SWANSEA BAY CITY REGION JOINT SCRUTINY COMMITTEE

11.00 am FRIDAY, 1 MARCH 2019

COMMITTEE ROOM 2, CIVIC CENTRE, OYSTERMOUTH ROAD, SWANSEA, OYSTERMOUTH ROAD, SWANSEA, SA1 3SN

A Briefing for Members of the Joint Scrutiny Committee will be held from 10am - 11am.

1. Declarations of Interest

2. Minutes of the Meeting held on 31 January 2019 *(Pages 3 - 14)*

3. Chairman's Letter to Councillor R.Stewart *(Pages 15 - 26)*

4. Overview of Arrangements to Sign Off Projects by Joint Committee particularly the Regional Projects - Presentation *(Pages 27 - 28)*

5. Presentation on the Skills and Talent Regional Project *(Pages 29 - 54)*

6. Presentation on the Homes as Power Stations Regional Project *(Pages 55 - 84)*

7. Presentation on the Digital Infrastructure Regional Project *(Pages 85 - 98)*

   Standing Items

8. Project Updates (Verbal)

9. Updated Risk Register (Verbal)

10. Financial Monitoring (Verbal)

11. Work Programme *(Pages 99 - 100)*

12. Access to Meetings
     To resolve to exclude the public for the following
     item(s) pursuant to Section 100A(4) and (5) of the Local
     Government Act 1972 and the relevant exempt paragraphs of Part
     4 of Schedule 12A to the above Act.

     **<u>A Briefing for Members of the Joint Scrutiny Committee will be
     held from 10am - 11am.</u>**

     S.Phillips
     <u>Chief Executive</u>

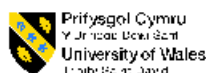**Civic Centre**
Port Talbot   **22 February, 2019**

<u>Committee Membership:</u>

Chairperson: **Councillor A.N.Woolcock**

Vice   **Councillor R.James**
Chairperson:

Councillors: A.Llewelyn, S.E.Freeguard, P.Downing,
                          J.Curtice, M.Evans, J.Adams, T.Baron,
                          G.Morgan, D.Price and Jones

SWANSEA BAY CITY REGION JOINT SCRUTINY COMMITTEE

(Council Chamber - Port Talbot Civic Centre)

Members Present: **31 January, 2019**

Chairperson: **Councillor A.N.Woolcock**

Councillors: T.Baron, J.Curtice, P.Downing, S.E.Freeguard, Jones, A.Llewelyn, G.Morgan and D.Price

Officers In Attendance: K.Jones, C.Griffiths
C.Furlow, C.Davies and A.Manchipp

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1. **MINUTES OF THE MEETING HELD ON 20 NOVEMBER 2018**

    The Minutes of the meeting held on 20 November, 2019 were approved.

2. **UPDATE FROM THE CHAIR OF THE JOINT COMMITTEE AND CHIEF EXECUTIVE OF THE LEAD AUTHORITY FOR THE SWANSEA BAY CITY DEAL (BACKGROUND PAPERS ATTACHED)**

    By way of introduction the Chairman advised Members that the Vice Chairperson had indicated that he had an issue with attending today's meeting and as such it may be necessary for him to reconsider his position on the Joint Scrutiny Committee.

    The Joint Scrutiny Committee welcomed Councillor R Stewart (City and County of Swansea), the Chairperson of the Swansea Bay City Deal Joint Committee, M.James (Chief Executive, Carmarthenshire County Council), Lead Officer, C.Moore (Carmarthenshire County Council), 151 Officer and L.Rees-Jones (Carmarthenshire County Council) the Head of Administration, Law and Monitoring Officer.

    The Chairperson, in his opening remarks, advised that the Committee, through its remit which included the governance of the

Swansea Bay City Deal Programme, wished to be advised of the circumstances around the suspensions at Swansea University, and the position relating to the Wellness Village at Delta Lakes, Llanelli.

The Chairman outlined the lines of inquiry which the Joint Scrutiny Committee would be pursing today as follows:-

- Governance arrangements for the programme (Section 20.5 (b) of the Joint Working Agreement refers);
- Seeking reassurance that the City Deal was operating in accordance with the Joint Committee Agreement, its Business Plan, timetable and was being managed effectively (Paragraph 2.1.3 of Schedule 12 to the Joint Agreement refers)

Members asked for details of the events leading to the decision taken by both the UK and Welsh Governments to undertake an independent review of the City Deal arrangements. It was noted that Members of the Joint Scrutiny Committee had copies of the following background information:-

- The letter from the UK and Welsh Government in relation to the intention to carry out the joint review;

- The Terms of Reference of the Joint Government Review.

Members were advised that the Independent Review was not specifically related to the issues at Swansea University, but was part of a planned process to provide assurances prior to the release of monies. Actica had been commissioned to undertake the review on behalf of the UK and Welsh Governments.

In relation to the letter received from the Joint Governments, Members asked whether the phrase 'This will provide us all with assurances ' – was predetermination and was this questioned at the time? In response Cllr Stewart disagreed with the assumption that the review was predetermined but felt that it was seeking assurances that the arrangements within the programme was fit for purpose. He advised that one year after the signing of the Deal in March 2017, all the governance arrangements were in place for the 11 defined projects. The delay in drawing up the governance arrangements, from the Deal's Head of Terms was due, in part, to the Election and more specifically the purdah period. Thereafter the Shadow City Deal Joint Committee became the City Deal Joint Committee. Three full

Business Cases were endorsed at the Joint Committee meeting held on 22 November 2018, one of which included the full Business Case for Delta Lakes. Cllr Stewart confirmed that the Joint Committee was committed to delivering the City Deal Programme.   He further explained that scrutiny arrangements had not been put in place earlier as this could not be done until the Joint Committee was in place. The three projects had been endorsed in order to seek Governments' approval in line with the established governance procedures. However Members felt that the reliance placed on individual Authority's scrutiny alone, during the shadow period, had been insufficient.

Members asked for details of when the Joint Committee became aware of the suspensions at Swansea University and were advised that this was at the time the suspensions were publically announced, in November 2018.

It was noted that the Delta Lakes Project was developed and led by the individual Local Authority, Carmarthen County Council. Work had been carried out prior to the Joint Committee's endorsement and had been subject to the Local Authority's own internal governance arrangements, then the Programme Board's own governance and the Economic Strategy Board. The project would then have been endorsed by the Joint Committee and thereafter referred onto the UK and Welsh Governments.

The 151 Officer advised that risks assigned to individual projects fall to each City Deal partner and that they would be expected to sign off the financial elements of individual projects, etc. For example, in relation to Yr Egin, the risk lay with the University of Wales, Trinity St David, as the project had been completed without the sign off of the Joint Committee, etc.

Members expressed concern that the suspensions at the Swansea University had put public funds in jeopardy, however Cllr Stewart confirmed that no funds had been accessed. He confirmed that meetings had since been held with the University and there were concerns around 2 projects, however, it had confirmed that there were no issues with the other projects.

The Lead Officer confirmed to Members that no payments had been made to third parties from Carmarthen County Council and also that there were no legal liabilities. In relation to the Delta Lakes Project

the 151 Officer confirmed that the only money spent was the Local Authority's and that no companies had been established. In addition it was noted that there had been no land transfers.

Members asked what, if any, impacts and implications for the City Deal Programme had been identified to or by the Joint Committee in relation to the suspensions? It was noted that the Chair of the Joint Committee had initiated meetings with the University however information was limited. There had been a further meeting with the Swansea University's Registrar and his legal advisers following the announcement and prior to the Joint Committee meeting of 14 December, 2018. Some information was gained but was subject to legal privilege. He did however give assurances to the Joint Scrutiny Committee that the Internal Review commissioned by the Joint Committee would actively audit activity to ensure it had been carried out, in line with the agreed governance arrangements. However, there was always improvements that could be made. It was confirmed that the University of Swansea was involved in 5 projects, however only 1 had progressed to date.

Members asked whether Officers or the Joint Committee Members had been informed of the investigations carried out by the University prior to the suspensions and what were the working relationships between the 2 organisations? The Chair of the Joint Committee advised Members that there had been no notification of the investigation and that he believed the position taken by the University was correct however he would have preferred an early notification. He confirmed that there was a close working relationship between the partners and the University of Swansea on a range of projects.

Members asked whether the input of Welsh Government officials in the development of the Terms of Reference and the ongoing reviews could be clarified?   The Lead Officer confirmed his frustration regarding the length of time taken in relation to governance issues as during this time the Joint Committee was keen to progress the projects. It was noted that work regarding the funding of the City Deal Programme had taken place to create new funding flexibilities. Government funding was for Capital funds and there was no revenue stream identified. Agreement had also been reached on local use of NNDR monies associated with the various projects. Also the use of capital monies as revenue for regeneration purposes. In the view of the Lead Officer the process should be reviewed and improved.

Members asked what assurances did the Joint Committee seek and receive prior to the endorsement of the full Business Cases for the Wellness Village, the Swansea Waterfront and Digital District and Yr Egin? Members were advised that the Joint Committee had received assurances that the governance arrangements had been adhered to. There was however an opportunity, in any review, to improve arrangements. The suspensions had occurred after the endorsement of the three full Business Cases, on 22 November, 2018, by the Joint Committee. It was outlined that the Joint Committee was unaware at this time, of any investigations being undertaken by Swansea University.

The Joint Scrutiny Committee asked why the Joint Committee had not met as soon as the suspensions were announced and was advised that earlier meetings had been sought, however had been impossible to convene.

In relation to the checks carried out on external companies Members asked for details of the process. The 151 Officer advised that there was an open procurement process and 1 tenderer had shown an interest. Consultants were then employed and a Business Case developed. A due diligence test was undertaken. The project was developed over 3 stages, however at stage 2 it was acknowledged that the project would not work. A consortium was then entered into between Swansea University and Stirling Health which allowed the project to continue. On 7th December this collaboration agreement was dissolved and Carmarthenshire Council was now looking for an alternative delivery option.

At this point in the meeting the Chairperson expressed his concern that at no point had the Joint Scrutiny Committee been consulted about any of the reviews nor their terms of reference. This was considered, by Members of the Joint Scrutiny Committee to be disrespectful and that the Chairperson, at least, should have been contacted.

Since the Joint Governments' Review was announced a number of other reviews had been put in place, including:-

1. A review by the Joint Committee on programme governance – The Joint Scrutiny Committee had obtained a copy of its terms of reference. The timetable was aligned with the independent review and was led by the internal auditors from Pembrokeshire

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County Council supported by auditors from the other Local Authorities in the City Deal Partnership.

2. A review by the Wales Audit Office (WAO) concerning the Delta Lakes Project requested by Carmarthenshire Council. The Section 151 Officer was asked to provide the Terms of Reference for this prior to today's meeting, however he refused as they had not been shared with Carmarthenshire elected Members and would not come within the purview of the Joint Scrutiny Committee as the Delta Lakes Project was not a regional project. In response to this, the Chairperson advised that the Committee was fully aware that the Delta Lakes Project was not a regional project, however the reviews to be undertaken could reflect on the governance of the Programme as a whole, which was within its purview. As a result the Joint Scrutiny Committee would welcome an overview of the objectives of the WAO review and the External Legal Review, associated timescales and an undertaking that the findings of those reviews would be made available to the Joint Scrutiny Committee. In response the 151 Officer read out the Terms of Reference of WAO review for the Joint Scrutiny Committee's information.

3. A review being undertaken by Carmarthenshire County Council in relation to the procurement process associated with the Delta Lakes Project.

4. An internal investigation being undertaken by Swansea University.

In relation to the governments' review, Members asked for details of the anticipated timeline for its completion and whether the outcome would be shared with this Committee. Was the money safe? In response it was noted that the timeline for completion of the reviews was February as interviews were ongoing and that the outcome would be made public.

Members asked why, in relation to the Joint Committee's review, was there no contact with the Chairperson or the Joint Scrutiny Committee. The witnesses advised that there had been consultation with the UK and Welsh Governments to ensure that all areas were covered by the reviews. They did not feel it was necessary to have liaised with the Joint Scrutiny Committee as they expected the Committee would want to do its own review, but confirmed that if,

after completion of the review, Members wished to invite them back to a future meeting, they would be happy to present the findings. Again Members of the Joint Scrutiny Committee expressed their dissatisfaction that they had not been consulted prior to the review commencing. The Head of Administration and Law for Carmarthen acknowledged Members concerns and undertook to address the issue going forward.

Members expressed concern that the situation had occurred soon after the Joint Scrutiny Committee's first meeting and while it recognised some projects were not within its purview, the scrutiny of the overall governance did rest with the Scrutiny Committee. The Committee did not consider that it was possible to separate project issues from wider programme issues. Concern was expressed at the lack of a Shadow Joint Scrutiny Committee which meant that scrutiny Members were now on a steep learning curve. The witnesses agreed that information sharing/relationships would be improved going forward.

Members asked for assurances that the terms of reference for the two reviews on the Delta Lakes project would be made available to the Joint Scrutiny Committee and this was confirmed. In addition Members asked whether they would have sight of the recommendations made by the reviews and how the Joint Committee proposed to deal with them? The 151 Officer confirmed that initial feedback from the external legal reviewers was that the procurement process had been carried out correctly and further suggested that the Wales Audit Office be invited to present its findings in due course. At this point the Lead Officer interrupted the 151 Officer and advised Members that the reports would be shared with the Committee and scrutiny Members could then draw their own conclusions.

Cllr.Stewart reiterated the need for local scrutiny to be carried out by the respective Authorities as they were responsible for their governance.

The witnesses were then asked about the position regarding the suspensions at Swansea University and any implications from the ongoing investigations. Members noted the position in relation to the suspensions and any implications going forward were unknown.

As the City Deal was a significant partnership for the four constituent authorities, scrutiny Members asked the witnesses to outline what the Joint Committee had assessed the impacts and implications of the

recent events to be? The Chairman of the Joint Committee advised that there should be no impact. The investigation in Swansea University was live and the other reviews may result in changes being required. He also gave Members assurances that the findings of the reviews would be fully considered by the Joint Committee, including making a challenge to conclusions reached and recorded if appropriate. It was noted that the partnership between Carmarthen County Council and Sterling Health had been dissolved and a new partner would need to be sought. In relation to Yr Egin this project had been completed. In relation to the Swansea Digital Project this was still ongoing. There was no impact at this time and the Joint Committee would still meet.

Members questioned whether all partners, including Swansea University, were committed to the Deal and were advised that while work may be delayed the Deal was still ongoing. A meeting would be sought with the University once a new Vice Chancellor had been appointed.

In relation to the risks to the individual Local Authorities, Members questioned whether losing a partner would result in the Local Authority taking on the whole risk? Members stressed the need for the Local Authorities to be aware of the risks associated with their projects. In response Members noted that the Joint Working Agreement allowed for flexibility thus there was no financial risk at Programme level. In relation to the Delta Lakes project it may be that Carmarthenshire County Council would deliver the project itself.

Members asked what the implication would be if one Local Authority/ Government withdrew from the Deal. They were advised that there was no evidence that this was a possibility, however the Deal allows for this eventuality, and perhaps the financial allocation could be used by one of the other Local Authorities involved in the Deal. Welsh Government was still keen to deliver the Deal, but if either Government withdrew its funding, Local Authorities would need to look at alternative ways to deliver.

Members asked about the relationships within the Joint Committee and were advised that there was great enthusiasm to deliver the Programme. An invitation was extended to Members to attend a Joint Committee Meeting.

Cllr Stewart confirmed that nothing had changed as a result of the Swansea University suspensions and that work was ongoing. He

advised that the City and County of Swansea had already spent money on its project and that this now represented a risk to the Authority in the sum of £1.5m. In relation to Yr Egin, Members were advised that this project was completed and occupied, this too was awaiting City Deal money. Pembrokeshire County Council was awaiting European Funds while Neath Port Talbot had land issues associated with the Steel Science Project. The other projects were not yet ready for consideration.

Cllr Stewart again confirmed that the governments' review was coincidental and that approval of the projects was subject to, among other things, a review. The review he stressed was not being undertaken as a result of possible problems.

Members asked whether the witnesses were aware of any other similar reviews of City Deals across the UK being carried out and were advised that the process in Swansea Bay was different to elsewhere because of Government requirements. The Lead Officer thought that the review would be of assistance. It was noted however that the date for the release of monies had not yet been confirmed.

In response to the question on where were the references to the risks associated with non-release of monies, Members noted that these risks would be identified on the individual Local Authorities' risk registers.

In relation to the Joint Committee's Risk Register, Members asked for assurances that it was robust and that it had been signed off by the Joint Committee. Members noted that this version of the Risk Register had not yet been signed off by the Joint Committee as part of the Implementation Plan and was therefore awaiting approval. It was confirmed that the Risk Register would be an item on each agenda of the Joint Committee going forward. In relation to the date on the most recent Risk Register it was noted that the date of October 2018 was incorrect and it had been reviewed since that date.

The financial risks was linked more to individual Authorities, with the Joint Committee being responsible for distributing £16m. The Programme as a whole was responsible for £240m over a 15 year period.

In relation to reputational risk and commercial risk, how was this to be evidenced in the risk register?   The Chairman of the Joint Committee advised that this had been considered in light of the suspensions,

however there had been no issues with other, private partners. The 151 Officer confirmed that dialogue was continuing with other investors who indicated continued confidence in the programme.

Cllr. Stewart offered to attend a future meeting of the Joint Scrutiny Committee once the outcomes of the reviews were known and would look at ways to improve scrutiny by the individual Authorities.

The Chairperson then thanked the witnesses for their attendance at today's meeting and advised that the Joint Scrutiny Committee would now discuss the information provided and make any recommendations it felt appropriate.

Following deliberations the Joint Scrutiny Committee:

RESOLVED: that

1. The Joint Committee should reinforce with City Deal partners that they have an obligation to disclose material events to partners in a timely way to ensure good governance and to ensure attendant risks to the wider programme are managed effectively

2. The Joint Scrutiny Committee believes that it can operate most effectively when there is a good flow of information between the Joint Committee and its own arrangements. The Joint Scrutiny Committee would like a formal assurance from the Joint Committee that any further material developments that are not set out in the Joint Committee's Forward Work Programme are notified to the Chair of the Joint Scrutiny Committee in a timely and appropriate way.

3. The Joint Scrutiny Committee believes that all of the work of the Joint Committee should be visible to Joint Scrutiny Committee members and that there should be no delay in information being shared with the Joint Scrutiny Committee. The presumption should be that there is transparency across the Programme. The Joint Committee is therefore asked to revise the existing information sharing arrangements to ensure all papers (both public and private) are available to scrutiny committee members and support officers.

4. The Joint Scrutiny Committee notes and welcomes the standing invitation issued by the Chair of the Joint Committee to attend and observe meetings of the Joint Committee. The Joint Scrutiny Committee recommends that this suggestion be formally reflected in governance arrangements so that the Chair

and/Vice Chair of the Committee and supporting scrutiny officers can attend and observe both public and private meetings of the Joint Committee.

5. The Joint Scrutiny Committee welcomes the encouragement provided by the Chair of the Joint Committee for the terms of reference set out in the Joint Working Agreement to be operated in a more flexible way. The Joint Scrutiny Committee does not believe that neat boundaries can be drawn around the scrutiny of individual projects and scrutiny of the programme as a whole. The Joint Scrutiny Committee acknowledges and agrees that some matters at project level are more appropriately scrutinised at individual agency level, however, there may be situations where issues related to individual projects may have a bearing on the programme more broadly and the Joint Scrutiny Committee would want the ability to scrutinise those matters. The Joint Scrutiny Committee agrees that where appropriate the Joint Scrutiny Committee should be able to explore project activity.

6. The Joint Scrutiny Committee notes that the Joint Committee intends to review the Risk Register at each of its future meetings. The Joint Scrutiny Committee recommends that the Joint Committee considers whether the current Risk Register is comprehensive and up to date and is sufficient to support the Joint Committee in taking all of the actions needed to ensure the Programme delivers the outcomes required. In particular, the Joint Scrutiny Committee recommends that the Joint Committee considers whether the programme Risk Register is adequately informed by project risk to ensure that significant project risks are visible and enable the Joint Committee to assess whether they have the potential to impact on the delivery of the overall Deal.

7. The Joint Scrutiny Committee was told that the Risk Register circulated for the meeting had not been seen by the Joint Committee. The Joint Scrutiny Committee recommends that the controls in place within the Programme Office be reviewed to ensure appropriate release of programme information.

8. The Joint Scrutiny Committee was pleased to receive assurances about the lack of impact flowing from the suspension of individuals at Swansea University and subsequent events on reputational risk and investor confidence. However, the Joint Scrutiny Committee was not convinced the full impact of current events on reputational damage was being identified and recommends that the Joint Committee gives

further consideration to the impact of events on reputational damage and the measures in place to mitigate associated risk.

3. **FORWARD WORK PROGRAMME**

    Agreed by the Joint Scrutiny Committee, subject to a Special Meeting being convened to consider the reviews' findings and that the 151 Officer be invited to attend to explain governance arrangements.

CHAIRPERSON

Neath Port Talbot
Castell-nedd Port Talbot
County Borough Council Cyngor Bwrdeistref Sirol

Cllr R Stewart
Chair of the Joint Committee for the
Swansea Bay Region City Deal

By e-mail

Dear Councillor Stewart

RE: Swansea Bay City Region

Can I once again thank you for attending the recent meeting of the Joint
Scrutiny Committee. Please find attached a note of the findings and
recommendations from the meeting that I would ask you to put before the
Joint Committee.

I look forward to receiving your response to the recommendations we
have made in the near future.

Yours sincerely,

PP. Joan Davis

Cllr A N Woolcock
Chair, Joint Scrutiny Committee Swansea Bay Region City Deal

CC Councillor Rob Jones, Leader, C/o Neath Port Talbot County Borough Council (by e-mail)

Councillor Emlyn Dole, Leader, C/o Carmartheshire County Council (by e-mail)

Councillor David Simpson, Leader, C/o Pembrokeshire County Council (by e-mail)

Councillor Rob Stewart, Leader, C/o City and County of Swansea (by e-mail)

Note of Findings and Recommendations arising from a meeting of the Joint Scrutiny Committee Swansea Bay Region City Deal, held on January 31st 2019

Summary and Findings

Scrutiny members received information from witnesses about the sequence of events that had taken placed from 22nd November 2018 when three business cases had been endorsed by the Joint Committee, including the business case for Delta Lakes. The Committee was given a clear assurance by witnesses that the first time Members/officers involved with the Joint Committee became aware of the suspensions at Swansea University was the day the matter was made public. The Chair of the Joint Committee advised that he had subsequently met with the Registrar of Swansea University and his legal advisers in the period between the suspensions being made public and the Joint Committee's meeting of 14th December where information was shared under legal privilege concerning the matters under investigation. At the meeting, the Registrar also advised of the University's continued commitment to the Swansea Bay City Deal programme.

