



MANUMIX

Interreg Europe



European Union
European Regional
Development Fund

Welsh Government

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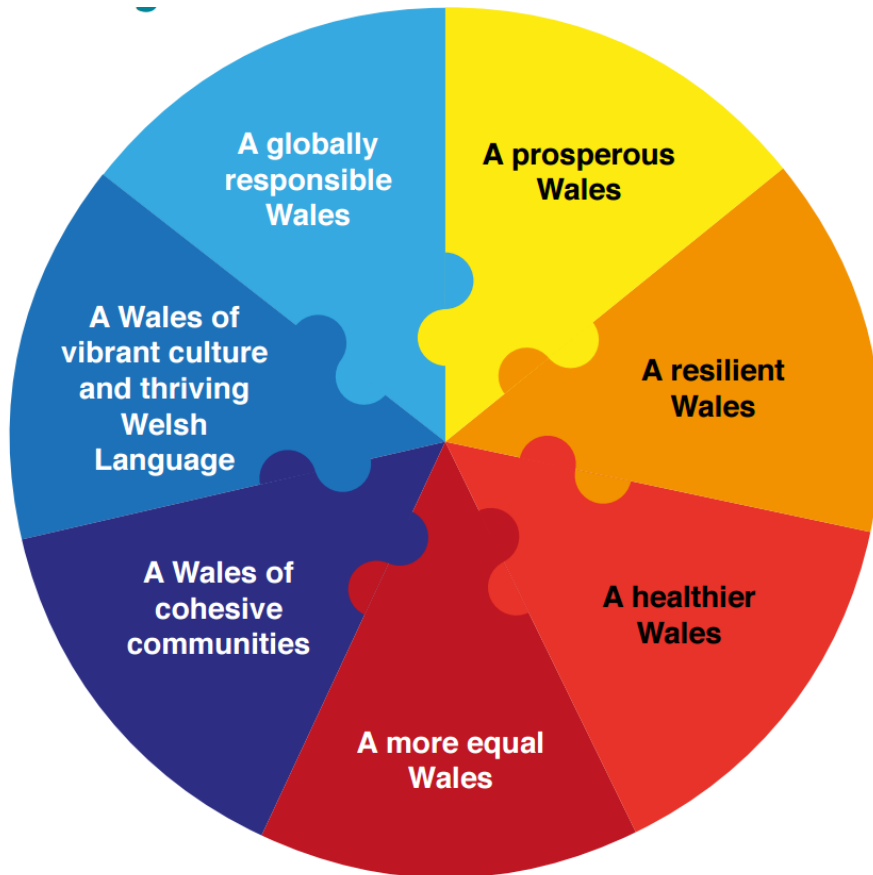
Wales – Manumix Innovation Policy Mix - Evaluation



Well being of Future Generations Act



Well-being goals



5 ways of working



What is it?

Well-being Goals

The Well-being of Future Generations (Wales) Act is about improving the social, economic, environmental and cultural well-being of Wales.

It will make the public bodies listed in the Act think more about the long-term, work better with people and communities and each other, look to prevent problems and take a more joined-up approach.

This will help us to create a Wales that we all want to live in, now and in the future.

To make sure we are all working towards the same vision, the Act puts in place the seven well-being goals for Wales:

Prosperous

Resilient

Healthier

More Equal

Cohesive Communities

Vibrant culture and language

Responsible

1. General Introduction to Manumix Policy Mix evaluation or Manumix Instruments Evaluation model and objectives.

Percentage of Innovative businesses in Wales

Instruments have SME focus

Diagnostics at start then planned monitoring at 6-12-24 months

Allows for feedback to businesses

Provides benchmarking against peers

Helps understand the 'Value add' proposition of Innovation instruments

Trends emerging –
use just launched Nesta Innovation dashboard

work with cluster development within sector teams.

