



Paper 6/2 Place session **For information**

1. Purpose

1.1 To provide Commissioners with background information on agenda item 2, an information gathering session exploring the future of the regional economy surrounding the Grangemouth industrial cluster.

2. Background

2.1 This note provides detail of the participants who have been invited to give evidence as part of this session along with a list of suggested questions. Further background information is also included in the Annex to help inform the session.

What	Agenda item 2: Place information gathering session
Who	<p>Douglas Duff, Head of Planning and Economic Development, Falkirk Council</p> <p>Jennifer Tempany, Director of Business Development, Forth Valley College</p> <p>Allan McQuade, Director of Place, Scottish Enterprise</p> <p>Jon Hand, Specialist (Chemical Sciences), Scottish Enterprise</p>
Why	<p>An opportunity to examine the opportunities and challenges for the regional economy posed by the move to a net-zero economy.</p> <p>Participants are senior figures involved in economic development in the region, and will be able to talk through the future vision for the regional economy and the barriers to achieving this.</p> <p>A selection of possible questions are included below:</p> <ul style="list-style-type: none"> • Do you see positive examples of the regional economy positioning itself for a future in a net-zero economy? How can these positive examples be built upon? • Are any groups of people particularly vulnerable to any transition that industry in Grangemouth makes – what can be done to protect them more if the employment landscape changes in the region over the coming decades? • Do you think the region requires additional support from Government to help secure a positive future due to the historic importance of heavy industry, or is the current support in the form of city deals etc sufficient? • To what extent do the various public and private sector bodies currently work together to secure the future vision for the region (such as enterprise agencies, skills bodies, council, national government, private sector)? Could they be coordinated better? • What would you understand the balance of responsibility between private sector companies and Government to be for bringing about the transition to a net-zero economy? Should Government be taking a more interventionist role or should companies be left to themselves? • How can economic development strategies be designed so they benefit all in the region, while improving the quality of region as a



	<p>place to live? Is there a danger that strategies focus too narrowly on supporting business without consideration of the distribution of winners/losers?</p> <ul style="list-style-type: none"> • Do you see the transition as a way of maintaining jobs/economic output at Grangemouth, or are there opportunities for growth resulting from the transition? What are they? • If the transition to net-zero in energy intensive industry requires a transition be made in terms of workforce skills, how should that be brought about, and who's responsibility is it for bringing it about? Might there be an opportunity for future skills planning to address inequalities that currently exist in the labour market?
<p>Additional background information</p>	<ul style="list-style-type: none"> • Annex A: submission from Falkirk Council • Annex B: submission from Scottish Enterprise

Annex A – Falkirk and Grangemouth Investment Zone proposal

This document outlines proposed investment for the Falkirk and Grangemouth area, and forms the basis of Falkirk Council's ask of Scottish and UK Government for funding as part of the Region Deal (still to be confirmed).

Executive Summary

Falkirk and Grangemouth contribute significantly to Scotland's GVA, combining nationally important industrial assets, reputation for high-value manufacturing, the Port of Grangemouth, and internationally-recognised tourist attractions.

The Falkirk area – and Grangemouth in particular – has seen considerable private sector investment in these areas in recent years. There is potential for this to continue at significantly higher levels. However, the ability to attract this investment, build nationally and internally renowned industries resilient to climate challenge, and ensure broad benefit across resident and business communities is hampered by a lack of supporting transport, utilities and place infrastructure.

The Falkirk Grangemouth Investment Zone aims to deliver transformational economic, inclusive and clean growth locally, regionally and nationally. At its heart is a vision to develop a sustainable, long term investment area that is a smarter, greener, resilient and more inclusive place – 'a dynamic and distinctive area at the heart of Central Scotland'. With funding of £235 million sought, its ambition is to increase job creation, innovation, productivity, and investment. Development of its key manufacturing, visitor and service sectors and the creation of great places across the Investment Zone will anticipate shifts in technology, transport and the ways people live and work to meet the challenges of climate change. The following projects will be delivered:

Innovative Industry projects		Project Funding
	Innovation 2050	£30m
	- Sustainable Chemical Manufacturing Campus	£20m
	- Autobus Technologies Centre for Excellence & Innovation	£10m
	Strategic Site Portfolio	£35m
	SME skills pathway	£4m
	Resilient Industrial Environment	£10m
Innovative Industry sub total		£79m
National Economic Infrastructure projects		
	Upgrades to Junction 5 & Inchyra Road	£22m
	New access to Port of Grangemouth	£16m
	Additional Rail Freight Capacity	£7m
	CO ₂ pipeline link to Feeder 10	£27m
National Economic Infrastructure sub total		£72m
Great Places projects		
	Sustainable Transport	£27.5m
	Great Places Development Fund	£32.5m
	Inclusive Growth - a Whole System approach	£8m
	Community Energy Infrastructure	£12m
Great Places sub total		£80m
Enabling Projects		£4m
Falkirk Grangemouth Investment Zone TOTAL		£235m

The UK and Scottish Governments will secure significant returns on their support: delivery will generate an additional 6,000 jobs and boost the economy by some £400 million annually.

The Falkirk Grangemouth Investment Zone will be:

- **Nationally important** through its vital industries and their integrated supply chains;
- **Regionally Significant** reflecting its attractions;
- **Locally Successful** in the great places it creates; and
- **Community Inclusive** in sharing the benefits of growth.

Vision delivery requires significant infrastructure improvement to support increased investment in the Falkirk and Grangemouth economy and to address the constraints which restrict it. While there is real private sector commitment to grow and develop, in the absence of United Kingdom and Scottish Government funding for the Investment Zone, development of a national focus will be restricted to incremental and piecemeal change. Opportunities to deliver broader economic opportunity across the Council area and the Forth Valley will be foregone.

The ability of the Falkirk and Grangemouth economy to realise the full potential of its strategic location and sector strengths is inhibited by below average skills attainment, restricted domestic spending linked to lower than average wages and the relative lack of access connections (infrastructure and services) between places of opportunity and communities. Road network capacity issues and a lack of town centre investment constrain development of a regional commercial and supply chain focus and other private sector investment in the area.

With the Falkirk Wheel, the Helix, and the Kelpies Park, the area is increasingly recognised as a visitor destination and a central part of the regional Forth Valley product. However, their benefit locally, regionally and nationally is limited by a lack of supporting visitor and cultural facilities, transport including active travel connections, and visitor accommodation. This will continue without supporting infrastructure, limiting the opportunity to widen the benefits of employee and visitor spending from key attractions.

Marshalling investment propositions behind development and exploitation of new technology, the Investment Zone will create sustainable and inclusive growth. Given the nationally and regionally important assets at the Grangemouth Port, refinery and chemicals complex, its advanced manufacturing base (particularly its central role in bus manufacturing), and its developing tourism status, support for the Falkirk Grangemouth Investment Zone will realise a return on UK and Scottish Government investment at least equal to, but likely to be greater than, those anticipated elsewhere.

The Investment Zone will deliver against key Scottish and UK Government, regional and local policy objectives and strategic priorities; furthering delivery of the UK Industrial Strategy and Scotland's Economic Strategy. It has been developed with a focus on sustainable and inclusive growth contributing to the UK target for net zero emissions by 2050¹. Driving the diversification and innovation central to the UK and Scotland's advanced manufacturing transition towards bio and low carbon feedstocks is a core element.

This Investment Zone submission recognises the scale of potential economic opportunity to Falkirk, Grangemouth, the Forth Valley, Scotland and the UK that will be realised in addressing the areas key challenges.

- Grangemouth's chemicals and related manufacturing base will be an international proposition developing a resilient and adaptable chemicals cluster, including innovation facilities, and provision of sites with networked services;
- Falkirk's heritage in advanced public transport manufacturing will be reinforced, encouraging ongoing adaptation to low and zero emission requirements of developed and emerging economies and encouraging supply chain colocation;
- Site constraints affecting development of the manufacturing supply chain and general business activity will be addressed;
- Road, access and other infrastructure improvements will encourage investment in commercial, residential, cultural, civic and administrative facilities in central locations, building footfall around public transport nodes. Town centre resident and business populations will increase, stimulated by the platforms offered by Investment Zone support;
- Sustainable transport and active travel routes will link key employment areas optimising their operation and enabling access from communities across the Council area. A sustainable transport corridor will encourage enhanced low carbon connections between Falkirk and Grangemouth; and
- Further development around Falkirk's established attractions will reinforce their appeal to national and international visitors. Visitor facilities will be better connected, building the conditions for more effective development of underutilised tourism assets.

The Falkirk & Grangemouth Investment Zone projects and initiatives, centred on Grangemouth and Falkirk & extending across the Forth Valley, respond to these specific issues and opportunities. They will develop a 'zone' of investment involving contributions from the public, private and third sectors to enable transformative growth. It is not a 'business as usual' programme.

¹ Climate Change Commission (CCC) Net Zero Report - March 2019. Note, the report suggested a net-zero target for Scotland by 2045.

Investment from the United Kingdom and Scottish Governments will therefore be channelled behind the pillars of **Innovative Industry**, **National Economic Infrastructure**, and creating **Great Places**, each of which includes a series of interlinked projects. They will be supported by **critical enabling actions**, projects which underpin infrastructure development and the extent to which benefits are driven regionally.

INNOVATIVE INDUSTRY - INVESTMENT ZONE FUNDING - £79 MILLION

Innovation 2050

£30 million

UK Innovation District for Chemical & Manufacturing Excellence

Falkirk-Grangemouth is a centre of production excellence in chemical sciences and large public vehicle manufacturing. It hosts the largest cluster of advanced manufacturing businesses in Scotland and has established itself as a leading location for inward investment and allied company investment in related energy, biosciences and logistics. These existing strengths will be bolstered to further expansion in industrial biotechnology, carbon usage and low / zero carbon production

There are excellent partnerships between industry and the area's education institutions. These will be developed further to ensure its company base and its people are equipped to take full advantage of the transition to bio and low carbon feedstocks in manufacturing and transport. The establishment of Centres of Excellence & Innovation (CEIs) will reinforce this. With strong links to the UK Industrial Strategy and its growth ambitions in key emerging areas, they will operate as 'shared knowledge' resources supporting research and development, incubator, 'proof of concept', and commercialisation of manufacturing development in these areas. They will combine the area's manufacturing capability with Scotland's leading advanced manufacturing and transport technology research & innovation centres to drive mutual benefit from product innovation, development and commercialisation at scale. Three CEIs will be developed, providing medium scale facilities for research-industry collaborations and commercialisation. The CEIs have the in-principle support of key industry operators and related University expertise. A Sustainable Chemical Manufacturing Campus in Grangemouth will house:

- The Industrial Biotechnology CEI; to be managed by the Industrial Biotechnology Innovation Centre (IBioIC)(Strathclyde University) ; and
- The Scottish Centre for Industrial Decarbonisation; a carbon capture usage and storage (CCUS) scale up facility, managed by Scottish Carbon Capture and Storage (SCCS).

The Autobus Technologies (including Hydrogen & Electric Propulsion) CEI will be located in Falkirk with support from Napier University's Transport Research Institute and Strathclyde University's Department of Electronic & Electrical Engineering. It will build on the areas established transport manufacturing & related supply chain capacity. Future development of Falkirk's vehicle manufacturing capability will also respond to the climate challenge, adapting 'clean' bus and other manufacturing technology to meet the requirements of domestic and export markets for low and zero carbon public transport.

CEI commercial and research activity will be reinforced by 'Community Satellites' in the town centres of Grangemouth (Sustainable Chemical Manufacturing) and Falkirk (Auto bus and General Technologies) providing centrally accessible accommodation for: innovative and start-up businesses in the supply chain; and Forth Valley College's promotion of training and employment opportunities from future technology to the local community to widen access to related training and employment opportunities and as centres for related STEM education. They will reflect the areas industrial heritage, demonstrating its central role in industrial development over the last 200 years and more. The UK Innovation District for Chemical & Manufacturing Excellence includes provision for investment in training plant to service the future skills requirements in the area and across the UK. The equipment will be located between each CEI and Forth Valley College to provide direct access to developing businesses.



Strategic Site Portfolio

£35 million

The Investment Zone will enable the areas further development as a national and international production centre. This requires land for high value manufacturing colocation in the chemicals, industrial biotechnology and other sectors, and to extend the scope and sustainability of advanced manufacturing and other operations. The area is affected by a shortage of effective industrial land to support its advanced manufacturing activity and its future development. The Investment Zone will advance sites close to major transport corridors or co-located with existing industrial sites and services. The sites will support a combination of innovation / industry and business park style settings. Where legacy constraints presently render development for economic purposes unviable, it will assist with improved access and support works to address ground conditions; sub-ground / above ground structures; re-profiling; decontamination and other constraints. This project will enable complementary investment in strategic grow-on-space including advanced units) , promoting sector & joint venture development

Grangemouth

Earls Gate (ownership CalaChem)
Grangemouth Dock (Forth Ports)
Grangemouth 1/2/3 (Forth Ports)
INEOS colocation sites (INEOS)
Wholeflats Road (INEOS / FC)

South Bridge St (Forth Ports/Falkirk Council)
Falkirk/Larbert
Abbotsford (Falkirk Council/Scottish Enterprise)
Glenbervie (Scottish Enterprise)

SME Skills Pathway

£4 million

Whether as innovators or as part of sector supply chains, SMEs are critical in commercialising new technologies, developing future job roles, and retaining economic activity locally and regionally. The success of the UK Innovation District will be influenced by SME development and growth. In turn, this relies on an appropriate supply of skilled workers, particularly in STEM subjects, aligned to sector needs. SMEs are generally not eligible for training support for the Flexible Workforce Development Fund, typically accessed by Apprenticeship Levy payers. Where industry clusters exist, the potential for larger companies to attract staff trained in an SME environment is a further disincentive. The SME Skills Pathway seeks to remove barriers to SMEs growth by de-risking investment in workforce training and upskilling; and addressing a shortage of skills in growth areas.

The SME Skills Pathway has three elements: an SME Skills Enhancements Fund operating for 10 years allowing business to access appropriate training opportunities; an SME Shared Apprenticeship Model to de-risk investment in developing employees; and additional investment in local labour market intelligence to ensure peaks and troughs in anticipated requirements can be effectively managed in pursuing Innovation District growth.

Resilient Industrial Environment

£10million

State-of-the-art technology will combine with the availability of supporting data to provide continuous and advanced information on environmental hazards to support community, business and environmental resilience. Working with industry and regional academic and other partners an innovative, integrated and smart network of sensors will be developed, a first of a first-of-its-kind suite of integrated technologies to minimise risks to industry and community alike such as floodwater levels, tidal surges and air quality. It will have close links with the National Environment Centre being developed through the Stirling & Clackmannanshire Growth Deal

NATIONAL ECONOMIC INFRASTRUCTURE - INVESTMENT ZONE FUNDING - £72 MILLION

National Economic Infrastructure

The Investment Zone will support a modern transport network reinforcing Falkirk- the integrated chemicals, port and settlement cluster, creating a major industrial access at the M9 Junction 5 with associated

distributor connections linked to major industrial sites and the Port of Grangemouth. It will reinforce the area's strategic national infrastructure for sustainable growth through:

- | | |
|---|--------------------|
| ▪ upgrades to the M9 Junction 5 and Inchyra Road; | <i>£22million</i> |
| ▪ new access to the Port of Grangemouth; | <i>£16million</i> |
| ▪ additional rail freight capacity within the Port; and | <i>£7million</i> |
| ▪ a carbon dioxide pipeline link to the Feeder 10 Pipeline (enabling national decarbonisation objectives) | <i>£27 million</i> |

This Investment Zone infrastructure will support the whole of the Grangemouth Investment Zone (NPF32) including the Chemical Cluster / Logistics Sector / Petro-chemicals / Port and business and industrial areas to the west, north and east of Grangemouth. Wider place and community benefits will include removal of HGV traffic from sensitive local and residential streets.

GREAT PLACES - INVESTMENT ZONE FUNDING - £80 MILLION

Based on internationalisation, innovation, investment and inclusion, the Investment Zone will drive new levels of activity, opening new and emerging markets associated with meeting the climate challenge, digitisation and adapting to changing markets. Investment Zone funding will support places and the links between to fully capture these opportunities to build Great Places in Grangemouth and Falkirk.

Sustainable Transport

£27.5 million

The Investment Zone will support infrastructure to ensure its key centres and communities are sustainably connected. Reinforcing Innovative Industry and National Economic Infrastructure investment, it will improve connections between its main centres – Falkirk & Grangemouth – and its key employment and living places. It will deliver wider place, environment, and economic efficiency benefits by establishing:

- The Falkirk Central rail/bus/active travel interchange. Taking advantage of increased capacity and better strategic links with electrification of services to Edinburgh, Glasgow & Stirling, the interchange will improve arrival facilities in the centre of the Investment Zone, with coordinated services linking it to key sites and places;
- A Falkirk- Grangemouth Green Corridor, enabling l12ow / zero carbon movement between centres, arrival points and linking major areas of employment, visitor activity and neighbouring communities; and
- Park and Ride/ Choose facilities linked by regular services to the Investment Zone's main centres and sites.

Great Places Development Fund

£32.5 million

Despite their strategic accessibility, Falkirk and Grangemouth centres face major challenges associated with structural change in retail, leisure markets and other markets

While its tourism profile has risen based on the attraction of the Falkirk Wheel and the Kelpies, there is clear opportunity to drive greater benefits locally and regionally, by encouraging longer stays and higher levels of spending, and nationally, by increasing the area's international attraction. The areas supporting tourism infrastructure assets, the connections between them and the connections to the key centres of Falkirk and Grangemouth badly need to be reinforced to achieve this.

² National Planning Framework 3 identifies the Grangemouth Investment Zone, its freight and transport infrastructure as a national development

Supporting projects with a minimum value of £4m, the Great Places Fund will support proposals which: can drive transformation of the centres as supply chain hubs and focal points of regional cultural and economic activity; and which strengthen supporting tourism infrastructure, demonstrate major additional benefits in increasing visitor volumes & related levels of spending and broaden and deepen visitor impacts on the regional economy.

