



University of
Strathclyde
Business
School

Fraser of Allander Institute

**Socio-Economic Impact Assessment
of the University of Strathclyde's
Combined Heat and Power Project**

May 2018

Introduction

The University of Strathclyde's Combined Heat and Power Project

The University of Strathclyde is investing £650 million over the course of this decade to transform the Strathclyde campus into a first-class working and learning environment for students and staff. The Combined Heat and Power (CHP) project is a vital part of this investment.

The project involves the creation of a state of the art Energy Centre and the installation of several kilometres of large scale pipework and cabling that will enable the University to connect eighteen of its main buildings to a district heat and power network.

The University will generate its own heat and electricity for these eighteen buildings and will reduce its emissions of CO_{2e} by several thousand tonnes per annum as well as securing a significant financial return on this investment.

The University is funding this in partnership with the Scottish Funding Council which has provided grant funding for this innovative city centre energy investment.

The project has been designed so that it can be expanded with further phases. The first phase of the project began in 2016 and is expected to finish by the end of 2018. Future phases hope to connect other major energy users in the area, such as Glasgow City Council.

Financially, the first phase of the project, once completed, is expected to save the university £2.6 million each year through allowing further resources for teaching, research and innovation. But there are also major environmental benefits. The first phase is expected to reduce CO_{2e} emissions by 4,500 tonnes every year.

Total expenditure by the university on the CHP project is expected to reach £16m by completion of phase one.

Of this, around £11.6m is expected to have been spent within Scotland. The FAI have been asked to determine the potential economic impacts of this project on the Scottish economy.

As with all such modelling, these figures are estimates. The construction of the project is still on-going and so some of the expenditure data provided to us is based on anticipated rather than realised spend.



Disclaimer

The analysis in this report has been conducted by the Fraser of Allander Institute (FAI). The FAI is a leading academic research centre focussed on the Scottish economy.

This report was commissioned in April 2018 by the University of Strathclyde. The university asked the FAI to provide an estimate of the contribution of its Combined Heat and Power project to Scotland's economy.

The technical analysis, methodology and writing up of the results was undertaken independently by the FAI. The FAI is committed to informing and encouraging public debate through the provision of the highest quality analytical advice and analysis. We are therefore happy to respond to requests for factual advice and analysis. Any technical errors or omissions are those of the FAI.



GDP £12.5 million added to the Scottish economy



JOBS 230 additional person years of employment

Investment in Strathclyde

The university of Strathclyde is investing **£650 million** to transform its campus over the course of the current decade.

The Combined Heat and Power project is essential to the vision of creating a sustainable Strathclyde.



Understanding the results

Direct, indirect and induced impacts

This report looks at the economic impacts of the CHP project on GDP and employment in Scotland.

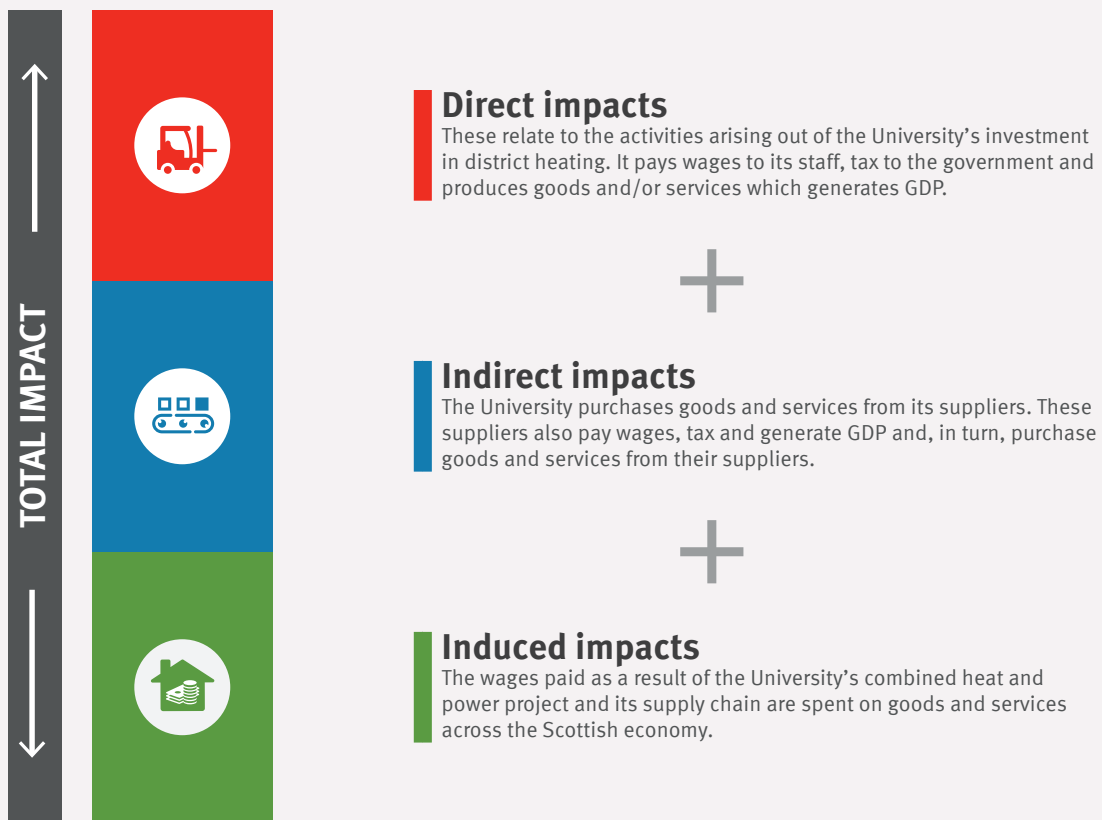
Gross Domestic Product (GDP) is the value of all final goods and services produced within the economy for a given period of time.

