

Towards the Seventh Framework Programme (2007-2013): Summary

- EU research: the story so far
- Lisbon Strategy
- R&D – European weaknesses
- Research: filling the gap
- Research and economic development
- Why research at European level?

Summary (cont.)

- European research: increasing budgets
- FPs: significant impacts on S&T and the economy
- FPs: strong impact on the integration of the ERA
- Why increase the FP7 budget?
- Projected FP7 economic impacts
- What's new?

Summary (cont.)

- Specific Programmes
- JRC – Research-based policy support
- Management
- Simplification of procedures
- Dissemination and use of EU R&D results
- Funding Schemes
- Budget

Summary (cont.)

- FP7 and CIP
- Towards the Seventh Framework Programme 2007-2013 ('co-decision')
- FP7 timetable
- Information

EU research: the story so far

- 1952: ECSC treaty, first projects started March 1955
- 1957: Euratom treaty, Joint Research Centre set up
- 1983: ESPRIT programme
- 1984: First Framework Programme (1984-1987)
- 1987: 'Single European Act' – science becomes a Community responsibility; Second Framework Programme (1987-1991)
- 1990: Third Framework Programme (1990-1994)
- 1993: Treaty on European Union; role of RTD in the enlarged EU
- 1994: Fourth Framework Programme (1994-1998)
- 1998: Fifth Framework Programme (1998-2002)
- 2000: European Research Area
- 2002: Sixth Framework Programme (2002-2006)
- 2005: Proposal for the Seventh Framework Programme (2007-2013; 2007-2011 for Euratom)

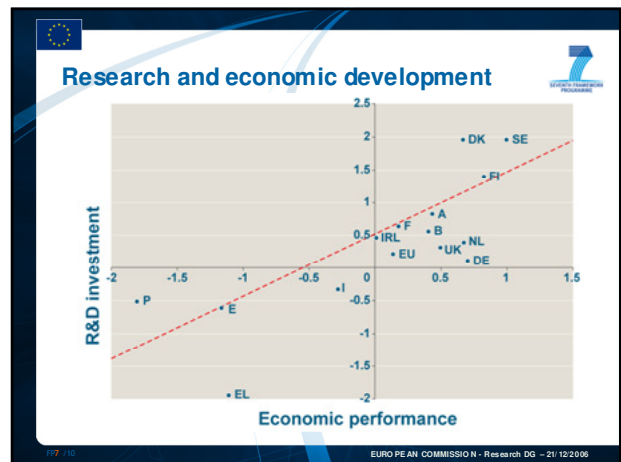
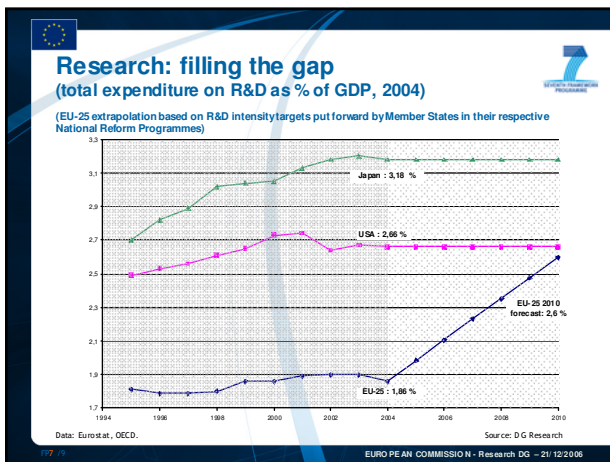


R&D – Europe's challenges

	EU-25	US	Japan
R&D intensity (% of GDP) (2004)	1.86	2.66	3.18
Share of R&D financed by industry (%) ⁽¹⁾	54.8	63.7	74.8
Researchers (FTE) per thousand labour force ⁽²⁾	5.5	9.1	10.1
Share of world scientific publications (%) (2003)	38.3	31.1	9.6
Scientific publications per million population (2003)	639	809	569
Share of world triadic patents (%) (2000)	31.5	34.3	26.9
Triadic patents per million population (2000)	30.5	53.1	92.6
High-tech exports as a share of total manufacturing exports (%) (2003)	19.7	28.5	26.5
Share of world high-tech exports (%) (2003)	16.7	19.5	10.6

Data: Eurostat, OECD. Source: DG Research
Notes: ⁽¹⁾ EU-25: 2003; US, JP: 2004. ⁽²⁾ EU-25: 2004; US: 2002; JP: 2003.