Inclusive Growth – a Whole System Approach

£8 million

The Investment Zone package is underpinned by a robust programme to promote inclusive growth. Procurement processes will be structured to ensure the widest possible community benefit from related contracts. There is also an acknowledgement that mechanisms need to be developed to address deep-seated and long-standing issues of deprivation in particular parts of the Investment Zone. Household and fuel poverty is compounded by family health and other issues in parts of Grangemouth in close proximity to the area's main industrial complex. A Whole System Approach pilot will bring together Council departments, NHS staff and other agencies to target compound disadvantage at household level to comprehensively address related issues and increase household economic activity levels.

Community Energy Infrastructure

£12 million

The Investment Zone will promote local, inclusive and sustainable energy generation by investing in renewable energy solutions to meet local needs whilst reinforcing community empowerment. The Investment Zone will enable local organisations, with Falkirk Council and Local Energy Scotland, to commercialise low carbon energy solutions to generate a financial return for community re-investment. This investment will capitalise on Scotland's largest concentration of industrial heat to develop a series of interconnected district heating networks.

ENABLING PROJECTS - INVESTMENT ZONE FUNDING - £4 MILLION

Delivery of the Investment Zone projects needs effective coordination, clear direction and prioritisation and clarity regarding the effects of implementation on existing networks. Their delivery will therefore be supported by Enabling Projects including:

- Dedicated project management & delivery resource. Coordination and management will also require additional resource beyond a 'business as usual' approach;
- A focussed approach to ensure Inclusive Growth factors are comprehensively reflected in project delivery and procurement: lack of monitoring and follow up information frustrates the efforts of the Council and others in extending the inclusive growth and economic benefits of procurement activity. An early focus on such barriers will address these and encourage consistency across Investment Zone projects and Forth Valley delivery partners. This measure will raise the level of inclusive growth and related benefits from Investment Zone infrastructure expenditure;
- Comprehensive information to guide project and infrastructure development & delivery: the interventions will affect the movement of people, information and traffic across Falkirk and Grangemouth. A multi-modal movement assessment of vehicle and active travel movement across Falkirk – Grangemouth will provide a baseline of existing and forecast conditions; and
- Place Development Masterplans: Grangemouth and Falkirk's centres are critical to increased investment, productivity, performance and inclusion across the Investment Zone. They will be critical to the development of regional supply chains in industry and in supporting the visitor economy. They will be the focus of regional and local cultural and administrative activity. They will also be the 'front window' for residents and visitors to the innovation in industrial biotechnology, advanced manufacturing, decarbonisation and public transport taking place across the Investment Zone and its opportunities. Masterplans will be prepared as initial actions to ensure Investment Zone ambitions are realised.



IMPACT

The Falkirk Grangemouth Investment Zone Investment Zone is expected to generate considerable economic benefits over and above those of existing programmes. Its programme will be delivered over a 15-year programme and its full benefits captured within 25 years as private and other investment and local business, resident and visitor communities capture its opportunities. Over 25 years, more than 6,000 new jobs will be created, adding nearly £3bn to the regional economy

Falkirk Grangemouth Investment Zone Theme	Impacts			
	Annual ³		Cumulative GVA	
	Job ⁴ s	GVA	to 2040	over 25 Years
Innovative Industry	2,182	£156m	£619m	£1,191m
National Economic Infrastructure	2,078	£148m	£590m	£1,134m
Great Places	1,817	£91m	£323m	£650m
Total	6,077	£395m	£1,532m	£2,975m

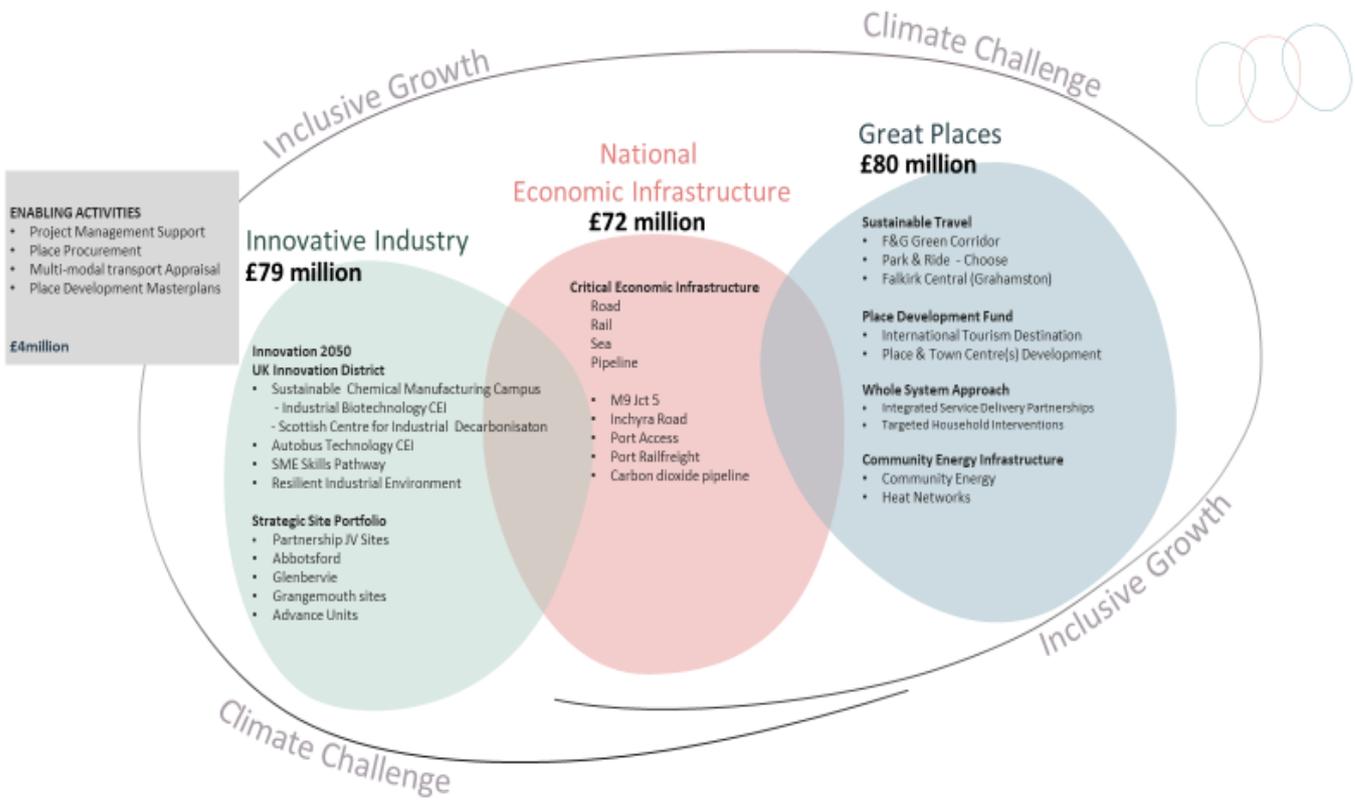
The figure below shows the relationship between Investment Zone interventions and their associated investment.

GOVERNANCE

The experience of Falkirk's Tax Incremental Finance initiative, Scotland's most successful shows the benefit of infrastructure and other investment behind targeted sector expansion. It also demonstrates the ability of Falkirk Council and its partners in the Falkirk Economic Partnership to deliver successful outcomes. The Investment Zone will be delivered by the Falkirk Economic Partnership, led by Falkirk Council. Partners including Scottish Enterprise, Forth Valley College, Falkirk Community Trust, Scottish Canals, INEOS, Forth Ports, CalaChem and Alexander Dennis will have lead roles as appropriate in project development and delivery.

³ On completion

⁴ Full time equivalents



CEI = Centre for Excellence & Innovation



Introduction

This document presents the Falkirk Economic Partnership's proposals to the United Kingdom and Scottish Governments for substantial investment in driving Industrial Innovation, Strategic National Infrastructure and creating Great Places in the area. The Falkirk Grangemouth Investment Zone will deliver transformational economic and inclusive growth locally, regionally and nationally.

Through Government funding and the investment it attracts from the private sector and others, the Investment Zone will be a smarter, greener, resilient and more inclusive place. The projects supporting this vision are integrated and will deliver significant infrastructure improvement to support increasing investment in Falkirk and Grangemouth's economy. It is not a 'business as usual' investment programme. It is a 'zone' of investment involving public, private and third sector investment to enable transformative growth. Its projects respond to specific issues & opportunities and have been developed collaboratively by the Falkirk Economic Partnership.

Developing the Investment Zone programme

Under the remit of the Falkirk Economic Partnership, a Steering Group involving Falkirk Council, Scottish Enterprise, Scottish Futures Trust, Forth Valley College, INEOS and others was established to oversee Investment Zone preparation. It has met regularly since May 2017 to refine the proposition to Government. Investment Zone programme development has involved:

- Detailed analysis of the performance of the Falkirk & Grangemouth economy against economic and inclusive growth indicators, consistent with the UK Industrial Strategy and the Scottish Government's Enterprise and Skills Review⁵;
- Review of existing and emerging policy and initiatives, acknowledging Falkirk's Tax Incremental Financing (TIF) pilot and other programmed spending. The effects of Investment Zone projects will be additional to those already anticipated;
- Wide-ranging consultation with public and private sector stakeholders, involving Falkirk Council as lead organisation, Scottish Enterprise, Scottish Canals, the Scottish and UK Governments, Forth Valley College, Chemical Sciences Scotland, Transport Scotland, Sustrans, Visit Scotland, Skills Development Scotland and other national agencies. Private sector interests including Alexander Dennis (ADL), CalaChem, Forth Ports, INEOS, Syngenta, local developers, other manufacturers, and other interests have been involved⁶.

It has progressed through a series of stages:

- A call for projects targeting suggested objectives issued to key stakeholders, generating 44 proposed interventions (Summer 2017);
- Agreement of the Investment Zone Vision, objectives and priorities for projects at a stakeholder event at the Falkirk Wheel (August 2017);
- Establishing 9 platforms for transformational growth in Falkirk and Grangemouth with a comprehensive inclusion focus to ensure opportunity and benefit is broadly spread across the community (Winter 2017/18); and

⁵ Scottish Government: Enterprise & Skills Review: Report on Phase 2, Regional Partnerships, June 2017

⁶ A schedule of the organisations involved is attached at Appendix 1



- Submission of an Outline Investment Zone Case to the UK and Scottish Governments, describing the platforms and their anticipated effects (May 2018). This was followed by a working session with officers of both Governments and stakeholders, and subsequent advice on project refinement (Autumn / Winter 2018).

In early 2019, Falkirk Council via the Falkirk Economic Partnership started working to develop the Investment Zone submission. FEP members, leading businesses and others needed to deliver the projects worked collaboratively to develop project outline cases. This was accelerated by a series of 3 sessions with project working groups, held in April, June and July / August.

This submission reflects this extensive partnership collaboration.

Falkirk Economic Partnerships' Growth Deal ambitions and its Investment Zone objectives are outlined in the next chapter, before describing its enabling projects – strategic actions which will underpin all of the interventions – and the projects to drive Innovative Industry, reinforce National Economic Infrastructure and create Great Places across Falkirk and Grangemouth.

Investment Zone Vision & Pillars

Vision

The Falkirk Grangemouth Investment Zone aims to deliver transformational economic, inclusive and clean growth locally, regionally and nationally. At its heart is a vision to develop a sustainable, long term investment area that is a smarter, greener, resilient and more inclusive place – 'a dynamic and distinctive area at the heart of Central Scotland'. Its ambition is to increase job creation, increase innovation, increase productivity, and increase investment across the Council area, and nationally. The forward development of its key manufacturing, visitor and service sectors and the creation of great places across the Investment Zone will anticipate the shifts in technology, transport and the ways people live and work to meet the challenges of climate change. The Falkirk Grangemouth Investment Zone will be:

- Nationally important as a result of its vital, key industries and their integrated supply chains;
- Regionally Significant by virtue of the area's attractions;
- Locally Successful in the places it creates; and
- Community Inclusive in sharing the benefits of growth.

Vision delivery necessitates significant infrastructure improvements to support increasing levels of investment in the Falkirk and Grangemouth economy. It is not a 'business as usual' programme. It is a 'zone' of investment involving contributions from the public, private and third sectors to enable transformative growth. Investment Zone projects and initiatives respond to specific issues and opportunities. These are centred on Grangemouth and Falkirk, extending across the Forth Valley. Investment from the United Kingdom and Scottish Governments will be channelled behind Industrial Innovation, Strategic National Infrastructure and creating Great Places and support for critical enabling actions.

The Investment Zone will drive diversification and innovation in the chemicals & life science, carbon usage, and transport manufacturing sectors as a key part of the UK and Scotland's advanced manufacturing transition towards bio and low carbon feedstocks. It will establish the area as a model for low and zero



carbon transport, harnessing local innovation to achieve a cleaner network. Strategic investment will facilitate the transition to more efficient and low carbon energy solutions while future-proofing energy systems in existing and new communities, contributing to the UK target for net zero emissions by 2050⁷.

The experience of Falkirk's Tax Incremental Finance initiative, Scotland's most successful shows the benefit of infrastructure and other investment behind targeted sector expansion. It also demonstrates the ability of Falkirk Council and its partners in the Falkirk economic Partnership to deliver successful outcomes.

The UK's Draft Integrated National Energy and Climate Plan (NECP) (2019), UK Clean Growth Strategy (2017) and Scotland's Energy Strategy (2017) all identify Grangemouth as an area where industrial biotechnology and carbon usage offer significant opportunities for decarbonisation and economic growth. The challenge for Grangemouth is to further develop its strategic position at the heart of the UK chemical manufacturing sector, with a renewed focus on reducing its carbon footprint. While related influences will increase in future across Europe and globally, Grangemouth will lead critical areas of activity in industrial biotechnology and carbon capture and usage as it does so. This Growth Deal submission targets capital funding for the related infrastructure and site improvements needed to achieve this

A related Strength in Places bid to UK Research & Innovation led by the Industrial Biotechnology Innovation Centre (IBioIC) seeks £20m to invest directly in industry training and engagement, Forth Valley College working in collaboration with the Universities of Edinburgh, Strathclyde and Glasgow.

Building on the established strengths of Alexander Dennis, one of the UK's leading public transit manufacturers and its local supply chain, future development of Falkirk's vehicle manufacturing capability will also respond to the climate challenge, adapting 'clean' bus manufacturing technology to meet the requirements of domestic and export markets for low and zero carbon public transport.

The Investment Zone will combine the area's manufacturing capability with Scotland's leading research & innovation centres in the advanced manufacturing and transport technology fields to drive mutual benefit from product innovation, development and commercialisation at scale. The Investment Zone aims to boost the areas competitiveness, nationally and internationally.

In the absence of United Kingdom and Scottish Government funding for the Investment Zone, development of a national focus for key sectors will be restricted to incremental and piecemeal change. Opportunities to deliver broader economic opportunity across the Council area and the Forth Valley will also be foregone.

More broadly, the ability of the Falkirk and Grangemouth economy to realise the full potential of its strategic location and sector strengths is inhibited by below average skills attainment, restricted domestic spending linked to lower than average wages and the relative lack of access connections (infrastructure and services) between places of opportunity and communities. Road network capacity issues and a lack of town centre investment have constrained the development of a regional commercial and supply chain focus and other private sector investment in the area.

The Falkirk area is increasingly recognised as a visitor destination with key developments such as the Falkirk Wheel, the Helix, and the Kelpies Park. With Stirling Castle and other attractions, these are now a central part of the regional Forth Valley product. However, their benefit locally regionally and nationally is restricted through a lack of supporting visitor and cultural facilities, transport including active travel

⁷ Climate Change Commission (CCC) Net Zero Report - March 2019. Note, the report suggested a net-zero target for Scotland by 2045.

connections and visitor accommodation. This will continue without supporting infrastructure, limiting the opportunity to widen the benefits of employee and visitor spending from key attractions.

By marshalling investment propositions behind development and commercial exploitation of new technology, the Investment Zone will create an opportunity for sustainable and inclusive growth. Given nationally and regionally important assets at the Grangemouth Port, refinery and chemicals complex, its advanced manufacturing base (particularly its central role in bus manufacturing), and its developing tourism status, support for the Falkirk Grangemouth Investment Zone will realise a return on UK and Scottish Government investment at least equal to, but likely to be proportionately higher than those anticipated in devolved arrangements elsewhere. Investment Zone projects will deliver against its objectives to:

- **Enable Growth, Investment & Innovation** - Securing additional economic growth & activity across the Council area and Scotland. Significant new employment will be generated from private investment leveraged through the Investment Zone projects. The ability to exploit existing and developing national and international key sector markets will be expanded;
- **Enhance Connections** – Low / zero carbon investment in infrastructure, networks and utilities will improve connectivity assisting strategic employment & investment opportunities regionally, nationally & internationally;
- **Promote Sustainable and Competitive Places** – Investment in major infrastructure improvement in the Investment Zone’s central places will improve connections between and the experience of gateways and the cultural, commercial and administrative focal points to build strong, sustainable centres and smart business, culture and leisure environments which work for all sections of society. It will create platforms for increased residential and business populations;
- **Promote Community Inclusion** – Infrastructure delivery will be accompanied by innovation in procurement, skills development to enable businesses and communities to fully benefit from industrial innovation, and a concentrated focus on addressing critical issues which restrict economic participation. The Investment Zone and its communities will be adaptable and resilient to economic and wider challenges. They will be clear beneficiaries of Growth Deal investment; and
- **Build a Low Carbon economy** – Net carbon emissions will be greatly reduced with the introduction and development of new manufacturing and carbon usage processes. This and Growth Deal investment in active travel and sustainable public and private transport will make a major contribution to Forth Valley’s net zero target.

These actions will be the platform to strengthen the Investment Zone economy as an important and central driver of long-term growth in the Scottish economy and a significant contributor to growth in key UK sectors.

