



MANUMIX
Interreg Europe



European Union
European Regional
Development Fund

5th Learning Pillar: Evaluation management

Welsh Government

Innovation Advisory Council Wales

Evaluation management

- How is currently structured the evaluation management of:
- The RIS3 strategy for advanced manufacturing

One part is the official Welsh European Funding Office (WEFO) type evaluation - external consultants.

Typically a mid term and a final review.

Undertaken

This will be done for each 'major' operation and for the 'programmes' (i.e. ERDF) as a whole.

The second part is to recognise that this is looking backward and is a bit reactive.

Currently proposing to use e.g. IACW and stakeholder groups like Industry Wales, to perform a more informal 'entrepreneurial discovery' type of exercise whilst the operations are still running and while we have time to change the instruments.

Innovation Specialists team are already doing this sort of thing internally by changing IV's to respond to opportunities eg Industry 4.0.

The current programmes/ instruments costs/benefits

Categories	Research		Applied Research and Development			Prototype Demonstratio		Pre Commercial		Commercial
TRL	1	2	3	4	5	6	8	9		
Business Research		SMART Cymru (Feasibility to Exploitation)								
Working with universities			Smart Expertise & partnerships/ Knowledge Transfer Centres (KTC), Industrial Research (Collaborative R&D/ Knowledge Transfer Partnerships KTP (with Innovate UK)							
Business Innovation		Innovation Vouchers – Third Party Experts, Capital Investments Innovation Specialists – Advice, Signposting , Design etc.								
Supply chain Innovation										Open Innovation
Public Sector innovation					Small Business Research Initiative SBRI (with Innovate UK)					
Outside Wales	Horizon 2020 (TRL 1-6) Innovate UK SMART (TRL 3-7), competitions, Launchpads etc., Nesta programmes.									



