

Scottish Enterprise, Falkirk Council, Chemical
Sciences Scotland

Falkirk Grangemouth Framework for Growth



Final Report

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Executive Summary

This Framework focusses on the Falkirk Grangemouth area, identifying its economic development potential and how it can be realised. Grangemouth is at the heart of Scotland's chemicals industry and the country's largest port. The Falkirk Grangemouth Framework for Growth recognises the vital contribution made by the area and by this important sector to Scotland's economic health. By involving the public sector at all levels – the Scottish Government and its key departments, national government agencies and regulatory bodies, and Falkirk Council – working with international, national and locally significant businesses the framework supports the areas development as an

Investment Zone of National Significance - Scotland's National Centre of Excellence

The Framework has been prepared by a partnership involving Scottish Enterprise, Chemical Sciences Scotland and Falkirk Council. They have worked closely with representatives of local business and have agreed:

- A Vision for development of a low-carbon chemicals and logistics focussed Investment Zone.
- An Action Plan which enables the area's fullest potential to be realised and its contribution to national economic resurgence to be gained.

Potential

The economic potential of the Chemicals sector and the Falkirk Grangemouth area is substantial:

- Scotland's chemicals and related sectors generate over £14 billion in annual turnover.
- At over £160,000 per employee, average gross value added (GVA) is more than twice the manufacturing average.
- FalkirkGrangemouth's GVA per capita is the 4th highest in Scotland, after Edinburgh, Glasgow and Aberdeen.
- The area has one of the the highest concentrations of manufacturing industry of any area in Scotland with strengths in chemicals, engineering and related sectors such as logistics and distribution.
- It contains over 80% of the country's employment in organic and agri-chemicals.

The European chemicals sector has grown by over 3% annually over the last decade, with similar rates of growth expected to continue in the short to medium term. Scotland, with Grangemouth at its centre and the UK has shared in this growth. International and UK comparisons suggest that Grangemouth is at least comparable to other European locations and maintains a competitive edge in terms of energy. With the key skills, experience and capital investment in Scotland's Chemical cluster centred on Grangemouth, the area has an opportunity to lead in new product/service development and position itself in the vanguard of renewable energy/low carbon technology.

The Port of Grangemouth has significant potential for development, and the area's central location in the strategic road and rail network position the area well for logistics and distribution activity with scope for its development, recognised in NPF2 as a key distribution hub in Central Scotland..

Several strategic investments have taken place in Grangemouth in recent months, including Petrochina's acquisition of a 50% stake in the Grangemouth oil refinery; Aurelius acquisition of the former ICI complex, creating a new company 'Calachem'; and Forth Ports recent acquisition by Arcus Capital.

All of these are key elements in the repositioning or place-making of Falkirk Grangemouth as a national economic asset. They are allied to its potential for harnessing 'green' sector expansion and development, with the Helix, a national "Living Landmark" project which can act as a vibrant symbol of change.

Challenges

However, the area faces various challenges including:

- Its physical infrastructure: much of the area north of the M9 is affected by potential flood risk constraints; the capacity of key motorway junctions limits growth potential and a number of development opportunities; and there is a need for enhanced rail connections to the Port.
- The availability and effectiveness of strategic employment land, particularly given the current property market conditions.
- With a lower working age population in future, and a mainstream skills profile, the development of the chemicals and other sectors may be limited by a shortage of available and suitably qualified labour.
- Increasing competition from the Middle and Far East in the chemicals sector. Resources are increasingly being devoted to skills development, R&D , and product development. 'Competing' areas in the UK are adopting significant and targeted responses to this shift. A similar approach is needed if Grangemouth is to maintain its lead position.
- A low strategic profile. While Grangemouth is home to a number of leading international companies in the chemicals and other sectors, the business sector has maintained a low profile. This low profile is also reflected in strategic policy. The challenges facing its industries and the area generally requires a strategic repositioning to increase its profile as a priority for investment from both public and private sectors.

The Strategy

The strategy promotes the future development of the Grangemouth Falkirk area as an Investment Zone of national significance and one of Europe's leading innovation centres in the petrochemical and chemical sciences sectors. This will support the development of Scotland's renewable energy resources, complementing assets in wind and wave/marine energy. It highlights a developing role for the Port of Grangemouth, combining with

improved strategic road and rail infrastructure to position the area as a key logistics and distribution hub in Central Scotland.

The economic impact modelling of the partners vision suggests that major economic benefits can arise. By overcoming its current constraints and making its development opportunities effective, implementation of the Falkirk Grangemouth Investment Zone is anticipated to create:

- An estimated 6,000 jobs, some 4,650 being net additional jobs for Scotland by 2025.
- 2,300 net additional chemicals sector jobs, with a GVA per employee of £218,000 p.a.
- An additional 5,000 jobs locally.
- A combined GVA impact of £410m for the Scottish economy.

Five objectives with supporting activities have been developed to achieve this over the next 15-20 years:

1. Repositioning in the face of strategic market change

Developing Falkirk/Grangemouth's national and international presence and promoting its vision as a low carbon manufacturing and logistics hub in all relevant strategy and programme development

- Enhanced priority in the emerging National Planning Framework 3, Strategic Transport Projects Review etc.
- Repositioning to encourage effective national and City Region links.

Developing a focal point for higher education and research in the chemical sciences and low carbon sectors

- Develop Centres of Excellence for Scotland's Chemical Sciences cluster.
- Position Falkirk Grangemouth as one of Scotland's low carbon technology/green sector hubs.
- Ensure provision of business space to accommodate research-oriented businesses / spin out activity.
- Support for new/ local businesses in key sectors.
- Developing supporting site and transport infrastructure to position Falkirk Grangemouth as a key distribution hub in Central Scotland.
- Promote preferred sites through the Local Development Plan.

Developing the Helix as an icon of green tourism infrastructure.

Progress development of the Falkirk Gateway.

2. Flood prevention

Provide an effective operating environment for industry which minimises flood risk

- Develop a strategy to address flood constraints, while enabling business continuity and investment.

3. Enabling infrastructure to release capacity

Improve accessibility to the strategic road and rail network to address existing capacity issues and improve the area's profile as an investment location

- Prioritise and implement critical infrastructure projects: Junction 6 ; Specific port-related measures: enhanced road and rail access; Flood Alleviation measures; Progress agreement on upgrade of A801 Avon Gorge.
- Progress Tax Increment Financing bid as a means of enabling infrastructure provision.

Develop energy and other infrastructure with potential to generate business and community benefits.

- Prepare a medium to long term Energy Strategy.

4. Developing an enabling regulatory and planning environment

Support key sector development through strategic land allocations and an enabling development approach

- Develop streamlined planning & regulatory procedures.
- Harness fiscal incentives behind key sector development & diversification into areas of added value.
- Progress potential opportunities and benefits of Tax Increment Financing and Enterprise Zone status.

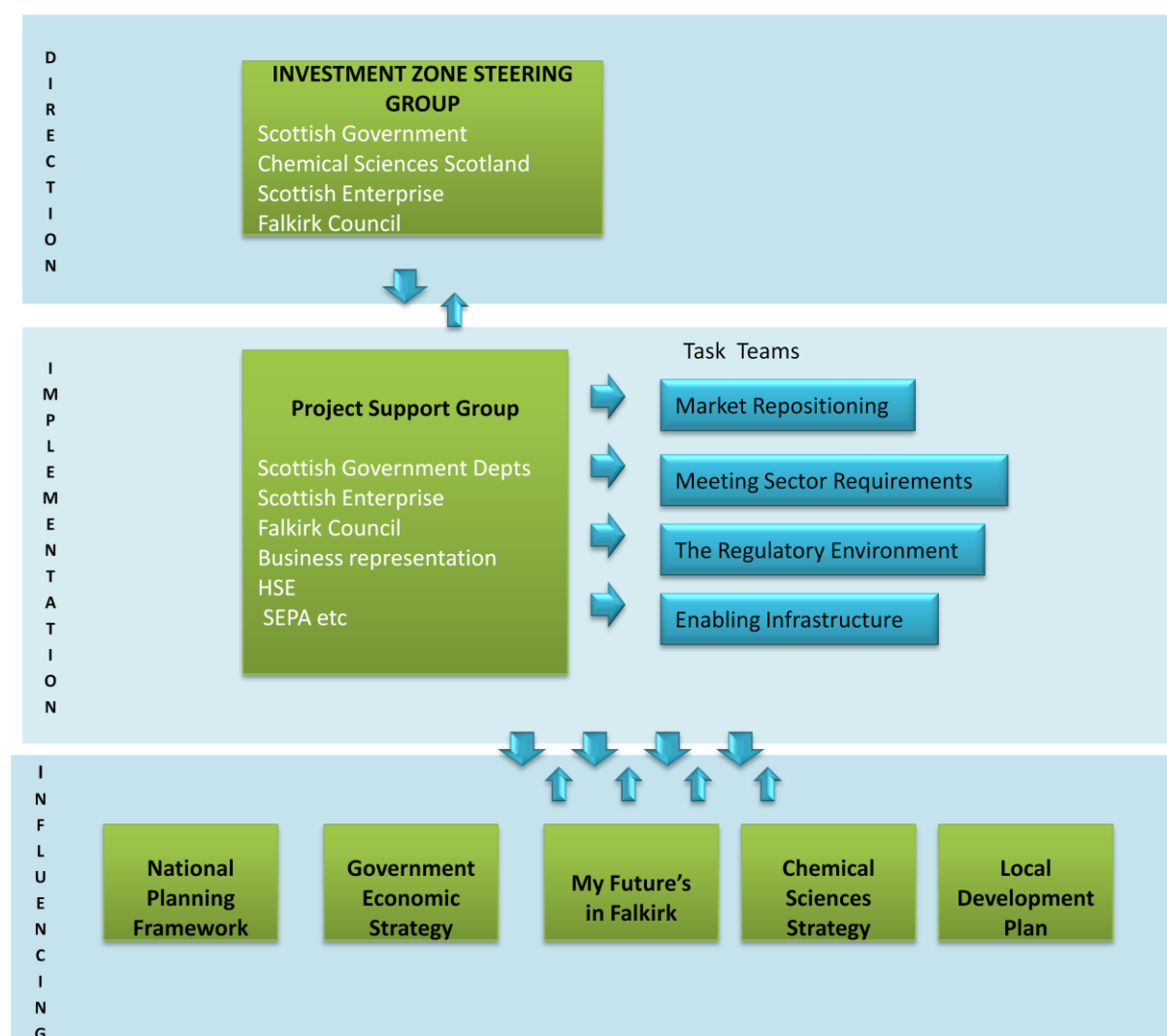
5. Business Leadership - Developing a strategic perspective of the Grangemouth/Falkirk area across the business base

Develop a common key sector business perspective of Falkirk Grangemouth's future growth and development

- Establish effective business-led chemicals sciences, low carbon & logistics network as influencing organisation for increased strategic priority.
- Develop added value activity in the Grangemouth chemicals sciences cluster to embed companies more deeply and build additional local capacity.
- Build business and commercial links to: promote local innovative product development and manufacturing; deepen business linkages within the Grangemouth cluster to identify areas of mutual benefit through collaboration.
- Effectively promote the Falkirk Grangemouth area to exploit product, knowledge transfer, and training opportunities in existing and developing markets.
- Collaborative development of a suite of targeted 'marketing' packages to UK and overseas markets.
- Inter-Sector Internationalisation & Partnering initiatives.
- Increased Government & Ministerial Engagement.

Next Steps

The Falkirk Grangemouth Investment Zone will be an initiative of national scale. It is one of the main elements evolving from the My Future's in Falkirk partnership and requires concentrated and prioritised resources for implementation. The approach to implementation needs to be fit for purpose. Those leading it need to exercise influence over a range of public sector bodies. Equally, it is vital that lead companies and the business sector generally is effectively engaged.





The preparation of this Framework is timely: initiatives such as Enterprise Zones and Tax Increment Financing are being brought forward to encourage business investment and raise finance to improve critical infrastructure in key locations. In other parts of the UK, these incentives are being coordinated in support of sectors identified as critical to future economic growth. The Falkirk Grangemouth Investment Zone needs to be able to offer comparable attractions to businesses in its target sectors.

Over the next 6 months, the delivery structure will be developed by Scottish Enterprise, Chemical Sciences Scotland and Falkirk Council and the partners will embark on steps to establish an Investment Zone of national significance in Falkirk Grangemouth.

1 INTRODUCTION

Context

- 1.1 Falkirk, Grangemouth and the Upper Forth is well established at the centre of Scotland (and the UK's) petrochemical industry. It has been, and continues to be home to world-leading companies in this sector. Given the presence of Scotland's principal container facilities at Grangemouth and its location relative to the M9/M876/M8 and Central Scotland's rail network, the area also has considerable strategic significance to the logistics, distribution and other sectors. Again, this is reflected in the presence of industry-leading companies in the area.
- 1.2 With a turnover of £9.3 billion, Scotland's chemical sciences and petro-chemical sector offers immense potential for further economic development, and is one of the highest value industries in the country. A significant proportion of this capacity is Grangemouth-based. The establishment of Chemical Sciences Scotland in 2007 recognises the sector's potential and provides an industry-wide platform for tackling key issues and harnessing opportunities. 
- 1.3 While market consolidation continues, the sector offers much potential for the coalescence of technologies on multiple technology platforms. The integration of renewable technologies, chemical sciences and petro-chemicals, and the recognition of the need for carbon balance provide a direction for understanding the capacity and capability of the Upper Forth area and developing its potential contribution to the wider economic benefit of Scotland.
- 1.4 One of the key roles of the Framework as it is developed and implemented will be to better position Falkirk, Grangemouth and the Upper Forth as a priority for investment: for available public sector resources and commitment; and to encourage and attract private sector investment related in particular to its key industrial sectors and extended more broadly.
- 1.5 National Planning Framework 2 provides some of the context for this: the Grangemouth Freight Hub is identified as one of 14 national developments; the Upper Forth (with 7 other areas) is identified as offering substantial strategic growth potential. NPF2 notes the economic success of these areas is dependent on good links to the rest of Scotland and externally and the need for investment in new or improved infrastructure to reflect economic development priorities; the Firth of Forth's role as a key strategic freight gateway is specifically referenced as is the potential for the further expansion of port capacity ; the Strategy maps portray the area as an International Gateway , in a Key Economic Corridor and on strategic transport routes; and the delivery of improvements in port, road and rail infrastructure to support Grangemouth's role as Scotland's largest container port and main freight distribution centre is one of the key Actions identified in NPF2's Action Plan. 
- 1.6 My Future's in Falkirk has developed as a partnership between the private and public sectors to foster economic growth and innovation across the area. In the context of

developing suitable Business Locations to support growth and ideal business environments its latest review, “The Way Forward” stresses the importance of Falkirk-Grangemouth as a strategic investment location, improved strategic links, investment in Grangemouth’s petrochemicals and chemicals sector and promoting careers in science and technology.

