transport System (ITS) approaches including provision of journey time information. For example the Northern Ireland Roads Service actively participates in the following ITS groupings:
  - ´5 Nations´ Network Operators Board, in association with the Highways Agency (England), Transport Scotland, Traffic Wales and the National Roads Authority (Ireland).
  - ´5 Nations´ Incident Management Group.
  - The UK UTMC Development Group
  - The UK Traffic Signals Group (TSG)
  - STREETWISE, which is one of 8 Euro-Regional projects part funded by the European Commission to undertake implement traffic control and travel information
  - Roads Service and the National Roads Authority (Republic of Ireland) have been partners since 2002 in the EC funded project called INSTANT - providing traffic control and travel information on the Belfast to Dublin corridor
- The proposed upgrade of the Dublin-Derry/Londonderry road (N2-A5)
- Cross-border vehicle enforcement activities, including sharing intelligence where appropriate.

In summary, there is considerable collaboration, joint-working and sharing of good practice that already occurs between relevant Irish and UK organisations. This collaboration covers funding, regulation and service provision. Discussions did not identify any significant transport-related opportunities for economic collaboration that were being missed. Rather, they suggested that the current level of cooperation should continue.

9 Additional issues to explore

As part of the research for this report a wider literature review was undertaken to identify evidence both for the priority sectors and for sectors which were not highlighted as part of the Joint Statement. The literature review is set out in Volume II, Appendix B. Issues relevant to priority sectors are incorporated into the relevant chapters in the body of this report.

The following issues suggest potential for further consideration of the evidence:

- Water infrastructure: Joint action on treated water infrastructure (particularly between Northern Ireland and Ireland). According to a wide-ranging and influential report 'Ireland and Northern Ireland need to work collaboratively and co-ordinate their actions in terms of progressing their plans for water infrastructure upgrades. Co-ordination is necessary to effectively tap into the island's 'water wealth''.[82] Underpinning this recommendation is the following points:
  - Responsibility for water in all its manifestations is fragmented and spread across and among a wide range of agencies and interests; and cross-border geography of water distribution is an inescapable factor necessitating North-South interaction. In September 2011 the International Centre for Local and Regional Development (ICLRD) concluded that there was an 'immediate need for more inter-agency coordination and cross-jurisdictional cooperation as one of the requirements for effective coordination between river basin management across the island'.[83]
  - The last decade has seen a growing awareness of the scale, urgency and complexity of the task of upgrading the treated water infrastructure due to rising demand, contamination problems, shortages and leakages
  - In December 2010, Northern Ireland suffered a dramatic water shortage which left 40,000 people without water for up to 12 days[84]. the crisis in Northern Ireland was eased by cross-border cooperation
  - The administrations on the island share an overarching EU regulatory framework regarding water quality and treatment, most notably in the European Water Framework Directive 2000[85]
  - Ireland has committed to a major reform of its water industry, creating a state body, Irish Water which will take over the investment and maintenance programmes of local councils.[86] This will also have relevance to collaboration between Ireland and Northern Ireland. Similarly, the UK is entering a period of reform to the water industry, although against the backdrop of a privatised sector in the UK.[87]
- Telecoms: Collaboration on sharing wireless spectrum (particularly between Northern Ireland and Ireland). ~ Ireland and Northern Ireland can work closer together in the Telecoms sector through joint broadband infrastructure deployment and standardisation of regulation covering the rights and obligations of telecom operators. This is in line with wider EU policy on shared infrastructure

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[82] Delivering A Prosperity Process: Opportunities In North/South Public Service Provision - A Scoping Study Michael D'Arcy, D'Arcy Smyth Associates for The Centre for Cross Border Studies

[83] The International Centre for Local and Regional Development (ICLRD) published a report entitled *Responding to the Environmental Challenge: Spatial Planning, Cross Border Co-Operation and River Basin Management*

[84] http://www.guardian.co.uk/uk/2010/dec/29/northern-ireland-water-shortage; http://www.rte.ie/news/2011/0101/water.html; and http://www.bbc.co.uk/news/uk-northern-ireland-12094518.

[85] Directive 2000/60/EC of the European Parliament and of the Council establishing a 'framework for the Community action in the field of water policy'.

