

Evaluation Tools of Environmental and Welfare Effects in Tekes Funding

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Technology and Innovation

and

ETLA, The Research Institute of
the Finnish Economy

ETLA

The Research Institute of the Finnish Economy


Tekes

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Goals of my Presentation

- A goal is to determine meta evaluation results of Tekes funding, Finland
 - > **Focus is on the socioeconomic effects**
 - Two cases:
 - i) Environment and sustainable economy: ClimBus programme
 - ii) Wellbeing of citizens: iWell and FinnWell programmes
 - > these cases are used to make corner stone observations in order to build meta model of Tekes funding
- I build up framework of longer term societal welfare effects by focusing on
 1. Meta evaluation
 2. Tekes strategic goals: environment and welfare
 3. Tekes impact model

Tekes– the Finnish Funding Agency for Technology and Innovation

- **Most important publicly funded expert organization for financing research, development and innovation in Finland**
- **We fund wide-ranging innovation activities in research communities, industry and service sectors**
- **Funding is targeted to projects that create the greatest benefits for the economy and society in the long-term**
- **R&D funding in 2010: 633 million euros and 1,896 projects**

Tekes strategy in a nutshell

The basis

Mission statement

Tekes boosts the development of Finnish industry and the service sector by technological means and through innovation.

This will renew the economy, increase added-value and exports, enhance productivity and the quality of working life, and create employment and wellbeing.

Values

Tekes and its staff value and aim to promote the **wellbeing, vision, trust, cooperation and development** of society, customers and colleagues

Vision

Tekes is a leader in boosting innovation



Core activities

Core processes

Strategy

Foresight, evaluation and innovation research
Strategy creation and communication

Customerships

Customership planning
CR management
New client acquisition, activation and customer service
Marketing communication

Programmes

Tekes programmes
Activation projects
Strategic Centres for Science, Technology and Innovation
International cooperation initiatives

Funding

Special innovation funding
Funding for public research
R&D funding for companies

Resources

- 581 + 46 million euros
- Personnel 293 + 90
- 6 overseas offices

The goal

Objectives

Capabilities in innovation activities

Focus during strategy period:

- Internationality of innovation activities
- Strong and networked competence centres

Productivity and renewal of industries

Focus during strategy period:

- Young innovative companies
- Growth companies
- Combining technical and non-technical development

A wellbeing society and environment

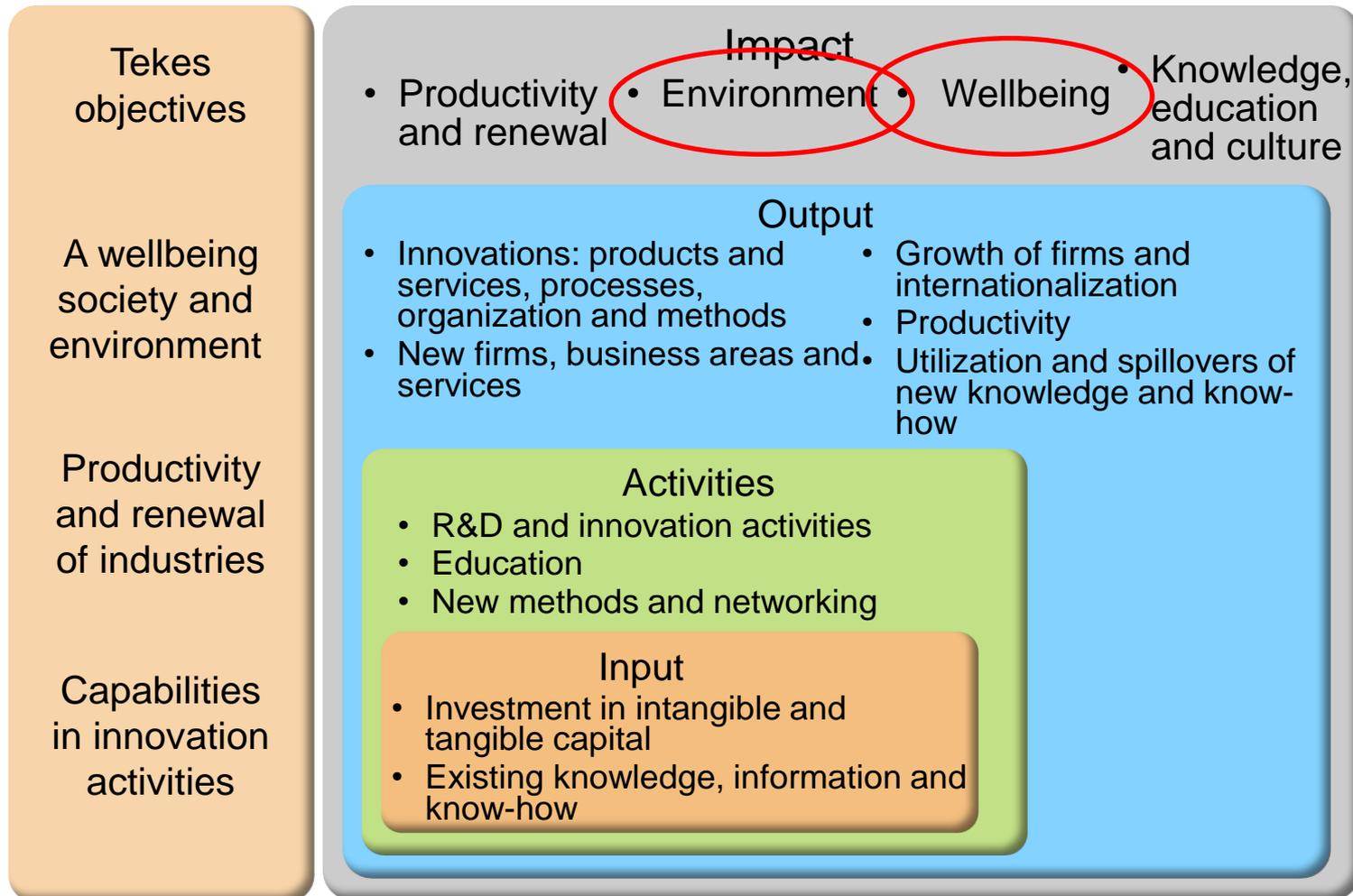
Focus during strategy period:

- Sustainable energy economics and environment
- Quality social and health care service system
- Services and platforms for the information society
- Quality of working life