The Lead Chief Executive advised the Committee that Carmarthenshire Council had requested a review of the arrangements related to Delta Lakes by the Wales Audit Office. The initial discussion with the Wales Audit Office had taken place at the end of November involving Carmarthenshire Council's s151 Officer and WAO officials. Information pertinent to the review had been shared with WAO from early December 2018. An external legal review had also been

commissioned by the Executive Board of Carmarthenshire Council to seek assurance that the appointment of the development partner for Delta Lakes had been undertaken correctly. This external legal review has been completed and will be considered by the Executive Board in forthcoming weeks.

Additionally, the Chair of the Joint Committee explained that at the Joint Committee's meeting on 14th December, the Joint Committee had also decided to seek its own assurance that the processes established to govern the City Region Deal had been complied with and were appropriate.

In response to specific questions raised by Members of the Joint Scrutiny Committee, assurance was given that the suspensions at Swansea University had occurred after the three full business cases had been endorsed by the Joint Committee on 22nd November. The Joint Scrutiny Committee was told that at the time the Joint Committee had made a decision to endorse the business cases there was no information available to the Joint Committee about the investigations conducted by Swansea University. The Committee was told that the Joint Committee members had relied on the assurances provided with the reports at the meeting on 22nd November 2018 to come to their decision to endorse the three business cases. The Committee were also advised that the University had not approached Members of the Joint Committee or officers to make them aware that their internal investigations and the subsequent suspensions had some implications for the Delta Lakes project and the City Deal programme. The Chair of the Joint Committee advised that he had needed to take the initiative to seek out information from the University to assess if there

were implications for the Programme.

In relation to the review commissioned by the UK and Welsh governments, the Chair of the Joint Committee and Lead Chief Executive advised the Joint Scrutiny Committee that the events at Swansea University had not triggered the review commissioned by the UK and Welsh governments. Furthermore, they did not believe that Welsh Government officials or Ministers were aware of the investigations taking place at Swansea University until events were made public but were not in a position to confirm this. The reviews were to provide assurance to both governments that arrangements within the Programme are fit for purpose.

The Joint Scrutiny Committee noted that in addition to the review commissioned by the UK and Welsh governments, a number of other reviews were underway: a review commissioned by the Joint Committee; the Wales Audit Office review of the Delta Lakes project; an external legal review of the procurement of the development partner commissioned by Carmarthenshire County Council. The Chair of the Joint Committee gave scrutiny members an assurance that the Joint Committee would give full consideration to the findings of the four reviews, including making a challenge to conclusions reached and recommendations made, if appropriate. The Chair of the Joint Committee also gave an assurance that the Joint Scrutiny Committee would be provided with the reports arising from the review, including the associated terms of reference at an appropriate time. Members of the Joint Committee would be pleased to discuss the findings of the review with scrutiny members in due course, should

the scrutiny members request that. Scrutiny members welcomed these assurances and underlined the importance of the Programme operating on a principle of transparency. Scrutiny members were unhappy that some of the documents requested had not been provided when requested.

In relation to the Delta Lakes project specifically, the Chair of the Joint Committee gave an assurance that no funds had transferred from the City Deal programme to Swansea University or the individuals subject of the suspension. The Lead Chief Executive confirmed this and added that neither had any land transferred or any companies been established. The Committee were advised by the Chair of the Joint Committee and the Lead Chief Executive that they expected all reviews to be completed in February 2019.

The Chair of the Joint Committee gave scrutiny members an assurance that the UK and WG governments' money is safe. Additionally, the Committee were advised that flexibility had been provided for in the City Deal terms and conditions in the event there should be a need to adjust projects, substitute projects or make changes to lead bodies for the projects within the Deal. It was explained by the Chair of the Joint Committee that the UK and Welsh governments were not withholding funding while their review was in train as there had been no timetable for releasing the funds. The governments' review had not changed the position on programme funding. Scrutiny members were assured that all partners remained committed to the Deal and relationships between partners to the Deal were on a strong footing.

In response to questions about the risk register that had been circulated to the Joint Scrutiny Committee, the s 151 Officer advised that the financial risk

attached to projects is borne entirely by individual agencies. Governance arrangements within the Programme expected individual agencies to sign off the financial elements of individual projects, amongst other things. Scrutiny members were advised there is no financial risk at programme level. Scrutiny members observed that the circulated risk register did not detail the financial exposure of agencies and asked the Chair of the Joint Committee to consider if the risk register was complete. In response, scrutiny members were advised that the risk register circulated had not been seen by the Joint Committee but there would be a standing agenda item to consider programme risks at future meetings of the Joint Committee

Scrutiny members also sought assurances about the management of reputational risk and investor confidence. The Chair of the Joint Committee advised that he had put a range of communications activities in place but he was not able to control statements made by the individuals who had been suspended by Swansea University. Programme communications were being supported by partners, co-ordinated by the central programme office. In relation to commercial risks, the s151 officer advised scrutiny members that there was no detriment to the Programme as investors had indicated continued confidence in the Programme.

Scrutiny members asked about the status of projects within the programme. The Chair of the Joint Committee advised that projects continue to be developed in parallel with the reviews. In relation to the Wellbeing Village at Delta Lakes, this is being reconsidered by Carmarthenshire County Council to

identify an alternative delivery model. Once the alternative model is available, Members were assured that the project would be subject to all of the Joint Committee sign off and assurance processes.

Members of the Joint Scrutiny Committee thanked the Chair of the Joint Committee and officers for attending the meeting to provide information and to answer questions, however, scrutiny members pointed out that they were unhappy that the Joint Committee had not proactively shared information about developments following the suspension of individuals at Swansea University with them, nor had the Joint Committee been consulted about the reviews and associated terms of reference. The Chair of the Joint Committee explained that the Joint Scrutiny Committee had not been consulted about the reviews and associated terms of reference as he had expected the Joint Scrutiny Committee would want to determine its own programme of review. Scrutiny members made it clear that it was reasonable to have expected the Chair of the Joint Scrutiny Committee to have been consulted as a minimum.

Scrutiny members also pointed out that whilst the Joint Committee and some of the associated governance structures had been established in shadow form since 2017, there had been no similar mechanisms for conducting joint scrutiny in this phase of the programme development. By waiting until the Joint Working Agreement was signed to put the joint scrutiny mechanisms in place, scrutiny members felt that a number of key decisions had already been made and the committee members were on a steep learning curve. Members of the Joint Scrutiny Committee noted that scrutiny committees within individual

authorities would have had the opportunity to scrutinise individual projects as they were developed by the respective local authorities. However, scrutiny members were of the view that the reliance placed on scrutiny at individual authority level alone during the shadow period had been insufficient.

Recommendations

Recommendation 1

The Joint Committee should reinforce with City Deal partners that they have an obligation to disclose material events to partners in a timely way to ensure good governance and to ensure attendant risks to the wider programme are managed effectively

Recommendation 2

The Joint Scrutiny Committee believes that it can operate most effectively when there is a good flow of information between the Joint Committee and its own arrangements. The Joint Scrutiny Committee would like a formal assurance from the Joint Committee that any further material developments that are not set out in the Joint Committee's Forward Work Programme are notified to the Chair of the Joint Scrutiny Committee in a timely and appropriate way.

Recommendation 3

The Joint Scrutiny Committee believes that all of the work of the Joint Committee should be visible to Joint Scrutiny Committee members and that there should be no delay in information being shared with the Joint Scrutiny Committee. The presumption should be that there is transparency across the Programme. The Joint Committee is therefore asked to revise the existing information sharing arrangements to ensure all papers (both public and private) are available to scrutiny committee members and support officers.

Recommendation 4

The Joint Scrutiny Committee notes and welcomes the standing invitation issued by the Chair of the Joint Committee to attend and observe meetings of the Joint Committee. The Joint Scrutiny Committee recommends that this suggestion be formally reflected in governance arrangements so that the Chair and/Vice Chair of the Committee and supporting scrutiny officers can attend and observe both public and private meetings of the Joint Committee.

Recommendation 5

The Joint Scrutiny Committee welcomes the encouragement provided by the Chair of the Joint Committee for the terms of reference set out in the Joint Working Agreement to be operated in a more flexible way. The Joint Scrutiny Committee does not believe that neat boundaries can be drawn around the

scrutiny of individual projects and scrutiny of the programme as a whole. The Joint Scrutiny Committee acknowledges and agrees that some matters at project level are more appropriately scrutinised at individual agency level, however, there may be situations where issues related to individual projects may have a bearing on the programme more broadly and the Joint Scrutiny Committee would want the ability to scrutinise those matters. The Joint Scrutiny Committee agrees that where appropriate the Joint Scrutiny Committee should be able to explore project activity.

Recommendation 6

The Joint Scrutiny Committee notes that the Joint Committee intends to review the Risk Register at each of its future meetings. The Joint Scrutiny recommends that the Joint Committee considers whether the current Risk Register is comprehensive and up to date and is sufficient to support the Joint Committee in taking all of the actions needed to ensure the Programme delivers the outcomes required. In particular, the Joint Scrutiny Committee recommends that the Joint Committee considers whether the programme Risk Register is adequately informed by project risk to ensure that significant project risks are visible and enable the Joint Committee to assess whether they have the potential to impact on the delivery of the overall Deal.
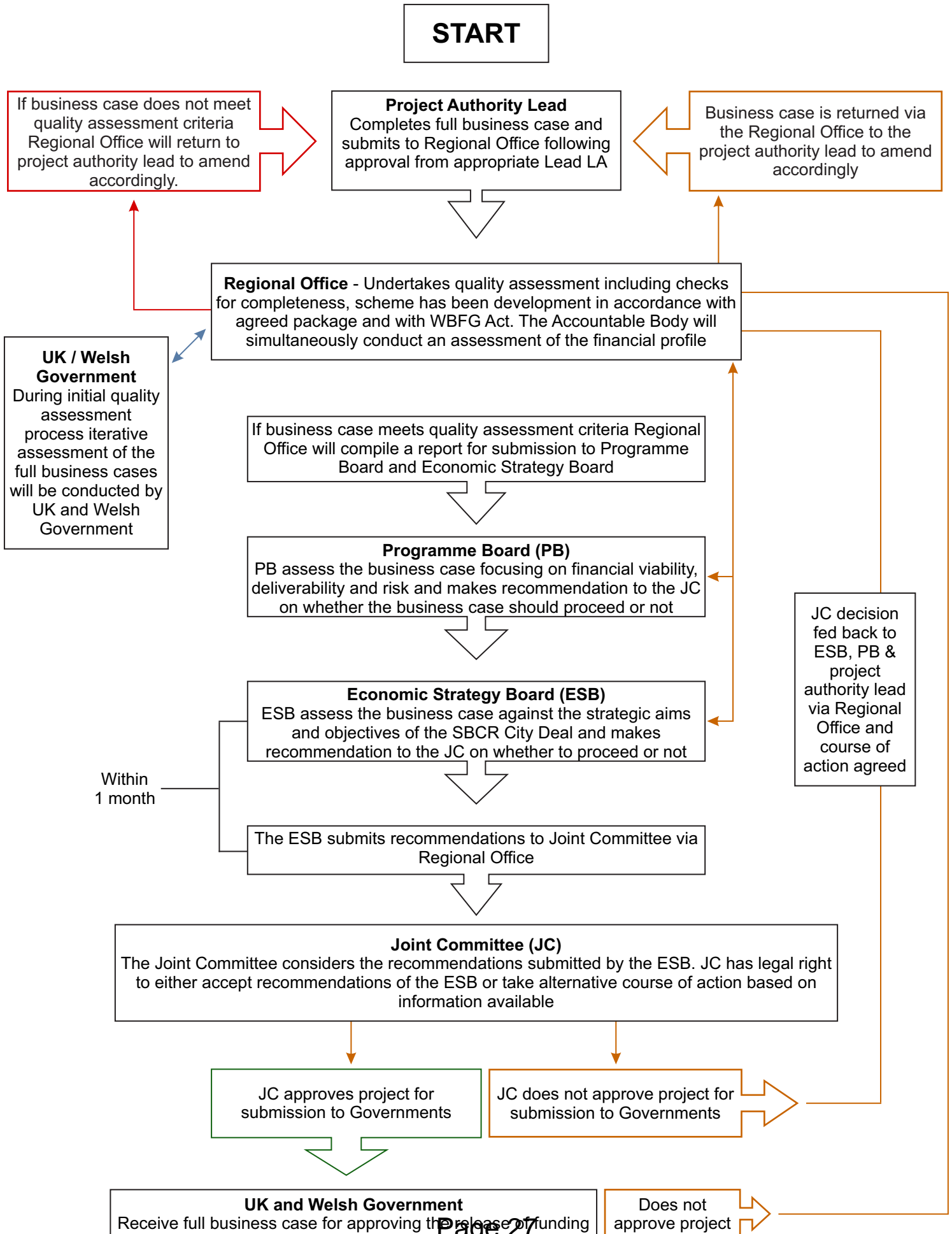
Recommendation 7

The Joint Scrutiny Committee was told that the Risk Register circulated for the

meeting had not been seen by the Joint Committee. The Joint Scrutiny Committee recommends that the controls in place within the Programme Office be reviewed to ensure appropriate release of programme information.

Recommendation 8

The Joint Scrutiny Committee was pleased to receive assurances about the lack of impact flowing from the suspension of individuals at Swansea University and subsequent events on reputational risk and investor confidence. However, the Joint Scrutiny Committee was not convinced the full impact of current events on reputational damage was being identified and recommends that the Joint Committee gives further consideration to the impact of events on reputational damage and the measures in place to mitigate associated risk.

FULL BUSINESS CASE APPROVAL PROCESS FOR AGREED SBCR CITY DEAL PROJECTS

START

If business case does not meet quality assessment criteria Regional Office will return to project authority lead to amend accordingly.

Project Authority Lead
Completes full business case and submits to Regional Office following approval from appropriate Lead LA

Business case is returned via the Regional Office to the project authority lead to amend accordingly

Regional Office - Undertakes quality assessment including checks for completeness, scheme has been development in accordance with agreed package and with WBFG Act. The Accountable Body will simultaneously conduct an assessment of the financial profile

UK / Welsh Government
During initial quality assessment process iterative assessment of the full business cases will be conducted by UK and Welsh Government

If business case meets quality assessment criteria Regional Office will compile a report for submission to Programme Board and Economic Strategy Board

Programme Board (PB)
PB assess the business case focusing on financial viability, deliverability and risk and makes recommendation to the JC on whether the business case should proceed or not

JC decision fed back to ESB, PB & project authority lead via Regional Office and course of action agreed

Economic Strategy Board (ESB)
ESB assess the business case against the strategic aims and objectives of the SBCR City Deal and makes recommendation to the JC on whether to proceed or not

Within 1 month

The ESB submits recommendations to Joint Committee via Regional Office

Joint Committee (JC)
The Joint Committee considers the recommendations submitted by the ESB. JC has legal right to either accept recommendations of the ESB or take alternative course of action based on information available

JC approves project for submission to Governments

JC does not approve project for submission to Governments

UK and Welsh Government
Receive full business case for approving the release of funding

Does not approve project

v5.5

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Project title:	*Skills and Talent Intervention*
Project Sponsors (Lead partner)	- *Regional Learning and Skills Partnership (Lead)* - *(A mature, regional partnership comprising of Higher Education, Further Education, Local Authority and Industry Partners)*

Summary:	The Skills and Talent Intervention will provide an integrated regional approach to delivering skills focusing on specific sector skills required in order to meet the demand of the Swansea Bay City Region City Deal – "The Internet Coast" and the four themes of 'Digital, Health and Wellbeing, Energy and Smart Manufacturing all fused together to bring about Economic Acceleration in the region

The delivery of the City Deal is highly dependent upon the attraction, creation and importantly the retention of skilled and talented future generations.

The intervention will involve;

- Advanced skills: Leading innovation across the Four Internet themes of the Internet Coast proposal. The advanced skills offer will support the new and emerging technologies contained within the constituent proposal bids.
- Under/Postgraduate Expansion: providing increased productivity through greater graduate skills application across the Four themes
- Further/Higher Education: delivering skills for new roles within the theme sectors, through Foundation Degree, programmes, Apprenticeships and Higher Apprenticeships. Delivering innovation will include new blended learning approaches.
- Continuing Professional Development: ensuring the region's skills across the themes remains at the forefront of professional practice.
- Apprenticeships: support the integration of apprenticeship opportunities throughout the Skills and Talented Future Generations project.
- Skills facilities development: creation of sector-specific facilities to support the development of new emerging skills/roles and the creation of a step-change in capacity across the region.
- Schools engagement to influence curriculum development and delivery to ensure the adequate supply of young people with the right skill set.
- Careers engagement to enthuse young people and influence career decisions.

The intervention will channel these efforts through a unique regional construct, managed and led by the Regional Learning and Skills Partnership (RLSP), which provides an 'Open Education to mirror an Open Innovation" Economic Framework. This will ensure appropriate and timely response to industry and emerging project demands, remaining relevant and effective while avoiding duplication or missed opportunities. The intervention enables a collaborative, responsive infrastructure to provide relevant skills solutions to emerging projects comprising the City Deal proposals. As projects are identified established partnership protocols, including private sector engagement via sector specific cluster groups, Strategic Employer Reference Group and existing consultation mechanisms which will identify the skills required and the providers to deliver the skills solutions.

The skills developed through the Skills and Talent intervention will not only help fill the new roles directly created through the Internet Themes interventions, but also support a broader uplift in productivity (GVA) across the sectors and wider economy of the region.

The Skills and Talent Intervention is a cross cutting project providing the skills solutions for each of the four themes of the City Deal Internet Coast proposal.

Individual Project Skills needs Identified and quantified
Existing Regional Skills Identified
Skills Gap Analysis undertaken
Skills Requirement solutions developed
Skills Solutions delivered
Future Workforce influenced, informed and integrated
City Deal Request - £10m
Match Funding - £20m

Programme strand:	Internet of Economic Acceleration (Infrastructure) / Internet of Energy (Efficiency) / Internet of Health & Wellbeing (Productivity) . The Intervention will support the skills across all the themes.							
Financial summary* (Please write in full e.g. 135,000)	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	TOTAL
Total costs (£)	£7,500,000	£7,500,000	£7,500,000	£7,500,000				£30,000,000
City Deal input (£)	£2,500,000	£2,500,000	£2,500,000	£2,500,000				£10,000,000
Private Sector (£)	£1,000,000	£1,000,000	£1,000,000	£1,000,000				£4,000,0000
Other public (£)	£4,000,000	£4,000,000	£4,000,000	£4,000,000				£16,000,000
Prepared by:	Name [Main Contact]: Barry Liles, Chair RLSP Tel: 01554 748001 Email: barry.liles@colegsirgar.ac.uk							

*Note assume CITY DEAL funding is for five years (max) only

SBCR City Deal Business Case Template

1) Project title:

Skills and Talent Intervention

2) Executive summary:

The Regional Learning and Skills Partnership has a long standing reputation of regional collaborative working with key partners in the region and working with Welsh Government to influence policy on the delivery of skills training in the region. The development of the Skills and Talent Intervention meets the four themes of 'Digital, Health and Wellbeing, Energy and Smart Manufacturing all fused together to bring about Economic Acceleration in the region.

All these themes are each dependent upon the attraction, creation, and retention of skilled and talented future generations and this Intervention will aim to meet and deliver on the overarching skills requirements of the City Deal – Internet Coast vision.

The Skills and Talent intervention has been developed to provide an integrated regional approach to delivering the skills supply, with sector-specific efforts targeting each Internet theme. The intervention will involve;

- Advanced skills: Leading innovation across the Four Internet themes of the Internet Coast proposal. The advanced skills offer will support the new and emerging technologies contained within the constituent proposal bids.
- Under/Postgraduate Expansion: providing increased productivity through greater graduate skills application across the Four themes
- Further/Higher Education: delivering skills for new roles within the theme sectors, through Foundation Degree, programmes, Apprenticeships and Higher Apprenticeships. Delivering innovation will include new blended learning approaches.
- Continuing Professional Development: ensuring the region's skills across the themes remains at the forefront of professional practice.
- Apprenticeships: support the integration of apprenticeship opportunities throughout the Skills and Talented Future Generations project.
- Skills facilities development: creation of sector-specific facilities to support the development of new emerging skills/roles and the creation of a step-change in capacity across the region.
- Schools engagement to influence curriculum development and delivery to ensure the adequate supply of young people with the right skill set.
- Careers engagement to enthuse young people and influence career decisions.

The Regional Learning and Skills Partnership will lead the intervention and work with delivery partners – Higher Education, Further Education, private and Third Sector providers. The purpose is to ensure that there is a clear channel to develop the required skills in the region across all levels to meet the needs of the emerging projects. This will ensure that academic and vocational qualifications and delivery respond to industry demand, remaining relevant and effective while avoiding duplication or missed opportunities.

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The skills developed through the Skills and Talent intervention will not only help fill the new roles directly created through the Internet themes projects, but also support a broader uplift in productivity (GVA) across the sectors and wider economy.

City Deal Request - £10m
Match Funding - £20m

3) Project description.

The Regional Learning and Skills Partnership (RLSP) for South West and Mid Wales is a transformational partnership bringing education and regeneration partners together to help provide a better future for learners and potential learners across the region. The partnership is made up of key representatives from Higher Education, Further Education, Local Government, the Third Sector and private sector, across Carmarthenshire, Ceredigion, Neath Port Talbot, Pembrokeshire, Powys and Swansea.

Recognised by Welsh Government for its transformational work with employers and partners in driving investment in skills based upon local and regional need. The RLSP has been formally recognised as one of three Regional Skills Partnerships in Wales.

This role is recognised by the Welsh Government through the commissioning of a Regional Employment and Skills Plan and the regional Demand and Supply Assessments, which have been instrumental in developing a strategic approach to skills.