[86] http://www.environ.ie/en/Environment/Water/WaterSectorReform/

[87] http://www.defra.gov.uk/environment/quality/water/legislation/whitepaper/

deployment and can help to reduce costs. Also, shared spectrum use and harmonisation can help to control traffic and offer a better service to consumers.

- Health and Pharmaceuticals: Collaboration in terms of Connected Health and Independent Living; Medical Devices; Diagnostics; and Therapeutics. Both the UK and Ireland face similar challenges in terms of moving the emphasis of care to the patients in their own home. Collaboration on connected health and independent living technologies can help both countries to transform healthcare and service delivery, thereby reducing burdens on health systems and improving the quality of life of ageing populations. Also, both countries have developed significant research capacity in a range of areas that underpin development of therapeutics and diagnostics like biomedical research and nanotechnology. Sharing this work and working together to develop solutions can help the UK and Ireland to commercialise growth areas such as nutrition related diagnostics
- Manufacturing: Collaboration on developing and using Processing Technologies and Novel Materials as well as Innovation in Services and Business Processes. According to the Irish report on research prioritisation, the Irish manufacturing base needs to transition into one with enhanced capabilities in processing technologies and materials science and engineering. Closer collaboration between the UK and Ireland and best practice sharing can help achieve this transition, while resource sharing can provide mutual benefits in terms of innovation and smarter commerce.

10 Scenario analysis

This appendix sets out drivers of economic change based on existing PA scenario analysis. This offers an alternative look at the issues to which both the UK and Irish economies will need to respond in the future and thus provides an alternative platform on which collaboration could be built.

10.1 Drivers of change

These are the large trends that will push companies to adapt and change.[88]

10.1.1 Globalisation

There is growing integration and interdependence of individuals and nations around the world in terms of economies, societal influences and cultures. There will be an increased flow of capital across borders and economies to emerging markets - with the US becoming more reliant on other regions for capital. China and India are expected to surpass the leading western economies, forcing them to find new ways to sell into these emerging markets and requiring them to become more adaptable and flexible - building local networks and innovative distribution channels, strategic acquisitions and consumer segmentation. Complex flows of capital, goods, information, and people are creating an interlinked network that spans geographies, social groups, and economies in ways that permit large-scale interactions at any moment. This expanding grid is seeding new business models and accelerating the pace of innovation. It also makes destabilizing cycles of volatility more likely.[89]

10.1.2 Geopolitical Power

Geopolitical power is shifting. China and India are asserting themselves as world markets and powers; while Russia's position as a leading global energy supplier is increasing its influence. The Middle East is expected to remain at the heart of international political debate but Africa could play a greater role as it exploits its natural resources to meet the needs of a commodity hungry world. At the same time, Western democracies risk being distracted by the social challenges arising from changing demographics.

10.1.3 Access to Knowledge

The success of knowledge economies based on learning, education and innovation will continue to increase - as will the use of ICT, new media, virtual reality and virtual business worlds - to access, communicate, share and control knowledge. Access to education is increasing and demand for education services continues to grow. In 2009 alone there were 610 million internet users in the BRICI countries alone.90 Successful businesses require workers who constantly upgrade their skills and knowledge and this drives demand for education services. An emerging, highly educated, highly skilled 'creative class' in science, engineering, architecture, design, the arts, law, business and finance is critical to building a successful knowledge economy.

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[88] PA Consulting Group (2008). *Technology Convergence, The Evidence behind Mega-Trends*

[89] McKinsey (2010). Global Forces, An Introduction. *McKinsey Quarterly*

[90] Boston Consulting Group (2010). *The Internet's New Billion, Digital Consumers in Brazil, Russia, India, China and Indonesia*

10.1.4 Consumer Consumption

Wealth and the increasing absence of failed economies will continue to drive up consumer consumption. Rising per capita incomes, budding middle classes, abundant savings, stronger employment growth and higher private capital investment will see developing nations becoming more powerful in relation to global imports and consumerism[91]. The increasing consumption of luxury goods in China, India and Russia will continue alongside new consumption demand in the Arab world. The BRICs plus Mexico, Indonesia and Turkey[92] will be 50% larger than the current G7 in 205093 providing a consumer hungry affluent middle class. The demand for higher quality, sophisticated, high-tech, quality products and services will drive the growth of the high-value manufacturing industry to meet the demand for high-end goods[94].