Tekes

Innovations are profitable investments for the future



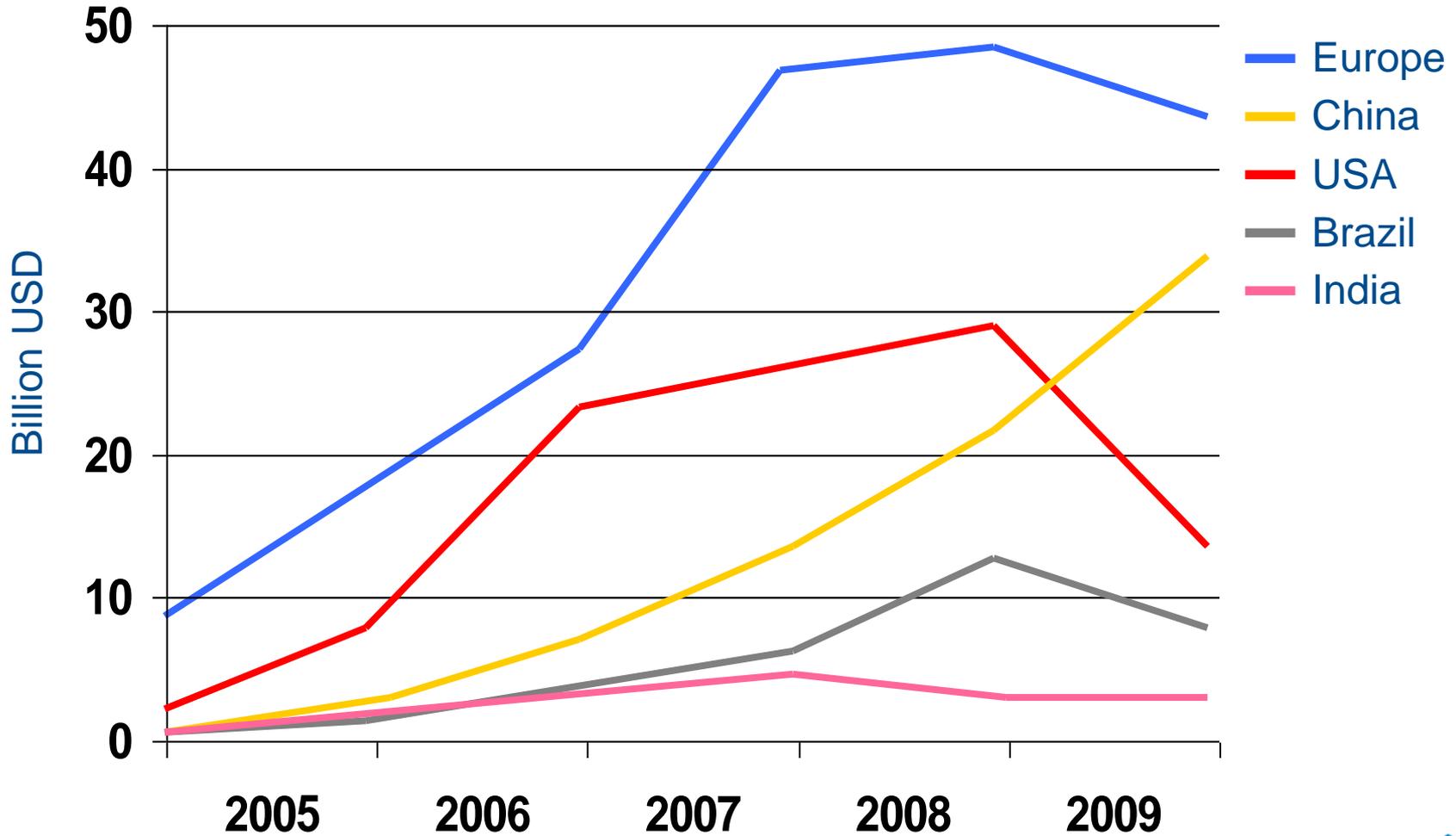
Environment - Inputs

▪ Investment in intangible and tangible capital

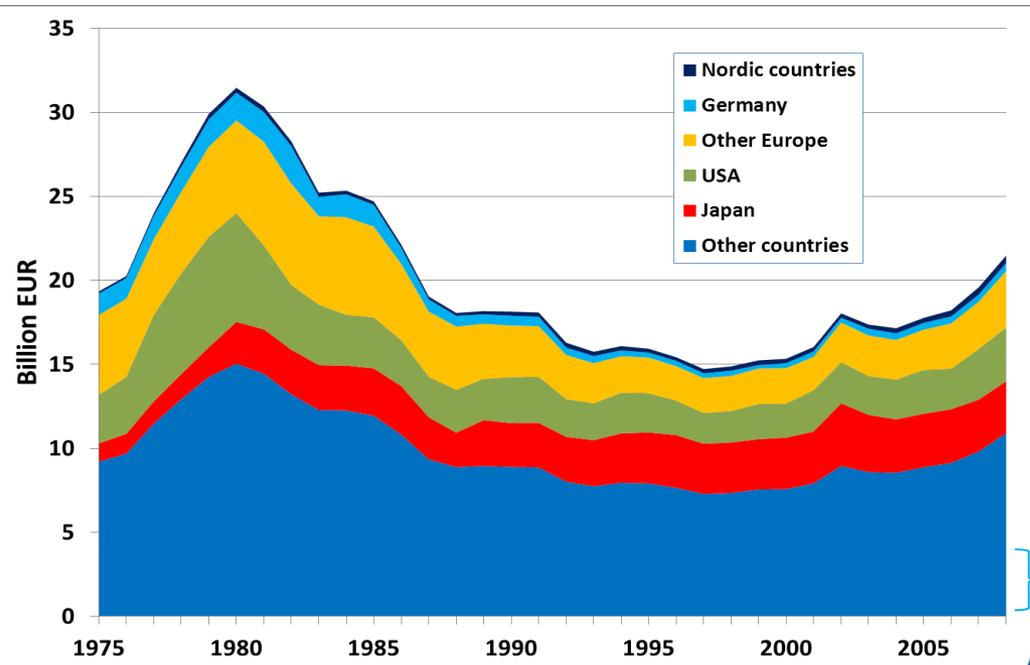
- Global renewable energy investments in 2009: 117 bln EUR (162 bln USD)
- Global energy R&D investments in 2009: 23 bln EUR (32 bln USD)
- Global renewable energy R&D investments in 2009: 4 bln EUR (5.6 bln USD)

- In 2010, Tekes funded about 245 million EUR (325 mill. USD) towards innovative projects in the area of environment and climate change
 - generating new know-how
 - new kinds of products and processes,
 - new kinds of service and business concepts

