



# **Science, Technology and Innovation Policy Studies: IPTS Experience**

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**Foresight and Science, Technology and Innovation Policies: Best Practices,  
HSE, Moscow, OCTOBER 13-14, 2011**

- **Introduction to JRC and the IPTS**
- **IPTS Policy and Business Areas**
- **Knowledge for Growth**
  - Foresight - Forward Visions on the European Research Area
  - ERAWATCH – Research Policy Mixes
  - NETWATCH – monitoring and analysis of transnational collaboration
  - Support to the Innovation Union – information and intelligence
- **Summary**

*7 Institutes on 5 sites  $\cong$  2750 staff  $\cong$  340 M€/y direct from FP7 + 60 M€ earned income*



**IE** – Petten, The Netherlands  
*Institute for Energy*  
*Director: Giovanni de Santi*



**IRMM** – Geel, Belgium  
*Institute for Reference Materials and Measurements*  
*Director: Krzysztof Maruszewski*



**ITU** – Karlsruhe, Germany  
*Institute for Transuranium Elements*  
*Director: Thomas Fanghänel*



**IES/ IHCP/ IPSC** – Ispra, Italy  
*Institute for Environment and Sustainability*  
*Director: Leen Hordijk*  
*Institute for Health and Consumer Protection*  
*Director: Elke Anklam*  
*Institute for the Protection and Security of the Citizen*  
*Director: Stephan Lechner*



**IPTS** – Sevilla, Spain  
*Institute for Prospective Technological Studies*  
*Director: John Bensted-Smith*



*IPTS  $\cong$  210 staff  $\cong$  14 M€/y direct from FP7 + 4 M€ earned income*

IPTS came to Sevilla in 1994

- to engage in future-oriented studies concerning new and emerging technologies, hence the title “prospective technological studies”

IPTS has evolved into a **Policy Studies Institute**

- providing economic and policy research and analysis needed to support evidence-based EU policy making
  - especially in the frame of the Lisbon/Europe 2020 Agenda
- our research tools are increasingly focused on quantitative economics
  - i.e. economic and market modelling, econometrics, input/output accounting, scenario analysis, uncertainty/sensitivity analysis, cost benefit analysis,...

## **Knowledge for growth (~25% of our research effort)**

focusing on policies to build a Knowledge Economy, especially research policy, and its interfaces with related policies, notably innovation, education and regional development

## **Information society (~20%)**

focusing on policies to create a Digital Economy and to stimulate more widely the take-up of ICTs in society

## **Agriculture and rural development (~20%)**

focusing on the economic and social pillars of agriculture and rural development policies

## **Sustainable production and consumption (~20%)**

focusing on the techno-economics of sustainable industry policies and on the Green Economy

## **Climate change, energy and transport (~15%)**

focusing on the economics of climate change, energy and transport policies and on policies to build a Low-Carbon

## Conducting policy studies

- currently ~45% of our business

## Providing policy intelligence platforms

- currently ~15% of our business

## Managing techno-economic bureaux

- currently ~15% of our business

## Building a Reference Centre for Economic Modelling

- currently ~25% of our business (and growing)

## Policy studies support all parts of the policy cycle

- e.g. anticipation, analysis of policy options, ex-ante impact assessment, monitoring implementation and compliance, ex-post evaluation, ...

## Studies usually involve multidisciplinary teams

- around half the research staff are economists, econometricians and social scientists; the other half are essentially natural scientists and engineers

## Recent examples

- What should be the focus of policies, if we want “greener” buildings, “greener” cars, ...?
- Can e-Health substantially contribute to reducing our growing health budgets?
- Does Europe have the energy research capacity it needs to achieve its Strategic Energy Technology (SET) - plan objectives?
- How can we fully harness ICTs to facilitate "active ageing" in Europe?
- What lessons can we draw from the diversity and specialisation of the research systems in the different Member States?

