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Department of Enterprise, Trade & Employment

The Office of Science and Technology (OST) is responsible for the development, promotion and co-ordination of Ireland's Science, Technology and Innovation policy; and Ireland's policy in European Union and international research activities.

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The principal aim of the Czech Liaison Office for R&D is to help the Czech research, development and innovation to incorporate successfully into the European Research Area (ERA), especially within the Framework Programmes for Research and Development.

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Collaborative Profile for Research & Innovation

# Ireland–Czech Republic



[www.enterprise-ireland.com](http://www.enterprise-ireland.com)

## Foreword: Ireland

Collaborative research initiatives between older and newer Member States offer particular advantages to each participant country. Such initiatives not only allow commercial and academic investigators to access the unique and complementary expertise they require from another Member State, but can also help create permanent, mutually beneficial links that can create a lasting impact on the commercial, scientific and economic development of both countries. There is clear merit in formalising and accelerating such collaborative research activity.

This report represents the first step in an ambitious initiative, spearheaded by Enterprise Ireland, aimed at building cooperation and facilitating new research collaborations between Ireland and New Member States of the European Union. It is the culmination of more than two years' work following the establishment by Enterprise Ireland of an EU Research and Development Liaison Office in Brussels. Initially envisaged as a means of raising the EU profile of Ireland's research community and capabilities, this office has developed productive dialogue with R&D officials and liaison offices from various New Member States, in particular the R&D Liaison Office of the Czech Republic (CZELO).

Enterprise Ireland and CZELO have collaborated closely to create this report, which features research profiles of the agencies' respective countries, including a practical guide to specific researchers and institutions across a range of disciplines in pure and applied research. It is the sincere wish of Enterprise Ireland and CZELO that the report will lead to a wider appreciation of existing research capabilities in both countries, and will highlight areas of genuine opportunity and synergy for Ireland and the Czech Republic.

### Frank Ryan

Chief Executive Officer  
Enterprise Ireland

### **Foreword: Czech Republic**

The Czech Republic as a New Member State is deeply interested in scientific collaboration within the European Research Area. International R&D co-operation is considered a key element for further development and for full exploitation of Czech national research capabilities.

The Government of the Czech Republic believes that international co-operation and other research initiatives with Ireland may be particularly useful for the Czech Republic. With its ambitious economic reforms and its emphasis on R&D based on high tech products, Ireland is a very inspiring model. Co-operation in the field of R&D is a platform that will allow both countries to benefit from each other's experiences.

The R&D Council of the Czech Republic has put significant work into creating an environment of innovation, promoting exploitation of R&D results in the business sector, fostering the development of high tech industries and further integrating R&D institutions into the international scientific community. This pilot project is in line with all these efforts, and the R&D Council welcomes the initiative and wishes it every success. The Council expects that the project outcomes will be used in practice as soon as possible and will encourage further co-operation between Ireland and the Czech Republic.

#### **RNDr. Marek Blažka**

Office of the Government of the Czech Republic  
Secretary of the Research and Development Council

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## 01

## Introduction

## 1.

**Introduction**

In June 2004, Enterprise Ireland (EI) established an EU Research and Development (R&D) Liaison Office in Brussels with the specific objective of optimising the involvement of Irish industry and researchers in the European Commission's Sixth Framework Programme (FP6) for Research and Development. This office promotes the interests of EI, its client companies, and the capabilities of the Irish research community to the European Commission (EC), and to other National R&D Liaison Offices, through the mechanism of IGLO (The Informal Group of RTD Liaison Offices in Brussels for EU R&D)<sup>1</sup>. Productive discussions have taken place between Ireland's R&D Liaison Office and these gateway collaborators, particularly in New Member States.

This research profile has come about as a direct follow-on from these discussions and is based upon the shared belief that such offices can deliver significant benefits to their home constituencies by co-operating and seeking to promote research collaborations between Ireland and the New Member States. A specific objective is the promotion of joint industry collaborations through Research and Technological Development and Innovation (RTDI), for the wider research and commercial benefit of each Member State.

For EI, these aims reflect the agency's strategic policy of developing Ireland from an investment-driven economy to an innovation-driven economy, by providing support for enterprise R&D and enterprise collaboration with higher education, and by promoting research commercialisation. For many New Member States, an initiative to promote research collaboration is consistent with policy goals, including the support of underdeveloped organisations to reach competitiveness and further development of national research infrastructures.

Following an analysis of EI's International Science & Technology Department (IS&T) targets and objectives, and in order to progress an initiative to encourage collaborative research, it was agreed that a strategic analysis should be undertaken of the research and technological opportunities offered by certain of the New Member States of the European Union (EU).

There already exists a demonstrable and active flow of economic and trade activity being undertaken by EI's client companies in these new Member States (80% of Ireland's trade with the New Member States is accounted for by the Czech Republic, Poland and Hungary). By targeting them in the present initiative, there is the potential to further develop these relationships and add new dimensions through capitalising on the existing knowledge base.

<sup>1</sup> [www.iglortd.org/](http://www.iglortd.org/)

## 02

# Objectives and Strategy

## 2.1

### Objectives and Strategy

A clear strategic objective of the current initiative is that the product and outputs should be complementary to the work of the National Delegates (NDs) and National Contact Points (NCPs). NDs represent each Member State's national interest and viewpoint in the implementation and management of specific research programmes at European level, while NCPs inform and assist companies and researchers interested in participating in FP6. In particular, the outputs of the current initiative should be seen as a tool to help disseminate focussed information about individual Member States to qualified audiences in other Member States, leading to a wider appreciation of research capabilities in each country and helping to facilitate collaborative opportunities, in FP6 and elsewhere.

It was agreed that the outputs from this initiative should comprise a series of tightly structured, highly focussed Joint Research Profiles. Each profile would focus on a selected New Member State, offering an overview of its research and industrial capabilities alongside a similar overview of capabilities in Ireland. The profiles would be based on mutually agreed areas of interest, highlighting existing applied research capabilities and strengths and where possible, capitalising on existing collaborations between the two countries. The ultimate objective of each profile would be to highlight the strongest research capabilities and industry strengths of the New Member State and of Ireland; identify pertinent synergies; and encourage the creation of collaborative research projects of mutual benefit.

## 2.2

### Pilot Research Profile

A Pilot Research Profile is required in order to review and validate the methodology outlined above and implement any adjustments deemed necessary to ensure the integrity of the process. Following the approval and successful completion of the Pilot Research Profile, it is anticipated that individual New Member State country reports will be published regularly during 2006.

As part of the procedure related to following up the contacts made at the launch event for Enterprise Ireland's EU R&D Liaison Office, it was eventually agreed that the Czech Republic should co-operate with Ireland to produce the Pilot Research Profile. The Czech R&D Liaison Office (CZELO) in Brussels is a fully operational entity which was officially established on 16th May 2005, and formally launched on 27th June 2005. It has five full-time members of staff. Their individual responsibilities reflect the broad range of the Framework Programme.

In June 2005 initial discussions were held with CZELO, which readily indicated its agreement and commitment to participating in a Pilot Research Profile. For CZELO, this initiative is consistent with the Czech Republic's policy of supporting research and development in areas where the Czech Republic enjoys a high level of expertise, and using the outputs for the benefit of all areas of Czech society. Subsequent discussions led to target sectors being identified for the Pilot Research Profile.

### 2.3

#### Action Plan

The Action Plan to develop the Research Profiles is based on a framework of key criteria designed to create a vivid picture of the science and research policy and the supporting infrastructure of the country under analysis. The format of the Research Profiles is designed to harvest and document data on a range of relevant factors in both countries under analysis. The final profile should accomplish the following goals:

- Identify strengths in sectors and technologies based on industrial capacities and applied research
- Highlight Advanced Research Centres
- Identify key contacts for R&D
- Quantify collaboration requirements and potential synergies
- Raise the profile of industrial strengths and centres where advanced R&D is undertaken
- Identify opportunities for relationship building
- Develop the link between Ireland and the market opportunities
- Establish a basis for inward visits to Ireland based on Applied Research opportunities for mutual benefit

The main driver for gathering this information is to identify clear areas of opportunity where targeted joint activity between Ireland and the Czech Republic will lead to the development and submission of high quality and mutually beneficial funding proposals to the Framework Programme.

The sources for this information include the Brussels-based R&D Liaison Offices for the nominated New Member States, Enterprise Ireland's NDs/NCPs and market-based teams, and existing statistical sources in Enterprise Ireland, Forfás etc. To facilitate effective liaison and a common information gathering mechanism for Ireland and the target New

### 2.4

Member States, it was agreed that a template be constructed to capture relevant R&D information. The template devised for this purpose has been adapted from the existing Technology Platform template created by Forfás. It contains sections to elicit and capture the following information:

- Industry profiles (per sector)
- Technology base
- Research capabilities
- Advanced Research Centres
- Areas of interest and opportunity
- Evaluation of existing FP6 collaborations involving Ireland and the New Member State being profiled to capitalise on networking effects

A copy of the template used for this purpose is provided in Appendix A.

#### Process

The Pilot Research Profile examines a number of sectors and Thematic Programmes that are of mutual interest to the Czech Republic and Ireland. Initially this examination was undertaken at a macro level using the templates described in the previous section. The specific sectors that were targeted are described in Section 3.

The process for examining the target sectors and programmes was as follows:

- The template was circulated to NDs/NCPs in Ireland to develop an accurate profile of the Irish research landscape based on their intimate knowledge of the sectors that they represent, and the CZELO office for completion in respect of the research landscape in the Czech Republic on a similar basis
- An analysis was made of the responses received to identify and validate genuine opportunities for possible collaboration between the countries in areas relating to applied research and its potential commercialisation
- A number of future actions were agreed with CZELO following this analysis. These include public launches in both the Czech Republic and Ireland in predetermined strategic areas, and the creation of a web portal where complementary and updated information will be provided as it becomes available

## 03

# Target Sectors for Collaboration

## 3.1

### Background

Strategic meetings were held between Enterprise Ireland and CZELO staff in the summer of 2005. The objective of these discussions was to agree common themes of interest for this initiative. Based on an examination of the current priorities of both CZELO and EI, and taking into consideration the distribution of current FP6 projects involving partners from both countries, the four sectors/Thematic Programmes that are deemed to offer the most potential for opportunity development at the outset of this study are:

- Life Sciences, Genomics and Biotechnologies for Health
- Information Society Technologies
- Nanotechnologies and Nanosciences, Knowledge-Based Multifunctional Materials and New Production Processes and Devices
- Sustainable Development, Global Change and Ecosystems

The overall objective of the initiative is to identify opportunities for collaboration leading to the development of innovative applications which have commercial potential, and which correspond to the specific Thematic Programmes which underpin the Framework Programme. For this reason, it was agreed that the Marie Curie initiative would not be suitable for analysis at this stage, as this programme is highly targeted in nature, aiming primarily to source and place individual researchers with specific skills to fill a particular organisational requirement.

## 3.2

### Target Sectors

The reasons underlying the choice of these sectors are highlighted on the following pages.