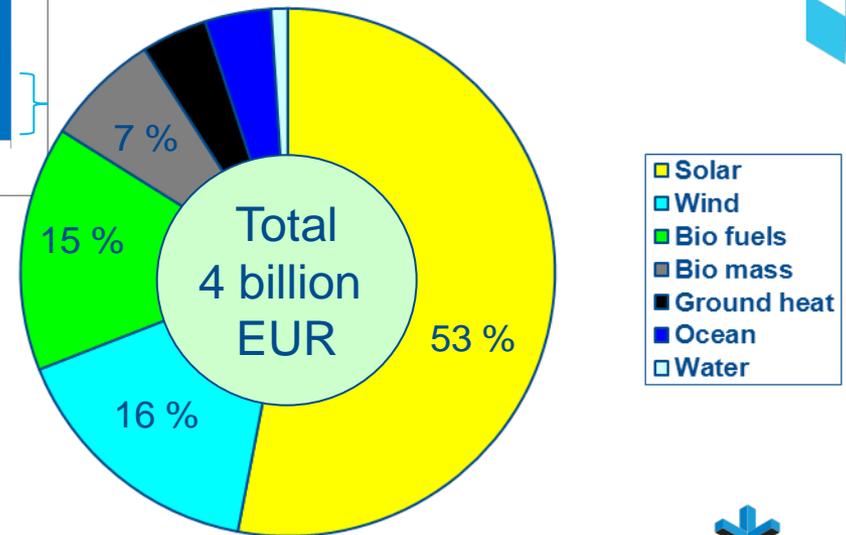
Investments of Renewable Energy



Global R&D Investments in Energy Sector

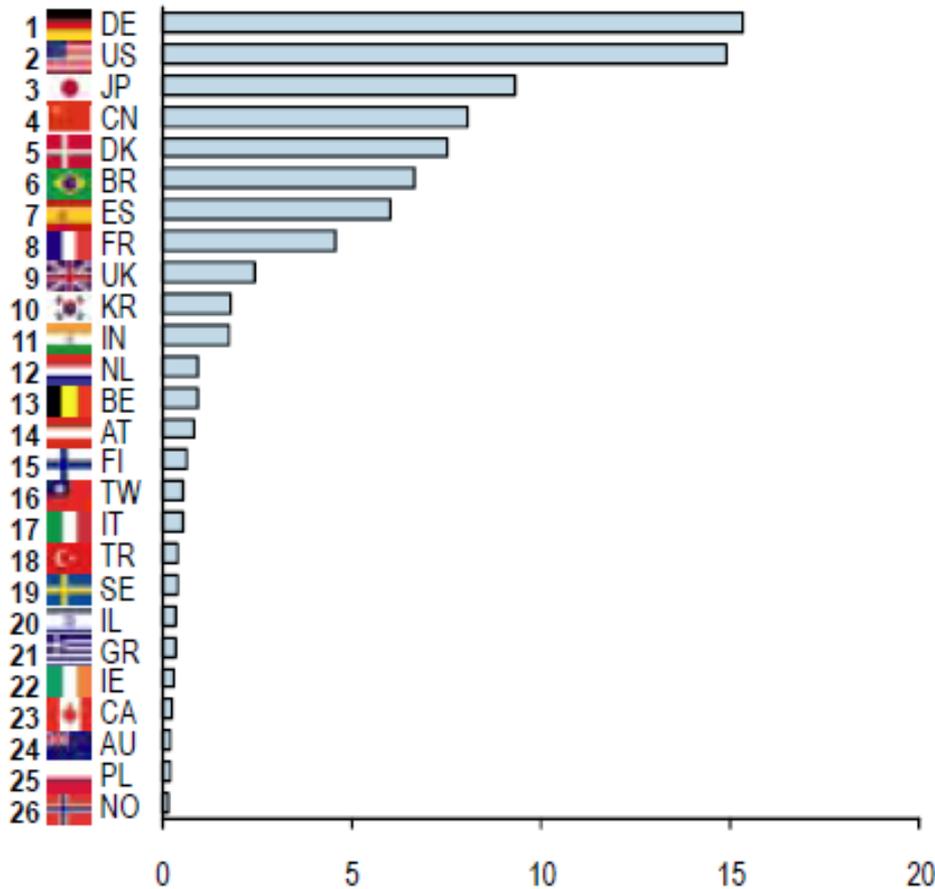


R&D in Renewable energy

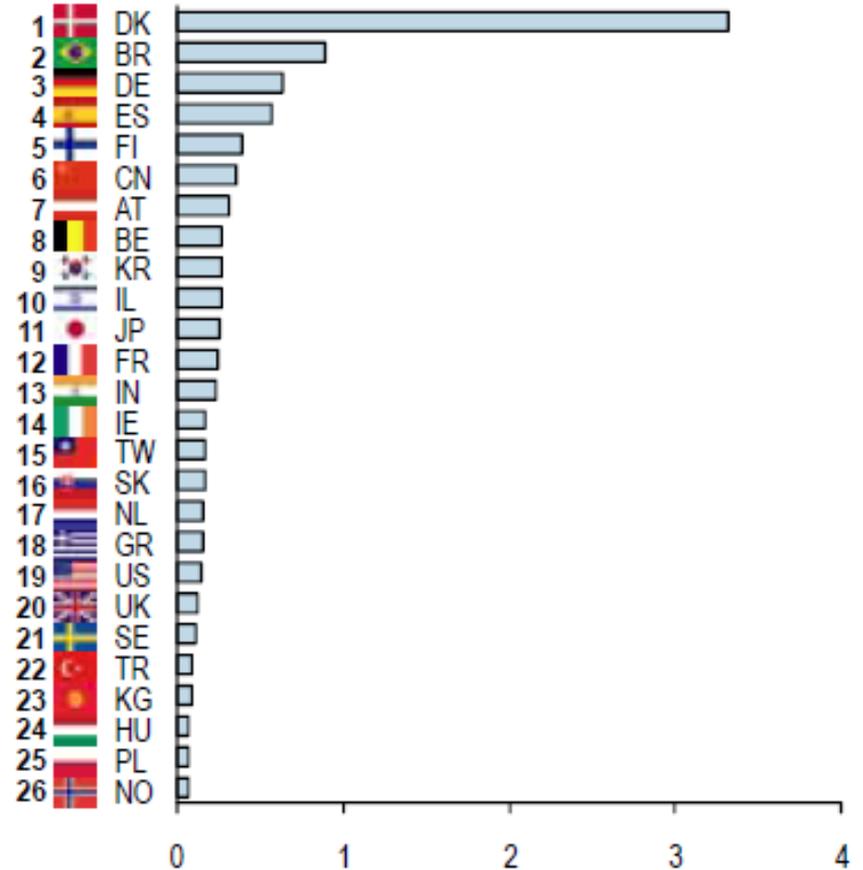


Source IEA (2011); in 2009 prices and exchange rates