Through a focused co-ordinated approach delivering transformational interventions while maximising the value of existing assets, Growth Deal projects and the synergies between them will deliver against key national, regional and local policy objectives and strategy priorities, including the stated priorities of Scottish and UK Governments: promoting Inclusive Growth (Scotland’s Economic Strategy, 2015); furthering delivery of UK Industrial Strategy (2017) objectives; and supporting transition towards a low carbon economy.

Coordinated support for Industrial Innovation, National Significant Infrastructure and Great Places in the Investment Zone will assist achievement of UK and Scottish Government climate change targets.

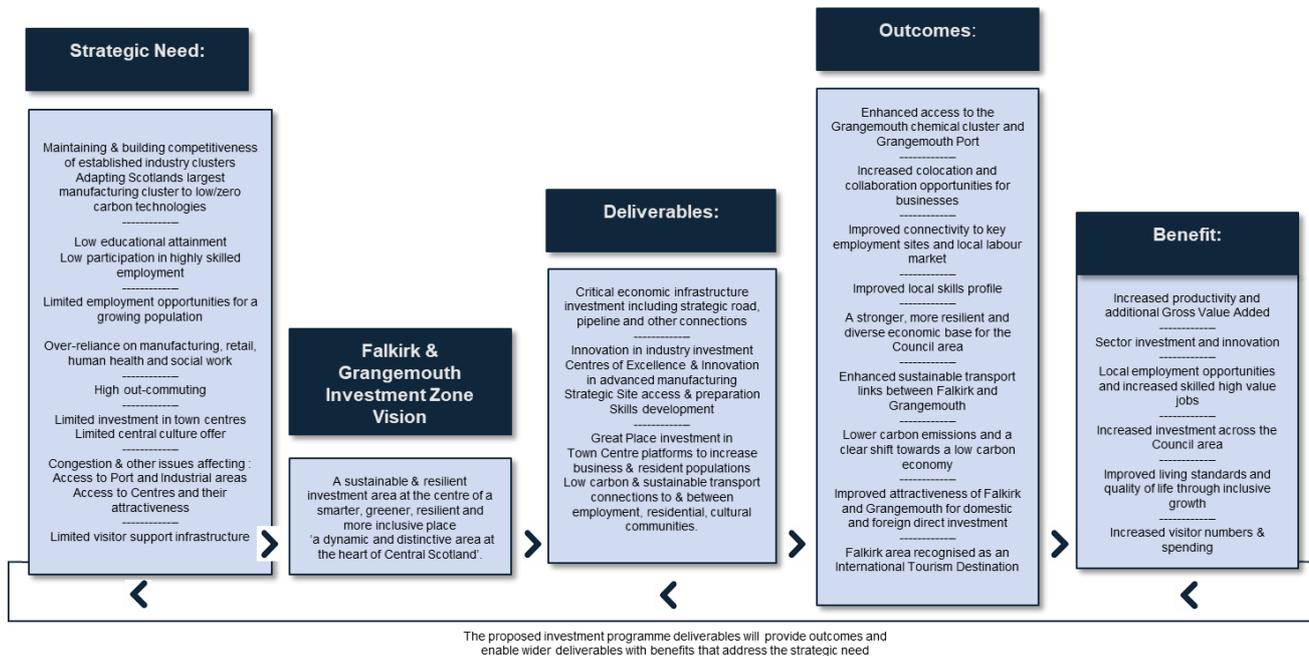


This Investment Zone submission recognises the scale of potential economic opportunity to Falkirk, Grangemouth, the Forth Valley, Scotland and the UK that will be realised in addressing the areas key challenges.

- Grangemouth’s chemicals and related manufacturing base will be an international proposition developing a resilient and adaptable chemicals cluster, including innovation facilities, and provision of sites with networked services;
- Falkirk’s heritage in advanced public transport manufacturing will be reinforced, encouraging ongoing adaptation to low and zero emission requirements of developed and emerging economies and encouraging supply chain colocation;
- Site constraints affecting development of the manufacturing supply chain and general business activity will be addressed;
- Road, access and other infrastructure improvements will encourage cultural, civic and administrative facilities in central locations, building footfall around public transport nodes. Town centre resident and business populations will increase, stimulated by the platforms offered by Investment Zone support;
- Sustainable transport and active travel routes will link key employment areas optimising their operation and enabling access from communities across the Council area. A sustainable transport corridor will encourage enhanced low carbon connections between Falkirk and Grangemouth; and
- Further development around Falkirk’s established attractions will reinforce its attraction towards national and international visitors. Visitor attractions will be better connected, building the conditions for more effective development of underutilised tourism assets.

The relationship between interventions and outcomes in delivering the Vision is illustrated in the Falkirk Grangemouth Investment Zone logic model below. Appendix A schedules the Baseline Indicators which Investment Zone activity will influence.

Figure 0:1 Investment Zone Logic Model



Pillars

The Investment Zone proposition is founded on the three pillars of Innovative Industry, Strategic National Infrastructure, and Great Places, each of which includes a series of interlinked projects. They will be supported by a suite of enabling actions, projects which will underpin the development of infrastructure and the extent to which benefits are driven regionally. These are briefly described below.

Innovative Industry

Innovation 2050

Falkirk-Grangemouth is a centre of production excellence in chemical sciences and large public vehicle manufacturing. It hosts the largest cluster of advanced manufacturing businesses in Scotland and has established itself as a leading location for inward investment and allied company investment in related energy, biosciences and logistics. These existing strengths will be extended to further expansion in industrial biotechnology, carbon usage and low / zero carbon production

There are excellent partnerships between industry and education institutions in the area The Investment Zone support will develop them further to ensure the area, its industry and its people are equipped to take full advantage of the transition to bio and low carbon feedstocks in manufacturing and transport. The establishment of Centres of Excellence & Innovation (CEIs) in: Industrial Biotechnology; Public Transport Technology; and Carbon Usage (Chemical Manufacture) will reinforce this. With strong links to the UK Industrial Strategy and its growth ambitions in key emerging areas, they will operate as 'shared knowledge' resources supporting research and development, incubator, 'proof of concept', and commercialisation of manufacturing development in these areas.

Strategic Site Portfolio

The Investment Zone presents major opportunities for the area's further development as a national and international production centre. This requires land for high value manufacturing colocation in the chemicals, industrial biotechnology and other sectors, and to extend the scope and sustainability of advanced manufacturing and other operations. The Investment Zone will advance development of sites close to major transportation corridors or co-located with existing industrial sites and services. The sites will support a combination of innovation / industry and business park style settings. Where legacy constraints presently render development for economic purposes unviable, it will assist with improved access and support works to address ground conditions; sub-ground / above ground structures; re-profiling; decontamination and other constraints.

Resilient Industrial Environment

State-of-the-art technology will combine with the availability of supporting data to provide continuous and advanced information on environmental hazards to support community, business and environmental resilience. Working with industry and regional academic and other partners an innovative, integrated and smart network of sensors will be developed, a first of a first-of-its-kind suite of integrated technologies to minimise risks to industry and community alike such as floodwater levels, tidal surges and air quality.

National Economic Infrastructure

The Investment Zone will support a modern transport network reinforcing the integrated chemicals, port and settlement cluster of Falkirk-Grangemouth, creating a major industrial access at Junction 5 with associated distributor connections linking the major industrial sites and port. It will reinforce the area's strategic national infrastructure for sustainable growth through: upgrades to the M9 Junction 5 and Inchyra Road; new access to the Port of Grangemouth; additional rail freight capacity within the Port; and a carbon dioxide pipeline link to the Feeder 10 Pipeline (enabling our decarbonisation objectives).

This Investment Zone infrastructure will support the whole of the Grangemouth Investment Zone (NPF38) including the Chemical Cluster / Logistics Sector / Petro-chemicals / Port and business and industrial areas to the west, north and east of Grangemouth. Wider place and community benefits will extend to removal of HGV traffic from sensitive local and residential streets.

Great Places

Based on internationalisation, innovation, investment and inclusion, implementation of Growth Deal projects will drive new levels of activity, opening new and emerging markets associated with meeting the climate challenge, digitisation and market change and creating a step-change in economic activity. Its places and the links between them will be positioned to fully capture the opportunities Investment Zone interventions will bring to build Great Places in Grangemouth and Falkirk.

Sustainable Transport

The Investment Zone will support infrastructure to ensure its key centres and communities are sustainably connected and can fully capture its opportunities. Reinforcing its investment in Innovative Industry and strategic infrastructure, Growth Deal interventions will improve the connections between its main centres – Falkirk & Grangemouth – and its key employment and living places. Its support will target sustainable and low / zero carbon modes, extending transport choices for people and goods. It will encourage modal shift

⁸ National Planning Framework 3 identifies the Grangemouth Investment Zone, its freight and transport infrastructure as a national development

and reduce traffic movement in areas with limited capacity through enhanced infrastructure. It will deliver wider place, environment, and economic efficiency benefits by establishing:

- The Falkirk Central rail/bus/active travel interchange. Taking advantage of increased capacity and connectivity with electrification of services to Edinburgh, Glasgow & Stirling, the interchange will improve arrival facilities in the centre of the Investment Zone, with coordinated services linking it to key sites, and places;
- A Falkirk- Grangemouth Green Corridor, enabling low / zero carbon movement between the centres and the Investment Zone arrival points and linking major areas of employment, visitor activity and neighbouring communities to active travel infrastructure; and
- Park and Ride/ Choose facilities, linked by regular services to the Investment Zone's main centres and sites.

Great Places Development Fund

Despite their strategic accessibility Falkirk and Grangemouth centres face major challenges associated with structural change in retail and leisure markets. With Investment Zone support the areas will aim to capitalise on recent improvements to regional accessibility afforded by rail electrification and anticipated growth in advanced manufacturing, tourism and other sectors.

While its tourism profile has risen based on the attraction of the Falkirk Wheel and the Kelpies, there is clear opportunity to drive greater benefits locally and regionally, by encouraging longer stays and higher levels of spending, and nationally, by increasing the area's international attraction. The areas supporting tourism infrastructure assets, the connections between them and the connections to the key centres of Falkirk and Grangemouth badly need to be reinforced to achieve this.

The Great Places Fund will support proposals which: can drive transformation of the centres as supply chain hubs and focal points of regional cultural and economic activity; and which strengthen supporting tourism infrastructure, demonstrate major additional benefits in increasing visitor volumes & related levels of spending and broaden and deepen visitor impacts on the regional economy.

Inclusive Growth – a Whole System Approach

The Investment Zone package is underpinned by a robust programme to promote inclusive growth. Procurement processes will be structured to ensure the widest possible community benefit from related contracts. There is also an acknowledgement that mechanisms need to be developed to address deep-seated and long-standing issues of deprivation in particular parts of the Investment Zone. Household and fuel poverty is compounded by family health and other issues in parts of Grangemouth in close proximity to the area's main industrial complex. A Whole System Approach pilot will bring together Council departments, NHS staff and other agencies to target compound disadvantage at household level to comprehensively address related issues and increase household economic activity levels.

Community Energy Infrastructure

The Investment Zone will promote local, inclusive and sustainable energy generation by investing in renewable energy solutions to meet local needs whilst reinforcing community empowerment. The Investment Zone will enable local organisations, with Falkirk Council and Local Energy Scotland, to commercialise low carbon energy solutions to generate a financial return for community re-investment. This investment will capitalise on Scotland's largest concentration of industrial heat to develop a series of interconnected district heating networks.

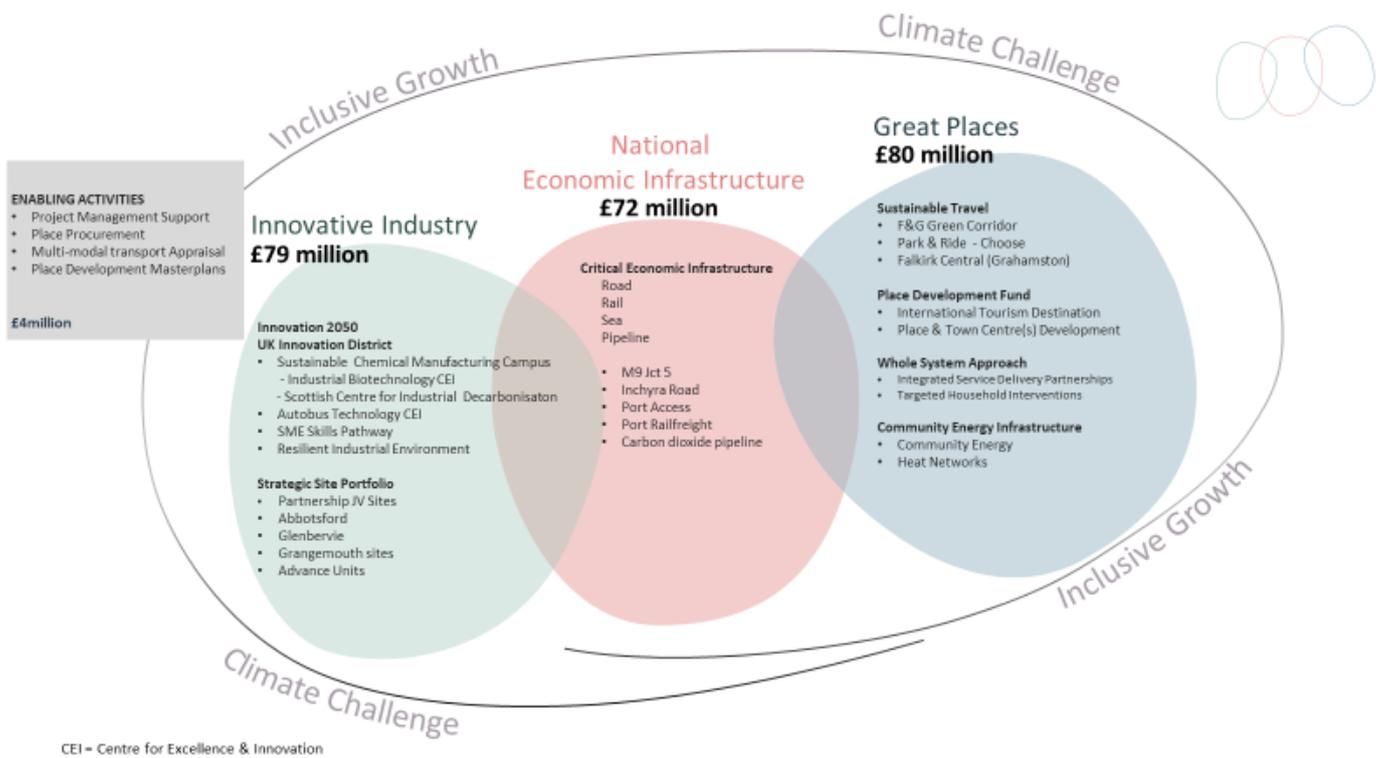
Enabling Projects

Delivery of projects under each of the three Investment Zone pillars is dependent on effective coordination, clear direction and prioritisation over the role of the Investment Zone's central spaces, and clarity regarding the effects of implementation on existing networks. Their delivery over the next 10 - 15 years will therefore be supported by a series of Enabling Projects including:

- Dedicated project management & delivery resource: substantial investment is associated with the Investment Zone projects, requiring direction, drive and close coordination at individual project, theme, and IZ level. It is acknowledged that these activities, in common with the IZ projects and their deliverables, will require additional resource beyond a 'business as usual' approach;
- A focussed approach to ensure Inclusive Growth factors are comprehensively reflected in project delivery and procurement: lack of monitoring and follow up information frustrates the efforts of the Council and others in extending the inclusive growth and economic benefits of procurement activity. An early focus on related barriers aims to address these issues, promoting consistency across Investment Zone projects and delivery partners in the Forth Valley. This measure will raise the level of inclusive growth and related benefits from Investment Zone infrastructure expenditure;
- Availability of comprehensive technical information to guide project and infrastructure development & delivery: the IZ interventions, with only a limited number of exceptions, will affect the movement of people, information and traffic across Falkirk and Grangemouth. A multi-modal assessment of vehicle and active travel movement in the Falkirk – Grangemouth corridor will provide a comprehensive baseline of existing and forecast conditions to refine project development consistent with Investment Zone and Great Places objectives; and
- Place Development Masterplans: Grangemouth and Falkirk's centres are critical in pursuing increased investment, productivity, performance and inclusion across the Investment Zone. As the places which reflect the economic diversity and health of the area, they have a central relationship, particularly with creating Great Places and driving Innovative Industry projects. At strategic, regional and local levels, they are the most accessible places in the IZ area. They will be critical to the development of regional supply chains in industry and in supporting the visitor economy. They will be the focus of regional and local cultural, cultural and administrative activity. Increasingly, they will also provide a 'front window' for residents and visitors to the innovation in industrial biotechnology, advanced manufacturing, decarbonisation and public transport taking place across the Investment Zone and the employment and education opportunities associated with it. Masterplans will be prepared as initial actions to ensure Investment Zone Growth Deal projects and other activity will be coordinated to ensure these ambitions are realised.

The diagram overleaf shows the relationship between the Investment Zone interventions, their associated investment and anticipated effects.

Figure 0:2 Investment Zone interventions



CEI = Centre for Excellence & Innovation

Table 0-1 Investment Zone impacts

Falkirk Grangemouth Investment Zone Theme	Impacts			
	Annual ⁹		Cumulative GVA	
	Job ¹⁰ s	GVA	to 2040	over 25 Years
Innovative Industry	2,182	£156m	£619m	£1,191m
Strategic National Infrastructure	2,078	£148m	£590m	£1,134m
Great Places	1,817	£91m	£323m	£650m
Total	6,077	£395m	£1,532m	£2,975m

⁹ On completion

¹⁰ Full time equivalents

Innovative Industry

Introduction

Meeting the challenges of climate change will demand different approaches to the way we produce chemicals, plastics and the other materials used in making the products we use every day. It will also require a shift towards low and zero carbon fuels for all forms of transport for business, community, leisure and other functions. As major users of carbon and producers of the materials society will continue to need, the Investment Zone's industries need to be at the heart of this transition. Major investment in resilient innovation and supporting infrastructure is needed if our climate change objectives are to be realised.

With Growth Deal investment, cutting edge research will combine with industry expertise in application and commercialisation to place Grangemouth at the forefront of this next industrial revolution.