Central to the activity of the Regional Learning and Skills Partnership is the analysis of local labour market intelligence to identify and inform skills and curriculum provision. Supporting this work is the Regional Learning and Skills Observatory, an online data portal providing labour market intelligence from a range of sources. This is complimented by further research into key regional themes and sectors. Analyses to date include sector studies into the Life Science and Energy and Environment sectors with current research including a study on the skills requirements of the Swansea Bay Tidal Lagoon.

The region has a strong history of providing apprenticeship and work based learning opportunities for young people with a range of opportunities from foundation to higher level, apprenticeships. The RLSP has completed two studies to support investment in Apprenticeships in line with labour market requirements to support sustainable learning progression and employment.

The work of the partnership includes promoting and championing a strategic overview of skills provision to ensure that it maximises economic opportunities. The RLSP also forms the skills pillar of the Swansea Bay City Region drawing on its extensive experience in supporting regional needs and collaborative practice.

The Regional Learning and Skills Partnership has a strong history of stakeholder engagement across the region to inform Employment and Skills Plans and other key sector plans. This intervention will require contact with similar organisations and other more sector specific organisations to ensure that a comprehensive bank of skilled individuals is

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developed within the region. The region has extensive experience in delivering successful high value skills and employability interventions including utilising European funding, examples include the COASTAL and Workways employability projects with a value of £39m and the Skills for Industry and LEAD projects with a combined value of £9.6m.

The Skills and Talent intervention will develop a sustainable pipeline of individuals to support growth of the four Internet themes and support the future competitiveness of the region.   It will nurture indigenous talent through initial education and on-going career stages, while also attracting globally competitive skills to the region.

The intervention will seek to utilise and maximise the potential of city region partner organisations through the existing RLSP structure and will look to develop and support strategic skills interventions around the key themes of ICT infrastructure and digital skills, Health and Energy.

The intervention strands will involve;

- Advanced skills: Identify opportunities within sector-specific technical skills for R&D and innovation, along with leadership and management. The high-level (NQF 7-8) relates to HE provision, with awards such as Engineering Doctorates (EngD) and a potential new SciD.

- Under/Postgraduate Expansion: providing increased productivity through greater graduate skills application across the themes.

- Further Education/Schools: delivering skills for new roles within the theme sectors, including blended learning approaches (inc. through Foundation Degree/Apprenticeships recognising the need for installation and maintenance of new technologies; coding and programming).

- Continuing Professional Development: ensuring the region's skills across the themes remains at the forefront of practice. This strand in particular will build upon strong links with relevant Sector Skills Councils and Professional Bodies (e.g.CITB; IET).

- Apprenticeships: ensuring that projects developed under the City Deal include opportunities for new apprenticeships to be developed particularly in the innovative sectors of Internet Technology.

- Skills facilities development: creation of sector-specific facilities to support the development of new emerging skills/roles and the creation of a step-change in capacity across the region. These environments will reflect the technologies and practices within each of the Internet themes, and be developed to reflect real-world application.

- Schools engagement to influence curriculum development and delivery to ensure the adequate supply of young people with the right skill set. Influence the introduction of coding and data management to young people.

- <u>Careers engagement</u> to enthuse young people and influence career decision and new pathways for learning.

Each Internet Theme will have a sector-specific context to the activities described above and will require specific skills to meet the demand, the following section highlights how some of the issues around specific skills may be addressed. The fusion of all four themes brings together the Economic Acceleration of the region that will establish Swansea Bay region as a globally significant area where open innovation driven by digital technologies and unique assets will bring about a sustainable and diverse economy.

<u>Internet of Digital</u>: Disruptive technologies and concepts such as Internet of Things (IoT) and Augmented Reality (AR) are opening a swathe of new opportunities. However, such technologies require new skills to resolve associated challenges in areas such as cyber security, technology adoption. The provision of relevant and industry required skills in this theme to ensure that skills remain at the forefront of all projects.

<u>Internet of Health & Wellbeing</u>: Ensuring sufficient young people progress into an otherwise greying workforce is critical for the sector. The sector is broad ranging in both the level and nature of skills contained therein. The ARCH project will highlight the skills requirements within the Health and Social Care sector, developing new skills to adapt to the use of new technology and innovative ways of delivering services in the future.

<u>Internet of Energy</u>: Installation and maintenance of new energy technologies at scale is an important challenge in realising a new UK-wide sector based upon Buildings as Power Stations (SPECIFIC+).

<u>Internet of Smart Manufacturing:</u> The Industry 4.0 paradigm shift in manufacturing moves from individual technical workstation operations to a dynamic cyber-physical production approach. This will require a whole new range of skills in design and management of manufacturing solutions.

The work of this skills intervention has been developed around the existing expertise of the RLSP and focusing on specific areas of the four Internet themes which have been developed in partnership with stakeholders including Welsh Government.

4) Project Aim and SMART objectives.

The project aims and objectives can be summarised as follows:
Aims
- Creation of a skills system that will support the future competitiveness of the region.
- Expansion of regional collaboration to reflect the City Deal -Internet Coast Themes
- Establish a sustainable pipeline of skills and talent to support the growth of each Internet theme.

- Developing skills for Business growth in the region.
- Realising the potential of young people in the region to meet the aspirations of the City Deal- Internet Coast.

Objectives
- Develop provision through FE, HE and CPD channels aligned with industry demand across the four Internet Themes
- Development of greater ownership of skills by employers by increasing engagement with new apprenticeships and address skills priorities identified by the Regional Learning and Skills Partnership in the annual Employment and Skills Plan.
- Developing an understanding of the Labour Market and Skills priorities and work with providers to address and deliver the training.

5) Applying organisation including contact details and details of partners involved.

Regional Learning and Skills Partnership (Lead)

- *Barry Liles, Chair RLSP*

- *Tel: 01554 748001*

- *Email: barry.liles@colegsirgar.ac.uk*

    Partners-

    Higher Education-
    Swansea University
    University of Wales Trinity Saint David
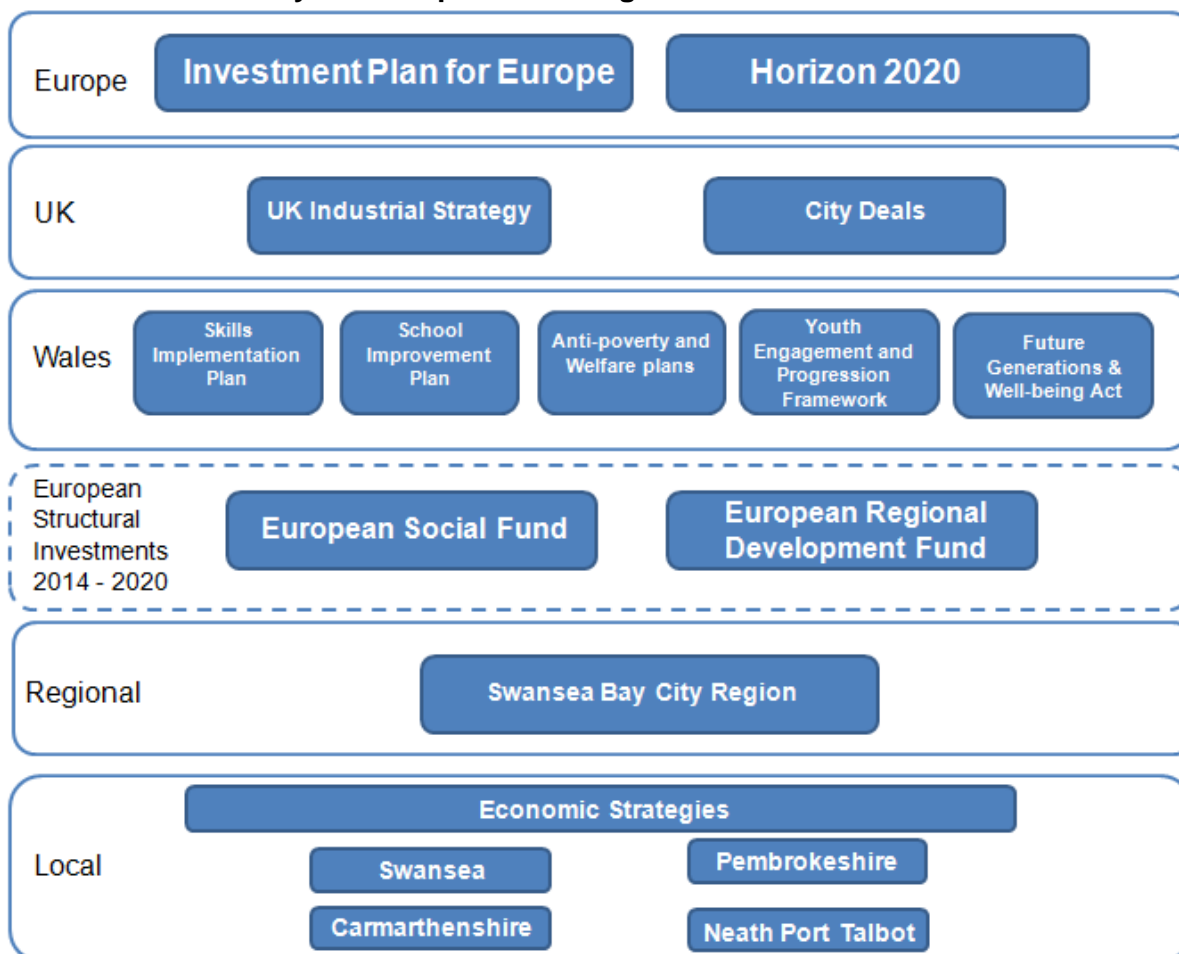   **Further Education-**
    Gower College Swansea
    Coleg Sir Gar
    Pembrokeshire College
    Neath Port Talbot Group
    Coleg Ceredigion.

6) Strategic Fit.

The Skills and Talent intervention will develop a sustainable pipeline of individuals to support growth of the four Internet themes and support the future competitiveness of the region.   It will nurture indigenous talent through initial education and on-going career stages, while also attracting globally competitive skills to the region. The intervention will seek to utilise and maximise the potential of city region partner organisations through the existing RLSP structure and will look to develop and support strategic skills interventions around the key themes of Economic Acceleration, Health and Wellbeing, Energy and Smart Manufacturing.

The Skills and Talent intervention fully fits the overarching opportunities within the Wellbeing and Future Generations Act and complies with the seven goals and five ways of working.

Overview of the Policy Landscape Influencing the SBCR

Europe	Investment Plan for Europe	Horizon 2020
UK	UK Industrial Strategy	City Deals
Wales	Skills Implementation Plan · School Improvement Plan · Anti-poverty and Welfare plans · Youth Engagement and Progression Framework · Future Generations & Well-being Act
European Structural Investments 2014 - 2020	European Social Fund	European Regional Development Fund
Regional	Swansea Bay City Region
Local	Economic Strategies — Swansea · Pembrokeshire · Carmarthenshire · Neath Port Talbot

How the project aligns to the key strands of the Internet Coast i.e. Internet of Economic Acceleration, Energy, Health and Well-being and Smart Manufacturing.

a) ICT infrastructure and digital skills

The continuing pace of digital change and the development of new 'disruptive' technologies within the global economy present a number of opportunities for the City Region. The ICT sector has been a strong driver of growth across the region and the Welsh economy, with the sector in Wales growing by 3.4% in GVA terms between 2006 and 2014, amounting to a total value of over £1.7bn. Significant growth has been seen across the sub sectors of software and services, which grew by 45.9% and 71.1% respectively over the same time period[3]. Increasingly, evidence is suggesting that there is a need for a greater number of advanced ICT and digitally skilled individuals to tackle challenges such as cyber security and 'big data'.

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[3] Government Priority Sector Statistics (2015). Accessed online via http://gov.wales/statistics-and-research/priority-sector-statistics/?lang=en

Changes within the digital sector are likely to have significant implications on the roles of workers within the economy, how workers undertake activity will increase the need for digital skills across the whole economy. Increasingly, businesses and individuals are becoming aware of the potential provided by the digital economy with developments such as cloud based computing empowering change. As a result there is likely to be greater need for people who have been educated and trained to use advanced digital devices and equipment, as well as people who are motivated and skilled to work with others or overseeing people who provide these services.

The region has a significant range of skills activity to support the development of the ICT sector and digital skills ranging from advanced academic research focused activity, including the planned development of the computational foundry and research undertaken at both Swansea University and University of Wales Trinity Saint David. There is also a range of activity at a further education level to provide a pathway into the digital skills arena.

b) **Health**

The health sector is a strong component of the Welsh economy employing 129,000 individuals, accounting for 8% of the total workforce. It also encompasses the life science sector which is an advanced driver of the regional economy providing high value employment and growth. The Life Science sector has shown significant growth in Wales with GVA increasing by £106m between 2006 and 2014, a growth of 24.1%. Growth was particularly strong within the Medical Technology and Medical Biotechnology sectors which grew by 36.4% and 37.4% respectively[2].

An increasingly important area is the digital health sector which includes bioinformatics and connected health technologies, allowing for improved care for individuals. In response to these challenges A Regional Collaboration for Health (ARCH) [1] has been formed which brings together two regional health boards, Abertawe Bro Morgannwg (ABMU) and Hywel Dda with Swansea University and the six local authorities of South West and Mid Wales to combine and focus their efforts on improving the health, wealth and wellbeing of the people of the region

Working alongside these community based services the Singleton Health Campus will become a centre of excellence for rapid access diagnostics, same day care, and rehabilitation. Meanwhile, the Morriston Health Campus will become the regional centre for specialist treatments in South West Wales supported by a number of additional investments including a healthcare technology centre, a joint clinical research facility and a medi-park network. The development of an innovative specialised 'Wellness Centre' in Carmarthenshire that will incorporate a range of different treatment and facilities will introduce new opportunities for delivering

[2] Government Priority Sector Statistics (2015). Accessed online via http://gov.wales/statistics-and-research/priority-sector-statistics/?lang=en

[1] ARCH (2015).A Regional Collaboration for Health (ARCH) Accessed online via http://www.swansea.ac.uk/medicine/enterpriseandinnovation/aregionalcollaborationforhealtharch/documents/ARCH%20Summary%20Document.pdf

services using technology and community facilities. These changes will be supported by investments in specialist equipment, research and innovation projects and associated education and skills development for new and existing staff.

Integral to these developments will be the increasing role of digital technology within the delivery of healthcare services including greater use of health informatics including the utilisation of 'big data'. The greater use of wearable health and fitness monitors to improve personal wellbeing as well as the development of remote consultation in rural areas provide significant opportunities for the Swansea Bay City Region.

c) Energy

The Energy sector is fast becoming one of prominence in Wales. It provides the foundation for sustainable development and is constantly changing in line with developing technologies, policies and markets. The sector has exhibited exponential growth over recent years both in terms of employment and its monetary contribution to the local and national economy. At a regional level recent statistics show that there has been a 4.8% increase in employment figures between 2006 and 2015, coupled with a11% increase in GVA at a Wales level between 2009 and 2014[1].

This growth is set to continue as the demand for renewable and innovative forms of energy generation increase in line with policy and targets. Revolutionary changes in the way energy needs are met are inevitable, which brings with it a wealth of opportunity for the region.

Historically, the region has played a significant role in the UK energy industry over many decades. Oil and gas terminals as well as refineries and storage facilities in Pembrokeshire remain a significant component of the regional economy. Growing interest in green and sustainable sources of energy has led to the construction of a number of energy developments, including a number of onshore wind farms across the region [2] as well as increasing the number of new tidal and wave energy prototypes along the Pembrokeshire coast.

Most recently, it has acted as a spur to the development of plans for a tidal lagoon in the Swansea Bay. The planned facility is intended to be the world's first, man-made, energy-generating lagoon and could potentially contribute approximately £76 million per year to the Welsh economy on completion[3].

Other potential areas of renewable energy production, storage and conservation being developed in the region include work on the development of buildings as power stations by researchers at Swansea University's Sustainable Product Engineering Centre for Innovative Functional Industrial Coatings (SPECIFIC). The project focuses on the development of commercially exploitable technologies for the generation of heat and electricity from solar powered photovoltaic cells. Using low cost printing and

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[1] Government Priority Sector Statistics (2015). Accessed online via http://gov.wales/statistics-and-research/priority-sector-statistics/?lang=en

[2] Map of Wind Farms in Wales. Accessed online via : http://www.renewables-map.co.uk/windfarm.asp

[3] Swansea Bay Tidal Lagoon. Accessed online via: http://www.tidallagoonswanseabay.com/the-project/proposal-overview-and-vision/51/

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production methods the aim of the project is to design houses which can be built cheaply and which not only generate sufficient energy for their own use, but also store unused energy and provide surplus energy to the national grid.

Further substantiating the growing importance of ICT and digital technologies, building management systems are now utilising ICT and digital technologies, including the development of the 'internet of things' to manage and reduce household and commercial energy usage.

An analysis by the Regional Learning & Skills Partnership of Welsh Government data indicates that the sectors current workforce is ageing, due in part to the fact that staff turnover in the sector is relatively low in comparison to others. Whilst this inevitably creates new opportunities for new entrants to the sector there is a need to ensure that educational provision is demand-led. A desk-based review concluded that where skills gaps are present, most are generic skills needs and can be addressed by the curricula currently offered within the region e.g. construction, engineering etc. What has become apparent is the demand for many specialist and job role specific skills gaps in certain sub-sectors.

The education and skills needed to develop, produce and install these new technologies are considerable and to be adopted on a large scale will require the development of new education and training courses and associated qualifications at all levels from trained technicians and installers at level 3 to maintenance and development engineers at levels 6, 7 and 8. It will also require investment in the construction and operation of sizeable offsite modular building construction facilities.

d) Smart Manufacturing

Wales has a long tradition in the manufacturing industry and in recent years the sector has become a key component in the drive to deliver a balanced economy. Adding value to products and services has become a focus for the advanced materials and manufacturing sector with innovation and processes becoming key enablers in the delivery of cost effective and valued products.

The economic output of the sector (GVA) increased by 36.1% between 2006 and 2014 where total GVA amounted to £5,885 million in 2014. This substantiates its importance as a key economic driver not only for the region but for Wales as a whole.

At a Wales level 85,700 individuals are employed within the Advanced Materials and Manufacturing sector, of this total 21,700 (25.3%) are employed in companies based in the region of South West and Mid Wales. As of 2015, local unit data indicates that there were 2,940 units operating within the sector in Wales with 815 (27.7%) of these located in the South West and Mid Wales region.

Employment demography patterns indicate that the sector suffers from an ageing workforce with 33% of the workforce at a Wales level being over the age of 50. This could pose significant challenges in the near future if suitably qualified new entrants to the sector are not readily available in the economy to meet the replacement demand caused by retiring employees.

The manufacturing sector is experiencing significant changes at a global scale termed in much literature as the 'Fourth Industrial Revolution' or 'Industry 4.0'. In a broad sense this change will result in a marked increase in the use of advanced IT systems within manufacturing processes. This will create a significant skills challenge to which the region will need be able to respond to ensure a sustainable manufacturing sector and to maximise the opportunities.

7) Evidence of need / demand for the project

To support and achieve the ambitions of the internet coast having the 'right people with the right skills at the right time' is essential to the success of the region. The project will look to build upon the existing established structures of the Regional Learning and Skills Partnership to focus the development of skills across all levels to drive change across the educational landscape of the City Region.

The region has failed to maximise the opportunities that economic change has previously presented with the region suffering from areas of high unemployment, low skills and high rates of economic inactivity. There is a risk that unless intervention is immediate and co-ordinated the region risks being 'left behind' and to miss the opportunities that are presented.

There is also the challenge of lead times in the development of new and changes to the skills offers across the region. In this respect the RLSP is well placed to support through its role as a one of Welsh Government's Regional Skills Partnerships and its annual submission of a regional employment and skills plan which is utilised to directly affect the allocation of funding to further education and apprenticeships provision.

The Swansea Bay City Region continues to perform poorly in productivity and continues to lag behind the UK average in GVA terms (SBCR £15,049 per head UK £24,626 per head) and as a result is still eligible for the highest level of European structural funding. Although there has been a positive uplift in relation to economic activity and employment within the city region there is little to suggest that this new employment is having any significant effect on the productivity and overall competitiveness of the region with a risk of trapping individuals into a cycle of low skill, low pay employment.

Human capital much like financial capital flows to areas where returns are greatest and currently the region suffers from a loss of some if its higher skilled individuals to other locations both with Wales, across the UK and internationally. This can be evidenced by reports undertaken by WISERD and the lower numbers of higher skilled (NVQ level 4+) residents compared to key economic areas across the UK.

This continued failure to improve the relative economic performance is a strong indicator that the current structure of the city region economy is no longer fit for purpose and in need of intervention. The need to address the skills potential early within the talent pipeline and to support employers to attract the *'right people with the right skills at the right time'* is important to minimise the potential risk of displacement and ensure sustainability and employment for citizens of the city region.

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8) Added Value

The intervention has been developed to enhance the work already undertaken by the Regional Learning and Skills Partnership by focusing particularly on the skills requirements of the four themes of the Internet Coast.

The intervention has been developed for a high-growth sector built upon the unique strengths and assets of the region. A focus on new enterprise and inward-investment contributes to high additionality with low deadweight and avoiding displacement. A focus of the partnership will be to support safeguarding of employment across a range of sectors.

9) Wider economic impact of the intervention

A major component of the Internet Coast proposal is the development of skills across the region. The Skills and Talent intervention has been developed to assist in the skills supply for employment growth within the four internet themes, along with improving productivity within the sectors. The supply of skills and talent is critical for the employment growth and GVA contribution targeted by the proposed projects within each theme. Therefore, to avoid duplication of benefits and subsequent impact with that being delivered by the projects, the impact appraisal of the skills and talent intervention focuses solely on the benefits to the existing sector. These include:

- The creation, retention and attraction of skilled and talented future generations.
- Advanced skills: Leading innovation across the Internet Themes, underpinned by existing and new provision (including EngD/SciD level)
- Under/Postgraduate Expansion: providing increased productivity through greater graduate skills application across the Themes
- Further/Higher Education: delivering skills for new roles within the Theme sectors, including blended learning approaches (including through Foundation Degree/Apprenticeships)
- Continuing Professional Development: ensuring the region's skills across the Themes remains at the forefront of practice.
- Apprenticeship: support the integration of apprenticeship opportunities throughout the Skills and Talented Future Generations project.
- Skills Facilities (e.g. Talent Bank): Creation of sector-specific facilities to support the development of new skills/roles and step-change in capacity required across the region.