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- ## Why research at European level?
- Pooling and leveraging resources
 - Resources are pooled to achieve critical mass
 - Leverage effect on private investments
 - Interoperability and complementarity of big science
 - Fostering human capacity and excellence in S&T
 - Stimulate training, mobility and career development of researchers
 - Improve S&T capabilities
 - Stimulate competition in research
 - Better integration of European R&D
 - Create scientific base for pan-European policy challenges
 - Encourage coordination of national policies
 - Effective comparative research at EU-level
 - Efficient dissemination of research results
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- ## FPs: significant impacts on S&T and the economy
- Economic benefits
 - €1 (research) at European level → €4-7 (long-run, econometric models)
 - Reduced commercial risk
 - increased turnover and profitability
 - enhanced productivity and market share
 - Innovative performance
 - Enterprises participating in FP:
 - tend to be more innovative
 - more likely to patent
 - engage in innovative co-operation with other firms and universities
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FPs: significant impacts on S&T and the economy

- Scientific performance:
 - FP project → up to nine peer-reviewed publications (international co-publications)
- Human resources development:
 - Over 7000 proposals for Marie Curie in 2004, thousands of researchers have participated in top transnational teams, benefiting from training and knowledge sharing

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FPs: strong impact on the integration of the ERA

- 180 000 co-operation links (FP5):
 - academia, industry, public research labs
- Better coordination of national research efforts (ERA-NET, etc.)
- Counter-acting fragmentation of ERA
 - Average number of MS per project: 3 (FP2) → 6.7 (FP6)

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FPs: strong impact on the integration of the ERA

- Concentration of research efforts through larger projects with critical mass
 - Average number of participants per project: 4.7 (FP2) → 14 (FP6)
 - Average EU funding per project: €1.2 million (FP2) → €4.6 million (FP6)
- Top-level scientists: e.g. six Nobel prize-winners involved in FP6 fundamental genomics projects
- ERA more attractive to researchers worldwide.
 - Number of participating countries from across the world: 30 (FP2) → 140 (FP5)

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Why increase the FP7 budget?

Tackle under-investment by exerting leverage on national and private investment

- Increase EU spending on R&D: 1.97% of GDP vs 2.59% (US)
- Help leverage business R&D (EU-wide projects, solutions and market)
- Encourage Member States

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Why increase the FP7 budget?

Tackle fragmentation of research effort in the EU and enhance its efficiency and effectiveness

- Achieve critical mass, share knowledge and facilities
- Better dissemination across the EU
- More excellence through EU-wide competition
- Less fragmentation through stronger coordination

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Why increase the FP7 budget?

- Widen the scope of the FP
 - Launch essential new initiatives
 - Reinforce existing successful actions
- Help to meet new S&T challenges
 - Rising costs of research mean that higher funding is needed to produce same impacts
 - New research fields are emerging (hydrogen economy, etc.)

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Why increase the FP7 budget?

Reinvigorate the Lisbon Strategy

- **Objective:**
to become the most dynamic knowledge-based economy
- Supports the integration and attractiveness of the ERA
- Contributes to increased competitiveness
- Contributes to sustainable development

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What's new?

Main new elements compared to FP6:

- Duration increased from five to seven years
 - except for Euratom FP
- Annual budget increased significantly
- Basic research (~ €1 billion per year)
- New structure: cooperation, ideas, people, capacities
- Flexible funding schemes
- Joint Technology Initiatives
- Simpler procedures
- Logistical and administrative tasks → external structures

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FP7 2007 –2013 | Specific Programmes

Cooperation – Collaborative research

Ideas – Frontier Research

People – Marie Curie Actions

Capacities – Research Capacity

+

JRC non-nuclear research

Euratom direct actions – JRC nuclear research

Euratom indirect actions – nuclear fusion and fission research

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Cooperation – Collaborative Research

Ten themes

1. Health
2. Food, agriculture and fisheries, and biotechnology
3. Information and communication technologies
4. Nanosciences, nanotechnologies, materials and new production technologies
5. Energy
6. Environment (including climate change)
7. Transport (including aeronautics)
8. Socio-economic sciences and the humanities
9. Space
10. Security

