Wales - Physical

- Devolved administration. Part of the United Kingdom and the island of Great Britain.
- Borders: England to the east and the Atlantic Ocean and Irish Sea to the west.
- Population over 3 million, 5% of the UK total.
- Land area of 21,000 sq/km 1,200 km of coastline.
- Devolved Responsibilities e.g. in Economy/Health/Education/Transport/Housing.
Wales - Physical

- Two ‘regions’ East Wales and West Wales and the Valleys
- Three major cities Cardiff, Swansea, Newport
- 8 Universities
- Main economic centres in east
- Mid Wales predominantly rural.
Wales: Key Facts

• Economy changing from heavy industrial to service led

• Total workplace GVA in Wales in 2015 was £55.8 Billion, up 3.0% on 2014. (Total Manufacturing sector c£9.5 Billion)

• Workplace GVA per head in Wales in 2015 was 71% of the UK average, the lowest amongst the devolved countries and English regions.

• East Wales 84%/West 63%
Wales: Key Facts

• Manufacturing comparatively more important in Wales than rest of UK

• Many large companies have a presence in Wales, e.g. Tata, General Dynamics, GE Healthcare/Aerospace, Ford, Airbus, Toyota, BA

• But business R&D low

• Small number of Head Quarters

• Lack of critical mass
Wales and Smart Specialisation

We have some history:

- Wales was one of the 1st regions in Europe to produce a *Regional Technology Plan* in 1996
- This was superseded by *Wales for Innovation* in 2003
- These strategies prioritised Structural Funds spending up until 2013
Wales and Smart Specialisation: Welsh Government Policy Framework

Energy Wales: A Low Carbon Transition

Science for Wales

Delivering a Digital Wales
The Welsh Assembly Government’s Outline Framework for Action
December 2010
Overriding principle:

- Innovation is vital across all parts of economy but major investments must be based on evidence of existing strengths and market opportunity.

Five key themes

- Collaborate inside and outside Wales
- Promote a culture of innovation
- Innovation in government
- Flexible support
- Prioritisation and critical mass
Action areas

Wales needs to collaborate and engage more productively with EU and UK bodies

Knowledge exchange and commercialisation of R&D will be given a high priority, favouring a demand led approach

The value of all types of innovation will be recognised, not only those which are technology led
Action areas

Innovation, entrepreneurship and enterprise should feature strongly in the education of young people

Wales will present itself to the world as an attractive place to locate and grow innovative businesses

Public sector in Wales an opportunity to support ‘testbed’ of new solutions

Wales will develop financing products to bridge the gap between research and the deployment of new products and ideas
Wales will support a culture of open innovation

The public sector in Wales will to support innovative methods of procurement, such as Small Business research Initiative (SBRI)

Wales will identify opportunities for a small number of major investments designed to have a transformational effect of Wales’ RD&I capabilities
Energy & Environment

Financial & Professional Services

ICT

Advanced Materials & Manufacturing

Construction

Creative Industries

Life Sciences

Tourism

Food & Farming
Wales’ Strengths

- Life sciences and health
  - Patient data records
  - Wound healing
  - e-health

- Low carbon energy and environment
  - Smart living
  - Eco innovation
  - Marine energy
Wales’ Strengths

- Advanced engineering and materials
  - Photonics
  - Compound semi conductors
  - MRO (aerospace)
  - Functional coatings

- ICT/Digital
  - High performance computing
  - Broadband infrastructure
  - Cyber Security
Advanced Manufacturing strategy

• 5 key priorities:

• **Globalisation** – increasing trade, export and inward investment opportunities from existing and emerging markets

• **Innovation and Technology** – encouraging and supporting Research and Development in innovative products and processes to increase and embed ‘intellectual capital’ in Wales

• **Employment** – ‘future proofing’ education, skills, training and leadership to meet the demands of the 21st century manufacturing workplace

• **Finance for growth** – syndicating risk-sharing financial packages through a combination of public and private sector funding mechanisms

• **Building Capacity** - targeting investment in strategic infrastructure and broad-access initiatives that together create a sustainable business environment

“Car maker Aston Martin has bought the land for its new factory in south Wales.

The firm will build its new DBX model at a plant in St Athan, Vale of Glamorgan, from 2020 and will employ 750 highly-skilled workers” (December 16)
## WG mix and Instruments

<table>
<thead>
<tr>
<th>Categories</th>
<th>Research</th>
<th>Applied Research and Development</th>
<th>Prototype Demonstration</th>
<th>Pre Commercial Deployment</th>
<th>Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idea = Feasibility Studies</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Scale up = Industrial research</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Valley of Death = Experimental Development</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Market = Innovation Vouchers</td>
<td></td>
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</tbody>
</table>

| 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. |                                  |                         |                            |            |
SMART (2015 – 2021)

SMART Innovation
• Pan Wales team of Innovation and IP Specialists plus framework of private sector partners providing expertise on product design and manufacturing improvement for eligible businesses.
• Dedicated Research Development Managers working with Welsh Research Institutions

SMART Cymru
• Innovation grant funding for eligible businesses accessed via Innovation Specialists.

SMART Expertise
• Support for Welsh Research Institutions to facilitate specialist technology transfer via industry led collaborative projects, accessed via the Research Development Managers
## SMART Cymru (structured R&D)

<table>
<thead>
<tr>
<th>Category</th>
<th>Technical &amp; Commercial Feasibility</th>
<th>Industrial Research</th>
<th>Experimental Development</th>
<th>Exploitation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Small Limits (10–49)</strong></td>
<td>70% £15,000</td>
<td>70% £100,000</td>
<td>45% £200,000</td>
<td>50% £25,000</td>
</tr>
<tr>
<td><strong>Medium (50 – 249)</strong></td>
<td>60% £15,000</td>
<td>60% £100,000</td>
<td>35% £200,000</td>
<td>50% £25,000</td>
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<tr>
<td><strong>Large (250+)</strong></td>
<td>N/A</td>
<td>50% £100,000</td>
<td>25% £200,000</td>
<td>N/A</td>
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<tr>
<td><strong>Duration (mths)</strong></td>
<td>1 - 6</td>
<td>3 - 12</td>
<td>6 - 24</td>
<td>Up to 6</td>
</tr>
</tbody>
</table>
......‘The public sector in Wales should be encouraged to support innovative methods of procurement.

...... The Welsh Government will work to identify opportunities within Wales and collaborate with Innovate UK to facilitate SBRI competitions in Wales.

...... Value Wales will raise Welsh public sector awareness of the scope to use innovative procurement to improve outcomes.’
Thank you for listening

Diolch am wrando

Greg Green
Head of R&D Projects
Innovation Team
Economy, Skills and Natural Resources
Welsh Government