## Provision of relevant, reliable and up-to-date information

- Evidence-based policy-making is often hampered by a lack of relevant, reliable and up-to-date information, that is structured and readily accessible
- “intelligence” platforms are designed to meet that need

## Examples of IPTS intelligence platforms

- ERAWATCH. A web-based service to provide regularly updated policy-relevant information on the research systems of Member States, Associated States, and competitor countries
- Scoreboard of Industrial Research Investment. Annually analyses the performance of the world’s top corporate investors in R&D
- I3S. Innovation Union Information and Intelligence System aims to ensure that all stakeholders are well informed on the implementation of the 34 Commitments of the Innovation Union



## Economic models

- Economic models are increasingly necessary for the Commission to help prepare and justify policy initiatives, and later to evaluate them.
- However, many Commission Services found themselves becoming uncomfortably dependent on external consultants and approached the JRC to provide them with a *secure, independent, impartial, confidential, scientifically transparent and robust* in-house modelling service

## IPTS is establishing itself as a Reference Centre for Economic Modelling

- agriculture economics, climate change economics, energy economics, transport economics (→ well advanced)
- environmental economics, regional development economics (→ under development)
- knowledge economy, digital economy (→ at an early stage)

## Industrial Research and Innovation

- Industrial R&D Scoreboard
- Impact of R&D and innovation company performance and employment
- Growth of innovative companies

## ERA-Policies

- Monitoring of Member States R&I policies
- Foresight for R&I policy –
- Transnational Programme cooperation - ERANETS
- Analysis of ERA

## Smart Specialisation

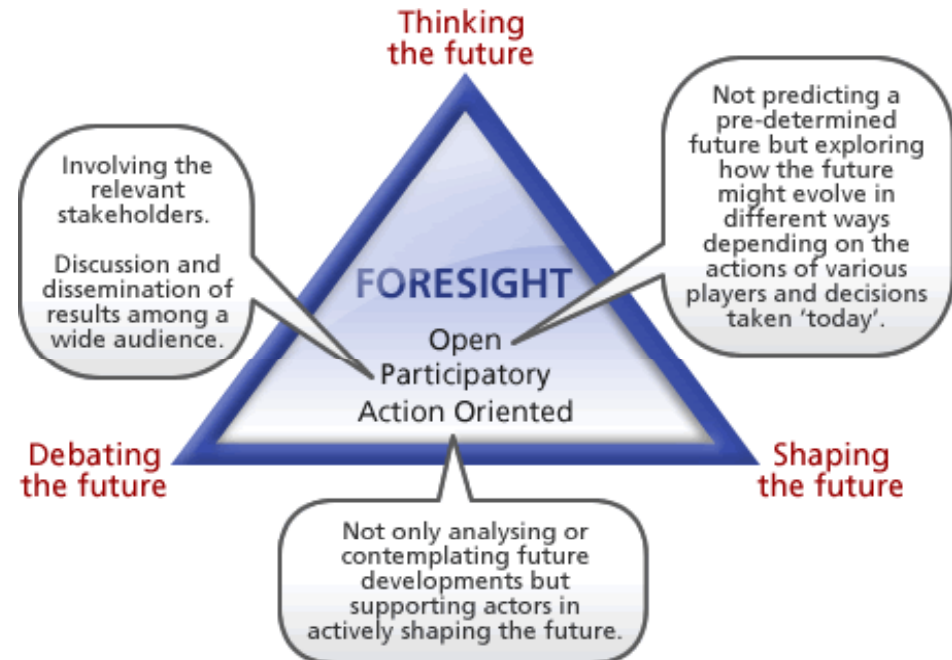
- Smart specialisation platform

## Regional Economic Modelling

- Regional economic models to assess the impact of R&D, innovation, human capital and infrastructures

## European Foresight at JRC-IPTS is

- both *applying* and *advancing* IPTS foresight competencies
- for the benefit of European Policy-making
- with a focus on Research and Innovation policies



## Current and recent FP7 projects:

- EFP: **E**uropean **F**oresight **P**latform
- SESTI: **S**canning for **E**merging **S**cience and **T**echnology **I**ssues
- Sustainable Manufacturing (IMS2020)
- WBC-INCO.NET Project
- ERA.Net RUS Project (STI cooperation with Russia)
- VERA\*: Forward **V**isions on the **E**uropean **R**esearch **A**rea

## Exploratory and supporting actions:

- Support to Joint Programming
- Combining qualitative and quantitative approaches

