

Swansea Bay City Deal Supporting Innovation and Low Carbon Growth Potential Economic Impact – Technical Note

Introduction

This Economic Impact technical note considers the potential economic impact of the City Deal ‘Supporting Innovation and Low Carbon Growth’ FBC programme.

The purpose of this technical note is to consider the potential economic impact that might arise should this Programme be successfully implemented. The potential impact of this Programme reflects the potential collective impacts of its constituent projects. The objective of this note is to provide an indication of the potential broad magnitude of the overall economic impact under highly conservative assumptions.

Programme Costs

- Only includes capital and revenue costs;
- Not yet adjusted for optimum bias or risk; and
- Assumes each project will operate for 40 years.

Table 1: Undiscounted Programme Costs (£m, 2019 prices)

	Total Capital Costs during Construction Period	Total Revenue Costs during Operation	Total Project Costs (Capital and Revenue)
By Theme			
Swansea Bay Technology Centre	7.50	8.00	15.50
National Steel Innovation Centre	20.00	8.00	28.00
Decarbonisation	3.00	-	3.00
Industrial Futures	25.00	26.00	51.00
Total	55.50	42.00	97.50
By Project			
Swansea Bay Technology Centre	7.50	8.00	15.50
National Steel Innovation Centre	20.00	8.00	28.00
Hydrogen Developments	2.00	-	2.00
Air Quality	0.50	-	0.50
Electric Vehicle Infrastructure	0.50	-	0.50
Production Facility	12.00	16.00	28.00
R&D Innovation & Growth Facility	8.00	-	8.00
Property Development Fund	5.00	-	5.00
Revenue - not project specific	-	10.00	10.00
Total	55.50	42.00	97.50

Key points:

- £55.5m CAPEX, of which:
- OPEX of £1.05m per annum once fully operational to be funded from project revenues

Table 2: Discounted Programme Costs (£m, 2019 prices)

	Total Capital Costs during Construction Period	Total Revenue Costs during Operation	Total Project Costs (Capital and Revenue)
By Theme			
Swansea Bay Technology Centre	7.21	4.14	11.36
National Steel Innovation Centre	18.45	4.01	22.46
Decarbonisation	2.87	-	2.87
Industrial Futures	23.52	13.65	37.17
Total	52.06	21.80	73.86
By Project			
Swansea Bay Technology Centre	7.21	4.14	11.36
National Steel Innovation Centre	18.45	4.01	22.46
Hydrogen Developments	1.90	-	1.90
Air Quality	0.50	-	0.50
Electric Vehicle Infrastructure	0.47	-	0.47
Production Facility	11.33	8.29	19.62
R&D Innovation & Growth Facility	7.60	-	7.60
Property Development Fund	4.59	-	4.59
Revenue - not project specific	-	5.36	5.36
Total	52.06	21.80	73.86

Once discounted as per HMT Green Book to provide comparable present costs, key points:

- The two projects already included within the City Deal funding envelope – the Swansea Bay Technology Centre and National Steel Innovation Centre – account for 46% of programme costs; and
- The Industrial Futures programme accounts for half of overall programme costs.

Comparison with the original City Deal proposal shows:

- The original City Deal funding envelope included £23m of funding for CENGS and £20m of funding for the Steel Science Innovation Centre – earlier iterations of the Swansea Bay Technology Centre and National Steel Innovation Centre respectively;

- The marginal cost of this revised City Deal Programme therefore stands at just £4.7m¹ – an uplift of 11% - in return for which this Programme intends to deliver eight projects rather than two;
- Moreover, this additional 11% in City Deal investment would leverage some £50m in undiscounted public sector investment across the lifecycle of these eight projects. This additional investment from WEFO / WG, NPTCBC and from retained project revenues would not be forthcoming without the initial capital funding from the Swansea Bay City Deal programme.

Programme Benefits

Potential programme benefits comprise:

- Direct public sector benefits to the originating organisation;
- Indirect public sector benefits to other public sector organisations (not possible to calculate at this time owing to early stage of project development); and
- Wider benefits to UK society.

Direct public sector benefits

The programme will yield cash releasing benefits in the form of rental income from new property development that would be owned by the Council and let to tenants. Key assumptions include:

- Assumes 44% of gross floor space is 'net additional'²;
- Assumes 80% of GIFA is net-lettable across each project;
- Assumes 90% occupancy levels; and
- Assumes rental of £10psf per year.

Table 3: Direct Cash Releasing Benefit (£m, 2019 prices)

¹ £47.7m now vs £43m in the original funding envelope.