The environmental agenda has driven a growth in 'ethical products' and put pressure on retailers to reduce packaging. The increase in food prices is likely to persist in the medium term. The ever increasing demand for energy is likely to drive energy efficiency although developing countries are lagging behind here. The need to reduce CO2 emissions is likely to stimulate greater interest in developing renewable energy that can reduce current dependence on fossil fuels.

10.1.5 Health Evolution

Health evolution related to a rise in 'value' (and cost) of life. As medical advances continue, technology will enable increasingly widespread awareness of health issues and personal responsibility for health - allowing individuals to challenge healthcare professionals and demand a higher, more targeted, quality of healthcare. The push towards a healthier lifestyle has encouraged the growth in the market for functional foods and neutraceuticals. Demands for healthcare products will vary more widely from new products (such as genetically modified foodstuffs) to more alternative and complementary forms of medicine (such as Chinese Traditional Medicine). The growth of obesity - and related illnesses - in children is an area of increasing concern.

10.1.6 Generational Events[95]

Events such as the Olympics and FIFA World Cup provide significant procurement opportunities. Business opportunities range from feasibility and planning stages, to fitting out stadia and transport links, to VIP management, security and ticketing96. Sports and leisure infrastructure is a significant growth area globally, cutting across a wide range of sectors such as sustainable infrastructure. Generational events provide a platform for the adoption of new technologies and provide a suitable vehicle for technology convergence. Events such as these are also the best example of the global supply chain which brings together expertise and resource from all over the world.

10.2 Enablers and constraints

These are the conditions that will either see a sector flourish, or challenge and limit its development.

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[91] Bank of America

[92] UKTI (2010). *Review of High Growth Markets*

[93] PWC (2007). *World in 2050*

[94] UK Government (2010). *Manufacturing Growth Framework: Core narrative*

[95] For the purposes of this report 'Generational Events' such as the Olympics have been included as a driver of change as they are a focal point for UKTI when considering opportunities for UK companies in a particular sector or geographical market.

[96] UKTI (2010). *Vince Cable Press release*

10.2.1 Security threats and responses

The threat of global terrorism will continue together with the increased threat related to proliferation of weapons of mass destruction. Future threats will continue to come from failed states presenting an ongoing problem for global security. Religious and ethnic tensions around the world risk developing into conflicts. The world will face a wide range of traditional and new security threats including chemical, biological, radiological, and nuclear. The growing threat of terrorism will continue to increase government spending on security and R&D into new technologies to counteract and detect the various modes of terrorism. Security may grow in importance as a consideration for inward investors when looking to locate production.

10.2.2 Commodity availability

Scarcity of key commodities and resources such as fuels, minerals and water will become an increasingly significant issue, with corresponding increases in use of renewable sources and efficiency measures. Global demand for key commodities is expected to double over the next 15 years, driven by rapid industrialisation and urbanisation in emerging economies causing key natural resource reserves to deplete. This scarcity is driving the development of alternative fuels while increasing the importance of adopting energy efficiency systems.

10.2.3 Automation

The continuing replacement of the human worker with automation technologies will continue and will spread around the world. As automation affects the less developed areas, countries such as the UK will be increasing the use of embedded intelligence across a wide range of areas and products. Neuroscience is helping to develop a new generation of robots and the development of nanorobotics continues. Increasing security threats will lead to the use of biometric systems to automate security controls. Ageing populations and burgeoning health systems will lead to the adoption of technology that will respond to lifestyle and technological changes.

10.2.4 Technology Convergence

The convergence of key technologies in NBIC (Nanotechnology, Biotechnology, Information Technology and Cognitive Science) is creating potential new applications and benefits across a wide range of areas. Nature will be used as the basis for the development of new technologies and new societal patterns. Technology platforms will bring about convergence of industry sectors, which will become more multidisciplinary in nature and harness capability based on material technology and miniaturisation. Health and the environment will be key drivers here.

10.2.5 Individual Mobility

The mobility of individuals will continue to increase with the development and improvement of transport infrastructures and new transport technologies to support this. Personal transport usage is set to grow, especially in the emerging economies and developing world, driven by growth in real per capita income. Types of cars and how they are powered continue to evolve (fuel cell, hybrid). Air travel will grow faster than all other personal travel modes and the market for space tourism will start to grow. People are also becoming more and more willing to relocate for their work which means that companies and countries have to remain attractive to retain talent. The increasing capability of broadband and connectivity means that the number of telecommuters will increase. Congestion and pollution are barriers to growth in mobility.

