

December 2011

Mini Country Report/Italy

**under Specific Contract for the Integration of INNO Policy
TrendChart with ERAWATCH (2011-2012)**

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Thematic Report 2011 under Specific Contract for the Integration of INNO Policy TrendChart with ERAWATCH (2011-2012)

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Authors: Bianca Maria Potì and Emanuela Reale, Ceris/CNR

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Preface

The European TrendChart on innovation is the longest running policy benchmarking tool at European level. Since its launch in 1999 it has produced annual reports on national innovation policy and governance, created a comprehensive database of national innovation policy measures and organised a series of policy benchmarking workshops. The databases of INNO Policy TrendChart and ERAWATCH have been merged and a joint inventory of research and innovation policy measures has been created by the European Commission with the aim of facilitating access to research and innovation policies information within Europe and beyond.

With a view to updating the innovation policy monitoring, the European Commission DG Enterprise and Industry commissioned a contract with the objective to provide an enhanced overview of innovation and research policy measures in Europe and to integrate the INNO Policy TrendChart with the complementary ERAWATCH platform. This contract is managed by the ERAWATCH Network asbl. (<http://www.erawatch-network.com>) coordinated by Technopolis Group (<http://www.technopolis-group.com>).

During each of the two years of this specific contract three reports will be produced to complement data collection and to update the research and innovation policy measures: a trend report on innovation policy in the EU, an overview report on innovation funding in the EU and an analytical thematic report (the selected theme for 2011 is demand-side innovation policies). To this end, the objective of the present mini country report is to furnish those three reports with country specific information.

Executive Summary

This report summarises key developments in innovation policy in Italy from mid-2009 to mid-2011. During this period, innovation policy in Italy followed the previous mainstreams: regional policy, i.e. the National Operational Programme “Research and Competitiveness 2007-2013” and the “Industria 2015” programme. Regional policy focused on shifting public aid for Southern Objective 1 regions towards a more research based and more competitive economic environment for durable and sustainable development. The “Industria 2015” programme, which is devoted to applied industrial R&D, innovative finance and business networks envisaged also a policy line for SMEs expenditure in IPR and commercial exploitation of patented innovations, which has been activated between May 2009 (publication of the Ministerial Decree on the National Fund for Innovation) and August 2011 (first bids for the new incentives of the Innovation Package). No significant change occurred in national priorities, since the 'South' and SMEs have always attracted policy attention. Specific consideration has been devoted to firms' access to credit and risk finance, an area of traditional weakness, where many new policy instruments have been introduced. A shift in policy priority is observable within the energy policy with the introduction of programmes for the development of renewable energy sources. The Ministry of Economic Development (MISE) focuses on demonstration projects, downstream of research activity, and specifically on three projects: carbon capture and storage; bio-fuels and concentrating solar power. Energy (saving and renewable sources) policy can be included among the demand driven innovation policy. The policy design emerging from recent policy documents, mostly inspired by European Commission's policy papers and guidelines, could be summed up as: mobilising private capital towards targeted investments; improving the entrepreneurial environment, with a policy targeted at SMEs, additional to strategic programmes and focused on access to private and institutional funding (venture and equity); modernising public administration and promoting public procurement (which is mentioned however only once in the 2011 National Reform Program); transforming environmental policy through an opportunity for the renewable energy industry (including SMEs and Southern regions); promoting public-private partnerships (High Tech Districts, Poles and Public-Private Laboratories) with a focus on localisation within “convergence” regions; mobilising Structural Funds and international agreements for investment in infrastructures.

A considerable fragmentation of incentives persists notwithstanding the claimed need for a more concentrated use of resources.

Public funding of research and innovation has increased, mostly in the period following the economic crisis. Between 2010 and 2011 there has been an acceleration of public funding for industrial firms, universities and public research organisations: €2 billion has been mobilised for the Fund for the promotion of Research-FAR-including disbursement and new financial commitments, and for closing the gap registered in the past.