² Additionality Guide, English Partnerships (2008)

	Gross internal floor area (m2)	% net additional	Net additional GIFA (m2)	Percentage net lettable	Net Additional NIA (m2)	Assumed occupancy rate	Occupied Net Additional NIA (m2)	Annual Net Additional Cash Releasing Benefit to NPTCBC
Swansea Bay Technology Centre	2,500	44%	1,100	80%	880	90%	792	85,251
National Steel Innovation Centre	6,000	44%	2,640	80%	2,112	90%	1,901	204,602
Production Facility	2,230	44%	981	80%	785	90%	706	76,044
R&D Innovation and Growth Facility	2,000	44%	880	80%	704	90%	634	68,201
Property Development Fund	6,000	44%	2,640	80%	2,112	90%	1,901	204,602
Total	18,730		8,241		6,593		5,934	638,700

Key points:

- Once the facilities to be developed under each facility are fully operational, the resulting annual cash releasing benefit is expected to be in the order of £710K in real 2019 prices;
- Comparison between this figure and the revenue costs presented in Table 1 shows that the direct cash releasing benefit alone is equivalent to some 60% of the annual OPEX of the facilities

Wider Benefits to UK Society

Wider economic benefits should be measured from the perspective of the UK as a whole. At this level, best practice has moved away from the use of employment and GVA calculations since at the macro level only interventions that increase human capital or job search activity have positive labour supply effects. However, at the local level, first round labour demand effects can be included.

Key assumptions in doing so include:

- Assumes 44% of gross floor space is 'net additional'
- Assumes 80% of GIFA is net-lettable across each project
- Assumes 90% occupancy levels
- Assumes 32% of jobs accommodated are 'net additional'³

Table 4: Potential Net Additional Jobs

³ Additionality Guide, English Partnerships (2008)

	Net Additional NIA (m2)	Assumed occupancy rate	Occupied Net Additional NIA (m2)	Assumed Employment Density (m2 NIA per job)	Number of jobs accommodated	Net Additional Jobs Created
Swansea Bay Technology Centre	880	90%	792	12	66	21
National Steel Innovation Centre	2,112	90%	1,901	12	158	51
Production Facility	785	90%	706	12	59	19
R&D Innovation and Growth Facility	704	90%	634	12	53	17
Property Development Fund	2,112	90%	1,901	12	158	51
Total	6,593		5,934		494	158

It is likely that these jobs would be reasonably high value. For example, the economic impact work undertaken in support of the Port Talbot Waterfront Enterprise Zone noted that manufacturing jobs within the Port Talbot area generated GVA impacts of nearly £72,000 per job.

However, owing to the early stage of project development a highly conservative estimate is adopted, which assumes productivity per job to instead be in-line with the Swansea and Neath Port Talbot average of some £39,000. This generates a more conservative estimated annual GVA impact of £6.2m once all the above projects are fully operational.

Net Present Value

Comparison of these indicative net present costs and benefits is shown below assuming a 40 year operating period. The results show a Benefit Cost Ratio (BCR)⁴ of 1.85, even adopting the conservative assumption that net additional jobs created are only of equal value to those already present within the Swansea / NPT area and only including the GVA and cash-releasing benefits of the above programmes in the calculation.

Table 5: High Level Net Present Value Estimates

Economic Impact	
Net Present Costs	73.86
Net Present Benefits	136.95
Net Present Value	63.08
Benefit Cost Ratio	1.85

⁴ BCR Definition - The Benefit Cost Ratio (BCR) is one of the standard metrics used to appraise the potential economic return from a project, the other common metric being NPV.

Net Present Value (NPV) = Present Value of Benefits (i.e. the discounted future benefits) minus the Present Value of Costs. NPV therefore gives an indication of the potential magnitude of economic impact.

BCR = Present Value of Benefits divided by Present Value of Costs. A BCR above one delivers a positive economic return. A BCR's intuitive interpretation gives an indication of the potential return on investment for every pound spent. A BCR of 1.85 therefore implies that for every £1 invested in this project, the economy benefits by £1.85 - i.e. society gets back almost twice as much as it puts in.

The above results should be treated with caution and are indicative only. However, the positive NPV is reasonably robust to changes in the input assumptions. For example, even if an optimum bias adjustment of 50% is added to all costs the BCR still remains above one as shown below.

Table 6: High Level Net Present Value Estimates, including 50% Optimism Bias

	Economic Impact
Net Present Costs	110.79
Net Present Benefits	136.95
Net Present Value	26.15
Benefit Cost Ratio	1.24