10.2.6 Business Integration

The systems used by business will become more open allowing closer integration of businesses with each other and their customers. The ability to virtually integrate at speed will become the main margin driver for businesses. Business models will move towards open innovation by sharing both the risks and rewards of innovation. Adoption of Information-as-a-service (IaaS) is a strategy that employs a more flexible architecture to ensure business information integration with external resources. Open source will continue to provide a platform for development while cloud computing will provide increased capability and allow corporations to change the way they meet their IT needs.

10.3 'Outcomers'

These are the elements of the new operational environment for the sectors under consideration. How well they adapt to these developments will determine how far they will succeed.

10.3.1 Individualism

Individualism refers to the shift from mass to personalised markets and products with increasing opportunities for self sufficiency, self service for the individual and personalisation.

10.3.2 Cultural evolution

This will continue to increase globally, with competing cultural influences and value systems, and the emergence of hybrid cultures.

10.3.3 Work Methods

The emergence of highly flexible, ICT enabled, new ways of working is changing working life and allowing individuals to work anywhere, any time, with advances in automation and technology supporting these new practices. Evolution of mobile business communications will help remote end-users to collaborate and innovations in existing technologies will further enhance the adoption of the virtual work environments. Technology, flexible location and working hour requirements, and lower travel and accommodation costs will promote telecommuting. The use of virtual environments can reduce isolation and allow people to work together more effectively.

10.3.4 Urbanisation

This looks at the continued colonisation of already developed cities. The movement of people - and with them goods, knowledge and money - into cities and the increasing development of huge 'megacities' will require new ways of living. Cities in the developing world will grow faster than those in the developed world and all cities will continue to need major investment in infrastructure with a greater emphasis on energy-efficient buildings providing both affordable and sustainable homes.[97]

10.3.5 Demographic Change

The demographics of the world's population are changing, with populations in Western countries aging and decreasing - with the opposite happening in the developing world. In general the world's population is ageing with fewer people of a working age and a resulting increased burden on healthcare resources. Migration will also drive demographic change, with immigration continuing to flow from less developed countries to developed countries. Population reductions in parts of Western

97 OECD (2006). Infrastructure to 2030

Europe and Russia will require large increases in migration to maintain the workforce size and it is estimated that the ethnic population of the US will be in the majority by 2042.

10.3.6 Climate Change

Climate change caused by CO2 emissions will cause increasing environmental problems in the future. New strategies and technologies will be needed to tackle them. Greenhouse gas emissions due to human activity are causing temperatures to rise, with the effect of climate change being felt more acutely in poorer countries. There will be increasing focus on curbing climate change globally. Energy-intensive industries like power generation and manufacturing will shift business strategies to align with environmental priorities - including a push towards increased use of renewable sources of energy in order to reduce green house gas emissions.

10.4 Impact of emerging influences by sector

The table below sets out the combined influence of the above factors on a range of sectors.

Sectors	Commentary
The emerging influences on the following sectors overall are deemed very positive	
Lifesciences	Most of the drivers of change including globalisation, access to knowledge, health evolution alongside some enablers and 'outcomers' such as technology convergence and changing demographics are all judged to affect the sector in a positive way.
Security	Some of the drivers of change including globalisation, political power and generational events alongside several constraints and 'outcomers' such as heightened need for security, reduced commodity availability, cultural evolution and urbanisation are all judged to affect the sector in a positive way in terms of growth reflecting a growing need for security services.
Services	Some of the drivers of change including globalisation, access to knowledge and generational events alongside mainly 'outcomers' such as urbanisation and changing work methods suggest that this sector will be affected in a positive way going forwards with an increased need for services provision.
Creative Industries	Some of the drivers of change including globalisation, consumer consumption and generational events alongside some enablers and 'outcomers' such as technology convergence and cultural evolution and work methods are viewed as affecting the sector in a positive way; although changing demographics is considered as having an uncertain impact as it could as easily reduce demand as it could enhance it.
Consumer & Leisure	Although most of the drivers of change, enablers, constraints and 'outcomers' are viewed as a positive influence, this sector is considered to be subject to an increased number of uncertainties including globalisation, commodity availability, cultural evolution, and changing demographics - all of which could as easily reduce demand as they could enhance it.
Transport	Although nearly all the drivers of change are considered a positive influence on this sector, there are several enablers, constraints and 'outcomers' which are viewed as having a disruptive impact including heightened concerns around security and commodity shortages probably causing reduced levels of travel, changing work methods (e.g. remote working) and climate change (lower emissions regulations) - again causing reduced levels and/or different modes of travel with consequent impact on transport infrastructure.
ICT	Most drivers of change are viewed as positive influence for this sector. However, there are considered to be a couple of potential disruptors - climate change and commodity availability with security as a big unknown (e.g. cyber terrorism).
Education, skills & training	Enablers such as individual mobility, technology convergence and business integration are judged to have a positive effect on this sector complementing a few of the drivers of change such as globalisation and access to knowledge. Here again security could be a