Turnover of Renewable Energy in 2008



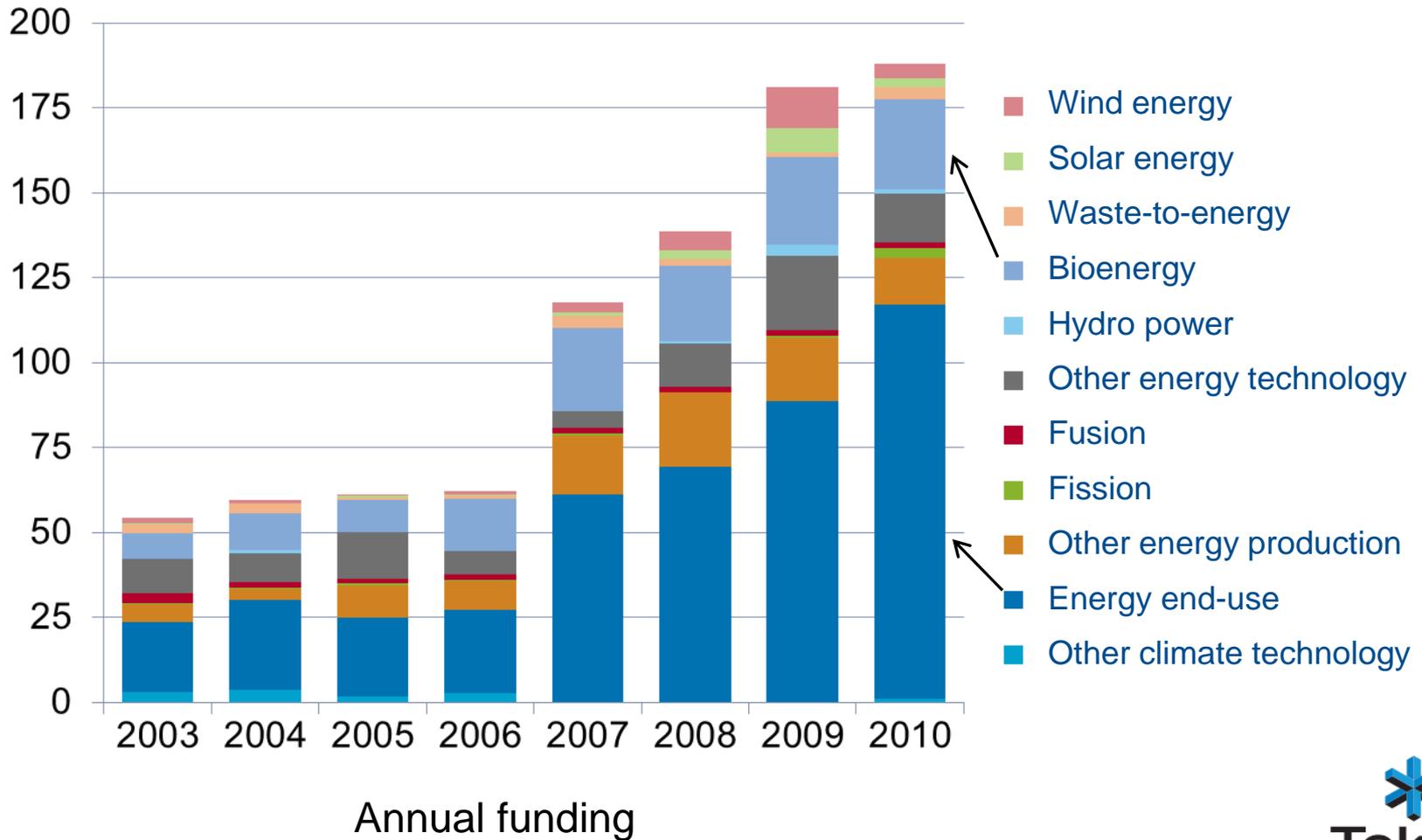
Billion EUR



% of GDP

Source: Clean Economy, Living Planet (2009)

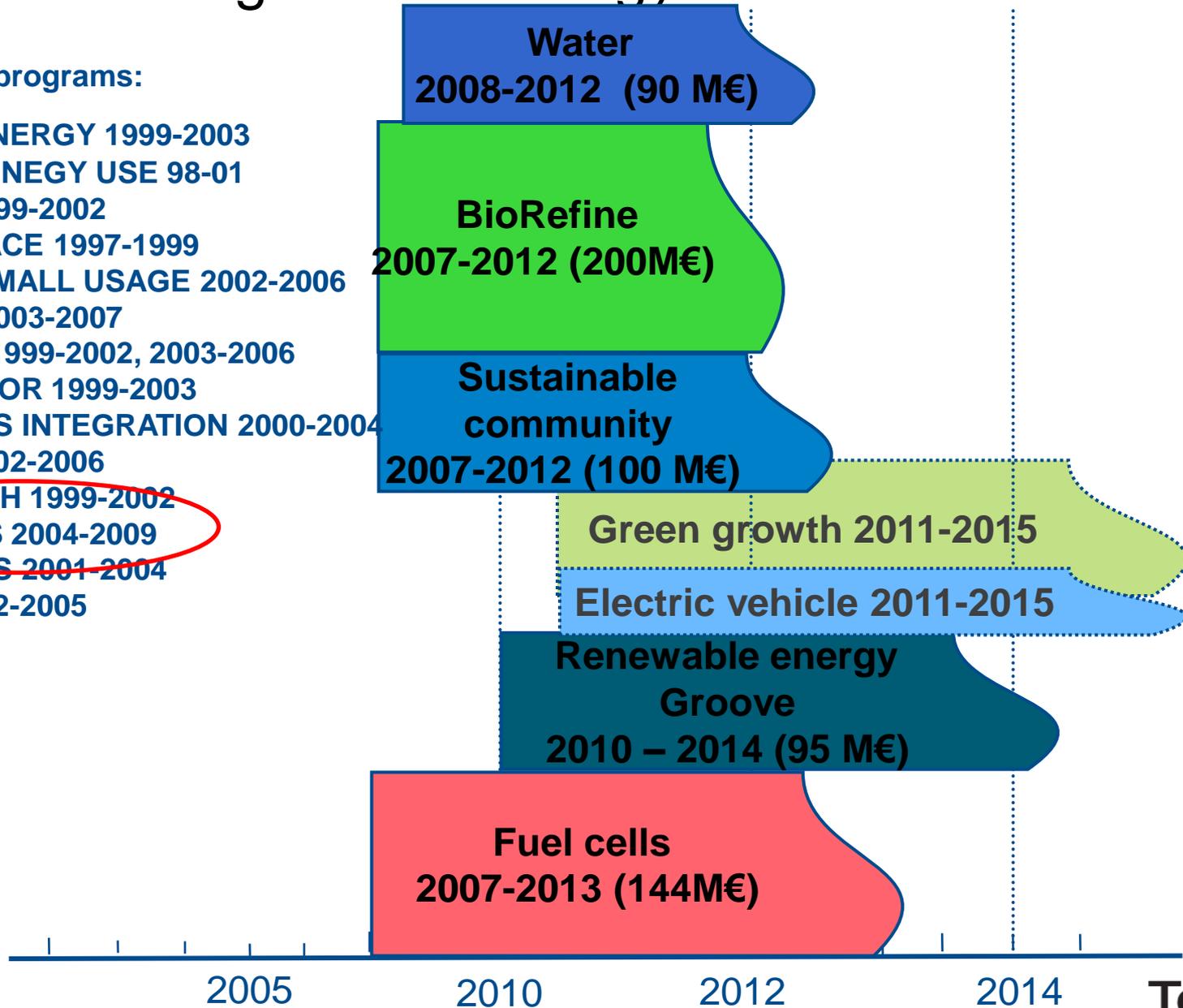
Tekes Funding in Energy and Climate Field