Wider Policy mix

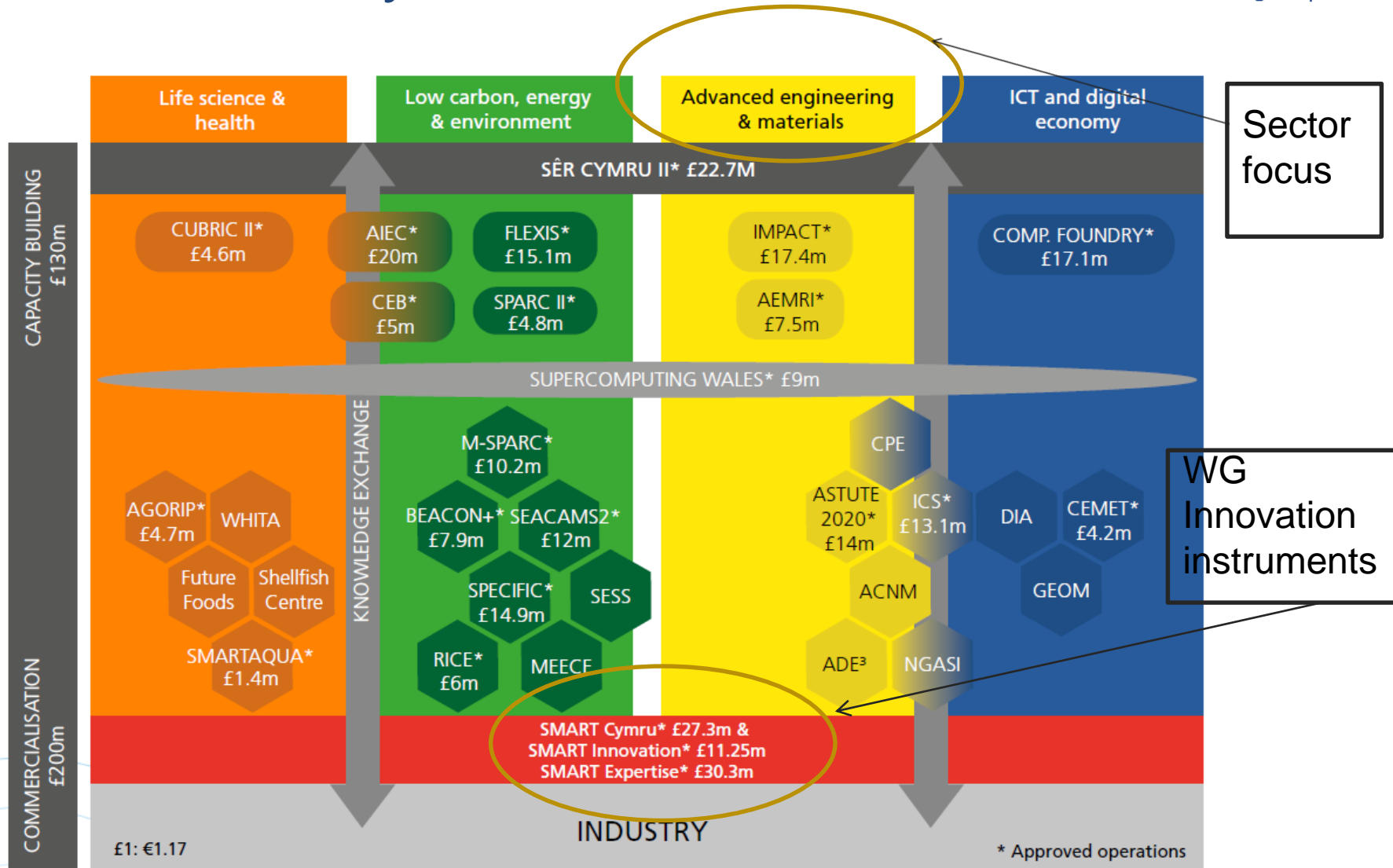


Figure 9 – ERDF research and innovation portfolio²³

21. £5m EU funding boost for Bangor University <http://gov.wales/newsroom/environmentandcountryside/2018/180118-5m-eu-funding-boost->

Indicators – near time data capture

SMART Business Innovation Indicators

WEFO (SO1.2): To increase the successful translation of research and innovation processes into new and improved commercial products, processes and services, in particular through improved technology transfer from HEIs.

WG Wellbeing Objective 10: Foster conditions for sustainable economic development and employment, whilst stimulating innovation and growth for a modern low carbon economy

SMARTCymru Aim: To co-invest in business Research, Development and Innovation for sustainable growth.

Achieved via:

- Encouraging businesses to create capacity and/or capability to develop and/or introduce new and improved products, processes and services
- Encouraging businesses to invest in R, D&I projects
- Encouraging businesses to collaborate

Outcome: Businesses invest in R, D&I to create sustainable growth through new products, processes and services.

Legend for Indicators Table
Monetary indicator
Capability indicator
Activity indicator
Knowledge sharing indicator

*WBF: Wellbeing of Future Generations	
1.	A Prosperous Wales
2.	A Resilient Wales
3.	A Healthier Wales
4.	A More Equal Wales
5.	A Wales of Cohesive Communities
6.	A Wales of Vibrant Culture and Thriving Welsh Language
7.	A Globally Responsible Wales

Indicators for discussion	Definition & How it would be Measured	Benefit to: Individual (I) / Beneficiary (B) / Society (S)	WBF ⁺
Average share of total turnover from product innovation, and novel innovation	Definition: Averaged share (%) of total turnover from New or Improved Products, Processes or Services; looking for increase in percentage Measured/Evidenced: Self certify and sign off by director Lean benchmarking	B, S	1
RD&I Expenditure	Definition: How much company spends on R,D&I e.g. New science and technology including incremental improvements in new products processes and services including organisational innovations and associated training. Measured/Evidenced: In diagnostic , Self certified by company	B, S	1
Public Funding Secured	Definition: public funding secured e.g. grants, R&D tax credits Measured/Evidenced: self declaration for tax credit, self certify which may include a copy of grant letter	B, S	1
Private sector investment secured	Definition: private sector investment secured e.g. own company, Industry, Venture cap/bus. Angels/individual, acquisitions Measured/Evidenced: self certify and ideally evidence scanned copy of letters/agreements etc.		
Market share (nice to have indicator not essential)	Definition: % market share evidenced, narrative concerning market share can be UK/region/worldwide and new market Measured/Evidenced: Self certified by company (sign off by director)	B, S	1
Employees capabilities (nice to have indicator not essential)	Definition: average number of people undertaking training/CPD/Chartered membership in last year related to research development and innovation Measured/Evidenced: self certify by company	I, B, S	1, 4
Innovation jobs (nice to have indicator not essential)	Definition: jobs related to R,D&I e.g. technical experience without higher degree or STEM degree level, design Measured/Evidenced: Self certify by company	I, B, S	1, 4