Employment in this report refers to person-years of employment. A person-year of employment is equivalent to one person working full-time for one year, two people working half the hours for one year, and so on.

A study of the impact of the CHP project needs to look further than the expenditure on the project itself. It needs to ask: who is supplying goods and services to the project? What do these suppliers spend their revenues from the project on? What are the wages paid as a result of the CHP project and its suppliers spent on?

An economic impact study aims to answer these questions by examining three channels of activity: direct, indirect and induced impacts.

Diagram 1: Direct, indirect and induced impacts explained



Source: Fraser of Allander Institute

The Strathclyde Commitments

Engaging locally, regionally and nationally

This socio-economic impact assessment forms part of the University's commitment to engage with and to understand the impact of major capital projects on the local area, the region and nationally.

As well as this assessment work, the project has also delivered a number of apprenticeships, internships and placements for graduates as well as adopting targets for local and small and medium sized enterprises (SMEs) employment and engaging with the local community.

You can read more about the University's Social Economic Impact and Community Benefits Strategy [on its website](#).

Table 1: The Strathclyde Commitments

No.	Commitment Target Area	Actions	Progress/ Target Date
1	Employ local staff	Current local staff level at 65%. Utilisation of local sub-contractors and staff.	Ongoing
2	Employ 4 direct apprentices and 10 sub-contractor apprentices	3 'craft' apprentices within the offsite fabrication team and 2 on site. Currently have 5 subcontractor apprentices on site.	Completed
3	Offer 3 work placements for a minimum of 12 weeks	3 placements due to start June 2018.	June 2018
4	Offer 4 undergraduate/graduate internships	7 undergraduate/graduates have worked on the project.	Completed
5	Engage with local primary school	November 2017 saw: ■ A tree planting event with children from St Mungo's primary school and attended by the Lord Provost of Glasgow. ■ An environmental presentation to the children from St Mungo's primary school by Hugh Thompson and Amy Ritchie.	Completed
6	Hold open days/participate in fundraising	VE sponsored the Climate Change Adaptation event on 21st September 2017.	Completed
7	Utilise SMEs for local businesses	Project team already utilising SME for work packages.	Ongoing
8	Analysis of local supply chain impact to make a socio-economic assessment	The Fraser of Allander Institute has carried out this work.	Completed
9	65% target for local spend on project	Local spend currently at 68% with final forecast of 71%.	Ongoing

Source: The University of Strathclyde



With assistance from the Scottish Funding Council, the University has made this ambitious Combined Heat and Power District Energy Project happen. The scheme enables the University to significantly reduce its operating costs for heat and power by generating its own energy and distributing it locally.

As we transition towards a lower carbon economy, the installation of a district energy scheme in the heart of Glasgow is a first for the city centre and this infrastructure investment by the University leaves a long term legacy for the local area and one that can be a catalyst for city-wide district heating and a new approach to energy management in the city.

Roddy Yarr, Assistant Director, Sustainability and Environmental Management at the University of Strathclyde

Results

Economic impact

Table 2: The impact of the CHP project on the Scottish economy, 2018/19

	GDP (£m)	Employment*
Direct	5.2	100
Indirect	3.0	60
Induced	4.3	70
Total	12.5	230

* Rounded to the nearest 10.

