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Full Business Case (FBC)			
1. General Information			
Directorate	Economy	**Portfolio/Committee**	Clean Streets, Recycling and the Environment
Project Title	TRIS	**Project Code**	*To follow*
Project Description	**Concept** Resource Efficiency and SME competitiveness are fundamental to the EU agenda to create the conditions for smart, sustainable and inclusive growth. They enable the development of strong and resilient regional economies, which help to increase employment and reduce poverty. Inefficient resource use by Europe's SMEs has been identified by the European Commission as a clear market failure creating additional and unnecessary costs that constrain growth, contribute to greenhouse gas (GHG) emissions, and further exploit scarce natural resources (European Resource Efficiency Platform, 2014, Manifesto and Policy Recommendations. 31 March). Successful Industrial Symbiosis keeps resources circulating in the economy but the product, process, technology and procurement changes necessary are often complex for SMEs. Industrial symbiosis addresses this market failure by connecting traditionally separate industries through facilitation, thus enabling them to divert wasted by-products and resources into productive and value-added uses elsewhere in the economy. There is a growing market for industrial symbiosis across Europe, supported by the recent high-level European Resource Efficiency Platform (EREP) recommendation (cfr. EREP Manifesto) that EU and Member States should foster IS by promoting a pan-European network of Industrial Symbiosis initiatives. A DG Environment study indicates that pan-European Industrial Symbiosis would generate €3Billion in additional sales and cost savings for Europe, alongside substantial environmental benefits (Economic Analysis of Resource Efficiency Policies: Final Report, 2011, COWI for DG Environment). Industrial symbiosis has been proven to deliver wide-ranging benefits, from resource efficiency to eco-innovation. Facilitated Industrial symbiosis brings together producers and users of underutilized resources (including materials, water, energy, logistics) with technological innovators to foster demand-led innovation (i.e., innovation that responds to the needs of the market). Improving Resource-efficient economy policies is a key theme within the Interreg Europe programme and the efficient use of resources is		

critical to SME profitability and long term resilience. Industrial symbiosis techniques provide SMEs with the tools to address their use of materials, helping to reduce input costs and the cost of waste disposal. This has a direct impact on SME profitability and competitiveness. The TRIS project allows the sharing of best practice in industrial symbiosis between European regions, thereby accelerating improvements in resource efficiency and competitiveness. It provides learning and knowledge exchange for policy makers and public bodies to inform them of the appropriate incentives and environment to accelerate the uptake of industrial symbiosis and a more circular economy.

Partners

Birmingham City Council is a member of Climate KIC. This project concept was developed in association with other city/ regional partners that also belong to the European-funded Climate KIC partnership. Partners include:

1. Birmingham City Council (Lead Partner)
2. International Synergies (a Kings Norton based company and global leaders in industrial symbiosis and Innovation Birmingham)
3. IFKA Public Benefit Nonprofit Limited for the Development of Industry (Hungary)
4. Emilia Romagna Region (Italy)
5. Energy Agency for Southeast Sweden
6. Valencia Region (Spain)

Previous collaboration

Birmingham City Council has collaborated extensively with international Synergies on a number of activities (including Climate KIC, the new waste vision, the G7 Summit on industrial symbiosis held in Birmingham and in relation to Green Commission activities). We have also worked with most of the regional organisations mentioned (the only exception being the Energy Agency for SE Sweden) through previous Climate KIC activity, although not on the theme of industrial symbiosis).

Project Need

Birmingham has ambition to become a zero waste city; this is the ambition being articulated through the city's new waste vision. The ambition also runs through the work and strategies of the Green Commission and also through the Birmingham Development Plan. One way that this can be achieved is through ensuring that we support a

‘circular economy’ approach , a key part of which is industrial symbiosis (most simply described as the mechanism by which the waste products from one part of the supply chain can become the resources for another, thereby diverting significant material from landfill, incineration or other waste disposal requirements).