## International FTA conference in Seville, 12-13 May 2011

- Regular meeting point for the forward-looking communities
- Focus of 2011: FLA for structural and systemic transformations in response to grand soc
- Around 200 abstracts were submitted
- 200 participants and 60 final papers presented
- Book of abstracts and special issues in ISI journals



## FOR-LEARN On-Line Foresight Guide

- Aim: consolidate European expertise on Foresight through actively promoting
- mutual learning among Foresight practitioners and users
- Merging with EFMN on EFP
- Co-operation with Romanian project on Quality and Leadership in higher
- education: development of an online foresight training

## Enlargement and Integration Actions

- Foresight training for NMS, CC and PCC



- **Aims of Study**

- To enhance understanding of the likely state of the world in 2025
- To provide input for the policy agenda of the EC for 2010 and beyond
- To complement previous work undertaken for and by BEPA

- **Three Challenges for the EU and the World**

- Need to change the ways in which essential natural resources are used
- Need to anticipate and adapt to societal changes
- Need for more effective and transparent governance for the EU
- and the world

- **Three areas for EU Policy making**

- Policy alignment towards sustainability
- Social diversity and ICTs for citizen empowerment
- Anticipation of future challenges to turn these into new opportunities

**ERAWATCH is the European Commission's on-line information system on European, national and regional research policies, actors, and programmes in the EU and beyond.**

**It supports evidence-based policy making in Europe and contributes to the realisation of the ERA**

<http://cordis.europa.eu/erawatch>



## The ERAWATCH Information Platform

Research Inventory includes information on country profiles, policy support measures, policy documents, and organisations

Covers EU-27, Associated Countries to the ERA, main global players, and selected neighbourhood countries (60 countries)

The Joint European Inventory of Research and Innovation Policy Measures involves close collaboration with Inno-Policy Trend Chart





## ERAWATCH Analytical Country Reports

Produced annually since 2007

Focus changes from year to year (e.g. evolution of policies to realise ERA, integration of knowledge triangle policies)

Input to ERAC peer-review and mutual learning, and to the Review of National Reform Programmes

Input to other analytical work relying on qualitative data on R&I policies across Europe