Technology Area	Life Sciences, Genomics and Biotechnologies for Health
Objectives of the area/sector as stated by Enterprise Ireland	<ul style="list-style-type: none"> <li>● Increase the number of firms engaged in meaningful R&amp;D</li> <li>● Support the creation of new high-potential start-up companies (HPSUs) nationwide</li> <li>● Drive export readiness by implementing productivity and competitiveness improvement projects in firms</li> <li>● Increase in new export sales</li> </ul>
Objectives of the area/sector as stated by the Czech Government (National Research Plan II for 2006–11)	<ul style="list-style-type: none"> <li>● Development of new procedures (including nanotechnologies etc) in medical diagnostics and treatment follow-up</li> <li>● Molecular genetics and biotechnology for new drugs development</li> <li>● Better therapeutic efficiency and safety of medical drugs</li> <li>● New procedures in genomics of grave illnesses (cardiovascular, cancer etc)</li> <li>● New materials and procedures in medicine</li> </ul>
<b>Applied Research collaboration potential:</b>	
What are the applied research gaps in this area/sector in Ireland as presently perceived by Enterprise Ireland?	<ul style="list-style-type: none"> <li>● Poor collaboration between academia and SMEs/industry</li> <li>● Fragmented research groups</li> <li>● Poor exploitation of basic research to translational medicine or innovation</li> <li>● Many SMEs in early stages of development</li> </ul>
What are the applied research gaps in this area/sector in the Czech Republic as presently perceived by the Czech Government?	<ul style="list-style-type: none"> <li>● Low number of spin-off SMEs in biotechnology</li> <li>● High-tech and costly instruments sometimes unaffordable</li> <li>● Weak connection between academics and industry</li> <li>● Very weak participation of industry in Framework Programmes for RTD</li> </ul>

Technology Area	Information Society Technologies
Objectives of the area/sector as stated by Enterprise Ireland	<ul style="list-style-type: none"> <li>● Aiming to increase the number of companies doing R&amp;D in this area and to improve industry-academic co-operation</li> </ul>
Objectives of the area/sector as stated by the Czech Government (National Research Plan II for 2006–11)	<ul style="list-style-type: none"> <li>● To develop technical infrastructure for knowledge management, especially in health care, social security and public administration at large</li> <li>● To develop new information infrastructures at universities</li> <li>● To develop new methods of knowledge management with the aid of methods of artificial intelligence, machine learning and information and data archive</li> <li>● To develop new mobile and open systems for internet applications and for new types of customer solutions in industry and elsewhere</li> <li>● To develop new systems of computer security including anti-spam protection in order to bring the information and communication environment in the Czech Republic up to world security standards</li> <li>● To develop new tools for the work of virtual teams and labs, and to expand e-learning methods in order to become European leaders in this area</li> <li>● To overcome language barriers in information and knowledge sharing in the multilingual EU environment</li> </ul>
<b>Applied Research collaboration potential:</b>	
What are the applied research gaps in this area/sector in Ireland as presently perceived by Enterprise Ireland?	<ul style="list-style-type: none"> <li>● Applied research gaps in IST are to be explicitly identified by EI</li> </ul>
What are the applied research gaps in this area/sector in the Czech Republic as presently perceived by the Czech Government?	<ul style="list-style-type: none"> <li>● Fragmentation of research effort</li> <li>● Weak connections between academia and industry</li> </ul>

Technology Area	Nanotechnologies and Nanosciences, Knowledge-Based Multifunctional
<p>Objectives of the area/sector as stated by Enterprise Ireland</p>	<ul style="list-style-type: none"> <li>● Increased uptake of nanotechnologies by existing client companies</li> <li>● Double the number of researchers working in this field</li> <li>● Increase the number of new start-up companies</li> <li>● Encourage the establishment of a range of centres of excellence to exploit the main areas of potential from the application of nanotechnology</li> <li>● Increase the profile of Irish nanotechnology capability both at home and overseas</li> </ul>
<p>Objectives of the area/sector as stated by the Czech Government (National Research Plan II for 2006–11)</p>	<ul style="list-style-type: none"> <li>● Prepare new materials and develop new processes for utilisation of renewable and non-traditional energy sources, including hydrogen</li> <li>● Develop new unconventional structures and engine constructions</li> <li>● Develop new materials with new application properties, including nanomaterials and methods for material diagnostics</li> <li>● Prepare new semiconductor components for diagnostics and control</li> <li>● Introduce new processes in selected branches of chemical and pharmaceutical industries</li> <li>● Develop new materials, new admixtures into products of other branches, new polymers and catalysts</li> <li>● Develop new diagnostics approaches, including nanotechnological methods for speedy, exact and patient-friendly diagnostics</li> <li>● Develop new materials and processes for medicine</li> </ul>

Technology Area	Nanotechnologies and Nanosciences, Knowledge-Based Multifunctional
<p><b>Applied Research collaboration potential:</b></p> <p>What are the applied research gaps in this area/sector in Ireland as presently perceived by Enterprise Ireland?</p>	<ul style="list-style-type: none"> <li>● Nanoparticle safety and risk assessment</li> <li>● Nanoparticles for drug development and delivery</li> <li>● Metrology and standards</li> <li>● Infrastructure</li> </ul>
<p>What are the applied research gaps in this area/sector in the Czech Republic as presently perceived by the Czech Government?</p>	<ul style="list-style-type: none"> <li>● Weak research in advanced non-metallic materials</li> <li>● Weak connections between academia and industry</li> </ul>

Technology Area	Sustainable Development, Global Change and Ecosystems
Objectives of the area/sector as stated by Enterprise Ireland	<ul style="list-style-type: none"> <li>Development of intensified energy efficiency programmes</li> <li>Development and deployment of renewable and alternative energy sources</li> <li>Integrated approaches to urban mobility and promotion of sustainable modal choice</li> <li>Raising awareness and stimulating energy efficiency</li> <li>Deploying renewable energy in electricity and heat production</li> <li>Enabling clean urban transport and communities</li> <li>Creating competitive energy markets, security of supply and environmental protection</li> </ul>
Objectives of the area/sector as stated by the Czech Government (National Research Plan II for 2006–11)	<ul style="list-style-type: none"> <li>New materials and new procedures for the use of the renewable sources of energy, including hydrogen energy</li> <li>Increased reliability of the devices for the transfer of electricity</li> <li>New procedures for nuclear energy technologies</li> <li>Decreased energy demands of operations of buildings</li> <li>Alternative energy sources in transport</li> <li>Increased use of transport security systems</li> <li>Lower production of emissions, remediation of previous ecological loads, improvement of the surface water cleanliness</li> <li>Innovative procedures in waste treatment</li> <li>Methods for the implementation of environmental standards according to OECD standards</li> </ul>
<b>Applied Research collaboration potential:</b>	
What are the applied research gaps in this area/sector in Ireland as presently perceived by Enterprise Ireland?	<ul style="list-style-type: none"> <li>Emerging technologies</li> <li>Renewable energy</li> <li>Energy efficiency</li> <li>Built environment</li> <li>Economic/financial research relating to both energy efficiency and renewables</li> </ul>

Technology Area	Sustainable Development, Global Change and Ecosystems
What are the applied research gaps in this area/sector in the Czech Republic as presently perceived by the Czech Government?	<ul style="list-style-type: none"> <li>Weak utilisation of hydrogen energy sources and other renewable sources (bio, solar, etc)</li> <li>Need for research on long-term benefits and risks of different energy sources</li> <li>Lack of connection between basic and applied research in the area of forestry, landscape planning and the protection of nature and environment</li> </ul>



- Ireland invested 1.2% of GDP in R&D in 2004, up from 1.12% in 2003<sup>2</sup> (Czech Republic – 1.28%, EU25 average – 1.9%)
- The Irish innovation system brings together researchers and businesses in commercial applications of science and technology
- The Irish economy outperformed all other European economies during the 1990s, recording a growth rate throughout that period that was over three times the rate of the EU average (8% – 2.1%)
- Growth was driven by domestic demand as private consumption was boosted by gains in disposable incomes and wealth and investment remained strong
- Natural resources include natural gas, peat, copper, lead, zinc, silver, barite, gypsum, limestone, dolomite
- Ireland is ranked 10<sup>th</sup> by the IMD World Competitiveness Yearbook 2005 in terms of exports of goods as a percentage of GDP
- Ireland is the world's biggest exporter of software<sup>3</sup>
- The IMD World Competitiveness Yearbook 2005 ranks Ireland third for GDP per capita at Purchasing Power Parity (PPP), ahead of the USA (5<sup>th</sup>) and Switzerland (11<sup>th</sup>)<sup>4</sup>
- Ireland remains one of the most successful EU States at attracting FDI, with direct inward investment flows representing 17% of GDP in 2003<sup>5</sup>
- According to the Economist Intelligence Unit Business Rankings, Ireland will remain one of the most attractive business locations in the world throughout the period 2004–2008

#### 4.2

##### Basic Information<sup>6</sup>

Area	70,280 km <sup>2</sup>
Population	3,917,203
Capital City	Dublin, population 1,122,821
Other major cities (Population)	Cork (186,239), Limerick (86,998), Galway (66,163), Waterford (46,736)

#### 4.3

##### Economic Information (2004)<sup>7</sup>

GDP, real growth rate	6.0% (Eurozone average – 1.2%)
GDP (current prices)	€ 39,556m
GDP per capita (current prices)	€ 38,800
GDP per capita compared to EU25 in PPS	131% (only Luxembourg has a higher rate)
Unemployment rate	4.2%
Inflation	2.2%

Ireland's employment rate grew at 3.0% in 2004. Over the period 1995 to 2004, the employment rate grew from 54% to 65.5%. This was higher than the EU25 average of 63% in 2004. The unemployment rate in Ireland increased from a low point of 3.6% in 2001 to 4.2% in August 2005. Despite this, Ireland continues to enjoy the second lowest unemployment rate in the EU, at a level that is less than half the EU25 average (8.8%).

Industry accounts for 46% of GDP, about 80% of exports and 29% of the labour force. Apart from exports, the economy has benefited from a rise in consumer spending, construction and business investment.

#### 4.4

##### Operating Companies and Entrepreneurs (2005)<sup>8</sup>

The table on page 28 shows the number of firms in manufacturing and internationally traded services (e.g. software, international financial services etc) in the country by size band and by ownership. Excluding micro-enterprises (10 or fewer employees), there are approximately 3,500 SMEs in manufacturing and internationally-traded services in Ireland (i.e. employing 11–250 employees).

<sup>2</sup> Eurostat Press Release 156/2005, 6 December 2005

<sup>3</sup> OECD

<sup>4</sup> IMD World Competitiveness Yearbook 2005

<sup>5</sup> Measuring Ireland's Progress, 2004, Central Statistics Office (CSO)

<sup>6</sup> Census 2002; CSO 2004

<sup>7</sup> ESRI Quarterly Economic Commentary, Summer 2005 & OECD Economic Outlook No 77, May 2005

<sup>8</sup> Forfás Annual Employment Survey 2005

#### Number of Firms in Manufacturing and International Services Activities in Ireland, 2005

Employment Size Band	Irish-owned	Foreign-owned	Total
1-10	4,397	242	4,639
11-50	2,097	397	2,494
51-100	401	202	603
101-250	204	193	397
251-500	49	116	165
501+	14	50	64
<b>Total</b>	<b>7,162</b>	<b>1,200</b>	<b>8,362</b>

Ireland also has many small businesses operating outside of manufacturing and services. On the basis of the number of self-employed people in Ireland, there are 102,000 small businesses with paid employees and another 132,000 self-employed people operating as sole traders.

#### 4.5

#### Foreign Trade (2005)<sup>9</sup>

Ireland's economy is one of the most advanced in the EU25, ranked 10<sup>th</sup> in the world by the IMD World Competitiveness Yearbook 2005 in terms of exports of goods as a percentage of GDP. The most recently available statistics show that in 2003, export of merchandised goods and services from Ireland accounted for 83.7% of GDP, third in the EU only behind Luxembourg and Belgium. The corresponding figure for import of goods stood at 68.2%.

Ireland's foreign trade surplus has grown exponentially in the period 1990–2004 from a level of €2,372 million (1990) to €33,292 million (2004). In 2004, this surplus reflected figures of exports at an annual level of €84,175 million and imports at €50,884 million. Compared to the previous year, exports were up by 2% overall, principally due to a rise in pharmaceuticals exports. Imports, on the other hand, were up by 5%, principally due to road and other transport (including aviation) and fuels.

#### Major Product Groups – Exports (€88,411m) which include:

- Chemicals (including Pharmaceuticals) (€40,323m)
- Machinery and transport equipment (€23,448m)
- Miscellaneous manufactured articles (€10,532m)
- Food & live animals (€6,326m)
- Manufactured goods (€1,757m)

#### Major Product Groups – Imports (€56,478m) which include:

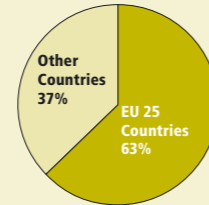
- Machinery and transport equipment (€24,787m)
- Computer equipment (€9,141m)
- Chemicals (including Pharmaceuticals) (€7,280m)
- Manufactured goods (€4,866m)
- Food & live animals (€3,544m)

The year-on-year comparison of January–September 2005 with the same period in 2004 shows that exports increased by 3% to €64,756 million, and imports increased by 8% to €40,291 million. During this period, Ireland's external trade has been characterised by substantial levels of export trade with three developed economies (USA, Great Britain and Belgium), who together account for 49.5% of total exports. Great Britain is by far Ireland's single biggest provider of goods; it accounts for almost 29% of imports. The figures also show that, during this period, levels of export trade with France rose by 13%, and with Spain by 24% compared with the corresponding period in 2004, while at the same time levels of imports from China rose by 31%, with those from France decreasing by 20%.

<sup>9</sup> External Trade, Central Statistics Office, 21 March 2006

### Export of Goods by Major Trading Countries, 2004

UK (17.9%)  
Other EU (44.7%)



USA (19.6%)  
Switzerland (4.0%)  
Japan (2.7%)  
Hong Kong/Singapore (1.6%)

## 4.6

### Foreign Direct Investment (FDI)

The National Foreign Direct Investment Agency, IDA Ireland, is the primary Government agency with responsibility for the promotion of FDI into Ireland and the development of the existing base of overseas companies. IDA Ireland was established in 1969 and has played a crucial role in attracting leading world corporations to establish significant operations in Ireland. Through a network of offices in the United States and several other countries, IDA Ireland has been able to develop relationships across the globe and attract further investment.