- 1.7 This Framework looks to build on the economic potential of the Falkirk and Grangemouth area – its central location, key assets in the Port, chemicals sciences and motorway connections, and the strengths of its business base - to reinvigorate its economy, attract new investment and create sustainable jobs.
- 1.8 It has been commissioned by Scottish Enterprise, working with Chemical Sciences Scotland and Falkirk Council and prepared by Roger Tym & Partners, with Ironside Farrar.
- 1.9 Its findings and recommendations are based on: analysis of the chemical sciences sectors, logistics and other key sectors influencing economic growth in the area; surveys of businesses operating in the area and across the key sectors; and comparisons with other major investment locations for investment in petrochemicals and the chemical sciences sector.
- 1.10 The current planning policy framework and the way it contributes to the area’s economic growth priorities has also been examined, alongside consideration of the effects of existing road, rail and distribution infrastructure in positioning the area. The delivery of proposed infrastructure improvements is a critical consideration, and those preparing the Framework have liaised closely with Falkirk Council and others regarding the application of approaches such as tax Increment financing in the area.
- 1.11 The Framework also recognises the major investment already made in the area from within the business base. Key businesses have been closely involved in developing the Framework from the start of the process: in helping to scope the work at the outset; through individual discussions with the project team; and in a series of strategy workshops held to consider priority issues for businesses, the scale of ambition the area should adopt, and their potential role in helping to reposition the area as one of Scotland’s main economic drivers.

2 A VISION FOR FALKIRK AND GRANGEMOUTH'S INDUSTRIAL BASE IN 2030

- 2.1 A statement of ambition has been evolved from the baseline analysis and comparator studies, consideration of the key challenges facing the Falkirk Grangemouth area, and stakeholder consultation involving local businesses, Falkirk Council, Scottish Enterprise, regulatory bodies, and other partners.
- 2.2 The Vision recognises:
- The national and international contribution the chemical sciences sector makes both to the Scottish economy and as the mainstay of the manufacturing sector in Grangemouth and Falkirk: this needs to be maintained and adapted to respond to market trends, technological change and an increased emphasis on carbon reduction.
 - The key role Grangemouth Port plays: the port handles approximately 9m tonnes of cargo per annum and is Scotland's largest Port. Grangemouth is also the largest container terminal in Scotland handling some 230,000 TEU per annum. Its capacity needs to be further developed to assist the development of chemical sciences and other national growth sectors and to better position the area as a logistics and distribution hub associated with low carbon economy.
 - Falkirk and Grangemouth's central position relative to strategic road and rail infrastructure: the area is readily accessed from Scotland's main economic centres with the Port offering inter-modal transportation facilities and economic access to overseas markets. It needs to compete more actively for investment in the logistics and distribution sectors if this is to be fully exploited.
 - The interaction between the business and wider community in the area: over the last century Grangemouth's economic and industrial development has proceeded in tandem with that of neighbouring residential communities. While traditionally, this was linked to proximity to work, environmental considerations increasingly influence the relationship. While Grangemouth's chemicals and refining sectors now offer a lead in managing environmental risk, this - and the significant economic contribution the industry makes needs to be more widely appreciated. The framework needs to manage sector growth and development alongside community and environmental considerations.
 - The prospect of establishing a position in the vanguard of low carbon industrial development combining the potential offered by:
 - chemical-science based research and manufacturing to bring forward new carbon-efficient products;
 - a clear and lead role for the multi-modal infrastructure at the Port of Grangemouth in reducing long distance freight movements by road
 - locating bio-mass/bio-fuel and or shared energy generation in and around the area; and
 - the development of the Helix , which straddles Falkirk and Grangemouth and offers a potential symbol of the dynamism and adaptation within the local economy.

- 2.3 The Vision includes a number of Ambitions – statements of intent – supporting Falkirk/Grangemouth's development as an

Investment Zone of National Significance
- Scotland's National Centre of Excellence

- 2.4 The Vision for Grangemouth, Falkirk and neighbouring areas sees:

Falkirk/Grangemouth recognised in Scotland, the UK and abroad as the leading UK destination in the EU Innovation Union for new investment in chemical sciences and low carbon applied research, carbon capture and the development, demonstration and delivery of innovation associated with new technologies, applied sciences and advanced manufacturing.

- Grangemouth develops a lead research and production capacity in the EU in bio-refining and industrial biotechnologies.
- Recognising Grangemouth's best practice expertise and experience, Centres of Excellence are established linking the application and commercialisation of chemical sciences with the research, academic and industry base.
- A Centre of Excellence is established for skills in current and future technologies.
- Integrated supply chains create deeper connections to and integration between businesses in the area and industry in Scotland, the UK and EU.
- The EU's largest concentration of technologists working on industry based projects/challenges outside a university base is enabled.
- The stock of brownfield land adjacent to INEOS and CalaChem is fully developed within 15 years.

Grangemouth continue to grow its role as Scotland's busiest port, supported by fully integrated road – rail – sea infrastructure. Falkirk/ Grangemouth exploits its central location and becomes the key logistics location in East Central Scotland offering swift and efficient access to domestic and overseas markets.

- The port benefits from improved rail-freight linkages and enhanced connections to the strategic rail network
- Brownfield port land and port infrastructure is improved and productively used, exploiting opportunities for energy generation as well as logistics and distribution uses
- Port, logistics and industrial areas are supported by high capacity road, energy and flood prevention infrastructure
- High quality, modern distribution (and industrial) sites located close to key junctions are identified, serviced, developed and occupied taking advantage of proximity to the M9 and Grangemouth Port
- Enhanced road connections are put in place to the principal road network associated with improved network connections and upgrading of key junctions

Place-making and place-branding boosting business and investment confidence across all sectors improve the area's attraction to skilled and higher value employees and their families

- The majority of the Falkirk Gateway area is developed
- The Helix raises the national and international profile of the area, benefitting business and tourism investment while also boosting local confidence. It becomes established as one of Scotland's top visitor attractions. Over 300,000 visits are made to the Helix annually, boosting local tourism revenue
- Falkirk Grangemouth is established as a business conferencing location, based on its accessibility and high profile in the low carbon and chemical science sectors
- New, sustainable communities are developed in areas including Whitecross and Portdownie, with opportunities for skilled residents to work locally and entrepreneurs to develop business opportunities in the area.

There is a positive relationship between businesses and residential communities which encourages the sustainable growth of key sectors, working with the areas environmental assets.

- Grangemouth's industrial base continues to lead practice in minimising the environmental effects of business activity
- Local and wider communities are aware of the economic significance of the chemicals sector, its importance to the local area and are involved in managing its impacts on the environment
- The Helix builds links between Falkirk and Grangemouth, while promoting sustainable, low carbon growth
- Opportunities in the Upper Forth to promote green infrastructure and environmental benefits for residents and business are realised.

3 KEY ISSUES & CHALLENGES

- 3.1 The Vision statement recognises Falkirk and Grangemouth's potential to further develop as a key driver of Scotland's economy based on a lead role in chemical sciences, petrochemicals, distribution and logistics.
- 3.2 In trying to achieve its goals, the Framework acknowledges a number of challenges in developing the area's business infrastructure and developing its profile.
- 3.3 This chapter presents a position statement, describing:
- How the area performs at the moment economically.
 - How key businesses view the area and its prospects, as well as the key market challenges it faces.
 - Policy aspirations and how planning and other policy frameworks contribute to them.

The Economy and its Performance

Population

- 3.4 In 2009 Falkirk's population was 152,500 with a further 673,000 in the wider labour market area¹. 16% of Scotland population lives in this combined area. At 65%, the proportion of working age residents reflects the picture across Scotland
- 3.5 Scotland's population is forecast to increase to 2033, with growth mainly in the pensionable age-group (65+). At the same time Falkirk is forecast to see a 13% increase and while its working age population should increase by around 2,100 (2%), most of the growth - 17,300 - will be in age brackets 65 and above. Decline or low growth of the working age population presents a potential challenge for employers. In consultation, some of the major employers already suggest their workforce is ageing with few younger employees coming through with the relevant skillset. In the on-line business survey conducted, just under 2 in 5 respondents thought availability of labour was 'very weak' or 'weak'.
- 3.6 If employers and potential investors are to invest in the area, there need to be sufficient staff with relevant skills available.

Employment

- 3.7 There are nearly 60,000 jobs in the Falkirk Council area, 14% of which (8,300) are in manufacturing. This compares with a national average of 8.7%, demonstrating its continuing importance in the Falkirk Grangemouth area. The chemicals sector underpins this activity, directly accounting for more than 30% of manufacturing employment locally.²

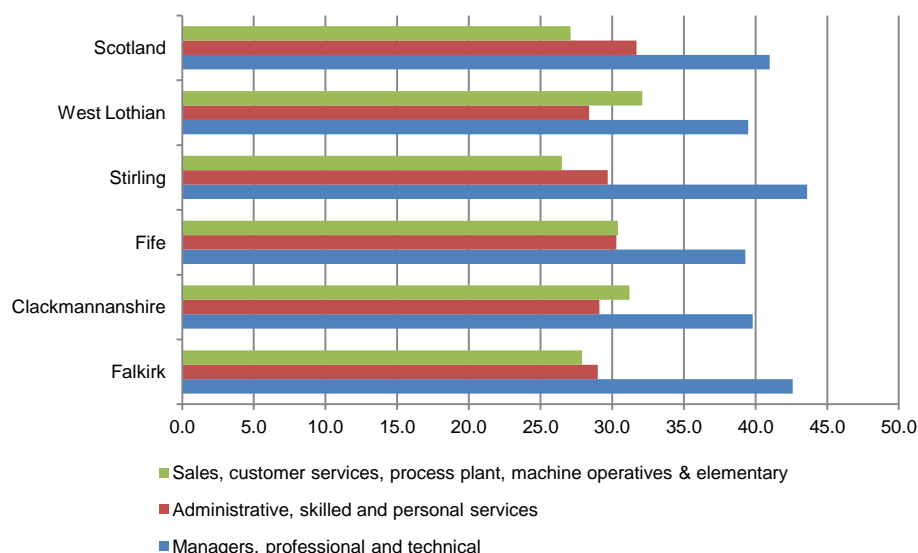
¹ Including Fife, Clackmannanshire, West Lothian and Stirling Council areas

² Using SIC 2003 category 24 'Manufacture of Chemicals and Chemical Products' to proxy direct chemicals jobs.

- 3.8 The transport & communications sector accounts for nearly 7% of the areas employment, compared with a Scottish average of just over 5%. Its Central Scotland location, proximity to the M9 and the Port of Grangemouth are key factors. Chemicals-related freight and logistics will support a large number of jobs in the sector

Occupations

- 3.9 The concentration of manufacturing activity is not necessarily reflected in the areas occupational profile.



As shown, this is broadly similar to national patterns, possibly an indication of the highly capitalised nature of the chemicals sector.

Economic Activity

- 3.10 Rates of economic activity and employment are slightly higher in Falkirk than nationally. There are fewer self-employed and similar proportions of unemployed people. Economic activity rates and employment rates are also similar to or above the national average in the wider labour catchment area, suggesting a broad base of available labour. However, there are some concerns that the area's sectoral concentrations in manufacturing, construction and the public sector – sectors which are vulnerable in the current economic downturn - may affect its resilience in the short term..
- 3.11 Economic inactivity rates are correspondingly lower in Falkirk and the wider labour catchment than national averages. 7,000 of Falkirk's economically inactive residents want a job (7.1%), which is a higher rate than Scotland (5.6%), suggesting a potential labour force willing to work should suitable opportunities be available.

Qualifications

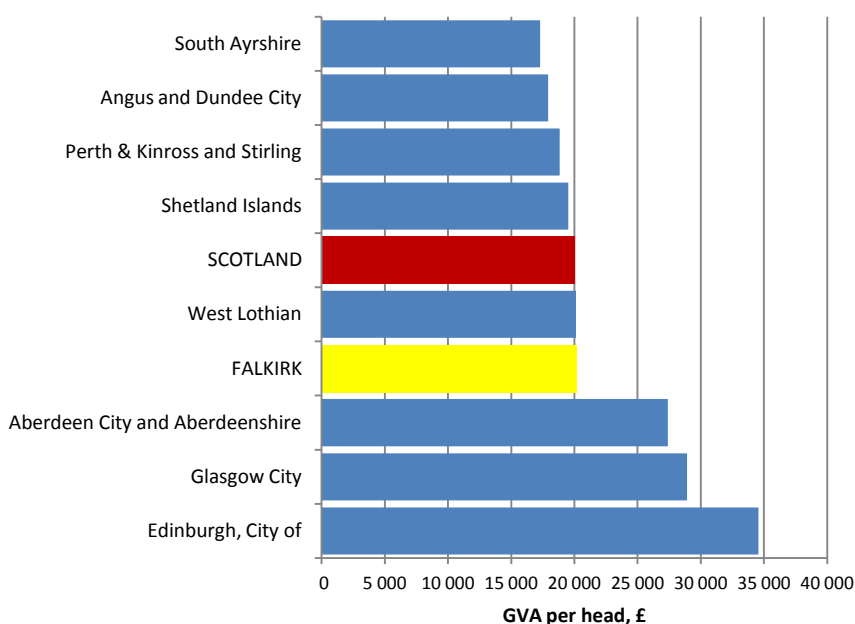
- 3.12 Falkirk has a lower proportion of residents with no qualifications than the national average but also fewer well qualified people.

Chemical Sciences

- 3.13 The chemicals industry generates global revenues of \$2,100 bn³ and has been growing at an average of 3.3% over the past decade. The European Chemical Industry Council expects the EU industry to grow at around 2.9% in the short term. However, the chemicals industry is fragmented, with the top 25 companies accounting for less than 30% of the market⁴, and large mergers and acquisitions (M&A) activity resulting in changed ownership and investment patterns. In 15 years, 50% of the top 50 chemical companies disappeared, with others re-grouping and new companies forming. CSS expects the restructuring of the industry to continue for some time, as the western oil majors' exit from chemicals and acquisition of Western technology by growing Asian companies are still at an early stage⁵.
- 3.14 In the UK, the chemicals industry employs 214,000 people, generating £34bn in revenue, and contributing a £4.5bn trade surplus⁶. Chemicals accounted for some 11% of manufacturing gross value added and has had an average growth rate of 2.9% per annum over the last decade⁷.
- 3.15 Over the last 3 to 4 years, there has been capital investment of at least £200 million in the Grangemouth facilities of some of the sector's leading companies including Ineos, Fujifilm, Syngenta and Dow. Repair and maintenance expenditure exceeds £100 million annually.