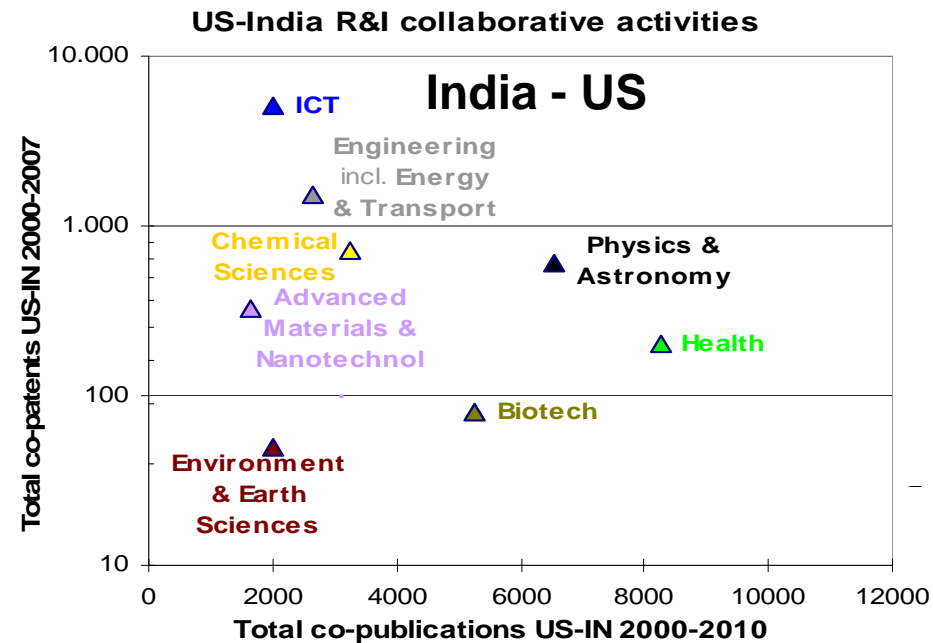
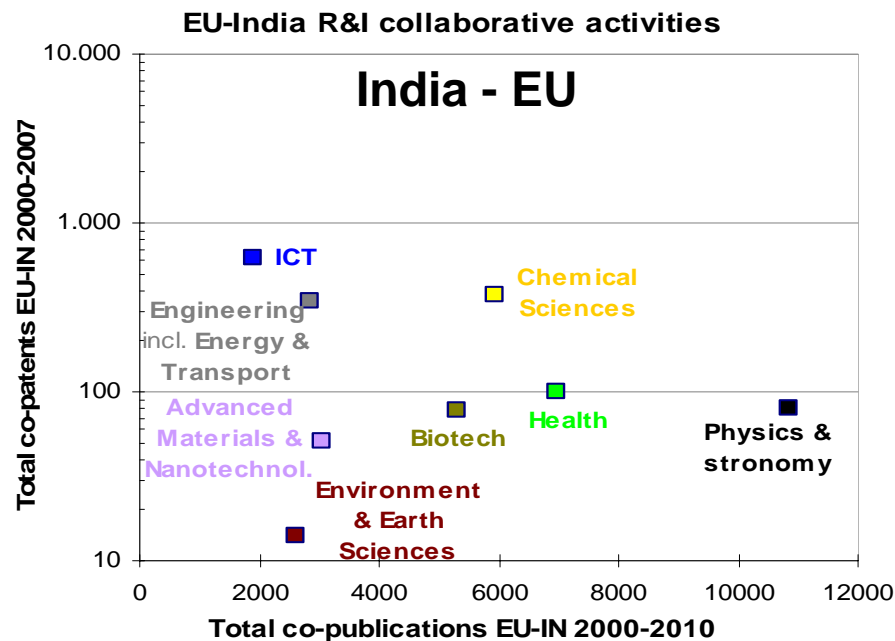
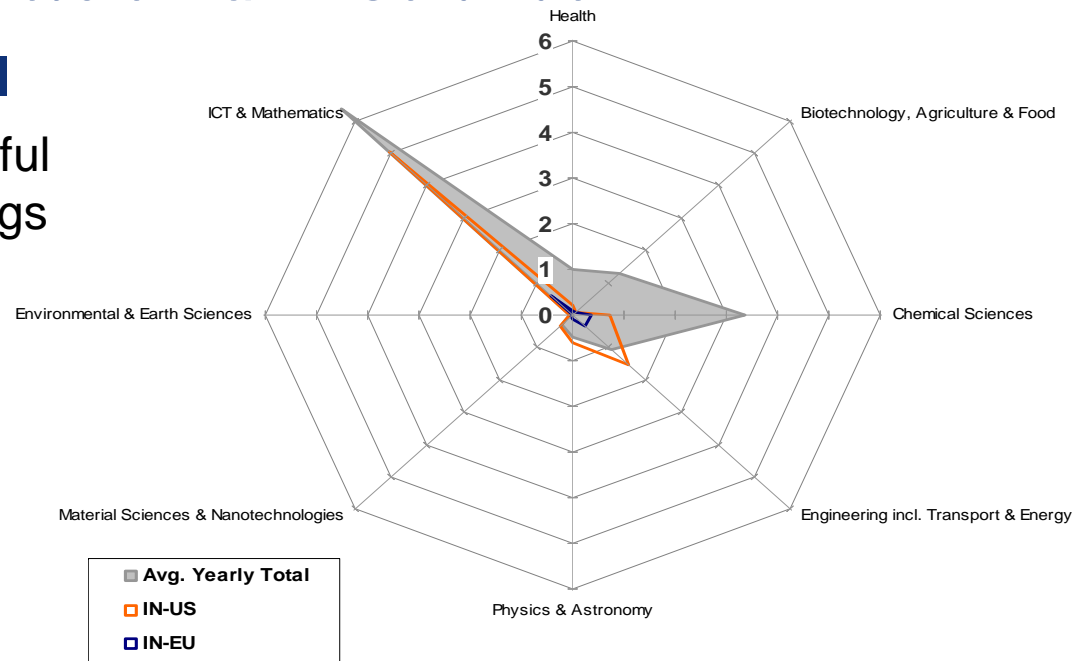