In December 2015, the European Commission released its Circular Economy Package. This sets out targets and strategic direction in regard to waste reduction, recycling, reuse and disposal:

- A common EU target for recycling 65% of municipal waste by 2030;
- A common EU target for recycling 75% of packaging waste by 2030;
- A binding landfill target to reduce landfill to maximum of 10% of all waste by 2030;
- A ban on landfilling of separately collected waste;
- Promotion of economic instruments to discourage landfilling ;
- Simplified and improved definitions and harmonised calculation methods for recycling rates throughout the EU;
- **Concrete measures to promote re-use and stimulate industrial symbiosis - turning one industry's by-product into another industry's raw material**;
- Economic incentives for producers to put greener products on the market and support recovery and recycling schemes (e.g. for packaging, batteries, electric and electronic equipment, vehicles)

Much of this work coincides with ambitions being developed in relation to BCC’s new waste vision, as well as the procurement of the new disposal contract. We have worked with an environmental engineering consultancy (Ricardo) to understand some of the potential solutions, some of which we are able to implement through facilitation and sharing best practice. One of these areas links to industrial symbiosis (referred to above) whereby we can not only reduce waste but also improve SME competitiveness through reduced costs.

The thematic focus

However, despite the acknowledged advantages, Industrial Symbiosis (IS) is not yet fully widespread. The aim of the TRIS project is to facilitate a systemic uptake of IS in 5 European regions, supporting policy makers to increase the competitiveness of their SMEs by introducing industrial symbiosis practices. To do so, TRIS consortium

	will: • Raise awareness of industrial symbiosis and its economic and environmental benefits • Build a cooperation culture in the stakeholder groups (including SMEs and policy actors) • Standardise industrial symbiosis practices in regional/ LEP policy instruments • Launch tangible initiatives in the regions: reaching out to SMEs, supporting their business with new industrial symbiosis cases/projects, preventing industrial waste production, testing new governance models • Bring industrial symbiosis to a higher position in the European political agenda. **Project Objectives** The overall objective of TRIS is to support the partnering public authorities and related bodies to increase resource efficiency and the competitiveness of their SMEs, and productive systems at large (being SME a portion up to 99% of the EU entrepreneurial fabric), by introducing Industrial Symbiosis (IS) practices. This will be achieved through the following 1. Improvement of the regional policies addressing: • production and management of industrial waste, • efficient production processes, • access to innovative technologies and production techniques, • launch of new business strands and penetration of new markets. 2. Identifying the enabling elements and the obstacles for such an environment to become long lasting and embed them in, or remove them from, the appropriate policy instruments. 3. Reaching out and engaging with the actors that can drive the changes and/or be impacted by them and maintain them, interconnected in a structured network.
Links to Corporate and Service Outcomes	Supports the Council Business Plan and Budget 2016+ priority 'A Prosperous City' , particularly: • Business: Businesses will be growing and new ones starting up; industrial symbiosis is a proven technique to support economic growth and resource efficiency of all business in the supply chain. • Sustainability: Birmingham will be more environmentally sustainable through the support for the circular economy and

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<table>
<tr><td></td><td colspan="3">more efficient use of resources.

The project also directly supports:
• The Green Commission's Carbon Roadmap
• The objectives and ambitions of the new waste vision
• The Birmingham Development Plan (especially TP13-15 in the section on Sustainability).</td></tr>
<tr><td>Project Definition Document Approved by</td><td>Cllr Lisa Trickett and Waheed Nazir</td><td>Date of Approval</td><td>22nd April 2016</td></tr>
<tr><td rowspan="4">Benefits Quantification- Impact on Outcomes</td><td colspan="2">Measure</td><td>Impact</td></tr>
<tr><td colspan="2">Regional Action Plan</td><td>This will be the main product from the TRIS project and will form the end of the first phase of the project. It will be built on all the practical activity and best practice observed during the first three years and will form a bespoke policy tool to move each region forward in relation to its resource efficiency agenda.</td></tr>
<tr><td colspan="2">Industrial Symbiosis "IS Labs"</td><td>An "IS-Lab" (essentially a stakeholder group) is created in each region, where input from the interregional learning activities is presented and used to develop locally relevant 'bite-sized' activities. All activities at the core of the mutual learning will be either discussed with or/and reported to the IS-Labs afterwards. Six meetings in each region are foreseen.</td></tr>
<tr><td colspan="2">Study visits</td><td>These will involve mainly junior staff in an internship of up to 5 working days in a partner organisation of a different region. This provides a real learning opportunity to see what is happening in different European regions in relation to industrial symbiosis and the circular economy.</td></tr>
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	Interregional workshops	Partners and IS-labs' members will present their most promising activities, addressing 5 themes: policy and regulation; awareness raising; financial schemes & business models; tools to improve the capacity of SMEs to use industrial symbiosis; and, engagement and creation of a trusted local network.
	Site visits	Coupled with the interregional workshops are site visits. About 30 people (partners and stakeholders) are expected to visit 6 outstanding examples of industrial symbiosis. The actors involved - SMEs, public authorities, consultants, etc. - will be interviewed to spot risks and success factors. Assessment of replicability will be performed at regional level.
Project Deliverables	The following deliverables have been collectively agreed by the project consortium: • Local meetings: local IS-labs set up in each location with a minimum of 10 individuals; letters of commitments signed by each members; IS-labs will meet and work at least 6 times each semester • Communication plan prepared and updated annually; website launched in year 1 and updated quarterly; visual identity of the project prepared; poster, brochures, leaflet: on the project, on IS basic concept, on technical themes • Public dissemination events: 2 at EU level organised by Eurisa, 2 per location organised by partners in Phase 1; one final event organised in Phase 2 • Media coverage across the regions (press, TV, radio, web etc.) • Regional reports on the good practices analysed, assessed and shortlisted • 10 peer review meetings organised -> review reports prepared • 6 study visits organised (involving in average 25 participants each) • 5 Interregional workshops carried out, and reported, each on a specific theme (min 30 participants) • 5 to 10 staff exchanges occurred and reported • 5 regional action plans drawn, through an iterative process, presented and disseminated at EU and local level.	
Scope	The project will extend across the GBS LEP, providing opportunities for policy development (and funding support through ESIF) to support the mainstreaming of industrial symbiosis as an approach to improved resource effieicncy.	