Italy has no relevant tradition in demand driven innovation policy. Even if experience of demand driven innovation policy can be identified, in Italy it is not explicitly recognised as such in the official documents. Nonetheless, the following national measures could be regarded as relevant demand driven examples: the eco-sustainable procurement of the Public Administration, which can be classified as procurement of innovative goods; the measures for supporting the introduction of the renewable energy sources, especially at regional level, which could be classified as promoting lead markets; the technological platforms, a policy instrument included in the 3-year National Research Program of MiUR, which could be defined as 'supply-chain' policy or 'systemic' policy. Technological platforms are also instruments for introducing standards and setting up innovation targets. Regulation is an instrument largely used for implementing environmental policy. Subsidies and tax incentives are used within the energy policy for promoting new behaviour by consumers. Pre-commercial procurement is more explicitly treated as a measure of demand driven innovation policy.

1. Innovation policy trends

1.1 Trends and key challenges for innovation policy

Italy has been a leading country in non-R&D based innovation. However, this model of innovation without research is now entering a phase of decreasing returns. At the same time Italy is encountering difficulties in producing and defending innovation processes based on R&D (Bonaccorsi, 2011¹). Problems pertain to the weakness of the oligopolistic industrial core, to the downsizing of the large research private structures, to the need of improving the relationship between industry and universities and to the weakness of new entrepreneurship in high tech sectors. Problems are also due to the size distribution within the industrial population and to the low propensity to innovate in smaller companies: only 30% are successful innovators among the small firms, while for medium and large firms the percentages are, respectively, 53% and 68% (CIS3, 1998-2001).

Public intervention in support of innovation in Italy has been traditionally driven by two types of policies: regional policy, based on the Structural Funds and aimed at reducing the economic and technological gap between the South and the Centre-North of the country, and the sectoral policy developed through the Fund for Technological Innovation (FIT, L.46/1982) and devoted to pre-competitive development projects.

The financial Law of 2007 reorganised the public incentives managed by the Ministry of Industry (now the Ministry of Economic Development), including aid for less developed geographical areas, specific sectors, research and development and others, within the Fund for Competitiveness. This Fund received (D.L. 11 July 2007) €2.458m in total for the period 2007-2009, of which €990m was devoted to industrial innovation. The Financial Law 2007 endorsed the way the Government strategy launched with the initiative “Industria 2015” through which the strategic lines for the development and competitiveness of the national innovation system were fixed. Three instruments were envisaged: business networks (especially for SMEs and based on contractual coordination), innovative finance (a Fund for enterprise finance, helping firms in accessing credit or venture capital, and preferably directed towards groups of firms, such as districts and networks) and Industrial Innovation Projects (PIIs). Innovation was taken as the main driver for the future development, and the concept of innovation was extended to the new supply chains integrating manufacture, advanced services and new technologies. In particular PIIs are projects integrating: (i) government choice of strategic areas; (ii) a plurality of private and public actors; (iii) coordination among what is now the Ministry of Economic Development, the Ministry of University and Research and the Ministry of Innovation in the Public Administration, participating with their specific funds for research and development; (iv) a new design of the incentives, from the one-to-one (incentive-activity to be funded) to an integrated package of a mix of instruments, tailored to the projects and negotiated between government and the actors involved. Measures include: aid for research and product development; for process and organisational innovation; for new and innovative firms; for SMEs expenditure linked to IPR; for technical feasibility; for consultancy and support to innovation; for high skilled personnel; for innovation poles and infrastructure. 2007 has been also the year of a change from the previous (2000-2006) to the new National Strategic Framework (Quadro Strategico Nazionale) 2007-2013 for the regional policy of cohesion and competitiveness. The intervention in the areas of South, the National Operational Program (PON) “Research and Competitiveness” 2007-2013 funded by ERDF (European Regional Development Fund) and by the national Revolving Fund (Fondo di Rotazione) had a global endowment of €6,205.4m, of which €2,972.7m was transferred to the Ministry of Economic Development for the “Competitiveness” part and €3,232m to the Ministry of University and Research. The Programme was implemented with some delay: the

¹ A. Bonaccorsi, “A leaky bucket? Research and innovation in Italian system” Conference of the *Review of Economy and Industrial Policy*, 2011, Roma (“Un secchio bucato? Ricerca e innovazione nel sistema italiano”, Conferenza della *Rivista di Economia e Politica Industriale*, 2011, Roma).

Memorandum of Intent (Protocollo d'intesa) which represents the first step of the implementation was signed between MiUR and Objective 1 Regions in June 2009; it established an appropriation of €1,600m for the first three years. The Memorandum was followed in 2010 by the Operating Agreements (Accordi di programma) between MiUR, MISE and each Objective 1 Region, and by the first bids for the (re-funding and new creation of) technological districts and public private laboratories.