- **Progress in ERA Policy Implementation Report**
  - In support of the 2012 ERA Framework
  - Focuses on mobility of researchers and cross-border research collaboration
  - Shows, e.g., that approximately 21% of research programmes in Europe are open to participation, to a certain degree, by non-residents.
- **The main drivers of change affecting the R&I landscape and implications for EU policy**
  - Exogenous drivers of change: Financial crisis, Globalisation, Regional disparities, Demographic shifts, Grand challenges, Political instability
  - Endogenous drivers of change: New S&T opportunities, ICT developments, New forms of innovation
  - Performance drivers of change: Performance weaknesses, Policy deficits
  - Policy conclusions. Need: Strengthening the science base, Improving innovation performance, Spreading the benefits, expanding policy coverage, Focus on grand challenges, Pooling resources
- **Evaluation of Socio-Economic impact in the EU: Evidence from ERAWATCH**
- **Research and Innovation Challenges and Policy Responses in Member States**
- **European Research Area Impact on Member States' Policy development**

MOSCOW 13- 14 October 2011

While EU-IN cooperation is successful regarding co-publications, the EU lags behind the US in innovation and patenting

Lessons learned and application of methodology for China and other BRICS.



- Information: to create a system for the collection of accurate and validated information on national R&D programmes and their transnational collaboration
- Analysis: to build an intelligence service on the impact of ERA-NETs that is able to provide timely and relevant analysis to policy stakeholders
- Mutual Learning: to foster mutual learning through good practice examples and the use of web based collaboration tools
- Presentation of results: to make examples of information, analysis and best practice available to programme and policy stakeholders

**ERA-NETs Information**

- ERA-NETs
- Participating Countries
- Programmes
- Organisations
- Call Calendar

**Strategic Analysis**

- Mapping
- Archive (2009)

**Learning Platform**

- Toolbox
- Events

**News**

- Workshop in Berlin: "Implementing ERA-NETs"
- All EU countries highly involved in fostering public transnational R&D

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## The world of R&D programme collaboration

**NETWATCH is the European Commission's information platform on transnational R&D programme collaboration. The current focus is on ERA-NETs, but the scope will be increased to include a broader range of programmes.**

NETWATCH supports transnational R&D programme collaboration in Europe by:

- mapping ERA-NETs;
- providing information on Joint Calls;
- analysing the impact of programme collaboration;
- describing the scope and results of individual ERA-NETs;
- supporting mutual learning among transnational programme networks.

## News

**27/01/2011 Workshop in Berlin for ERA-NET coordinators about "Implementing ERA-NETs"**

ERA-NET coordinators are invited to the ERA-LEARN Learning platform workshop "Implementing ERA-NETs", designed as a training session targeted at ERA-NET coordinators and core partners of the consortia on 16 and 17 March 2011 in Berlin.

[More ...](#)

**21/01/2011 All EU countries highly involved in fostering public transnational R&D**

All EU Member States are highly involved in the ERA-NET scheme is the main finding of the report "Mapping ERA-NETs across Europe: overview of the ERA-NET scheme and its results", published today by JRC's Institute for Prospective Technological Studies (IPTS).

[More ...](#)

[Click here to access the News Archive >>](#)

**Research opportunities and calls published**

Direct entry for scientist



[Joint call calendar >>](#)

My research field is :  
(Select a research field ...)

**How can I benefit from NETWATCH?**

Select your profile:

- Researcher
- R&D programme manager
- Research policy maker
- Person new to the field

**Presentation of NETWATCH**



[Click here to download a presentation of NETWATCH](#)

<http://i3s.ec.europa.eu/>

## Main aim:

- to present up to date, comparable and readily accessible information on Innovation Union activities, centred on status of the 34 Innovation Union actions (IU34)
- to provide other relevant information and links

## For each of IU34:

- the key dimensions of challenges faced
- the objectives in tackling these challenges
- the approach planned to meet these challenges
- Key milestones and progress
- relevant background intelligence



- Provide support to customer-driven requests for research and analysis in key policy areas, including in sector-related EU legislation.
- Strengthen and organise economic and policy analysis competences inside JRC to ensure integrated solutions.
- Integration around modelling competences and platforms.
- Anticipate societal challenges and policy needs through proactive forward-looking activities.
- Strive for scientific excellence.

# Thank you!

