Exciting Times for Science and Innovation in the NW

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Outline

• Innovation in the NW
  – CRW:
    • NWSC & NWDA, YIC, NWay Innovation Steering Group, N8
    • New LEPs…
    • National Govt Innovation Policy, TSB, STEMNET

• STFC Daresbury Laboratory
• Daresbury National Science & Innovation Campus
  – A new UK “Critical Mass” Innovation Model
  – UK-leading ultra-high-tech business growth rates & sustainability

• Very Ambitious Campus Growth Plans
NW OF ENGLAND

- **Population 6.8M**
  - Most densely populated region outside London

- **£120 Bn GVA Economy : 230,000 companies**
  - Denmark, Hungary, Ukraine, Ireland and Greece….

- **£30 Bn is science dependent**
  - Above UK-average levels of Private Sector R&D
    - UK-leading region in Chemicals, Aerospace and Nuclear sectors
    - AstraZeneca’s Global Cancer Research Centre
    - Also home to one of Unilever’s Global research centres

- **HEIs**
  - Combined turnover of £1.2Bn
  - UK’s largest University – University of Manchester
  - Highest graduate skills outside London / SE
NWDA & NW SCIENCE COUNCIL

- **First UK Science Council**: Very highly regarded
  - Rolls-Royce, BaE, Unilever, AZ, NW Aerospace Alliance.....
  - STFC, Manchester, Liverpool, Lancaster Univs, UCLAN & NWUA
  - SME & Science Park Representation

- **Major strategic “Pillars” (2006 – 2010)**
  - Nuclear, Biohealth, Aerospace, Chemistry & Chemistry-Using Industries, Emerging Technologies

- **Major Multi-Partner Initiatives**
  - eg DSIC, KCMC, VEC, National Composite Centre.....

- **July 2010 Strategy Review**
  - Simulation and Virtual Prototyping, Autonomy, Performance Materials, Accessing the NHS, Energy Technologies.....
Community Innovation Survey

Shares of innovation-active businesses: by region

Percentages

- Eastern England
- East Midlands
- North West England
- South West England
- Yorkshire and the Humber
- Wales
- England
- South East England
- West Midlands
- Scotland
- North East England
- Northern Ireland
- London

Source: UK Innovation Survey 2007
STFC & the UK Research Councils

- ~ 1800 Staff
- Turnover ~ £430M
- Major Laboratories at RAL (Oxfordshire), Daresbury (Cheshire) & ATC (Edinburgh)
• (a) Large-Scale Facilities
  • Synchrotron radiation
  • Neutron scattering
  • Central Laser Facility
• (b) Technological Resource Centres
  • High Performance Computing & E-science
  • Space Science & Technology
  • Particle Physics Department
  • Nuclear Physics
  • Accelerator Science and Technology (ASTEC)
  • Engineering and Instrumentation
ASTeC, ALICE & NLS Science

- **Real-Time Reaction Pathway Monitoring**
  - Catalyst Chemistry, Enzyme-catalysed processes, atmospheric pollution processes, real-time nano device operation (charge/spin)

- **Conformational Dynamics of Biological Molecules**

- **Nanoscale Dynamic Imaging**
  - Intercellular signalling,
  - Functional imaging in live cells – pharmaceutical effects

- **THz Imaging and cellular effects**

- **New “EMMA” Medical treatment Accelerator**
Large Science Facilities interact with a wide range of disciplines, not just fundamental physical sciences. All on an international basis.
The Campus Model

- **2004**: Campus Model Presented to Government (CRW)
- **Genuine** Internationally-competitive Critical Mass
  - Co-Locate: STFC, Leading Universities, Ultra-High-Tech Industry
  - PLUS Open Innovation
- **Early 2005**: DSIC Board established to test model
- **January 2006**: Govt asked CRW to introduce same model at Harwell
- **March 2006**: Budget Announcement
  - Daresbury and Harwell National SICs
THE DSIC BOARD

- Board Members (Shadow Board 2005; Full Board: Sept 2006 onwards)
  - Chair: Professor Sir Martin Harris (Ex VC Manchester)
  - STFC (CRW & KOM)
  - Vice Chancellors of Manchester (Gilbert), Liverpool (Bone/Newby), Lancaster (Wellings) Universities
  - NWDA (Baxter)
  - Halton Borough Council (Parr)

- > £50M NWDA catalytic investment proved model + 18M Vanguard House
- New PPP JV Board now formed with Langtree (December 2010)
MULTI-UNIVERSITY CO-LOCATION ?
Cockcroft Institute: National Accelerator Science Centre

- PPARC / CCLRC / NWDA
- Co-located critical mass:
- Liverpool, Manchester & Lancaster Universities + STFC (ASTeC) [>100 Staff]
- Major Awards (>£30M already)
- High grant success rates
- + Other Universities
- Professor Swapan Chattopadhyay
  - Thomas Jefferson National Accelerator Facility
- NEW £17M STFC Grant announced to 2017

Excellent Generic Campus Model involving key Universities & UK High-Tech Industry: NEW CAMPUS CENTRES & TICs
MAGNET FOR ULTRA-HIGH-TECH INDUSTRY ?
DARESBURY INNOVATION CENTRE

- 105 Ultra-High Tech companies
- V. HIGH QUALITY Selection Criteria
- VERY RECENT ANNUAL SURVEY
  - UK-leading Sales Growth (40% in 2010)
  - UK-leading Investment Growth
  - UK-leading company survival rates
- RECENT BIS S&I ANALYSIS VISITS
- Major expansion space urgently needed
Vanguard House

- “Home for life” Campus Philosophy
- 36,000 sq ft
- Opening end-May 2011
- ~ 33 - 50% occupancy on opening!
FUTURE PLANS (2008)

- NWDA : NW Key Transformational Site (2006)
- Full Site Masterplanning
  - Timescale : 30 year
  - 10 years sub-plan
-JV Options Appraisal
  - May/June 2008
  - New JV Completed December 2010
  - New Private Sector Partner : Langtree
- Strategic R&D Investment Partners
- £660M investment plan
Latest Master Plan
SUMMARY

• NW Knowledge Economy & Excellent S&I Networks
• Daresbury National Science and Innovation Campus
• Open Innovation : FANTASTIC !
• **UK-Leading** Ultra-High Tech Company Growth Rates & Sustainability
• Ongoing building of Campus Critical Mass
  – Recent April 2011 Budget : Further £10M to DSIC
• RDAs and LEPs