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Scope exclusions			
Dependencies on other projects or activities	The project will need to comply with the funding rules and regulations set out by Interreg Europe. It will also need to align closely with the work of the new waste vision and will inform the work of the Green Commission and delivery of the Birmingham Development Plan going forward.		
Achievability	The Sustainability Team has an excellent track record of managing and coordinating complex European funded and national projects and complying with grant funding requirements. The Sustainability has delivered 7 European Projects to date (to completion – we are working on a number of others) and understands the stringent requirements that need to be observed in order to claim funding. We have developed knowledge and skills in financial reporting. Further, in this project, we are supported by International Synergies, who also have extensive experience in transnational project delivery. The TRIS project is enhancing the work of the new waste vision by supporting policy and funding (through ESIF) for increased resource efficiency amongst our businesses, and training in the tools to enable this for policy makers. As indicated in the first section of this business case, there has been some history of collaborative working amongst the partners identified in the project previously.		
Project Manager	Jacqueline Homan Sustainability and Science City Manager jackie.homan@birmingham.gov.uk/ 07833 059273		
Budget Holder	Jacqueline Homan Sustainability and Science City Manager jackie.homan@birmingham.gov.uk/ 07833 059273		
Sponsor	Anne Shaw Assistant Director Transport and Connectivity Economy anne.shaw@birmigham.gov.uk/ 0121 303 6467		
Project Accountant	Michele Garrison Finance Manager Development & Culture michele.garrison@birmingham.gov.uk/ 0121 303 3817		
Project Board Members	Jacqueline Homan – Sustainability and Science City Manager		
Head of City Finance (HoCF)		**Date of HoCF Approval:**	

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2. Budget Summary (Detailed workings should also be supplied)							
	Voyager Code	***Financial Year (2016-17)***	***Financial Year (2017-18)***	***Financial Year (2018-19)***	***Financial Year (2019-20)***	***Financial Year (2020-21)***	***Totals***
Revenue Costs		**£ (in '000s)**					
Expenditure:							
BCC staff costs		**31.9**	**43**	**44**	**44**	**31.8**	**194.7**
Travel Costs	TBA	**3**	**4.5**	**5**	**5**	**4**	**21.5**
Subcontractors		**0**	**8.4**	**10**	**10**	**10**	**38.4**
Other (office admin)		**5.5**	**5.5**	**5.5**	**5.5**	**5.5**	**27.5**
Totals		**40.4**	**61.4**	**64.5**	**64.5**	**51.3**	**282.1**
Funded By:							
BCC Revenue budget (15%)	RPXPP	**6**	**9.2**	**9.7**	**9.7**	**7.7**	**42.3**
Interreg Funding (85%)		**34.4**	**52.2**	**54.8**	**54.8**	**43.6**	**239.8**
Totals		**40.4**	**61.4**	**64.5**	**64.5**	**51.3**	**282.1**
Overall Project cost (including partners spend)		**342.1**	**434.5**	**566.7**	**48.5**	**60.7**	**1452.8**
Planned Start date for delivery of the project		*July 2016*		**Planned Date of Technical completion**			*June 2021*