Ireland remains one of the most successful EU Member States at attracting FDI, with direct inward investment flows representing 17% of GDP in 2003. This was ten times the corresponding Eurozone rate of 1.7%. In 2003 Ireland negotiated and secured 64 inward investment projects. IDA-supported companies, in 2003, spent €14.7 billion in the Irish economy from their annual sales of €69.3 billion and exports of €65.2 billion. IDA Ireland attracts investments that exploit the wealth of skills, expertise and knowledge which has been built up in Ireland by:

- Focussing on business sectors that are closely matched with the emerging needs of the economy and that can operate competitively in global markets from an Irish base
- Building links between international businesses on the one hand, and third level education and research centres on the other, to ensure the necessary skills and research capabilities are in place

- Building world-leading clusters of knowledge-based activities
- Strongly influencing the competitive needs of the economy. IDA Ireland is very active in the development of infrastructure and business support services, telecoms, education, and regulatory issues, especially in relation to EU policy

Ireland now accounts for roughly 25% of all FDI from the US into Europe. This includes:

- Around 30% of all FDI in pharmaceuticals and healthcare
- Nine of the world's top 10 drug companies have operations in Ireland
- 33% of all personal computers sold in Europe are manufactured in Ireland

By lowering corporate taxes for both manufacturing and services over the years (2003–12.5%), Ireland has been able to offer a financially competitive platform. This is demonstrated by the fact that in 1990 some 11,000 companies were exporting from Ireland. By 2002, this number had risen to 70,000. More recent highlights include:

- Nearly half of all IDA-supported companies now have some expenditure on R&D and 7,300 people are engaged in this activity
- In 2004 major R&D developments were announced by Bell Labs, Merit Medical, IBM and Liebherr
- In 2003 Google, Overture and eBay/PayPal, all world leaders in their fields, announced the establishment of key European Centres in Ireland, giving a real boost in the internet services sector

## 4.7

### Research Information<sup>10</sup>

- Ireland invested 1.2% of GDP in R&D in 2004, up from 1.16% in 2003<sup>11</sup>
- Investment in R&D performed by the business sector in Ireland increased to €1,076 million in 2003 (from €901 million in 2001)
- Business spending on R&D in Ireland increased annually by 9.2% between 2001–2003 in nominal terms, accelerating from 7.0% annual expansion between 1999–2001. When adjusted for inflation, annual growth between 2001–2003 amounted to 5.2%

<sup>10</sup> Business Expenditure on R&D 2003, Forfás, May 2005

<sup>11</sup> Eurostat Press Release 156/2005 - 6 December 2005

- Business investment in R&D (BERD) rose strongly in the pharmaceutical and instruments sectors, steadied in the electronics and computer-related sectors, and fell in the food and drink sector
- Foreign-owned (shareholding > 50%) companies accounted for a growing 72% of total BERD performed in Ireland in 2003
- Despite the 9.2% growth in BERD, the number of R&D active companies performing R&D in Ireland fell by an annual 5.5%
- The numbers of people employed in R&D activities by business in Ireland (full-time equivalents) increased by 1.7% between 2001–2003
- The share of total expenditure invested in Basic Research R&D by businesses rose to 8.9% in 2003, increasing from the 4.4% share recorded in 2001
- BERD is estimated to have increased to €1,145 million in 2004

#### 4.8

#### Research and Development Policy in Ireland

R&D policy in Ireland comes under the auspices of Forfás, which is the National Board responsible for providing policy advice to the Government of Ireland on enterprise, trade, science, technology and innovation. Legal responsibility for the promotion and development of these sectors is vested in Forfás by the State, through the Department of Enterprise, Trade and Employment. Forfás' functions include:

- Research, analysis and policy advice on competitiveness and economic development
- The promotion of scientific research and innovation in close association with Science Foundation Ireland (SFI) and the Advisory Council for Science, Technology and Innovation (ACSTI)
- Industrial policy development and coordination to promote coherence in the activities of State bodies such as IDA Ireland, Enterprise Ireland and SFI

R&D in Ireland has expanded in recent years, reflecting the Irish Government's major injection of funding into the sector. The National Development Plan 2000–2006 committed to spend €2.48 billion for research, technological development and innovation as part of its policy to ensure that Ireland will be one of the foremost knowledge-based economies with world-class centres of excellence in fields such as life sciences, medical technologies, software and information technologies.

#### 4.9

The Irish Action Plan for Promoting Investment in R&D to 2010<sup>12</sup> is based on the premise that sustained investment in R&D is an essential foundation to maintain the competitiveness of the enterprise base and to develop Ireland as a knowledge-based society. The vision for 2010 is to achieve a major change in the performance of R&D, and to secure Ireland's future economic well-being by promoting innovation and a culture of entrepreneurship amongst researchers, and fostering effective linkages between enterprise and academia.

#### Science Foundation Ireland (SFI)

In the late 1990s it was identified that Ireland's research capability had a number of quality gaps in certain strategic areas. In order to address these gaps, the Government established SFI, as part of the National Development Plan in 2000. SFI was created as a sub-board of Forfás to administer Ireland's Technology Foresight Fund, and the Government committed €635 million in funding to it.

SFI was set up to undertake and support strategic research of world class status in key scientific areas which can underpin economic development. SFI provides awards to support scientists and engineers working primarily in biotechnology and information and communications technology development and their underlying scientific disciplines. The ultimate goal is to foster an R&D culture in Ireland by attracting and investing in superb individual researchers and their teams from Ireland and abroad and to support them in developing ideas that lead to the creation of knowledge-based businesses, which produce jobs and generate exports. In short, SFI's remit is to encourage the generation and application of research and knowledge to secure Ireland's long-term competitiveness and growth.

The Agreed Programme for Government, published in June 2002, provided for the establishment of SFI as a separate legal entity. In July 2003, SFI was established on a statutory basis under the Industrial Development (Science Foundation Ireland) Act, 2003.

Since its creation, SFI has gradually increased its annual research funding levels from €10 million in 2001 to €121 million in 2005. During that time, it has established 163 Research Groups, of which 34 have come to Ireland from overseas laboratories. The groups now employ over 1,150 research staff and around 450 PhD students. SFI has also played a major role in promoting the internationalisation of the Irish research system, both by attracting people to work in Ireland and by facilitating and encouraging international collaborations.

<sup>12</sup> *Building Ireland's Knowledge Economy, July 2004*

SFI has established a number of Centres for Science, Engineering & Technology (CSETs) to help link scientists and engineers in partnerships across academia and industry to address crucial research questions, to foster the development of new and existing Irish-based technology companies, to attract industry that could make an important contribution to Ireland and its economy, and to expand educational and career opportunities in Ireland in science and engineering. The CSETs are detailed in Appendix I

SFI's performance in its first five years of operation (2001–2005) was the subject of an independent review by an international evaluation panel of distinguished scientists, the findings of which were released in December 2005. The review<sup>13</sup> concluded that:

“Research of excellent quality is being funded by SFI and the existence of SFI funding is having a positive catalytic effect on the performance of research in Ireland in its two fields.”

The review panel made four main recommendations regarding the future operation of SFI:

- Research excellence as the basis for making SFI's awards is the single most important factor in its success and it is of paramount importance that awards continue to be decided on the criterion of research excellence above all else
- It is essential for the Irish Government to continue to take a long-term, strategic view of funding for research in Ireland
- All relevant research funding agencies must assume a shared responsibility for a coherent and coordinated approach to the development and consolidation of the Irish research system
- Commercialisation of SFI funded research should be supported through an integrated system built on a foundation of realistic expectations

#### 4.10

#### Enterprise Ireland (EI)

EI is the Government agency responsible for developing and supporting Irish industry. As part of its strategy it works alongside Irish-owned industry to encourage and support the development of research agendas relevant to Irish industry's medium and long-term needs. These agendas will form the basis for funded research programmes completed in co-operation with the third level sector.

<sup>13</sup> 'Science Foundation Ireland: The First Years 2001-2005' Forfás 2005

EI's mission in research and innovation is to:

- Encourage and assist Irish-owned companies to initiate R&D
- Support collaborative R&D by industry & academia
- Actively promote international R&D collaborations through the Framework Programme and other programmes
- Help college campus researchers to commercialise their work, and to forge links with Irish companies
- Administer a number of funding schemes to both industry and academia

The promotion of industry-led R&D is very much a priority for EI. At the end of 2005, company investment in R&D with EI support amounted to €120 million. Five hundred and sixteen Irish companies were engaged in projects involving R&D investments of €100,000 or more, and 31 companies were engaged in significant R&D projects involving investments of €2 million or more.

EI's R&D activities have recently been repositioned and refocussed to address the issues that are now increasingly significant for industry. Arising from the Lisbon Agenda, strategic R&D targets have been agreed with the Office of Science and Technology and these will be a primary focus in 2006 and beyond.

#### 4.11

#### Higher Education Authority (HEA)

The HEA is the principal funding agency for higher education. It works closely with the colleges to foster a dynamic, innovative and well-funded research sector in Ireland. Since the launch in 1998 of the Programme for Research in Third-Level Institutions (PRTL), following the success of a pilot programme in science and technology, the HEA has allocated €605 million to third-level institutions through this mechanism. The programme provides integrated financial support for institutional strategies, programmes and infrastructure and ensures that institutions have the capacity and incentives to formulate and implement research strategies to give them critical mass and world level capacity in key areas of research.

The investment made through PRTL I has resulted in a highly significant improvement in Ireland's college research capability. As well as improved infrastructure, it has led to the creation of a steady output of highly qualified graduates and outstanding researchers, as is required by Ireland's progression into an economy and society based on knowledge and innovation.

#### 4.12

##### Health Research Board (HRB)

The HRB provides funding and support for research under two strategic strands:

- The Science for Health strand supports investigator-led research in the health, life and social sciences that improves understanding of health and disease, and contributes to the discovery of improved therapies
- The R&D for Health strand targets the development of structures within the health system to support research and development that will, in due course, encourage the application of knowledge to health problems, and increase the effectiveness of the health system in achieving its goals. Research grants are awarded following competitions open to researchers working in any recognised health research institution in the country (e.g. universities, hospitals, health boards, voluntary agencies etc)

All applications for funding are peer reviewed by national or international experts working in that field and also reviewed and scrutinised by an international panel of experts. Applications are funded only on the basis of scientific merit.

#### 4.13

##### Universities in Ireland

There are seven universities in Ireland, three of which are located in Dublin, with the remaining four located across the country. The oldest, Trinity College Dublin (TCD), was established in 1592, while the newest, Dublin City University (DCU), was initially set up in 1980.

Ireland's universities have long been at the vanguard of the country's research and development activity. In addition to ongoing research projects, which are central to the studies of Ph.D. students and to university instructors' own bodies of published work, Irish academics are also deeply involved in multinational research initiatives. These include a number of collaborative projects under the EU Fifth and Sixth Framework Programmes (FP5 and FP6), addressing diverse topics that range from global warming to the causal factors of obesity. All seven universities have established a strong commitment to research and in most instances have established dedicated research centres in key subject areas.

##### Ireland's Universities

Ireland's universities are listed below. For a full outline of the universities and their individual research capabilities, see Appendix H.

- University College Dublin (UCD)
- Dublin City University (DCU)
- National University of Ireland, Galway (NUIG)
- National University of Ireland, Maynooth (NUIM)
- University of Limerick (UL)
- National University of Ireland, Cork (NUIC)



## 4.14

**Research and Development Institutions in Ireland**

The Irish Government's investment in R&D has resulted in the development of a number of highly sophisticated research centres. These are funded under the SFI Centres for Science, Engineering and Technology (CSET) programme and in most cases are designed to create an environment for world-class, highly focussed research in dedicated subject areas, ranging from biomedical research and nanoscience to telecommunications and sensor research.

Also funded under the CSET programme is Ireland's premier multidisciplinary advanced research centre, the Tyndall Institute, whose research themes currently encompass critical topics in microtechnologies, photonics, nanotechnology and research at the ICT/Bio interface.

For a full description and contact information for all CSET-funded advanced research centres, see Appendix I.

## 4.15

**Institutes of Technology in Ireland**

In addition to Ireland's universities, the country also features 15 Institutes of Technology, higher education institutions which have their roots in vocational and technical education. Eleven of today's institutes were formerly Regional Technical Colleges but all of the institutes were re-classified as Institutes of Technology in the late 1990s, in recognition of their ongoing development and high standards, including the development of university-level research at the institutes.

Located throughout the country, the institutes offer programmes at degree, national diploma and national certificate levels in a wide variety of subjects from craft to professional level. Many also run postgraduate and degree programmes. Most have schools of science, engineering & technology and business. In addition some institutes have developed special programmes in areas such as humanities & languages, paramedical studies and healthcare, art & design, and tourism.