	disruptor with changing demographics considered to have an unpredictable impact.
Retail & Logistics	Most drivers of change are viewed as a positive influence for this sector including globalisation (i.e. increase in world trade driving increased levels of trade and transport of goods). However there are considered to be three potential disruptors - climate change, commodity availability and security (e.g. cyber terrorism).
The emerging influences on the following sectors overall are deemed positive	
Construction	Quite a few uncertainties but with more 'outcomers' that are expected not to impact the bulk of activities conducted in the sector (individualism, cultural evolutions, work methods).
Agri-food	This sector is considered to be subject to a considerable amount of uncertainty including unpredictable factors such as consumer consumption (continued aversion or eventual acceptance of GM foods), urbanisation (driving more uniformity in consumption demand and production processes or further reducing agricultural resource capacity/capability). Agri-food also has the least number of identified positive influencers - only three - automation, health evolutions, and access to knowledge.
Finance	For Finance the drivers are generally positive, but concerns around security and commodity shortages could lead to volatility - acting as disruptors. The 'outcomers' of cultural evolution and demographics are considered to be a bit unpredictable in terms of their effect on the sector.
The emerging influences on the following sectors are too uncertain to judge	
Energy	This sector is subject to a number of positive influences including globalisation, access to knowledge and generational events all of which are expected on the one hand to drive demand for energy and on the other to help promote the emergence of new generation technologies. It is however also judged to be vulnerable to a number of disruptive influences, particularly climate change, security and political power.
Manufacturing	Drivers of change are generally positive for manufacturing as a cross-cutting horizontal sector, but there are potentially major disruptors in terms of work methods, climate change, security and commodity shortages.

Appendix A: Stakeholders: consultees; workshop attendees; steering group

In this section we set out a list of individuals consulted during the research process - consultees, workshop attendees and steering group members.

A.1 Consultees

Workshop	Attendees
Energy	• Bord Na Mona - Charles Shier • Commissioner for Energy Regulation - Garrett Blaney • Eirgrid - Michael Walsh • ESB - Gareth Davis • Gaelectric – Colin Spain • Mainstream Renewable Power – Andy Kinsella • National Grid – Paul Johnson • NewEra - John Paul Corkery • Oriel Windfarms – Brian Britton • SSE Renewable – David Manning • Siemens – Garry O'Callaghan The Crown Estate - David Charlesworth
Agri-Food	• Bord Bia - Michelle Butler • Dawn Meats - Paddy Walsh • Glanbia - Muireann Kelliher • Good Food Ireland - Margaret Jeffares • Irish Dairy Board – Joe O'Flynn • Irish Farmers Association - Pat Smith • Moy Park - Tony O'Neil • Lyecross Farm and PTF - Tim Harrap • Teagasc - Dr. Lance O'Brien • John Thompson and Sons Limited - Declan Billington
Financial and Professional Services	• AIB - Rachel Naughton • Aviva - Steve Treloar • Bank of Ireland - Donal Duffy • Barclays - Andrew Hastings • Davy Stockbrokers - Fergal Meegan • Deloitte - Brendan Jenkins • HSBC - Stephen Young • KPMG - Shaun Murphy • PWC - Ronan Murphy • Realex Payment - Paul Davey • South Western Services - David Kelly
Tourism	• China Holidays - Carey Fletcher • European Tour Operator Association - Thomas Jenkins