Tekes Programs in Energy and Climate Change

Ended programs:

- WOOD ENERGY 1999-2003
- WASTE ENERGY USE 98-01
- CODE 1999-2002
- FIRE PLACE 1997-1999
- WOOD SMALL USAGE 2002-2006
- DENSY 2003-2007
- FUSION 1999-2002, 2003-2006
- PROMOTOR 1999-2003
- PROCESS INTEGRATION 2000-2004
- CUBE 2002-2006
- CLIMTECH 1999-2002
- CLIMBUS 2004-2009
- STREAMS 2001-2004
- FINE 2002-2005



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Environment - Inputs

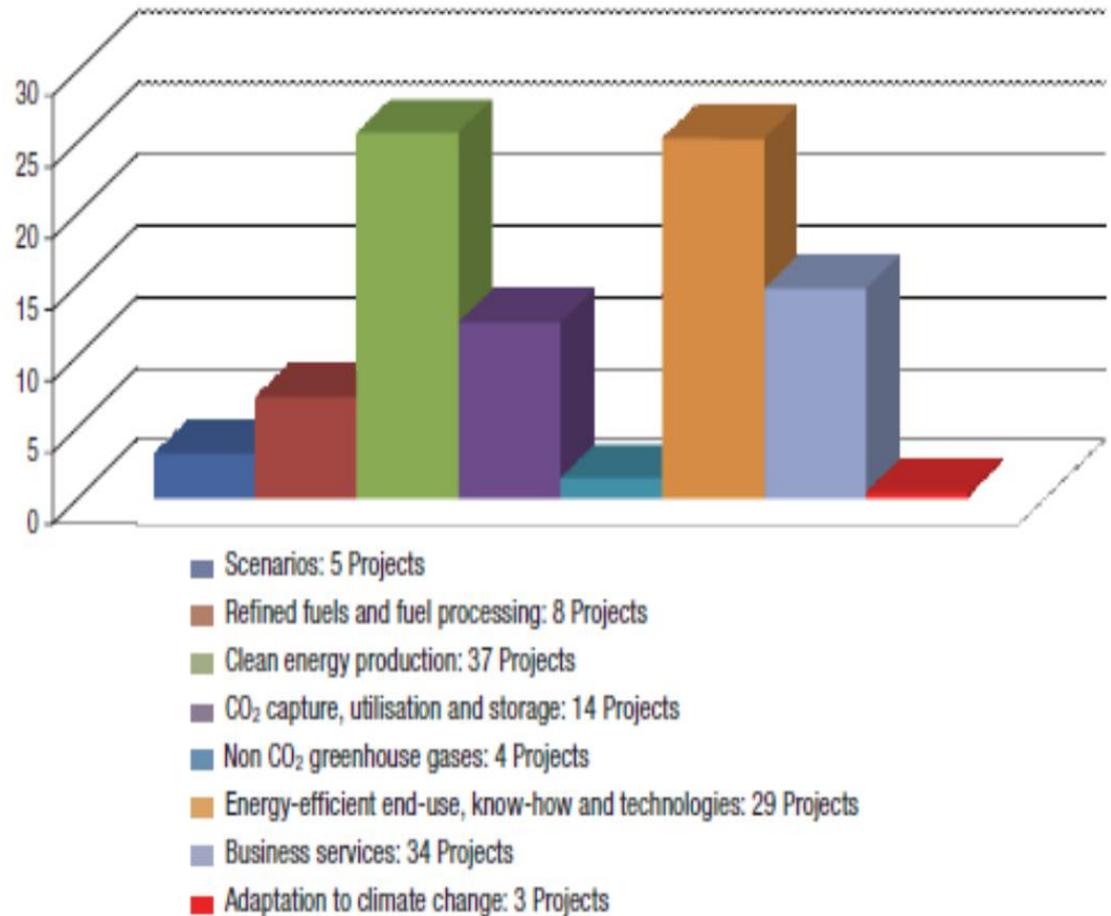
- **Evaluation results of CLIMBUS Programme 2004-2009**
(Business Opportunities in the Mitigation of Climate Change)
 - Focus areas:
 - Clean energy production and fuels
 - GHG (greenhouse gas) storage, capture and utilisation
 - Energy efficient technologies
 - Business services in mitigating climate change
 - Future business opportunities and technologies

“The main goals of ClimBus were to develop Finnish climate technology, strengthen the competitiveness and create new business opportunities for the emerging climate market”

Funding and Programme Portfolio

Funding:

- ClimBus has financed overall 134 projects, 50 of which were research projects and 84 enterprise projects.
- The overall programme volume was 90.5M€, of which 48% were Tekes funding (43.5 M€).
- Tekes portion to be financed in research projects was 66% (16.5M€) and in enterprise projects 41.3%, (27.0 M€).