Building from established manufacturing strengths, Innovative Industry activity responds directly to the grand challenge of 'Clean Growth' identified in the UK Industrial Strategy. Its projects respond to its five foundations of productivity - Ideas, People, Infrastructure, Business Environment and Place.

Investing in Innovative Industry will deliver Innovation 2050, the UK Innovation District for Chemical & Manufacturing Excellence. This will contain:

- Centres of Excellence & Innovation (CEIs) in: Industrial Biotechnology; Carbon Usage (combined at a Sustainable Chemical Manufacturing Campus in Grangemouth); and Auto bus Technology. These will provide medium scale facilities for research-industry collaborations and commercialisation, establishing business environments focused on driving Clean Growth;
- A portfolio of strategic sites, ensuring that commercialisation from the Grangemouth and Falkirk CEIs can locate in proximity to research facilities and other supporting infrastructure, whilst retaining the value they create locally and regionally;
- Skills pathways to complement emerging Clean Growth sectors, ensuring that Forth Valley College (FVC) continues to provide leading edge production skills as requirements adapt to changes in feedstocks and legislative requirements; and
- State-of-the-art monitoring technology to supports the continued growth and resilience of nationally significant industry in Grangemouth while protecting the community that surrounds it.

Sustainable Manufacturing Chemical Campus

The Sustainable Manufacturing Campus will support innovation-led economic growth in Grangemouth; addressing sector weaknesses identified in the UK Industrial Biotechnology Strategy, the UK Industrial Strategy and a UK wide target for net zero emissions by 2050¹¹. It will support an ecosystem for investment, research and commercialisation in new clean growth technology, as identified in the UK Industrial Strategy.

¹¹ Climate Change Commission (CCC) Net Zero Report - March 2019. Note, the report suggested a net-zero target for Scotland by 2045.

The Sustainable Chemical Manufacturing Campus will have two elements: an Industrial Biotechnology¹² (IB) innovation hub, managed by the Industrial Biotechnology Innovation Centre (IBioIC); and a Scottish Centre for Industrial Decarbonisation, a carbon capture and Storage (CCUS) scale up facility, managed by Scottish Carbon Capture and Storage (SCCS). Activity at the Campus will be underpinned by state-of-the-art equipment to support sustainable chemical sector training & demonstration, managed by the UK's leading chemicals skills provider, Forth Valley College (FVC).

Commercial and research activity will be reinforced by a 'Community Satellite' in Grangemouth town centre providing accommodation for: innovative and start-up businesses in the supply chain; and FVC promotion of opportunities from future technology to the Grangemouth community in a highly visible location to widen access to related training and employment opportunities and to act as a centre for related STEM education. The Grangemouth Community Satellite will also reflect Grangemouth's industrial heritage, demonstrating its central role in developing the industry over the last 100 years and more.

The Strategic Sites project (see later) will provide complementary investment in strategic grow-on-space, promoting sector business development across Grangemouth.

Existing Arrangements

Grangemouth's chemicals manufacturing industry is integral to the performance of the UK and Scottish economy. Grangemouth houses Scotland's largest concentration of industrial activity, with chemical manufacturing GVA per head 23% higher than the rest of Scotland. Although the future of the sector in Scotland has not always been certain, Grangemouth has maintained its position as one of the main centres of chemicals and energy production in the UK. However, its' international and global profile is less well developed compared with European competitors, a disadvantage when attempting to attract Foreign Direct Investment (FDI).

While much of Grangemouth's activity is based on 'traditional' feedstocks from fossil fuels, there are considerable synergies in processes between this sector and those using more sustainable bio feedstocks. Alongside process similarities, the skills required to operate them are similar. This offers Grangemouth a singular opportunity as it benefits from a highly skilled, chemical process trained labour force in the region reinforced by traditional chemical sector training at FVC.

This, and direct port access, has attracted a range of medium and large multi-national chemical companies. While many have invested significantly in their own plant and premises, infrastructure constraints, the availability of effective sites and the lack of an integrated proposition to attract and build sector investment, continue to affect Grangemouth's ability to maximise its contribution to the national economy.

Similarly, while individual companies have established bilateral relationships through industry bodies such as IBioIC and SCCS, process related research and development lacks the physical presence of a central point conveniently located for industry. Strategic opportunities which support sector development such as the integration of bio economy-based product development and the validation of new bio economy technology are not captured or profiled.

¹² Industrial Biotechnology is a means to manufacture chemicals, pharmaceuticals, consumer products, polymers, fuels and numerous other materials, using innovative manufacturing processes and sustainable raw materials with a reduced carbon footprint

Rationale

The Central Scotland Science and Innovation Audit (SIA)¹³ identified the main growth constraints facing Scotland's chemical industry as a lack of technology integration, demonstration facilities and integrated business development support. This restricts sector productivity, product and process commercialisation. The lack of technology integration & technology demonstration facilities was identified as a strategic weakness, preventing the industry up-skilling companies and their staff.

The audit also highlighted the need for enhanced integration from product and process concept through to commercialisation and subsequent business and industry growth¹⁴ to "rapidly identify and link developing technologies and trial these in pre-competitive environments, in order to accelerate productivity gains". It found a lack of infrastructure to support the diverse demand-led needs of industry, particularly in sectors with no scale up demonstrator facilities such as industrial biotechnology and carbon usage. It identified a strategic requirement for sector specific technology demonstration facilities, enabling developing operations in the chemicals sector to demonstrate, prototype and validate new technologies in a realistic setting and scale.

The Sustainable Chemical Manufacturing Campus addresses these issues. It aims to increase the speed of new technology adoption, supporting acceleration of innovation, industry growth and productivity. As bio economy development is enabled by infrastructure to support integration, demonstration & commercialisation, the UK will improve its capacity and international market positioning, maximising the value of investment, processes, products, companies and skilled workers.

The project responds to the UK Industrial Strategy's call to maximise competitive advantage in the global shift to clean growth. Grangemouth has an opportunity to establish a European if not global lead in sustainable chemical manufacturing. Unless this is grasped, competitor locations will capture the opportunity.

Scotland's Energy Strategy identifies Grangemouth as an area where biotechnology and CCUS offer significant opportunities for decarbonisation and economic growth. The challenge is for Grangemouth to further develop its strategic position at the heart of the UK chemical manufacturing sector, with a clear focus on reducing its carbon footprint. The industry already operates to stringent health and safety and emissions regulations. While these are likely to increase in response to the climate challenge, Grangemouth has an opportunity to lead critical areas of activity in industrial biotechnology and carbon usage as it does so.

The rationale for CCUS development at Grangemouth is clear. The area is well positioned to develop world-leading CO₂ usage capability, combining: a significant source of industrial CO₂, established supply chain links with high-quality biogenic CO₂ from the food and drink sector; vibrant CO₂ usage, hydrogen and CCS academic communities; and a significant renewable energy resource. In 2018, the Scottish Enterprise Carbon Capture Storage report identified Grangemouth as the long-term strategic location for a Carbon Capture hub of scale, with:

- An industrial location capable of being readily linked to and adapted for CCUS infrastructure;
- Scotland's largest manufacturing concentration with access to a 'deep and broad' chemical sciences knowledge base; and

¹³ Enabling Technologies in Scotland's Central Belt – Report <http://glasgoweconomicleadership.com/publications/>

¹⁴ Technology readiness levels are a method for estimating the maturity of technologies as they progress from inception through to commercialisation,

- The strong vertical supply chain links needed for development of the industrial biotechnology cluster and 'industrial symbiosis opportunities that use CO₂ to provide additional value'.

The Acorn CCS project in the North East of Scotland is demonstrating the commercial viability of capture and storage processing. CO₂ which would otherwise enter the atmosphere is captured at St Fergus gas terminal before being transported offshore and stored in deep geological formations underground.

The Scottish Government has stated it will work with the Scottish National Investment Bank to support the full-scale commercial deployment of CCUS. A Scottish Centre for Industrial Decarbonisation located in Grangemouth will enable innovation and value engineering of capture solutions, assisting development of a carbon capture industry to export materials and expertise. Consistent with circular economy principles, co-located technologies will employ industrial CO₂ as a feedstock for high-value low-carbon products and explore potential for energy storage through synthetic fuel production, taking technologies from lab to pilot and production scale. From a regional perspective, partners such as Scottish Enterprise will ensure activity at the Sustainable Chemical Manufacturing Campus is appropriately linked to the National Manufacturing Institute for Scotland (NMIS).

Project aims

Delivering the Sustainable Chemical Manufacturing Campus will effectively bridge the transitioning gap faced by developing IB and CCUS firms as they progress from process and product concept to commercialisation and growth. It will achieve this by establishing high quality, leading commercial facilities in Grangemouth to support technology development & transitioning to scale-up and commercialisation. As businesses progress beyond initial commercialisation, collaborative joint venture and other investment will work to ensure appropriate sites and premises in the area (see Strategic Sites project).

The availability of skilled and adaptable labour is a critical locational factor. To remain internationally competitive, investing companies will require sector specific skills and training infrastructure to ensure they adapt to changing technologies over the next 50 years.

One of Forth Valley Colleges' central missions is to develop locally available skills and ensuring their ongoing availability and adaptability to the needs of the chemicals sector as it constantly develops. As industrial biotechnology (IB) and carbon capture, usage & storage (CCUS) technologies emerge, there is a growing need for chemical and process engineers who understand them. Without the full resources required to train or upskill existing skill sets using live IB or CCUS systems, the adoption of enabling bio economy technologies in Scotland will be constrained.

Reinforcing the investment in bio economy cluster development will be the necessary platforms for skills development, vital for sustainable growth in the chemicals sector and attracting inward investment to Grangemouth. FVC is the leading provider of Engineering Modern Apprenticeships in Scotland. The project will ensure FVC continues to be a leading skills provider regionally and nationally through investing in the latest capital equipment to support the developing bio economy.

The project will also seek to ensure local participation. The Grangemouth town centre Community Satellite will support development of Grangemouth's bio economy through local engagement and integration, hosting 'digital twins' of industrial biotechnology and carbon usage training equipment. It will support community and education engagement, encouraging a new generation of bio economy engineers.

Investment in the project now will ensure transition towards a Clean Growth economy is as environmentally and economically efficient as possible. It will support the evolution and diversification of manufacturing processes/products from fossil fuel feedstocks towards bio-based manufacturing in Grangemouth. Analysis



by the Nova Institute concludes that most bio-based products show clear environmental advantages, with potential to reduce greenhouse gas emission by up to 50%¹⁵.

Table 0-2 Investment Zone funding & core partners - Sustainable Chemical Manufacturing Campus

Partners	Role	Investment Zone funding
IBioIC	Industrial Biotechnology Innovation Hub management	£20m
SCCS	Scottish Centre for Industrial Decarbonisation management	
Forth Valley College	Grangemouth Community Satellites management	
Scottish Enterprise	Business support & advice. Link to premises & site provision	

Autobus Technology (including hydrogen & electric propulsion) Centre for Excellence & Innovation

The Autobus Technology Centre for Excellence & Innovation will combine the research and commercialisation strengths of the University of Strathclyde and Napier University (Transport Research Institute) with production capacity and innovation of Falkirk’s established automotive sector. The CEI will involve higher education establishments, lead businesses in manufacturing for public transport and the sector supply chain, and relevant industry groups. It will test and develop new technologies to support advances in propulsion; materials used in manufacture; vehicle autonomy; and reduction in CO₂ emissions and energy consumption. It will be linked digitally and through collaboration arrangements with other relevant facilities including the National Manufacturing Institute Scotland (NMIS), the Medicines Manufacturing Innovation Centre (MMIC) and others.

Complementing and where appropriate collaborating with the work of the CEI, the Investment Zone will support expansion of Forth Valley College training facilities to meet the future skills needs of the automotive sector and its workforce, including investment in equipment to support EV, low emission and hydrogen technology deployment. Consideration will be given to the skills requirements of vehicle manufacturing and maintaining fleet operations and the most appropriate way for this to be delivered. This will be a combination of different modes of learning delivery to suit candidates and business requirements. Work with the Centre of Excellence (also linked to NMIS) will focus on future skills needs and practical applications to ensure business benefit. Investment Zone support will also enable FVC to widen participation and interest in the engineering sector and STEM.

Existing Arrangements

Falkirk’s automotive manufacturing sector employs upwards of 1,000 people in facilities across the Council area. It is anchored by Alexander Dennis Limited (ADL), the UK’s largest bus and coach builder, who have their headquarters (founded in 1902) and key manufacturing facilities in the areas, and its supply chain. Some 900 vehicles are built in the area each year for markets across the UK and increasingly overseas.

With Stagecoach and Fusion Processing, ADL has launched the UK’s first autonomous bus (presently undergoing depot trials). It has developed relationships with the University of Strathclyde and Napier

¹⁵ Bio-based economy and Climate Chang – Nova Institute – Industrial Biotechnology

University and its recent merger with NFI Group (world leader in zero emission buses and infrastructure) further reinforces its strength in innovation.

While it provides a complete offering in the sector, ADL is also recognised worldwide as a market leader in terms of product innovation, leading market innovation in diverse propulsion offerings on proven bus platforms. As well as clean diesel systems, this includes biogas, hybrid and fully electric variants through partnerships with Scania, BAE and BYD

Rationale

The need to respond to climate change and related regulatory requirements are driving change internationally towards cleaner fuel propulsion. A third of all buses in the UK will be electric by 2022. Bus fleets will be expected to demonstrate a 25% reduction on current CO₂ emissions by 2025, with a minimum of 24% of all buses on the road to be zero emission by this point. In tandem, vehicle manufacturers are seeking to optimise materials and methods of manufacture to further reduce carbon footprints. Lighter composite materials, alternative painting methods and associated new technologies are currently being sought.

There are potential synergies to be developed from the experience of the area's chemicals and automotive sectors in innovating new products and processes in terms of: new lightweight materials; different sources of fuel; battery development (links to Leven, Fife) and other areas of opportunity.

Project aims

The Auto bus Technologies CEI will assist the future design and development of the next generation of lighter, more efficient, and low and zero-carbon HGV and public transport vehicles. By ensuring the sector is positioned at the head of developments in technology designed to address the climate challenge, it will help Scotland and the UK extend its global market positioning.

While stimulating growth of related research and business activity in the area and nationally, the CEI will also help attract national and international businesses in the supply chain to the area. Consistent with the direction of the UK Industrial Strategy, it will be part of national efforts to ensure that the economy can access manufacturing capability at all points of the production process, reducing levels of dependency on overseas manufacturers and suppliers.

As synergies between innovation in public transport, chemicals and materials technology and carbon capture and utilisation technologies develop, there will be opportunities to test and deliver innovative approaches on the area's road and rail networks. Where hydrogen and other less traditional fuels form part of the approach, manufacturing, adaptation of storage & depot facilities, and other measures may benefit existing and future industrial areas.

This investment will also help deliver leading platforms for sector skills development, improving take and up and participation in engineering and STEM-related training across the Forth Valley region.

Adopting a parallel approach to the Sustainable Chemical Manufacturing Campus, related collaboration workspaces and opportunities for the local population and labour force to capture emerging sector opportunities will be promoted in the Falkirk Town Centre Community Satellite.



Table 0-3 Investment Zone funding & core partners - Automotive Technologies Centre of Excellence & Innovation

Partners	Role	Investment Zone funding
University of Strathclyde	Joint CEI management, research & development	£10m
Napier University ¹⁶	Joint CEI management, research & development	
ADL	Process innovation & commercialisation	
Scottish Enterprise	Business support & advice. Link to premises & site provision	

Strategic Sites

Grangemouth’s chemicals manufacturing industry is significant in the context of the UK and Scottish economy. Grangemouth is Scotland’s largest industrial concentration and internationally recognised as the centre of chemical manufacturing and petrochemicals in Scotland. The Port of Grangemouth is Scotland’s largest container port.

The wider Falkirk area is home to Scotland’s large vehicle automotive sector. More widely, the Investment Zone has played a continuous role in industrial innovation and its commercial deployment since the end of the 18th Century.

The Strategic Sites project seeks to support regional inward investment and the growth of the Innovation Zone and Forth Valley’s industrial base by developing a portfolio of market-ready sites capable of meeting future industrial requirements for chemicals, logistics, advanced manufacturing, enterprise and innovation. An emerging shortage of appropriately serviced and available sites and premises potentially constrains the growth of the Investment Zones key industrial sectors. The Strategic Sites project will provide and promote investment ready locations.

Core sites have been identified, developed and prioritised through workshops and engagement with Scottish Enterprise, Scottish Development International, industry partners and regional planning officers. The Strategic Sites would be advanced as a programme (developed in compliance with State Aid rules) supporting inward investment, innovation and enterprise over 20 years. They will create a diverse portfolio reflecting strategic market and sectoral demands. Where required to support innovation in growth industries, it will also provide for limited flexible Advance Build premises.

The priority sites are:

- Abbotsford (Falkirk Council / Scottish Enterprise);
- Earls Gate (CalaChem);
- Glenbervie (Scottish Enterprise);
- Grangemouth Dock (Forth Ports);
- Grangemouth 1/2/3 (Forth Ports);
- South Bridge St (Forth Ports / Falkirk Council); and

¹⁶ Transport Research Institute

- Wholeflats Road (INEOS / FC).

Existing arrangements

The National Planning Framework (NPF3) is the spatial expression of the Scottish Government's Economic Strategy and its plans for infrastructure investment. NPF3 identifies national developments and other strategically important opportunities which will support growth and regeneration, the low carbon economy, environmental enhancement and improved connectivity. Three of these national developments are located in the Falkirk Council area:

- Grangemouth Investment Zone: the provision of freight facilities, transport infrastructure, flood defences and business premises to support the area's nationally important role in freight handling, chemicals sector and energy related industries;
- Carbon capture and Storage Network and Thermal Generation; Grangemouth is one of two locations identified for thermal power generation utilising carbon capture and storage technology; and,
- The Port of Grangemouth is also part of plans to increase Freight Handling Capacity on the Forth which include a new rail freight service (DRS/Stobart Service) between Grangemouth and the Port of Tilbury, London.