Innovation activity- WFBG No. 11	Definition: Measure of New Products, Process or organisation innovation- products Launched or introduced in the last year Measured/Evidenced: diagnostic form benchmark section 16 (currently optional on diagnostic but will be essential), self declare by company	B	1, 2,3
<u>Intellectual</u> assets	Definition: New Products, Processes or Services Registered e.g. Number of patents registered for products, know how, trademarks, copyright registered and non registered designs intellectual property Measured/Evidenced: diagnostic section 19 benchmark and post completion monitoring can do searches to check what has been registered	B,S	1,2,3
Physical capability to engage in R,D&I (nice to have indicator not essential)	Definition: Physical capability to engage in R,D&I e.g. perceived tech gap, increase in resources Measured/Evidenced: Section 5 and 14 of diagnostic section, appraisal officers/ managers can give a score of low, medium or high to indicate companies ability based on evidence from application form and diagnostic showing human, finance and physical capacities. Benchmark company situation after grant would need to be measured by post completion forms or new application from company	B	1, 4
Sharing of innovation knowledge	Definition: Community interaction e.g. open innovation network, conference, publications, clusters, KTN, Welsh events, H2020, Interreg Measured/Evidenced: section 15 of diagnostic to benchmark, self declaration and post completion monitoring will capture end result	I, B, S	4, 5, 6
Collaborative R,D&I	Definition: Collaboration interaction e.g. with research institute, business, supply chain (global) Measured/Evidenced: section 15 for benchmark, self declaration from company Prompt for innovation in supply chain , post completion monitoring would target these companies to follow up on benefits	B, S	1,4,5, 7
Eco- innovation	Definition: Social and Environmental interaction e.g. reduces the use of natural resources and decreases the release of harmful substances across the whole lifecycle, bringing economic, social and environmental benefits e.g. accreditations Measured/Evidenced: Benchmark diagnostic 10 accreditations and standards and Section 7 diagnostic asking on eco credentials, Enterprise assist form, afterwards self declaration and post completion monitoring e.g. can check websites	B,S	1,2,3,7

Cost/Benefit

Concrete Canvas



A single truck load of Concrete Canvas Bulk rolls replaces 34 ready-mix trucks resulting in huge savings in terms of both cost and CO₂ emissions.



Concrete Canvas Ltd was incorporated in August 2005 to develop and commercialise its two products; Concrete Canvas Shelters and Concrete Cloth technologies.

Concrete Canvas Shelters are rapidly deployable, inflatable structures that are primarily used in disaster zones. The shelter can be set up in 40 minutes as a solid concrete structure. Its creators, Will Crawford and Peter Brewin were on BBC TV's Dragon's Den, but they refused investment from the show because the Dragons wanted 40% of their company in return for an £85,000 investment.

Concrete Canvas is a unique proprietary material, which is a flexible geo-textile, impregnated with a dry concrete powder. This product is rapidly replacing conventional concrete, particularly in the mining, civil infrastructure and the petrochemical sectors where it is used for erosion control applications such as ditch lining.

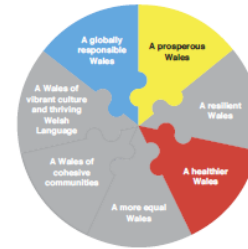
By adding water, Concrete Canvas hardens to become a strong, durable, waterproof and fireproof concrete surface, ideal for rapid construction and erection.

The company has grown rapidly since 2005 and now sells its products to over 40 countries around the world.

Co-founder Will Crawford said: "The Welsh Government have been fantastic in supporting the business, right from the start when we moved to South Wales in 2007. They provided capital equipment grants that took the pre-production prototypes to a commercially viable operation. In addition, we have received R&D support from SMART awards, we've had consultancy support and Innovation Vouchers and that's enabled us to improve and develop our production equipment."



Concrete Canvas Cost/benefit



A Prosperous Wales: Since 2008 the company has grown and now employs 32 people with an average salary of £44,000. Turnover has grown to £6M and exports account for 85% of the sales.

A Healthier Wales: The concrete has limited alkaline reserve. Unlike most concretes, it is not classified as an irritant and is less damaging to the environment.

A Globally responsible Wales: Eco-Friendly – Concrete Canvas is a low mass, low carbon technology which uses up to 95% less material than conventional concrete for many applications.