	• Irish Hotel Federation – Tim Fenn Houses Castles & Gardens of Ireland - Sara Waldberg • Manor House Hotels - Roisin Wallace • Ryanair – Michael O'Leary • Select Hotels (and ITIF) - Derry Cronin • Tourism Ireland – Niall Gibbons • Visit Britain - Sandie Dawe
Research & Development and Innovation	• CRANN - Dr Chris Keely • Institutes of Technology Ireland - Andrew Brownlee • Irish Universities Association - Conor Carroll • Tyndall Centre - Prof Tony Day
Cross Sector - workshop	• Paypal - Maeve Dorman • Google - Sue Duke • Smurfit Kappa - Ray Murphy • Sisk – Paul Hackett • Interserve Ireland- Rory McGovern • DAA – Deirdre Levin • IBEC - Pat Ivory • ISME - Mark Fielding • SCSI - Ciara Murphy • Kingspan - Pat Freeman • Kingspan - Gary Treanor • BICC/ESB - Johnny Shine
Other (generally bilateral)	• British Chambers of Commerce • British Irish Chambers of Commerce • Business Services Association - • European Tour Operators Association - Tom Jenkins, Linda Haydon • Trafalgar Tours - Lisa Bissett • Globus/Cosmos - Tristan Yardelavett • Insight - John Boulding

10.5 Policy makers/government bodies consulted

	Ireland	**UK**
Agri-Food	• Department of Agriculture, Food and the Marine	• Department for Business Innovation and Skills • Department of Agriculture and Rural Development (Northern Ireland)
Construction & physical infrastructure	• Department of the Taoiseach	• HM Treasury - Infrastructure UK • Government Property Unit • Construction Industry Training Board
Energy	• Department of Communications, Energy and Natural Resources	• Department of Enterprise Trade and Investment (Northern Ireland)
Financial and Professional Services	• Department of Finance	• Department for Business Innovation and Skills • HM Treasury

Research & Development and Innovation	• Department of Jobs Enterprise and Innovation	• Department for Business Innovation and Skills • Department of Enterprise Trade and Investment (Northern Ireland) • Intertrade Ireland
Tourism and travel	• Department of Transport, Tourism and Sport • Department of Justice & Equality • Failte Ireland • Tourism Ireland	• Visit Britain • Department of Enterprise Trade and Investment (Northern Ireland)
Transport	• Department of Transport, Tourism and Sport	• Department for Transport
Other	• Enterprise Ireland • North South Ministerial Council	• Cabinet Office • British Embassy – Dublin • North South Ministerial Council

10.6 Steering Group

Ireland	UK
Department of the Taoiseach Department of Foreign Affairs and Trade	Department for Business, Innovation and Skills

Appendix B: Glossary of terms

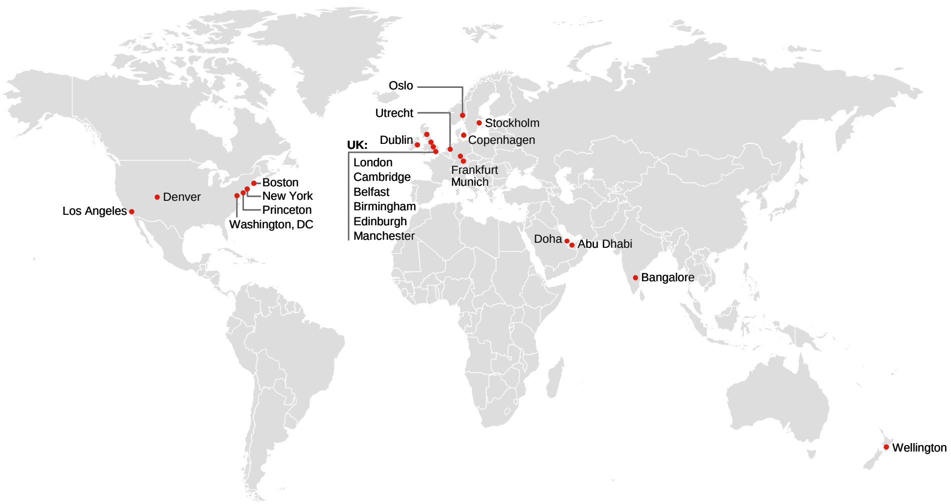
Term	Definition
AHRC	Arts and Humanities Research Council (UK)
AIFM	Alternative Investment Fund Managers
APD	Air Passenger Duty
BERD	Business Enterprise Research and Development
Bord Bia	Irish Food Board
'C' Visit Visa	A general visa for visitors to the UK
CAA	Civil Aviation Authority (UK)
CDFI	Community Development Finance Institutions
CERT	Carbon Emission Reduction Target
CITB	Construction Industry Training Board (UK)
CRC	The CRC Energy Efficiency is a mandatory scheme aimed at improving energy efficiency and cutting emissions in large public and private sector organisations.
CSS	Client Support Services for visa
CTA	Certified Tourism Ambassador
DAFM	Department of Agriculture, Food and the Marine
DARD	Department of Agriculture and Rural Development (Northern Ireland)
DCENR	Department of Communications, Energy and Natural Resources (Ireland)
DECC	Department of Energy and Climate Change (UK)
DEFRA	Department for Food, Rural and Environmental Affairs (UK)
DETI	Department of Enterprise Trade and Investment (Northern Ireland)
DfT	Department for Transport (UK)
DJEI	Department of Jobs Enterprise and Innovation (Ireland)
DTTAS	Department of Transport, Tourism and Sport (Ireland)
EBRD	European Bank of Reconstruction and Development
ECB	European Central Bank