The financial crisis of 2008 triggered an economic crisis, despite which public aid to firms in that year was consistent, and 85% concentrated on innovation, research and development and on less developed areas (Annual Report 2009 MISE).

From mid-2009 to mid-2011 there has been no change in the national innovation strategy. The innovation policy followed the previous main streams: regional policy, i.e. PON “ Research and Competitiveness” 2007-2013, and the “Industria 2015” programme, including PIIs, innovative finance and firms networks. A recently opened line of policy, supporting SMEs’ expenditure in IPR and commercial exploitation of patented innovations, was also previously envisaged in the “Industria 2015”. It represents anyway an interesting shift in direction of supporting more R&D based innovation within SMEs, reinforcing the competitiveness of these companies. This policy is articulated in two instruments: (i) the National Fund for Innovation set up by a Decree of the Ministry of Economic Development (11 May 2009) sustaining innovative projects of SMEs based on the economic use of IPRs and (ii) the Innovation package, a programme of incentives promoted by the Ministry of Economic Development (first bids in August 2011) for supporting the patenting activity of SMEs and the introduction of patented innovations to the market.

No significant changes in national innovation priorities can be found in official documents between mid 2009 and mid 2011: the South and SMEs still attract policy attention and at the same time a considerable fragmentation of incentives persists despite the declaration of moving towards a more concentrated use of resources. A new instrument, the Technological Innovation Contract (2010), opens the way to large-scale interventions; it is funded through the Fund of Technological Innovation (FIT) and other funds.

Two kinds of intervention, respectively specialised and generalist, emerge: the new energy policy and the support to firms’ access to external finance, introducing new instruments. A more active policy towards renewable energy sources, together with a policy for products/production processes with low environmental impact appears, though more at regional than at national level. This policy can have a relevant impact on firms’ organisational, process and product innovation. Firms’ access to credit and risk finance is an area in which many new policy instruments have been introduced. It can sustain innovation activity by reducing the liquidity constraints on business innovative investments and by allowing the entry of new innovative firms. In particular the public role in the supply of risk capital could tackle an historical weakness of the national system.

Energy (saving and renewable sources) and environment policy can be included among the demand driven innovation policies, where a mix of regulation, public procurement and subsidies, together with coordination between suppliers and users are applied. Neither demand driven innovation nor innovation public procurements are topics explicitly dealt with in the official policy documents. They have been recently debated mostly within academic forums or in public discussions, such as that organised with the support of CIACE, (Inter-Ministerial Committee for EU Affairs) in 2010². An aspect of national innovation policy that currently gets attention is innovation in the public sector, in particular realised through programmes supporting “Innovation in the Public Administration”. These programmes characterised government policy in the last two years (mid-2009-mid-2011).

² Pre-commercial procurement: managing public procurement for sustaining innovation (Pre-commercial procurement: gestire la domanda pubblica per favorire l'innovazione), Dexia Crediop, via XX Settembre Roma, 2 Oct. 2010

A specific topic, which is addressed in the latest (innovation and other) policy documents, is the question of reducing the financial impact of policy intervention on the public budget. The 2011 National Reform Programme requires that policies have a “low impact” on the national public budget. In this context a shift is visible towards less uncertain or costly measures: (i) financial subsidies are cited in the 2011 National Reform Programme as less effective instruments in comparison to private equity funds in which the State can have a guidance function, but the project selection is based on market criteria, with the aim of obtaining an economic return for private and public investors; (ii) the use of a regulatory type of intervention is preferred: examples are the reduction of the transaction cost between private firms and public administration by the simplification of administrative acts, which includes the act of creation of new firms, and the promotion of innovation diffusion through regulation, such as for the eco-innovations.

Innovation policy evaluation in Italy has been developed mostly within the National Strategic Framework and regional policy. Recently, CIPE (the Inter-Ministerial Committee for Economic Programming) issued a deliberation (1/2011) which fixed deadlines for PON “Research and Competitiveness” implementation: if deadlines are not respected the availability of resources is re-programmed and sanctions are imposed. This new regulation has produced a turn-round towards the more efficient management of regional policy. The latest (May 2011) evaluation of the implementation of the Competitiveness Objective, managed by MISE, registered an interesting acceleration of the level of engagement.