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3. Checklist of Documents Supporting the FBC		
Item	**Mandatory attachment**	**Number attached**
Financial Case and Plan		
• Detailed workings in support of the above Budget Summary (as necessary)	Mandatory	
• Statement of required resource (people, equipment, accommodation) – append a spreadsheet or other document	Mandatory	
• Whole Lifecycle Costing analysis (as necessary)	n/a	
• Milestone Dates/ Project Critical Path (set up in Voyager or attached in a spreadsheet)	Mandatory	
• Partnership Funding Proposal		
• Specific Funding (Grant) outline		
Project Development products		
• Populated Issues and Risks register	Mandatory	
• Stakeholder Analysis	Mandatory	
• Technical Feasibility Assessments		
• Partnership Agreement		
• Non-Financial Benefits		
Other Attachments (list as appropriate)		
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Annex 1 – Risk and Issues assessment

Please identify any significant risks and their impact on the project. Assess the probability of their occurrence and describe possible remedial actions.

Risk Description	Impact	Probability	Remedial Actions
Lack of take up in the project from SMEs	H	L	In working with International Synergies we are confident that there will be a high level of take up and interest from the opportunities that come from the TRIS project as they already have extensive networks of businesses that they support through their National Industrial Symbiosis Programme (NISP). We will also work with other business organisations (such as Chambers of Commerce) to ensure that dissemination is as widespread as possible.
Deliverables not achieved	H	L	Birmingham City Council is Lead partner on the project and has extensive experience in delivery of transnational projects and programmes. We will ensure that a consortium agreement is put in place between partners so that everyone knows what their responsibility is to the project.
Change of project personnel	M	H	Over the five year time period of the project, it is likely that there will be some changes of personnel. The consortium agreement will make it clear what the project expects from the member organisation in this case, but loss of expertise and knowledge can be problematic.
Insufficient capacity to deliver against the project objectives	M	L	Contingency has been included in the inclusion of a sub-contracting budget in order to provide support for the project team on some of the more technical elements of the project.
Lack of take-up of the project learning	L	M	It is important that the learning from this project is an iterative process and feeds back into development of strategy and decision-making in the partner organisations and that the project does not sit in isolation. In order to minimise this, the work from the project will be as inclusive as possible and dissemination will be done widely.
Clawback of funding for either non-compliance with grant conditions or ineligible spend for both BCC and the	H	L	Birmingham City Council is Lead partner on the project and has extensive experience in delivery of transnational projects and

regional partners.			programmes. We will ensure that a consortium agreement is put in place between partners so that everyone knows what their responsibility is to the project. Regular partner meetings will address expenditure to ensure spend relates to planned activities and is within budget, is actual and eligible. Grant agreement states, “the lead partner and/or the programme authorities may impose corrective measure which have to be implemented by the concerned partner. Those corrective measures can lead to the exclusion of any ineligible expenditure and to the request for repayment of all or part of the concerned subsidy.” Each partner will be solely responsible for any non-compliance of the agreement.

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Annex 2 – Stakeholder Matrix

Stakeholder Group	Role / Influence
Cabinet Member for Clean Streets, Recycling and the Environment (portfolio owner)	Sponsor the project,
BCC Councillors	Scrutinise Sustainability team projects
Green Commission	Will assist in delivery of the project and dissemination of outcomes, particularly through the 'Resources' theme.
Climate KIC	Working with the Climate KIC on a similar project (Public Procurement of Innovation Network, also hosted at BCC).
Social media networks	Social media networks for Green Birmingham and Birmingham Science City will be interested in this project
Interreg	As project funders, there will be responsibility for supporting the dissemination of project outcomes and recommendations.
European Commission	Interested in relation to potential future funding of Industrial Symbiosis projects, as well as for policy
BCC services	Planning and Waste Management Services will be particularly important/ interested in this project as it moves forwards
Birmingham / West Midlands online communities re digital, green, energy, consumer groups	Potential participants in user groups
Birmingham residents, the public	Raise awareness of entrepreneurial activity through press articles, YouTube videos etc.
Birmingham Chamber of Commerce	Dissemination of project opportunities through networks
Birmingham SMEs	Potential service users, potential project participants
GBS LEP	The project will inform decisions made for ESIF funding as well as having an impact on SME growth

Project Gantt Chart