Scotland

- 3.16 Gross Value Added (GVA) in the Scottish chemicals sector in 2008 was £1.96 bn with a turnover of £14 bn. It employed 14,000 skilled staff⁸, with an estimated 70,000 jobs dependent on it⁹. At £161,000, average GVA per employee is 2.5 times the level of manufacturing as a whole (£66,000).



³ Source: CEFIC (European Chemical Industry Council), quoted in Chemical Sciences Scotland: *The Formula for Success: A Strategic Plan for the Chemical Sciences in Scotland*, p.7

⁴ Source: Chemical Sciences Scotland: *The Formula for Success: A Strategic Plan for the Chemical Sciences in Scotland*, p.7

⁵ as above

⁶ as above p.9

⁷ as above

⁸ Source: Scottish Government: *Scottish Annual Business Statistics, 2008*

⁹ Source: Chemical Sciences Scotland: *The Formula for Success: A Strategic Plan for the Chemical Sciences in Scotland*, p.11

Labour costs per employee (£37,000) are also some 15% higher compared to the manufacturing sector as a whole (£32,000)¹⁰. The value of the sector locally is shown above. Falkirk's GVA per capita is fourth highest in Scotland

Comparator Areas

3.17 France, Germany, Belgium and other parts of the UK have been identified by Scottish Development International (SDI) as Scotland's key competitors¹¹. Over 20 interviews were carried out with key decision makers in the fine and speciality chemicals sector to establish what shaped investment decisions. The findings highlighted:

- Companies did not appear to have particular activities or processes to identify potential destinations for new investment.
- Proximity to customers, co-location with existing company facilities, economies of scale, and fit with company strategy were the main reasons for location selection.
- Little options analysis in decision-making.
- Scotland was rarely considered as a potential location, and where it was, decision-makers were concerned about distance to markets and logistics¹².

Market Share

- Scotland accounts for 2.7% of the European market share for speciality chemicals, compared to 24.4% in Germany, 13.1% in France, and 8.2% for the rest of the UK.

Market Access

- Germany, France and Belgium benefit from their location in central mainland Europe, with close access to key suppliers and the emerging economies of Eastern Europe. The UK and Scotland are more peripheral to the European markets but do have deep water East-Coast ports giving access to Europe.

Specialist Industrial Infrastructure

- Germany benefits from highly developed infrastructure with most sites operating their own power stations and many parks accessing existing waste treatment services, water and energy, shared maintenance and logistics services. France has innovation clusters with additional R&D funding from government for private firms. Belgium also has developed infrastructure around the main chemical producing sites with a highly developed logistics infrastructure. In the rest of the UK there are three key regions where chemicals cluster: the North West and North East of England, and Yorkshire and Humber. The main chemical industry clusters also include academic centres with specialist expertise. The chemicals cluster in Grangemouth is based around the Ineos plant with other speciality chemicals facilities such as Calachem and Fujifilm in the area.

¹⁰ Source: Scottish Government: *Scottish Annual Business Statistics, 2008*

¹¹ Scottish Development International, Optimat (May 2010) *SDI Fine and Speciality Chemicals*

¹² Source: Scottish Development International, Optimat (May 2010) *SDI Fine and Speciality Chemicals*, p. 8-9

While it does not benefit from integrated shared infrastructure, a number of agreements between companies are in place for the supply of electricity, steam etc.

Transport Infrastructure

- Germany has a good transport infrastructure with planned investment in autobahns in Northern regions and its rail system. France also has good road and rail links, as well as 80 airports and five of Europe's main sea ports. Belgium is well-located in Central Europe and has three major seaports, as well as access to raw materials through the Western European pipeline network. The rest of UK and Scotland suffer from their location on the periphery of Europe, but it is investing in infrastructure, including the additional runway at Heathrow and upgrades to the motorways in Scotland.

Energy Costs

- Scotland's average energy price (p/kWH Jan-Jun 2009) was second-lowest (9.51) to France (6.67), ahead of Belgium (9.72) and Germany (9.73). France's prices reflect their cost-effective nuclear generation.

R&D

- All of the locations have developed research infrastructure. Many of Germany's chemicals parks have pilot plants available for rent, meaning flexible access for start-up companies.
- However, Scotland's industrial funding for R&D is the lowest of the comparators, at 0.48% compared to the rest of the UK (1.11%), Belgium (1.24%), France (1.27%) and Germany (1.83%). This reflects the nature of the companies in Scotland

Ease of Doing Business

- The UK ranked 5th in the World Bank Doing Business Rankings, compared to 22 for Belgium, 25 for Germany and 31 for France. However, anecdotal evidence from the study's consultation found that other countries were better at providing speedy access to decision-makers to potential investors.

- 3.18 The North West of England is a useful comparator. While considerably larger, it is a similarly industrial location, with a history of manufacturing, concentrations of the chemicals industry and good links to academia. The North West Regional Development Agency (NWRDA) *Chemicals Sector Strategy for England's North West* notes similar challenges to those facing Grangemouth, including: increasing investment in India, China and the Middle East; European legislation and regulation; ageing demographics; lack of a networking supply chain; and a lack of investment in skills. The strategy suggests exploiting the region's expertise in chemistry as well as enabling and support fields. It suggests a focussed intervention in a small number of industries, including printed electronics, automotive, wind/tidal generation, built environment and industrial biotechnology.
- 3.19 In broad terms, the supporting actions are similar to those which might be promoted for the Grangemouth. They include: setting up networking and collaborative groups to encourage joint working and ensure collaboration; effectively engaging with the media to ensure the value of the chemicals industry is known and understood; ensuring the right supply of

labour with the right skills required; encouraging excellence and capability in all areas of the industry, including the supply chain; and creating an environment and infrastructure that encourages commercial innovation.

Elite Technology and Innovation Centre

- 3.20 The development of an elite technology innovation centre has recently been announced by the UK Government¹³, comprising a consortium made up of The Centre for Process Innovation (CPI), The Advanced Manufacturing Research Centre (AMRC), The Advanced Forming Research Centre (AFRC), The Manufacturing Technology Centre (MTC), The Nuclear AMRC, and The National Composites Centre and Warwick Manufacturing Group. This is part of the Government's plans to invest over £200m in a network of technology and innovation centres. The new centre will focus on high value manufacturing and will draw on university research to accelerate the development and commercialisation of new technologies. There would appear to be an opportunity for Falkirk/Grangemouth to position itself as part of the UK Governments network of such centres.

Key Issues & Challenges

Falkirk has a strong base of manufacturing sector activity, anchored by an established concentration of mainly large, international businesses in the chemical sciences and related sectors. Its contribution to GVA is significant, helping to position Falkirk as the fourth highest generator of GVA per capita in Scotland and highest Local Authority contributor to Scotland's manufacturing GVA (11% of the total)¹⁴

The ongoing health of the sector will be subject to a number of challenges:

- Increasing competition from the Middle and Far East, which benefit from cheaper feedstocks and closer market proximity. While this tends to be process focussed at present resources are increasingly being devoted to skills development, R&D, and product development; Grangemouth needs to maintain and build its position as a leading chemicals location.
- With a lower proportion of the population of working age forecast in the future, and the area's mainstream skills profile, there is a risk that the development of the chemicals and other sectors could be limited in the future by a shortage of available and suitably qualified labour.
- However, analysis suggests that the area is at least comparable to a number of other European locations and maintains a competitive edge in terms of energy.
- 'Competing' areas in the UK are adopting targeted strategic responses to the shift in the balance of activity towards the Middle and Far East. These emphasise their sectoral production strengths, quality of available labour, research and development strengths and academic linkages. A similar approach is required at Grangemouth to maintain its relative market position.

¹³ www.uk-cpi.com/3_pages/media-centre/news/2011/cpi-technology-innovation-centre.html

¹⁴ <http://www.scotland.gov.uk/Resource/Doc/933/0104838.pdf>

Business Perspectives

Key Issues & Challenges

The first workshop established that in the absence of co-ordinated action, businesses feared prospects for the industry were between steady-state and decline. Moving forward, the challenge is to embed national and international companies while further developing the innovative aspects of the chemicals sector in the area.

In a combination of individual and collective discussions, the following key constraints were identified in terms of infrastructure:

- Addressing potential flooding constraints (through a clear strategic plan to address flood risk and working with environmental agencies, understanding the potential risk to energy supply through flooding).
- Road improvements (including improvements to Junction 6).
- Rail improvements, particularly to the Port.
- The development of energy infrastructure (including the need to investigate options for shared energy infrastructure, potentially through the use of surplus energy on sites).

Business also identified potential for regulatory improvements which may assist investment decisions, including;

- Speeding up decision-making.
- Provision of clear guidance and advisory services for new and indigenous companies making planning applications or looking to invest.
- Consideration of accelerated planning zones.
- Using the environmental and regulatory framework to the advantage of the area – as a unique selling point.

Businesses generally felt staff availability was good and one of the area's locational strengths, although staff retention can be an issue due to competition for skilled labour. Forth Valley College provides related training courses where training cannot be carried out in-house, although several companies would prefer to be able to provide bespoke courses if there were combined opportunities with other businesses.

A number of companies have developed research relationships with the University sector and these collaborations are generally seen to be successful. For others, lack of resources in the current climate restricts research capacity.

Businesses suggested Falkirk Grangemouth faces challenges in responding to changing sources of raw materials to the chemicals industry and increasing investment in the Middle and Far East. The area's strengths include skilled labour, the supply chain, intellectual property and R&D activity of the business base. Innovation is seen as key to Grangemouth's future, building on and improving the existing skilled workforce and infrastructure.

Spatial Planning & Environmental Management

Policy Framework

National Planning Framework

- 3.21 The NPF2 includes the Grangemouth Freight Hub as a strategic development of national importance in maintaining and increasing Scotland's economic growth. The Upper Forth area is also recognised as part of a strategic cluster of related industries and business activity. The central Scotland area, including Falkirk Grangemouth is an area with strategic growth potential, but the potential requires essential investment in infrastructure. NPF2 identifies new investment in infrastructure in the Upper Forth area that offers the potential to grow the economy regionally and act as a driver for the wider Scottish economy.

Scottish Planning Policy Framework

- 3.22 The Scottish Planning Policy, in conjunction with the NPF2, is a statement of Governments policy on land use planning and aims to assist with the five strategic objectives: wealthier and fairer; greener; smarter; safer and stronger and healthier. The SPP also sets out that the planning system should be plan-led with Structure Plans according with both the SPP & NPF2 and directing development towards areas which will be identified within Local Plans.
- 3.23 The SPP supports the Scottish Government's Economic Strategy which set out how sustainable economic development can be achieved and dictates that a plan-led system promoting development at appropriate locations maximises national economic potential and the opportunities in key sectors.
- 3.24 The Falkirk-Grangemouth area is recognised as a location of growth potential in the National Planning Framework, Structure Plan and Local Plan.

Falkirk Development Framework

Structure Plan

- 3.25 The Structure Plan for Falkirk sets out the vision and lays the foundation for development in the Falkirk-Grangemouth region up to 2020: Promoting Sustainable Growth in all our Communities. The Key Diagram identifies the Falkirk-Grangemouth area as a Strategic Development Area. The local plan will detail site specific policies to maximise the potential which the designation offers for economic growth.

Local Plan

- 3.26 The Falkirk Council Local Plan is the detailed planning framework and includes policies and site specific proposals which accord with the strategic vision of the Structure Plan. The plan supports the Structure Plan by promoting developments which best address the issues of improving environmental quality, sustaining communities, building economic prosperity and releasing opportunity to secure the upgrading of transport infrastructure.

Environmental Policy Framework

- 3.27 The Forth of Forth forms the estuary of the River Forth extending from the tidal water limit at Stirling to the Isle of May the Forth (96km) and covers an area of 1,670km² with

extensive designated areas including SPA, RAMSAR site and SSSI. The Firth of Forth is an internationally recognised site and an important resource contributing to Scotland's economic, social and environmental quality. It is a major commercial area with around one quarter of Scotland's population in or near its shores. A key centre for the chemical sciences, oil and port related industries that include Scotland's largest dock complex at Grangemouth.

- 3.28 Climate change, place making and protecting, enhancing environmental and assets and their management (urban / rural / natural environments) is a key aim of sustainable growth. The Forth Estuary offers significant opportunity to address issues associated with climate change and mitigate flood risk in the Falkirk-Grangemouth area.
- 3.29 In developing a transformational landscape over 300 ha. between Falkirk and Grangemouth, the Helix is adopting a low-carbon, environmentally aware approach. Grangemouth Transition Town is also working to reduce the community's reliance on fossil fuels in the face of climate change and peak oil and is developing a range of community-based projects to promote low carbon lifestyles (e.g. local food production, bicycle library and provision of information on energy consumption).

Key Issues & Challenges

Sustainable economic growth with its focus on a more integrated management approach needs to secure closer links between the region's economic, social and environmental development needs. This should seek to secure added value and wherever possible real additionality and net sustainability gains from economic investment. The Falkirk-Grangemouth area presents clear opportunities to contribute to Scotland's national targets associated with:

- Climate Change and mitigating the risks and economic cost of flooding.
- Place-making and the strengthening Falkirk-Grangemouth as a key urban / industrial / environmental location with a distinctive and quality offer.
- Promoting integrated environmental management and the value of high quality environmental stewardship.

Falkirk-Grangemouth should seek to secure a position that demonstrates the capacity to deliver economic gains alongside environmental enhancement and promote the location as an exemplar in spatial planning; planning and consent procedures and integrated environmental management.

The key challenges for the area in promoting economic development relate to existing infrastructure capacity and securing transformational change in place perceptions that give recognition to the area's economic, people and place assets that build on:

- Falkirk-Grangemouth as an Industrial /Manufacturing and Logistics complex.
- Falkirk Helix and the wider Central Scotland Green Network.
- Promote opportunity and integrated management within the Upper Forth.

Forward spatial planning is critical to this challenge where key industrial sectors have special needs associated with Consultation Zones (HSE); Permitted Development Rights (PD); Utility

& Service Requirements and Specialised Employment and Training Needs.

Identifying consent processes that offer more assurance and clarity to major development; fast-track consent processes and allow more pro-active consultation and engagement could assist.

Critical to any future spatial plan for the Falkirk Grangemouth area is the closer alignment of community planning, infrastructure capacity and flood risk and management in delivering employment land that is market ready, serviced and capable of meeting international, national and indigenous company needs.

Falkirk-Grangemouth needs to offer competitive place benefits to future investors that reflect its standing as a strategic business location in key growth sectors. Investors are seeking a high quality employee base linked to suitable market ready, competitive and serviced employment land with a clear planning and policy framework supportive to investment.