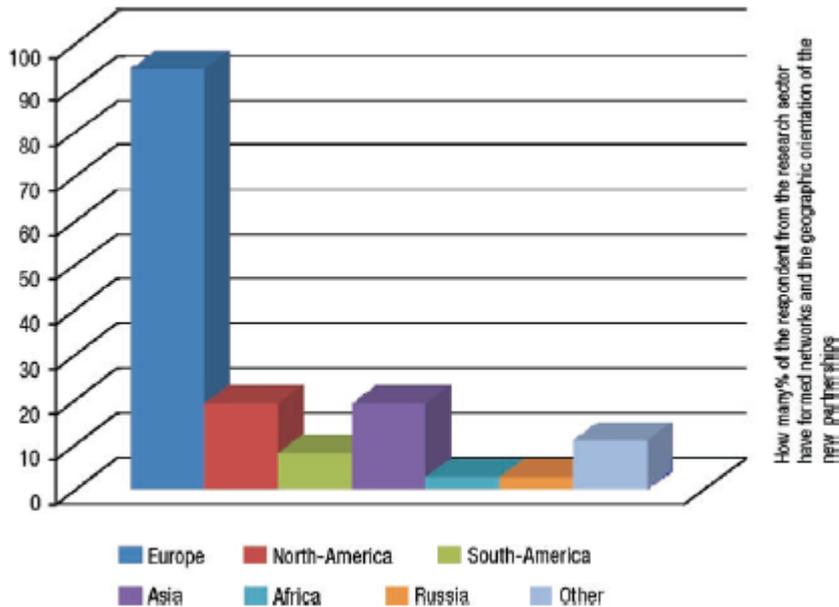


Activities during ClimBus programme

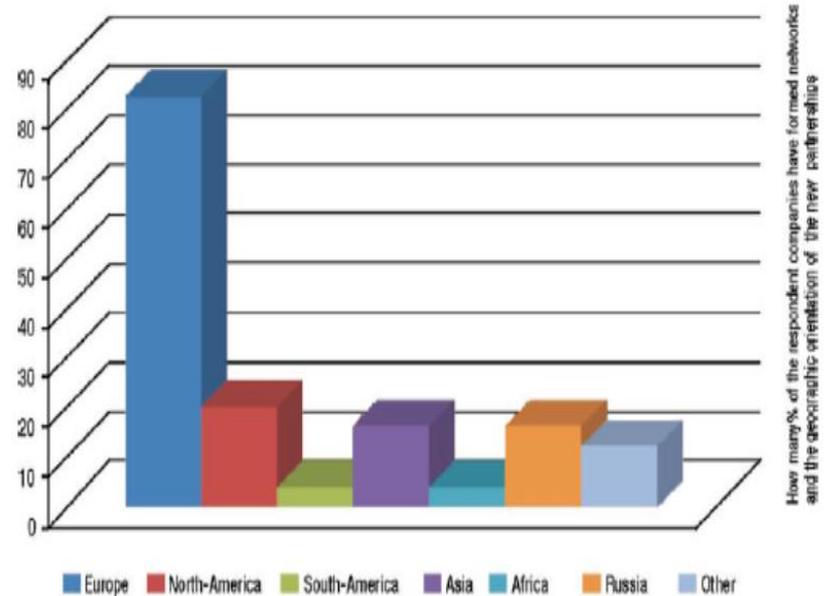
- Interest groups co-operation: ClimBus programme offered an active dialogue platform to parallel programmes and projects
- Business Breakfast events were organised as business-oriented informative sessions
 - > raised companies' awareness to consider climate change from their own business perspective
- The programme aimed at informing Finnish stakeholders about international field events, e.g. the application for the EU framework programmes.
- At project level, international cooperation has been enhanced
 - increasing researchers exchange in projects,
 - launching common projects and
 - taking advantage of already existing framework agreement and networks.

Networking of Projects

Networking of research



New international partnerships of enterprises



Recommendations

Teke

- Early identification of future market needs ensures successful timing for programmes
- It is important to invest in demonstration projects of new technology
- Broad-based foresight and scenario work are useful tools in programmes

The climate sector

- More emphasis on development of service business and end user solutions
- The continuation of support for clusters initiated in the programmes needs to be ensured

Innovation and climate policy

- Commercialization of technology needs to be supported with market activation measures
- Internationalization of SME:s needs to be supported with novel means.

Environment - Activities

- R&D and innovation activities
 - Development of sustainable energy and environment.
 - Climate change has broad impacts on global economy
 - it creates new business possibilities
 - Several programs have improved a national climate business cluster in Finland.
- New methods and networking
 - Most programs have improved capabilities where research centers and universities have networked with each other (interdisciplinary activities), and with companies.
 - Also international contacts with clients, networked firms and funders have increased.

Environment - Results

- Innovations: products and services, processes, organization and methods
 - Long-distance and generic research has created new focus areas in climate business areas
 - New skills on decentralized energy technologies and new promising innovations in Finland
 - New methods of calculating energy efficiency in buildings, evaluation of life cycle costs and environment impacts
- New firms, business areas and services
 - Development of climate change, energy use mechanics and integration of recycling
 - Raising of knowledge, research, firms and products in waste business
- Growth of firms and internationalization
 - Develop new technologies in export markets for example in small firewood production
- Utilization and spillovers of new knowledge and know-how
 - Important role in knowledge updating, and finding new specialists in climate and environment area.

Environment - Impacts

- Climate warming is a global challenge
 - > creates talents for green economic growth
- Environment and energy innovations change structures of global economy
- International climate policy and agreements
 - > change operating environment of firms, because it channels investments and technology choices
- Consumers and final users consume more ethically
 - > because worries about environment are increasing - for example - by comparing ecological foot prints.

Meta Logic Model: Environment



Tekes

The impact goal: well-being

■ Inputs

- Investment in intangible and tangible capital
 - A starting point is ongoing knowledge in client processes and services
 - Cost-benefit analysis and implementation of most suitable results
- Existing knowledge, information and know-how
 - Co-operation between shake-up of the health services and already well-working practices and methods, and share them with partners
 - Duplication of processes and broad utilization

■ Activities

- R&D and innovation activities
 - In order to develop, produce and implementation a new kind of client-based services in co-operation with several partners, services methods and concepts in the social and health services
- New methods and networking
 - Co-operation between public, private and third sector