The intervention will channel these efforts through a unique regional construct, managed and led by the RLSP, which provides an 'Open Education' mirror to the 'Open Innovation' Economic Framework activities. This will ensure that efforts respond to industry demand, remaining relevant and effective while avoiding duplication or missed opportunities.

Analysis by SQW undertaken for the SBCR Board highlighted the skills gaps which limit potential growth within the region and the subsequent economic impact. This reflects the findings of numerous sector studies undertaken by the Regional Learning and Skills Partnership.

10) Details of the activities/ outputs / results in the short, medium and long term

Intervention Process	Required Actions	Responsibility
Individual project skills needs identified and quantified	• Communication required between successful applications and the RLSP to identify project requirements.	RLSP/Successful Projects/ SBCR Board
Existing regional skills identified and skills gap analysis undertaken	• Utilise existing labour market research, including the Regional Delivery Plan for Employment and Skills to develop a profile of the region. • Engage employers, including the private sector, around the key themes of the final City Deal to identify current workforce skills deficiencies in detail.	RLSP/ Employers
Skills requirement solutions developed	• Identify and develop appropriate interventions e.g. higher level apprenticeships or postgraduate provision to support the delivery of City Deal projects and overall ambitions. • Ensure facilities are appropriately set up to allow for the delivery of related activity. Including relevant hardware/software and suitable staffing.	RLSP/Skills Providers/ Employers
Skills solutions delivered	• Recruit to and deliver a range of skills interventions to support the delivery of the City Deal projects and the development of the digital economy. • Review regularly to ensure relevance of delivery and to provide flexibility to adapt to a changing skills environment. • Promote the development of activity to employers to further enhance the employer led delivery.	RLSP/Skills Providers/ Employers
Future workforce influenced, informed and integrated	• Sustainably embed the activity into the mainstream regional delivery to improve the retention of talent and to service the ongoing labour requirement of the digital economy.	RLSP/Skills Providers/ Employers

The Skills and Talent intervention will develop the skills matrix to underpin the portfolio of projects across all Internet themes highlighting the productivity and economic benefits across all categories.

A number of projects have been developed as part of the City Deal and there will be a number of skills requirements to ensure that the projects improve the opportunities for new jobs in the region and increase the economic prosperity. To achieve the ambitions of the City Deal and to provide sustainable outcomes for citizens there is a need for the region to understand the potential impact of the opportunities, to plan and prepare its skills offering accordingly.

The Skills and Talent intervention differs from previous skills interventions as it seeks to establish a pre-emptive and proactive response mechanism that directly aligns to the outputs

of the Internet Coast. This will allow for greater additionality across all of the internet themes and related activity and will ensure a greater value for money through reducing both deadweight (through ensuring relevance to economic needs) and displacement (through ensuring local availability of skills). Through building a skills 'pipeline' simultaneously with the development of new and emerging disruptive technologies there is an opportunity to embed the sustainable skills required for sustainable employment.

The intervention will initially seek to understand the core and specialist skills requirements for the City Deal interventions, including an understanding of the timescales required with a view to having *'the right people, at the right time, with the right skills'*. These skills may be new to the region and will require the development of new courses within the training facilities; others will be developing more key skills to ensure that there are enough people to meet the demands. Building upon the initial understanding of the skills required for the city deal tailored skills based activity will be developed to support the growth of the sector with a view to mainstreaming activity. This will include actions across the entire skills infrastructure from entry level to level 8 and will include engagement with Schools, Further Education and Higher Education.

The table below highlights the potential key skills requirements by each of the projects:

City Deal Project	Key Skills Requirements	Potential Skills Interventions	Cost
Digital Infrastructure and Test Bed intervention	Research and Development, Higher Level ICT including Analytics and Networking	Development and delivery of higher level (Levels 4-8) skills activity. Extensive Research and Development	New course development at ~£100k per course[4]. (yr1/2) Delivery of activity - potential high costs due to specialisation/ requirement for tailored support. (yr 2-4)
Swansea City Waterfront Digital District	Broad Digital/ICT – Including Creative and Analytical, Entrepreneurship	Development and delivery of new activity including apprenticeships and foundation degrees.	New course development at ~£100k per course. Delivery of apprenticeships at ~£5-10k per learner[5].
Creative Digital Cluster – Yr Egin	Creative Industries, ICT, Financial and Professional Services, Construction.	Development and delivery of new activity including apprenticeships and foundation degrees.	New course development at ~£100k per course. Delivery of apprenticeships at ~£5-10k per learner.
Centre for Excellence in	Higher Level IT – Coding, Analytics, Networking	Development and delivery of higher	New course development at

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[4] Estimated cost based on previous regional activity, subject to variation depending on activity and development requirements

[5] Estimated cost based on current apprenticeship costs

Next Generation Digital Services	Commercial/Entrepreneurial Skills	level (Levels 4-8) skills activity. Extensive Research and Development	~£100k per course. Delivery of activity - potential high costs due to specialisation/ requirement for tailored support.
Health and Wellbeing Campus and Village Network	Clinical, ICT including Data Science and analytics, high level Research and Development skills, Advanced Manufacturing	Development and delivery of new activity including apprenticeships and higher apprenticeships. Development and delivery of higher level (Levels 4-8) skills activity.	New course development at ~£100k per course. Delivery of apprenticeships at ~£10-15k per learner due to duration of apprenticeships (2 years) and high delivery cost (equipment)
Homes as Power Stations	Construction (Specialist project related–New/Retrofit), Electrical, Research and Development, Data Analytics, Advanced Manufacturing, Commercial	Development and delivery of new activity including apprenticeships and higher apprenticeships.	New course development at ~£100k per course. Delivery of apprenticeships at ~£10-15k per learner due to duration of apprenticeships (2 years) and high delivery cost (equipment)
Pembroke Dock Marine	Energy and Environment, Advanced Materials and manufacturing, Construction	Development and delivery of new activity including apprenticeships and higher apprenticeships.	New course development at ~£100k per course. Delivery of apprenticeships at ~£10-15k per learner due to duration of apprenticeships (2 years) and high delivery cost (equipment)
Factory of the Future	Engineering, ICT, Economics, Management, Advanced Materials and Manufacturing	Development and delivery of new activity including apprenticeships.	New course development at ~£100k per course. Delivery of apprenticeships at ~£10-15k per learner due to duration of apprenticeships (2 years) and high delivery cost (equipment)
Steel Science Centre	Advanced Materials and Manufacturing	Development of new higher level courses (levels 4-8)	New course development at ~£100k per course. Delivery of activity -

			potential high costs due to specialisation/ requirement for tailored support.

Links with Welsh Government Skills and Employability programmes

The Skills and Talent intervention is designed to complement existing skill and employability programmes to work alongside both emerging and established activities such as the employability and apprenticeship programme. The intervention will be well placed to address gaps in delivery and to aid in the development of new activities, for example where there may not be other suitable programmes or qualifications or where the development of new activity may be considered as economically unviable due to its specialist nature. It will also be well placed through its position within the RLSP to influence future Welsh Government provision through the Regional Employment and Skills Plan and embedding sustainably.

Activity and outputs table for the Skills and Talent interventions

Activity	Potential Output	Impact time period
Advanced Skills	Development of innovative new provision across the internet coast themes e.g. new qualifications	Long
Under/Postgraduate Expansion	Increasing the number of graduates and postgraduates across the internet coast themes	Medium
Further/Higher Education	Delivery of skills for new roles within the internet coast themes	Medium
Continuing Professional Development	To promote up-skilling within all organisations related to the internet coast	Long
Apprenticeships	To support the integration of apprenticeships related to the themes of the internet coast into companies	Long
Careers intervention	*To develop the future supply chain of young people to enter the further and higher education sectors appropriately informed and with the appropriate skills*	*Long*

Impacts table outlining the likely impacts of Skills and Talent intervention

Benefit/Impact	Wales – Lo/med/hi	Description	UK – Lo/med/hi	Description
New High-Added Value Jobs	*High*	*Direct jobs in new and growing companies*	*Med*	*Direct jobs in new and growing companies*
Safeguarded High-Added Value Jobs	*High*	*Protected jobs in new and established companies*	*High*	*Protected jobs in new and established companies*
Higher Skilled	*High*	*Up-skilling of*	*Med*	*Up-skilling of*

Labour Force		*local labour supply with relevant skills through the targeted interventions*		*local labour supply with relevant skills through the targeted interventions*
Multiplier Effects	*High*	*Strong multiplier effects for targeted sector*	*High*	*Strong multiplier effects for targeted sector*
Inward Investment	*High*	*Deal flow for current and attractor for new investor community.*	*High*	*Deal flow for current and attractor for new investor community.*
Enterprises Created	*High*	*New ventures with high-growth potential*	*High*	*New ventures with high-growth potential*

Displacement and evidence of it not happening

Due to the specialised and targeted nature of the intervention relating specifically to the activities of the Internet Coast the risk of displacement is considered low. The global opportunities presented by the Internet Coast proposal and the continued growth of the sector reduce the local risks related to displacement. In relation to displacement within the labour market evidence suggests that currently skilled and talented individuals are not being retained within the region, therefore, the intervention seeks to lower the displacement effect of other Internet Coast activities, which will require the recruitment of skilled individuals to achieve sustainable economic change.

11) Cross Cutting Themes

There are some enlightened parts of the world that recognise that the combination of various technology revolutions particularly those around health, digital, energy and manufacturing are moving towards what the Japanese call a Super Smart Society. Such a society is underpinned by a user-centric Open Innovation approach which draws upon multi-sector and interdisciplinary collaborative working. Clearly this approach presents considerable innovation challenges but in return offers enormous economic and citizen well-being benefits.
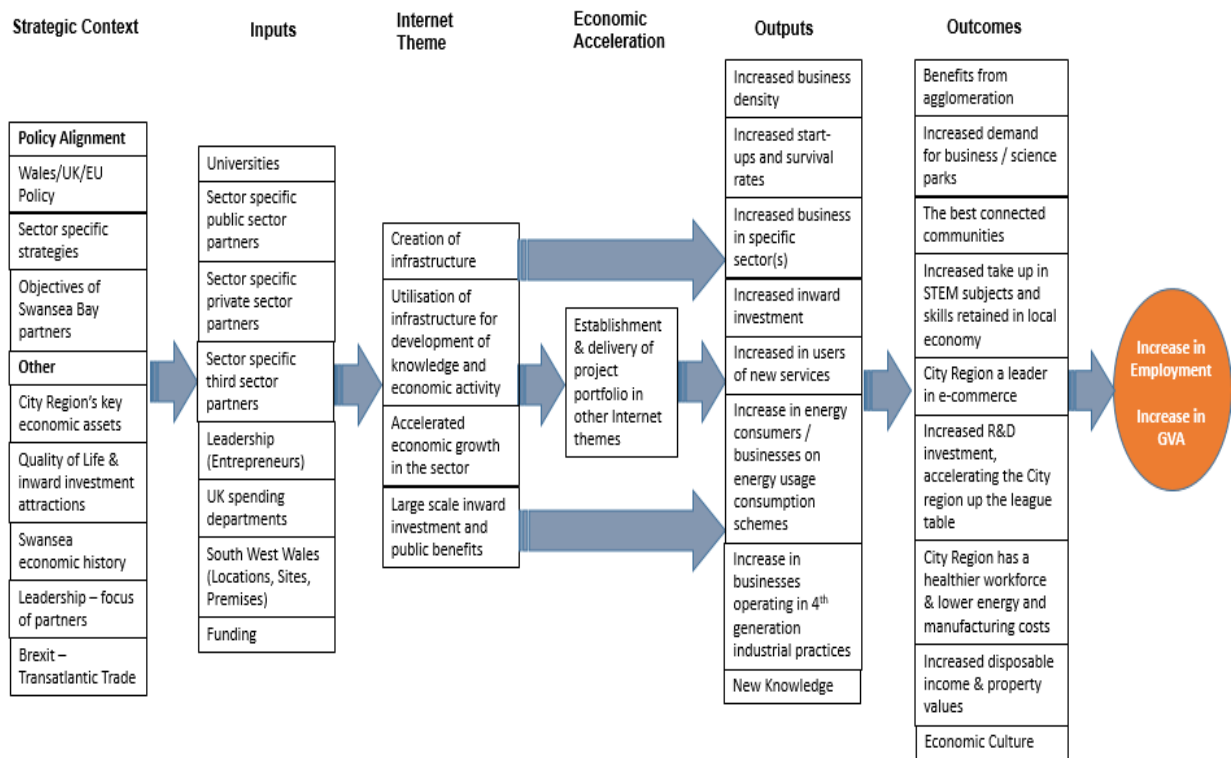
This intervention has been developed to build upon the momentum established in defined sectors but recognising that combining disparate threads into one coherent strategy addresses the challenges of an age that often requires collaborative and multidisciplinary solutions.

To realise this vision this City Deal proposal has four interconnected strands referred to as internets that all combine to deliver Economic Acceleration;
- An Internet of Economic Acceleration
- An Internet of Health & Wellbeing

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- An Internet of Energy
- An Internet of Smart Manufacturing

The Internet Coast that will establish the Swansea Bay City Region as a globally significant area where Innovation accelerates a vibrant sustainable and diverse economy delivering jobs and investment through the enhancement of skills and ultimately benefitting its' population and addressing the determinants of inequality for current and future generations.

Strategic Context	Inputs	Internet Theme	Economic Acceleration	Outputs	Outcomes	
Policy Alignment	Universities	Creation of infrastructure	Establishment & delivery of project portfolio in other Internet themes	Increased business density	Benefits from agglomeration	
Wales/UK/EU Policy	Sector specific public sector partners	Utilisation of infrastructure for development of knowledge and economic activity		Increased start-ups and survival rates	Increased demand for business / science parks	
Sector specific strategies	Sector specific private sector partners			Increased business in specific sector(s)	The best connected communities	
Objectives of Swansea Bay partners	Sector specific third sector partners	Accelerated economic growth in the sector		Increased inward investment	Increased take up in STEM subjects and skills retained in local economy	
Other	Leadership (Entrepreneurs)	Large scale inward investment and public benefits		Increased in users of new services	City Region a leader in e-commerce	Increase in Employment
City Region's key economic assets	UK spending departments			Increase in energy consumers / businesses on energy usage consumption schemes	Increased R&D investment, accelerating the City region up the league table	Increase in GVA
Quality of Life & inward investment attractions	South West Wales (Locations, Sites, Premises)			Increase in businesses operating in 4th generation industrial practices	City Region has a healthier workforce & lower energy and manufacturing costs	
Swansea economic history	Funding			New Knowledge	Increased disposable income & property values	
Leadership – focus of partners					Economic Culture	
Brexit – Transatlantic Trade						

12) Stakeholder Engagement

The Regional Learning and Skills Partnership (RLSP) for South West and Mid Wales is a transformational partnership brining education and regeneration partners together to help provide a better future for learners and potential learners across the region. The partnership is made up of key representatives from Local Government, Higher Education, Further Education, the Third Sector and private sector, across Carmarthenshire, Ceredigion, Neath Port Talbot, Pembrokeshire, Powys and Swansea.

The work of the partnership includes promoting and championing a strategic overview of skills provision to ensure that it maximises economic opportunities by developing stakeholder engagement across the region to inform Employment and Skills Plans and other key sector plans.

The intervention therefore builds upon that momentum bringing proven working collaboration. A summary of example partners actively involved includes:

- Further Education providers – Coleg Sir Gar; Gower College; Pembrokeshire College; Neath and Port Talbot College; Colegau Cymru and Coleg Ceredigion.
- Higher Education - Swansea University; University of Wales Trinity St David; Aberystwyth University and Open University.
- Local Authorities - All four relevant local authorities: Swansea City Council, Neath Port Talbot County Borough, Carmarthenshire County Council and Pembrokeshire County Council. There is also engagement with Ceredigion and Powys County Councils who have an interest in Skills Development in the region.
- Welsh Government - The Departments of: Economy and Infrastructure; Health, Wellbeing and Sport; and Finance and Local Government, together with the First Minister's Cabinet Office.
- NHS - Both Abertawe Bro Morgannwg and Hywel Dda University Health Boards covering the entire region from an NHS perspective
- Private Sector – Welsh Government designated Anchor and Regionally Important Companies; Large Companies; Small and Medium Size Enterprises in the region. Cluster groups will be developed to support specific sectors within the Internet themes
- Third Sector organisations

As the governance and management structure of the City Deal becomes defined and active, it will then prioritise the effective and efficient engagement with all stakeholders in order to maintain coherence and momentum, consistent with the City Deal vision.

Private Sector Engagement

The RLSP currently has an established Strategic Employer Reference Group (SERG) to assist in providing oversight and 'on the ground' leadership in relation to the skills requirements and demands of industry. The SERG group has provided valuable insight and has supported the development of the regional employment and skills plan to support Welsh Government through influencing provision. It also provided valuable support for the UKCES funded Understand, Co-produce, Influence and Learning Project (UCIL) which sought to identify barriers to leadership and entrepreneurship training. The RLSP has also engaged with a large number of business with 66% of businesses being in city deal related sectors and over 60% being identified as 'small' with less than 50 employees.

To further strengthen the voice of employers and substantiate the current employer engagement taking place, the RLSP is seeking to transition its current governance structure to increase private sector representation with a particular focus on strategically important companies. These strategic changes will further enhance the ability of the partnership to be responsive and reactive to economic change both via the City Deal and other established mechanisms. The primary method for achieving this change will be through the development of industry cluster groups. The City Deal will be key to developing and enhancing the engagement providing valuable support for the operational activity of the group as well providing a direct route for influencing change and developing new, employer-led activities.

These cluster groups will provide much needed insight and further enhance the employer voice these RLSP supported groups will provide a unique opportunity to inform the future of skills provision within the region, helping to drive a balanced and thriving economy. These relationships will provide a valuable basis for the supporting the internet themes and

identifying the skills challenges faced by industry.

Industry groups will be created for the following key sectors, which show clear alignment to the four themes of the City Deal proposal;
Health and Social Care,
Life Sciences,
Construction, Advanced Materials and Manufacturing and Energy,
Creative Industries and Digital/Information and Communication Technology,
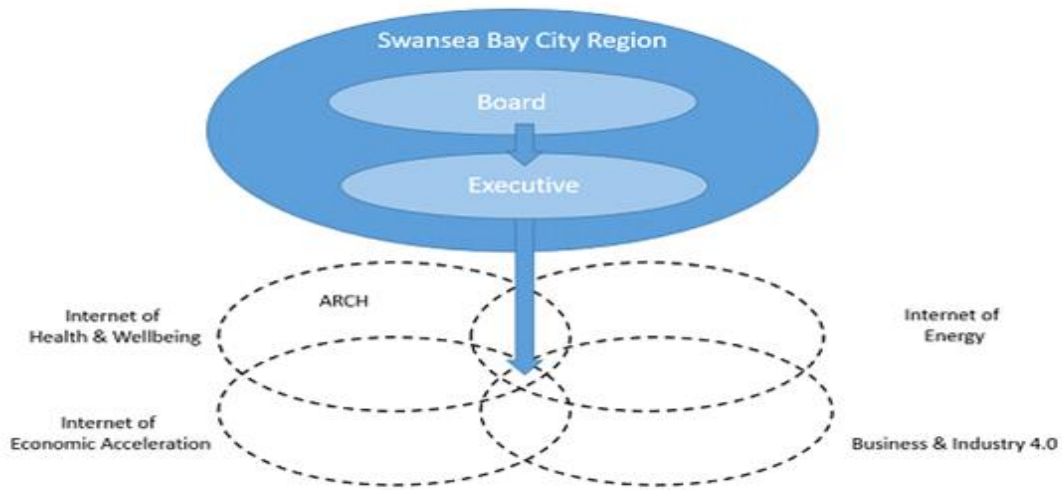Financial and Professional Services.

The RLSP has also completed a number research projects to support a variety of sectors and provision types with a view to improving the skills required for industry within the region. This has included an in depth study for the Life Science sector as well the Energy and Environment sector, which led to a range of new activities being developed both regionally and nationally. These reviews required significant engagement with private sector companies and provided valuable insight for policy makers. Currently, work is being undertaken with Tidal Lagoon Power Ltd and the potential supply chain to identify the skills challenges related to component manufacturing for the potential first of a kind project with a view to developing targeted activity pending the outcome of the Hendry review. A copy is appended at Annex A. Working with other City Deal interventions there will be the potential to identify leading edge disruptive technologies that can present opportunities for the region, which may not be otherwise identified and responded to.

On completion, the model for the work conducted with Tidal Lagoon Power Ltd will now be applied to the Port Talbot Enterprise Zone, where the RLSP will work closely with Business Wales to survey businesses present in the zone. This work will primarily aim to identify the needs of these businesses in terms of skills and training allowing appropriate interventions and support to be provided in line with demand. Support from the City Deal would allow for this work to be expanded across all of the internet themes and geographies to provide a valuable insight into the skills challenges faced by business.
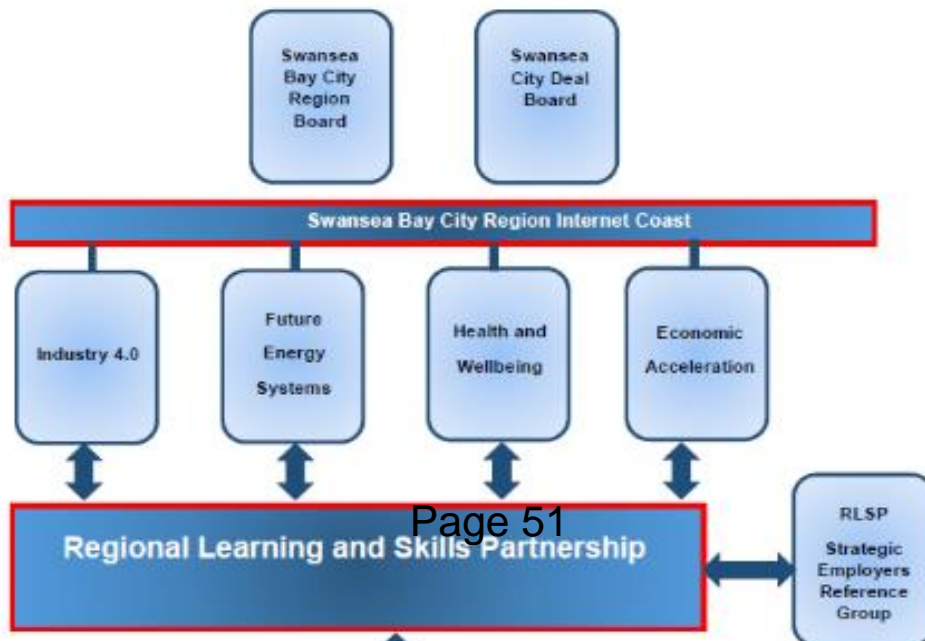
Furthermore, as part of the consultation process for the most recent iteration of the regional Employment and Skills Plan (Please refer to Annex B) the RLSP conducted employer engagement through a primary research study. This insight formed much of the employer voice element of the evidence base provided to Welsh Government. This work was complimented by a survey of large companies commissioned and subsequently analysed by the RLSP. In addition, following the success of the aforementioned large company survey the RLSP are now commissioning a similar piece of work with a focus on small and medium enterprises, which are key to the economic sustainability of the region.