Geographic activity – eg Nuclear Industry in N. Wales and neighbouring regions

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 |

| Indicators for discussion | Definition & How it would be Measured | Benefit to: Individual (I) / Beneficiary (B) / Society (S) | WBFG* |
|---|--|--|-------|
| Average share of total turnover from product innovation, and novel innovation | <p>Definition: Averaged share (%) of total turnover from New or Improved Products, Processes or Services; looking for increase in percentage</p> <p>Measured/Evidenced: Self certify and sign off by director</p> <p>Lean benchmarking</p> | B, S | 1 |
| RD&I Expenditure | <p>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.</p> <p>Measured/Evidenced: In diagnostic , Self certified by company</p> | B, S | 1 |
| Public Funding Secured | <p>Definition: public funding secured e.g. grants, R&D tax credits</p> <p>Measured/Evidenced: self declaration for tax credit, self certify which may include a copy of grant letter</p> | B, S | 1 |
| Private sector investment secured | <p>Definition: private sector investment secured e.g. own company, Industry, Venture cap/bus. Angels/individual, acquisitions</p> <p>Measured/Evidenced: self certify and ideally evidence scanned copy of letters/agreements etc.</p> | | |
| Market share (nice to have indicator) | <p>Definition: % market share evidenced, narrative concerning market share can be UK/region/worldwide and new market</p> | B, S | 1 |

| | | | |
|--|---|----------------|----------------|
| <p>Innovation activity- WBFG No. 11</p> | <p>Definition: Measure of New Products, Process or organisation innovation- products Launched or introduced in the last year</p> <p>Measured/Evidenced: diagnostic form benchmark section 16 (currently optional on diagnostic but will be essential), self declare by company</p> | <p>B</p> | <p>1, 2,3</p> |
| <p>Intellectual assets</p> | <p>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</p> <p>Measured/Evidenced: diagnostic section 19 benchmark and post completion monitoring can do searches to check what has been registered</p> | <p>B,S</p> | <p>1,2,3</p> |
| <p>Physical capability to engage in R,D&I (nice to have indicator not essential)</p> | <p>Definition: Physical capability to engage in R,D&I e.g. perceived tech gap, increase in resources</p> <p>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</p> <p>company situation after grant would need to be measured by post completion forms or new application from company</p> | <p>B</p> | <p>1, 4</p> |
| | | | |
| <p>Sharing of innovation knowledge</p> | <p>Definition: Community interaction e.g. open innovation network, conference, publications, clusters, KTN, Welsh events, H2020, Interreg</p> <p>Measured/Evidenced: section 15 of diagnostic to benchmark, self declaration and post completion monitoring will capture end result</p> | <p>I, B, S</p> | <p>4, 5, 6</p> |

Examples

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.

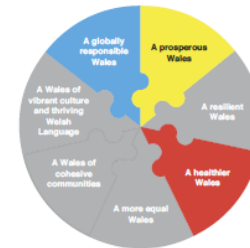
By adding water, Concrete Canvas hardens to become a strong, durable, waterproof and fireproof concrete surface, ideal for rapid construction and erection.

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



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 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



innovation

Invertek Drives

Invertek Drives is a global leader in the design and manufacture of variable speed drives used to control the speed of electric motors of applications in conveyor, heating, ventilation, pumping and other systems.



Launched in 1998 to address a gap in the market for easy to use, compact drives, Invertek now turns over £18million, trades across 80 countries and employs 160 people in Mid Wales, Czech Republic, Spain, the Far East and China.

With 70% of the world's energy consumed by electric motors, Invertek has developed two core drive lines capable of reducing consumption by more than 50% through matching the speed of the motor with the specific application's requirements.

Extensive investment in R&D, supported by the Welsh Government's Business Innovation Programme, means Invertek products are far easier to install and commission than others available.

Invertek's 30 000 sq ft

by the Welsh Government at Welshpool, also provides exhibition quality facilities for manufacturing and innovation, together with world class visitor services.

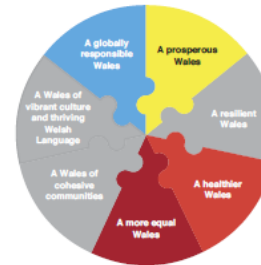
SMARTCymru funding has specifically helped employ R&D specialists whose work will be pivotal in ensuring Invertek Drives doubles its turnover to £35million, and increases its employee count by 50, in the next five years.

Director Charles Haspel said: "It was always our ambition to be a global business, but without the extra funding received to complement the private investments made, Invertek Drives would simply not have been able to research and develop its products as extensively as it has. Support

that step change to becoming a major player in the worldwide market much sooner than we could have done independently, and now we are contributing £5 million to the local economy annually as a result."



Invertek Drives



A Prosperous Wales

With its HQ in Mid Wales, Invertek Drives provides employment for over 170 people in the Welshpool area. Many of these jobs are specialist engineering roles with higher than average salaries making a significant contribution to the local economy in excess of £5M pa. Since 1998, Invertek Drives has designed and manufactured innovative variable speed drives. A key driver for the adoption of variable speed drives is the significant energy savings that can be achieved making a major contribution to a low carbon society.