Figure 1 Main recent policy documents

Type of document	Date (of approval, publication)	Organisation responsible	Legal status
National Research Programme	2011	MIUR	National Plan
National Reform Programme	2011	CIACE (Inter-Ministerial Committee for EU Affairs)	National Plan
Administrative Simplification Plan 2010-2012	2010	Ministry of public administration and innovation	Decree of the President of the Republic (DPR)
Plan for renewable energy sources	2010	MISE	National plan
Document of economic and financial planning DPEF	2010 and 2011	MEF	Medium term national Plan
National Plan for the South	2011	MISE	National PLAN
National Health Plan	2011	Ministry of Health	National PLAN

1.2 Innovation governance

Innovation governance is distributed among different institutions:

The **Ministry for Economic Development** supports and manages industrial innovation. It is now organised in departments, corresponding to the Ministry’s main missions: competitiveness promotion; development and cohesion; and market regulation. The department devoted to competitiveness is in charge of technological innovation and responsible for industrial policy, industrial districts, energy policy, policies for SMEs and support instruments for the productive system. The mission of evaluating the support instruments managed by the Ministry previously set up at IPI (Institute for Industrial Promotion), which gave technical assistance to the Ministry, is now re-internalised within the Ministry (DM 08/06/2010).

UVAL, the Public Investment Evaluation Unit at the Department of Development and Cohesion (MISE), plays an active role in supporting the implementation of the National Strategic Framework (NSF) and regional policy.

The Ministry for Education, University and Research (MiUR) coordinates national and international scientific activities and distributes funding to universities and research agencies. It establishes the means for supporting public and private research and technological development (RTD) funding. MiUR coordinates the preparation of the triennial National Research Programme (NRP), the main governmental document for R&D planning that sets the strategic lines for the national system. It does this by interacting with all other interested stakeholders, including other Ministries.

The 2010-2012 National Research Programme (NRP) introduced the creation of a new structure, the so called Coordination Activities of Italian Research - Attività di Coordinamento della Ricerca Italiana (ACR) -, coordinated by MiUR, with the scope of developing the coordination of national research activity with the function of receiving and transmitting to the Ministry the demand coming from the scientific system and the institutions which finance R&D activities. This new structure should involve components from the State-Regions Committee and a group of Ministries (MiUR, MISE, Agriculture and Forest, Environment, Health, Cultural Heritage, Public Administration and Innovation). The ACR will implement priority actions and formulate an estimated budget for each area. The operational staff of ACR will be personnel coming from public research organisations.

The political willingness to establish a new research and innovation policy framework is confirmed by the latest version of the National Research Programme 2011-2013, with the aim of rationalising and simplifying the normative frame and of better coordinating the different institutions with competence in research and innovation. NPR 2011-2013 provides the transformation of the “technical” sector tables, which have supported the redaction of the National Research Programme, into Committees of strategic orientation, for accompanying the implementation of the actions included in the national plan.

The Agency for the Diffusion of Technologies for Innovation, created by the 2006 Financial Law, is an instrument for inter-ministerial coordination of innovation policies, with the aim of reducing competence fragmentation among Ministries and regions. It aids the cooperation between central government and regions in the efficient use of available resources related to various technological innovation projects.

The National Agency for the Evaluation of Universities and Research Institutes (ANVUR) has been operative since June 2010. This new agency will evaluate efficiency and effectiveness of activity in the education sector, HE and public research organisations, masters, doctorate schools; quality and results of research projects.

Innovation policy evaluation in Italy has been developed mostly within the National Strategic Framework and regional policy. The monitoring system allows the collection of data on the implementation of the Common Strategy Framework (CSF), PON and POR projects and is assured by the various administrations responsible of CSF together with the I.G.R.U.E., the General Inspectorate for Financial Relations with European Union (Ministry of Economics and Finance-MEF). Data are collected at project level and then aggregated at various levels. There are three types of evaluation: ex ante, intermediary and ex post; these last two evaluations verify the state of implementation, the state of physical realisation and the effectiveness of the programmes. The coordination of the National Strategic Framework evaluation is assured by the Public Investment Evaluation Unit (UVAL) at the Department for Development and Cohesion (DPS) at the Ministry of Economic Development (MISE).

