

OECD Global Forum on Environment on Eco-Innovation

Research & Innovation for a Green Economy



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Background

- Green Economy & Green New Deal
- Increasing recognition that economic recovery & growth intrinsically linked to a clean and protected environment.
- Building Green economy can contribute to economic recovery and growth by
 - Creating employment & export opportunities in green enterprises; and
 - Supporting improved competitiveness.
- Leveraging the Innovation or 'ideas' component of the economy;
- Innovation & ideas can lead to new sources of economic growth

EPA Environmental Research Programme

- Increasingly, research playing a central role in protecting the environment:
 - Provides foundation for policy and decision making
 - Technology & innovation provide pioneering solutions to environmental problems
- Foundation for Green Economy
- EPA has the overall remit for co-ordinating environmental research in Ireland.

EPA Environmental Research Programme (cont.)

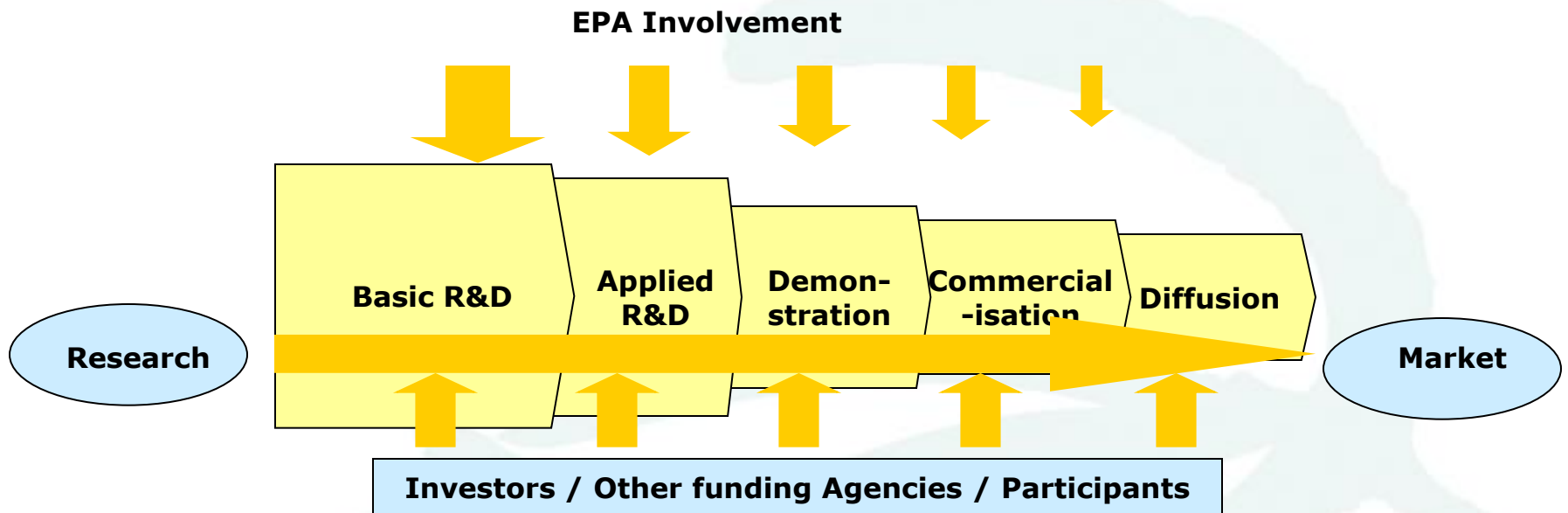
- Most recent strategy 'STRIVE' for period 2007-2013
- Covers full spectrum of environmental media and themes
- Key focus on Eco-Innovation
 - Industry-led: Cleaner Greener Production Programme
 - Academic-led: Environmental Technologies Research Programme



Environmental Technology (ET) Research

- Investment in ET provides a significant opportunity
 - Reduce pressures on environment & improve resource efficiency
 - Can help competitiveness & generate new forms of economic growth
- Opportunity to take advantage of one of the fastest growing markets internationally
 - 3.4 million currently employed in EU in ET sector
 - Worldwide ET market forecasted to reach €2.3 trillion by 2020
- Since 2005 EPA invested €30m in ET
 - 190 projects research and innovation projects
 - Engagement of 200 new researchers in full-time roles.

Environmental Technology Framework



Basic/Fundamental Research

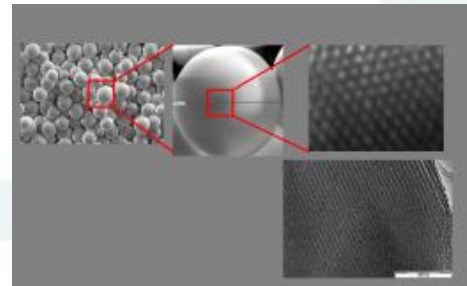
- Successful development of ET needs a foundation of high-quality research into novel processes and materials
- Critical step - ensuring that the right people and resources are in place
- Focus on building and developing research capacity in Ireland
- Examples:
 - nanotechnology for remediation;
 - biotechnology,
 - ICT & early warning systems
- Indicators: mainly focused on numbers; academic quality and policy relevance.

Applied ET Research & Demonstration Projects

- Emphasis on adapting existing/developing new technologies
- Strong policy focus - implementing and supporting compliance with EU legislation
- Indicators: Greater focus on commercialisation aspects



Bioplastic
from waste



Metal Removal
using Nano



Novel toxicity
Testing



WWT Test-
bed facility

Analysing Results

- Investment delivering noteworthy results
- Survey of 18 large projects awarded in 2005 (€4.7m investment)
 - 45+ papers in high impact journals (e.g. *Nature* and *New Scientist*)
 - Filing of 5 patents, 7 patents in preparation, 9 Non-disclosure agreements, 1 licence agreement
 - One spin-off company
 - Benchmarks very favorably against European and US figures

EPA Cleaner Greener Production Programme

- Supports variety of existing businesses
 - SME's to multi-nationals
 - Hotels to pharmaceuticals
- Aim is to ensure that eco-efficiency become the established norm across businesses in Ireland
- Can form the basis of improved cost competitiveness
- Highlighted as *Exemplar Programme* in EU review of Eco-Innovation Programmes (2007)
- Since 2000, EPA committed €7m to 90 organisations

Cleaner Greener Production Programme: Analysis

- Indicators: Initial focus on both economic & environmental returns
- 2005-2008: Once-off investment by EPA of €1m
 - Cost savings to participants of €1.6m annually
 - Significant, verified annual reductions in water use & wastewater, waste, energy
- Taking the lessons forward:
 - e.g. Green Hospitality Award: 250 hotels now involved
 - Conservative estimate of €3m annual saving to the hotels industry.
 - Principles now being rolled out across Health Services Executive in Ireland
- Programme has also yielded a wealth of practical experience
 - construction industry, pharmachem, services sector etc.

Conclusions

- Environmental research is vital to underpin environmental protection and development of a green economy
- Environmental technologies represent a major opportunity
- Measurement of success vary depending on type of research
- Increasing need to demonstrate “immediate” benefits – but nature of research is often more long-term and less tangible.
- EPA Investment to date laying the foundations for a greener economy
- Yielding wider economic and policy related benefits.

www.epa.ie/downloads/pubs/research