Falkirk Local Development Plan 2 (proposed for adoption 2020) seeks to allocate industrial land anticipating the future requirements of the economy. Its supporting technical assessment¹⁷ found that while the Investment Zone employment land supply appears extensive, much of it is not effective, limited by various constraints. It highlighted: a weak fit between market supply (site: scale/location/market readiness) and market demand; a lack of investment in land and property; and the effects of a lack of market ready sites in encouraging investors to seek alternative locations.

Demand assessment

There is considerable interest in the energy sector in Grangemouth, where there have been several energy-from-waste proposals, with operators themselves seeking to build new energy plants to reduce costs. The potential for district heating networks in the area, linking surplus heat to heat demand, whether from industrial or domestic users, is being investigated, and may further enhance Grangemouth's attractiveness as an investment location.

There is considerable potential in the logistics sector, with the Investment Zone enjoying a prime location relative to strategic rail, road and sea connections (including the M9, two rail stations, freight connections and M8 accessibility). The Port of Grangemouth has considerable land reserves which it is keen to develop to enable growth. Asda has already established Falkirk as its distribution base, and the Malcolm Group makes extensive use of the road / rail hub at Wester Newlands. There may wider interest from logistics operators given the strategic location.

The area still has a significant advanced manufacturing sector with, for example, Alexander Dennis, the UK's leading bus manufacturer, operating from facilities in Camelon and Larbert. There remains a strong presence in metal working and timber manufacturing supporting medium-term demand for premises and land.

¹⁷ LDP2 Technical Paper 6 provides an employment land assessment

Industrial Land supply and demand is monitored by Falkirk Council through the LDP and annual Planning Performance Framework submitted annually to the Scottish Government. This demonstrates that while industrial land supply is notionally good, many of the sites potentially available are not effective or market ready as they require investment to address abnormal development or servicing costs. Demand has varied over the past two decades reflecting the health of the wider Scottish economy however current & future anticipated demand and Investment Zone driven demand are anticipated to challenge supply.

Rationale

Key policy documents - the UK Industrial Strategy, Scotland's National Planning Framework, the National Plan for Biotechnology, Scottish Energy Strategy, Falkirk Economic Strategy - support and identify Grangemouth as an area with significant potential for innovation, investment and growth. The challenge is to ensure Grangemouth can deliver on this potential and grows as a national centre of excellence and heart of the chemicals and advanced manufacturing sector in Scotland and the UK.

The rationale for strategic site investment is explicit in the LDP's conclusion: existing arrangements and site allocations provide general purpose industrial / commercial and business space but are for the most part, unsuited to larger scale Chemical Science, Advanced Manufacturing, Logistics or Energy investments and fail to offer a portfolio of sites addressing industry need. Existing major businesses and inward investors in specialist sectors (Celtic Renewables / Piramal Pharma / Covanta) note the constraints on land supply that arises from:

- Large zoned and allocated land is not available to smaller start-up / innovation companies as outside the core business interest of major landowners;
- Allocated sites are not linked to services (industrial gases / steam / specialist WWTW / utilities) that offer significant site / commercial / consent benefits to new businesses and SME's; and
- Allocated sites are typically stand-alone sites of long-standing with significant 'abnormal' development costs constraining anything other than for single-user or for the largest operators and with extended lead times for development and market-readiness.

Market-ready land and suitable property is a vital component of regional and national economic infrastructure cutting across, and contributing toward a range of economic, place and socio-economic and sustainability policy objectives.

Priority sites will support colocation, innovation and diversification within key sectors (e.g. biochemical, pharmaceuticals, carbon usage, advanced manufacturing etc.) and support colocation investment that expands demand for existing feedstocks, skills and industrial services infrastructure.

Discussion with industry, Council planners and economic agencies has been progressed with key industry partners and stakeholders to:

- Confirm priority sites for inward investment / colocation;
- Identify partnership mechanisms to bring forward sites and buildings and ensure land is effective and market ready; and
- Ensure land / allocations are compliant with and supportive of LDP policy.

Priority Sites and their details are summarised below:

Table 0-4 Priority Sites

Site Name	Area (Ha)	Location	Provision
Abbotsford	13.9	Off the A9, Falkirk	Innovation / Incubator / Supply Chain
Earls Gate Park	9.8	North & south of Earls Rd, Grangemouth	Incubator /Industrial Specialism
Glenbervie	12.7	Between A9 and M876, Larbert	Inward Investment /Data Centre
Grangemouth Dock	11	South of Carron Dock, Port of Grangemouth	Logistics/ Innovation/ Incubator
Grangemouth 1/2/3	41.2	East of Grange Dock & Grange Burn, Port of Grangemouth	Logistics / Carbon Capture and Storage
South Bridge Street	2.9	West of Bridge Street & Old Dock, Port of Grangemouth	Industrial Specialism/ Supply Chain
Wholeflats Road	4.2	Wholeflats Rd/Inchyra Rd, Grangemouth	Industrial specialism

With Investment Zone funding, the portfolio of sites will support the full range of industrial need (Colocation / Chemicals & Energy Logistics / Supply Chain / Innovation / Incubator / Enterprise).

A mechanism to bring forward sites is considered critical. Many of the sites have remained non-effective for many years and have not been advanced by landowners (including key industry partners) due to land-use conflict, risk, absence of strategic purpose. The favoured delivery option is the establishment of a participatory equity arrangement in the form of Site Development Joint Venture arrangement (JV’s). These would operate as a JV between the landowner (land) and growth deal partner (investing in market-readiness / infrastructure) on a shared equity and State Aid compliant basis. JV arrangements would be outlined in Heads of Terms setting out the lease period site area (acres / ha); infrastructure investment (access / utilities); partnership support (utilities / feedstock etc.); (conditions of use) and any other site-specific requirements (ISPS / COMAH etc.)

Potential partners may include ADL; Callendar; CalaChem; Falkirk Council; Forth Ports; and INEOS and deliver core sites extending to 238ha. Six (6) sites offer short-medium term activity (183ha) and 1-2 sites long term development potential (55ha). Within these areas, a flexible fund for advance build (5,000m²) of industrial/innovation units is proposed.

Project aims

The project connects major industrial and manufacturing players (ADL, CalaChem, Forth Ports, and INEOS etc.) and their delivery, promotion, and investment with inward investment and colocation activity. It brings forward a portfolio of sites and property to address constrained industrial allocations in a pro-active industrial partnership. It ensures a portfolio of market-ready sites and property is available for investment linking public-private sector partnership skills in an innovative industrial land strategy.

Investment in strategic sites & advance units will address the lack of market-ready, market attractive, key sector industrial land and employment space. The project demonstrates a strong fit with the objectives of



the UK Industrial Strategy, Scotland’s Economic Strategy, National Planning Framework 3, and local economic strategy. Delivery will support:

- Inward investors / regional growth companies / SME’s / enterprise activity and innovation businesses;
- Investment in a strategic portfolio of sites; provide ‘grow-on’ space for businesses emerging from the Centres of Excellence & Innovation;
- Development of appropriate JV arrangements with industry partners; and
- Delivery of Advance Units.

Table 0-5 Investment Zone funding & core partners - Strategic Sites

Partners	Role	Investment Zone funding
Falkirk Council	Management & oversight, land, design and procurement of works (as appropriate). Potential JV partner	£35m
Scottish Enterprise	Industry liaison, land, design and procurement of works (as appropriate). Potential JV partner	
Landowners	Potential JV partners	

SME Skills Pathway

The Falkirk Grangemouth Investment Zone aims to drive diversification and innovation in chemicals & life science, and advanced manufacturing sectors as a key part of Scotland and the UK’s industrial response to the climate emergency. As industry, society and markets adapt to the end for low and zero carbon products and feedstocks, new technologies and processes will be developed. The Investment Zones key industrial sectors - chemical sciences, automotive and manufacturing - will be at the forefront of this transition.

The Investment Zone’s skills profile is presently weighted towards intermediate and lower skills. However, changes in technology and production processes need to be accompanied by skills adaptation and improvement to better position the Investment Zone as a leading international industrial location, to drive productivity improvements, and to broaden labour force involvement in key sectors across the Innovation Zone and the Forth Valley.

Supply chain and particularly SME development is a critical component. SMEs face significant risk and costs in recruiting and in-work skills and training development exacerbated by: the absence of related financial support; the relatively higher wages larger companies can offer skilled staff; and other factors. The SME Skills Pathway will aim to tackle these areas through:

- Establishment of a SME Skills Enhancement Fund for 10 years (£250,000 per annum). Operated in a similar way to Flexible Workforce Development Fund¹⁸ this will enable SMEs in, or with potential to be part of sector supply chains to access training to enhance workforce development & productivity;

¹⁸ <https://www.skillsdevelopmentscotland.co.uk/news-events/2018/july/employers-large-and-small-to-benefit-from-10m-extension-of-flexible-workforce-development-fund/>

- Development of a Shared Apprenticeship Model (£1m) to increase SME take up of apprenticeship places. This would operate on a 'pay as you place' basis, funding the time spent by apprenticeships in college. A successful model for construction activity exists in Dundee¹⁹; and
- £250,000 will be invested in local labour market intelligence (LMI) to refine supplement regional data available through SDS.

The SME Skills Pathway will target SMEs in the Investment Zones key industries, young learners, workers at risk of training barriers, and adults in low paid work. Where appropriate, it will also target opportunities for the most disadvantaged people including workless and low-income families, people with disabilities, and people living in particular SIMD data zones.

This platform will be managed by Forth Valley College which will work with employers to tailor skills programmes whilst offering employees transferable and certifiable training and development. FVC will offer these opportunities across a range of flexible learning formats, working alongside existing support services for skills and career development.

Existing arrangements

In common with other parts of Scotland and the UK, employment in traditional manufacturing is forecast to fall through internationalisation of production and increasing automation. Skills Development Scotland forecasts a reduction of up to 800 jobs²⁰ across the Investment Zone area should the cluster maintain its present scale, with lower skilled and clerical jobs at greatest risk of replacement.

Compared to the Scottish average, Falkirk's workforce has a lower proportion of highly skilled employees²¹, a higher proportion of those with intermediate skills and an average proportion low skilled workers. Improving skill levels to anticipate transitioning technology in industrial production is critical. Falkirk Council, with SDS, has identified that young learners, adults in low paid work, and workers at risk of displacement require additional skills and training support. Where possible, these groups should be included in scoping new opportunities for skills and learning development.

Larger firms can access the Apprenticeship Levy (including the Flexible Workforce Development Fund) and can be expected to address related issues without additional assistance from Government. While SMEs with payrolls below £3m are exempt from it, they do not benefit from a programme of support for up-skilling and re-skilling in place for SMEs. Undergraduate programmes also fail to address SME requirements.

Rationale

As Grangemouth and Falkirk's chemical and manufacturing industries grow and diversify, the future skills of its workforce need to be continually fit for purpose and focused on productivity. This is particularly true of businesses commercialising new technologies and innovations and developing new job specifications. SMEs are critical to the supply chain in the area's key industries, and in providing entry- and higher-level employment opportunities to the Investment Zone and Forth Valley workforce. The SME Skills Pathway will directly support growth in chemical and manufacturing industries and their supply chains.

However, SME growth is constrained by the relatively high cost and risk of training new and upskilling existing employees. They face greater proportional risks in terms of the opportunity cost of training

¹⁹ <https://dundeeandangus.ac.uk/business/newsletter/the-shared-apprentice>

²⁰ SDS has advised that anomalies in the classification of chemical sciences employment may mean this is an overestimate

²¹ SCQF level 7 or above

investment through short-term loss in productivity, the need to maintain cash flow and, with larger companies able to pay higher rates, the extent to which they can retain skilled labour. This limits innovation, business growth and productivity.

To compound the issue, while larger organisations typically resource sector training and development programmes, developing and smaller operations in its supply chain may lack capacity to do so due to their size and scale. Their skill requirements also tend to be different, with employees typically requiring a broader range of skills. It is critical in emerging areas such as Industrial Biotechnology and Sustainable Chemical Manufacturing, that the needs of SMEs are addressed and supported.

SIMD data also demonstrates persistent multiple deprivation in some Investment Zone wards. Many of these are located in Grangemouth where major manufacturing investment is anticipated. The recent Community Links report on Grangemouth²² identified a clear sense that, despite their close proximity, opportunities in the chemical sciences and advanced manufacturing are beyond the reach of local people and businesses. If skills pathways are not established for workers currently at risk, then unemployment and inequality could increase

If SMEs are not provided with additional support, growth sector potential may be undermined and opportunities for employment and workplace progression in Grangemouth and elsewhere limited.

While Skills Development Scotland maintains some labour market intelligence at regional level, it is not sufficiently fine-grained to match the existing and anticipated capacity of the labour market to emerging opportunities in the chemicals (including biochemical) and advanced manufacturing sectors. Additional labour market intelligence resource is needed to address this.

Unless addressed, the growth and re-orientation of the Investment Zone economy could be limited by two interrelated factors:

- Insufficient appropriate and flexible skills in growth areas, restricting expansion and the broad sharing of opportunities across the investment Zone; and
- Continuing constraints to SME development through financial barriers and investment risks associated with training and upskilling.

Project aims

Through its focus on addressing projected skills gaps, the project directly supports the development of advanced manufacturing whilst addressing an existing gap in SME support which will also benefit other sectors. Achieving the key aims of the project – addressing skills gaps through a focus on SMEs – will both strengthen the business base of the Investment Zone economy and increase the quality and quantity of employment opportunities in the area.

The project will address one of the constraints to SME's ability to scale-up, specifically the viability of long-term training. Where possible, it will focus this training to encourage broader labour market participation.

SMEs have little support in de-risking the skills and training process and its costs. The SME Skills Pathway would tackle this and, if successful, may be a template for broader application. The Shared Apprenticeship Model element builds on an established successful approach in Dundee. The Skills for Growth component responds to the UK Industrial Strategy, the National Manufacturing Institute for Scotland, supporting Investment Zone aims and objectives by addressing skills shortages in chemical & life sciences and

²² Grangemouth "Your Place Your Views" Consultation, May 2019: Community Links



advanced manufacturing. The project will improve SME access to skilled staff, boosting productivity and assisting business development.

While channelled through SMEs, the project also adopts a labour supply perspective, focusing on retraining and training people who are, or are at risk of, exclusion from the labour market. The project will also support people in areas identified in 20% most deprived according to the SIMD. This, alongside training investment in the Sustainable Chemical Manufacturing Campus, the Auto bus Technology CEI and the Community Satellites, will help ensure the Investment Zone delivers local opportunity and more inclusive growth.

It will focus on Forth Valley College (FVC). FVC has focussed on developing people with skills adapted to modern chemicals and advanced manufacturing processes. In 2017, it accounted for 34% of qualifiers in Scotland’s chemical industry, including almost all the qualifiers in Chemical Material Engineering in Scotland. The project will ensure this success continues while also enabling FVC to meet the skills requirements to assist growth in emerging sectors such as biochemical manufacturing. It will also respond to the needs of other growth sectors such as construction and care. FVC will be the educational hub for a model of skills investment that focuses on SMEs and meeting the needs of those parts of the current and future workforce in greatest need of skills investment. The project will encourage increasing numbers of apprenticeships and traineeships in the Investment Zone.

More industry-specific market intelligence will reinforce the training and upskilling outcomes of this project, supporting Investment Zone employers to meet their future skills requirements.

Table 0-6 Investment Zone funding & core partners - SME Skills Pathway

Partners	Role	Investment Zone funding
Forth Valley College	Management & delivery of the SME Skills Pathway	£4m
Falkirk Council	Coordination of services, identifying business & participants	
Business Gateway, Skills Development Scotland	Labour market intelligence, Identifying business participants Promoting uptake	
Local Business	Promoting uptake, Identifying business participants	

Resilient Industrial Environment

The SMART Resilience Industrial Environment is a concept designed to minimise business, industrial and community risk while supporting avoidance of major events such as flooding, and pollution, supporting community, business and environmental resilience. It was initiated in 2014 in partnership with CENSIS (the Scottish Innovation Centre for Sensor and Imaging Systems) following a call by Innovate UK for globally scalable commercial propositions to enhance current arrangements through the integration of Internet of Things (IoT) data streams and newly designed smart technology networks.

It has evolved in response to the increasing awareness of the need to address the causes of climate change, and in support of national and Council priorities, Keep Scotland Running, the Strategic Outcomes and Local Delivery Plan, low carbon and digital agendas.

The Investment Zone’s Resilient Industrial Environment aims to enhance resilience networks in a mixed urban and industrial community. It will enable monitoring of environmental metrics, detecting and

minimising the potential for impacts associated with flooding, pollution, accidental gas release, traffic incidents or utilities (energy, water and communications) performance. It is intended to enhance business and community resilience, encouraging collaboration between public sector bodies, local business and the wider community.

Co-ordinated and managed by Falkirk Council through a central Hub with a focus on Grangemouth, the Resilient Industrial Environment will integrate sensors and analytics across local and central government, non-governmental agencies, emergency services and business aiming to provide a comprehensive, organisational and community-based awareness of the status, operation and integrity of the environment and local services related to it. The Hub will enable seamless transition to a central facility in the event of an emerging incident, encouraging early intervention.

The Resilient Industrial Environment will effectively be a network, building on existing systems, sensing, data and analytics across the Investment Zone and its communities, addressing gaps or lack of specific capabilities through development or acquisition of new products, systems or services. The system is being designed to integrate new and existing data streams with streamlined Council systems and processes to afford accurate situational awareness in real-time.

Underpinned by data and cyber security protections, the analytics hub will provide different stakeholders with the specific information they require in formats tailored to their requirements. The emergency services in particular are keen to support development of this capability. It aims to:

- enhance existing resilience arrangements;
- minimise the potential for major impacts on business, community & the environment;
- support sustainable economic development, supply chain resilience & security; and
- stimulate inward investment and tourism

Existing arrangements

The Investment Zone accommodates a complex mix of communities, industrial activity and fragile environmental systems which coexist close to one another. This relationship extends across the Forth Estuary and the Forth Valley. This broader area's combination of extensive industrial complexes, local communities and sensitive environmental assets has been acknowledged in the inclusion of the Stirling University-led International Environment Centre among the projects with in-principle approval in the Stirling & Clackmannanshire City Region Deal. Its close proximity to the Investment Zone will allow related synergies to be captured.