13) Delivery

The Governance and Financial vehicle for the Internet Coast is yet to be agreed, the following diagram shows how the Internet Themes will report to an overarching structure.

Swansea Bay City Region

Board

Executive

ARCH

Internet of
Health & Wellbeing

Internet of
Energy

Internet of
Economic Acceleration

Business & Industry 4.0

The diagram outlines how the Intervention would work with partnerships across the region

Swansea
Bay City
Region
Board

Swansea
City Deal
Board

Swansea Bay City Region Internet Coast

Industry 4.0

Future
Energy
Systems

Health and
Wellbeing

Economic
Acceleration

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Regional Learning and Skills Partnership

RLSP
Strategic
Employers
Reference
Group

14) Financials

Financial summary* (Please write in full e.g. 135,000)	2017/18 Development Phase	2018/19 Development / Pilot Phase	2019/20 Pilot Phase	2020/21 Pilot / Delivery Phase	2021/22	2022/23	2023/24	TOTAL
City Deal (£)	£2,500,000,	£2,500,000,	£2,500,000,	£2,500,000,				£10,000,000
Private sector	£1,000,000	£1,000,000	£1,000,000	£1,000,000				£4,000,0000

Other Public Sector	£4,000,000	£4,000,000	£4,000,000	£4,000,000				**£16,000,000**
Other								
Total costs (£)	*£7,500,000*	*£7,500,000*	*£7,500,000*	**£7,500,000**				**£30,000,000**

Private Sector Match Funding

Engagement with the private sector is critical to developing a proactive and responsive skills based intervention therefore match funding will be sought from the private sector in a variety of ways. The RLSP and its partners have extensive experience in utilising employer co-investment to deliver upon the skills needs for region, as evidenced through the Regional Delivery Plan for Employment and Skills

The initial identification of skills requirements will require a significant investment in terms of in-kind time from private sector partners including the wide base of SMEs within the region to which initial cash match funding may not be sustainable. This would be essential to provide momentum and the leadership required to drive the ambitions of the skills interventions as well as the technical knowledge to ensure they are employer led.

Following the successful identification of skills requirements and the development of new innovative activities and to ensure the sustainability of activity a co-investment approach will be utilised in line with Welsh Government framework for co-investment in skills[6]. The level of co-investment will be vary depending on the activity developed and the targeted beneficiaries.

It is envisioned that there will be significant requirement to utilise next generation and emerging hardware and software for training purposes to ensure that individuals are employment ready. As a result the intervention would seek match funding via the providers of next generation ICT services to embed them within the institutions and activities.

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[6] http://gov.wales/topics/educationandskills/skillsandtraining/framework-for-co-investment-in-skills/?lang=en

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Project title: 304 DELIVERING HOMES AS POWER STATIONS

Project Sponsors (Lead partner): Local Authorities

Summary:

Energy efficiency and demand side management is needed to reduce energy costs and provide affordable warmth for housing. This programme will target both new build projects and the retrofit of existing buildings. SBCR will make available a Local Authority led regional land-bank for new build. It will promote energy retrofits, initially through the public sector housing stock, and after proving the process and financial measures it will target rollout to private sector landlords and owner-occupiers. Energy retrofits will be linked to other housing improvement programmes in order to optimise efficiency of delivery. A major aim will be to reduce fuel poverty and its impact on health. There will also be a focus on broadband Internet connections and smart metering. This proposal has been discussed with the four Local Authorities and has received their full support. The Local Authorities will be supported by Swansea University (Specific) in delivering the project.

The SBCD will kick start a construction programme of £517,050,000 for an investment of £15 million (3% of the total programme value) generating an estimated 4,512 new jobs.

Programme strand: Internet of Energy

Project title:	***304 DELIVERING HOMES AS POWER STATIONS***					
Project Sponsors (Lead partner)	*Local Authorities*					
Summary:	Energy efficiency and demand side management is needed to reduce energy costs and provide affordable warmth for housing. The programme will target both new build projects and the retrofit of existing buildings. SBCR will make available a Local Authority led regional land-bank for new build. It promotes energy retrofits, initially through public sector housing stock, and after proving the process and financial aspects will target rollout to private sector landlords and owner occupiers. It will link energy retrofits to other housing improvement programmes. A major aim will be to reduce fuel poverty and its impact on health. There will also be a focus on broadband internet connections and smart metering. The SBCD will kick start a construction programme of £517,050,000 for an investment of £15 million (3% of the total programme value) generating an estimated 4,512 new jobs in the construction industry and its supply chains.					
Programme strand:	*Internet of Energy (Efficiency)*					

Financial summary*	*2017/18*	*2018/19*	*2019/20*	*2020/21*	*2021/22*	**TOTAL**
Total costs (£)	*32,400,000*	*66,150,000*	100,400,000	137,500,000	180,600,000	517,050,000
City Deal input (£)	*2,900,000*	*4,400,000*	*4,400,000*	*3,000,000*	*300,000*	15,000,000
Private Sector (£)	*23,075,000*	*47,675,000*	*73,050,000*	*102,600,000*	*136,500,000*	382,900,000
Other public* (£)	*6,425,000*	*14,075,000*	*22,950,000*	*31,900,000*	*43,800,000*	119,150,000

Prepared by:	*Name: Gareth Nutt, Phil Jones* *Tel: 44 02920 874078* *Email: jonesp@cardiff.ac.uk*

* Includes an estimated 40% new houses developed by public sector.

SBCR City Deal Business Case

1) Project title. DELIVERING HOMES AS POWERSTATIONS
2) Executive summary

Energy efficiency and demand side management is needed to reduce energy costs and provide affordable warmth for householders. The programme will target both new build housing projects and the retrofit of existing housing. SBCR will make available a Local Authority led regional land bank for new build. It will promote energy retrofits, initially through the public sector housing stock, and after proving the process and financial measure it will target the rollout to private sector landlords and owner-occupiers. Energy retrofits will be linked to other housing improvement programmes in the Region, for example, ARBED. A major aim will be to reduce fuel poverty and its impact on health. There will also be a focus on broadband Internet connections and smart metering, and the potential for links to a local authority led ESCO (Energy Supply Company).

The current shortage of new housing in SBCR will be met with a programme of new housing which will be designed to be energy efficient with integrated renewable energy. A programme of existing housing retrofit will improve their energy efficiency. The proposed programme will therefore:

- Help fill the Region's new housing gap between demand and current rate of build.
- Provide lower cost energy bills to households and reduce energy demand from grid supply.
- Reduce fuel poverty and provide householders with more spending power.
- Improve health and well being through affordable warmth and better quality indoor environment.
- Expand broadband usage and links with user-led energy demand management (smart meters).
- Create jobs and industry (rising to an estimated 4,512 new jobs over a five year period).
- Add value to the Regions housing stock.

The Centre for Excellence in Next Generation Services (CENGS) (101) will provide the will provide a data analytics capability to support the projects smart and healthy elements.

3) Project description
There are 3 aspects to the programme.

(A) New Houses: There is a need for new housing across the Region. It has been estimated that 8,700 new houses a year are needed in Wales, of which, 63% would be in the private sector (5,500 a year), and 37% in the social sector (3,300 a year). In the SBCR some 2674 new houses are needed a year, however the current completion rate is 1471. So current completions are only 55% of housing needs target. It is proposed to build up to 1200 houses to 'energy positive' standards to help bridge the gap between the current and target new build rate. There is an interest in the rollout of energy positive houses, shown in the figure below (developed WEFO LCRI project). The design is based around reducing energy demand, renewable supply and energy storage. This can be applied to groups of housing, and eventually to other building types. This activity can contribute to affordable new build programmes, creating supply chain industries and construction related jobs. It is proposed for LA's to provide a combined land bank from their existing portfolio, in proportion to their housing needs to accommodate up to 1200 'energy positive' houses per year, with the potential to create an estimated 2,880 jobs. The programme would begin with a target of around 200 houses in the first year rising to 1200 after five years. The programme would look for support from Welsh Building Regulations, and buy-in from public and private sector house builders. The housing would target public and private sector developments, leading with public sector (LA's and RSL's), whilst engaging with the private sector.

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New Build 'Energy Positive' House (ERDF funded)

SPECIFIC is a National Innovation Centre developing the concept of buildings as power stations, and has WEFO funding to engage with industry in the application of new technology, and developing supply chains and demonstration projects. SPECIFIC at Baglan can act as a supply chain hub for BAPS (Buildings as Power Stations) supply chains. The activities of SPECIFIC are embedded within private sector-led agenda to create new opportunities for an emergent industry embracing a range of sectors. This include 50+ industry partners from small SMEs through to large corporate partners interested in developing solutions in Wales for global export. It will link to work at Tata's Sustainable Building Envelop Centre (SBEC) on innovation in steel products for the construction industry at Shotton, to provide innovative components such as transpired solar (air collectors (TSC's) and integrated steel based solar PV roofs. Recent work at SBEC includes demonstrating TSC's for heating a range of building types across Wales (ERDF funded) and the development of glazed-in solar air collectors involving collaboration between Tata and NSG glass (funded by A4B). This work on new applications of steel in the construction industry continues through the new SPECIFIC2 ERDF project based at SPECIFIC Baglan (partners including Swansea University and Cardiff University), and potentially links to the proposed SBCR Steel Innovation Centre.

The project will seek to engage with volume house-builders, who are already looking at the move to near zero carbon houses in line with European Directives (which will likely continue after BREXIT). A recent meeting attended by volume house builders, RSL's, Local Government and Welsh Government, discussed the move towards zero carbon performance and the need to work together on appropriate solutions.

(B)   Housing Retrofit: There are 323,274 housing units in SBCR, of which 28,000 are managed by LA's, and 23,000 by RSL's. 87,954 are below the energy target of SAP65, of which 15,000 are in the public sector (analysis by Warm Wales Ltd (Margam). In SBCR some 33,000 of households are in fuel poverty, where they need to spend more than 20% on energy. In many cases, households cannot afford to heat their houses to appropriate standards, and this incurs considerable health problems. 80% of the fuel poor are in the private sector. In SBCR, the public sector has around 2,500 fuel poor households. These should be a priority for retrofit as they are more accessible and potentially easier to fund through projects with LA's and RSL's. Once retrofit models (technical and financial) are proven, the scheme can be focussed more on private landlord and owner-occupied properties. There is already experience of large scale housing retrofit in Wales through ARBED, Warm Wales (Community Interest Company based in Margam) and the WEFO LCRI Retrofit project (see figure below). Large-scale whole-house retrofit programmes can
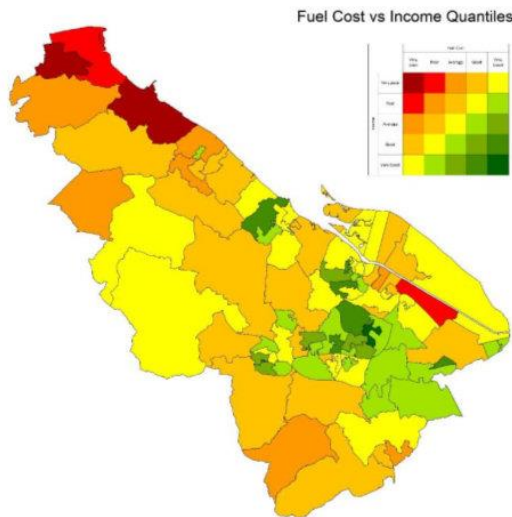
significantly reduce energy needs and provide affordable warmth, which contributes to healthy living. However, there is a need to carry out whole house deep retrofits in a professional way with quality checks. In the past large scale retrofit projects have been compromised in relation to quality by lack of quality control. Retrofit programmes can also include health and IT Broadband measures. Once proven, the retrofit 'model' can then be offered to the private sector. The programme would build up to a target 3,600 per year after 5 years. (estimated by Warm Wales Ltd). The current average cost of 'whole house' retrofit is £25,000 (based on the LCRI Retrofit costs). The target would be to reduce this to below £20,000 through scaling. At £20,000 per house, at year 5, the total spend would be £72 million per year, which equates to around 1500 jobs.

Demonstration LCRI Housing Retrofits (ERDF funded)

(C) Smart Healthy Homes: The project will also focus on smart technologies in relation to energy demand management (i.e. grid import and export in relation to energy demand, building integrated renewable energy and energy storage) for both new and retrofit housing. Discussions with the international software company SAP have resulted in them seeking to engage with the project in rolling out smart technology for both new build and retrofit. The proposed Centre for Excellence in Next Generation Services (CENGS) (101) will provide the will provide a data analytics capability to support the projects smart healthy elements. Warm Wales, and Wales and West Utilities have worked on smart healthy homes, which in future could link to the Internet of Health theme. The figure below summarises their FRESH Programme (initially developed for Flint and Cardiff LAs), which links area analysis of fuel cost and household income, which is then used to trigger house visits which address income, health, access and safety, and whole house retrofit opportunities. Survey work relating to health and housing in Carmarthenshire is demonstrating health improvements resulting from housing quality upgrades. This innovative approach to energy, household income and health can be rolled out across SBCR.

FRESH PROGRAMME
(Warm Wales, Cardiff University, Wales and West Utilities)

Income
- Benefits & Debt Advice
- Fuel Costs (Heating, Hot Water and Lighting)
- Fuel Switching, Smart Meters with Social Tariff
- Pre Payment switching to Direct Debit
- Out of Work Benefit Claimants
- Grant & Loan Packages incl Special Funds
- Add to Priority Services Register

Health, Access & Safety
- General Health including Local Poor Health Index
- Examining Cold Hazard Home Data
- Examining GP Practice Data on Cold-related Illnesses
- Slips Trips & Falls Assessment
- Stair / Lift access (Incl Disabled FGrants)
- Fire & Carbon Monoxide Alarms (incl Free Boiler Check)
- Healthy Homes Internal Air Quality Assessment
- Humidity / CO / CO2 / NO /

Whole House
- SAP rating
- Fabric Repairs
- Grant & Loan Packages incl Special Funds
- Insulation Upgrades (and EPC Energy Cert)
- Heating Systems Upgrades
- ECO Grants
- Off Gas Solutions (RHI funding)

FRESH Programme (WWU funded)

Comparative advantage of Homes as Power Stations

Other projects have had limited success with increased scale, both for new build and retrofit programmes. For new build there has been uncertainty and lack of awareness of what is possible, e.g., the SOLCER house. For retrofit funding has been unsteady and somewhat disjointed, resulting in short term programmes and lack of skills development, and potentially poor quality outcomes. Both situations have been a barrier to setting up robust supply chains and achieving confidence in performance.

The homes as power stations programme would scale-up in a manageable way that gives industry a longer term perspective to set up local supply chains. It will oversee performance, create a better understanding and develop skills. This can then be used to show the way to other regions and the UK as a whole.
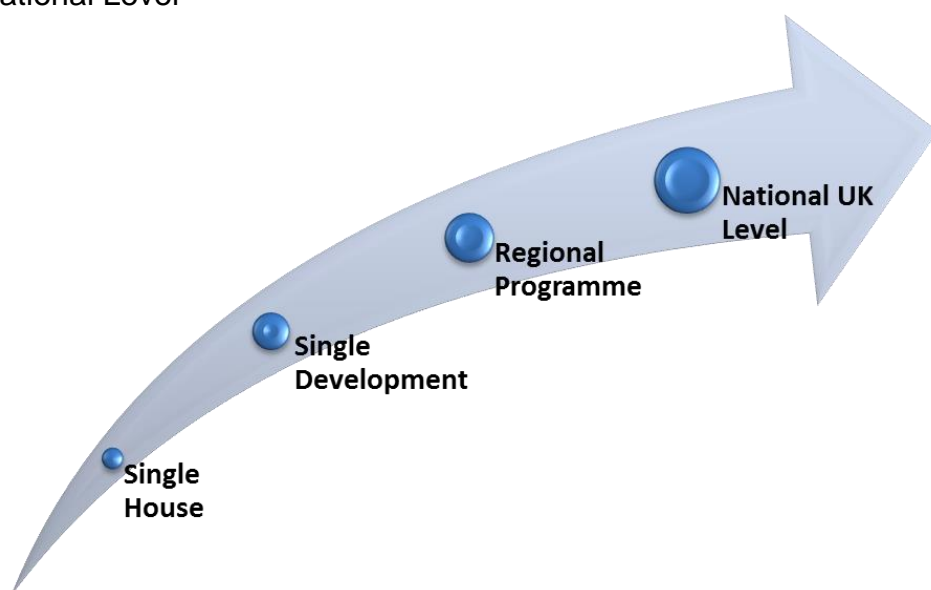
3) Project aim and SMART objectives

- *Delivering Innovative Smart Low Carbon Homes* will initiate a programme of new build and retrofitting existing houses aimed at providing energy efficient healthy homes, particularly targeting vulnerable groups, such as the fuel poor. The focus on housing will extend to health monitoring and broadband services. It will coordinate a local authority land bank for new houses, and initially LA and RSL housing stocks to develop large scale retrofits. It will develop supply chains and training within the region to support this activity.
- At the end of a five year period it will build up to a target of 1200 new houses per year, helping to fill the gap between the current rate of new build and the rate required to meet housing demand. Over this 5-year period it will also develop a steady-state programme of at least 3,600 retrofits a year. It will create jobs and supply chain industries, rising to an estimated 4,512 new jobs over a 5-year period.
- The programme will include a monitoring and quality activity, which will collect data to provide measurable outputs in relation to job creation and added value to the region in the form of house values, health improvements also

- The programme will manage expectations through increasing the number of new build and retrofits in line with developing supply chains and training, therefore maximising the local impact of economic activity and delivering multiple benefits to communities in the form of energy cost savings, improved health and economic growth (see details below in section 14).
- The activities will kick start a construction programme of £517,050,000 for an investment of £15 million (3% of the total programme value) by the SBCR City Deal.
- The project will be relevant not only to the Internet of Energy theme but also to the Internet of Health and Internet of Economic Acceleration.
- The time scale of the programme will develop numbers of new build and retrofit houses, starting with existing resources in the Region, and growing numbers over a 5-year period through expansion of the construction industry in the region.

The City Region has adopted a stepped approach model for delivering homes as power stations at scale and magnitude. To ensure that a qualitative programme is achieved and delivered at volume the following platforms have been identified to ensure that a progressive and structure advancement is taken towards a national level roll out.

- Single House (Solcer)
- Single Development (15 Homes)
- Regional Programme across the four Local Authorities
- National Level

During the five year regional SBCR housing programme the following mechanisms and components will be developed and established that will ensure that a structured and well co-ordinated scaled up approach is set in place that will enable a smooth transition and progression between the various platforms to a national level at volume:

- Creation of a specialist programme management vehicle
- Establishment of professional and informed workforce for programme delivery across relevant disciplines
- Formulation of effective partnership arrangements
- Quality assured design and construction processes adhering to and enhancing approved procedures
- Proven and established cost model

- Creation of a robust supply chain
- Established training programme
- Reporting and review protocols

The aforementioned elements will ensure longevity and the delivery of carbon neutral/houses as power stations for years to come on a regional scale contributing to future carbon and renewable generation targets.

The co-ordination and scalability of the delivery of homes as power stations will achieve far greater economic value than an ad-hoc approach. To summarise the City Deal will evolve from a single house to individual development regional approach to national UK level.

SBCR have already established a pilot programme through Neath Port Talbot in partnership with POBL and SPECIFIC ahead of the SBCR Low Carbon Housing Programme. The methodologies and the multi-discipline project management of buildings, energy storage, and occupance has already been established. A forward plan is also being prepared for the monitoring of outcomes, including health, occupier experience, supply chain capability and financial benefits.

> The homes as power stations programme would scale-up in a manageable way that gives industry a longer-term perspective to set up local supply chains. It will oversee performance, create a better understanding and develop skills. This can then be used to show the way to other regions and the UK as a whole.

4) Applying organisation including contact details and details of partners involved.

The programme will be led by a consortium of the four local authorities.

5) Strategic Fit.

The programme will provide a vital contribution to make to the wellbeing of future generations in Wales. It will drive actions to deliver against the goals set out in our new and historic *Wellbeing of Future Generations (Wales) Act*, tackling poverty and the global threat of climate change, building resilience for our communities, boosting green growth in the economy and addressing the health inequalities caused by poor energy efficiency.

Besides addressing the energy "trilemma" of affordability, security of energy supply and the need for decarbonisation, the strategy is designed to play a major role in driving economic growth – supporting the growth of green jobs and skills throughout Wales and increasing the competitiveness of our businesses.

To protect the long-term well-being of our citizens, we need to take action now to improve the energy efficiency of our homes, our businesses and our public sector. The energy system in Wales is on the threshold of considerable change with new energy, technology and low carbon transition opportunities. Ensuring that our buildings are energy efficient will be the bedrock of this transition.

The programme fits with societal needs for efficient and healthy housing with lower energy costs, and government targets for maintaining security of energy supply and reducing carbon dioxide emissions. In particular it:

- Builds on and will gain support from existing activities in the region, eg SPECIFIC's Buildings as Power Stations programme, large scale housing energy retrofits by Warm Wales Ltd.
- Links to Welsh Government policy and initiatives such as ARBED and NEST.
- Fits with the government's low carbon agenda.
- Meets the demand for more new houses.
- Reduces energy costs especially for fuel poor.
- Has links with the SBCR Health and Internet themes.
- Aligns with Future Generation policy and environment and energy policy.