Some of the institutes have now established formalised R&D strategies and built strong links with industry and local businesses, with a view towards developing innovative solutions to real-world commercial challenges. The technology network TecNet pools knowledge and skills from the Institutes of Technology to provide research services to Irish industry and business.

**Institutes of Technology**

For a full description of the Institutes of Technology, see Appendix J.

- Athlone Institute of Technology (AIT)
- Institute of Technology, Blanchardstown (ITB)
- Institute of Technology, Carlow (ITC)
- Cork Institute of Technology (CIT)
- Dublin Institute of Technology (DIT)
- Dundalk Institute of Technology (DKIT)
- Dun Laoghaire Institute of Art, Design and Technology (IADT)
- Galway-Mayo Institute of Technology (GMIT)
- Limerick Institute of Technology (LIT)
- Letterkenny Institute of Technology (LYIT)
- Institute of Technology, Sligo (ITS)
- Institute of Technology, Tallaght (IT TAL)
- Institute of Technology, Tralee (IT TRA)
- Tipperary Institute (TI)
- Waterford Institute of Technology (WIT)



## 4.16

**Research Funding Programmes in Ireland**

A range of funding schemes to support research in Ireland are offered to Irish organisations by Enterprise Ireland, IDA Ireland, Science Foundation Ireland, the Higher Education Authority and the Health Research Board.

**Enterprise Ireland Financial Incentives**

Enterprise Ireland, as the trade and technology board of the Irish Government, has a strong commitment to increasing and developing linkages between research and business communities as a driver of new company products, and ultimately, sales. To that end Enterprise Ireland offers a range of direct and indirect support measures to Irish industry and research performers to engage in and profit from research activity<sup>14</sup>. Most of these are administered by the Applied Research and Commercialisation Division and the Technology Automation and Productivity Division:

- Research, Technology & Innovation
- The Innovation Partnership Initiative
- Productivity Improvement Fund
- R&D Capability Grant Scheme
- Technology Transfer
- Campus Business Incubators
- Intellectual Property Assistance Scheme
- Patents
- Internationalisation
- Industry Driven Research Programme
- Commercialisation Fund

**Research, Technology & Innovation (RTI)**

The RTI Scheme aims at bringing about a substantial increase in the level of high quality R&D in businesses in Ireland. The scheme supports commercially focussed, industry led, high quality, risk intensive R&D projects, which are essential for companies to establish or to maintain their overall competitiveness. RTI is particularly directed at established companies planning to undertake their first R&D projects, and companies significantly developing their existing R&D activity. RTI encourages firms to collaborate with research institutions and other firms, especially internationally via the Europe-wide network for market-oriented industrial R&D (EUREKA).

RTI has two forms, competitive (where funding support up to a maximum of €650,000 is available) and non-competitive (where available support is capped to a maximum of 45% of €95,000 projects, depending on location). Both forms of the scheme are co-funded by EU Structural Funds. The portion of the funding that is repayable by the company is linked to the successful completion of the R&D project and the achievement of agreed business targets.

**The Innovation Partnership Initiative**

The Innovation Partnership Initiative provides financial support to encourage companies to undertake collaborative projects with Irish universities and Institutes of Technology. The initiative offers Irish companies the opportunity to tap into the research infrastructure of the Irish third-level sector through collaboration, and a cost-effective approach to innovative product and process development.

All manufacturing, processing and research companies involved in science, engineering, technology and internationally tradable goods and services and with an operating base in the Irish Republic are eligible to benefit under the scheme, provided collaboration with Irish third-level institutions is part of the project.

**Productivity Improvement Fund<sup>15</sup>**

The Productivity Improvement Fund is designed to help Irish companies achieve greater competitiveness by improving their export potential through investment in new technology and training that leads to a sustainable improvement in productivity within the company.

This can be achieved by increasing both their gross output and gross productivity, while also providing new employment or maintaining existing employment levels.

This support scheme is designed to foster a sustainable improvement in productivity in recipient companies, thereby establishing a base from which they can develop their exports.

<sup>14</sup> [www.enterprise-ireland.com/ResearchInnovate/](http://www.enterprise-ireland.com/ResearchInnovate/)

<sup>15</sup> [www.enterprise-ireland.com/grow/finance/productivity+improvement+fund.html](http://www.enterprise-ireland.com/grow/finance/productivity+improvement+fund.html)

### R&D Capability Grant Scheme

The R&D Capability Grant Scheme aims to help companies establish or substantially expand an existing Irish R&D function. The scheme contributes to the capital costs of establishing an R&D unit (e.g. buildings, equipment etc) in addition to the current costs of running the unit for a defined period. The development must represent a clear and substantial “step up” in a company’s R&D activities in Ireland. The scheme is operated by Enterprise Ireland for indigenous companies and by IDA for Multinational Corporations (MNCs).

### Technology Transfer

The Technology Transfer Initiative (TTI)<sup>16</sup> is an inter-regional collaborative project involving the three primary universities of the Atlantic University Alliance (AUA) – University College Cork, the National University of Ireland, Galway and University of Limerick. Under the auspices of the TTI, SMEs in selected regions of Ireland can benefit from support to stimulate new product and process development through collaboration with AUA universities, resulting in mutually beneficial co-operation and interaction.

### Campus Business Incubators

Campus business incubators offer resources which particularly benefit technology-based start-ups including:

- R&D expertise
- Specialist facilities and equipment
- Academic consultants
- Student workers
- Commercialisation advice
- A credible, secure and prestigious address

There are currently 14 campus incubators, plus 6 bio-incubation facilities throughout Ireland. By the end of 2006, there will be incubation facilities present on almost all third level campuses.

<sup>16</sup> [www.technologytransfer.ie/](http://www.technologytransfer.ie/)

### Intellectual Property Assistance Scheme

Through this scheme, Enterprise Ireland provides intellectual property advice on:

- The protection, development and commercialisation of patentable technology
- In appropriate cases, financial assistance to a company for the cost of patenting

Under the scheme, EI assists inventions which result from Government sponsored research, from universities, industry and from private individuals. Advice is available on:

- The use of intellectual property rights (patents, copyright, designs and trademarks)
- Confidentiality agreements
- Licensing (negotiations, royalty rates etc)
- TechSearch – acquiring technologies external to a company that are not readily available from commercial sources
- Technical development
- Scheme for college researchers

EI can also assist in the process of finding companies to commercialise the invention, in cases where the inventor is unable to do so himself/herself, provided the invention is deemed to have sufficient merit and is developed to the stage where there are reasonable prospects that a company might be interested.

A business plan is only required if the application is from an existing company, or the inventor has a definite intention to manufacture and market the invention himself/herself. However, although EI can assist the inventor in undertaking the innovation stages, in return the inventor is expected to demonstrate a business-like approach to managing the project, as the invention will have to progress through various stages of technical and commercial development.

### Patent Funding

As part of its broader support to commercialisation of research, EI’s Patent Fund provides financial aid towards the cost of protecting intellectual property emerging from the higher education sector.

The scheme is open to all third level/research bodies. In 2005, over 35 patents were supported under this scheme. The budget available for 2006 amounts to €1 million.

### Internationalisation

EI provides support to Irish organisations wishing to participate in international programmes for science and technology collaboration through its International Scientific Programmes team. In addition to the specific programme support outlined below, EI's overseas offices are continually working to develop relationships with global corporate leaders. Through these links, EI helps integrate Irish organisations into world-wide networks of firms, helping them to work together on collaborative research and exchange of ideas.

- The EU Framework Programme Information and Support Unit<sup>17</sup>

For the EU Sixth Framework Programme (FP6), EI established a dedicated unit to provide a National Information and Support service to potential Irish participants. This unit is the main structure to give advice, practical information and assistance to Irish industry and research performers.

The service acts as a first point of contact for enquiries relating to FP6. It disseminates information and works in co-operation with the comprehensive structure of NDs and NCPs for the various specific areas of FP6 to inform and assist enterprises and researchers that are interested in participating in the programme. The available assistance includes:

- Advice and financial support for proposal submission through the Feasibility Grant Scheme
- Advice on administrative procedures and contractual issues
- A mechanism for identifying potential collaborating partners in other countries through the Europe-wide network of NCPs

- EUREKA

EUREKA is a pan-European network for market-oriented, collaborative industrial R&D. Its aim is to enhance European competitiveness through providing support to businesses, research centres and universities. Enterprise Ireland manages the participation of Irish companies in the EUREKA network. In 2004, on top of 39 completed projects, Irish companies became involved in eight new collaborations. These covered areas such as robotics, communications, energy, environmental science and biotechnology.

<sup>17</sup> [www.fp6-ireland.com](http://www.fp6-ireland.com)

- European Space Agency (ESA)

ESA promotes co-operation among European States in space research, technology and applications. Currently ESA has 15 Member States and a co-operation agreement with Canada. Ireland's membership of ESA permits Irish companies and research teams to bid for ESA contract development work in:

- ESA mandatory programmes including the ESA General Budget and the Science Programme
- ESA optional programmes in which Ireland participates

EI assists Irish companies to bid for ESA contract work by providing support and advice. For certain ESA Programmes (ARTES and GSTP), prior authorisation by EI is necessary before a contract proposal can be accepted by ESA.

EI also assists international companies that are seeking to identify sources of space-related expertise in Ireland.

### Industry Driven Research Programme

EI's Applied Research and Commercialisation (ARC) division works with industry to identify those significant technology issues which would benefit from strategic research to underpin future developments. Sectors are facing increasingly complex technology challenges to remain competitive.

Research parameters are established, refined, monitored and reviewed by industry groups and facilitated by EI. Funding is provided for projects which address the identified industry research agenda. The research programmes are 100% funded by EI. Companies are expected to pay licensing charges for college intellectual property. Should specific research projects be required, then funding support is available through the Innovation Partnerships.

### Commercialisation Fund

Under the Commercialisation Fund, support is made available to companies for:

- Innovative technologies
- Unique applications of existing technologies
- Internationally traded services that can be developed into High Potential Start-Up companies (HPSUs)

EI seeks to encourage and facilitate high quality applied research aimed at the commercial exploitation of knowledge. As part of its commitment to facilitating the commercialisation of research, EI recognises that this process is an uncertain activity, and that the conversion of scientific principles into the commercial environment requires sustained support. The Commercialisation Fund provides support to companies in three phases: Proof of Concept Phase, Technology Development Phase and Business Development Phase.

### Science Foundation Ireland (SFI) Grants and Awards

SFI provides a range of grants for researchers from around the world and based in Ireland, for outstanding research visitors, for conferences and symposia, and for collaboration with industry. SFI chooses award recipients in the fields underpinning biotechnology and information and communications technology (ICT) through merit review by distinguished scientists. Those schemes that are most relevant for applied research collaborations are highlighted below.

#### SFI Principal Investigator (PI) Programme Grants

These are awards to leading researchers in the science and engineering sectors that underpin the biotechnology and ICT industrial sectors. PI grants range from €50,000 to €1 million direct costs per year and may be up to 5 years in duration. Typical grants are in the range of €50,000 to €200,000 (direct costs) per year and normally up to 4 years in duration. Researchers with exceptional track records may apply for awards of up to €1 million (direct costs) per year for up to 5 years.

### SFI Centres for Science, Engineering, and Technology:

#### Campus-Industry Partnerships (CSET)

Established to fund researchers to build collaborative efforts with researchers from industry to develop internationally competitive research programmes, grants can be available for up to €5 million per year initially, for up to five years. These grants support research partnerships linking scientists, engineers and industry.

#### E.T.S. Walton Visitor Awards

These have been instituted with the aim of bringing international researchers to Ireland for periods of up to one year. Grants usually total €200,000 per year, including salary, laboratory, and moving expenses.

#### SFI Workshops and Conferences Grants

These were set up to support events either sponsored by or involving Irish scientists and research bodies that reach an international scientific audience.

#### Industrial Partnership Research Supplements

SFI strongly encourages research collaboration between SFI-funded scientists & engineers and industry. Such interactions can lead to SFI scientists & engineers becoming more informed about industrial priorities and research needs; and lead to industrial collaborators being informed about important new science and engineering research developments in Ireland. To facilitate such collaborations, SFI accepts applications from SFI Investigators for supplementary awards to fund collaborative projects with industry, provided these projects directly relate to and enhance existing SFI peer-reviewed programmes.

## 05

## The Czech Republic



## 5.1

## Highlights

The research and innovation infrastructure of the Czech Republic continues to mature, supported by a strong belief at the highest levels of Czech Government that R&D is one of the most important factors influencing the country's future competitiveness and prosperity. Since 2000 the Czech Republic has continued to develop its R&D policy and hone its innovation strategy, and it has set aggressive targets for accelerating public allocation of R&D funds.

The Government has set itself the ambitious goal of establishing the Czech Republic as a "knowledge and technological centre of Europe."