Grangemouth is Scotland's No.1 flood risk priority and its largest industrial concentration, with potential for long-term public health, environmental and financial impact should there be a major flood or industrial event. Presently, there is no integrated predictive system available to establish the nature and probability of risks.

In the water environment and in the context of national and global rising water levels and consequent risk, very limited sensing and data is presently available. The ability to provide predictive information and have real-time situational awareness is needed to effectively manage increasing climate change and other risks. Stirling University maintains one of the world's largest collections of flood and related data, which can benefit the development for this project ensuring any water/flood module is replicable, scalable and of national/international significance

In terms of potential air releases, industrial operators primarily monitor their processes to optimise commercial efficiency and ensure the smooth and safe continual operation of their plant as well as enabling compliance with legislative requirements. Limited environmental sensing is in place with no holistic or consistent to detect emissions at site boundaries.

Whether environmental or industrial in origin, the present approach to significant events is reactive, taking place after the event. The focus of the Resilient Industrial Environment is on developing real-time situational awareness, supporting transition to prediction and prevention via early intervention and avoidance.

Rationale

Grangemouth contains several pieces of national economic infrastructure – it is home to Scotland’s primary container port, fuel refinery and Scotland’s largest industrial concentration. The imperative to safeguard and future-proof such critical infrastructure is outlined in the Scottish Government’s Keep Scotland Running report, which identifies building infrastructure resilience as the responsibility of Government, industry and the responder community. This project will bring together these three areas together to develop a robust and innovative solution to enhance infrastructure resilience in Grangemouth.

The Grangemouth industrial cluster is a significant contributor to the national economy, identified as a national planning priority in the National Planning Framework 3 (NPF3). Some 30% of Scotland’s GDP is connected to Grangemouth, through its established refinery and petrochemical industrial complex, or through the goods and supplies exported and imported at the Port of Grangemouth, Scotland’s largest container port. In addition to substantial recent investment in expanding their Grangemouth footprint²³ its industrial operators plan significant future investment to upgrade equipment and expand operational activities. Enhanced and strategic awareness of environmental and industrial risks, accompanied by early mitigating actions, will increase business investment confidence.

Grangemouth is also a major source of greenhouse gas emissions, generating some 4 million tonnes of CO₂ annually. With the Investment Zone’s other Innovative Industry projects, the Resilient Industrial Environment will also help deliver inclusive growth through new, innovative and mutually beneficial partnerships with communities, industry, and the public sector, helping to manage business and community risks both from existing operations and the industrial transition to a low and zero carbon future.

The Grangemouth flood protection scheme, costed at some £150m, is identified as the highest priority in the National Flood Risk Management Strategy²⁴. The proposed scheme will benefit over 3,000 properties, with avoided flood damages estimated at some £6 bn. An embedded sensor network will assist understanding of fluctuating water levels, the performance of defences and predicting where supplementary measures may be needed. It will enhance the value of this investment and SEPA has indicated its support for enhancing current capability.

A potential collaboration/data sharing opportunity is also being explored with Scotland’s International Environment Centre which is developing plans for future flood prevention which may be beneficial in addressing flood challenges for communities and industry.

²³ including :INEOS investment in Europe’s largest ethane storage facilities, its ethylene cracker & related infrastructure, and Forties Pipeline System infrastructure; investment of £200m in energy from waste infrastructure at Earls Gate; and others

²⁴ SEPA, 2015

The reality confronting Falkirk and Grangemouth highlights the necessity of developing robust and resilient early warning and defence systems which can be used to assist the data-driven decision-making capabilities for the Local Authority, as well as first responder communities.

The Resilient Industrial Environment will enhance resilience capabilities, aiming to avoid damages from natural and man-made causes. This will ensure that Investment Zone communities, its industrial base and its environment, are well protected and best able to adapt to the uncertainty caused by the effects of climate change.

Project aims

The Scottish Government's Keep Scotland Running report indicates that resilience involves a diverse range of stakeholders building resilience across all aspects of essential services and enhancing the resilience and security of critical infrastructure is vital.

Presently, there is no integrated system of the type anticipated by the Resilient Industrial Environment, involving large-scale bespoke sensor deployment, IoT data streams and analytics, and producing real-time 3D outputs. The development of a common operating platform will offer the opportunity of continuity across Council, Government services and business, supporting collaborative, partnership working.

In being the first to develop such capabilities, the Investment Zone will pioneer its development and deployment. It is an opportunity to create an innovative toolkit to enhance the resilience of the Innovation Zone and of the wider Forth Valley. Its systems and technologies will demonstrate proof of the concept and offer the potential for its replication and expansion elsewhere in the UK and internationally to aid wider resilience efforts.

While the objective is major incident prevention, in the event of an incident, the Council, industrial and agency partners and in particular emergency service first responders will benefit from accurate real-time data collected and analysed by the network to help make informed decisions and coordinate responses, in protection of the community, environment and business.

This approach will shift the current paradigm from a reactive response to one that is more focused on predictive and preventative measures, aiming to:

- reduce the risk of catastrophic long-term environmental, economic and public health effects from significant events;
- enhanced economic output, investment (by existing and new businesses) and increased employment from a strategic approach to reducing environmental risks to business investment;
- enhance supply chain monitoring, early intervention and continuity;
- improve collaboration and relationships across communities, industry, government agencies and academia;
- improve the community/business sector relationship is enhanced through increased confidence in the industrial environment and its management; and
- generate efficiencies among public sector agencies in anticipating & responding to events and ensuring infrastructure and service coordination.

Table 0-7 Investment Zone funding & core partners - Resilient Industrial Environment

Partners	Role	Investment Zone funding
Falkirk Council	Resilient Industrial Environment Management	£10m
International Environment Centre (University of Stirling)	Coordination with & extension of IEC initiatives	
SEPA	Coordination with Grangemouth flood prevention	
Industrial Partners	Assistance in design & deployment	
Scottish Enterprise	Industry liaison	
Scottish Government Resilience Division	Coordination with national approaches	
Emergency Services	Assistance in design & deployment	

National Economic Infrastructure

Grangemouth’s national economic infrastructure and chemicals manufacturing industry is integral to the success of the UK and Scottish economy. Grangemouth is Scotland’s largest industrial site and is globally recognised as the centre of chemical manufacturing and petrochemicals in Scotland. The Port of Grangemouth is Scotland’s largest container port operated by Forth Ports.

The National Economic Infrastructure project seeks to support delivery of Investment Zone objectives with resilient road, rail, sea, pipeline and digital infrastructure as the enabling platform for investment, innovation and green growth. This will address inadequate and over-capacity infrastructure at strategic locations where it places Investment Zone industry at a disadvantage relative to its competitors, at the same time providing new infrastructure anticipating the distribution requirements for goods, services and energy in a low/ zero carbon economy.

The private sector has committed significant investment to provide petrochemical, refining, manufacturing, port and distribution facilities in Grangemouth as well as investment in similar national infrastructure in Mossmorran, Tilbury and elsewhere. To ensure its continuation, growth and acceleration it needs to be supported by public sector infrastructure investment of a commensurate scale: a scale which cannot be met in full by Falkirk Council

The National Economic Infrastructure project aims to deliver strategic infrastructure for sustainable growth. It will provide national and international businesses and investors with a regional infrastructure fit-for-purpose to meet industry requirements in the middle of the 21st Century. Its core interventions have been identified, developed, prioritised and value engineered through a series of workshops and engagement with statutory service bodies and industry under the guiding principle that infrastructure upgrade is essential to maintaining investment in the Investment Zone, Scotland and the UK. It includes:

- **M9 Junction 5 Upgrade** creating an effective full diamond interchange for Grangemouth Investment Zone. This includes creation of an eastbound off-ramp, redesign of existing connections and configuration consistent with the Grangemouth Flood Protection Scheme;
- **Inchyra Road Upgrade** (in addition to the planning obligations of recent permissions). This will provide for junction capacity improvements and additional lane provision to enable growth; improved signalisation; improved & segregated pedestrian and cycle provision, and enhanced public transport infrastructure;

- **New Port of Grangemouth Access** involving realignment of Powdrake Rd reducing residential impacts; reconfiguration of Grange Burn crossing and the South Shore Road access; design to reflect Grangemouth Flood Protection Scheme requirements; and an enhanced access interface with the refinery terminal;
- **Additional rail freight facilities in the Port**; and
- **A carbon capture & usage pipeline connection to the FEEDER 10 Pipeline**, involving: establishment of a 17km link to the national transmission network at Avonbridge; and carbon collection infrastructure accessible to local and regional operators.

More detailed network appraisal and STAG Assessment will formally review options as part of the strategic project delivery (See Enabling Projects)

Existing arrangements

The UK Industrial Strategy, Scotland's Economic Strategy and its National Planning Framework, the National Plan for Biotechnology, Scottish Energy Strategy, and Falkirk's Economic Strategy support and identifies Grangemouth as an area with significant opportunities for innovation, growth and investment. The challenge is to ensure the growth at Grangemouth can deliver on its potential and grow Grangemouth as a national centre of excellence and heart of the chemicals manufacturing and logistics sectors in Scotland and UK.

Regional transport policy and Falkirk Council's Local Development Plan 2 (LDP2) outline transport policy objectives relevant to the Investment Zone. The refreshed SEStran Regional Transport Strategy (RTS) promotes improved access to a wide labour market, and enhanced connectivity on regional transport networks to facilitate a successful economy. It also seeks to improve public transport. LDP2's Transport Appraisal takes account of the active and sustainable travel policies set out in the Council's Local Transport Strategy.

LDP2's Main Issues Report recommends continuity of the area's spatial strategy, carrying forward much of the development proposed in LDP1 (and indeed from the Falkirk Council Structure Plan and Local Plan preceding it) to LDP2. This proposed development included 12 strategic growth areas which are the focus for housing growth, and four strategic business locations. With many of the adopted LDP1 proposals yet to be delivered, LDP2 involves selective rather than radical change reflecting Falkirk Council's capacity to deliver major transport projects.

The national road and rail infrastructure for Falkirk-Grangemouth and the M9's connections with the primary regional network as developed in the 1970's is now heavily compromised: in its capacity to handle existing and forecast industrial and import/export traffic; in segregating industrial and Port traffic from other infrastructure users; and in its accessibility to the strategic road network.

LDP policy INF09 promotes freight intensive development at the Grangemouth Investment Zone and other locations that can be accessed without significant impact on local communities, or on the local and strategic road network. It supports continued collaboration through freight quality partnerships between the Council, SEStran, freight companies, developers and others to promote freight transfer from road to rail, including freight handling facilities. Despite clear policy support, there has been little extension to rail freight capacity.

As roads authority, Falkirk Council has a responsibility to ensure a safe and operational network. It has sought developer contributions to address network deficiencies. However, the scale of related capital investment, programme & procurement delay, and related risk has adversely affected place competitiveness for activities requiring logistics infrastructure and large scale goods transport. Forth Ports

As a statutory port operator has a level of Permitted Development Rights (PD) and is exempt from developer contributions. Transferring a public investment requirement for national economic infrastructure to the private sector has limited investment, delayed infrastructure provision and reduced place competitiveness.

As Scotland's largest industrial CO² emitter, Grangemouth has a potentially pivotal role in the development of carbon capture and usage technologies and their deployment in Scotland. The repurposing of the 385 km FEEDER 10 gas pipeline from St Fergus to Avonbridge as a critical piece of national CO₂ distribution infrastructure potentially extends this, although its route west of Grangemouth. A potential pipeline route, based on existing pipeline corridors, and linking Grangemouth emitters to FEEDER 10's Avonbridge compressor station, would require a pipeline link of some 17.5km.

Under existing arrangements:

- Growth is constrained by the limited capacity of existing infrastructure serving the Port of Grangemouth, Grangemouth's refinery, the areas chemicals manufacturing cluster and its regional & national distribution requirements;
- There are increasingly frequent conflicts between the needs of industrial and Port uses and the local communities they interface with;
- With important infrastructure improvements delayed, Grangemouth's competitiveness - and market access to the Port and its industry through strategic infrastructure which its competitors enjoy - is compromised;
- Falkirk Council is unable to fund a national scale of infrastructure and Grangemouth's public infrastructure remains inadequate to support and sustain carbon neutral initiatives, clean growth strategy investment zone growth and innovation ambitions.

Rationale

An infrastructure programme targeted at network and industry needs will catalyse additional economic growth in Grangemouth and Falkirk. The programme will deliver a package of transport, business infrastructure activity to alleviate market failures (public goods / externalities) and exploit economic opportunity, capture additional investment and accelerate development activity across the Grangemouth Investment Zone.

Without Investment Zone public sector infrastructure investment to address barriers to investment, and promote and leverage private sector development, investment activity is likely to be more modest, piecemeal, extended in timescales and with limited strategic direction.

The rationale for infrastructure investment is explicit in the existing arrangements and as illustrated by the extended infrastructure planning and national planning appeal processes witnessed over recent years. Industry and community partners have vigorously highlighted existing infrastructure constraints and their negative impact on new investment in industry, as well as on place and community improvement, over an extended period.

Transport connections are vital components of national economic infrastructure and key enablers of economic and community activity, cutting across, and contributing toward a range of policy objectives. Discussion with industry partners (INEOS, PetroINEOS, CalaChem, Forth Ports, logistics operators, developers) has identified:

- Transport capacity and transport logistics as the region's major public infrastructure deficit of the region;
- Planning risks and delays associated with resolving transportation capacity as a major disincentive for investment; and
- Suppressed land values and the subsequent constraint on consented development to contribute to addressing capacity issues in the area's nationally significant economic infrastructure.

Grangemouth's industrial complex emits some 4 million tonnes of CO₂ annually. The National Economic Infrastructure project has the potential to link this as part of a national CO₂ distribution network encouraging its productive reuse or storage. The intervention seeks to develop national CO₂ resilience, contributing to the Investment Zone's clean growth strategy.

Project aims

The infrastructure supports the whole of the Grangemouth Investment Zone (NPF3) including its chemicals cluster, its logistics sector, the Port of Grangemouth and business and industrial areas to the west, north and east of Grangemouth. Its wider place and community benefits include removal of HGV traffic from sensitive local and residential streets. Key beneficiaries include the Falkirk and Grangemouth communities, the Falkirk and Grangemouth industry and business base, and Scottish-based port (import / export) logistic operators.

The National Economic Infrastructure project will create a 21st century infrastructure to support investment, clean growth and jobs. It aims to:

- Deliver improvements to the road network, focussed on connections to the strategic transport network, to enhance capacity, accessibility and connectivity within the Investment Zone and across the Forth Valley, focussed on the Grangemouth Investment Zone; and
- Facilitate enhancement of active travel capacity on local networks and sustainable growth by removing industrial traffic / logistics HGV activity from communities.

Its programme will deliver Investment Zone objectives by

- Developing key road, transport and utilities infrastructure to enable over 200 hectares of strategic economic assets to be advanced for investment capable of supporting employment; and developing CCS potential;
- Delivering road and rail freight infrastructure to re-structure port access and logistics activity associated with Scotland's busiest container terminal and 40 hectares of International Ship and Port Facility Security (ISPS) Port Area;
- Developing the potential of emerging carbon capture, usage and storage technology and its commercialisation through effective connections to a national distribution network, supporting UK-wide transition to clean growth; and
- Removal of HGV traffic from local networks.

The project will be delivered through relevant Falkirk Economic Partnership members. It offers significant synergy with other Innovative Industry and Great Places projects in the Investment Zone programme.



Table 0-8 Investment Zone funding & core partners - National Economic Infrastructure

Partners	Role	Investment Zone funding
Falkirk Council		£72m
Transport Scotland	National Economic Infrastructure management, procurement	
Scottish Carbon Capture & Storage	Support on FEEDER 10 link	
Industry partners	Support on design, delivery of economic benefits	

Creating Great Places

The Investment Zone will create Great Places by driving inclusive economic growth and tackling inequality through growing local talent, creating new connections with the world and providing new opportunities and routes into employment for people across Falkirk and Grangemouth.

Genuine partnership and solid evidence from Forth Valley College, Skills Development Scotland, Scottish Enterprise, Visit Scotland, local and national business, agencies, and communities, lies at the heart of the Investment Zone’s sector specific, people and place plans for Falkirk and Grangemouth. This inclusive approach has identified a programme of impactful investment proposals that tackle the challenges associated with creating Great Places.

It is important that we act now, with support from national Government, to make Falkirk and Grangemouth a destination that has choices and opportunities for all.

Sustainable Transport

High accessibility and connectivity to is a prerequisite for a successful place and a vital underpinning for the Innovative Industry and National Infrastructure projects. Three measures to promote sustainable and resilient transport are included in the Falkirk Grangemouth Investment Zone:

- To ensure key civic, cultural, employment & residential areas are effectively linked to stimulate footfall and economic activity in key locations;
- to ensure networks are resilient and adaptable to technology and climate change;
- to enable comprehensive community access to the centres of Falkirk and Grangemouth and the opportunities between; and
- to develop the area’s role as a regional centre for the Forth Valley.

Their combined delivery will encourage modal shift and establish the area as a model for low and zero carbon transport, harnessing local innovation to achieve a cleaner network. They include:

- A Public Transport Interchange (Falkirk Central) will be established at Falkirk Grahamston Station to consolidate bus, rail and active travel in a central location.
- Falkirk–Grangemouth Green Corridor. A Green Corridor will be established between Falkirk and Grangemouth Town Centres, enabling strategic and resilient utility connections and effective active

travel routes between them. The corridor will improve accessibility to key points for cyclists, pedestrians & public transport users as well as road users.

- Park and Ride / Choose (P&R) facilities at Junction 5 (M9) and elsewhere. P&R facilities will improve access and transport capacity, increasing the use of public and sustainable transport across the Investment Zone's urban areas, and improving ease of access to and between economic, civic, cultural and residential areas.