+ Euratom: Fusion energy research, nuclear fission and radiation protection

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1. Health

- Biotechnology, generic tools and technologies for human health
- Translating research for human health
- Optimising the delivery of healthcare to European citizens

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2. Food, Agriculture and Fisheries, and Biotechnology

- Sustainable production and management of biological resources from land, forest, and aquatic environments
- 'Fork to farm': Food, health and well being
- Life sciences and biotechnology for sustainable non-food products and processes

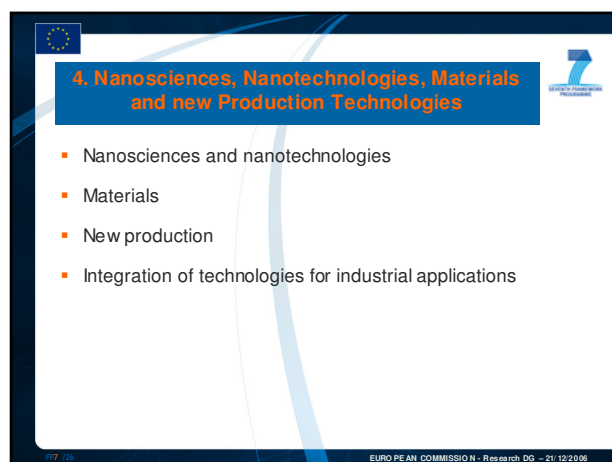
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Slide 3: Information and Communication Technologies

- ICT Technology Pillars
- Integration of Technologies
- Applications Research
- Future and Emerging Technologies

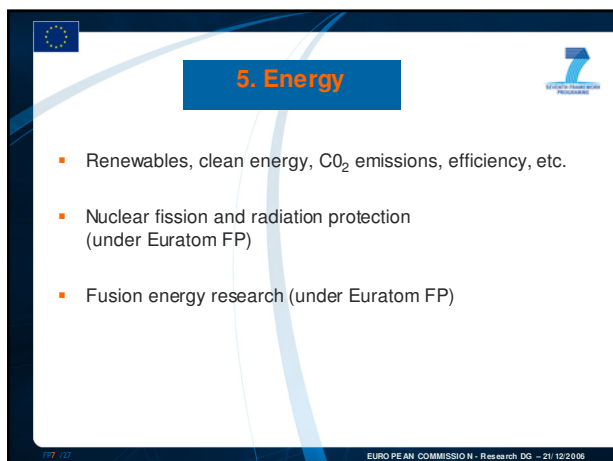
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Slide 4: Nanosciences, Nanotechnologies, Materials and new Production Technologies

- Nanosciences and nanotechnologies
- Materials
- New production
- Integration of technologies for industrial applications

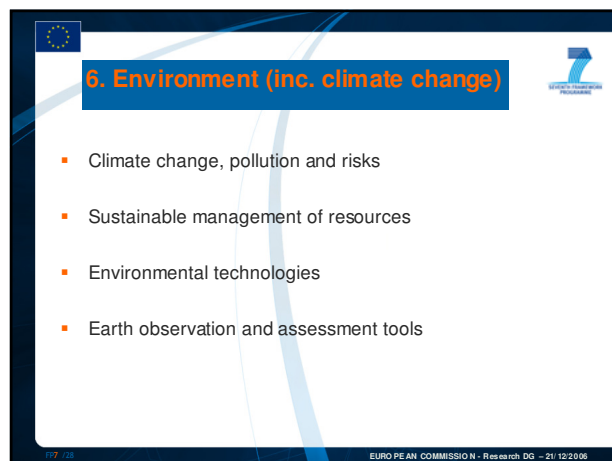
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Slide 5: Energy

- Renewables, clean energy, CO₂ emissions, efficiency, etc.
- Nuclear fission and radiation protection (under Euratom FP)
- Fusion energy research (under Euratom FP)