Moving Forward

The key opportunities and action plan agenda for the Upper Forth Development Framework associated with the Spatial Planning need to advance:

- Development Land Supply linked to Enabling Infrastructure
 - Strategic Site Allocations
 - Port & Port Related Sites
 - Key Sector Sites
- Climate Change Adaptation
 - Flood Risk Management
 - Low Carbon Futures / Transition Town
 - Upper Forth Management
- Community Development
 - Community Planning & Skills Development
- Place Making
 - Developing the Helix
 - Promoting Urban Quality & Green Networks
 - Promoting Grangemouth Transition Town
- Planning through Positive Engagement
 - Enabling Planning & Compliance Processes
 - Engagement

4 MOVING FORWARD

4.1 There is a clear vision for the future development of the Grangemouth Falkirk area as one Europe's leading centres for innovation in the petrochemical and chemical sciences sectors. This will support the development of Scotland's renewable energy resources, effectively providing a third strand, complementing assets in wind and wave/marine energy. The Vision also highlights a developing role for the Port of Grangemouth, combining with improved strategic road and rail infrastructure to position the area as East Central Scotland's logistics and distribution hub.

4.2 Five supporting strands have been developed with the aim of achieving the Vision over the next 15-20 years:

1. Repositioning the area in the face of strategic market change

- Building Falkirk/Grangemouth's priority in strategy, policy and ultimately resource allocations linked to implementation programmes.
- Promoting the area's long term direction as a manufacturing and logistics hub in all relevant strategy and programme development.
- Developing physical and organisational infrastructure to position the area as a focal point for higher education and research activity in chemical sciences and the low carbon sectors.
- Supporting improved site and transport infrastructure to position Falkirk Grangemouth as East Central Scotland's main distribution hub.
- Developing the Helix as an iconic element of green tourism infrastructure.

2. Flood Prevention

- Providing an effective operating environment for industry and encouraging investment by minimising flood risk.

3. Enabling infrastructure to release capacity

- Improving accessibility to the strategic road and rail network to address existing capacity issues and improve the area's profile as an investment location.
- Developing energy and other infrastructure with potential to generate business and community benefits.

4. An enabling regulatory and planning environment

- Supporting key sector development through strategic land allocations and an enabling development approach.
- Promoting Falkirk Grangemouth as an area which combines the highest industry standards with a positive compliance approach.

5. Business Leadership - Building a strategic perspective of the Grangemouth/Falkirk area across the business base

- Establishing a common key sector business perspective behind Falkirk Grangemouth's future growth and development.

- Exploiting product, knowledge transfer, and training opportunities in existing and developing markets.
- Developing added value activity in the Grangemouth chemicals sciences cluster to embed companies more deeply and build additional local capacity.

Action Planning

- 4.3 The Action Plan identifies the key supporting actions required in each area, highlighting lead and support partners, and the likely timescale for delivery. In the schedules below: S denotes short term (0-2 years); M denotes medium term (3-10 years); and L indicates long term (10 years plus). Figures 4.1 and 4.2 spatially illustrate the Action Plan and its phasing.

6. Repositioning in the face of strategic market change

<i>Develop Falkirk/Grangemouth's priority in terms of strategy, policy and ultimately resource allocations linked to implementation programmes. Promote the area's long term direction as a low carbon manufacturing and logistics hub in all relevant strategy and programme development</i>			
1	Enhance area priority in emerging National Planning Framework 3, building on NPF 2's infrastructure focus while emphasising the need to maintain & develop the area's industrial asset base		
	Liaison with Scottish Government. Submission of supporting cases with delivery emphasis	S-M	FC, SE (Private sector)
2	Reposition the area as part of SESPLAN SPD/Glasgow to encourage City Region links and supporting actions		
	Liaison with City region counterparts. Submission of supporting cases with delivery emphasis	S-M	FC, SE (Private sector)

<i>Developing physical and organisational infrastructure to position the area as a focal point for higher education and research activity in chemical sciences and the low carbon sectors</i>			
3	Develop Centres of Excellence for Scotland's Chemical Sciences cluster		
	Discussions with sector lead Universities (Strathclyde, Dundee, Herriot Watt, Napier EastChem, West Chem etc)	S	CSS, Private sector
	Liaison between Forth Valley College/ key businesses and CSS to develop broader range of generic technician grade courses, including examination of apprenticeship opportunities)	S-M	CSS, FVC, Private sector
4	Position Falkirk Grangemouth as one of Scotland's new low carbon technology/green sector hubs.		
	Business liaison to identify opportunities for research sponsorship/ secondments/ collaboration	S	SE, Private Sector, HEIs(SFC)
	Specification and identification of potential sites & buildings	S	SE, Private Sector
	Preparation of development brief and implementation	S-M	SE, FC
	Identify further opportunities for partnering between Forth Valley College/ University sector and key businesses	S	CSS, FVC, HEIs,
	Develop a baseline position to understand the carbon impacts of Grangemouth's businesses, and monitor carbon emissions	S-M	FC

<i>Developing physical and organisational infrastructure to position the area as a focal point for higher education and research activity in chemical sciences and the low carbon sectors</i>			
	as the Action Plan is developed.		
5	Ensure provision of business space to accommodate research-oriented businesses / spin out activity		
	Specification and identification of potential sites & buildings	S-M	SE, Private Sector
6	Supporting new/ local businesses in key sectors		
	Package business development and marketing packages for key sector businesses/ new starts and SMEs	S	SE,F4B (Business Gateway)

<i>Develop supporting site and transport infrastructure to position Falkirk Grangemouth as East Central Scotland's main distribution hub.</i>			
7	Identification of preferred sites for logistics and distribution development to be promoted through the Local Development Plan		
	Establish 10 - 15 year requirement, identify and allocate appropriate sites close to M9 and Grangemouth Port.	S	FC, private sector
	Preparation of development briefs for key sites followed by Masterplan preparation	S-M	FC, Private sector
	Related junction/ infrastructure works(where required)	M-L	FC, private sector

<i>Develop the Helix as an iconic element of green tourism infrastructure</i>			
8	Complete capital phase and develop business development role in sustainable development and tourism sectors	S-M	FC, BWS

<i>Progress development of the Falkirk Gateway</i>			
9	Exploit linkages to the Helix and growth in key sectors to secure development of the Falkirk Gateway for a range of employment uses.	S-M-L	FC,Private sector

7. Flood prevention

<i>Provide an effective operating environment for industry which minimises flood risk</i>			
1	Make provision for a practical approach to addressing the areas flood constraints, while enabling continued business investment.		
	Prepare series of incremental flood defence projects	S-M	FC, HSE, private sector

8. Enabling infrastructure to release capacity

<i>Improve accessibility to the strategic road and rail network to address existing capacity issues and improve the area's profile as an investment location</i>			
1	Progress and prioritise NPF2 projects		
	Prioritise transport infrastructure initiatives, recognising the current requirements of industry as well as longer term strategic objectives. Cost as part of EZ/TIF approaches	S-M	FC

Improve accessibility to the strategic road and rail network to address existing capacity issues and improve the area's profile as an investment location			
	1. Junction 6 Interim	S	FC, TS
	2. Specific port-related measures: enhanced road and rail access	S-M	FP, FC, NR
	3. Flood Alleviation measures	M-L	FC
	4. Junction 6/6a full movement	M-L	FC
	5. Progress agreement on upgrade of A801 Avon Gorge	M	FC/WLC/ Scottish Govt
Develop energy and other infrastructure with potential to generate business and community benefits.			
2	Prepare medium to long term FG Energy Strategy, (recognising relative policy priority and lack of control over commercial/fiscal drivers)		
	Scope future potential in context of: proposed development (and related energy requirements); identifying appropriate energy solutions; assessing capacity of Grangemouth resource, including opportunities for shared development/use of energy infrastructure;	S-M	FC, Private Sector

9. Developing an enabling regulatory and planning environment

Support key sector development through strategic land allocations and an enabling development approach			
1	Bring forward strategic allocations of employment land in the LDP to reinforce existing provision and make a clear statement of intent regarding the area's role		
		S-M	FC
2	Develop streamlined planning procedures. Where possible harness fiscal incentives to encourage key sector development & diversification into areas of added value.		
	Liaison between FC officers, industry, Scottish Government and Treasury. Develop case for Falkirk Grangemouth Investment Zone.	S-M	FC
	Identify target areas for industrial/research expansion, prepare planning schemes/protocols, market key site opportunities	S-M	FC, SE
3	Investigate potential opportunities and benefits of Tax Increment Financing and Enterprise Zone status. Progress applications accordingly	S	FC, SE
4	Prepare Falkirk Grangemouth concordat		
	Establish fundamental strategic elements for delivery. Prepare protocol for developments/proposals in key sectors, prepare processing agreements, allocation procedures and commitment to levels of service to strategic proposals/businesses. Market to industry.	S	FC, private sector
Promote Falkirk Grangemouth as an area which combines the highest industry standards with a positive compliance approach			
5	Develop enabling or 'fast-track' mechanisms to assist process and product development in sensitive industries/locations		
	Establish Falkirk/Grangemouth Task Group including: HSE, SEPA, key industry representatives, FC officers to develop operational protocols	S	FC, HSE, SEPA, private sector
	Develop FG Pilot Enabling Framework	S	FC, HSE, SEPA, private sector

10. Business Leadership - Developing a strategic perspective of the Grangemouth/Falkirk area across the business base

Develop a common key sector business perspective behind Falkirk Grangemouth's future growth and development			
1	Establish effective business-led chemicals sciences, low carbon & logistics network as influencing organisation for increased strategic priority for the area and related infrastructure, funding and other resources. Key targets: UK/Scottish Government, overseas companies, academic base		
	Liaison between CSS, key sector business, Falkirk for business and others to establish strong network: agreement on common objectives/future strategic direction.	S	CSS, FC, Private sector
	Develop partnership strategy between business and public sector through MFIF	S-M	FC, Private sector
	Build business leadership capacity as sector/area champion	S-M	SE, Private sector

Develop added value activity in the Grangemouth chemicals sciences cluster to embed companies more deeply and build additional local capacity			
2	Build business and commercial links to: promote local innovative product development and manufacturing; deepen business linkages within the Grangemouth cluster to identify areas of mutual benefit through collaboration		
	Further develop links between CSS Innovation Group & local business and education base to improve awareness and take up of available innovation funding	S	CSS, FC, Private sector

Effectively promote the Falkirk Grangemouth area to exploit product, knowledge transfer, and training opportunities in existing and developing markets			
3	Collaborative development of a suite of targeted 'marketing' packages to UK and overseas markets.		
	Develop Strategic Location Briefing Pack / Web Domain, profiling available technical, research and academic, business and support resources	S	SDI, FC
4	Inter-Sector Internationalisation & Partnering initiatives		
	Develop strategic alliances/sector twinning partnerships with zones in developing market areas e.g. SE Asia (building on Petrochina investment), India, Middle East	S-M	SDI, FC
5	Encourage Government & Ministerial Engagement		
	Involvement of business leaders at high level with Government	S	Private sector

Figure 4-1 Investment Strategy



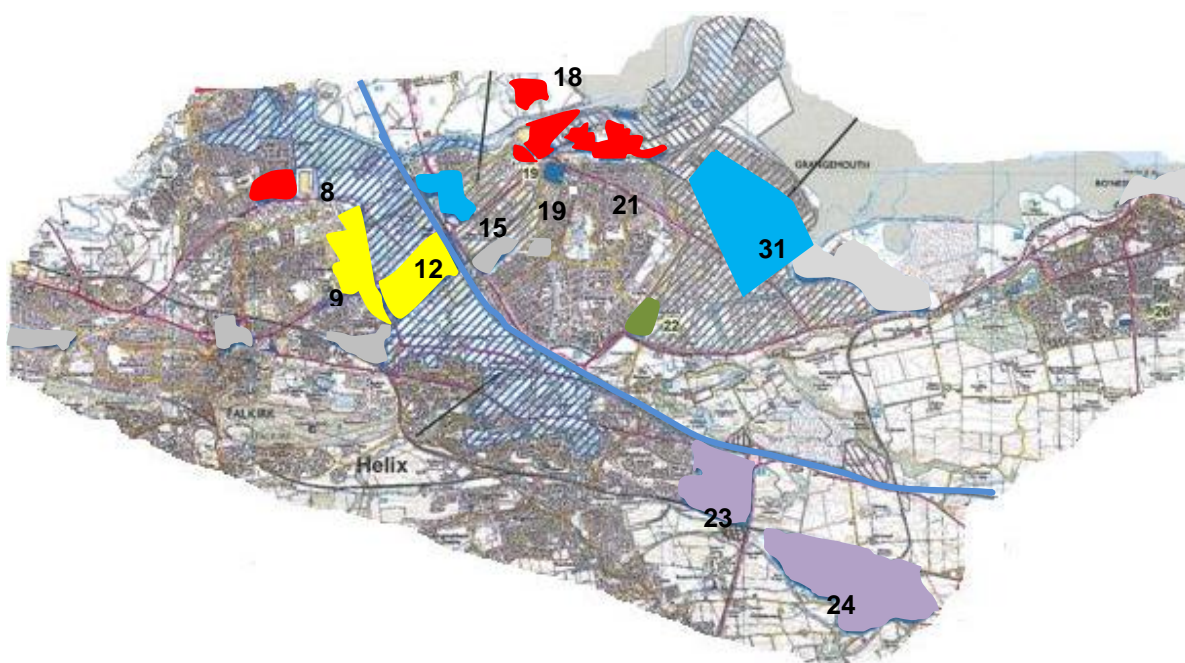
Figure 4-2 Phasing








5 ECONOMIC IMPACTS

5.1 We have assumed the development of a number of sites following infrastructure improvements and implementation of the Investment Zone Action Plan. These are assumed to require a mixture of public sector and private sector investment, and so the net additionality below refers to the impacts of this public sector support. The sites we have considered below require some level of public sector support for them to come forward – mainly through infrastructure improvements. Having worked on this and similar projects, the strategic partners strongly believe that without the proposed interventions the developments will not take place with the same scale and pace and Grangemouth could find itself in a position of ‘managed decline’ – as discussed at workshops with local businesses and stakeholders.

Falkirk-Grangemouth Investment Zone –Development Sites



Use	
	Chemicals, general industrial and/or warehousing development
	Warehousing development only
	Office, general industrial, warehousing and retail/leisure elements
	Office , retail/leisure and other employment uses
	Office development only

Site	
8	Abbotsford Business Park
9	Falkirk Gateway
12	Stadium Site *
15	Earls Gate Business Park/ Calachem
18/19 /21	Grangemouth Docks
22	Wholeflats Business Park
23	Gilston
24	Whitecross
31	Ineos (additional 100 acres on site)

- 5.2 Activity is assumed to come from a mixture of inward investment and existing Grangemouth companies remaining where they are or, indeed, expanding their presence. There will also be some development of R&D and education facilities, which may result in some new starts and spin-off companies. Assumptions used in the model are detailed in Appendix 3.