As a potential research partner, the Czech Republic offers the benefit of this robust, Government level embrace of the "innovation imperative," as well as historic strengths in pure research in its leading basic research institution, The Academy of Sciences of the Czech Republic (AS CR). The Czech Republic is generally regarded as being the most economically advanced of the New Member States:

- It has a population around three times that of Ireland
- It invests 1.28% of GDP in R&D, up from 1.26% in 2003<sup>18</sup>, the highest level of all the New Member States except Slovenia (Ireland–1.2%, EU25 average – 1.9%)
- It has a GDP per capita in PPS (72 in 2004) that is fourth of the 10 New Member States (after Cyprus, Slovenia and Malta)<sup>19</sup>
- It has common strategic sectoral objectives with Ireland in ICT, Life Sciences, Nanotechnologies, Sustainable Development
- It is committed to developing linkages between its higher education and research systems and to creating public/private partnerships
- It aims to develop its infrastructure for Research of Innovation through creative use of Structural Funds (e.g. technology parks)
- It aims to support underdeveloped organisations in reaching competitiveness
- It is a partner with Ireland on 83 FP6 contract negotiations (July 2005)

<sup>18</sup> Eurostat Press Release 156/2005, 6 December 2005

<sup>19</sup> Regional GDP per Capita in the EU25, Eurostat, 75/2005 - 3 June 2005

## 5.2

Basic Information<sup>20</sup>

Area	78,864 km <sup>2</sup>
Population	10,300,000
Capital City	Prague, population 1,250,000
Other major cities (Population)	Brno (380,000), Ostrava (320,000) Plzen (170,000), Olomouc (100,000) Liberec (100,000) Ceske Budejovice (100,000) Hradec Kralove (100,000)

## 5.3

Economic Information (2004)<sup>21</sup>

GDP, real growth rate	4.4%
GDP (current prices)	€44,748m
GDP per capita (current prices)	€ 8,446m
GDP per capita compared to EU25 in PPS	72%
Unemployment rate	8.9%
Inflation	2.1%

## Operating Companies and Entrepreneurs:

Number of Companies:	42,068
○ SMEs	40,540
○ Large Companies	772
Number of Entrepreneurs	55,181

<sup>20</sup> Czech Republic Profile, 'Building Your Business in the EU Accession States' Enterprise Ireland, June 2004

<sup>21</sup> Czech Statistical Office, Key Macroeconomic Indicators, September 2005

<sup>22</sup> Analysis of the economical development of CR and branches under the auspices of MPO in first half-year of 2005, Ministry of Industry and Trade (MPO), October 2005

<sup>23</sup> Czech Statistical Office, Key Macroeconomic Indicators, September 2005

## 5.4

## Foreign Trade (2005)

The Czech economy is one of the most open world-wide, ranking in 15<sup>th</sup> position. Exported goods account for 64.3% of Czech GDP, and imported goods 61.3%. The foreign trade surplus continues to grow following the accession of the Czech Republic to the EU in May 2004. This is underpinned on one hand by an increasing competitiveness and, on the other, to a continuing shift from import of sub-products to purchase from local suppliers<sup>22</sup>.

Foreign trade results are characterised mainly by trade with developed economies (91% of exports) with Germany being by far the major trading partner (34.5% of exports and 31% of imports). High tech products account for 7.7% of exports and 13.9% of imports.

Major Product Groups–Exports:<sup>23</sup>

- Motor cars
- Pharmaceuticals
- Chemicals
- Furniture
- Steel and steel products
- Parts and accessories of motor vehicles
- Refrigerators, freezers, etc
- New pneumatic tyres
- Electrothermic appliances, other domestic equipment
- Computers and peripherals

## Major Product Groups–Imports:

- Steel and steel products
- Motor cars
- Petroleum oils
- Parts and accessories of motor vehicles
- Pharmaceuticals
- Chemicals
- Motor vehicles for the transport of goods
- Computers and peripherals
- Petroleum gases

## 5.5

### Foreign Direct Investment (FDI)

FDI is the responsibility of CzechInvest, the agency of the Czech Department of Industry and Trade. In recent years the proportion and impact of FDI in the Czech Republic has significantly increased. Following a temporary decline in 2003, FDI inflows into the Czech Republic reached US\$ 4 billion in 2004, around twice as much as that achieved in 2003<sup>24</sup>.

The ability to attract FDI is also important from the point of view of R&D, as almost 47% of corporate R&D undertaken in the Czech Republic is performed by foreign-owned companies. This is above the OECD average and places the Czech Republic fifth in the world behind Ireland, Hungary, Singapore and Brazil<sup>25</sup>. Foreign companies that have recently opened or announced intentions to open R&D centres in the Czech Republic include:

- Tyco Safety Systems (Brno)
- Robert Bosch (Ceske Budejovice)
- Mercedes-Benz (Pilsen)
- Latecoere (Prague – development and production of composites for Airbus aeroplanes)

## 5.6

### Research and Development – Overview

The Czech Republic currently invests 1.28% of GDP in R&D with 0.54% coming from public sources, 0.67% from business and 0.05% from abroad. Public allocations to R&D funds are expected to increase by almost one third to 0.72% of GDP by 2008 and a similar increase is anticipated for the private sector<sup>26</sup>.

The Czech Government is now addressing a number of challenges in relation to pursuing convergence with the EU15 through the development of its research and innovation infrastructure. Its policy is to devote an increasing proportion of the overall State budget for research towards applied research in order to bring the ratio with basic research in line with the EU norm. The Government has committed to developing linkages between its higher education and research systems on one hand, and between research and innovation on the other.

<sup>24</sup> CzechInvest, 29 September 2005

<sup>25</sup> OECD, 2005

<sup>26</sup> Statistical Yearbook Science and Technology, Czech Statistical Office 2005, [www.czso.cz/csu/edicniplan.nsf/p/1005-05](http://www.czso.cz/csu/edicniplan.nsf/p/1005-05)

Currently, R&D is undertaken by four different groups of institutions. These are:

- Institutes of the Czech Academy of Sciences<sup>27</sup>
- Universities<sup>28</sup>
- Private Research Institutes
- Departmental Research Institutes

The first two groups concentrate principally on basic research, while the latter two have a greater emphasis on applied research.

#### Basic Research

The leading basic research public institution in the Czech Republic is The Academy of Sciences of the Czech Republic (AS CR). It was established in 1992 by the Czech National Council to succeed the former Czechoslovak Academy of Sciences. Its mission is to undertake both basic research and strategic applied research to create scientific knowledge that contributes to strengthening the nation's position in key areas of science.

The AS CR formulates its own scientific policy, and advises the State on major issues of its R&D policy. It also administers national as well as international research programmes, and promotes co-operation in applied research and industry to foster technology transfer and exploitation of scientific knowledge.

The AS CR currently manages a network comprising 60 research institutes and five supporting units, which in total have a staff of 6,400 employees. Just over half of these are university-trained researchers and PhD scientists. The Head Office of the Academy and 40 research institutes are located in Prague, with the remaining institutes being situated across the country. A full listing of AS CR institutes is included in Appendix C, in three divisions: the Division of Mathematics, Physics, and Earth Sciences; the Division of Chemical and Life Sciences; and the Division of Humanities and Social Sciences.

University research is constantly gaining in importance; from being almost non-existent under the Communist regime it has developed to account for some 15% of total R&D funding at present. There are some 27 public institutions of higher education in the Czech Republic and a further 40 smaller, private institutions, mostly oriented towards business and social sciences.<sup>29</sup>

<sup>27</sup> [www.cas.cz/index.html.en](http://www.cas.cz/index.html.en)

<sup>28</sup> [www.radavs.cz](http://www.radavs.cz)

<sup>29</sup> [www.system.vysokeskolny.cz/?clanek=430](http://www.system.vysokeskolny.cz/?clanek=430)

A number of higher education establishments in the Czech Republic feature technical R&D capacities. These are located in Prague, Ceske Budejovice, Brno, Ostrava, Opava, Liberec, Hradec Kralove, Usti nad Labem, Olomouc, Pardubice, Zlin, Pilsen, Jihlava and Mlada Boleslav. For a full listing, see Appendix D.

### Applied Research

The Czech Republic has a large number of sectoral research institutions outside the academic sphere, performing research as well as consultation and testing services for the public and private sector. These institutions undertake work in subject areas ranging from mechanical engineering and material science to medicine and pharmacology. A number of private institutions that undertake applied research were established through the privatisation of research institutions that formerly operated under the auspices of the Department of Industry and Trade. Other privately funded research is performed in corporations and just a few genuinely new research establishments. The majority of the private institutions are members of the Association of Research Organisations.<sup>30</sup>

For an extensive listing of the more significant non-academic research institutions, see Appendix E. Unfortunately, a significant number of non-academic research organisations ceased to be active in this field due to the economic reality during the transformation from the centrally planned economy in the nineties.

### Significance of individual R&D sectors

The head counts in various R&D sectors show that numbers of employees in universities and Governmental research establishments have remained relatively stable, whereas business research has increased slightly over the last three to four years. There has also been a marked improvement in the number of university graduates entering companies, with around 70% of all R&D employees holding PhD, MSc and MS qualifications. Compared to Ireland, the Czech Republic is very strong in nuclear research, both basic (fusion) and applied.

<sup>30</sup> [www.avo.cz/index\\_e.htm](http://www.avo.cz/index_e.htm)

## 5.7

### Overview of Innovation in the Czech Republic

In 2002–2003<sup>31</sup>, 11.5% of companies doing business in industry and services in the Czech Republic were involved in innovation of the production process, whereas 21.7% were involved in the innovation of actual products.

In terms of innovation investment, most of the funds to date have been directed to the acquisition of machinery and equipment and used for intramural R&D.

The data on innovation intensity (innovation investment as a proportion of total income) and innovation employment (proportion of labour involved in innovation activities) in a range of enterprises show that absolute numbers are relatively small. The census also shows that:

- By far the most serious hindrance to innovation has been the lack of financial resources and the high cost of innovation
- The most significant organisational drivers for innovation come from intramural resources (45% of respondents) and clients (40%); the least are universities (4%) and research establishments (3%)
- The major benefits and outputs from innovation are improvements in product quality (31%), product range (27%) and market enhancement (19%), in comparison to compliance with regulations (11%) and reduction of energy and material consumption (10%)

<sup>31</sup> *Technical Innovation in CR, Czech Statistical Office 2005, [www.czso.cz/eng/edicniplan.nsf/p/9605-04](http://www.czso.cz/eng/edicniplan.nsf/p/9605-04)*

## 5.8

### Research and Development – Public Funding

Government funding available to support R&D initiatives is mainly provided in two forms:

- Institutional funding
  - Per number of students (applies to universities only)
    - provided by Department of Education, Youth and Sports<sup>32</sup>
  - Based on state-approved Institutional Research Plan
    - provided by Department of Education, Youth and Sports
- Targeted funding
  - Research grants (mainly basic research)
    - Provided by Grant Agency of the Czech Republic (GA CR)<sup>33</sup>, Grant Agency of the Academy of Sciences (AV CR)<sup>34</sup> or Universities Development Fund<sup>35</sup>
  - National Research Programme projects (mainly applied research)
    - Provided through Department of Education, Youth and Sports, Department of Industry and Trade<sup>36</sup>, other State Departments

Overall, the proportion of targeted funding has decreased marginally over the last eight years. The current levels are 43% targeted funding and 57% institutional funding. Also, competitively funded National Research Programme projects are usually assigned considerably more money than is available from research grants.

Overall, there are some 22 institutions<sup>37</sup> responsible for R&D funding in the Czech Republic. By far the most important funding body is the Department of Education, Youth and Sports which provides about €180 million a year, closely followed by the Academy of Sciences of the Czech Republic with about €150 million (2005 figures). These contributions are channelled through the Grant Agency of the Czech Republic and the Grant Agency of the Academy of Sciences. Sectoral funding by individual Departments is at a significantly lower level.

<sup>32</sup> [www.msmt.cz](http://www.msmt.cz)

<sup>33</sup> [www.gacr.cz](http://www.gacr.cz)

<sup>34</sup> [www.gaav.cz](http://www.gaav.cz)

<sup>35</sup> [www.upce.cz/veda-vyzkum/veda-programy/veda-fond](http://www.upce.cz/veda-vyzkum/veda-programy/veda-fond)

<sup>36</sup> [www.mpo.cz](http://www.mpo.cz)

<sup>37</sup> Government Office, Security Information Service, Dept. Foreign Affairs, Dept. Defence, Nat. Security Authority, Dept. Labour, Dept. Interior, Dept. Environment, Dept. Regional Development, GA CR, Dept. Industry, Dept. Transport, Dept. Agriculture, Dept. Education, Dept. Culture, Dept. Health, Dept. Justice, Dept. Informatics, Surveying Mapping and Cadastre, Mining Authority, AV CR, Office for Nuclear Safety

## 5.9

Technical sciences and engineering are the major beneficiaries of both targeted funding and institutional funding. The greatest number of projects and/or Institutional Research Plans are in the social sciences (mainly smaller projects) followed by engineering with medicine. The R&D outputs are normally in the form of academic publications (proceedings and journals).