The recent **A Smarter Energy Future for Wales March 2016** report recommends to urgently revise Building Regulations to ensure that all new houses are built to 'near zero' energy standards. Research by LCRI has shown that the cost of building an efficient, energy-positive house is similar to the existing cost of market and social housing. Retrofitting energy efficiency measures into existing housing stock has a crucial part to play, and Welsh Government schemes such as Nest and Arbed will be key to improvements.

The endeavor of the project proposal is to prove and implement homes as power stations and deliver at scale at a regional level, this is the challenge and the reason why the project is needed. There have been previous attempts and efforts that have met with limited success due to the nature of funding and the lack of a professional and coordinated approach.

6) Evidence of need / demand for the project

Market failure has led to (i) a low supply of new housing on the market which has leading energy demand management features (ii) low levels of take up on retrofitting in the private sector (iii) in terms of the public sector, the nature of housing improvements tends to be procurement led rather than individual household-centric, with little attention taken to the consumption patterns and demands of an individual household. (iv) few skills and only limited awareness of the role active energy management can have.

Specific evidence includes:

- House builders have been reluctant to integrate leading edge technology into housing developments on the grounds of costs and expected returns on investment.
- The provision of new housing is not achieving targets. In the SBCR some 2674 new houses are needed compared to the current completion rate of 1471.
- There are 323,274 housing units in SBCR, of which 28,000 are managed by LA's and 23,000 by RSL's. 87,954 are below SAP65, of which 15,000 are in the public sector.
- In SBCR 33,000 households are in fuel poverty many of which will not be adequately heating their houses, which has major impacts on health; In SBCR the public sector has around 2,500 fuel poor.
- Failure of the government 'green deal' to provide a financial model for retrofitting. Previous attempts to retrofit energy technologies (via for example the Green Deal) has failed because of (i) the poorly received financial package available to assist householders invest in energy saving technologies (ii) the energy products on offer focusing on replacing existing energy saving equipment such as boilers and windows rather than new approaches to energy management and consumption.
- Welsh households pay more for gas and electricity than the UK average, with average annual costs £725 for gas and £618 for electricity compared with UK averages of £715 and £584. Many fuel poor households are on prepaid meters, which further increases energy costs.
- The City Deal addresses these market failures and will:
- Show how energy efficient designed housing can be constructed in volume at a similar/same cost as a comparable house.
- Based on discussions with the Principality Building Society has explored providing increased mortgage lending for house buyers based on lower energy costs releasing greater spending power for households.

- Demonstrate the positive economics of retrofit in public sector housing
- Stimulate skill needs and demand for skills in new, value added construction activities
- Lead to the integration of good and practice in future housing scheme design and implementation as well as encourage new, household focused, models of retrofit and energy saving.
- Professionalise the housing retrofit industry with training and quality assurance processes.
- Link with a Regional ESCO to stabilise and reduce energy costs.

The key fundamental difference of delivering homes as power stations proposal is that what has happened before is not sufficient to make the changes needed both in terms of new build and retrofit housing schemes, to provide affordable, energy efficient, healthy housing and the significant step and cultural change to carbon neutral homes. Previous efforts have lacked the co-ordination, scale and ambition to enable effective delivery.

Additional information on market failure

For new build, the costs can be similar to standard house costs. The volume house builders will have to change/modify house types which they need encouragement to do. As end-users realise what is possible in terms of energy positive performance, the demand will increase.

Retrofit will cost more (although there will be concerted to reduce and drive down costs) and the multiple benefit argument will be used to include benefits of improved quality of life and health, affordable warmth, increased asset value, local job creation, as well as energy savings and CO_2 emission reduction (which are more related to government targets than user benefits).

7) Added Value
The added value of the programme will include:

- Construction (new build) impacts will lead to increased economic activity and GVA through this sector.
- Retrofit programmes will also lead to direct job generation and increased housing value.
- Lower fuel bills will lead to an increase in household wealth and expenditure.
- The estimated energy savings on 10,800 houses will be around £5.36 million per year from year 5. This will increase by around £2.4 million a year from year 5.
- Reduced fuel poverty will lead to (i) increased household expenditure elsewhere (ii) reduced 'poverty trap' making employment and training more desirable option for workless households.
- Every £1 invested in reducing fuel poverty has a £0.42 value to NHS. If we assume 30% of retrofits are in Fuel poverty then the NHS value from a £72 million per year programme is £24 million per year [1].
- It has been estimated that the social value of £1 investment in energy retrofits yields a return of £4 [1].
- The increase in value of the new build for the initial 5 year programme is estimated at £350 million (based on build costs).
- The increased value in the retrofit housing from applied measures will be £214 million.
- 4,512 jobs will be created as direct jobs and indirect jobs in the supply chain. It is important to develop local supply chains in the Region.

$(^1$ *Towards the delivery of a national residential energy efficiency programme Appendix Issue, 8 July*

2016, ARUPS.)

Reason why this proposal is not a devolved housing matter

The key justification for the programme not being a devolved matter are UK level carbon emission reduction targets and the requirement for a synchronised approach for achieving zero/low carbon housing that will be essential for Central Government to deliver the require reductions in carbon emissions.

A centralised and co-ordinated programme will achieve significant in-roads to decarbonisation of the homes in an efficient timescale, ensuring qualitative standards are achieved.

Another reason for a centralised governmental approach is to ensure that key fundamental issues are addressed in the delivery of large-scale zero/low carbon (homes as power stations) new build and retrofit homes.

With the abject failure of the green deal programme, it is vitally important that a tested and proven model and programme is implemented from a central datum across the principality to a UK level.

Centralised governmental approach will address the uncertainties by disseminating clear and easy to understand demonstration and delivery of smart low zero carbon housing programme to householders and all industry parties in a timely manner.

With the renewed vigour of zero carbon housing within Parliament, the SBCR programme will act as a pathfinder initiative.

8) Details of the activities/ outputs / results in the short, medium and long term

The programme outline and estimate of economic value and jobs is presented below. The SBCR investment in this programme is considered in the Financial section.

Years	1	2	3	4	5
New Build Number Houses	200	400	600	900	1200
Cost of build (120 TO 100K/house)	£24M	£46M	£66M	£94.5M	£120M
Jobs (2.4 jobs/house[1])	480	960	1,440	2,160	2,880
Retrofit Number Houses	250	750	1,500	2,000	3000
Total costs (£24k down to £20K (over 5 years) per house)	£6M	£17.25M	£33M	£42M	£60M
Jobs (22 / £1M costs)[2]	132	379.5	726	924	1,320

[1] *The industry estimates every new home built creates 1.5 direct house building jobs plus 0.9 jobs in the supply chain, or 2.4 direct and supply-chain jobs in total.*

[2] *The Energy Efficiency Industrial Forum (2012) states that on average, investing €1 million energy efficiency for buildings would create 19 new local and non-transferable jobs in the construction sector.*

The programme addresses both new build and retrofit schemes and the application of a whole house approach to both. The technologies for new build and retrofit overlap (e.g. energy savings, renewables and energy storage). The innovation will be in the development and integration of technologies, and in particular the connectivity across technologies and digitization and smart control, and the links with smart grids and future ESCo's. There will also be innovation in the associated design, planning and construction processes and performance quality checks. All this would have national (and potentially international) impact.

The purpose and requirements of each proposal type is outlined below:

Retrofit
At least 80% of the homes that will exist in 2050 have already been built, therefore the homes as power stations retrofit scheme will have a significant role to play in ensuring the climate change targets are met also assisting to alleviate fuel poverty and additional health benefits.

New build
Housing targets within the UK are to build one million new homes by 2020 and two and a half million homes over the next ten years. Using the Building as Power stations approach, a generation capacity reduction of 3GW can be achieved; equivalent to approximately to one new nuclear station or a substantial coal fired station.

The strategy is to establish an early impact through deploying the approach on a proportion of the planned 1,000 low carbon building programme. Retrofit can be more easily tackled once consumer confidence, supply chain capability and lower cost technology has been establish, this is considered the quickest route to overall impact.

The following retrofit and new build building projects have been programmed over the five year period of the SBCR proposal. Retrofit will account for 3,000 (71%) with new build accounting for 1,200 (29%).

Years	1	2	3	4	5
New Build Number Houses	200	400	600	900	1,200
Retrofit Number Houses	250	750	1,500	2,000	3,000

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efficient, healthy housing and the significant step and cultural change to carbon neutral homes. Previous efforts have lacked the co-ordination, scale and ambition to enable effective delivery.

Other projects have had limited success with increased scale, both for new build and retrofit programmes. For new build there has been uncertainty and lack of awareness of what is possible, e.g., the SOLCER house. For retrofit funding has been unsteady and somewhat disjointed, resulting in short term programmes and lack of skills development, and potentially poor quality outcomes. Both situations have been a barrier to setting up robust supply chains and achieving confidence in performance.

The key wider economic benefits flow from:

- Housing construction :
  - Details of construction costs per house (presently estimated at £120,000) per house.
  - Reduced timescales for construction and sale of houses (and generation of data).
  - Proportion of capital construction costs (CAPEX) which will be captured via local supply chains.
- The impact on domestic consumer patterns and fuel poverty (health improvement) on targeted households.
- The SBCD will kick start a construction programme of £517,050,000 for an investment of £15,000,000 (3% of the total programme value) generating an estimated 5,184 new jobs.

Details on how the private rented sector and owner-occupier properties will benefit from this programme.

To summarise the private rented sector and owner-occupier properties will benefit from the programme by increased asset value, lower energy costs, improved health and well-being. Many private sector landlords are committed to improving quality of life for their tenants. More expansive details how the private rented sector and owner-occupier properties will benefit from the programme are outlined below.

Private rented sector

The benefits to private landlords will be the attractiveness to prospective tenants of an energy efficient, carbon neutral cost effective household. Additionally the applicable generation technologies will be a potential source of income generation where incentives exist. They will also address poor quality housing via the retrofit programme.

Key benefit to tenants will be the cost effectiveness of the electricity and heating costs of the carbon neutral house as power stations helping to alleviate fuel poverty within a sector where fuel poverty is prevalent. Additionally tenants will be protected from energy price increases as a consequence of the volatility of energy markets.

Existing owner-occupier properties

The retrofit element of the programme will assist private householders to improve the energy efficiency and renewable generation of their homes. Existing owner occupier properties will benefit from the following aspects:

- Reduced household energy costs
- Achieve affordable warmth
- Creation of healthier homes
- Improved household energy and carbon performance
- Increased in householders disposable income
- Discounted mortgage rates for zero carbon homes
- Potential positive income flow
- Alleviation of fuel poverty
- Adoption of sustainable cost effective lifestyle
- Improved quality of internal living and environment and comfort conditions
- Increased asset value of the property
- Protection for private householders from energy price increases as a consequence of the volatility of energy markets
- Provision of more self-sufficient electricity and heating systems increasing the security of both electricity and heat provision
- The programme will ensure that installed low/zero carbon and renewable systems will be installed to high qualitative standards

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- Increased in householders disposable income
- Discounted mortgage rates for zero carbon homes
- Potential positive income flow
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- Adoption of sustainable cost effective lifestyle
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- Provision of more self-sufficient electricity and heating systems increasing the security of both electricity and heat provision
- The programme will ensure that installed low/zero carbon and renewable systems will be installed to high qualitative standards

Wider economic benefits:

To summarise the wider economic benefits of the delivery of homes as power station can be categorised into the following sectors:

- Householders
- Smart/Intelligent
- Construction
- Supply Industry
- Local Authorities
- Housing Providers
- Health Care Sector
- Central & Regional Government

Sector	Benefit
Householders	a) Reduced household energy costs b) It has been estimated that the social value of £1 investment in energy retrofits yields a return of £4 c) Reduced fuel poverty will lead to (i) increased household expenditure elsewhere (ii) reduced 'poverty trap' making employment and training more desirable option for workless households

	d) Provide protection against future energy market price increases
Smart/Intelligent	a) Enable householders to implement smart systems in conjunction with the low/zero carbon systems to achieve full optimisation and make use of smart energy tariffs b) Provide capability for identifying energy cost wastage
Construction	c) Construction (new build) impacts will lead to increased economic activity and GVA through this sector d) Retrofit programmes will also lead to direct job generation and increased housing value
Supply Industry	a) Increased productivity and job security b) Address skills shortage c) 5,184 jobs will be created as direct jobs and indirect jobs in the supply chain
Training	a) Increase in the uptake of university research support (FLEXIS & SPECIFIC) b) Training provision for relevant discipline/trades at local colleges
Housing Providers	a) Increased sales and rentals b) Tenants can afford to rent c) Helps to achieve and satisfies quality housing criteria d) Long term investment
Health Care Sector	a) Improve the health of occupants helping to reduce number of householders requiring care and the consequential financial impact b) Every £1 invested in reducing fuel poverty has a £0.42 value to NHS. If we assume 30% of retrofits are in Fuel poverty then the NHS value from a £72 million per year programme is £24 million per year
Central & Regional Government	a) Reduced carbon emissions b) Lower environmental impact c) Assist in the delivery of carbon reduction targets e) Helps achieve security of supply on a regional level f) Reduces the demand on electricity and gas national grid systems

The co-ordination and scalability of the delivery of homes as power stations will achieve far greater economic value then an ad-hoc approach. The City Deal will evolve from a single

house to individual development regional approach to national UK level.

The GVA figures from Swansea University will provide further quantitative analysis on the wider economic benefits of the project proposal.

- **Wider economic benefits**

Localised benefits will be replicated at scale through the advancement at each platform. Wider benefits of the programme will be the delivery of UK level carbon emission reduction targets and the requirement for a synchronised approach for achieving zero/low carbon housing that will be essential for Central Government to achieve the required reductions in carbon emissions.

A centralised and co-ordinated programme will achieve significant in-roads to decarbonisation of the homes in an efficient timescale, ensuring qualitative standards are achieved. Another reason for a centralised governmental backed approach is to ensure that key fundamental issues are addressed in the delivery of large-scale zero/low carbon (homes as power stations) new build and retrofit homes.

It is vitally important that a tested and proven model and programme is implemented from a central datum across the principality to a UK level. Centralised governmental endorsed approach will address the uncertainties by disseminating clear and easy to understand demonstration and delivery of smart low zero carbon housing programme to householders and all industry parties in a timely manner.

Find below analysis on the main energy and cost beneficial impacts of the SBCR Homes as Power Stations programme at the following levels:

- Regional (SBCR)
- Principality/National
- UK Level

Scale	Housing Stock	Energy Savings		Cost Savings		Jobs	
		MWh		£Million		x1000	
		Existing	New	Existing	New	Retrofit	New Build
SBCR	323,274	33,480.0	11,160.0	33.5	0.9	1.6	2.9
WALES	1,405,959	145,608.7	48,536.2	145.6	4.0	6.9	12.5
UK	28,249,959	2,925,718.2	975,239.4	2925.7	79.7	138.4	251.7

- **Dissemination of project knowledge and insights with the rest of Wales and the UK**

There will be a dedicated knowledge and information sharing plan which will be built into the mobilisation and implementation programme. The following mechanisms will be used a conduit for the dissemination of the benefits of the scheme, elements that have worked well and lessons learnt:

- Dedicated knowledge and insights sharing plan
- Website created which will disseminate of key information on the project
- Provision of periodic workshops/seminars
- Progress reports issued at key milestone of the rollout programme
- Creation of demonstrator homes/hub where the public can walk in / also may double up as a council interface within each main town within the SBCR Local Authorities (where possible) perhaps in similar vein to the SOLCER House
- Dedicated conferences
- SPECIFIC which is a national innovation centre and will assist the SBCR with information dissemination across the UK
- Work closely with Universities and FLEXIS research programme in particular
- The project will aim to work closely with organisations such as Innovate UK, Energy Saving Trust, Constructing Excellence and BEIS etc. to ensure that there is national coverage of the programme

The Low Carbon Housing Programme will critically include data and information capture through effective monitoring to measure performance make available a knowledge base of lessons learned and the methodology that can be used to feed into national roll out.

Key elements of the project that will be disseminated will consist of:

a) Publish feasibility & design vision
b) Project management and implementation
c) Construction techniques/build-ability
d) Cost model for new build and retrofit
e) Life cost cycle analysis & maintenance strategy

f) Social science review (User integration/engagement and dissemination of user guidance)
g) Whole house/development metering strategy
h) Real-time monitoring & performance optimisation
i) Structured independent reporting of each development's performance
j) Lessons learnt, report written on what actually went well and issues/problems identified during the rollout of the programme
k) Low carbon and technology review
l) Predicted energy/carbon performance vs actual

Benefit/Impact	Wales – Lo/med/hi	Description	UK – Lo/med/hi	Description
New Housing	Hi	Pioneering innovative energy positive housing.	Hi	Extending the activity UK wide and further.
Retrofit housing	Hi	Development of a viable technical and financial model for housing energy retrofits.	Hi	Extending the activity UK wide and further.
Smart connections	Hi	Integrating energy efficiency and renewable energy generation with Internet connectivity and health.	Hi	Extending the activity UK wide and further.

How this project is innovative

Homes as power stations is a ground breaking innovative yet practical application for the delivery of a domestic smart low carbon improvement programme. The focal aim is to achieve modern, smart energy system homes within the region, that will provide safe, efficient, clean and affordable homes, addressing the Energy Trilemma which is one of the most pressing universal themes and global challenges of our time, to support communities and industries via project delivery. Accomplishing a programme which is innovative and UK leading, making the most of the region's assets and talent stimulating economic growth.

The innovation will occur in the development and integration of technologies, and in particular the connectivity across technologies, digitization, smart control and the links with smart grids. There will also be innovation in the associated design, planning and construction processes and performance quality checks. All these aspects will significantly alter the innovative landscape on a national and potential international scale.

The homes as power stations programme is not just about the provision of homes, the programme will deliver multiple aspects which will make the programme unique and innovative they are:

- Assist in the delivery of digital infrastructure aligned to the Integration of smart/intelligent technology into carbon neutral homes
- Assist in the reduction of fuel poverty/affordable warmth improving health and well being
- Create centre of excellence for shared expertise and lessons learnt
- The homes as power stations programme will be aligned to fibre-optical communication that will produce provision and tested and quality delivery model in Swansea/Wales that will be replicable across the UK and create a world leading intelligent, zero/low carbon sector. This aligned to BREXIT will create a valuable product that could offered across the world in similar vain to Passive houses
- Development of highly technologically advanced and skilled large scale supply chain
- Rolling out of a regional, national, government aligned supported training and education programme for industry professionals and trades
- Increase promotion and demand of quality smart zero and low carbon houses providing increased levels of understanding and skills within the building, energy and data/communication sectors
- Unprecedented scale and co-ordination of a carbon positive programme across significant geographical area
- Assist in the delivery of National CO_2 emissions reduction targets
- Create standardised smart carbon neutral design solutions
- Provision of a vehicle that will further development low carbon technology utilised within the programme
- Creation of specific programme vehicle for delivering large scale affordable low and zero carbon solutions
- Provision of smart adaptive functionality that will deliver well-being benefits to occupants
- Proven test bed led by publically recognised and trusted organisations, creation of a trusted brand
- Creation of self-optimising households that achieves optimum levels of consumption and generation aligned to required internal environment requirements
- Increased security supply at local (household) level
- Provision of an analytical platform for data management (this will be the CENGS building and data platform), enabling the manipulation of large volumes of information. Also creating analytical visualization enabling the identification of patterns and relationships in data that weren't initially evident

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- Creation of new technology for example, optimisation control devices that balance the various generation and storage equipment and the integration to the user interfaces
- Creation of smart sensor and metering network both internally and externally with the latter linked to smart grid functionality
- Innovative financial mechanisms that provide zero/carbon mortgages engaging with building societies and banks to offer discounted rates to encourage and stimulate uptake of low and zero carbon homes

To summarise in conjunction with the Digital Infrastructure proposal the Homes as Power Stations project is part of creating the necessary infrastructure and network to apply the internet of things to the modernisation of our ageing energy infrastructure helping to tackle 21st century challenges of delivering technologically advanced, safe, reliable and affordable energy assisting to reduce fuel poverty whilst creating jobs through the delivery of smart/intelligent carbon positive homes.

SPECIFIC Is a National Innovation Centre and has pioneered the "Building as Power" Stations model and has demonstrated the concept at a whole building scale. The additionality of the SBCR Low Carbon Project is to deploy this approach at large scale in the community and in synergy with other community initiatives. The program allows the SBCR to demonstrate the benefits of the synergy between the building as Power Stations approach at a community scale in a cross cutting way:

- Health: through a substantial reduction in fuel poverty
- Community energy and business models through sharing embedded generation and stored energy between buildings
- Transport and pollution: through combining EV and EV storage to grid through smart control
- Smart cities: by using high level "big data" to optimise energy flows across the community

9) Cross Cutting Themes
There will be interaction with other themes:

- Both new and existing housing will be IT enhanced, with smart meters and test bed for demand-side management.
- Developing economic activities and infra-structures to support housing within the region and export to other regions.
- Housing to reduce fuel poverty and provide improved well-being and health.
- The project will lead to an increase in demand for relevant skills in construction and retro-fit installation

There will be Inter-connection and scalability with the project contributing to the cross cutting themes of skills and connectivity:

- Application of innovative technology at scale.
- Use of technology including the Internet of Things and Big Data to gather information from homes to optimise energy supply and efficiency
- Sustainability through (i) lower heating bills (ii) lower usage of non-renewables
- A region-wide programme will enable local and regional supply chains to learn necessary construction/data handling and processing skills necessary to work on future similar builds, this gives local companies a competitive advantage.

- Demands for skills will have significant impact on (i) employment of young people across South West Wales via apprenticeship routes (ii) upskilling local construction companies and supply chains across design and build phases of construction projects (iii) encourage schools to promote STEM subjects and opportunities to school pupils at GCSE and A-Level, enabling students to become more competitive in the market place.

Synergy with the digital infrastructure project

There will be clear linkage and synchronisation to the digital and health themes of the SBCR programme. Intelligent and smart functionality will be integrated into new build and refurbished households within the programme to monitor and optimise the low carbon systems within each household to process the large quantity of data produced. Analytical infrastructure platforms will be implemented to ensure effective control and optimisation, the CENGS proposal will be utilised to deliver digital requirements of the housing proposal.

Future energy systems aim to be end-user centred, which will require connectivity through smart meters and demand side control, as well as increasing end-user awareness and legibility (easy to use). The programme will focus on innovation in this area, for example with industry partners such as SAP, as well as energy supply companies.