Headline Impacts

Table 5.1 Headline Impacts¹⁵ - Scotland

	2015	2020	2025
Chemicals			
Gross jobs	130	781	1,302
Net additional jobs	230	1,378	2,296
GVA per employee, £	182,528	199,558	218,176
GVA impact, £m	£36.53	£201.74	£309.51
Warehousing			
Gross jobs	343	725	1,072
Net additional jobs	274	744	976
GVA per employee, £	35,635	38,960	42,595
GVA impact, £m	£8.50	£21.26	£25.69
Other industrial			
Gross jobs	40	221	446
Net additional jobs	30	244	416
GVA per employee, £	74,355	81,292	88,877
GVA impact, £m	£1.95	£14.53	£22.85
Office			
Gross jobs	153	899	1,924
Net additional jobs	78	457	978
GVA per employee, £	71,825	78,526	85,852
GVA impact, £m	£4.88	£26.35	£51.90
Retail/leisure			
Gross jobs	560	949	1,295
Net additional jobs	0	0	0
GVA per employee, £	35,635	38,960	42,595
GVA impact, £m	£0.00	£0.00	£0.00

¹⁵ Chemicals net jobs are higher than chemicals gross jobs, due to the value of the multiplier (3.14 at the national level). GVA per employee is assumed to increase by 1.8% per annum. Chemicals GVA per employee is particularly high due to the high value and capital intensive nature of the sector.

	2015	2020	2025
TOTAL			
Gross jobs	1,226	3,576	6,038
Net additional jobs	611	2,823	4,667
GVA per employee, £			
GVA impact, £m	£51.9	£263.9	£409.9

- 5.3 The scale and phasing of development on each site is consistent with that used in Falkirk Council's preparation of its TIF bid. The model diverges for the sites at Ineos and Calachem, where chemicals-related development consistent with the Framework Vision has been assumed.
- 5.4 The impact of the Development Framework is estimated as an additional 4,667 jobs nationally by 2025, around half of which are from the chemicals sector, with a GVA impact of £410m.

Table 5.2 Headline Impacts – Local

	2015	2020	2025
Chemicals			
Gross jobs	130	781	1,302
Net additional jobs	251	1,506	2,510
GVA per employee, £	182,528	199,558	218,176
GVA impact, £m	£39.92	£220.49	£338.28
Warehousing			
Gross jobs	343	725	1,072
Net additional jobs	231	490	724
GVA per employee, £	32,859	35,925	39,276
GVA impact, £m	£6.62	£12.91	£17.56
Other industrial			
Gross jobs	40	221	446
Net additional jobs	26	144	291
GVA per employee, £	162,620	177,793	194,381
GVA impact, £m	£3.65	£18.85	£34.93
Office			
Gross jobs	153	899	1,924
Net additional jobs	89	522	1,117
GVA per employee, £	73,447	80,300	87,792
GVA impact, £m	£5.70	£30.76	£60.56
Retail/leisure			
Gross jobs	560	949	1,295
Net additional jobs	205	348	475
GVA per employee, £	32,859	35,925	39,276
GVA impact, £m	£5.88	£9.17	£11.52

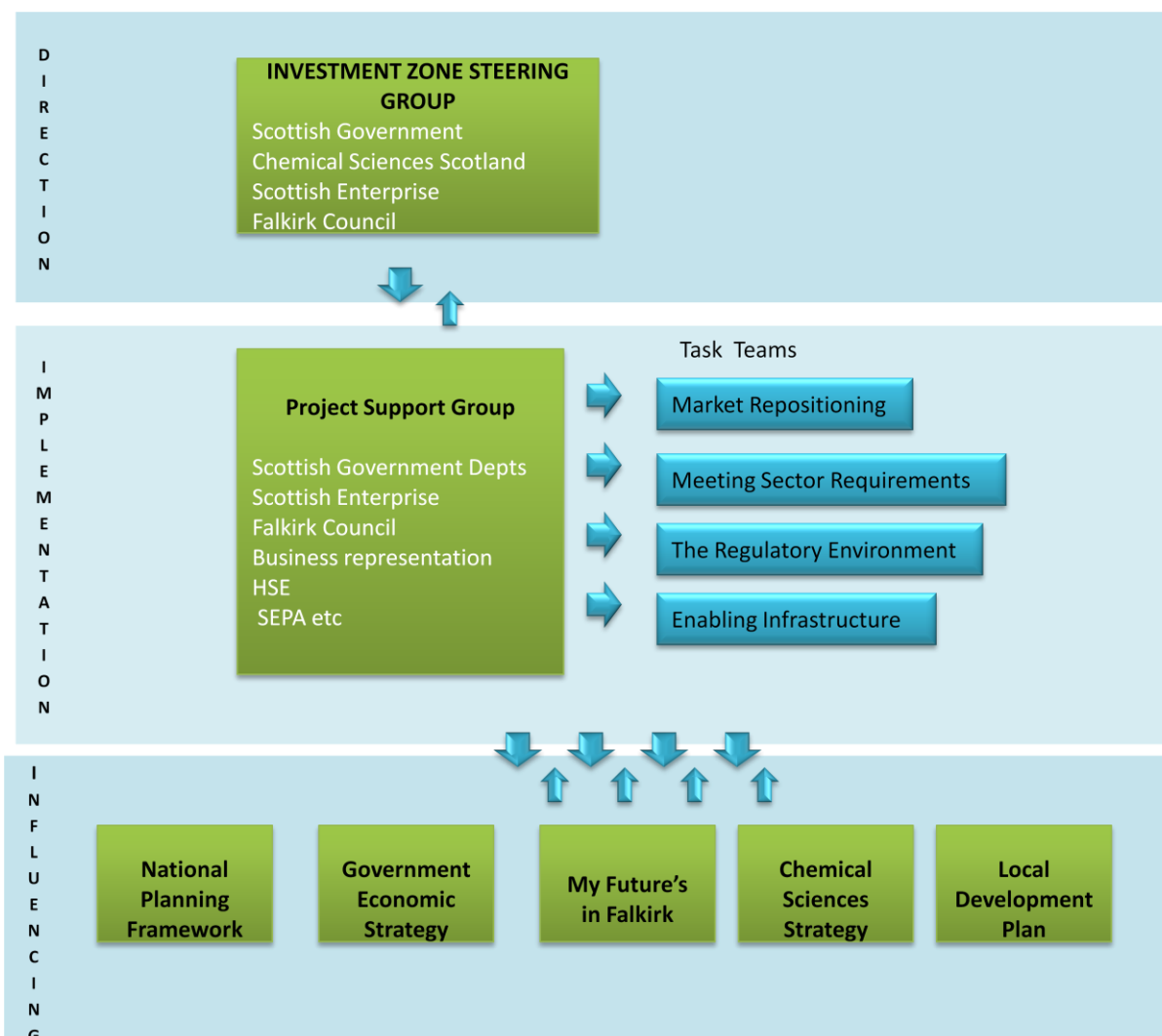
	2015	2020	2025
TOTAL			
Gross jobs	1,226	3,576	6,038
Net additional jobs	802	3,010	5,116
GVA per employee, £			
GVA impact, £m	£61.8	£292.2	£462.8

- 5.5 At a local level, the estimated impact is a net additional 5,116 jobs, with net additional GVA of £462.8m by 2025. Again, around half of the jobs are anticipated to be generated in the chemicals sector.

6 DELIVERY

- 6.1 It is intended that the Falkirk Grangemouth Investment Zone will have national significance. The project is comprehensive in its ambition to encourage innovation, investment and growth in the petrochemicals, chemical sciences, distribution and related sectors nationally, expressed through increased investment, development, employment and economic activity in the local area.
- 6.2 It aims to generate impetus behind the establishment of the area as an internationally significant investment location for the chemical sciences with supporting industrial, educational, research, business and transport infrastructure.
- 6.3 Implementation of the Framework aims to reposition the area as a priority in Scotland's national economic landscape. This will require co-ordination and action at national and local levels: including commitment by the Scottish Government; and the involvement of all of Falkirk key public sector bodies; by key businesses and across the main businesses sectors.

Figure 6-1 Delivery Structure



- 6.4 The Falkirk Grangemouth Investment Zone will be a significant initiative, one of the main elements evolving from the My Future's in Falkirk partnership and requiring concentrated staff resource for its implementation. Those involved need to have appropriate skills and experience in co-ordinating the delivery of complex projects. While these skills may be available within partner organisations, implementation will require a central focus on the Investment Zone and the commitment and prioritisation of resources behind it. The approach to implementation clearly needs to be fit for purpose,
- 6.5 The people and organisation(s) leading implementation need to have decision-making capability and authority, meaning the capacity to influence a range of public sector bodies at senior level and either some delegation of decision making or the development of clear channels of communication to enable swift decision-making. Equally, it is vital that the area's business sector is effectively engaged to ensure that the Action Plan respond can respond effectively in maximising the appeal of the Falkirk Grangemouth area as an investment and operational location. While broad-ranging involvement will be encouraged, the engagement of the private sector should prioritise the involvement of key businesses in the chemical sciences sector nationally and locally. .
- 6.6 The preparation of this Framework is timely: initiatives such as Enterprise Zones and Tax Increment Financing are being brought forward to encourage business investment and raise finance to improve critical infrastructure in key locations. In other parts of the UK, these incentives are being coordinated in support of sectors identified as critical to future economic growth at a strategic level. The Tees Valley Enterprise Zone is such an example, emphasising the development of particular sites for petro-chemical, renewable industry, advanced engineering and digital industries¹⁶. The Falkirk Grangemouth Investment Zone needs to be able to offer comparable attractions to businesses in its target sectors.
- 6.7 Announcements on future locations for Enterprise Zone or Tax Increment Pilot status are anticipated shortly from the Scottish Government and these will have a strong influence on the nature and structure of Investment Zone delivery. Over the next 6 months an appropriate delivery structure will be developed by Scottish Enterprise, Chemical Sciences Scotland and Falkirk Council.

¹⁶ Announcement of Tees Valley Enterprise Zone, Tees Valley Unlimited 17 August 2011

APPENDIX 1

Socio Economic Profile

SOCIO ECONOMIC PROFILE

Summary

- Falkirk has a strong concentration of manufacturing jobs (14%) compared to the Scottish average (8.7%). It is home to 84% of Scotland's organic chemicals manufacturing and 80% of Scotland's pesticides and agro-chemicals.
- Falkirk also has a stronger concentration of transport and communications employment (6.9%) compared to the Scottish average (5.1%), much of which will be linked to the chemicals industry.
- 10% of the Scottish population lives within Local Authorities around Falkirk, including Fife, Clackmannanshire, West Lothian and Stirling. While the population is forecast to increase, most growth will be in retirement age-bands, posing potential issues for Grangemouth employers and potential inward investors.
- There is a high economic activity rate in the working age population, and of those who are economically inactive, a higher than average proportion would like a job. The proportion of residents claiming Job Seekers' Allowance (JSA) is slightly higher than average. Overall, these indicators suggest an active workforce in Falkirk, and while some of the population is inactive or unemployed, many would like to work should opportunities be available.
- There is a lower proportion of residents in Falkirk who have no qualifications, compared to the national average, but also a lower proportion with the highest levels of qualification.
- The labour market in Falkirk draws mainly from Falkirk residents, as well as residents from Clackmannanshire, Fife, Stirling and West Lothian.

This section profiles the economy for both the local study area and wider labour market area. Falkirk is used as a proxy for the local study area, whilst the wider labour market area is based on the locations from which the major businesses draw their labour (according to the consultation), namely Clackmannanshire, Fife, Stirling and West Lothian.

Jobs in Falkirk

There are nearly 60,000 jobs in the Falkirk Council area, with 8,300 in manufacturing. At 14% of all jobs, this is much higher than the national average of 8.7%. 2,500 of these jobs (30%) are directly in the manufacture of chemicals and chemical products¹⁷. Falkirk is an

¹⁷ Using SIC 2003 category 24 'Manufacture of Chemicals and Chemical Products' to proxy direct chemicals jobs.

important location for some manufacturing sectors within Scotland. The following sectors represent a significant proportion of the Scottish total:

- Organic chemicals manufacturing 84% of the Scottish total
- Pesticides and agro-chemicals 80% of the Scottish total
- Manufacture of coachworks & bodyworks 47% of the Scottish total
- Fabricated metal products 20% of the Scottish total

There are also 3,900 jobs in Transport and Communications. This is also an important sector for Falkirk, accounting for 6.6% of all jobs compared to a Scottish average of 5.1%. Many of these logistics jobs will be linked to the chemicals and related industries.

Table A1.1 Employee Jobs, 2008

	Falkirk	%	Clackmannanshire	%	Fife	%	Stirling	%	West Lothian	%	Scotland, %
Total employee jobs	59,600	-	14,300	-	130,300	-	45,500	-	76,300	-	-
Full-time	40,300	67.6	9,400	66.0	86,500	66.4	31,600	69.5	55,800	73.2	67.2
Part-time	19,300	32.4	4,900	34.0	43,800	33.6	13,900	30.6	20,500	26.8	32.2
Employee jobs by industry											
Manufacturing	8,300	14.0	1,800	12.3	16,300	12.5	2,900	6.3	11,000	14.4	8.7
Construction	5,300	8.9	1,000	6.7	6,900	5.3	2,900	6.5	8,200	10.7	5.9
Services	45,300	76.0	11,400	79.9	103,000	79.0	38,600	84.9	56,200	73.7	81.9
Distribution, Hotels & Restaurants	14,400	24.1	3,200	22.2	29,200	22.4	11,700	25.7	18,000	23.6	22.2
Transport & Communications	3,900	6.6	600	4.0	4,400	3.4	1,400	3.0	4,500	5.9	5.1
Finance, IT, Other Business Activities	6,400	10.7	1,700	12.0	17,700	13.6	8,500	18.6	11,000	14.5	19.1
Public Admin, Education & Health	18,200	30.6	4,900	33.9	42,200	32.4	15,200	33.5	17,200	22.6	30.0
Other Services	2,400	4.0	1,100	7.8	9,500	7.3	1,900	4.2	5,400	7.1	5.4
Tourism-Related	4,800	8.0	1,100	7.8	11,800	9.0	4,600	10.0	4,700	6.2	8.9

Source: Office for National Statistics, Annual Business Inquiry Employee Analysis

Population

In 2009 Falkirk's population was 152,500. 673,000 people live in the wider labour market area, with over half of these people in Fife. 10% of Scotland's population was located within these five local authority areas. The proportion of working age residents was similar to the Scottish level.