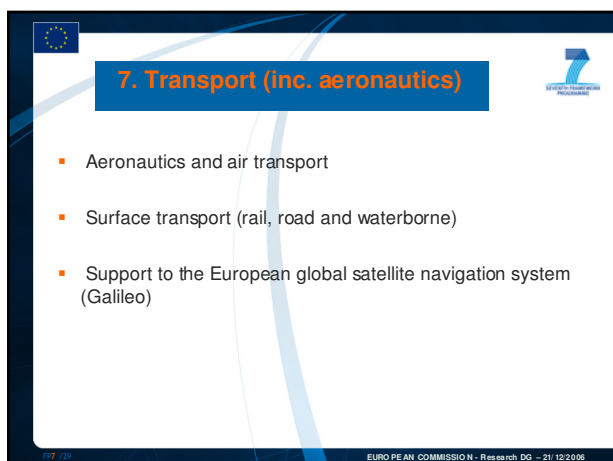
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Slide 6: Environment (inc. climate change)

- Climate change, pollution and risks
- Sustainable management of resources
- Environmental technologies
- Earth observation and assessment tools

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Slide 7: Transport (inc. aeronautics)

- Aeronautics and air transport
- Surface transport (rail, road and waterborne)
- Support to the European global satellite navigation system (Galileo)

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Slide 8: Socio-Economic Sciences and the Humanities

- Growth, employment and competitiveness in a knowledge society
- Combining economic, social and environmental objectives in a European perspective
- Major trends in society and their implications
- Europe in the world
- The citizen in the European Union
- Socio-economic and scientific indicators
- Foresight activities

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9. Space

- Space-based applications at the service of the European society
- Exploration of space
- RTD for strengthening space foundations

10. Security

- Protection against terrorism and crime
- Security of infrastructures and utilities
- Border security
- Restoring security in case of crisis
- Security systems integration and interoperability
- Security and society
- Security research Coordination and structuring

Cooperation – Collaborative Research (1)

- Under each theme there will be sufficient flexibility to address both **Emerging needs** and **Unforeseen policy needs**
- Dissemination of knowledge and transfer of results will be supported in all thematic areas
- Support will be implemented across all themes through...

Cooperation – Collaborative Research (2)

- Collaborative research
(Collaborative projects; Networks of Excellence; Coordination/support actions)
- Joint Technology Initiatives
- Coordination of non-Community research programmes
(ERA-NET; ERA-NET+; Article 169)
- International Cooperation

Potential Joint Technology Initiatives

Hydrogen and Fuel Cells	Aeronautics and Air Transport	Global Monitoring for Environment and Security
Innovative Medicines	Embedded Computing Systems	Nanoelectronics

Other possible themes to be identified later...

Coordination of non-Community research programmes

- Coordination of national and regional programmes actions will use the tools:
 - ERA-NET
 - ERA-NET PLUS
 - Article 169
 May cover subjects beyond the ten themes
- Coordination with European programmes
 - Addresses principally intergovernmental structures such as EUREKA, COST, EIROFORUM, etc.

Slide 1: Ideas – Frontier Research (1)

- Frontier Research is a key driver to innovation and economic performance
- Establish European Research Council (ERC) – the first pan-European funding agency for Frontier Research
- Support investigator-driven frontier research over all areas of research
- European added-value through competition at European level

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Slide 2: Ideas – Frontier Research (2)

- Budget ~ €1bn p.a. (2007-2013 ~ €7.46)
- Autonomous scientific governance (Scientific Council)
- Support projects of individual teams
- Excellence as sole criterion
- Simple, user-friendly

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Slide 3: Ideas – Frontier Research (3)

- ERC Launch Strategy provides for two streams of funding activities starting in 2007:
 - ERC Starting Independent Researcher Grant scheme (ERC Starting Grant)
 - ERC Advanced Investigator Researcher Grant scheme (ERC Advanced Grant)

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Slide 4: People – Marie Curie Actions

- Initial training of researchers
 - Marie Curie Networks*
- Life-long training and career development
 - Individual Fellowships
 - Co-financing of regional/national/international programmes
- Industry-academia pathways and partnerships
 - Industry-Academia Knowledge-sharing Scheme*
- International dimension
 - Outgoing & Incoming International Fellowships
 - International Cooperation Scheme
 - Reintegration grants;
 - Support to researcher 'diasporas'
- Specific actions
 - Mobility and career enhancement actions
 - Excellence awards

* Open to third-country nationals

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Slide 5: Capacities – Research Capacity