(A Governance chart is in Appendix B)

1.3 Recent changes in the innovation policy mix

Fragmentation and dispersion have characterised the national public incentive system for a long time, based on many measures of small size (the launch of several calls with relatively small budgets). Even the introduction of a programme such as “Industria 2015”, based on large, targeted and cooperative projects, the industrial innovation projects, PIIs, has still not been sufficient to change the whole system. Moreover the economic crisis had the effect of introducing temporary stand-by large programmes funded by national public finance, with the exception of projects co-funded within the European regional policy (Structural Funds). After the period of negative economic conditions, the emerging policy mix is still a constellation of measures, often adding new measures to previous ones. This is clearly visible in the Table reporting the 2010 policy measures budget.

The main targets visible in the policy mix implemented from mid 2009 to mid 2011 can be summed up as following: mobilising private capital towards targeted investments; improving the entrepreneurial environment, with a policy targeted to SMEs, additional to strategic programmes and focused on access to private and institutional funding (venture and equity); modernising the public administration and promoting public procurement (cited only once in the 2011 National Reform Programme); transforming environmental policy through an opportunity for the renewable energy industry (including SMEs and South regions); promoting public-private partnerships (High Tech Districts, Poles and Public-Private Laboratories) with a particular focus on the localisation within convergence regions; mobilising Structural Funds and international agreement for investment in infrastructure.

The policy mix implementation has been accompanied by problems: some funds have been partly re-allocated to different scopes (FAS, the Fund devoted to underdeveloped areas, has been used for implementing actions without territorial scope), long delays have been registered in the funding allocation within “Industria 2015”, PON “Research and Competitiveness”, Operating Agreements (Accordi di programma) and on the whole, given the addition of new to old measures, a redundancy appears.

Two priority areas of the ‘Innovation Union’ flagship initiative³ have been tackled in particular:

- commercialisation of research, getting ideas to the market;
- public sector innovation.

The scope of commercialisation of research is pursued through two measures: (i) the National Fund for Innovation, funding investment projects of SMEs exploiting owned patents and (ii) the Innovation Package, supporting SMEs’ expenditure on IPR and the commercialisation of patented innovations. Established in May 2009 the National Fund for Innovation has been implemented through two steps: (i) the identification of one or more financial intermediaries authorised for credit activity, for the realisation of financing portfolios to be allocated to SMEs’ innovative projects based on patents use (in 2010); (ii) opening the financial instrument to firms: the first bids started in August 2011. This Fund has two lines of activity: risk capital funding (investment in corporations) based on patents, and debt funding based on patents and designs. The mechanisms used for evaluating the innovative projects was jointly developed in 2008 by the Italian Bank Association (ABI), the Industrial Confederation (Confindustria), the Conference of Italian University Rectors (CRUI) and the Ministry of Economic Development⁴. The method deals with an economic evaluation of the firm’s intangible assets (IPR), which can mitigate the risk of credit and of venture capital and orientate the funding criteria. The IPR evaluation also allows an evaluation of the economic returns from patent based innovations. The idea is to create a relational circle between

³ http://ec.europa.eu/research/innovation-union/index_en.cfm

⁴ Memorandum of Intents (Protocollo d’intesa) MISE, ABI, Confindustria, CRUI, 28 Oct. 2008 www.uibm.gov.it

market and public policies. The second tool, the Innovation Package, is a programme promoted by the Ministry of Economic Development in 2011 and articulated in two measures: (i) a reward for firms which apply at national and international level for patenting, modulated on the basis of the number of patents, patents' families and country of extension, (ii) grants for the commercialisation of patented innovations.

A policy vein devoted to sustain business access to credit and risk capital, even if generalist, could impact on business innovation activity and new innovative firms' access to the market. The Italian Fund of Investment, launched in 2010, is however targeted towards low risk investments (one of the aim is to guarantee an economic return to private investors) and medium sized firms.

Public sector innovation is another priority area of the 'Innovation Union' flagship initiative, which has been followed in Italy, mainly through the Public Administration reform. The public sector is coming under increasing pressure from a number of directions – rising costs, increasing demands from citizens and businesses, demographic changes, the environmental problems- that increase the difficulty of maintaining high levels of welfare services. The message from all of this is that the public sector must do more for less.

This emphasises the need for innovation to meet these challenges; there is both a need to reduce costs and to find new and better solutions to social and economic challenges.