Table A1.2 Population and Working Age Population, 2009

	Falkirk	Clackmannanshire	Fife	Stirling	West Lothian	Scotland
Total Population	152,500	50,500	363,500	88,700	171,000	5,194,000
Working Age Population (%)	64.5	65.7	64.8	64.7	66.3	65.7

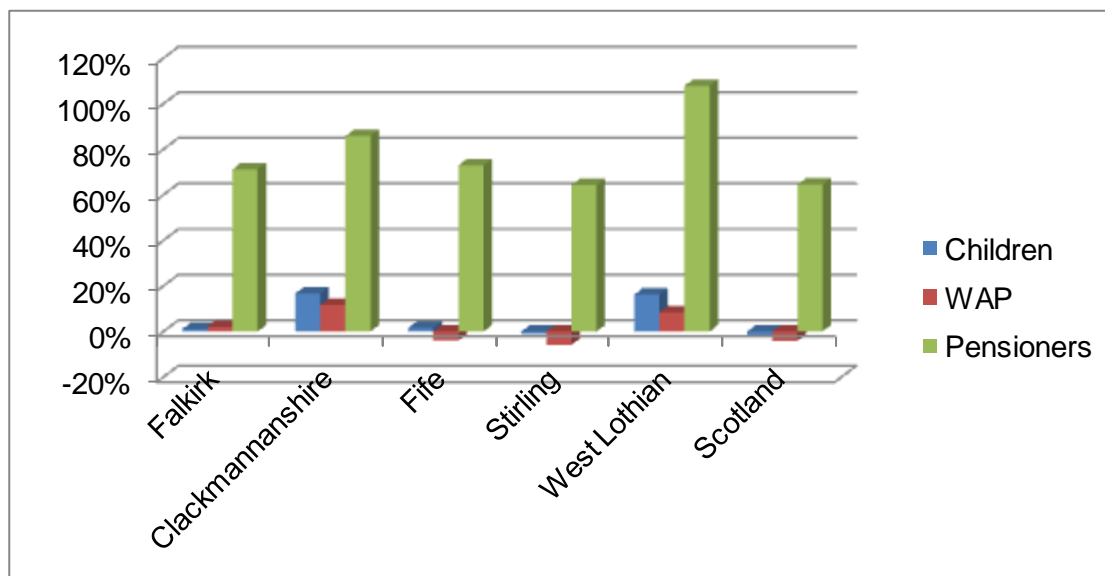
Source: Office for National Statistics, Mid Year Population Estimates

Population Projections

The population across Scotland is forecast to increase to 2033, with growth mainly in the pensionable age-groups (65+). Falkirk's population is projected to increase by 13% between 2008 and 2033. The working age population in Falkirk is projected to increase by around 2,100 people (2%), with the majority of the overall increase (17,300 additional people) in the pensionable age-group. The working age population is projected to grow in

Clackmannanshire and West Lothian (by 3,900 and 9,400 respectively), while declines in the working age populations are projected in Fife and Stirling.

Figure A.1.1 2008-Based Population Projections, 2008-2033



Source: GROS

Decline or low growth of the working age population presents a potential challenge for employers. Some of the major employers already suggest their workforce is ageing with few younger employees coming through with the relevant skillsets.

If current employers and potential investors are to invest in the location: there need to be sufficient staff with the relevant skills available.

Economic Activity

Economic activity rates and employment rates are slightly higher in Falkirk than nationally. There are fewer self-employed and similar proportions of unemployed people. Economic activity rates and employment rates are also similar to or above the national average in the wider labour catchment area. This suggests there is a good workforce available for employment.

Table A.1.3 Economic Activity, April 2009-Mar 2010

		Economically Active	In Employment	Employees	Self Employed	Unemployment (model based)
Falkirk	No	77,600	72,400	65,700	6,300	5,800
	%	77.3	72.0	65.5	6.1	7.4
Clackmannanshire	No	25,300	23,800	21,700	2,100	2,100
	%	77.0	72.3	65.8	6.5	8.0
Fife	No	186,600	170,100	156,100	13,200	15,100
	%	77.9	70.9	65.1	5.4	8.1
Stirling	No	44,900	41,300	35,600	5,400	3,200
	%	77.6	71.3	62.1	8.9	7.3
West Lothian	No	89,200	83,100	75,500	7,100	6,700
	%	77.1	71.9	65.5	6.0	7.5
Scotland	%	77.0	71.2	63.4	7.4	7.3

Source: Office for National Statistics, Annual Population Survey

Economic Inactivity

Economic activity rates are lower in Falkirk and the wider labour catchment area than national averages. Reasons for economic inactivity include factors such as being a student, long-term illness, retirement and caring responsibilities. 7,000 of Falkirk's economically inactive residents want a job (7.1%), a higher rate than for Scotland as a whole (5.6%), suggesting there is a labour force willing to work should suitable opportunities be available.

Table A.1.4 Economic Inactivity, April 2009-Mar 2010

		Economically Inactive	Wanting a Job	Not Wanting a Job
Falkirk	No	22,500	7,000	15,500
	%	22.7	7.1	15.6
Clackmannanshire	No	5,900	1,600	5,900
	%	23.0	5.0	18.0
Fife	No	51,900	15,300	36,600
	%	22.1	6.5	15.6
Stirling	No	12,600	2,800	9,800
	%	22.4	4.9	17.5
West Lothian	No	26,000	7,800	18,200
	%	22.9	6.9	16.0
Scotland	%	23.5	5.6	17.9

Source: Office for National Statistics, Annual Population Survey

Job Seekers' Allowance (JSA) Claimants

Over 4,000 people (4.1%) claim JSA in Falkirk. Clackmannanshire (5.1%) and Fife (4.1%) have higher than average JSA claimant rates (3.8%), while Stirling (3.0%) has lower rates.

Table A.1.5 Job Seekers' Allowance Claimants, October 2010

	Falkirk	Clackmannanshire	Fife	Stirling	West Lothian	Scotland
Total Claimants	4,071	1,706	9,717	1,739	4,245	-
%	4.1	5.1	4.1	3.0	3.7	3.8

Source: Office for National Statistics, Claimant count. Note: % is a proportion of resident population of area aged 16-64

Qualifications

Falkirk has a lower proportion of residents with no qualifications than the national average but also fewer with the highest levels of qualification. In the wider area, particularly high proportions of residents in Stirling have the highest levels of qualification, whilst there are particularly high levels of residents with no qualifications in Clackmannanshire.

Table A.1.6 Level of Qualification, Jan 2009-Dec 2009

		Falkirk	Clackmannanshire	Fife	Stirling	West Lothian	Scotland
NVQ4 and above	No	30,700	10,500	80,300	22,100	31,500	-
	%	31.1	32.5	34.2	39.5	27.8	33.9
NVQ3 and above	No	51,500	16,300	129,500	33,600	54,600	-
	%	52.3	50.2	55.1	60.0	48.2	54.8
NVQ2 and above	No	68,300	21,100	167,500	42,100	75,500	-
	%	69.3	65.0	71.2	75.1	66.6	69.3
NVQ1 and above	No	79,400	25,200	193,100	45,700	89,300	-
	%	80.5	77.5	82.2	81.5	78.7	79.1
Other qualifications	No	7,700	1,200	18,500	3,500	9,800	-
	%	7.8	3.6	7.8	6.3	8.6	7.6
No qualifications	No	11,500	6,100	23,500	6,900	14,300	-
	%	11.7	18.9	10.0	12.3	12.6	13.3

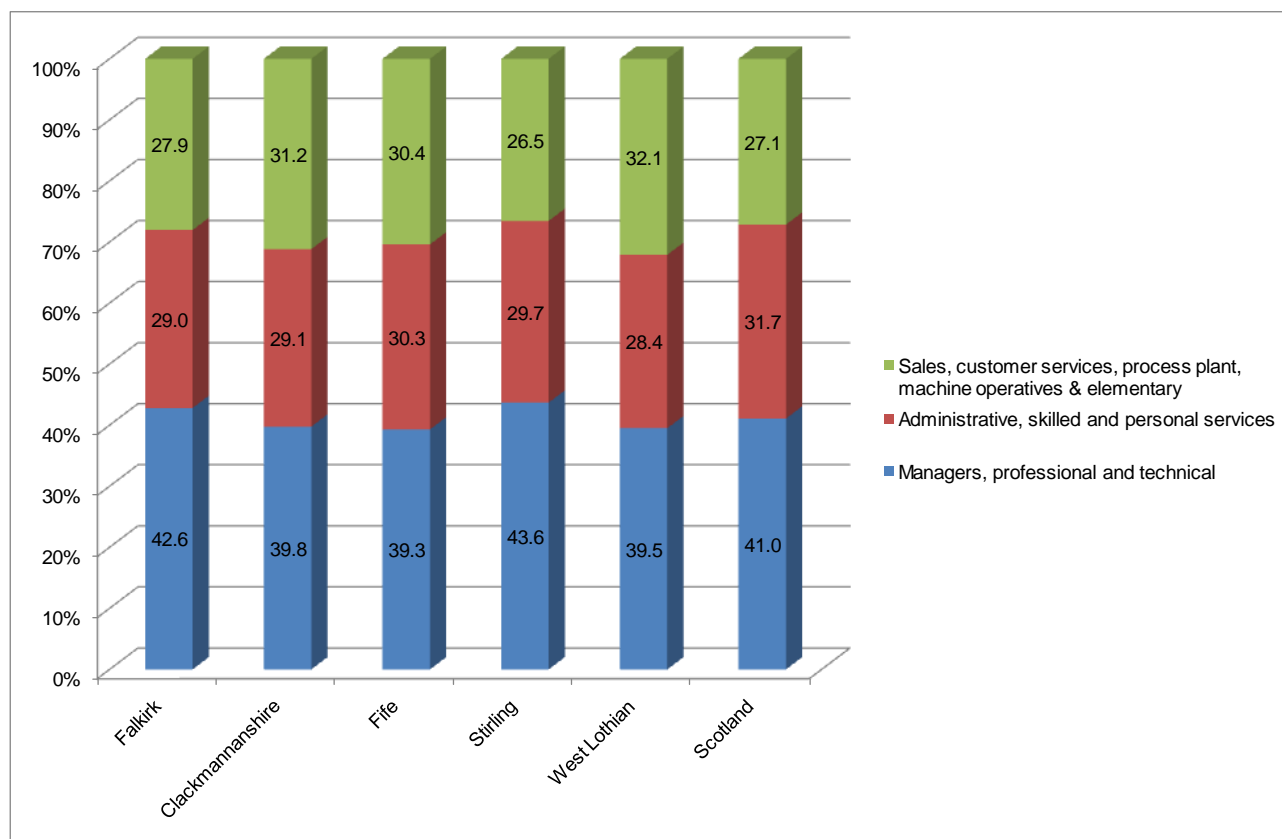
Source: Office for National Statistics, Annual Population Survey

Occupations

There are more residents than average in Falkirk working in managerial, professional and technical occupations (42.6%) and slightly more in sales, customer services, process plant, machine operatives and elementary occupations.

In the wider labour catchment area, Stirling in particular has high proportions of residents working in managerial, professional and technical occupations (43.9%) whilst there are high proportions of residents working in sales, customers services, process plant, machine operatives and elementary in West Lothian (32.1%), Clackmannanshire (31.2%) and Fife (30.4%).

Figure A.1.2 Employment by Occupation, April 2009-Mar 2010

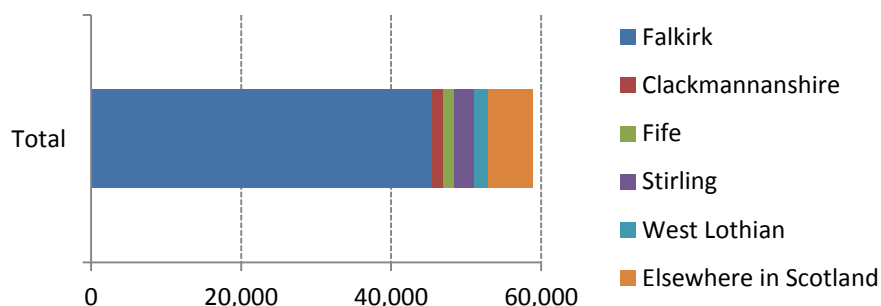


Source: Office for National Statistics, Annual Population Survey

Travel to Work

77.3% (45,482) of people working in Falkirk live within the Falkirk Council area. Apart from Falkirk, most Falkirk workers commute from elsewhere in Scotland 10% (5,912), and then Stirling 4.5% (2,667), West Lothian 3.1% (1,824), Fife 2.6% (1,502) and Clackmannanshire 2.5 (1,472). Falkirk benefits from its central location and accessibility by road and rail.

Figure A.1.3 Where Falkirk's Labour Force Commutes from



Source: Census 2001

APPENDIX 2

Business Perspective

THE BUSINESS PERSPECTIVE

A number of individual discussions were held with representatives from key businesses in the area (Table A.2.1). These covered topics including trends and prospects for the chemicals industry, infrastructure, policies, programmes and regulations, labour market and skills and procurement. An internet-based survey of businesses was also carried out, generating 27 responses (see Table A.2.2).

Business Views on Policies, Programmes and Regulations

Summary

- Aspects of the implementation of health & safety, environmental regulations and planning policies were seen as constraints to growth by some companies.
- While many companies thought that regulations imposed costs to their businesses, there was a degree of acknowledgement that ultimately they are beneficial. The need for high standards was recognised and could be used as a further point of differentiation for Grangemouth.

Constraints to Growth

In the business survey, 10 companies noted policies which were a constraint to growth. These included: REACH, climate change levies, national and European environmental requirements, health and safety and employment laws. 10 companies did not think there were policies constraining growth.

Health and Safety

In the direct interviews, some companies indicated that health and safety regulations have become more difficult to meet in recent years, and a number highlighted the need for a partnership approach on HSE's part to help companies better understand and meet requirements.

One noted that EU Health & Safety legislation does not seem to be applied consistently, suggesting that the UK is very strict in its application compared with competitors in France, Germany and Italy. For example the Hazardous Substance Consent Levels legislation restricts how much hazardous materials a company can have on site and the method of calculation in the UK is applied more strictly than elsewhere.

Environmental Regulations

Several companies noted the increasing requirements of environmental regulatory bodies. They suggest requirements have become a lot more taxing in recent years, which is starting to drive away investment. The documentation and achievement of the requirements is costly and compliance often has timescales which are difficult to meet.

One company thought that different interpretations of regulations between the Environment Agency and SEPA were difficult to understand and confusing for companies working on both sides of the Border.

However, some said that the environmental groups work well to help businesses meet the requirements.

Planning

There was a perception from some companies that it takes a long time to do anything in the UK through planning, as large amounts of up-front documentation is required. They felt that it can be quicker to start development elsewhere. This is particularly a problem where companies have their headquarters and make decisions in other countries. *‘The UK is high quality and safe but really hard to ‘get in!’*

One company suggested that it was difficult to get planning permission as objectors tended to be against the chemicals industry.