### National Research and Development Policies

The first National Research and Development Policy of the Czech Republic<sup>38</sup> was approved by the Government of the Czech Republic on 5 January 2000. The main goals of the policy were defined as:

- Increasing the outcomes and efficiency of R&D
- Ensuring a flexible renewal of capacities, including the development of active human potential
- Ensuring the mobilisation of resources to meet the future needs of the citizens, society and economy of the Czech Republic

The overall objective of the policy is to support R&D in areas where the Czech Republic enjoys a high level of expertise and to use the outputs for the benefit of all areas of society.

The first Policy was updated by a second National Research and Development Policy for 2004–2008<sup>39</sup>, which was approved by the Czech Government on 7 January 2004. The new policy focusses on thematic areas selected from the original policy using Technology Foresight methodologies. These thematic areas mirror European development priorities and evolve around five themes:

- Safe, reliable and ecological energies for the future
- Information and knowledge society
- Quality and safety of life
- New materials and technologies
- Social and economic needs of the Czech Republic

<sup>38</sup> [www.czelo.cz/dokums\\_raw/hpv12-1po.eng.doc](http://www.czelo.cz/dokums_raw/hpv12-1po.eng.doc)

<sup>39</sup> [www.czelo.cz/dokums\\_raw/NarodnipolitikaVaV.pdf](http://www.czelo.cz/dokums_raw/NarodnipolitikaVaV.pdf)

In addition, there are five cross-sectoral priorities:

- Human resources
- International co-operation
- Regional aspects of R&D
- Utilisation of R&D results in practice
- R&D evaluation

On 1 June 2005, the Government of the Czech Republic adopted a document entitled 'Long-Term Research Priorities'<sup>40</sup> that names seven scientific research areas that are viewed as significant for the development of a competitive economy and the sustainable development of Czech society. The seven areas highlighted in the long-term R&D Policy are:

- Sustainable development
- Molecular biology
- Power resources
- Materials research
- Competitive mechanical engineering
- Information society
- Security research

The report suggests that up to 25% of the total Government budget should be allocated to supporting these fields of research.

<sup>40</sup> [www.vyzkum.cz/FrontClanek.aspx?idsekce=13590](http://www.vyzkum.cz/FrontClanek.aspx?idsekce=13590)

## 5.10

### National Research Programmes

The concepts outlined in the original National R&D Policy documents formed the basis of the first 'National Research Programme'<sup>41</sup> adopted by the Czech Government on 28 April 2003. The Programme specifies five thematic priorities for the years 2004–2009:

- Quality of life
- Information society
- Competitiveness and sustainable development
- Energy for economy and society
- Modern society and its transformation

In addition, there are three cross-sectoral priorities:

- Human resources for R&D
- Integrated R&D
- Regional and international co-operation in R&D

Each priority has between two and six sub-priorities, each of which has a managing organisation which receives proposals and evaluates them for financing.

An extension to the Programme, a National Research Programme II<sup>42</sup> was adopted by the Czech Government on 9 March 2005, which matches closely the priorities of the National Policy for 2004–2008 and focusses on four thematic priorities for the years 2006–2011:

- Durable prosperity (TP1)
- Healthy and high-quality life (TP2)
- Information technology for knowledge-based society (TP3)
- Socio-economic development of the Czech society (TP4)

<sup>41</sup> [www.czelo.cz/dokums\\_raw/NarodniProgramVaV.pdf](http://www.czelo.cz/dokums_raw/NarodniProgramVaV.pdf)

<sup>42</sup> [www.msmt.cz/Files/VedaAVyzkum/Odbor\\_34/NPV\\_II/NPVII.doc](http://www.msmt.cz/Files/VedaAVyzkum/Odbor_34/NPV_II/NPVII.doc)

These thematic priorities are supplemented by three cross-sectoral priorities:

- Human resources (PP1)
- International co-operation (PP2)
- Support to the development and realisation of national policies (PP3)

Each of these priorities is broken down into a number of specific topics. The Department of Industry and Trade and the Department of Education, Youth and Sports are responsible for the implementation of the Programme.

## 5.11

### National Innovation Policies

The Government of the Czech Republic adopted its first National Innovation Strategy on 24 March 2004.<sup>43</sup> The strategy foresees a sequence of legislative, financial, organisational and political actions to be taken to increase competitiveness and capitalise on innovation potential.

The recommendations made in the strategy document form the basis of the first National Innovation Policy for 2005–2010<sup>44</sup> adopted by the Czech Government on 7 August 2005. The policy proposes a shift towards high-tech and innovative production as a long term strategy for the Czech Republic as a means of guaranteeing permanent growth in labour productivity and competitiveness in international markets. Four strategic objectives are proposed to fulfil this vision:

- To strengthen R&D as a source of innovation
- To develop a functional partnership between the public and private sector
- To guarantee human resources for innovation
- To make the State administration in research, development and innovation more effective

Progress towards these objectives will be evaluated in 2007 and the policy will be updated accordingly.

<sup>43</sup> <http://wtd.vlada.cz/scripts/detail.php?id=5700>

<sup>44</sup> [www.vyzkum.cz/storage/att/1AC8A76408618BDB5A06888D6C6B5D86/NIP-%20851.doc](http://www.vyzkum.cz/storage/att/1AC8A76408618BDB5A06888D6C6B5D86/NIP-%20851.doc)

The Economic Growth Strategy of the Czech Republic (adopted by the Czech Government on 16 November 2005) presents a broader picture of the relevance of R&D and innovation. The vision is to establish the Czech Republic as a “knowledge and technological centre of Europe” and possibly to achieve the average EU GDP level by 2013. The strategy to achieve these objectives is based on five pillars:

- Favourable institutional business environment
- Sufficient sources of financing
- Infrastructure
- HR development
- Research, development and innovation

In addition, some Czech regions<sup>45</sup> have developed their own regional development and innovation strategies through their respective Regional Development Agencies<sup>46</sup>.

## 5.12

### National Innovation Programmes

The Czech Republic Government currently continues to develop the infrastructure for research and innovation through creative use of EU Structural Funds. The aim is to provide underdeveloped organisations with the basis to reach competitiveness by providing support for cohesion. The Government is committed to creating public/private partnerships to stimulate innovation and growth and is actively considering public tendering as one instrument for stimulating this objective.

In the field of innovation the main State actor is the Department of Industry and Trade. It has a long tradition in managing support programmes for industry, export, small and medium size enterprises and innovation. These are outlined in detail in Programmes SUPPORTING INDUSTRY and ENTREPRENEURSHIP in 2005<sup>47</sup>:

<sup>45</sup> South Moravia, South Bohemia, Prague, Ostrava and Pilsen; others are under development

<sup>46</sup> [www.cara.cz/cara/default.aspx?language=en](http://www.cara.cz/cara/default.aspx?language=en)

<sup>47</sup> [www.mpo.cz/xqw/webdav/-/UTF8-/dms\\_mpo/getFileinternet/19735/20132/MP0\\_brozura.pdf](http://www.mpo.cz/xqw/webdav/-/UTF8-/dms_mpo/getFileinternet/19735/20132/MP0_brozura.pdf); for a related document in English see: [www.czelo.cz/dokums\\_raw/Innovation\\_Strategy\\_for\\_Industry.doc](http://www.czelo.cz/dokums_raw/Innovation_Strategy_for_Industry.doc)

### Existing programmes for Innovation Support (2004–2006)

In May 2004, the Government of the Czech Republic adopted an industrial programme, Operational Programme Industry and Enterprise, and a similar programme for regional development, Common Regional Operational Programme. The funding for these programmes is sourced from the State budget of the Czech Republic, the European Regional Development Fund and the European Social Fund.

These programmes administer some 11 sub-programmes that support the development of an innovation and entrepreneurial environment in the Czech Republic. Under these schemes, any legal entity based in the Czech Republic can apply for support, except in cases where funding is partially from Structural Funds where the city of Prague is excluded, due to its status in relation to that programme. The sub-programmes are described below.

- Pokrok Programme - supports applied and industrial R&D in certain areas. It provides support for competitiveness under sustainable development (e.g. production processes and systems) and energy for economy and society (e.g. efficient use of energy and renewable resources). It requires co-financing on the part of the applicant, who must already be active in R&D
- Tandem and Impuls Programmes - support joint projects between research institutions and private companies for R&D (Tandem) and in innovation and management practices (Impuls). Both programmes require co-financing on the part of the applicant
- Prosperita Programme - provides assistance for the development of the innovation infrastructure in individual regions of the Czech Republic. Activities supported under the scheme include the creation of science and technology parks, business incubators and technology transfer centres. A characteristic feature of this programme is the emphasis on linking the business sphere with the scientific and research institutions and universities. During the period 2004–2006, the overall funding available under the Prosperity Programme is €55.6 million

- Innovation programme - directly supports the innovation process by supporting the introduction of new technologies for the development of innovative products (e. g. more efficient production, increased quality of products etc) to enhance the competitiveness of enterprises. The programme provided overall funding of €41.7 million during 2004–2006 in the form of subsidies related to costs incurred. The Innovation programme also offers SMEs the option of a preferential loan granted through the Czech-Moravian Guarantee and Development Bank
- Klastry Programme - provides support to regions, universities or research institutions for the set-up or development of sectoral clusters
- Energetika programme - provides support for efficient use of energy and renewable resources

Other programmes offering support to SMEs and/or innovation activities include:

- Programmes for business financing and guarantees (e.g. Kapital)
- Investment incentives, job creation
- Support to development of industrial infrastructure
- Enhancement of human resources
- Export support
- Quality and/or design support

## 5.13

### Incubators, Technology Parks, Technology Transfer

Prior to the accession of the Czech Republic to the EU in May 2004, national programmes existed to support the development of regional technology incubators in South Moravia (South Moravian Innovation Centre, Medipark), West Bohemia (Bohemian Regional Innovation Strategy) and in the Pilsen region (Bory Field Science Park). These programmes were funded by the Department of Education, Youth and Sport.

These incubators, and a range of technology parks and technology innovation centres, are now grouped in the Science and Technology Parks Association<sup>48</sup>. The organisation is responsible for around 20 accredited parks. Several others are currently under preparation.

Incubators, technology parks and innovation centres are frequently operated by, or closely linked with, Business Innovation Centres<sup>49</sup>. These in turn form a network with the Czech Innovation Relay Centres.<sup>50</sup> As a result, many of the technology transfer requirements of start-ups and innovative SMEs are available under one roof. These operations are mainly funded through the Prosperity Programme and the European Social Fund.

In addition, the Department of Industry and Trade and CzechInvest<sup>51</sup> indirectly foster technological development by attracting foreign investors to locate their operations in customised industrial zones in Czech cities.

Finally, there is a growing understanding that the Czech Republic and its financial sector need to start working hard on developing new and suitable financial instruments in support of R&D and innovations.

## 5.14

### Support for Participation in EU Programmes

In June 2005, CzechInvest established a programme designed to make financial support available for SMEs wishing to submit applications to European research programmes. The programme<sup>52</sup> is designed to enable entrepreneurs to recover part of the costs incurred in project preparation. By fulfilling the required criteria, companies can receive subsidies to defray the costs of feasibility studies, wages, overheads and employing external consultants.

Similarly, the Department of Education, Youth and Sports has authorised the Technology Centre of the Academy of Sciences<sup>53</sup> to administer a system of grants in support of preparation of projects to the European research programmes.