The P.A. reform has followed three lines: an internal organisational innovation with the aim of a higher productivity, i.e. a reduction of unit cost in service production; the wide adoption of the information and communication technologies, ICT, again in the aim of improving internal productivity, but also of innovating in the output, i.e. online services; an improved relationship with end users, which means to get greater effectiveness (customer satisfaction). A key aspect of this reform is the on-going diffusion of the evaluation culture within the public sector, which is at core of the reform.

Two specific measures are devoted to public administration reform, which can be identified as public services innovation. Both measures are of regulatory and normative type, with impact on organisational innovation and on social needs:

1. The new Code for the Digital Administration- CAD (D.Lgs 150/ October 2009). The first CAD was introduced the first January of 2006 and it has been technologically updated during the years. More recently (D.Lgs 235/2010) important innovative norms were inserted with potential impact on the behaviour of administrations and on the quality of services for citizens (time, access, efficiency). The norms came into force at the beginning of 2011. The new CAD introduces a list of new rights for the final users and new opportunities and duties for the administrations (see www.digitpa.gov.it);
2. A reduction of the administrative burden for enterprises, consistent with the European Commission objective of a cost reduction in bureaucracy of 25% . The programme, involving industrial Associations, concerns the measurement of current costs and a planned cost reduction following specific criteria. The current and the implemented costs are estimated following a European methodology (SCM) on a sample of enterprises. The bureaucracy costs for enterprises are estimated to be around €21.5m per year. The programme should be completed (measurement and planned reduction) at the end of 2012. It should be extended to the local Public Administrations.

A successful policy has been the creation of public-private partnerships such as technological districts and poles, which have been mostly funded by Structural Funds and regional funding. This policy needs, nonetheless, an evaluation of the impact on geographical areas, including the capacity of these new structures to become economically self-sufficient. At present the funding devoted to public-private partnerships is used for sustaining the existing structures and the current evaluation is focused on the accountability results, more than on the economic impact. Moreover the relation between Universities and local initiatives such as technology parks or incubators (where the gap between knowledge supply and demand can be matched) is still not well enough developed. The University transfer policy can be not enough oriented towards local SMEs and at the same time the decreasing trend of funds for University can reduce their transfer office activities.

In recent years, the system has witnessed a shift from direct support mechanisms based on grants and loans to indirect support, mostly based on tax incentives to R&D and guarantees. Fiscal incentive has been designed to help SMEs in doing more research activity, but this instrument has some drawbacks: it works well for firms doing regular R&D and has a small effect on the level of R&D; moreover SMEs demand for fiscal support has been higher than the available resources.

1.4 Internationalisation of innovation policies

The Directorate General for the Internationalisation of the Research (DGIR) at MiUR has developed a document “Strategy for the Internationalisation of Italian Research” (SIRit) with the scope of integrating the priorities of the national research activities within the European and international strategies and priorities. The National Research Programme 2011-2013 refers to this document and emphasises that relevant efforts have to be made in the near future for improving national participation in building the European Research Area.

The participation of Italy in the 7th Framework Programme has been characterised by a large number of submitted project proposals (Italy is only second to Germany) but a lower than the average percentage rate of success: 13.4% compared with the EU average 17.9%)⁵. The number of Italian projects accepted for negotiation is ranked fourth after Germany, UK and France. The Ministry of University and Research is aware of the necessity to improve the national participation and in particular to improve the Italian presence in more technologically advanced projects. Together with the FP, special attention is devoted also to the national participation in ERA-NET projects and to the Joint Technology Initiatives (JTIs).

The realisation of large research infrastructures of excellence is one of the strategic axes of the ERA development and this is strongly underlined within the document SIRit and in the PNR 2011-2013. The medium term strategy defined within the European Roadmap ESFRI identified 44 projects in different S&T sectors, taken as high priority for Europe, with a planned expenditure of €20m in the next 10-15 years. The Italian government has developed, through a committee of experts, including Presidents of Public Research Organisations, the Conference of University Deans and representatives of various Ministries, the first national Roadmap, linked to the European one. Public research organisations and universities have presented 220 projects of research infrastructure, including projects of new infrastructure, and improvement of existing ones to European standards, and the participation of scientific teams in important European infrastructure of research. The PNR 2011-2013 stipulated that the selection of proposals take into consideration the synergy of the proposed projects with other national initiatives, such as High Tech Districts and Excellence Poles. At present 50 projects have been identified as priority actions. Infrastructure is financed through project financing instruments, such as, at national level, the Cassa Depositi e Prestiti (CDP, www.cassaddpp.it/cdp). This first Italian Roadmap of research infrastructure has demonstrated an important Italian presence within ERA, with high-level infrastructure and competences. (For a complete list of

⁵ Source:..AIRI Focus December 2009

the Italian participation to the Inter-Governmental Research Organisations, in the Integrated Infrastructure Initiatives, and in the Preparatory Phase of the new infrastructures etc., see the “Italian Roadmap of Infrastructure of Pan-European Interest”, DGRI, MiUR).