Some mentioned that residential and retail planning permissions had been granted close to the sites of chemicals companies; posing problems for the operators as it increased the risk profile of the company. They suggested development further away from chemicals operations would be more suitable.

Suggestions for Improvements

One company suggested there are better systems in other countries (including Norway, the Republic of Ireland and Germany) where there are ‘one stop shops’ for investors. In Scotland, companies have to go to many different groups (the Council, SEPA, HSE, etc) which creates delay and can be confusing.

Overall, many thought that while regulations, such as Health and Safety, environmental needs and planning regulations, have business costs, they are ultimately beneficial. The need for high standards was recognised. Further to this, companies saw that high standards could be used as a selling point for Grangemouth. Scotland is a safe place to do business with high standards of health, safety and care for the environment and this could be more widely disseminated. However, this would need to be matched by improvements in the processing of proposed development to be effective.

Promoting Growth

The only document suggested as useful for promoting growth in the area was National Planning Framework 2, as this sets out where major infrastructure is required and highlights issues in Falkirk-Grangemouth.

None of the consultees suggested any policies which are helping to promote growth within the industry at present. There was limited awareness of effective policy approaches which had been applied elsewhere which might be effective in Falkirk-Grangemouth.

Business Views on Infrastructure

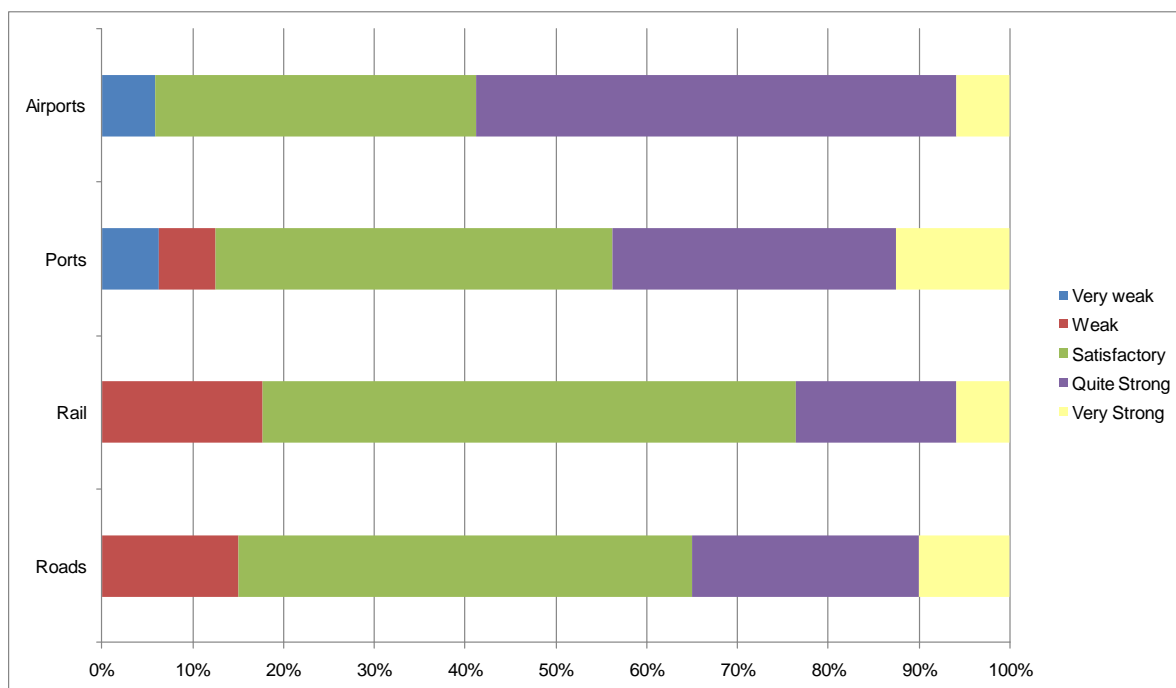
Summary

- Views on the roads were mixed: many consultees thought that existing links were good, while others mentioned access constraints around key junctions and issues for HGV drivers
- Rail infrastructure is perceived to be good, although improved connections to the port would provide transfer options from road to rail, potentially easing road freight volumes and relieving some of the business issues regarding junction capacity
- Air infrastructure is good with access to Glasgow and Edinburgh Airports, although destinations are limited from these airports
- The Port is a key asset, although it is perceived as expensive compared to ports in the south of England
- Energy infrastructure is reasonable, although businesses generally noted the lack of integrated or shared facilities as a missed opportunity.

Businesses' views were sought on the quality of transport and energy infrastructure in and around Grangemouth. Results are set out below.

Transport Infrastructure

Figure A.2.1 Views on Transport Infrastructure



NB: Reflects business survey only. Not all respondents answered this question. Results do not include non-reponses.

Roads

Views on the quality of the road network were mixed in the direct consultations. Some respondents experienced few problems with existing road infrastructure, going so far as to say it was 'fantastic'. Close proximity to motorway junctions, particularly from areas such as Earls Road was cited as a strength, as were the links from the M8 and M9 to the wider motorway network, making transportation south relatively easy.

However, there were also a number who thought the road network could be improved. HGV drivers are restricted in the use of some roads, meaning transport times, costs and emissions are increased. The roadworks taking place on the A80 at the time of the analysis were noted by some, although it was accepted these would ultimately improve links. The impacts of Junction 6 in restricting quick transportation to and from the port (due to traffic volumes) was also noted by a minority. One consultee suggested Junction 6 and the Avon Gorge would be high on their 'wish list' for improvements, although they suggested the roads in general are 'reasonable'.

Key areas identified for improvement in the road network included: bottlenecks at the Avon Gorge; the need for a four-way motorway junction at Larbert; expansion of the M9 Junction 6 at Falkirk; upgrading of the A80 to motorway status; improving links from Falkirk to the motorway; increasing capacity on the M8; and improved road access to the port.

Rail

There were mixed views on rail in the direct consultations. Several of the companies consulted do not use rail freight. For some, the need for inter-modal transfer was seen to increase costs and reduce efficiencies. Others suggested that improved links between the railway and the main industrial areas would increase commuting options for staff. The potential for improved rail at the port could increase transfer onto rail from road, although it was also noted that road transfer would still be needed to complete journeys.

Port

In the direct interviews, the Port was clearly seen as an asset to the area. However, some responses noted it was cheaper to import goods through southern ports (e.g. Felixstowe or Southampton) and transport goods by road. They have found it is often quite cheap to transport goods north using haulage companies who need empty lorries filling which have already travelled south and shipped out of England.

Airports

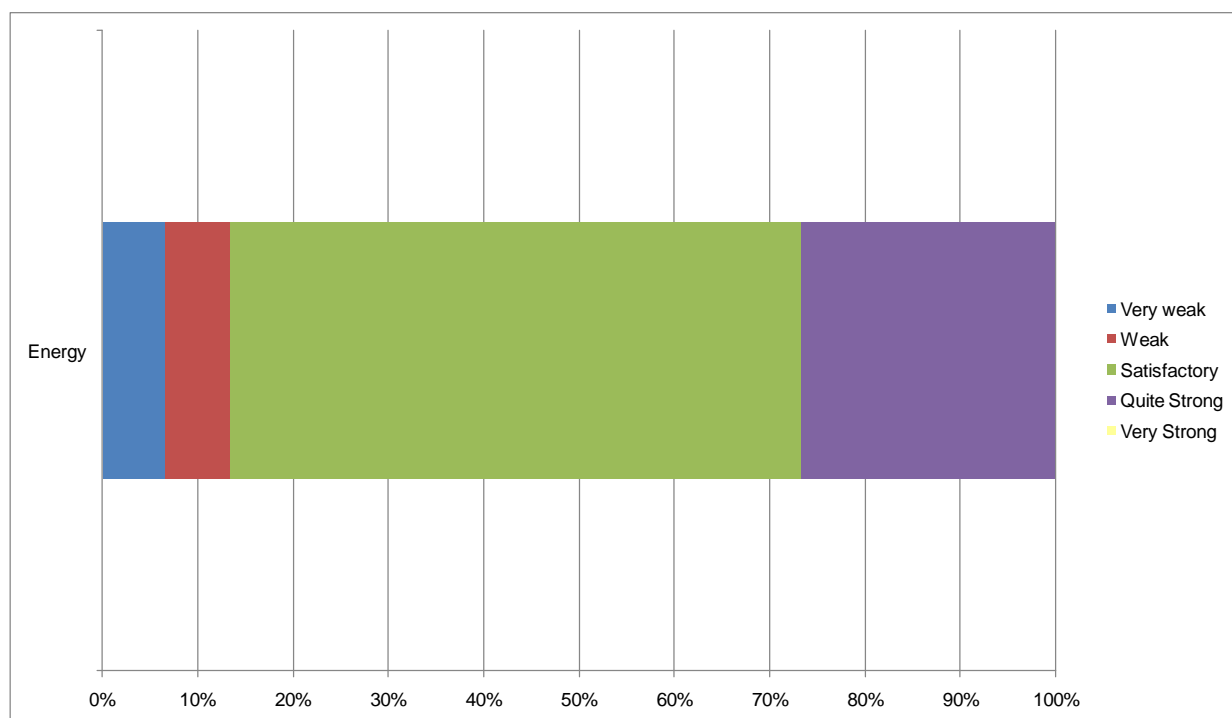
Most consultees acknowledged the strength of the area in terms of access to airports, with one suggesting they were 'almost spoiled'. However, several mentioned the limited choice of destinations from Glasgow and Edinburgh. One company uses Prestwick for freight as this has flights to the required destinations.

Energy

Several consultees source their energy from Aurelius, which makes the source cheaper and more reliable (as it is also backed up by the National Grid). Some mentioned the recent

problems during the winter where energy supply was switched off for a period, costing significant sums. The incremental development of Grangemouth was mentioned as being a constraint to future improvements: there is not an integrated network of energy infrastructure to distribute gas or steam locally e.g. from a biogas power station. Large capital costs can be associated with energy/gas/steam purchases between companies.

Figure A.2.2 Views on Energy Infrastructure



NB: Results from business survey only. Not all respondents answered this question. Results do not include non-responses.

Some suggested it may be beneficial for major companies to share infrastructure as they would benefit from economies of scale. This could include: power plants, services facilities, occupational health services, emergency response, training and effluent treatment. One respondent suggested development of an energy strategy combining the needs of industry, commercial and domestic users.

Business Views of the Future

Summary

- Falkirk-Grangemouth faces challenges through changing sources of raw materials to the chemicals industry and increasing investment in India, China and the Middle East.
- Grangemouth's strengths include access to skilled labour, the existing supply chain, and intellectual property and R&D activity of companies in the area.
- Innovation was seen as key to Grangemouth's future, building on its skilled workforce and infrastructure.

The business consultation (and the workshop session) discussed companies' and stakeholders' views of the future prospects of the chemicals industry and Falkirk-Grangemouth's role within it.

The industry has changed significantly over the period in which Grangemouth has developed. Recently, the main shift has been in the source of raw materials, which are now generally obtained from the Far East, and increased investment in locations such as India, China and the Middle East closer to markets which are continuing to witness increased demand. Grangemouth therefore needs to work harder to retain its current businesses and attract investment.

Many of the companies located in Grangemouth are headquartered abroad. The area is competing with global locations for future investment. Grangemouth suffers in terms of:

- Distance to source of raw materials.
- Distance to markets.
- Costs of development.
- Costs of labour.
- Perceived delays and restrictions on development stemming from the regulatory, programme and policy environment and its application.
- Ageing infrastructure.

However, Grangemouth also benefits from:

- Availability of skilled local labour.
- A history of working in the chemicals industry.
- Existing infrastructure.
- A well-developed local supply chain, including the logistics industry.
- The intellectual property and R&D activity of some companies located in Grangemouth.
- A critical mass of chemicals and related companies.

Consultation suggested that Grangemouth's strongest position for the future was to push its innovation, R&D and intellectual capital. While other emerging countries may have

advantages in terms of costs and speed of development, Grangemouth still has skilled workers and knowledge, as well as access to universities and their research. Some of the companies do not currently invest in R&D as decisions are made abroad and R&D investment is made elsewhere. However, there is an opportunity to encourage the further development of R&D and the development of business advisory services related to the chemicals sector in the area, further developing an innovative sector.

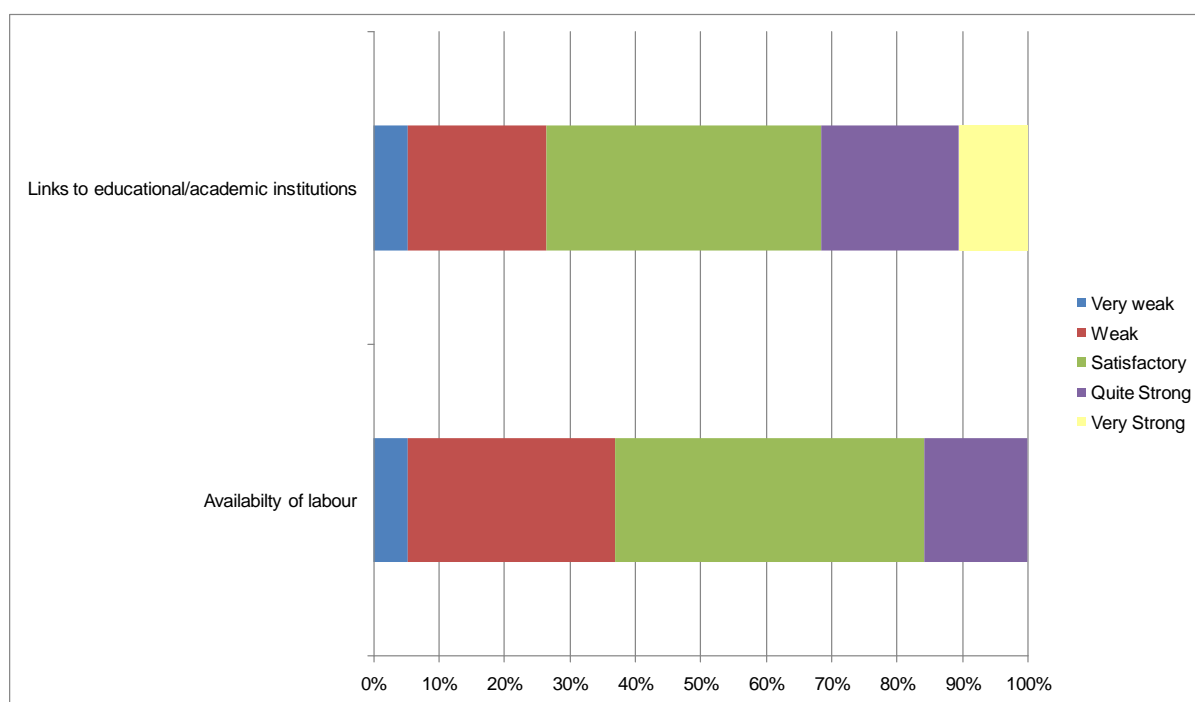
It was suggested that this could be built on, for example, through the development of an international training centre, which may attract external investment. Consultees felt it was important to encourage a focus on R&D and innovation, leading to new manufactured products as well as acknowledging the move away from petroleum-based manufacturing.