Project development for each intervention will be supported and shaped by the evidence provided by a comprehensive multi-modal analysis of this central area (See Enabling Project 1)

Sustainable Transport projects will underpin the Innovative Industry and National Economic Infrastructure elements. Within the Great Places pillar, their delivery will be critical enablers of Town Centre and International Tourism projects. Strategic Site projects will also benefit from improved connections and an improved strategic transport network.

Existing arrangements

A number of points on and around radial routes from all directions into Falkirk town centre are congested at peak both on weekdays and at weekends. Limited bus lanes on radial routes restrict public transport accessibility, increasing operator costs. The priority afforded to car borne traffic negatively affects the attractiveness of the town centre.

The strategic road network is congested, notably on key access points to the motorway network (Junctions 5 & 6) and around the Westfield junction, which serves Forth Valley College, the Helix, Falkirk Stadium and key emerging economic areas such as Falkirk Gateway. Similar issues are evident at approaches to Earlsgate roundabout (M9 Jct 6). Congestion regularly affects key junctions to the West, constraining activity and interest around strategic sites such as Glenbervie.

The Investment Zone's transport network also lacks capacity to accommodate the increased pressures associated with a growing and ageing population including increased accessibility requirements, and high frequency services. Unless addressed these constraints will increasingly limit the area's economic growth.

Five railway stations²⁵ are located around the Investment Zone on the Edinburgh, Glasgow and Stirling triangle. The primary stations are Falkirk Grahamston and Falkirk High however their current facilities fail to meet expectations of a modern public transport facility. The Falkirk Station Travel Plan (March 2019) indicated that improvements to station facilities would help increase patronage and encourage modal shift²⁶, while providing opportunities to consolidate transport modes such as rail, bus and active travel.

Stirling – Dunblane - Alloa rail electrification has been completed following electrification of the main Edinburgh - Glasgow via Falkirk High and Falkirk Grahamston via Cumbernauld lines. This enables rail freight opportunities in Grangemouth, including a regular weekend link which now operates between the Port of Tilbury and Grangemouth.

This is delivering various improvements including: improved journey experiences with the introduction of electric class 385 trains; reduced journey times from Stirling to Glasgow and Edinburgh; more seats on services between Alloa, Dunblane, Bridge of Allan, Stirling and Edinburgh; and reduced noise and improved air quality. Related service improvements include a doubling of service frequency between Falkirk

²⁵ Falkirk Grahamston; Falkirk High; Camelon; Larbert; and Polmont.

²⁶ The Falkirk Stations Travel Plan Management Group (TPMG) is responsible for the implementation, development and monitoring of the Travel Plan

Grahamston and Edinburgh to 4 trains per hour, a comparable service to that from Falkirk High. Edinburgh-Glasgow services have also been extended to 8 carriages further increasing the gateway potential of Falkirk's stations.

However, the extent to which the Investment Zone's places, centres, key employment concentrations and its visitor and other sectors benefit from these improvements is constrained by the quality of its stations - Falkirk Grahamston and Falkirk High, in particular - as gateway facilities and the connections from them to the area's places of employment, culture, public administration and visitor interest. As a result, the full benefit of the Investment Zone's strategic rail and road accessibility has not been captured to date, restricting the sustainable development of regional scale office, cultural, leisure and other facilities.

Falkirk and Grangemouth's attraction as a manufacturing and business location is at least in part, attributable to the related ease of regional labour market access - its key sectors typically drawing staff from across the Forth Valley, Clackmannanshire, Fife and parts of West Lothian. Falkirk's tourism profile has also grown significantly linked to the Falkirk Wheel, the Helix, and the Kelpies Park. However, a lack of integrated transport infrastructure restrains public transport accessibility and connections between key places, narrowing labour market accessibility, constraining the benefits of tourism growth and limiting the opportunity to widen the benefit of employee and visitor spending more widely areas. This will continue without intervention.

Falkirk Bus Station closed in August 2018, with road space, rather than any formal laybys or other provision, on Upper Newmarket Street now acting as a de facto facility. While connections to local bus routes are close by, business and leisure activity on Upper Newmarket Street is affected by the volume of buses accessing it, while access to other routes on Grahams Road is limited by the high volume of traffic using the roads between. Limited bus services are available to and from Falkirk High.

With network capacity restricted, the role of park and ride / choose facilities (P&R) in improving access to centres, key employment sites and other strategic points of interest increases in importance. However, the Investment Zone's five P&R sites²⁷ do not presently serve Grangemouth or key tourist attractions. They also lack the facilities typically associated with successful operations, namely: high frequency services; cycle hire facilities; and comfortable waiting areas. Effective P&R provision will improve the resilience of local networks in the face of capacity constraints and changes in transport technology, while also improving place accessibility, and reinforcing the benefits of other Investment Zone sector and place interventions

Improving the Investment Zone's network of sustainable and resilient transport infrastructure will also address critical issues facing its key centres

Falkirk Town Centre serves a regional civic, shopping and service catchment, supported by several District Centres²⁸. However, its transport accessibility does not reflect this regional importance: while well connected by rail to Glasgow, Edinburgh and Stirling, connections, including active travel connections between Falkirk High and Grahamston stations, and from each station to the town centre and other key facilities in the area are not well developed or clear. Improved accessibility and legibility of connections will reinforce efforts to build the area's profile as a commercial centre serving the supply chain needs of the chemicals, manufacturing, tourism and other sectors. Grangemouth Town Centre, while close to Scotland's largest concentration of manufacturing employment, fails to capture related spending on goods and

²⁷ Larbert Station; Polmont Station; Camelon Station; Falkirk Grahamston Station; and Falkirk High Station.

²⁸ Falkirk District Centres: Bo'ness; Denny; Grangemouth; and Stenhousemuir.

services. While this may in part be due to limited shopping and service offerings in the town centre, high car dependency and a lack of clear and safe connections from workplaces across Grangemouth exacerbate it.

Air Quality Management Areas (AQMAs) have been designated across both town centres. They extend to neighbouring areas and reflect the network pressures, traffic and congestion issues described above.

While Falkirk Council and its partners have improved the Green Travel Network in the area, the M9 and the Edinburgh–Dunblane line (Falkirk Grahamston), still present major barriers to active travel, and high quality & capacity connections between Falkirk and Grangemouth town centres. Sustrans regularly receives related complaints from the public.

Rationale

Electrification has improved service frequencies and capacity on the Edinburgh- Falkirk (High & Grahamston) - Glasgow and Stirling – Dunblane - Alloa lines. However, station facilities, particularly those at Grahamston, fall considerably short of those expected of an effective regional centre. Falkirk’s business, tourism and civic role will grow significantly as other Investment Zone projects are delivered. The continuing development of the area’s strategic manufacturing sectors, the office needs of its supply chain, increasing tourist accommodation requirements, and the Council’s relocation of town hall and cultural services to the core of the town centre will further reinforce the need for central, sustainable interchange facilities

Existing transport arrangements, particularly the road network, encourage car dependency and peripheral transport movements, effectively encouraging economic opportunities away from central areas. Intervention is needed to improve quality of place whilst driving growth in the Investment Zone’s key manufacturing and tourism sectors as well as commercial, retail, and leisure and town centre footfall-driven business. Active travel routes are required to better connect Grangemouth and its industries to Grangemouth and Falkirk Town Centre.

Car dependency has contributed to congestion in both town centres and on strategic transport routes (M876 and M9). The delivery of a Public Transport Interchange will consolidate public and active transport services in a central area, acting as a catalyst for development of a regional commercial supply chain to accompany anticipated growth and innovation in the Investment Zone’s manufacturing capability.

Fully serviced P&R sites will support improved accessibility to key employment areas, town centres and the areas main visitor economy assets, reinforcing efforts to encourage increased spending across the area while promoting modal shift to active travel modes.

Project aims

Provision of high-quality and resilient sustainable transport infrastructure in the Investment Zone will underpin submissions to its Great Places Development Fund as they emerge. The preparation of a comprehensive STAG appraisal (see Enabling Projects) will shape the interventions, ensuring evidence-led development and effective delivery of a comprehensive and integrated network. This network will address key challenges and maximise opportunities for broad and inclusive growth.

The need to respond to climate change and related regulatory requirements are driving change internationally towards cleaner fuel propulsion and a low carbon economy. Sustainable Transport projects will position this nationally significant area at the centre of low carbon innovation. The projects will also ensure the local community directly and indirectly benefits through improved accessibility, connectivity, access to opportunities, social cohesion and positive impacts on health and wellbeing, and raising the environmental quality of the places people use.



Delivering against economic, social and environmental objectives, Falkirk Central will enable simpler, convenient and high-quality travel to improve the commuter and visitor experience. The new station and interchange will be a focal point for those arriving and departing from Falkirk Town Centre, whether by rail, bus, car, or active travel modes. Its development will reinforce efforts to develop a sustainable regional office centre.

The Falkirk–Grangemouth Green Corridor will prioritise pedestrian and cycle movement, whilst facilitating placemaking and investment. Connectivity between places of work (including industry), residences and visitor attractions will also be supported. P&R facilities at Junction 5 (M9) and elsewhere, and connections to Falkirk Central will support the Investment Zone as a developing model for low and zero carbon transport by harnessing local innovation to achieve a cleaner network. This will have wider positive environmental and health and wellbeing impacts on the local population, reflected in air quality and other environmental indicators. Modal shift will be encouraged across all Sustainable Transport projects, allowing for the Investment Zone’s growth while easing and addressing congestion.

Anticipating future change in energy, data and utilities distribution resilience will be a central consideration in delivering the corridor.

The corridor will facilitate increased movement between the area’s centres and other important locations in what is effectively the area’s ‘spine’. It will improve cohesion between places, helping to achieve the Investment Zone’s aim to reinforce the area’s positioning as an attractive, ‘people-friendly’ and economically competitive area.

Park and Ride provision at Junction 5 (M9) will support the anticipated growth of Grangemouth’s petrochemical, manufacturing and industrial biotechnology industries, connecting Grangemouth services with the Helix (and its expanding role as an attraction of national and potentially, international, significance), Falkirk Town Centre, and addressing parking related constraints in existing and future business areas. To the east, the Glenbervie site may be considered for a similar role, bringing a constrained site into use, and in improving accessibility from the West and North of Scotland, maximising use of existing services close to the site, and enhancing accessibility to the Falkirk Wheel. Both sites will encourage active travel through cycle hire schemes.

Table 0-9 Investment Zone funding & core partners - Sustainable Transport

Partners	Role	Investment Zone funding
Falkirk Council	Sustainable Transport Management, design & procurement	£27.5m
Abellio	Falkirk Central improvements coordination & delivery	
Bus operators	Falkirk Central (bus elements)	
Sustrans	Active travel links between Sustainable Transport projects. Green Corridor development	



Scottish Canals	Active travel links between Sustainable Transport projects. Green Corridor development	
Central Scotland Green Network Trust	Green Corridor development	
Transport Scotland	Project development support	

Great Places Development Fund

The Investment Zone vision, developed by regional and local stakeholders with input, support and comment from the UK and Scottish Governments and their relevant agencies, is clear in its drive to see the areas underexploited assets capitalised on. Creating Great Places for those living, working, doing business in and visiting the Investment Zone will underpin this. The regional and local roles of its central places will be strengthened; Investment Zone support will also focus on developing the national and international attraction of its visitor base.

The Great Places development fund will support investment which targets transformational change in these areas. Projects (including packages of projects) will therefore be expected to achieve an anticipated capital spend of a minimum £4 million. The value offered by small scale incremental projects in supporting growth and reinforcing the visitor offer is recognised, but other sources of funding should generally be available to support these.

Building on its other measures, the Investment Zone’s Great Places Fund will support projects of scale which deliver:

Place & Town Centre Development

With ready access to strategic road and rail networks, Falkirk town centre’s potential to serve a regional role, in supply chain development, and as a visitor cultural, leisure and retail focus is clear. As discussed above (see Sustainable Transport) recent rail network improvements have further improved connections to Edinburgh, Glasgow and Stirling, extending the centres potential regional role. It is the administrative centre for the Council area’s 160,000 residents, a regional retail location, and of growing visitor significance. However, its town centre is fragmented, and disjointed with vacant or underutilised sites in key gateway locations. While recent improvements have improved certain areas, its environmental quality does not reflect this central employment, service, business and cultural role, limiting related investment. The town centre population is low (615 in 2016), providing little footfall and support for town centre businesses.

Structural changes in the retail and leisure sectors have seen an increased concentration of physical (rather than virtual) business in cities and regional shopping centres which are attracting consumer expenditure. Scotland’s 4th largest retail centre in 2005, Falkirk is now on the fringes of the top 20 with the closure of major stalwarts such as Woolworths and Marks & Spencer. Relocation of the Council’s Town Hall functions (outside the Investment Zone proposals) to the town centre will help stimulate activity.

Grangemouth is characterised by its port and petrochemical complex, both significant contributors to the national economy and important national infrastructure. However, despite its industrial and business significance, its population is falling, large parts of the town’s housing stock will require replacement, and housing development is restricted by: geography – the M9, Rivers Forth and Carron; flood risk, Health & Safety, COMAH and other regulations. Retail, service and other functions have moved from the town centre, inhibited in part by poor connections to residential and employment areas. Town Centre vacancy has tripled since 2014 (5% to 14%).



Providing solutions to the longstanding issues facing Grangemouth requires a holistic approach, recreating it as a Great Place and restoring vitality.

Combined with other Investment Zone measures, the Great Places Fund will support significant centre interventions to: ensure high quality, clear and safe links between entry points to the town centres, their main focal points, including transport hubs, cultural, retail and leisure centres, places of employment and places of employment / visitor attraction nearby employment centres and attractions. Supported projects should help creation of platforms to encourage major investment in cultural, heritage, residential and commercial projects.

Working with other Investment Zone measures, the Great Places Fund will support measures to help central populations grow to 5,000 people within 10 years, improve commercial and retail leisure vacancy rates to below the national average, and encourage a major increase in footfall and related spending.

International Tourism Destination Development

Falkirk Council and its partners have demonstrated the impact landmark development can have in building the experience economy, having established two successful destinations alongside its historic attractors.

The tourism sector attracts 1.3 million visits each year, supporting 1,980 full time jobs and £118.2 million in direct and indirect expenditure. Its growth has been driven by two world-class, internationally recognised tourism attractions in the Falkirk Wheel and the Kelpies at the Helix. Attracting over 1 million visits a year, they showcase Scotland’s modernity, contributing to the national dynamism and vibrancy used to market the country internationally.

However, its economic benefits are not being fully realised regionally. Day visitors account for half of visits, reflecting in part the scale of supporting infrastructure in the area’s centres and the links to and between them. While visitor numbers have increased by 50% in the last 5 years, total related spend has increased much less significantly (30%)

The area faces a number of challenges: supporting tourism infrastructure (accommodation, interpretation, connections to and from key attractions etc.) needs to be improved to enable businesses and communities to fully benefit from previous and future investment; the interpretation of Falkirk’s historic assets has been understated, and recent tourism investment has generally been limited to areas outside the main centres. This needs to be reversed if the Investment Zone is to see the full combined benefit of Growth Deal projects.

Building in the success of the Helix and the Falkirk Wheel, the Great Places Fund will support new (or improvements to existing) infrastructure, facilities or services which make a significant contribution: to visitor numbers and spend in Falkirk and across the Forth Valley; to extending lengths of stay; and to attracting international visitors.

Combined with other Investment Zone measures, the Great Places Fund will support measures to help achieve a 50% increase in visitor numbers over the next 10 years to 1.9 million annually.

Table 0-10 Investment Zone funding & core partners - Great Places Development Fund

Partners	Role	Investment Zone funding
Falkirk Council	Great Places Development Fund Management, project procurement	£32.5m



Falkirk Community Trust	Project development & implementation	
Scottish Canals	Project development & implementation	
Scottish Enterprise	Project development support	
Falkirk BID	Project development & implementation (Grangemouth counterpart to be established)	
Architecture & Design Scotland	Place quality, project development	

Improving Economic Participation: A Whole System approach

The Falkirk Grangemouth Investment Zone will develop and deliver a place-based Whole Systems Approach to improve economic participation. This will start in Grangemouth where other Investment Zone support will be targeted but where deprivation rates are consistently amongst the most challenging in Scotland. It will align with the Public Health Reform Programme, creating an opportunity for the Investment Zone as an early adopter and addressing Priority 5 of Scotland’s Public Health Reform Programme: ‘A Scotland where we have a sustainable, inclusive economy with equality of outcomes for all.’

A Whole Systems Approach recognises issues such as economic exclusion as the product of a complex web of interacting and changing causes and influences. In this case it advocates a cross sector approach, to tackling barriers to employment and improved wellbeing. The links between health, wellbeing, and economic exclusion will be assessed and addressed through a piloted approach in Grangemouth with the objective of reducing economic exclusion and improving outcomes for individuals and families.

This project has strong links to the SME Skills Pathway which will develop routes into industry for people living in the 20% most deprived SIMD data zones. It brings together Place, Employment, and Wellbeing with a particular focus on health to understand and tackle the multiple factors in poverty and disadvantage.

Existing arrangements

Grangemouth is an industrial town with a population of around 17,000 people, over 2,600 of who live in areas among the 15% most deprived in Scotland. Within these data zones, 22% of people are prescribed drugs for anxiety, depression or psychosis; school attendance is only 73%; 21% of 16 to19-year olds are not in full time education, employment or training; 2% of 17-21 year olds have entered full time higher education. Two of Grangemouth’s data zones are in the most deprived 10% in Scotland in terms of income and employment.

This situation exists adjacent to Scotland’s largest industrial concentration and one of its more productive facilities, a targeted location for significant investment as the region repositions towards and chemical sciences and low carbon advanced manufacturing. The Grangemouth complex offers well paid employment with excellent training opportunities and staged career progression. The Falkirk Grangemouth Investment Zone aims to expand its scale and its employment and income effects.