The same digital infrastructure can be used to develop well-being in the home related applications, well-being surveillance/monitoring, social care alarms, air quality monitoring/alarms (Internet of well-being theme) and link to proposed broadband developments.

> To summarise homes as power stations will deliver low carbon intelligent homes which will provide self-adaptive households that will fully optimise efficiency and consequentially improve the health and living standards of occupants.

10) Stakeholder Engagement

Full support from the four LA's following discussions of the proposal. There have also been extensive discussions with industry and government partners who are committed to economic development in the Region. These include National Grid, Wales and West Utilities, WPD, RWE, Welsh Water, Warm Wales Ltd, Local Authorities, Housing Developers.

The following provides evidence and detail of private sector engagement and support:

- Private house builders will have to comply with 2019/2020 EPBD for nearly zero carbon houses

- Recent meeting with house builders detected change of attitude and more positive approach to zero carbon houses

House builder organisations are receptive to the concept and delivery of Homes as Power Stations, ultimately they will have to meet legislative standards and anticipated future customer demand.

Private Sector engagement / commercialisation of the technology

The programme will initially focus on the public sector to develop and demonstrate the approach. At the same time there will be engagement with the private sector, e.g. mortgage lenders, volume house builders, private sector landlords, etc., to understand their concerns, and work together with them to achieve private sector buy-in. This work is already in progress. We have met with HBF and Mortgage lender and have held a workshop with private and public house builders. We will also continue to work closely with the Welsh Government in relation to their programmes for new build and retrofit, and how planning and building regulations can support.

The dialogue with private sector will seek to encourage the engagement and take up of new build and retrofit homes as power stations via the following drivers:

- Cheaper household energy bills
- Increased value of the asset
- Healthier living environment
- Protection against future energy market price increases
- Potential revenue stream from electricity generation
- Discounted mortgage rates for homes as power stations
- Support programme to ensure optimisation of household technology on an operational and maintenance perspective
- Private house builders will have to comply with 2019/2020 EPBD for nearly zero carbon houses
- Lower household carbon footprint
- Tailored awareness campaign with user friendly terminology

Structured dialogue with large-scale house builders will be made to ensure carbon neutral homes are adopted as standard. In recent meetings with house builders, there has been a change of attitude and more positive approach to the delivery of zero carbon houses. House builder organisations are becoming more receptive to the concept and delivery of Homes as Power Stations, ultimately they will have to meet legislative standards and anticipated future customer demand.

The commercialisation of the technology will be delivered via SPECIFIC which is a programme designed purposely to develop and evolve low/zero carbon technology from the conceptual stages through to the first generation testing and consequential full-scale commercialisation and deployment.

An additional catalyst to stimulate the adoption within the private sector will be the configuration of the financial model that will front load the public sector in the early stages of the programme to demonstrate and prove the effectiveness and increase the uptake within the private sector.

Innovate UK

Initial interaction with Innovate UK has been facilitated by Specific. Further, more detailed engagement will take place during the mobilisation stage of the programme with a focus on the technological aspects of the homes as power stations.

11) Delivery

The main delivery will be carried out by the four Local Authorities.

A detailed mobilisation programme plan is currently being formulated and scheduled for completion within the next two months, which will define an exact (timeline) programme with key milestones for the scheme. The pilot housing development at Neath will commence on site during September/October 2017. Currently in discussion with a range of developers and RSLs to formulate a privately financed housing development joint venture vehicle in conjunction with the SBCR Local Authorities

In terms of securing contractors for new build proposals, contractors will be evaluated and tested for suitability for the delivery of smart carbon neutral innovative housing solutions. Structured dialogue with large-scale house builders and specialist installers will be made to ensure carbon neutral homes are adopted as standard. In recent meetings with house builders and contractors, there has been a change of attitude and more positive approach to the delivery of zero carbon houses. House builder organisations, contractors, installers are becoming more receptive to the concept and delivery of Homes as Power Stations, ultimately they will have to meet legislative standards and anticipated future customer demand.

Risk	Likelihood	Impact	Mitigation	Who will lead?
Not achieving new build targets.	Medium in the early stages, but low after	High	Ensure that the LA's provide a land bank. Ensure that the right levels of skills and experience are applied through industry engagement. Soft start proposed in run up to programme.	LA consortium
Not achieving Retrofit targets.	Medium in the early stages, but low after	High	Ensure that the LA's and RSL partners provide housing stock for retrofit. Link with other housing improvement programmes to optimise efficiency of delivery. Ensure that the right levels of skills and experience are applied through industry engagement. Soft start proposed in run up to programme.	LA consortium

Not achieving smart connectivity and health benefits.	medium	medium	Link with other themes to integrate broadband services	LA consortium linked to other themes

Exit strategy and sustainability

The SBCR City Deal homes as power stations exit strategy will occur within the fifth year of the project programme after this point it will become autonomous from an operational perspective and financially self-sufficient.

At this stage the mechanisms and components listed below will have been developed and established during the five year programme and will ensure that a structured well co-ordinated exit strategy is achieved:

- Quality assured design and construction processes adhering to approved procedures
- Proven and established cost model
- Creation of a robust supply chain
- Delivered liveable zero carbon homes
- Formulation of effective partnership arrangements
- Established training programme
- Localised programme implemented on a regional scale
- Establishment of professional and informed workforce for programme delivery across relevant disciplines

The aforementioned elements will ensure longevity and the delivery of carbon neutral/houses as power stations for years to come on a regional scale contributing to future carbon and renewable generation targets.

12) Financials

Funding is needed to:

- Invest in supply chains to ensure economic benefits from supply chain activity in the Region.
- Test-bed and monitor early stage
- Develop quality assurance procedures
- Help secure land
- De-risk investment

The specific cost breakdown is as follows:

- Programme management: for both new build and retrofit programmes: to aquire land bank; Identify retrofit projects; develop supply chain activity; develop quality assurance procedures to ensure that both new build and retrofit houses achieve their design performance in practice; and, liaise with HE and industry on skills and training (£1M).
- To fund a trial new build development of around 15 housing units. This will test the rollout of the energy positive houses at scale (£2.5M).
- To provide a sliding scale of financial assistance for retrofits in order to support them whilst costs are being reduced through upscaling.
- To provide monitoring and evaluation over a 5 year period to provide feedback to the programme and disseminate to others (£0.8).

- Invest in supply chains that can manufacture the construction components within the region.
- Throughout the first 5 years the cost of both new build and retrofit will be reduced through scale-up activities and reflecting lower component costs.

The total private funding associated with new builds amounts to £281m and retrofits £101m giving a total private sector funding of £382m for the total project, with public sector funding of £119m. The SBCR ask £15m, was the indication given for this project from the Oversight Board.

The main source of match funding availability will be via house building construction companies, householders, existing and proposed European funding (e.g. Arbed), RSL private equity and social housing grant input from public funds.

PROGRAMME COSTS

The components of the City Deal funding input (£15,000,000) are retrofits (£8,250,000), Supply Chain Development (£4,640,000), New Build (£1,160,000) and Core Funding (£1,800,000).

[1] Costs based on social housing standards. Private sector developers may be able to reduce the cost through scaling and supply chain agreements.

Programme strand:	Internet of Energy (Efficiency)					
Financial summary*	2017/18	2018/19	2019/20	2020/21	2021/22	TOTAL
Total costs (£)	32,400,000	66,150,000	100,400,000	137,500,000	180,600,000	517,050,000
City Deal input (£)	2,900,000	4,400,000	4,400,000	3,000,000	300,000	15,000,000
Private Sector (£)	23,075,000	47,675,000	73,050,000	102,600,000	136,500,000	382,900,000
Other public (£)	6,425,000	14,075,000	22,950,000	31,900,000	43,800,000	119,150,000

* Includes an estimated 40% new houses developed by public sector.

Core Funding Annual Breakdown 2017 to 2022

_2017/18_	_2018/19_	_2019/20_	_2020/21_	_2021/22_	_TOTAL_
_£360,000_	_£360,000_	_£360,000_	_£360,000_	_£360000_	_1,800,000_

Core funding expenditure will consist of the following elements:

- Project management team vehicle
- Accommodation
- Programme review, testing, evaluation and reporting
- Qualitative assessment vehicle
- Test bed development across four Local Authorities
- Data and health analytics
- Knowledge dissemination/sharing
- Monitoring and evaluation
- Supply chain development
- Setup of LA land bank arrangement

Cost figures will be refined during the mobilisation stage.

Summary of GVA related value

The following is a summery of the main GVA related information contained in the above Template.

Project job creation: 5,184 new jobs related to the construction programmes. There will also be an estimated 6 new jobs associated with programme management and quality assessment.

Job creation broken down by sector:
Jobs in the construction industry (approx. 75%) and supply chains (approx. 25%).

Wider benefits overview

- Construction (new build) impacts will lead to increased economic activity and GVA through this sector.
- Retrofit programmes will also lead to direct job generation and increased housing value.
- Lower fuel bills will lead to an increase in household wealth and expenditure.
- The estimated energy savings on 10,800 houses will be around £5.36 million per year from year 5. This will increase by around £2.4 million a year from year 5 onwards.
- Reduced fuel poverty will lead to (i) increased household expenditure elsewhere (ii) reduced 'poverty trap' making employment and training more desirable option for workless households.
- Every £1 invested in reducing fuel poverty has a £0.42 value to NHS. If we assume 30% of retrofits are in Fuel poverty then the NHS value from a £72 million per year programme is £24 million per year [1].
- It has been estimated that the social value of £1 investment in energy retrofits yields a return of £4 [1].
- The increase in value of the new build for the initial 5 year programme is estimated at £350 million (based on build costs).
- The increased value in the retrofit housing from applied measures for the initial 5 year programme is estimated to be £214 million.
- 5,184 jobs will be created as direct jobs and indirect jobs in the supply chain. It is important to develop local supply chains in the Region.

(*[1] Towards the delivery of a national residential energy efficiency programme Appendix Issue, 8 July 2016, ARUPS.*)

Project costs, investment profile and sources of funding, by year.
The SBCD will kick start a construction programme of £517,050,000 for an investment of £15 million (3% of the total programme value). The yearly profiles are presented in the tables above.

Exit strategy for the project to ensure it grows and is sustainable in the long term

The SBCR City Deal homes as power stations exit strategy will occur within the fifth year of the project programme after this point it will become autonomous from an operational perspective and financially self-sufficient.

At this stage the mechanisms and components listed below will have been developed and established during the five year programme and will ensure that a structured well co-ordinated exit strategy is achieved:

- Quality assured design and construction processes adhering to approved procedures
- Proven and established cost model
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- Established training programme
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The aforementioned elements will ensure longevity and the delivery of carbon neutral/houses as power stations for years to come on a regional scale contributing to future carbon and renewable generation targets.

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Further detail about the delivery model of the 'not-for-profit' ESCO and how profits will be generated and returned to projects

The potential of incorporating an Energy Supply Company (ESCO) within the project programme will be evaluated during the project development stages and a decision taken whether to adopt across the City Region or not.

If a decision is taken to setup an energy supply company it would be centred around providing a localised independent energy supplier. The focal aim will be to provide household customers throughout the SBCR with cost effective gas and electricity prices via a stable price mechanism. The SBCR ESCO will operate in the same way as a typical energy supplier model. The ESCO will procure in bulk on the open market via the National Grid and then sell it onto SBCR customers.

The profit that the ESCO would generate from the supply energy will be used to cover operation overheads with profits recycled and assigned into specific projects and activities that will assist the development and delivery of the carbon neutral house as power stations programme.

Further detail on how the private sector will be encouraged to adopt energy positive houses and the commercialisation of the technology.

The private sector will be encouraged to engage and take up new build and retrofit homes as power stations via the following drivers:

- Cheaper household energy bills
- Increased value of the asset
- Healthier living environment
- Protection against future energy market price increases
- Potential revenue stream from electricity generation
- Discounted mortgage rates for homes as power stations
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An additional catalyst to stimulate the adoption within the private sector will be the configuration of the financial model that will front load the public sector in the early stages of

the programme to demonstrate and prove the effectiveness and increase the uptake within the private sector.

Further detail on how the private rented sector and owner-occupier properties will benefit from this programme

Detail how the private rented sector and owner-occupier properties will benefit from the programme are outlined below.

Private rented sector

The benefits to private landlords will be the attractiveness to prospective tenants of an energy efficient, carbon neutral cost effective household. Additionally the applicable generation technologies will be a potential source of income generation where incentives exist.

They will also address poor quality housing via the retrofit programme.

Key benefit to tenants will be the cost effectiveness of the electricity and heating costs of the carbon neutral house as power stations helping to alleviate fuel poverty within a sector where fuel poverty is prevalent. Additionally tenants will be protected from energy price increases as a consequence of the volatility of energy markets.

Existing owner-occupier properties

The retrofit element of the programme will assist private householders to improve the energy efficiency and renewable generation of their homes. Existing owner occupier properties will benefit from the following aspects:

- Reduced household energy costs
- Achieve affordable warmth
- Creation of healthier homes
- Improved household energy and carbon performance
- Increased in householders disposable income
- Discounted mortgage rates for zero carbon homes
- Potential positive income flow
- Alleviation of fuel poverty
- Adoption of sustainable cost effective lifestyle
- Improved quality of internal living and environment and comfort conditions
- Increased asset value of the property
- Protection for private householders from energy price increases as a consequence of the volatility of energy markets
- Provision of more self-sufficient electricity and heating systems increasing the security of both electricity and heat provision
- The programme will ensure that installed low/zero carbon and renewable systems will be installed to high qualitative standards

V 16/02/2017

Swansea Bay City Region – City Deal – Business Case

Project Title
SBCR Digital Infrastructure (Phase 1 – City Deal)

Project Sponsors (Lead Partner)
Partner Local Authorities and Private Sector

Summary

The SBCR Digital Infrastructure project has been developed to support economic and skills development throughout the Internet Coast. It aims to initiate a longer-term and far broader investment into regional digital infrastructure by building a unique innovation ecosystem and associated markets, and addressing market failures which currently prevent such development from occurring.

The proposed Digital Infrastructure will integrate the Internet Coast Themes into a seamless innovation ecosystem, using the region's assets and diversity to support indigenous and inward-investing opportunities. The relative rurality in parts of Pembrokeshire and Carmarthenshire contrast with the urban and industrial environments of Swansea and Neath Port Talbot. This provides innovators with a wide range of conditions to develop solutions for a variety of markets. Building upon foundations of existing regional digital infrastructure and leveraging the activities of the wider Internet Coast themes, the project will involve;

- **Creation of a SBCR Community** through an interconnected 'network' (akin to an extended EduRoam)–providing a regional platform for innovation, education and citizen access to services. This will use diverse underlying infrastructures to create seamless region.
- **Targeted fixed-line improvements** to break market failure, in sectors/sites aligned with Internet Coast Themes and wider economic benefit. Opening up the region to a plurality of suppliers, leading to effective sustainable market dynamics.
- **Tactical use of existing radio-based deployments** (including microwave and Wi-Fi) to connect key business sites where there might currently be significant barriers such as high costs of delivering fibre-based network connectivity **with focus on Internet Theme and wider economic benefit**. Doing so provides the ability for SMEs to establish premises in and create employment opportunities in business parks and enterprise zones sites where there is potential for business growth.
- **Connection with extra-regional digital assets** including bandwidth and datacentres. This will make use of existing and potential investments such as the Newport DataCentre and proposed Jupiter connection to maximise regional capabilities without duplicating efforts.
- **Establish Internet Theme Testbeds** to support innovation with 5G mobile connectivity and disruptive technologies such as Internet of Things (IoT) within Theme-related sectors.
- **Creation of market conditions via planning consent**, requiring new (including Internet Coast) proposals, and redevelopment of existing sites to incorporate infrastructure fit for future use and which extends connectivity beyond current reach.

The project provides strong synergies with the wider Internet Coast project portfolio, though weak dependencies, allowing alignment with developing clusters across Economic Acceleration, Health & Wellbeing, and Energy. Noting the almost infinite investment opportunity alongside chronic regional deficiencies within the scope of digital infrastructure, the project has been defined simply to catalyse further investment and provide uplift centred around the above targeted Themes.

Through building critical mass in markets and innovation activities, the project aims to attract a plurality of digital infrastructure firms, in an approach effectively exploited in other regions (for example, York, Newport and Glasgow). However, the unique combination of opportunities provided within the Internet Coast takes this further with a testbed environment supporting multi-sector interdisciplinary activity. For example, reaching more effectively into manufacturing hotspots will create conditions for *Internet of Health & Wellbeing* HTC medical device innovations to be taken to market through regional *Factory of the Future* virtual value and supply chains.

In parallel to physical infrastructure, the knowledge and innovation networks of each Internet Theme will be drawn together through a Community consisting of private and public sector organisations and Higher and Further Education institutions. This Community will draw upon existing skills and experience in the development and management of network overlay services on existing infrastructure. A key benefit will be to enable mobile working through partnerships with existing public Wi-Fi service providers and the creation of digital districts, all underpinned by seamless authentication to the network using tried and tested Wi-Fi roaming solutions like eduroam and emerging services like govroam. This will provide pervasive access to networks for public sector works, those in education as well as the citizen.

Investment from City Deal: £25m
Investment from other Sources: £30m

Programme Strand

Internet of Economic Acceleration

Finances £k	2017/18	2018/19	2019/20	2020/21	2021/2022	2022/23	2023/24	Total
Total Costs	15,000	20,000	20,000					55,000
City Deal	10,000	10,000	5,000					25,000
Private	5,000	10,000	15,000					30,000
Other Public								

Project Contact

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Email: **r.m.clement@swansea.ac.uk**

1) Project Title

2) Executive Summary

The SBCR Digital Infrastructure project has been developed to support economic and skills development throughout the Internet Coast. It aims to initiate a longer-term and far broader investment into regional digital infrastructure by building a unique innovation ecosystem and associated markets, and addressing market failures which currently prevent such development from occurring. Building upon foundations of existing regional digital infrastructure and leveraging the activities of the wider Internet Coast themes, the project will involve;

- **Creation of a SBCR Community** through an interconnected 'network' (akin to an extended EduRoam) providing a regional platform for innovation, education and citizen access to services. This will use diverse underlying infrastructures to create seamless region.
- **Targeted fixed-line improvements** to break market failure, in sectors/sites aligned with Internet Coast Themes and wider economic benefit. Opening up the region to a plurality of suppliers, leading to effective sustainable market dynamics.
- **Tactical use of existing radio-based deployments** (including microwave and Wi-Fi) to connect key business sites where there might currently be significant barriers such as high costs of delivering fibre-based network connectivity **with focus on Internet Theme and wider economic benefit**. Doing so provides the ability for SMEs to establish premises in and create employment opportunities in business parks and enterprise zones sites where there is potential for business growth.
- **Connection with extra-regional digital assets** including bandwidth and datacentres. This will make use of existing and potential investments such as the Newport DataCentre and proposed Jupiter connection to maximise regional capabilities without duplicating efforts.
- **Establish Internet Theme Testbeds** to support innovation with 5G mobile connectivity and disruptive technologies such as Internet of Things (IoT) within Theme-related sectors.
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The project provides strong synergies with the wider Internet Coast project portfolio, though weak dependencies, allowing alignment with developing clusters across Economic Acceleration, Health & Wellbeing, and Energy. Noting the almost infinite investment opportunity alongside chronic regional deficiencies within the scope of digital infrastructure, the project has been defined simply to catalyse further investment and provide uplift centred around the above targeted Themes.

Through building critical mass in markets and innovation activities, the project aims to attract a plurality of digital infrastructure firms, in an approach effectively exploited in other regions (for example, York, Newport and Glasgow). However, the unique combination of opportunities provided within the Internet Coast takes this further with a testbed environment supporting multi-sector interdisciplinary activity. For example, reaching more effectively into manufacturing hotspots will create conditions for *Internet of Health & Wellbeing* HTC medical device innovations to be taken to market through regional *Factory of the Future* virtual value and supply chains.
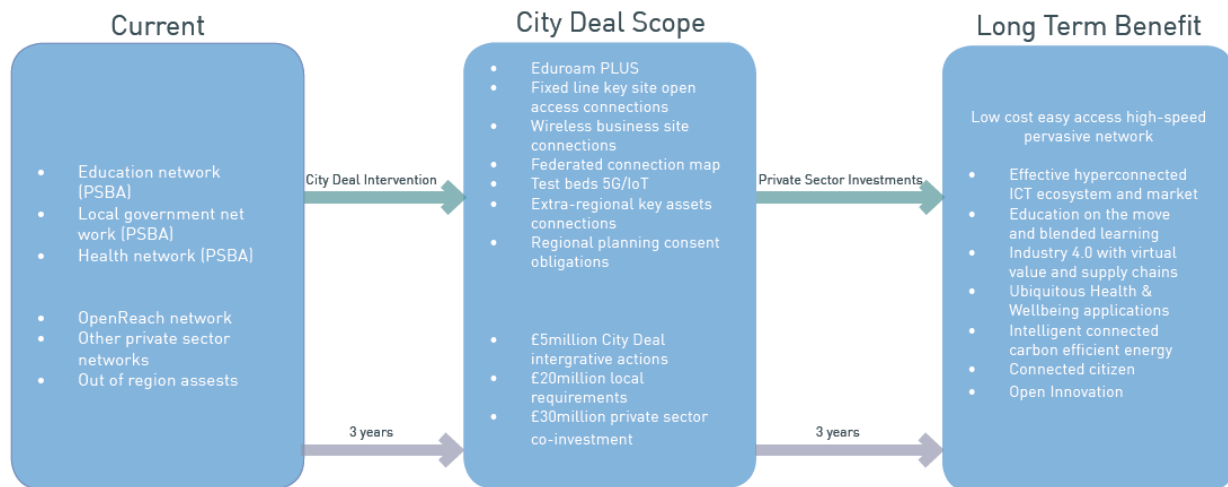
The long-term impact of the Digital Infrastructure project will be to build a market that levers significant private sector investment into region-wide infrastructure. This will support economic development, skills development and improved social inclusion. Closing this gap will result in additional employment of 780 jobs and GVA productivity improvements worth £270m.

3) Project Description

The Digital Infrastructure (Phase 1) Project has been developed to initiate a longer-term and far broader investment into regional digital infrastructure by building a unique innovation ecosystem and associated markets, and addressing market failures which currently prevent such development from occurring. The project involves two core principles which underpin its impact and sustainability.