Role of Tekes in Finnish Health Care and Well-being Sectors

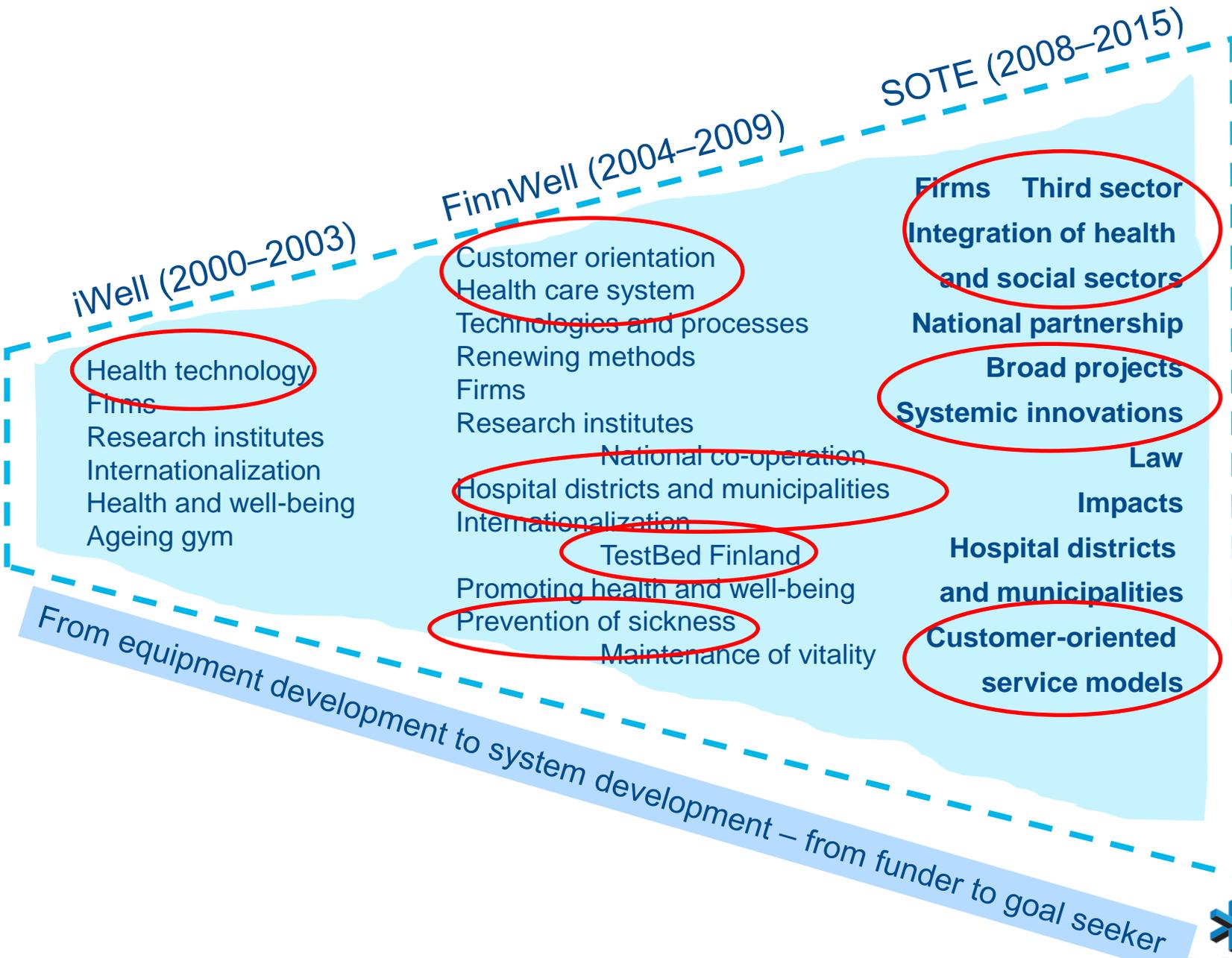
- Over the last decade, Tekes has invested heavily in advancing national well-being and health, and developing the healthcare sector.
- Tekes has sought
 - to engage with some of the central challenges in health policy in a fresh and unprejudiced manner, and in particular
 - to link the challenges in this policy sector, approaching them as a part of industrial and innovation policy

Completed and ongoing Tekes Programmes

- **iWell (Well-being and health) programme (2000–2003)**
 - focused on technology and service products that enhance health and well-being, at home, leisure time, at work, or travelling
- **FinnWell programme (2004–2009)**
 - aimed at improving the quality and productivity of national healthcare, and furthering the sector's commercial activity and internationalization
- **SOTE (Innovations in social and healthcare services) programme (2008–2015)**
 - The aim is to
 - renew the production of social and health services provided by the public sector,
 - improve the availability of services and their quality and effectiveness
 - promote new business opportunities in the area.

Evaluations of iWell and FinnWell programmes

- 75 % of project actors felt that the FinnWell programme had heightened awareness of customer perspectives and needs during the development of services in their organisation
- However, not yet any measurable national breakthroughs, in a way that customer-oriented approach has significantly spread at an organisational level in the healthcare sector
 - public health care system and funding are both too fragmented and distributed to small entities
 - IT NEEDS: more effective coordination of funding authorities and regulatory work, which achieve genuine customer-oriented efficacy at the organizational level with larger integrated project packages
- Tekes' programmes can nevertheless be seen as forging a common vision by furthering co-operation and networking between public sectors, firms and research institutes



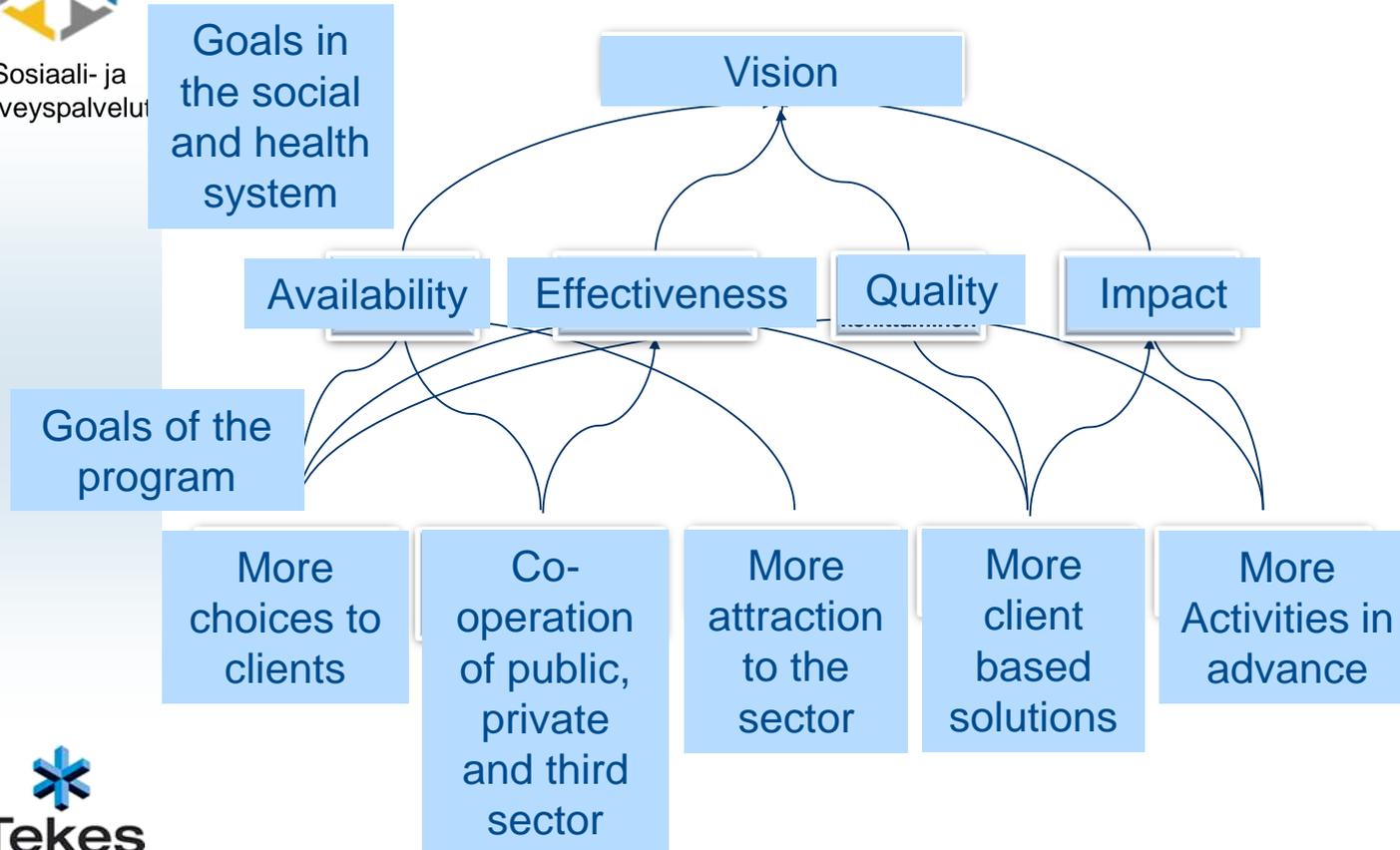
From equipment development to system development – from funder to goal seeker