A Healthier Wales

By addressing the demand side of the energy equation, Invertek technology is directly contributing to Decarbonisation – carbon and other greenhouse gas (GHG) emissions from energy supply and use must be reduced in order to reduce climate change impacts – and thereby helping improve the environment for people living in Wales and the wider world.

A more Equal Wales

Invertek invests in its people by offering clear pathways for every employee to reach their potential no matter what their background or circumstances. The company is extremely proud of their 'Technicians Programme' and the opportunities it offers to all staff for continued professional development.

A Globally Responsible Wales

With 70% of the world's energy consumed by electric motors, having a Welsh company who export over 90% of their production to 80 countries around the world is a concrete example of Wales making a positive contribution to global well-being.

innovation

To find out more about funding and support from the Welsh Government:

Email: businesssupport@wales.gsi.gov.uk

2. When is the Manumix Policy Mix evaluation or Manumix Instruments evaluation being used?

Ex - Post/Real time

Innovation dashboard developed

Live monitoring

Office of National statistics (ONS) National innovation survey –
1602 survey size in Wales generating 806 responses.

Working with ONS to increase sample size

2000 with a 1000 responses anticipated.

Diagnostic undertaken prior to instrument/monitoring/evaluation

Face to Face process by WG officials

Also performance monitoring against programme targets

Intention to use data to shape future trends

Well being and Future generations

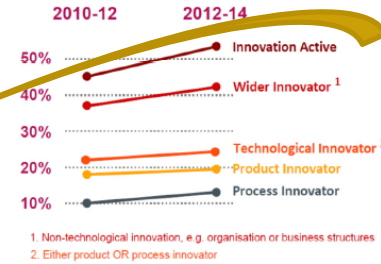
Input into UK Industrial strategy – sectors deals and challenge funds

Wales in context of the UK industrial make up

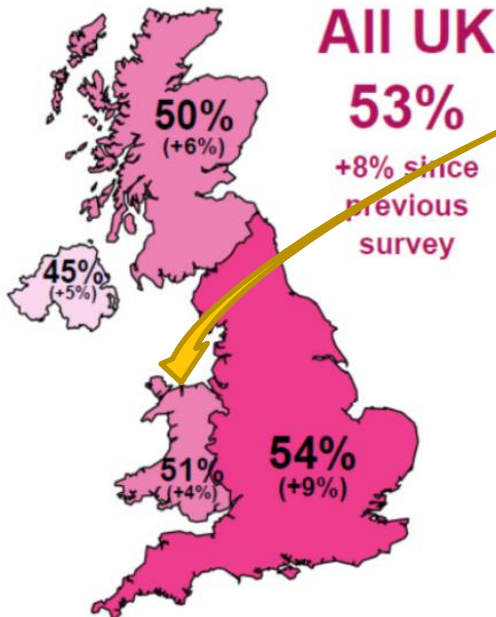
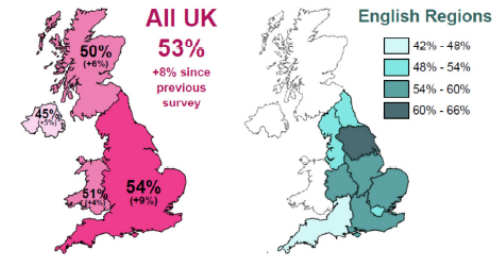
Infographics

In 2012-14, more UK businesses were innovative than in 2010-12

53% of all businesses were innovative



The proportion of innovators increased across the UK, and most English regions.



Innovative businesses are more likely to export, employ more qualified staff, and 40% collaborate to innovate, mostly with industry

Innovators are more likely to export



Innovators employ more highly qualified staff

Innovators co-operate mostly with suppliers, clients and customers on innovation activities

Of the 40% who have co-operation agreements:



National Impact Reporting

250 employees) and 55 per cent of small and medium enterprises (those with 10 to 250 employees) were innovative.

- 42 per cent of businesses used non-technological innovation, up from 37 per cent: 27 per cent engaged in 'new business practices' (up from 21 per cent), 19 per cent in 'new method of organising work responsibilities' (up from 18 per cent) and 16 per cent in 'changes to marketing concept or strategies' (unchanged).
- 24 per cent of businesses used technological innovation, up from 22 per cent: 19 per cent used 'product innovation' (up from 18 per cent) and 13 per cent used 'process innovation' (up from 10 per cent).