However, research among Grangemouth’s communities²⁹ has found widespread frustration at an apparent lack of work and training opportunities for local people and a sense that the community increasingly suffers rather than benefits from its proximity to the plant and the expanding port. This has led to an ‘us and them’ attitude, in marked contrast to the recent past when the opportunities and benefits of Grangemouth’s industry were a source of local pride. This is despite young people aspiring to work in local industry and at the plant in particular. The report called for greater investment in Grangemouth and better and clearer opportunities for local people, with industry helping to offer a clear route out of poverty. At a strategic level it

²⁹ Grangemouth “Your Place Your Views” Consultation, May 2019: Community Links

identified the possibility of “piloting transformational change” in Grangemouth as part of Falkirk Council’s ‘Council of the Future’ commitment³⁰. The Whole System project, with others in the Investment Zone, responds to this.

NHS Health Scotland is one of the national boards forming the new Public Health Scotland (2020) body tasked with enabling the whole system to work collaboratively to deliver 6 national public health priorities, aligned with and contributing to National Performance Framework outcomes. They target a Scotland:

1. where we live in vibrant, healthy and safe places and communities;
2. where we flourish in our early years;
3. where we have good mental wellbeing;
4. where we reduce the use of and harm from alcohol, tobacco and other drugs;
5. where we have a sustainable, inclusive economy with equality of outcomes for all; and
6. where we eat well, have a healthy weight and are physically active.

In developing a related programme for adoption of evidence-informed inclusive growth approaches by regional economic development partners. Public Health Scotland and Public Health Reform are seeking to identify and work with partners interested in inclusive economic growth at a local, regional and national level.

The Public Health Reform Programme jointly led by Scottish Government and COSLA will require a different way of working that supports everybody as part of a wider system to move towards a shared vision for public health. The success of public health reform will be judged against the major public health challenges facing deprived communities in particular, including: Scotland’s relative poor health; significant and persistent health inequalities; and unsustainable pressures on health and social care services. All of these challenges are apparent in communities in Grangemouth and the wider Falkirk area.

Rationale

It is generally acknowledged that the benefits of economic development have not been experienced equally across society as seen in inequalities in income and health in many countries. Recognising the damaging effects of inequality on economic performance, global organisations such as the OECD³¹, IMF³² and World Bank³³ now advocate for inclusive policies which target more equally distributed economic growth across society.

Across the UK, work including the RSA’s Inclusive Growth Commission (2017)³⁴ has raised the importance of what is often termed ‘Good Growth’ as a way to make ‘local economies across the UK more economically inclusive and prosperous’. This project will build on the national and local commitment to deliver inclusive growth in Scotland. The Scottish Government made inclusive growth a cornerstone of its 2015 Economic Strategy and delivering a sustainable and inclusive economy is recognised as a Public Health Priority by COSLA and the Scottish Government. Positive action through this project will contribute to improvements in the national performance framework indicator where Scotland is “a globally competitive, entrepreneurial, inclusive and sustainable economy”.

³⁰ Falkirk Council Corporate Plan 2017-2022

³¹ <https://www.oecd.org/inclusive-growth/>

³² [IMF \(2019\) Reducing inequality can open doors to growth and stability](#)

³³ [World Bank \(2018\) Inclusive Growth: A Synthesis of Findings](#)

³⁴ [RSA Inclusive Growth Commission 2017](#)



A recent report by the Scottish Poverty and Inequality Commission³⁵ found that while there is general commitment among strategic leads and practitioners in Scotland, there is less clarity about how to practically deliver inclusive growth. This project addresses this, ensuring that investment in the regional economy also means investment in developing the potential of its most disadvantaged communities. Delivery of public health priorities will require collaborative working, using the strengths and resources of different partners to achieve major improvements in local community wellbeing, particularly those communities experiencing the greatest inequalities. The experience of the Fair Start Scotland³⁶ employment support programme in Falkirk indicates that poor health is the main barrier to employment for many of the long term unemployed and economically excluded.

In developing a more inclusive economy and achieving wider Investment Zone benefit, improvements in access and labour market participation will require a Whole Systems approach to ensure the area's most deprived communities also benefit from its interventions.

NHS Scotland's Reform Team has developed a set of 9 characteristics of whole system working: system thinking; learning culture; facilitative and adaptive Leadership; purposeful engagement; governance and resourcing; sustainable collaborative working; shared commitment and outcomes; the importance of place; and creativity and innovation.

The Falkirk Grangemouth Investment Zone provides an opportunity to position the area as an Early Adopter of whole system working across the 6 Public Health Priorities as well as developing a needs led, person centred response.

Project aims

The current approach to dealing with the root causes of economic exclusion happens by default rather than design. Initial discussions suggest that there would be benefit in adopting a whole system approach through the vehicle of inclusive growth and to focus on Grangemouth initially. The first phase of the project will bring local partners together to understand the local context and develop a shared vision and priorities for extending inclusive growth in local communities through collaboration. Building on comprehensive recent local consultation³⁷, this project will seek to align views, identified needs and recommended actions supported by evidence from the Annual Population Survey³⁸ and the Grangemouth Inequalities Profile³⁹.

As an early adopter of a Whole Systems Approach to a more inclusive local economy delivering a single system, person-centred service the project will:

- Test and refine the whole system approach with partners;
- Understand what promotes whole system adoption, identify & test activity to overcome barriers;
- Identify ways of improving links between national policy and local delivery which best support a whole system approach; and
- Share the learning across the wider system.

³⁵ [Poverty and Inequality Commission \(2019\) Delivering Inclusive Growth in Scotland](#)

³⁶ <http://www.employabilityinscotland.com/fair-start-scotland/map-of-provider-contacts/>

³⁷ Community Links (2019) Grangemouth Your Place Your View Consultation – May 2019

³⁸ [Grangemouth Profile](#)

³⁹ [Grangemouth Inequalities Profile](#)



The Investment Zone Whole System Approach will improve access to opportunities and participation in the labour market for disadvantaged communities by linking opportunities and needs in a targeted, managed, and measurable framework, reducing health as a barrier to inclusion. Anticipated outcomes will align with the National Performance Framework and Inclusive Growth National Indicators as appropriate. The project will target improved income; employment; health; and education outcomes in first Grangemouth’s, and potentially extending to Falkirk’s most disadvantaged communities.

Table 0-11 Investment Zone funding & core partners- Whole System Approach

Partners	Role	Investment Zone funding
Falkirk Council	Whole System Approach Management, coordination, project development & delivery	£8m
NHS Forth Valley	Key project development & delivery partner	
Public Health Scotland 2020	Support in project development	

Community Energy Infrastructure

The Community Energy Infrastructure project will invest in capital equipment for community solar projects and a district heating network from Grangemouth to Falkirk Gateway. It will support the future resilience of existing and future communities.

This strategic investment will respond to Scotland’s Energy Strategy (2017) by facilitating transition to more efficient and low carbon energy solutions through a localised approach to energy generation. The move to community-level renewable and low carbon solutions will help delivery of Investment Zone objectives for achieving sustainable, inclusive growth. It will future-proof energy systems in existing and new communities, assisting achievement of net zero emissions by 2050⁴⁰ or earlier.

Existing arrangements

There is limited community energy generation capacity in Falkirk and Grangemouth, in stark contrast with the generation capacity of Grangemouth’s industrial facilities (which include a number of heat and energy generation stations to satisfy and safeguard industrial operational requirements). The latter includes backups, redundancies and intermittent surplus which are not currently exported for local use.

Clean Energy Generation

As domestic / small scale generation technologies have developed, local organisations including Falkirk Community Trust (FCT) and Grangemouth Community Council (GCC) have become increasingly interested in its potential application at community level.

The area has seen successful examples including the 49kW solar array at Falkirk Sheriff Court, which has reduced energy consumption and allowed for surplus to be exported to the national grid. While commercially-funded, small wind farm developments such as the 12mW facility at Larbert provide energy generation capacity while also delivering community benefit payments.

⁴⁰ Climate Change Commission (CCC) Net Zero Report - March 2019. Note, the report suggested a net-zero target for Scotland by 2045.

However, these schemes would not have been developed without the upfront public and / or private sector capital investment is required to make generation viable. Communities across the Investment Zone are not presently able to support the borrowing required for related capital investment.

District Heating

Following a grant of £983,000 from the Energy Savings Trust in 2005, Falkirk Council developed a district heating network (DHN) through a Combined Heat and Power (CHP) system in the Callendar Park area. The system serves six residential buildings and was connected to Callendar House in 2011.

In 2016, the Council feasibility study examined the possibility of extending the Callendar Park network to other tower blocks to improve efficiency while reducing maintenance costs. It also explored the potential for a DHN between Grangemouth and Falkirk, using surplus industrial heat to supply new developments. However, in the absence of other support, the initial capital costs of network delivery proved a prohibitive barrier to development.

While Falkirk Council is keen to deliver better services and has been proactive examining the potential to develop localised energy networks, under current arrangements, benefits in terms of enhanced community control and resilience cannot be delivered without substantial investment.

Rationale

There are pockets of severe deprivation in Grangemouth and Falkirk's communities. The Community Links report⁴¹, commissioned by Falkirk Council, identified a sense among Grangemouth's residents that local investment lags behind other areas. While communities understood the value and importance of the industry on their doorstep, they felt the community benefits from this relationship are not commensurate with Grangemouth's contribution to the national or regional economy. Energy and its generation is one area where the contrast is most pronounced, the surplus energy generated by industry contrasting with pockets of fuel poverty in neighbouring communities.

The discussion of existing arrangements indicated potential demand for low carbon energy solutions across the Investment Zone Falkirk and Grangemouth. This is supported and driven by policy support for both Scottish and UK Governments to decarbonise energy systems. By 2030 Scotland aims to generate 50% of overall energy consumption from renewable sources, and by 2045 have completely decarbonised energy networks⁴².

While in two strands, Community Solar and District Heating, the drive for investment in community energy infrastructure is stimulated by the need to improve community sustainability, resilience and control over their energy use (particularly in those parts of the Investment Zone where fuel poverty is most pronounced), while harnessing the potential for developing low/zero carbon networks. The requirement for significant upfront capital investment is a common barrier to development of community networks and decentralised generation.

Community Solar

While electricity is central to most aspects of daily life, the Investment Zone and its communities is still largely served by fossil-fuel generation. If emissions targets are to be met, opportunities for localised sustainable and clean energy production need to be harnessed. The rationale for intervention is based on the imperative of decarbonisation, particularly in communities close to industry.

⁴¹ Community Links Report: Involving Communities in Regeneration. May 2019.

⁴² Scotland's Energy Strategy (2017)



In the last 10 years, the cost of solar energy generation has reached grid parity, making it competitive with conventional sources of energy generation such as coal or gas. While this has opened market opportunities, current conditions prevent communities from accessing the required capital investment to deliver solar systems to meet their own energy needs and to retain the funds from its generation.

Investment in Community Solar is therefore based on: increasing local energy production through low-carbon generation; and creating a revenue sources for community reinvestment. Investment Zone capital support for Community Solar projects will reinforce community resilience.

District Heating

Grangemouth has the largest concentration of industrial heat in Scotland, with significant associated carbon emissions. The intervention promotes use of accessible waste industrial heat as part of a lower carbon generation solution. This will link industrial producers with local community and business demands.

The district heating strand seeks to establish a core network which will provide a low carbon solution to heating for future development in the Falkirk area, including the Gateway and the new Forth Valley College campus.

Project aims

The Community Energy proposition supports several of the recommendations made in the Community Links Report, including working at a strategic level to address and re-design services collaboratively with local people and community groups. Project delivery will empower communities while enabling them to see tangible, sustainable and recyclable investment through Investment Zone delivery.

The district heating element will to create a network which serves new developments in the Falkirk area, providing a low carbon solution to commercial, institutional and residential consumers. The ability to deliver low carbon heat to existing and future communities will encourage development of a more circular economy.

The Community Energy Infrastructure project seeks to accelerate adoption of efficient, localised and low carbon solutions to support efforts in Scotland and the UK to deliver against climate change targets.

Local, decarbonised energy generation will also deliver improved health and wellbeing outcomes, linked to local communities increased capacity to invest in their own communities and their social and community infrastructure. This will go some way to meeting the deficit in community support funding felt since the demise of major chemicals producer such as BP and ICI, who provided substantial support for community facilities.

Table 0-12 Investment Zone funding & core partners - Community Energy Infrastructure

Partners	Role	Investment Zone funding
Falkirk Council	Community Energy Infrastructure Management, project procurement	£12m
Local Energy Scotland	Community energy generation guidance & support	
Brockwell Energy	District Heat Network operation	



Falkirk Community Trust	Organisation, coordination. Community group liaison	
Forth Valley College	Potential links to Falkirk Gateway & other networks	
Community Groups	Capacity development, management	

Governance

Falkirk Council and its partners recognise the need for robust project management and governance to deliver the Investment Zone. The structure proposed centres on the Falkirk Economic Partnership (the Partnership) and includes the agencies and key business interests who will be involved in delivering Investment Zone interventions and in subsequently making sure its growth ambitions are realised.

In 2013, INEOS temporarily closed its Grangemouth plant. Following INEOS’s decision to sustain and grow its Grangemouth operations, the Partnership was formed to establish a new economic strategy for the area and to ensure its delivery with the full engagement of each partner. The Investment Zone is the key focus of the Partnership’s work and is designed to help maximise the value of the public and private sector investment anticipated in the area. The membership of the Falkirk Economic Partnership is as follows:

- Falkirk Council
- Scottish Enterprise
- Scottish Government
- Forth Valley College
- Scottish Canals
- INEOS
- CalaChem
- Forth Ports
- Alexander Dennis
- John Mitchell Ltd (Haulage)
- Falkirk Town Centre Business Improvement District (BID)
- Stirling University

The Investment Zone measures in this business case include strategic interventions aligned with complimentary investment by private & public sector project partners. With associated private sector investment of more than £1.5 billion planned or anticipated over the period of the Investment Zone, this partnership will maximise its economic, social and environmental benefits.

Investment Zone governance will build on the proven **track record** of Falkirk Council and its partners in the Falkirk Economic Partnership in delivering ambitious infrastructure projects. The Falkirk Tax Increment Finance (TIF) programme is delivering £67m of key infrastructure. To date it has assisted in maintenance and creation of some 700 jobs and attracted some £51m in inward investment. Opened in 2014, the Helix and Kelpies is a multi-award-winning development linking Grangemouth and Falkirk. It has become an International attraction and symbol of Scotland’s creativity and ingenuity. Tourism now generates over £110m each year, employing 2,000 people in the area.

The Investment Zone governance structure proposed to ensure its delivery has the following elements:

Strategic Board

The Falkirk Economic Partnership will act as the strategic board, directing and steering project elements to maximum effect and ensuring coordination with partners' related investment programmes. It will make recommendations for implementation of the Investment Zone measures, for formal agreement via the Council's Executive. The Partnership will review progress and report to the UK and Scottish Governments and the Council on an annual basis.

Project Boards

The Partnership will be supported by four Project Delivery Boards, each responsible for projects under one of the thematic areas (Innovative Industry, National Economic Infrastructure, Creating Great Places, Strategic Delivery & Enabling Actions). These will involve a range of partners responsible for development and delivery of Investment Zone projects. While Falkirk Council will provisionally chair each Project Board, once established Chairs will be nominated by Project Delivery Board members and will attend and update the Falkirk Economic Partnership.

Project Management Office

A project management office (PMO) will be established involving project partner representatives to ensure smooth development and delivery of Investment Zone interventions.

Reporting

A Governance structure is illustrated below. Formal measures for project reporting and accountability will be agreed with the Scottish and UK Governments and implemented by Falkirk Council. The Investment Zone programme will be reviewed every 3 years, with formal project evaluations instructed at an appropriate stage following project delivery.

Meetings

The Falkirk Economic Partnership will meet quarterly as the Strategic Board with Project Delivery Boards reporting to this timeframe.

Remit

The Strategic Board's remit will be to build and support sustainable, inclusive growth by overseeing Falkirk Grangemouth Investment Zone delivery. It will:

- negotiate infrastructure funding with the Scotland and UK Governments;
- allocate resources according to the Heads of Terms agreed by UK and Scotland Governments;
- agree project business cases;
- monitor the impact of the Falkirk and Grangemouth Investment Zone Programme;
- focus on the needs of the local area and strengthen the partnership between public, private, community and third sectors;
- work in partnership to improve the delivery of Investment Zone programme and economic development across the Forth Valley region; and
- guide and direct the PMO and individual project boards

The following roles are proposed for the Falkirk Economic Partnership members involved in delivering the Investment Zone programme:

- **Falkirk Council**

Lead in developing the Investment Zone programme, political leadership, financial management, monitoring and reporting, communications and stakeholder engagement, place-making and infrastructure programmes, engages and direct consultants/contractors, submits bid;

- **Scottish Enterprise**
Lead on Innovation projects – bio-chemical sector development, carbon usage, and automotive manufacturing; site development lead; secondary lead on communications & stakeholder engagement;
- **Forth Valley College**
Lead on skills & learning, development of STEM and skills pipeline; secondary lead on communications and stakeholder engagement;
- **Falkirk Community Trust**
Lead on Culture and Heritage projects;
- **Scottish Canals**
Lead on waterways development, significant input into place-making & tourism;
- **INEOS**
Lead on INEOS investment programmes. Leadership (private sector), contribute expertise in chemical industries projects and investment;
- **Forth Ports**
Lead on Port Improvement Plans, Leadership (private sector), contributes expertise in logistics (shipping and rail freight) and related investment;
- **CalaChem**
Lead on CalaChem investment programmes. Leadership (private sector), contribute expertise in chemical industries;
- **Alexander Dennis**
Lead on ADL investment plans. Leadership (Private Sector), contribute expertise in low carbon vehicle manufacture & public transport interventions;
- **Falkirk Town Centre BID**
Key partner in Falkirk Town Centre improvement.
- **Stirling University**
Strategic Board role in maximising synergies & coordination with Stirling & Clackmannanshire City Region Deal projects. Lead on Forth Valley Higher Education opportunities and links to the National Environment Centre.

Figure 0:3 Falkirk Grangemouth Investment Zone Governance Structure