Tekes program – Innovations in social and health service system (SOTE)



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terveyspalvelut



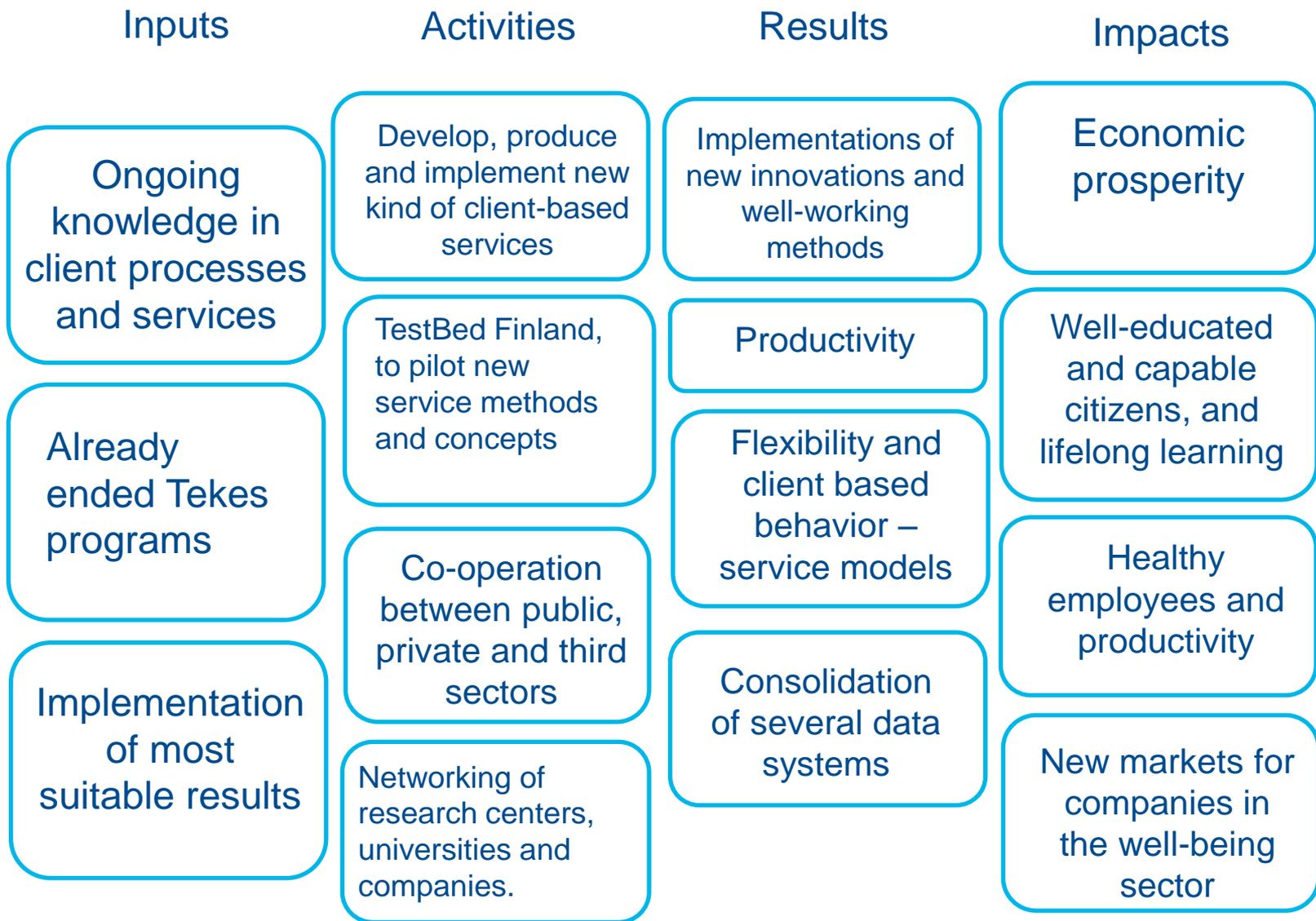
Well-being - Results

- Implementations of new innovations and well-working methods and practices
 - > productivity in the public social and health services
- Co-operation between public, private and third sectors
 - > more flexibility and client based behavior
- Consolidation of several data systems (for example patient registers)
 - > improves the activities of whole wellbeing sector

Wellbeing - Impacts

- Economic prosperity
 - > necessity to increase well-being
- National strengths
 - > well-educated and capable citizens
 - > long-life learning
- Well-functioning education system
 - > basis for quality-based social and health system
- Healthy and well-being employees
 - > more productive and eager to learn more
- New markets for companies in the well-being sector

The impact goals: well-being



Thank you!

Further information about the impact of Tekes funding and examples on innovations made in the projects and other results:

http://www.tekes.fi/en/community/Results_and_impact/468/Results_and_impact/1283

- Tekes Programs
(<http://www.tekes.fi/en/community/Networking/359/Networking/1294>)