1. Research infrastructures
2. Research for the benefit of SMEs
3. Regions of Knowledge
4. Research Potential
5. Science in Society
6. Coherent development of policies
7. Activities of International Cooperation

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Slide 6: 1. Research Infrastructures

- Support to existing research infrastructures:
 - Integrating activities
 - Research e-infrastructures
- Support to new research infrastructures:
 - Construction of new research infrastructures and major updates of existing ones
 - Design studies

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2. Research for the benefit of SMEs

- Research for SMEs
- Research for SME associations
- Encourage and facilitate SME participation across FP7

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under the Competitiveness and Innovation Programme (CIP):

- Support services provided by networks to encourage SME participation in FP7 (awareness, identification of needs, assistance)

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3. Regions of Knowledge

Two objectives for all European regions:

Strengthen their capacity for investing in RTD and carrying out research activities

Produce research strategies that contribute to regional economic development

- Through the development of regional 'research-driven clusters'

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4. Research Potential

Two objectives for EU's convergence and outermost (RUP) regions

Unlock and develop their research capacities

Foster an increase in their participation to Community research activities

To fully realise the European Research Area in the enlarged Union

- Through:
 - Transnational two-way secondments and recruitment of staff
 - Development of research equipment and the material environment
 - Workshops and conferences for knowledge transfer
 - 'Evaluation facilities'

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5. Science in Society

- Strengthening the European science system (inc. scientific advice)
- Broader public engagement on science-related questions
- Promoting better science through ethics research and ethical review
- Science and technology and their place in society
- Gender research, gender dimension, and the role of women in research
- Science education – curiosity and the participation of young people
- Policy for the role and engagement of universities
- Communication between scientists, policy-makers, media and the public

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6. Coherent Development of Research Policies

- Monitoring and analysis of research related public policies/industrial strategies:
 - Information and intelligence service (ERAWATCH)
 - Industrial research investment monitoring
 - Indicators on research activity and its impact on the economy
- Coordination of research policies:
 - Implementing the Open Method of Coordination
 - Bottom-up initiatives undertaken by several countries and regions (OMC-NET)

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7. Activities of International Cooperation

- 'Horizontal' support actions and measures not carried out in the Cooperation or People programmes

Two interdependent objectives:

Support competitiveness through strategic partnerships with third countries in selected fields

Address specific problems that third countries face or that have a global character, on the basis of mutual interest and mutual benefit

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JRC – Research-based policy support

Five policy themes for FP7

- Sustainable growth
- Conservation and management of natural resources
- Citizenship
- External responsibility and global security
- Euratom programme

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Management

Increased FP budget + No increase in Commission staff

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- Need new structures to manage the increase
- 'Externalise' part of the FP management to executive agencies for the first time

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Simplification of procedures

- Objectives:
 - Eliminate procedures, rules and requests with no added value
 - Cut the number of requests to participants
 - Avoid red tape and increase user-friendliness
 - Reduce delays
- Principles:
 - Rationalisation of all procedures
 - Communication
 - Strike a new balance between risk and control to provide
 - Greater trust
 - Increased risk-taking

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Work Programmes

- Strategy/ approach, timing and content of calls (topics, funding schemes, budgets etc.)
- Evaluation criteria (S&T quality, impact, implementation)
- Particular requirements for participation, evaluation, implementation

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Preparation of Work Programmes

- Annual process
- Following consultation and expert advice:
 - Advisory Groups
 - European Technology Platforms
 - Open consultations
 - Workshops, expert meetings, etc
 - Consultation with other Commission directorate generals
- Subject to opinion by Programme Committees (Member State representatives)

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Dissemination and use of EU R&D results

Need better diffusion and use of project outputs

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funding at:

- Project level
 - Innovation-related activities within RTD projects
 - Assistance from external experts
- In all thematic areas
 - Networking initiatives, seminars, brokerage events
 - Focused on specific fields or user groups

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Dissemination of EU R&D results (2)

- Complementary actions under the new CIP (Competitiveness and Innovation Programme)
 - Networks such as Innovation Relay Centres
 - IPR-Helpdesk
 - Actions to foster innovation networks and clusters
 - Support to projects and programmes for the dissemination and take-up of innovative technologies
- CORDIS
- Activities of EC Communication Units