- *Open Access Open Innovation*: Infrastructure created within the project will be application/user agnostic and made available to the broadest possible userbase. This is intended to promote collaboration and innovation across each of the Internet Themes and wider economy.
- *Co-investment*: Phase 1 projects will co-invest with the private sector (users and operators) to create demand and correct market failure. Co-invested infrastructure will be used as a platform for further development, reaching further into connected sites/communities.

The project will attract co-investment from private sector by de-risking an initial portfolio of activities aligned with the Internet Coast Themes, as outlined in the figure below;

The above presents how the City Deal Digital Infrastructure will lead through to longer-term private sector-led investment and benefits, through individual project strands as follows;
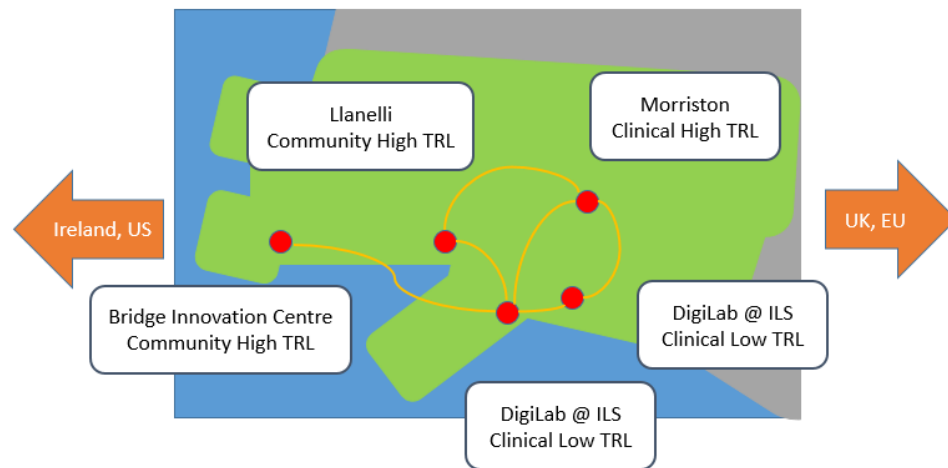
- **Creation of a SBCR Innovation Community** *through a 'network of networks' providing a regional platform for innovation, education and citizen access to services.* Centred upon the Internet Theme, targeted intervention will build upon existing commercial provision and through smart investment develop the region into a market of sufficient breadth and scale to attract inward-investment from commercial providers to enhance existing infrastructure. The currently fragmented nature of economic activity across sectors/sites contributes to market failure as activities lack the scale and density to make private sector-led interventions commercially viable.

EduRoam is an existing example of this approach, and has demonstrated how diverse networks can be integrated to serve users from separate organisations working across each other's infrastructure, This in itself reflects the SBCR *Open Access Open Innovation* philosophy. Adopting these principles, the SBCR Network will harness public and private infrastructure (existing and new) to support collaboration in innovation and education. Drawing together the significant communities in each of the Internet Themes, together with further users from private/public sectors and academia, this will create a market relevant to private sector led infrastructure investment.

Targeted Fixed Line Improvements: The Internet Coast involves a range of key sites including business parks with a mass of Factory of the Future-related operators, Health & Wellbeing Village developments, and major urban regeneration in the Swansea Digital District. Connecting these activities with other thematic Internet Coast sites, and outwards to the wider Internet via high-speed resilient connectivity will simplify collaboration and facilitate innovation. Market failure and the lack of competition in delivering affordable high-speed connectivity has introduced significant obstacles for many SMEs and start-ups located in business parks across the region. The SBCR Digital Infrastructure programme will remove these barriers by utilising a blended or hybrid approach that mixes traditional services from established carriers and innovative solutions from smaller telecoms providers. The proposal here is not to re-invent, or to duplicate existing infrastructure but to maximise opportunities through the use of traditional fibre leased-line services, limited deployments of private fibre, and radio-based network technologies to meet requirements. By opening up the *region to a plurality of suppliers, and linking service suppliers to potential customers can stimulate competition, and even lead to established carriers improving their access to products by lowering costs thus kick-starting effective and sustainable market dynamics*. Co-investment from City Deal into a viable and effective connectivity programme, targeted appropriately across local authority areas will de-risk private sector investment and create momentum for further roll-out. Based upon the Open Access Open Innovation approach, these deployments will involve opening (shared bandwidth) of infrastructure to the *SBCR Innovation Community*. This will maximise benefit of investments by making them available to the largest possible userbase. Individual connections will therefore be implemented where they plug gaps in existing infrastructure, and where co-investment is necessary to achieve the access for the *SBCR Innovation Community.*

Innovative use of Radio and WiFi based Connectivity Solutions *to connect key business sites, with focus on Internet Theme and wider economic benefit. Reaching underserved employment sites with growth potential*. Adopting a similar approach to the **Targeted Fibre Infrastructure Improvements** above, this project strand will deploy radio-based and WiFi solutions that have already been proven to deliver benefit in other parts of the UK to reach key sites/employers where topography and/or costs of laying fibre have conspired to introduce market failure for SMEs and new businesses. These connections will target Internet Theme gaps, such as reaching manufacturing sites un/under-served by existing services required for Factory of the Future (Industry 4.0) collaborations or where services (e.g.CENGS) may use high-bandwidth video/data connections.

- **Connection with extra-regional digital assets** *including bandwidth and datacentres. This will leverage access to existing services such as as the Newport Next Generation DataCentre without duplicating infrastructure. This could involve solutions for aggregated access to Cloud Services being delivered from the datacentre by suppliers like Microsoft (the Azure platform), Amazon Web Services and Google. The PSBA network will shortly be enabling access to NGD Cloud Services for the public-sector organisations within the City Deal region, and a similar slightly-revised aggregated model could be used for other private sector organisations within the region.*

- **Establish Internet Theme Testbeds** *to support innovation with 5G mobile connectivity and disruptive technologies such as Internet of Things (IoT) within Theme-related sectors.* The testbeds will utilise the diversity of the region and its sectors – ranging from urban (dense) to rural (sparse), community wellbeing (IoHW Village) to clinical (IoHW Campus) and across sectors CENGS (ICT Service) to Advanced Manufacturing (Factory of the Future/Steel Science). The Digital Infrastructure project will support deployment of infrastructure at key sites (e.g. 5G mast at IoHWB Village) to facilitate innovation of mobile applications in respective sectors. This will serve to develop demand within the region, promoting further operator investment for wider rollout as the userbase grows. These initial connections created with co-investment will also involve opening (shared bandwidth) of the infrastructure to the *SBCR Innovation Community.* The following map shows how a number of sites will be used together providing a Testbed for the IoHW as developed with one of the SBCR private sector partners.

- **Creation of market conditions via planning consent**, *requiring new (including Internet Coast) proposals, and redevelopment of existing sites to incorporate infrastructure fit for future use and which extends connectivity beyond current reach.* Recognising the importance of Digital Infrastructure, the partner authorities will embed a common approach to future development (and redevelopment) that requires infrastructure to be established/upgraded in line with the approach outlined above. Future phases of activity will not require co-investment from public funds, but facilitate private sector investment, including through partnership between developers and a more diverse market of operators.

The following example describes how the Infrastructure will be utilised to support innovation across the Internet Themes, in addition to the connectivity benefits provided to wider sectors and citizens.
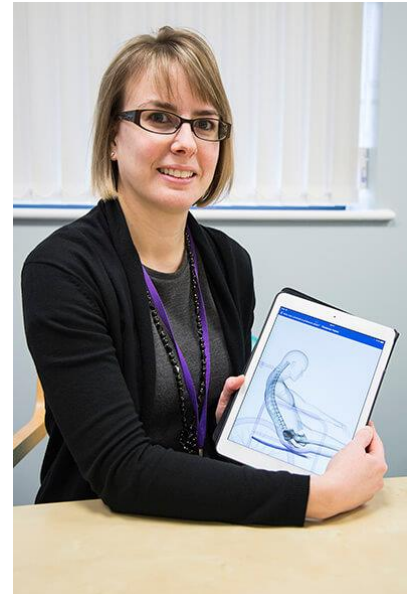
Example – Testbed: Health and Wellbeing

The network of Life Science Campuses and Villages being created by the Internet of Health and Wellbeing provides an environment for medical device and assisted living technology innovation. Fujitsu, working with Carmarthenshire Council and the Llanelli Village developer are integrating an ICT layer to develop Internet of Things (IoT) solutions. The company has already established a team of 15 developers in the region which it plans to grow as opportunities progress. It is planned that the Village platform will be rolled out creating opportunities for managed services with significant export potential.

An example of one innovation already take through Proof of Concept is 'Offload', a mobile platform for pressure ulcer management. This telehealth application has been developed with local clinicians to support remote management of conditions. The Testbed environment will allow this to be trialled and validated in a community setting, supporting initial market entry and 'proof of business'. 5G connectivity will allow further functionality to be developed including high definition video consultation/review where both clinician and patient time can be used efficiently.

Alongside the activity of multinational enterprises is a vibrant community of startups and SMEs working in the digital space. For example, Trakcel, a University spin-out is using web-based applications to manage delivery of stem cell therapies. Working with major partners such as GSK, the company demonstrates the potential to reach markets at pace and scale. The Testbed environment will allow development across a seamless wireless environment as therapies are delivered and managed across a range of environments including clinic, laboratory and home.

Core to the concept are openness of infrastructure, allowing collaborations to form and flourish, along with development of the community. Expansion of the user base provides users with whom applications can be tested, and also builds the market to attract further infrastructure investment.

4) Project Aims and SMART objectives

The Digital Infrastructure project has defined a series of Aims of Objectives which integrate with the wider regional planning as listed below;
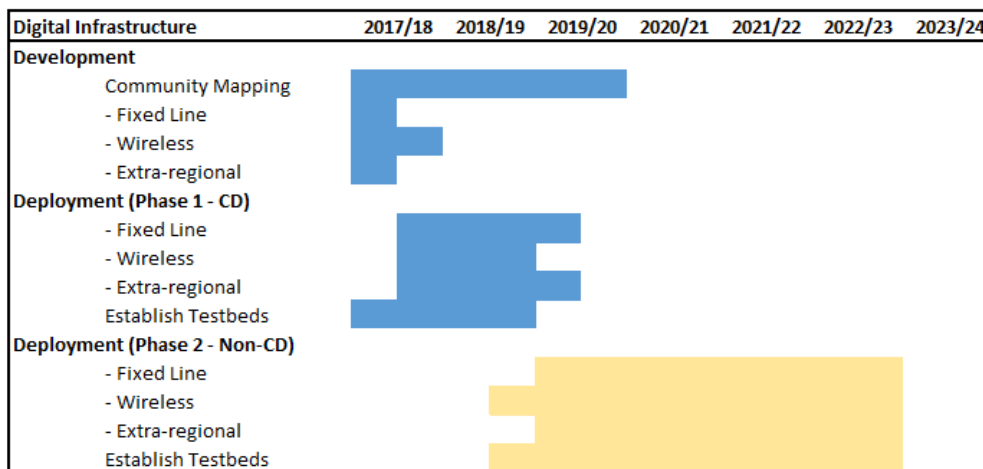
Aims
- Development of a SBCR Innovation Community
- Support innovation and high-value job creation in targeted SBCR Internet Coast themes
- Support wider uplift in regional productivity through wider use of ICT across all sectors
- Address market failure to realise private sector-led further phases

Objectives
- Engage and cohere existing (e.g. EduRoam) and new (e.g. Factory of the Future) regional networks to establish SBCR Innovation Comm
- Connect key sites through Fixed Lines to support Internet Coast Themes
- Connect key industry/employment sites through Wireless to support Internet Coast Themes
- Established connected Testbeds to support Internet Coast Themes, with 5G/IoT core infrastructure
- Embed Open Access Open Innovation approach as part of co-investment approach
- Embed Open Access Open Innovation and Co-investment principles in planning approach for future development/redevelopment across SBCR local authorities

To enable the above, the Digital Infrastructure Phase 1 project has been developed with key SMART objectives as presented in the table below;

Objective	Timescale	Measure
SBCR Community Scoping and Development	Q2 – 2017 Ongoing	50,000+ Active users by 2020 500,000+ Engaged Citizens by 2022
Connectivity – Identify/Plan Fixed Lines	Q4 – 2017	Regional Mapping of Phase 1 Rollout
Connectivity – Identify/Plan Wireless	Q1 – 2018	Regional Mapping of Phase 1 Rollout
Connectivity – Identify/Plan Extra-Region	Q1 – 2017	Mapping of Phase 1 Rollout
Deploy – Fixed Lines / Extra-Regional	Q2 – 2019	Rollout across ~20 key sites across SBCR
Deploy – Wireless	Q4 – 2018	Rollout across ~30 key sites across SBCR
Deployment (Private Sector-led)	Q2 – 2018 onwards	Private sector investment surpassing CD investment

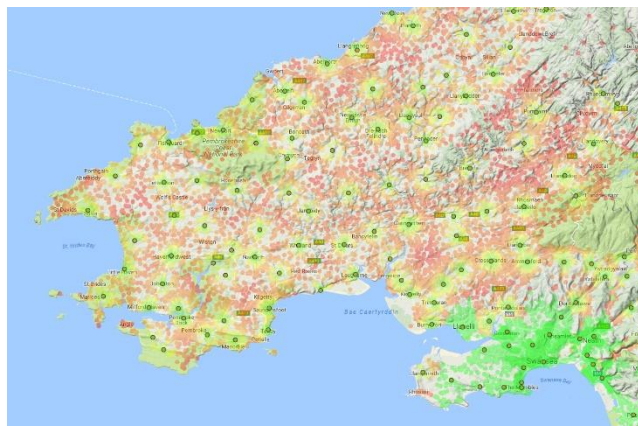| Local Authorities Private Sector Swansea University	Office of the Leader and Chief Executive Civic Centre Oystermouth Road Swansea SA1 3SN 01792 636000

The Internet Coast vision describes the opportunity presented by the region to harness ICT for innovation across Themes of Energy, Life Science, Economic Acceleration and Smart Manufacturing. Each component of the Digital Infrastructure project responds to need/demand summarised as;

Testbed

The Testbed concept is core to each of the Internet themes relying on data and communication. At present the market for communications infrastructure is weak, particularly in rural areas with sparse population. Development of 'testbed' activities is therefore an important part of working to build the market by increasing users of technologies such as 5G mobile.
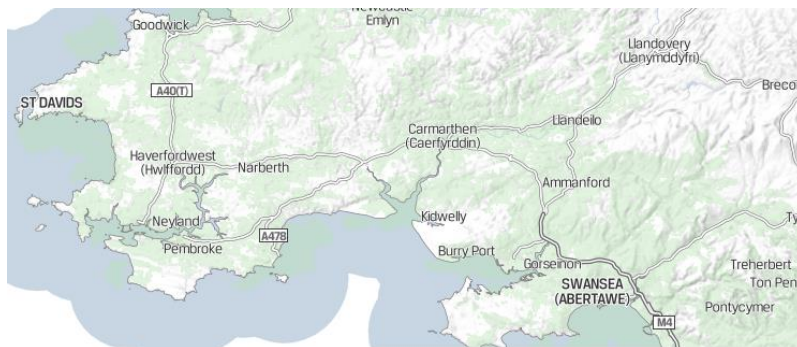
Fixed Line

Wales has seen improvement in fixed line connectivity with broadband reaching the vast majority of premises and major conurbations are well served. Relatively good access is seen in the vicinity of BT exchanges, though gaps exist, particularly in rural areas. Only in Swansea is there a plurality of operators (i.e. Virgin Media and BT). This continued monopoly (apart from LLU) with weak market drivers therefore requires intervention to ensure sufficient infrastructure for testbed activities.

Source: Thinkbroadband.com

Mobile and Wireless

Wales currently has lowest proportion of premises with 4G coverage from one or more operators, though this is developing rapidly (Ofcom 2016). EE provides the most extensive coverage, however the regional topography limits its availability, particularly within buildings, as shown in the map below. Limited availability of high bandwidth mobile connectivity creates a challenge for testbed activity. Coupled with operator-specific infrastructure (masts) this limits further the mobility of development activity across the region. However, as the topography and challenges are themselves useful test and development conditions this lends itself to the opportunity to co-invest in infrastructure for Open Access Open Innovation.

The Digital Infrastructure project has been developed to optimise its additionality at regional, Wales and UK levels, with focus upon the Internet Coast themes. The variable quality of existing infrastructure across the region underlines the market failure and need for intervention. Regional strengths and opportunities, including the recently announced BT rollout of new fixed line technologies and the Public Sector Broadband Aggregation (PSBA) network provide a foundation for intervention.

Deadweight: Market failure within the region has created significant inertia in digital infrastructure investments. Therefore, the Digital Infrastructure project would be realising scope and impact which would not otherwise occur. This implies that limited, if any, deadweight exists.

Displacement and Substitution: The Co-Investment approach has been developed to minimise displacement and substitution by enhancing the role for private sector in what is an otherwise relatively sparse marketplace. Further phases, which will be private sector-led completely negate this issue.

Leakage: The inherent nature of the Digital Infrastructure project is to connect both within and beyond the Swansea Bay City Region. Supporting the Internet Coast Themes it will enable collaboration and innovation in value and supply chains across the UK and therefore result in a level of (beneficial) leakage. However, the net beneficiary of knowledge and opportunity spill-overs will be the region itself, as the infrastructure is applied to further opportunities focused in each of the Themes.

8) Financials

The Digital Infrastructure (Phase 1) project has been developed recognising the enormity of the opportunity and challenge presented. Rather than simply proposing to initiate the scale of scope presented by the region, it instead aims to catalyse longer-term and far greater investment while also accelerating development of the Internet Coast themes. Therefore, the project scope and its financial profile focus upon early integrative interventions delivered in partnership with existing and future private sector partners.

Finances £k	2017/18	2018/19	2019/20	2020/21	2021/2022	2022/23	2023/24	Total
Total Costs	15,000	20,000	20,000					55,000
City Deal	10,000	10,000	5,000					25,000
Private	5,000	10,000	15,000					30,000
Other Public								

Match Funding

Private: A central aim of the Digital Infrastructure project is to lever significant private sector co-investment where market failure has prevented such activity. De-risking of initial activities through City Deal partnerships at key sites will mobilise a plurality of suppliers into the region making wider opportunities viable. As Phase 1 will represent a relatively limited number of sites/projects, it is planned that co-investment will at least equal that of City Deal though at far greater level in the

longer-term.

Impact of Reduced Funding
While the portfolio of Internet Coast projects can deliver significant impact with existing infrastructure (i.e. weak dependencies), stronger regional connectivity will maximise their integration and impact (i.e. strong synergies). Reduced funding therefore misses the opportunity to fully exploit wider opportunities from City Deal and other investments.

However, the greatest potential impact would arise from the lost opportunity to address market failure in the region. The intervention has been developed to provide ongoing dealflow for private sector investment, and therefore requires initial scope/scale of opportunity. Therefore, it is likely that with reduced scope that the initial mass of activities/projects needed to develop commercially-viable propositions for sustainable investment.

Options Appraisal: Long-list

Criterion/Option Conclusions D – Discounted, B – Baseline P – Preferred, A – Alternative	Do Nothing	Integrated Plan (Phased)	Integrated Plan (Full/Immediate)	Reduced Scope (Limited Funding)	Private Sector Standalone	Do Later
Critical Success Factors						
Strategic Fit	✗	✓	✓	✓	✗	✓
Business Needs	✗	✓	✓	✓	✗	✗
ARCH Integration	✗	✓	✓	✓	✗	✗
Internet Coast Integration	✗	✓	✓	✓	✓	✗
Potential Value for Money	✗	✓	✓	?	?	✗
Potential Achievability	✓	✓	✓	✓	✗	✗
Supply-side Capacity	✓	✓	✓	✓	✓	✓
Potential Affordability	✓	✓	?	?	?	✗
Conclusion	**B**	**P**	**A**	**A**	**D**	**D**

The following section provides a summary of key options as presented above;

Do Nothing - Baseline
Not developing the Digital Infrastructure will fail to maximise the impact of wider City Deal project portfolio and other activities. It could preserve resources for other interventions, though potentially at the expense of longer-term benefits for the Internet Coast. It would also stymie wider growth as continued market failure will not improve existing poor infrastructure.

Integrated Plan – Phased – PREFERRED

The Phased approach to developing Digital Infrastructure provides an opportunity to align effectively with wider City Deal developments in order to pump-prime greater and longer-term private sector investment. It also avoids embarking on potentially incomplete works by defining clear scope by phase. This supports the transition to greater private sector investment and a change in public-sector role of facilitative-planning for later phases following correction of market failure.

Integrated Plan – Full/Immediate – ALTERNATIVE

Commencing a fuller roll-out of connections and broader scope of digital infrastructure can clearly be considered. However, the immense resource requirements in planning alone would consume enormous investment and time. Prioritising early-benefit actions (i.e. Initial Phase) could protect the targeted benefits, though still involve significant investment. Such an approach may draw greater interest from private sector partners though weaken the co-investment proposition. UK Government may consider to make SBCR the focus of the recently-announced £1bn digital infrastructure investment and this is therefore considered as an alternative approach.

Reduced Scope

Omitting a project strand would reduce costs though result in a less-developed overall infrastructure. Reduced connectivity and engagement would in turn fail to maximise the potential of the Internet Coast Themes by potentially missing key sites within their associated sectors. This approach would also weaken the proposal to the private sector for co-investment and in turn the development of critical mass for sustainable private-sector led further phases.

Do Later

While the Digital Infrastructure does not create dependencies with other Internet Coast projects which could be successfully delivered independently, the broader programme creates the opportunity to build a strong case for private-sector co-investment to target growing sectors. Failing to align, particularly as City Deal projects are establishing their own infrastructure would therefore be a missed opportunity and present poor value for money.

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SWANSEA BAY CITY REGION JOINT SCRUTINY COMMITTEE

FORWARD WORK PROGRAMME
2019 – 2020

Date Of Meeting	Items for Report
1st March, 2019	1. To receive presentations on the 3 Regional Projects, as follows:- Skills and Talent – Jane Lewis, Regional Partnership Manager, Carmarthenshire County Council Homes as Power Stations - Gareth Nutt, NPT Digital Infrastructure – tbc
16th May,2019	

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