Innovation activity across countries, regions and sectors

- All four countries were more innovative. While England was leading the way with 54 per cent innovative firms (up from 45 per cent), Wales had the second highest proportion of innovative firms with 51 per cent (47 per cent previously), followed by Scotland (50 per cent, from 44 per cent previously) and Northern Ireland (45 per cent, up from 40 per cent).
- Almost all regions of England showed significant increases, although large variations remained across regions (from 65 per cent in Yorkshire and The Humber,

active") if they:

- Introduced a new or significantly improved product (goods or service) or process;
- Engaged in innovation projects not yet complete or abandoned;
- Acquired new and significantly improved forms of organisation, business structures or practices and marketing concepts or strategies.

This excludes expenditure and activities linked to innovation.

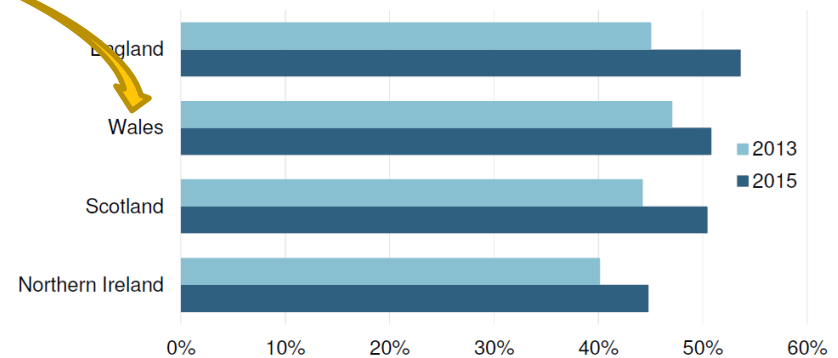
Non-Technological Innovation

Businesses that acquired new and significantly improved forms of organisation, business structures or practices and marketing concepts or strategies.

Technological Innovation

Businesses that introduced a new or significantly improved product (good or service) or process.

Figure 6: Shares of innovation active businesses by country (all enterprises)



Unweighted base = 15,091 in 2015 and 14,487 in 2013

3. Which is the decision- making process concerning the Manumix instruments/policy mix?

In development as early days less than 2 years into 6 year programme

Head of programme/Operations management/WEFO/ Head of Innovation Policy/ Sector expertise appraisal panels.

Post completion evaluation – Independent 3rd party commissioned (Innovation Partnerships just appointed)

Welsh Government objective – prosperity for all –economic action plan.

4. How is/should be the Manumix Policy Mix evaluation or Manumix Instruments Evaluation incorporated to decision-making process? Who participates in this process? Or failing that; who should be involved in this process? (Government, political and technical level, network of stakeholders, societal level).

Evaluation to influence future decision making

Continued testing and probing

Possible role for Innovation Advisory Council for Wales

Example – targeted Innovation Vouchers for Structural Steel CE marking to take advantage of the ‘Fit for Nuclear’ supply chain opportunity.

Evidence gathered to help Innovation senior managers build a business case to input into future business planning (post European Funding)

Compete for UK industrial strategy funding/Wales contribution to UK GVA

Post BREXIT strategy.

Well-being Objectives



Key Themes

'Prosperity For All'

- the national strategy

The strategy sets out how we will deliver for Wales during this term - and set long-term foundations for the future.

'Taking Wales Forward'

- The Programme for Government 2016-2021

The programme sets out what we will deliver for Wales during this Assembly term.



Well-being of Future Generations Act

The Act sets out the need for a long-term focus, and five 'ways of working' to guide the Welsh public services in delivering for people

Wales innovates: New Arloesiadur innovation directory

18 October 2017

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PRESS RELEASE

- *New Arloesiadur platform reveals insights into Wales' innovative industry, research and tech networks to provide policymakers in Wales with actionable insights*

Arloesiadur (Innovation Directory, in Welsh), a new web platform for mapping innovation in Wales has been unveiled today. A joint initiative between Nesta and Welsh Government, Arloesiadur, <https://arloesiadur.org/>, uses new data (interactive data visualisations and open datasets) to measure and visualise Wales' industry, research and tech networks with the goal of informing policies to drive growth.