48 [www.eng.svtp.cz](http://www.eng.svtp.cz)

49 [www.bic.cz/en/czbic.htm](http://www.bic.cz/en/czbic.htm)

50 [www.circ.cz](http://www.circ.cz)

51 [www.czechinvest.org](http://www.czechinvest.org)

52 [www.czechinvest.org](http://www.czechinvest.org)

53 [www.tc.cz](http://www.tc.cz)

## 06

Trade and Research  
Information between  
Ireland and the Czech Republic

## 6.1

## Ireland - Czech Republic Trade Information

**Exports (2004)**

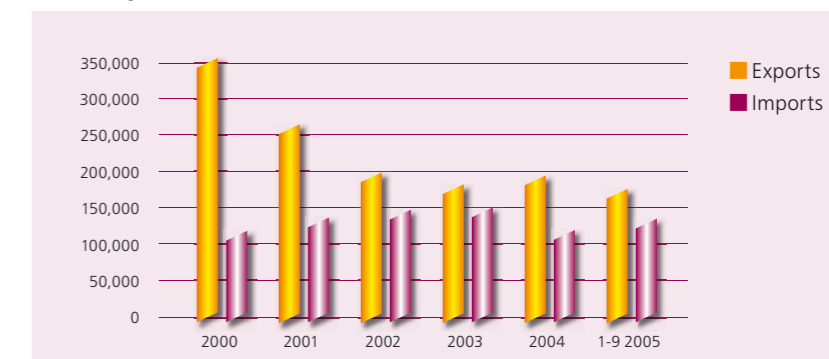
from Ireland to the Czech Republic

- Data processing machines
- Electrical machinery & appliances
- Pharmaceuticals
- Manufactured articles
- Chemicals
- Essential oils & resinoids

**Imports (2004)**

from the Czech Republic to Ireland

- Automotive
- Data processing machines
- Machinery for particular industries
- General industrial machinery
- Manufactures of metal
- Power generating machinery

**Exports from Ireland to the Czech Republic and Imports from the Czech Republic to Ireland**Czech trade with Ireland, 2000 – Sept. 2005, in thousand €<sup>54</sup>

Year-on-year figures produced by the Central Statistics Office in Ireland for the period January – September 2005 compared with the same period in 2004 show that exports from Ireland to the Czech Republic increased by 28% from €134.7 million – €172.5 million, and imports from the Czech Republic to Ireland increased by 50.7% from €82.7 million – €124.6 million.

54 Central Statistics Office Ireland

### Enterprise Ireland clients undertaking trade in the Czech Republic

The information in this section has been provided by EI's office in Prague.

1)

#### Irish organisations with operational bases in the Czech Republic

Nineteen companies presently have a base in the Czech Republic, of which:

- Fourteen are production bases
  - 5 - Electronics
  - 4 - Engineering
  - 2 - Construction and timber
  - 1 - Prepared consumer foods
  - 1 - Print and packaging
  - 1 - Other
- Four are sales and marketing operations
  - 1 - Electronics
  - 1 - Engineering
  - 1 - Enterprise, Government and financial services
  - 1 - Telecommunications and consultancy services
- One is a distribution operation (print and packaging)

2)

#### Irish organisations selling into the Czech Republic either directly or indirectly

Eighty companies presently make sales in the Czech Republic. Of these:

- Nineteen are in the software, services and emerging sectors market
- Thirty-nine are in industrial markets
- Twenty-two are in food and consumer retail markets

### Czech Republic organisations undertaking trade in Ireland

Initial enquiries suggest that the following undertake significant business in Ireland:

- Czech Airlines
- Dell (in-house trading)
- Skoda

Furthermore, Irish enterprises periodically order tailor-made manufacturing of industrial and/or consumer products from their partners in the Czech Republic. As far as is known (March 2006), there is no Czech FDI into Ireland.

#### Czech-Irish Business Association (CIBA)

CIBA promotes and strengthens ties between the Czech and Irish business communities. CIBA is a non-profit organisation that is funded mainly through the subscription of its members.

## 6.2

### FP6 Projects featuring Partners from the Czech Republic and Ireland

An analysis of available data shows an existing basis on which to develop and strengthen co-operation between the two countries. Data available in July 2005 demonstrated that partners from both the Czech Republic and Ireland are represented on 83 FP6 contract negotiations.<sup>55</sup>

<sup>55</sup> Forfás 2005

The distribution of these projects by programme is as follows:

### Focusing and Integrating Community Research

#### Priority Thematic Areas of Research

○ Life Sciences, Genomics and Biotechnology for Health	8
○ Information Society Technologies	16
○ Nanotechnologies and Nanosciences	17
○ Aeronautics and Space	3
○ Food Quality and Safety	7
○ Sustainable Development, Global Change and Ecosystems	8

#### Specific activities covering a wider field of research

○ Co-operative research	3
○ Collective research	1

#### Strengthening the Foundations of the European Research Area

○ Support for the coordination of activities	1
○ Support for the coherent development of policies	5

#### Structuring the European Research Area

○ Research and Innovation	2
○ Human Resources and Mobility	9
○ Research Infrastructures	3

These figures provide convincing evidence of existing linkages between Ireland and the Czech Republic on joint research initiatives. Complete details of the projects, their objectives and the partners involved are reproduced in Appendix K.

### 6.3

### EUREKA

EUREKA is a pan-European network for market-oriented, industrial R&D. It was established in 1985, and in 1990 was expanded to include the Central and Eastern European countries. Nowadays, the initiative covers some 35 countries. Ireland has participated in the programme since its inception. The Czech Republic has actively participated in the programme since 1995. To date, it has been active on some 188 projects.<sup>56</sup> Those EUREKA projects featuring partners from both the Czech Republic and Ireland are detailed in Appendix L.

On 1 July 2005, the Czech Republic officially assumed the chairmanship of the EUREKA initiative for one full year, thus becoming the first country from Central and Eastern Europe to take over the Presidency. This coincided with the 20<sup>th</sup> anniversary of the EUREKA initiative's launch. It was also the first occasion on which the Czech Republic held a Chair within the framework of a programme of European scope.

### 6.4

### The COST Programme

Founded in 1971, COST is an intergovernmental framework for European Co-operation in the field of Scientific and Technical Research, allowing the coordination of nationally funded research on a European level. COST actions cover basic and pre-competitive research as well as activities of public utility. Since its inception, COST has developed into one of the largest frameworks for research co-operation in Europe and is a valuable mechanism coordinating national research activities in Europe. Today it has almost 200 actions and involves nearly 30,000 scientists from 34 European Member countries and more than 80 participating institutions from 11 non-Member countries and Non Governmental Organisations.

Ireland is a founding member and by the end of 2005 it had signed up for participation in 277 COST actions. The Czech Republic became a member in 1991 and by the end of 2005 it had signed up for participation in 257 COST actions. There are now almost 200 actions where both Ireland and the Czech Republic have been participants<sup>57</sup>. Further information on the individual actions can be gleaned by consulting the COST action database<sup>58</sup>.

<sup>56</sup> EUREKA Chairmanship Secretariat

<sup>57</sup> [www.consilium.europa.eu/cms3\\_fo/showPage.asp?id=253&lang=EN](http://www.consilium.europa.eu/cms3_fo/showPage.asp?id=253&lang=EN)

<sup>58</sup> [www.cost.esf.org/index.php?id=26](http://www.cost.esf.org/index.php?id=26).

## 6.5

**EU Technology Platforms – Participants from the Czech Republic and Ireland**

The EU Technology Platforms provide a framework for all stakeholders, led by industry, to define research and development priorities, timeframes and action plans on a number of issues identified as strategically important. These are issues where achieving Europe's future growth, competitiveness and sustainability objectives are dependent upon major research and technological advances in the medium to long term. The platforms also play a key role in ensuring an adequate focus of research funding on areas with a high degree of industrial relevance, by covering the whole economic value chain and by mobilising public authorities at national and regional levels.

This section outlines those EU Technology Platforms in existence at the beginning of 2006, where there is a known or potential participation involving partners from the Czech Republic and/or Ireland<sup>59</sup>.

Platform Title and Acronym	The European Hydrogen and Fuel Cell Technology Platform (HFP)
<b>Objective</b>	To facilitate and accelerate the development and deployment of cost-competitive, world class European hydrogen and fuel cell based energy systems and component technologies for applications in transport, stationary and portable power.
<b>Web-site</b>	<a href="http://www.hfpeurope.org/">www.hfpeurope.org/</a>
<b>Czech Republic Partner</b>	<ul style="list-style-type: none"> <li>● CZECH ENERGY AGENCY, PRAGUE</li> <li>● ENVIROS sro, PRAGUE</li> <li>● CZECH TECHNICAL UNIVERSITY, PRAGUE</li> </ul>
<b>Irish Partner</b>	None identified
<b>Launch date</b>	October 2002

<sup>59</sup> Source CORDIS ([www.cordis.lu](http://www.cordis.lu)), January 2006

Platform Title and Acronym	European Nanoelectronics Initiative Advisory Council (ENIAC)
<b>Objective</b>	The principal mission of ENIAC is to provide a strategic research and development agenda for the nanoelectronics sector, to stimulate increased and more effective and coherent public and private investment in R&D in the nanoelectronics sector and to contribute to improving convergence between EC, national, regional and private R&D actions on nanoelectronics within the European Research Area Framework.
<b>Web-site</b>	<a href="http://cordis.europa.eu.int/ist/eniac/home.html">http://cordis.europa.eu.int/ist/eniac/home.html</a>
<b>Czech Republic Partner</b>	None identified
<b>Irish Partner</b>	TYNDALL NATIONAL INSTITUTE, CORK
<b>Launch date</b>	May 2004
Platform Title and Acronym	Nanotechnologies for Medical Applications (NanoMedicine)
<b>Objective</b>	<p>NanoMedicine's objectives are to establish a clear strategic vision in the area resulting in a Strategic Research Agenda, to decrease fragmentation in nano-medical research, to mobilise additional public and private investment, and to boost innovation in nanobiotechnologies for medical use.</p> <p>Three key priorities have been confirmed by the stakeholders:</p> <ul style="list-style-type: none"> <li>● Nanotechnology-based diagnostics including imaging</li> <li>● Targeted drug delivery and release</li> <li>● Regenerative medicine</li> </ul>
<b>Web-site</b>	<a href="http://cordis.europa.eu.int/nanotechnology/nanomedicine.htm">http://cordis.europa.eu.int/nanotechnology/nanomedicine.htm</a>
<b>Czech Republic Partner</b>	INSTITUTE OF ORGANIC CHEMISTRY AND BIOCHEMISTRY, PRAGUE
<b>Irish Partner</b>	DUBLIN MOLECULAR MEDICINE CENTRE
<b>Launch date</b>	September 2005

Platform Title and Acronym	The European Technology Platform on Photovoltaics
<b>Objective</b>	The Photovoltaic Technology Platform aims at mobilising all the actors sharing a long-term European vision for photovoltaic technology (the generation of electricity from light); realising the European Strategic Research Agenda for Photovoltaic for the next decade(s); ensuring that Europe maintains industrial leadership, and to contribute to a rapid development of a world-class cost competitive European Photovoltaic capability for a sustainable electricity production.
<b>Web-site</b>	<a href="http://www.eupvplatform.org/">www.eupvplatform.org/</a>
<b>Czech Republic Partner</b>	None identified
<b>Irish Partner</b>	None identified
<b>Launch date</b>	2005
Platform Title and Acronym	Technology Platform on Sustainable Chemistry
<b>Objective</b>	The European Technology Platform for Sustainable Chemistry seeks to boost chemistry and chemical engineering research, development and innovation in Europe. Chemistry innovation and chemistry R&D is not only a key driver for the sustained competitiveness of the chemical industry sector itself, but also of the sustainability of the customer sectors. Chemistry innovation has a disproportionate impact on innovation in up and downstream industries including consumer product sectors.
<b>Web-site</b>	<a href="http://www.suschem.org/">www.suschem.org/</a>
<b>Czech Republic Partner</b>	ASSOCIATION OF CHEMICAL INDUSTRIES, PRAGUE
<b>Irish Partner</b>	UNIVERSITY COLLEGE DUBLIN
<b>Launch date</b>	2004

Platform Title and Acronym	Forest Based Sector Technology Platform
<b>Objective</b>	The Forest Based Sector Technology Platform is an industry-driven process supporting the sector's strategy. The Strategic Research Agenda (SRA) will be developed with the support of National Support Groups, relevant European confederations and research bodies of European dimension, working on a "bottom-up" input on the research theme level.
<b>Web-site</b>	<a href="http://www.forestplatform.org/">www.forestplatform.org/</a>
<b>Czech Republic Partner</b>	Presently under establishment
<b>Irish Partner</b>	IRISH FORESTRY INDUSTRY CHAIN
<b>Launch date</b>	February 2005
Platform Title and Acronym	European Transport Research Advisory Council (ERTRAC)
<b>Objective</b>	ERTRAC's mission is to define a strategic vision for the road transport sector and to achieve this vision through the formulation and maintenance of a Strategic Research Agenda (SRA) and Strategic Research Recommendations (SRR). The objective is to stimulate increased effective public and private investment in road transport research and development and contribute to improving coordination between the European, national, regional and private research and development actions on road transport.
<b>Web-site</b>	<a href="http://www.ertrac.org/">www.ertrac.org/</a>
<b>Czech Republic Partner</b>	MINISTRY OF TRANSPORT, PRAGUE
<b>Irish Partner</b>	DEPARTMENT OF TRANSPORT, DUBLIN
<b>Launch date</b>	June 2004