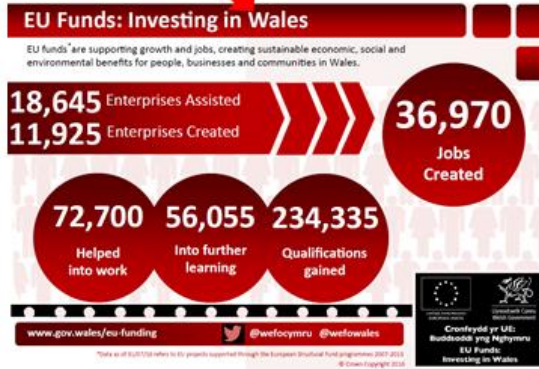
CO₂ saving in material – Concrete Canvas (CC) enables up to 150mm of poured concrete to be replaced with just 8mm of poured concrete for many surfacing applications. As a result, material savings of 95% can be achieved for a typical construction project. A single truck load of Concrete Canvas Bulk rolls replaces 34 ready-mix trucks.

The manufacture of CC is powered in part by a 90kWp solar array on the roof of their factory; furthermore, all materials are sourced to minimize environmental impact.

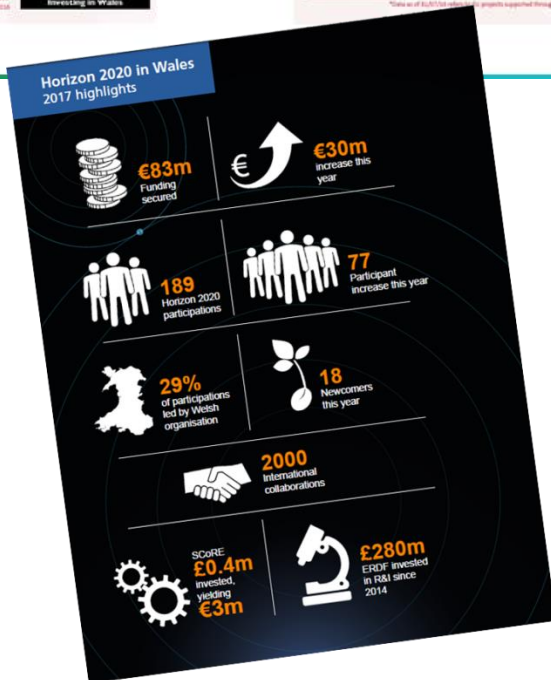
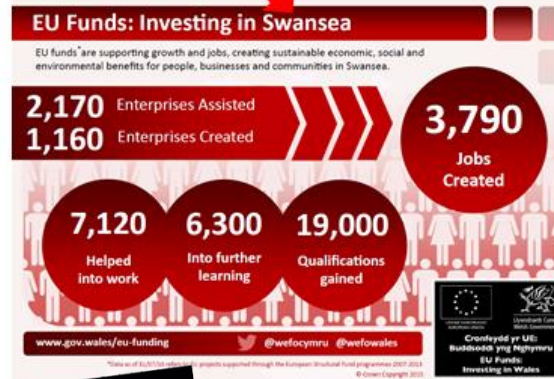
To find out more about funding and support from

Cost Benefit impact

EU Funds National Data presentation



Regional Data presentation



Evaluation management

Changes to effectively manage policy-mix evaluation?

Roles of IACW entrepreneurial discovery and Science and Innovation Audits

The initial framework for Smart Specialisation was established in two key (inter-related) documents:

Innovation Wales and Science for Wales.

These documents were framed some years ago.

However, the Welsh Government recognises that one of the aspects of the delivery of smart specialisation is ‘entrepreneurial discovery’.

They have interpreted this as being the need to take on board new developments and spatial strengths as they develop. This would mean identifying a and concentrating support towards new discoveries, e.g. Compound Semiconductors, which was not fully visible back in 2013, when the two documents above were in development.

WG and WEFO agreed that this ongoing interpretation will apply. In terms of an advisory process, WEFO ensures that it obtains the view of the WG’s Innovation Council on the strategic fit of any potential project to the RIS3 Smart Specialisation Platform.

Science and Innovation Audits - The purpose of the SIAs has been to confirm if these strengths exist in the HE or business communities, albeit from a retrospective point of view.