Nesta is a global innovation foundation. It backs new ideas to tackle the big challenges of our time. Nesta's innovation mapping team uses new data sources, methods and technologies to measure and map innovation to inform better policies. Working closely with Welsh Government, firstly scoping the needs of Welsh innovation policymakers, Nesta has created Arloesiadur to provide visualisations which can be used to answer big questions about Wales'



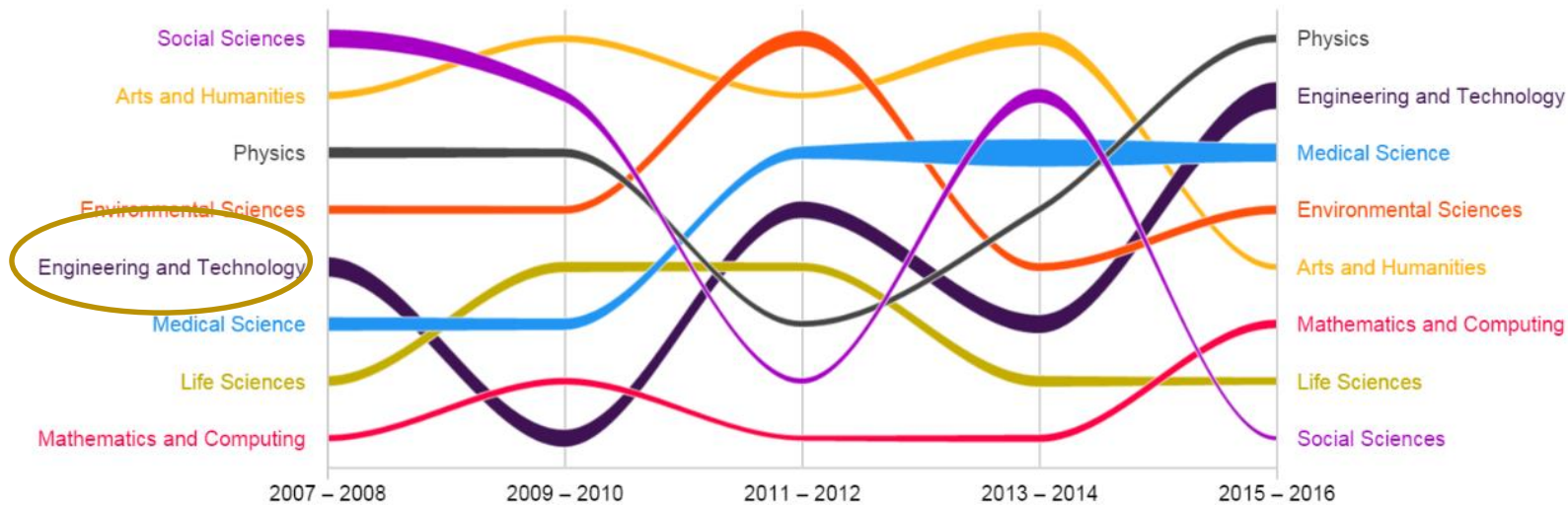
Juan Mateos-Garcia, Head of mapping at Nesta:

“Economists and policymakers recognise that innovation - the creation and application of new ideas - is one of the main ways to address the big challenges of our time. In order to support this innovation, we need to understand it first. With Arloesiadur, we have tried to achieve this with new data sources, data science methods and visualisations and so far, our work suggests that this can generate useful information for innovation policy.

Moving forward, we need to monitor how they are used by policymakers, and identify the processes, skillsets and policy instruments that have to be in place to augment their impact.”

Welsh Government Minister for Skills and Science, Julie James said: “The Arloesiadur collaboration marks an important milestone for developing innovation in Wales and is a clear demonstration of our commitment to our programme for government, Taking Wales Forward. *This information can help make important evidence-based decisions and develop policies to strengthen innovation in Wales which will improve productivity and provide a boost to our economic future.*”

Arloesiadur Data visualisation - example



5. Has any change occurred in the Manumix instruments derived from previous evaluation exercises? (for example, changing budgeting, evaluation criteria, beneficiaries, timing, procedures, objectives, etc.)

Early into programme

Setting out direction and evaluation methodology

The incorporation of wider society goals and cross cutting themes

UK industrial plans for post BREXIT

The future of European funding for Innovation in Wales and what may replace it.



MANUMIX

Interreg Europe



European Union
European Regional
Development Fund

Thank you for listening

Diolch am wrando

Questions welcome



Project smedia