Green Photonics Conference
19th October 2010

The Welsh Opto-Electronics Forum
Enabling Green Photonics

Dave Rimmer
DREM Ventures Limited
WOF Acting Deputy Chair
Presentation Format

- The Welsh Optoelectronics Forum
  - Key Roles and Activities
  - The shape of the industry in Wales
- What is Green Photonics?
  - Green activities
  - Achievements
- Next Steps?
The Welsh Opto-Electronics Forum

• Established in 1996
  *with demonstrated success to date*

• Consortium of companies and university groups
  *that pay membership fees*

• Dedicated to the
  *development and profitability of the sector in Wales*

• Facilitated by a *voluntary, elected committee*

• Initially encouraged and supported by the Public Sector
  *now fully operated by the Private Sector*
The Welsh Opto-Electronics Forum - an engine for economic growth in Wales

VISION:
“That the forum will provide a vehicle which will enable opto-electronics businesses in Wales to be world class leaders in their chosen specialist area of expertise; resulting in Wales being recognised as a centre of excellence in opto-electronics”.

MISSION:
“To stimulate the growth and competitiveness of the Opto-Electronics sector in Wales”
KEY ROLES & ACTIVITIES

- Business Development
- Technology Transfer
- Skills Training & Education
- Public Sector & Academic Liaison
- Sector Marketing /Cluster Development
- Networking – Local, National & International Links

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Key Strengths

- Breadth of Opto-electronics Technology capability

- Significant strengths in a number of areas through both University and Commercial capability, (specialist optics, opto-electronic materials, fibre optics and optical telecomms, semiconductors for photonics, microsystems)

- Strengths across the supply chain
  materials ➔ components ➔ systems ➔ equipment

- Solid growth in Total Annual Revenues: estimated at £800m in 2009 of which 60% comes from exports

- Slower growth in numbers employed as manufacturing efficiency improves: estimated at around 6,000 in 2009
WHAT IS GREEN PHOTONICS?

Photonics solutions that:

• Generate Energy;
• Conserve Energy;
• Cut Greenhouse Gas emissions;
• Reduce Pollution;
• Yield environmentally sustainable outputs;
• Improve Public Health.

*Photonics21 “Lighting the way ahead”; January 2010*
WHAT ARE THE ISSUES?

- Need for new materials;
- Energy reduction techniques;
- Energy efficiency in data networks;
- Improved product design – performance; lifetime; disposal;
- Sustainable manufacture – processing tools and sensors;
- Education and Training.
SO HOW GREEN ARE WE?

• Generate Energy;
• Conserve Energy;
• Cut Greenhouse Gas emissions;
• Reduce Pollution;
• Yield environmentally sustainable outputs;
• Improve Public Health.
• Need for new materials;
• Energy reduction techniques;
• Energy efficiency in data networks;
• Improved product design;
• Sustainable manufacture – tools/sensors;
• Education and Training.
MAJOR ACHIEVEMENTS TO DATE

• Creation of a chair of Opto-electronic Materials Chemistry. This has now developed into the Centre for Solar Energy Research based at OpTIC;
• The concept for and creation of OpTIC;
• Conception and launch of Photonics Academy – delivering the “MAGICAL HOME”, an educational initiative for primary schools;
• Successful lobbying in support of national academic programmes:
  – HiPER; CAFMAD; IKC...
• Sponsorship and support for the Wales PV road map – 2006 & 2008;
• Support for the UK PV Solar Energy Road Map;
• Seminars and meeting organisation:
  – Plastic Electronics 2006; Organic Electronics and Solar Cells 2007.....
• National recognition as an outstanding example of Best Practice in Cluster organisation and delivery:
  – ECO Photonics, Strasbourg 2011; Optics, Munich 2011
NEXT STEPS? - ENABLING THE GREEN AGENDA

Industry

Better understanding of Needs and Opportunities:
Product Design
Process Development

WOF

Dialogue on Setting Priorities - Research Funding and Targets

Government

Research Funding and Targets

Academia

Focus on the development and delivery of Green Research and Education

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NEXT STEPS?

Sector Sustainability & Growth Project (2010 – 2012)

- Sector Marketing
  - Promotion of Best Practice
- Supply Chain Market Research
  - Practical guidelines and advice
- Technical Workshops and Master Classes
  - Awareness and development of capability
- Collaborative Technology Platforms
  - Next generation management of new products and markets
Thank You!