EIB	European Investment Bank
Eirgrid	State owned electric power transmission operator (Ireland)
EPO	European Patent Office
EPSRC	Engineering and Physical Sciences Research Council (UK)
EU27	European Union's 27 member states
EUROSTAT	European Commission Statistics
EWEA	European Wind Energy Association
FAB	Functional Airspace Block
Failte Ireland	The National Tourism Development Authority of Ireland
FDI	Foreign Direct Investment
Forfás	The National policy advisory board for enterprise, trade, science, technology and innovation in Ireland
FSA/FSAI	Food Standards Agency (UK)/Food Safety Authority of Ireland
GDP	Gross Domestic Product
GNP	Gross National Product
GIB	Green Investment Bank
Green Deal	The Green Deal is a new way to pay for energy-saving home improvements in the UK
GVA	Gross Value Added
Gwh	Gigawatt hours
HEI	Higher Education Institution
IDA	International Development Association
IEA	International Energy Agency
IGA	Inter-Governmental Agreement
IMF	International Monetary Fund
INIS	Irish Naturalisation and Immigration Service
IRCHSS	Irish Research Council for the Humanities and Social Sciences
ITIC	Irish Tourist Industry Confederation
'Lincs project'	The Lincolnshire Wind Farm is a 270-megawatt (362,100 hp) wind farm under construction 8 kilometres (5.0 mi) off the east coast of England

MFF	Multiannual Financial Framework
NESTA	National Endowment for Science, Technology and the Arts (UK)
OECD	Organisation for Economic Co-operation and Development (OECD)
Ofgem	Office of the Gas and Electricity Markets (UK Energy Regulator)
ONS	Office of National Statistics
OSPAR	OSPAR is the mechanism by which fifteen Governments of the western coasts and catchments of Europe, together with the European Community, cooperate to protect the marine environment of the North-East Atlantic.
Peace IV	EU Programme for Peace and Reconciliation in Northern Ireland and the Border Region of Ireland
PF2	UK Private finance scheme to fund public infrastructure
RCUK	Research Councils UK
RE:FIT	Mayor of London's scheme to reduce carbon emissions in Greater London
Schengen	The Schengen Area comprises the territories of the European countries that have implemented the Schengen Agreement
SEM	Single Electricity Market (with an associated Committee)
SES	Single European Sky
SFI	Science Foundation Ireland
SME	Small and Medium Enterprises
TARGET	The euro payment system
TCD	Trinity College Dublin
Teagasc	The Irish Agriculture and Food Development Authority
TENs	Trans-European Networks
TIDA	Technology Innovation Development Award
TIVA	Trade in Value Added
TSB	Technology Strategy Board
UCD	University College Dublin
UKBA	UK Border Agency
UKTI	UK Trade and Investment

VFS	Visa Facilitation Services
Warm Front	The scheme provided grants to improve the heating and/or insulation in homes.
WTO	World Trade Organisation

PA offices worldwide



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