Business Views on Labour Market and Skills

Summary

- Staff can generally be found locally and graduates can be recruited from Central Belt universities. There are some problems retaining staff as there is competition for skilled labour.
- Where additional training is required, Forth Valley College provides related training courses. Some companies have bespoke training while others take advantage of generic modules courses provided by the college. Other training is provided in-house or through specialist providers as required.

Figure A.2.3 Views on the Labour Market



NB: Results from business survey only. Not all respondents answered this question. Results do not include non-responses.

Labour Availability

Companies tend to recruit locally and generally obtain staff with the skills they seek. Several mentioned they had found good staff easily in the local area recently because of redundancies elsewhere. Where companies employ graduates, they tend to be recruited from Universities across Central Scotland, although there is an occasional requirement to look further afield.

A few companies mentioned issues in retaining staff due to fierce competition locally, and with the larger organisations willing to offer better remuneration packages. One respondent noted it was difficult to know the 'going rate' for similar positions at the larger companies and therefore they had lost employees. It was noted that the average age of employees was increasing and there were insufficient young people with suitable skills coming into the market.

This said, the consultation found that many of the businesses find availability of labour one of the benefits of their location. Most staff live in the local area although management will travel longer distances (to Stirling, Linlithgow, Fife and Edinburgh). One company mentioned they had some staff who commuted from the west coast, and cited this as an example of the road networks' excellence.

Training and Education

Employers had different qualification requirements of their employees. Graduates – particularly engineers, chemists – are required at some companies; they are generally trained further for specific requirements of the job, either in-house or through training courses at Forth Valley College. Some who are particularly focussed on R&D activity may require post-graduate qualifications.

Companies also tend to require skilled and semi-skilled tradespeople, including electricians, engineering maintenance staff, operators and technicians. Most businesses train such staff further once employed, either through Forth Valley College or in-house.

Forth Valley College provides apprenticeship courses for many of the companies consulted. Only a few have bespoke courses at the college (this was felt to reduce the time needed to induct staff); most companies making use of generic courses and supplementing this with specific training in-house. Companies were pleased with the quality of training provided by Forth Valley College.

A number of companies have developed research relationships with the University sector and these collaborations are generally seen to be successful. For others, lack of resources in the current climate restricted their ability to develop research. A minority of (mainly outside the chemicals sector) felt that academic linkages were of little relevance to their operation.

1-2-1 Consultation List

Table A.2.1 Business Consultees

Consultee	Company
Peter Duncan	Allied International
Andy Ballatine & Dave Paterson	Asda
Tom Moore	BP
Mike Newstead	Biomar
Doug Edwards	Calachem
Paul Blacklock	Calor Gas Ltd
Adrian Jackson	Dow Chemicals Company
Gordon Goudie	Duncan Adams Haulage
Bill Ball	Firmin Coates
Derek Knox	Forth Ports
Mhairi Hay	Forth Valley College
Stevie Lockhart	Fuji Grangemouth
Rob Meake	Impact Solutions
Gordon Grant	Ineos
Andrew Tomb	Polimeri Europa UK Ltd
Neville Makan	Scottish Natural Heritage
John Harrison	Surface Active
Ronnie Hendrie	Syngenta
John Holwell	WH Malcolm

Business Survey Respondents

27 companies responded to the on-line business survey. 13 were from Grangemouth/Bo'ness, 3 from Lanarkshire, 2 from Midlothian, 2 from Perthshire and 2 from Fife. Some of the respondents were from further afield and did not continue to answer the questions about views on Falkirk/Grangemouth.

Table A.2.2 Location of Respondents

Location	Respondents
Grangemouth, Falkirk & Bo'ness	13
Lanarkshire	3
Midlothian	2
Perthshire	2
Fife	2
Stirling	1
Borders	1
Highland	1
Montrose	1
Paisley	1
Total	27

APPENDIX 3

Economic Impact Model Assumptions

ASSUMPTIONS MODEL

Development Sites

We have included the following sites in the assessment, assuming the actions of the Development Framework will help to bring them forward.

- Abbotsford Business Park.
- Falkirk Gateway.
- Falkirk Stadium Site.
- Earls Gate Park and remaining sections at Calachem.
- Grangemouth Docks (3 zones).
- Wholeflats Business Park.
- Gilston.
- Whitecross.
- Ineos – 100 acres additional on-site.

Plot Ratio and Floorspace Densities

Estimated development scale and phasing assumptions are shown below. These have also been employed in Falkirk Council's TIF bid (with the exception of Earls Gate Park and sites outside the framework area). Average employment densities have been applied to estimate net floorspace for each sector:

▪ Industrial and warehousing	67 sq.m. per employee ¹⁸
▪ Offices	16 sq.m. per employee ¹⁹
▪ Retail	19 sq.m. per employee ²⁰
▪ Chemicals sectors	100 sq.m. per employee ²¹

Floorspace Type

The key development assumptions are set out in Table A3.1.

¹⁸ Source: Roger Tym & Partners (2010) Floorspace densities study for Yorkshire & Humber

¹⁹ Source: Roger Tym & Partners (2010) Floorspace densities study for Yorkshire & Humber

²⁰ Source: Arup (2010) Employment Densities: A Full Guide

²¹ Based on estimates of actual companies in Grangemouth, which give estimates of 243 sq.m. per employee, 215 sq.m. per employee and 104 sq.m. per employee. We have assumed 100 sq.m. per employee to account for floorspace, such as at Centres of Excellence, where densities may be higher. In addition, some of the companies we spoke to said that they were currently working at low density levels and were hoping their densities would increase in future as employment picks up again (within the same building footprint).

Table A3.1 Assumptions for Development (net areas (sq.m))

Site	Offices	Industrial	Whsg	Retail/ leisure	Chemicals
Abbotsford Business Park			18,580		
Falkirk Gateway	18,627			19,509	
Stadium Site *	11,160			3,000	
Earls Gate Business Park & Calachem	2,267	10,704	24,960		39,840
Grangemouth Docks		98,867			
Wholeflats Business Park	2,522				
Gilston	20,000	10,000	10,000	14,500	
Whitecross	36,280	4,800	3,270	2,125	
Ineos (additional 100 acres on site)		31,958			97,200

* Also includes 60-bed hotel not included in floorspace figures.

Table A3.2 Phasing of Development

Site	Start Year	% complete by 2026
Abbotsford Business Park	2013	100%
Falkirk Gateway	2015	50-100%
Stadium Site *	2016	100%
Earls Gate Business Park & Calachem	2015	100%
Grangemouth Docks	2017	75-100%
Wholeflats Business Park	2017	100%
Gilston	2013	50-100%
Whitecross	2014	35-100%
Ineos additional 100 acres on site	2015	67-100%

Each development is assumed to have a 5-15% void.

The differences in assumptions for Earls Gate Business Park, Calachem site and Ineos are set out below.

Earls Gate Business Park and Calachem:

- Earls Gate Business Park Phase 1: 2,267 sq.m. offices and 9,104 sq.m. industrial.
- Earls Gate Business Park Phase 2: assumed 60% chemicals development and 40% warehousing development.

- Remaining area at Calachem (5 acres): assumed 60% chemicals development, 20% general industrial and 20% warehousing development.

Ineos

- Assumed 60% chemicals development and 40% general industrial development. For the chemicals development a plot ratio of 40%) is assumed.

Additionality Assumptions

Table A3.3 Additionality Assumptions - National

	Whsg	Other ind	Office	Retail/leisure	Chemicals
Leakage, %	0%	0%	0%	0%	0%
Displacement, %	35%	35%	50%	100%	25%
Deadweight, %	35%	35%	35%	35%	25%
Multiplier	1.89	1.81	1.57	1.31	3.14
GVA per employee, 2011, £	33,181	69,234	66,878	-	169,957

Table A3.4 Additionality Assumptions – Local

	Whsg	Other ind	Office	Retail/leisure	Chemicals
Leakage, %	20%	20%	20%	15%	10%
Displacement, %	25%	25%	25%	50%	10%
Deadweight, %	25%	25%	25%	25%	15%
Multiplier	1.50	1.45	1.29	1.15	2.80
GVA per employee, 2011, £	30,596	151,420	68,389	30,596	169,957

Leakage

National: Leakage figures are assumed to be zero as none of the jobs created are assumed to leak outside Scotland.

Local: Leakage figures are assumed to be fairly low as few of the jobs are assumed to leak outside the local area.

Displacement

National: This is assumed to be low for the chemicals sector as we assume that it is unlikely there will be reduced benefits elsewhere in Scotland resulting from the Development Framework. The choice of investment by existing companies who may expand and inward investors is understood to be between either investing in Grangemouth or investing abroad (whether that be in England or further afield) - i.e. they are not likely to invest elsewhere in Scotland. Displacement is assumed to be slightly higher, but still quite low, at 35% for warehousing and other industrial sectors, as Grangemouth is a specific

investment location for such companies. It is considered a strategic logistics location. Many of the industrial companies will want to locate there either to benefit from the same strategic location benefits, or to link to the chemicals sector. Displacement for offices is assumed to be higher, at 50%, as there will be more competition at a national level. 100% displacement is assumed for retail/leisure uses.

Local: This is assumed to be low for the chemicals sector as we assume it is unlikely there will be reduced benefits elsewhere in Falkirk resulting from the Development Framework. Displacement is also assumed to be low for warehousing, other industrial and offices, at 25%. Retail/leisure is assumed to be higher, at 50%.

Deadweight

National: This is assumed to be low for the chemicals sector as the majority of the benefits are assumed to relate to the Development Framework. At the workshops, it was clear that most businesses felt that in the absence of any intervention – including some infrastructure development and business support improvements - the industry was likely to decline. As indicated above, businesses were more likely to locate or invest outside of Scotland if they were not to invest in Grangemouth. Competitors were highlighted at the workshops as the Far and Middle East, where development costs are lower and a less stringent regulatory regime is in place. Deadweight is assumed to be slightly higher for the non-chemicals sectors as the intervention is needed to ensure many of the sites come forward for development.

Local: As for the national level, this is assumed to be low for the chemicals sector as the majority of the benefits are assumed to relate to the Development Framework. Again, deadweight is assumed to be slightly higher for non-chemicals sectors.

Multipliers

National: Multipliers are applied to each sector, based on Type II Employment Multipliers, Scottish Government 2007. Where there is no definite sector in the ONS figures for the sector, a composite is used to estimate the multiplier for that sector.

▪ Chemicals	3.14
▪ Warehousing	1.89
▪ Other industrial	1.81
▪ Retail/leisure	1.31
▪ Offices	1.57

Local: We have reduced the multipliers at a local level. Since there are not local figures available by sector, we have assumed the multipliers will be lower at the local level as follows:

▪ Chemicals	2.80
▪ Warehousing	1.50
▪ Other industrial	1.45
▪ Retail/leisure	1.15

- Offices 1.29

GVA per employee

GVA per employee figures are used to estimate GVA impact.

GVA per employee ratios are applied by sector (estimated using ONS NUTS 3 GVA by industry and applying Annual Business Inquiry data) for Scotland. These figures are for 2008 so are inflated to estimate 2011 values using an increase of 1.8% per annum, reflecting change in GVA per employee in the chemicals sector between 2005 and 2008. Future GVA per employee figures are also increased by 1.8% per annum.

Chemicals: GVA per employee figures for the chemicals sector (£161,000) are taken from Scottish Government data. While chemicals employment is likely to include R&D jobs, which have a much lower GVA per employee figure (£62,200 in 2008²²), the £161,000 figure is employed as we suggest that chemicals jobs created in Falkirk tend to be higher value than average. This is based on GVA per employee figures for the manufacturing sector, which indicate that GVA per employee in Falkirk (£181,000, Scottish Government data) is higher than most other local authorities and the Scottish average (£66,900). Given the already high value of the chemicals sector GVA per employee in Scotland (£161,100), this suggests that GVA per employee in Falkirk in the chemicals sector is even higher. Chemicals GVA per employee is high as it is a particularly high value activity and capital intensive.

Warehousing: This is based on ONS GVA split by industry and Annual Business Inquiry jobs data for these sectors, - Distribution, Transport and Communications - inflated to 2011 levels. Scottish and Falkirk figures have been employed.

Other industrial: This is based on ONS GVA split by industry and Annual Business Inquiry jobs data, based on the Production sector, but excluding the chemicals sector, inflated to 2011 levels. Scottish and Falkirk figures have been employed.

Retail/leisure: This is based on ONS GVA split by industry and Annual Business Inquiry jobs data for these sectors, based on the Distribution, Transport and Communications sectors, inflated to 2011 levels (which includes retail). Scottish and Falkirk figures have been employed.

Offices: This is based on ONS GVA split by industry and Annual Business Inquiry jobs data, based on the Business Services and Finance sector.

Elimination of Double-Counting

We have taken 100% of gross jobs estimated to be accommodated in chemicals floorspace. However, we have reduced the gross impacts of non-chemical jobs by 20% to ensure there is no double counting. There are jobs in the supply chain of the chemicals

²² Source: Scottish Government (2010) *Scotland By Division SIC 2007*, sector 72 'Scientific Research and Development.

sector already included in the model, which we would not want to double count in gross impacts, such as in logistics or other industrial sectors.

Optimism Bias

The model has accounted for optimism bias in four areas:

- The employment density for the chemicals sector is lower than that used for general industrial uses (67 sq.m.). Current densities at a small number of examples in Grangemouth have lower densities than the 100 sq.m. used (104, 215 and 243 sq.m.). However, to account for the fact R&D and small businesses are also expected to locate in Grangemouth, which would likely have a higher employment density, the median figure of 100 sq.m has been used.
- Phasing and density assumptions are aligned to those used by property market specialists relating to Falkirk Council's TIF analysis. These use recent development rates as a marker to see whether the figures set out are realistic. The only area of difference is at Earls Gate Phase 2, the remaining Calachem areas, and the Ineos site.
- The economic impact work looks at new business growth, rather than expansion of existing businesses. Through the framework it is likely that some of the existing companies in Grangemouth will expand their businesses within the current footprint of their building, or within their site. In this respect, the economic impact estimates are conservative.
- The reduction of gross jobs in non-chemicals sectors as discussed above, to reduce the impact of double-counting.