Funding Schemes, General principles

- FP6: new instruments
 - Structure research efforts
 - Overcome fragmentation
- FP7: flexible use of funding schemes
 - Alone or in combination
 - Fund actions throughout the Framework Programme

Funding Schemes, General principles (2)

- Programme decisions and calls will mention
 - The type(s) of scheme(s) used for different actions
 - The eligible participants
 - The eligible types of activity
- Work programmes may specify the scheme used for each element of the call

Budgets of the EU Framework Programmes 1984-2013

NB: Budgets in current prices. Source: Annual Report 2003, plus FP7 revised proposal

FP7 budget (€ 50 521 million, current prices)

Note: Euratom FP: €2.7 billion over 5 years - not included above

FP7 2007-2013 'Cooperation' budget

I. Cooperation	Budget (€ million, current prices)
1. Health	6 100
2. Food, agriculture and fisheries, and biotechnology	1 935
3. Information and communication technologies	9 050
4. Nanotechnologies, materials and production	3 475
5. Energy	2 350
6. Environment	1 890
7. Transport	4 160
8. Socio-economic research	623
9+10. Space and Security	2 830
Total	32 413*

* Not including non-nuclear activities of the Joint Research Centre: €1751 million

How FP7 and CIP complement each other

- Complementary and mutually reinforcing actions
- Competitiveness and dissemination remain key elements of FP7
- Designed to operate side by side in support of Lisbon objectives
- Close coordination

FP7: Dissemination of knowledge and innovation-related activities (within projects)

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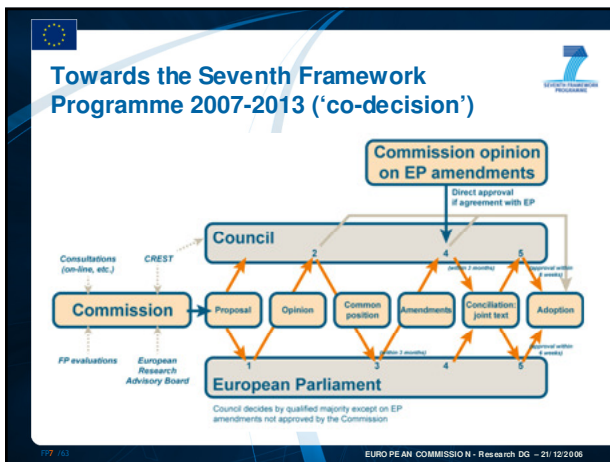
CIP: Innovation support networks and take-up of proven technologies

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How FP7 and CIP complement each other

	FP7-RTD	CIP
Funding of projects	<ul style="list-style-type: none"> Research, technological development and demonstration 	<ul style="list-style-type: none"> Take-up of proven technologies: environmental, ICT and energy-efficiency
SMEs' participation in Research	<ul style="list-style-type: none"> Simplification Definition of thematic content Specific schemes for SMEs 	<ul style="list-style-type: none"> Actions promoting SMEs' participation in FP7
Access to finance	<ul style="list-style-type: none"> 'Risk Sharing Finance Facility' for large European RTD projects and infrastructures (with EIB) 	<ul style="list-style-type: none"> Risk capital (start-up and expansion) SMEs guarantee facility SMEs loan securitisation
Dissemination of knowledge	<ul style="list-style-type: none"> Within projects In thematic areas 	<ul style="list-style-type: none"> Networks providing innovation support services
Regions	<ul style="list-style-type: none"> Research-driven clusters 	<ul style="list-style-type: none"> Innovation clusters

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FP7 Timetable

April 2005	Commission's proposal
September 2005	Specific programmes' proposal
June 2006	First reading at EP
September 2006	Common position at Council
November 2006	Second reading and approval at EP
December 2006	Adoption
December 2006	First calls for proposals
February 2007	Launch conference

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Information

- EU research: <http://ec.europa.eu/research>
- Seventh Framework Programme: <http://ec.europa.eu/research/fp7>
- Information on research programmes and projects: <http://cordis.europa.eu/>
- RTD info magazine: <http://ec.europa.eu/research/rdinfo/>
- Information requests: <http://ec.europa.eu/research/enquites/>

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Thank you for your attention!

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