Source: Fraser of Allander Institute

The total economic impact of the University of Strathclyde's Combined Heat and Power project on the Scottish economy is anticipated to be £12.5 million in 2018/19 prices.

Of this GDP impact, £5.2 million is related to direct spending. The spill-over effects on the supply chain of the CHP project add an additional £3 million to GDP. The remaining £4.3 million of GDP is generated by the spending of wages paid as a result of the CHP project and its supply chain.

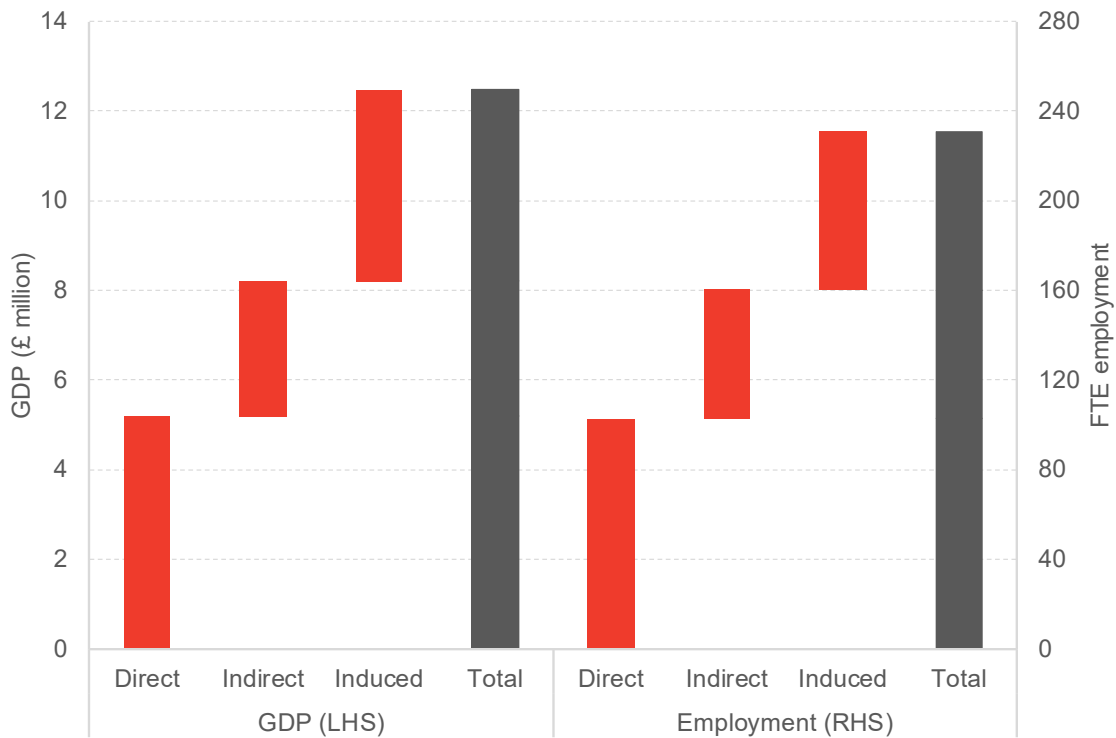
The CHP project is anticipated to generate 230 person years of full-time employment.

By the completion of phase one, the direct expenditure of the project is expected to have created 100 person years of full-time employment in the Scottish economy.

The 100 FTE jobs created by the direct expenditure of the Combined Heat and Power project are expected to support an additional 130 jobs in the Scottish economy.



Chart 1: Direct, indirect and induced impacts of the CHP project



Source: Fraser of Allander Institute

Methodology

Input-output modelling

Economic input-output tables provide a picture of the flows of goods and services in the economy for a given year. They are constructed from survey and other data sources and provide the most accurate and comprehensive picture of the national economy available.

In this report, we use the most recent (2014) input-output tables for Scotland.

The University of Strathclyde provided us with estimates of total expenditure by activity in 2016/17, 2017/18 and 2018/19, along with the total expenditure within Scotland. The proportion of activity expenditure within Scotland was assumed constant between the three years. Initial project development fees were provided separately and the spending was assumed to take place in 2015/16.

Following standard practices, spending in previous years was inflated to 2018/19 prices based on HM Treasury discount rate recommendations, and references to GDP in this report are in fact GVA.

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