Platform Title and Acronym	European Rail Research Advisory Council (ERRAC)
<b>Objective</b>	ERRAC was set up in 2001 with the aim of creating a single European body with both the competence and capability to help revitalise the European rail sector and make it more competitive, by fostering increased innovation and guiding research efforts at European level.
<b>Web-site</b>	<a href="http://www.errac.org/">www.errac.org/</a>
<b>Czech Republic Partner</b>	<ul style="list-style-type: none"> <li>○ RAIL RESEARCH INSTITUTE, PRAGUE</li> <li>○ CZECH TECHNICAL UNIVERSITY, FACULTY OF TRANSPORTATION, PRAGUE</li> </ul>
<b>Irish Partner</b>	DEPARTMENT OF PUBLIC ENTERPRISE, PUBLIC TRANSPORT PLANNING DIVISION, DUBLIN
<b>Launch date</b>	2001
Platform Title and Acronym	Waterborne Technology Platform
<b>Objective</b>	The objective of the Waterborne Technology Platform is to bundle efforts of the European waterborne actors in the production of efficient and safe vessels as well as the related systems and equipment. The three pillars of the platform's vision are safe, sustainable and efficient waterborne transport; a competitive European waterborne industry; and managing and facilitating the growth of transport volumes and the changes in trade patterns.
<b>Web-site</b>	<a href="http://www.waterborne-tp.org/">www.waterborne-tp.org/</a>
<b>Czech Republic Partner</b>	None identified
<b>Irish Partner</b>	IRISH MARITIME DEVELOPMENT OFFICE
<b>Launch date</b>	January 2005

Platform Title and Acronym	The Mobile Wireless and Telecommunications Technology Platform (eMobility)
<b>Objective</b>	The eMobility Platform will define and implement a comprehensive research agenda in the mobile and wireless sector to be conducted in Europe, on the basis of a strong coordination of the national research efforts as well as the collaboration of key research programmes from other regions of the world, in order to reinforce Europe's leadership in mobile and wireless communications.
<b>Web-site</b>	<a href="http://www.emobility.eu.org/">www.emobility.eu.org/</a>
<b>Czech Republic Partner</b>	<ul style="list-style-type: none"> <li>○ CZECH TECHNICAL UNIVERSITY, PRAGUE</li> <li>○ PIKE ELECTRONIC spol, sro, PRAGUE</li> </ul>
<b>Irish Partner</b>	<ul style="list-style-type: none"> <li>○ WATERFORD INSTITUTE OF TECHNOLOGY</li> <li>○ CELLUSYS, DUBLIN</li> <li>○ ERICSSON R&amp;D, DUBLIN</li> <li>○ NORCONTEL (IRELAND) Ltd, DUBLIN</li> <li>○ SYMANTEC Ltd, DUBLIN</li> </ul>
<b>Launch date</b>	February 2005
Platform Title and Acronym	Innovative Medicines Initiative (IMI)
<b>Objective</b>	The overall objective of IMI is to remove bottlenecks hampering the efficiency of the development of new medicines, where research is the key, thereby enabling the European biopharmaceutical industry to become a world leader. At the same time, by pooling resources from all stakeholders (industry, academia, SMEs, regulatory authorities, healthcare providers, patient organisations etc), this initiative is expected to provide faster access to better medicines for European citizens.
<b>Web-site</b>	<a href="http://europa.eu.int/comm/research/fp6/index_en.cfm?p=1_innomed">http://europa.eu.int/comm/research/fp6/index_en.cfm?p=1_innomed</a>
<b>Czech Republic Partner</b>	INSTITUTE OF ORGANIC CHEMISTRY AND BIOCHEMISTRY, ACADEMY OF SCIENCES OF THE CZECH REPUBLIC, PRAGUE
<b>Irish Partner</b>	DUBLIN MOLECULAR MEDICINE CENTRE
<b>Launch date</b>	October 2004

Platform Title and Acronym	Embedded Systems (ARTEMIS)
<b>Objective</b>	ARTEMIS will develop a Strategic Agenda and accompanying roadmaps to align the fragmented R&D efforts at community, intergovernmental, national and regional levels in the European Research Area. It will also advise on all structural, educational and regulatory matters (e.g. IPR, open source software, standards, research infrastructure, training etc) required for a systemic approach to ensure an environment allowing for successful innovation in the market place and sustainable growth for the industrial sectors that rely on Embedded Systems.
<b>Web-site</b>	<a href="http://cordis.europa.eu.int/ist/artemis/">http://cordis.europa.eu.int/ist/artemis/</a>
<b>Czech Republic Partner</b>	INSTITUTE OF INFORMATION THEORY AND AUTOMATION, PRAGUE
<b>Irish Partner</b>	ENTERPRISE IRELAND
<b>Launch date</b>	June 2004
Platform Title and Acronym	Advisory Council for Aeronautics Research in Europe (ACARE)
<b>Objective</b>	ACARE's main focus is to establish and carry forward a Strategic Research Agenda (SRA) that will influence all European stakeholders in the planning of research programmes, particularly national and EU programmes, in line with the Vision 2020 plan. It will recommend measures for optimising the use of existing research infrastructures and achieving cost-effective investments and for improving educational policies to attract the scientists, engineers and other skills that the sector needs.
<b>Web-site</b>	<a href="http://www.acare4europe.com/">www.acare4europe.com/</a>
<b>Czech Republic Partner</b>	VZLU, AERONAUTIC RESEARCH AND TEST INSTITUTE, PRAGUE
<b>Irish Partner</b>	ENTERPRISE IRELAND
<b>Launch date</b>	June 2001

Platform Title and Acronym	European Space Technology Platform (ESTP)
<b>Objective</b>	ESTP will define the priorities and requirements for space-based systems and ensure integration with related ground and in-situ systems in promoting the development of user-driven application services to support EU policies. It will promote coordination of the European position in international co-operation. EU space activities will be implemented through existing capabilities, notably through the European and National Space Agencies, industry, etc. Risksharing public private partnerships will be explored wherever possible to maximise the development of products and services to be supplied by the private sector to Governmental and commercial customers.
<b>Web-site</b>	<a href="http://europa.eu.int/comm/space/index_en.html">http://europa.eu.int/comm/space/index_en.html</a>
<b>Czech Republic Partner</b>	Not identified
<b>Irish Partner</b>	ENTERPRISE IRELAND
<b>Launch date</b>	Unknown
Platform Title and Acronym	The European Technology Platform for the Future of Textiles and Clothing (ETP-FTC)
<b>Objective</b>	The European Technology Platform for the Future of Textiles and Clothing was set up to define the innovation targets and research topics needed to address Europe's textile problems. The platform brings together industry and research experts, to develop specific research and innovation targets in three areas—new textile applications, the transition from mass production to customisation, and that from commodity to speciality products.
<b>Web-site</b>	<a href="http://www.euratex.org/">www.euratex.org/</a>
<b>Czech Republic Partner</b>	ASSOCIATION OF TEXTILE, CLOTHING AND LEATHER INDUSTRY, PRAGUE
<b>Irish Partner</b>	IRISH CLOTHING AND TEXTILE ALLIANCE (ICATA), DUBLIN
<b>Launch date</b>	December 2004

Platform Title and Acronym	Platform on Future Manufacturing Technologies (MANUFUTURE)
<b>Objective</b>	The platform will develop a research and innovation strategy based on a long-term vision to assist the transformation of the European manufacturing industry towards a knowledge-based economy and world leadership in manufacturing. It will identify aspects of technological research and innovation with high potential for breakthroughs that could be only achieved at a European level.
<b>Web-site</b>	<a href="http://www.manufuture.org/">www.manufuture.org/</a>
<b>Czech Republic Partner</b>	ASSOCIATION OF INNOVATIVE ENTREPRENEURSHIP, PRAGUE
<b>Irish Partner</b>	ENTERPRISE IRELAND
<b>Launch date</b>	2003
Platform Title and Acronym	The European Technology Platform on Industrial Safety
<b>Objective</b>	The platform will intensify networking and stimulate technological and organisational improvement in risk management. It will be achieved thanks to a commonly agreed research agenda, but also by working on education, standardisation, transfer to industry, and thanks to strong interactions with other TPs concerned by risk issues (e.g. Sustainable Chemistry, Hydrogen etc).
<b>Web-site</b>	<a href="http://www.industrialsafety-tp.org/">www.industrialsafety-tp.org/</a>
<b>Czech Republic Partner</b>	<ul style="list-style-type: none"> <li>○ NUCLEAR RESEARCH INSTITUTE, REZ</li> <li>○ TECHNICAL UNIVERSITY OF OSTRAVA, FACULTY OF SAFETY ENGINEERING</li> </ul>
<b>Irish Partner</b>	None identified
<b>Launch date</b>	June 2005

Platform Title and Acronym	European Initiative on Networked and Electronic Media (the NEM Initiative)
<b>Objective</b>	The Networked and Electronic Media (NEM) Initiative represents the convergence of existing and new technologies, including broadband, mobile and new media across all ICT sectors. It is an industry-led Initiative to promote and accelerate the pace of innovation and technology evolution to place European industry at the forefront of technology.
<b>Web-site</b>	<a href="http://www.nem-initiative.org/">www.nem-initiative.org/</a>
<b>Czech Republic Partner</b>	CZECH TELEVISION, PRAGUE
<b>Irish Partner</b>	<ul style="list-style-type: none"> <li>○ IIMC, INTERNATIONAL INFORMATION MANAGEMENT CORPORATION Ltd, DUBLIN</li> <li>○ WATERFORD INSTITUTE OF TECHNOLOGY</li> </ul>
<b>Launch date</b>	December 2004
Platform Title and Acronym	European Technology Platform 'Food for Life'
<b>Objective</b>	The vision of the platform is to achieve an effective integration of strategically-focused, trans-national, concerted research in the nutritional-, food- and consumer sciences to provide innovative, novel and improved food products for national, regional and global markets in line with consumer needs and expectations. It will support a successful and competitive pan-European agro-food industry securely based on economic growth, technology transfer, sustainable food production and consumer confidence.
<b>Web-site</b>	<a href="http://etp.ciaa.be/asp/home.asp">http://etp.ciaa.be/asp/home.asp</a>
<b>Czech Republic Partner</b>	INSTITUTE OF CHEMICAL TECHNOLOGY, PRAGUE
<b>Irish Partner</b>	<ul style="list-style-type: none"> <li>○ UNIVERSITY COLLEGE DUBLIN, DEPARTMENT OF FOOD SCIENCE</li> <li>○ TRINITY COLLEGE DUBLIN</li> <li>○ UNIVERSITY COLLEGE CORK</li> </ul>
<b>Launch date</b>	July 2005

Platform Title and Acronym	Networked European Software & Services Initiative (NESSI)
<b>Objective</b>	NESSI will develop a visionary strategy for software and services driven by a common European Research Agenda, where innovation and business strength are reinforced by developing novel technologies, strategies and deployment policies that foster openness. NESSI supports the increased adoption of open standards and open source software and the provision of open services, thus providing European industry and the public sector with efficient services and software infrastructures to improve flexibility, interoperability and quality.
<b>Web-site</b>	<a href="http://www.nessi-europe.com/index.htm">www.nessi-europe.com/index.htm</a>
<b>Czech Republic Partner</b>	None identified
<b>Irish Partner</b>	None identified
<b>Launch date</b>	September 2005
Platform Title and Acronym	The Photonics Technology Platform (Photonics 21)
<b>Objective</b>	The mission of the Technology Platform (Photonics 21) is the coordination of research and development activities in Europe among all the contributing partners from education, basic research, applied research and development to manufacturing and all relevant applications. The Strategic Research Agenda will provide the basis for a common strategy to achieve a strong European leadership in Photonics. It will address the funding of research and development for Photonics in FP7.
<b>Web-site</b>	<a href="http://web13.vdi.net-build.de/">http://web13.vdi.net-build.de/</a>
<b>Czech Republic Partner</b>	None identified
<b>Irish Partner</b>	NATIONAL UNIVERSITY OF IRELAND, GALWAY
<b>Launch date</b>	December 2005

Platform Title and Acronym	Water Supply and Sanitation Technology Platform (WSSTP)
<b>Objective</b>	<p>The WSSTP was established as part of the European Environmental Technology Action Plan (ETAP) that was adopted by the European Commission in 2004. It is open to all stakeholders involved in European water supply and sanitation and major end-user groups. The participants in the platform will produce a common vision document for the whole European water industry together with a strategic research agenda and an implementation plan for the short (2010), medium (2020) and long term (2030).</p> <p>The WSSTP will contribute to:</p> <ul style="list-style-type: none"> <li>• The competitiveness of the European water industry (Lisbon Strategy)</li> <li>• Solving the European water problems</li> <li>• Reaching the Millennium Development Goals (Johannesburg)</li> </ul>
<b>Web-site</b>	<a href="http://www.wsstp.org/default.aspx">www.wsstp.org/default.aspx</a>
<b>Czech Republic Partner</b>	DEPARTMENT OF AGRICULTURE, PRAGUE
<b>Irish Partner</b>	None identified
<b>Launch date</b>	September 2004

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