The participation of SMEs is fundamental for the internationalisation of research and innovation. “Research for SMEs” is a bottom up scheme in Framework Programme 7 within the “Capacities” programme: by the end of March 2011, 197 Italian projects had been accepted, with a funding of 10.5% on total UE for the same scheme⁶. DGRI of MiUR sustains that it is important to improve measures for the application of research results and not only pre-competitive research schemes. It also sustains the need to open participation in intensive knowledge technology clusters, such as Technological districts, to the European Framework.

The Joint Programming Initiatives (JPI) are taken as a strategic instrument of European research and the Italian participation in their implementation will be maintained in the future.

PNR 2011-2013 envisages the necessity of building a database collecting information on all R&D multi and bi-lateral agreements and all international projects involving Italian partners.

1.5 Evidence on effectiveness of innovation policy

At present the two best monitoring and evaluation systems of innovation policy in Italy are one devoted to the implementation of the Cohesion and Competitiveness policy and the other, more recent, to drive the modernisation of P.A. and specifically to administrative cost reduction.

The implementation of Structural Funds interventions is monitored through the national system of monitoring of MEF. The Competitiveness objective is implemented through 16 regional operational programmes funded by ERDF and one national operational programme (PON) funded by ESF. The results of a monitoring exercise conducted in February 2011 showed that only 21.70% of allocation and 41% of appropriation had been achieved. Following this outcome, an acceleration programme has been adopted (CIPE resolution 1/2011).

A very intensive monitoring of the regional policies is developed by the DPS (MISE) through its evaluation unit (UVAL) which collaborates directly with the regions’ evaluation units (if present) or other offices with competence in innovation regional policy.

Three kinds of measures deal with public sector accountability/responsibility and autonomy (D.Lgs 150/27 October 2009): the definition of a system of measurement of performance; the setting of a three-year plan of performance and related reports, allowing a transparent information for citizens on the strategic aims, actions and on budgeting; and evaluation of the public sector. The idea is to favour decisional processes within P.A. based on a periodic measurement of efficiency and effectiveness and to promote interaction channels among P.A., citizens and enterprises. The reform has been implemented during the last two years. Resources saved through greater efficiency should be devoted to reward the best results.

⁶ Source: APRE in AIRI Focus August 2011

Case 1 Energy efficiency in the P.A.

Consip SpA is a limited company entirely belonging to the Department of Treasury and manages all e-procurements on behalf of the Public Administrations (PA). Consip has developed a focus on energy efficiency activities within P.A., sustained by the tax deductions foreseen for the refurbishment and renovation of buildings (450 million euros for the period 2011-2013). The initiative is based on the energy performance contracts, through which suppliers receive the payment based on performance results. The initiative is at the same time an instrument in support of innovation, of environment protection, a process of P.A. modernisation and of diffusion of more efficient models of supply and demand (through national agreements, regional pacts, electronic market of P.A.). The effect has been a strong incentive to improve energy efficiency within P.A. and a saving of 20-25% of their energy expenditure.

Document of Economy and Finance, Part III, National Reform Program, Ministry of Economic Development, 2011 (Documento di Economia e Finanza, Parte III, Programma Nazionale di Riforma, Ministero dell'Economia e delle Finanze, 2011)

2. Innovation policy budgets – an overview

The 2009 TrendChart reports included a detailed analysis of available budgets based on the data contained in the policy measure templates for each country. The findings were summarised in the European Innovation Progress Report 2009 (available at: <http://www.proinno-europe.eu/trendchart/european-innovation-progress-report>).

This section updates the 2009 analysis and further explores the issue of the budgets for implementing innovation policy. It is recognised that not all Government departments/agencies allocate specific budgets to specific measures and that actual expenditure year-on-year can vary considerably from that initially declared in policy documents or programming documents. Equally, not all important policy measures are based on significant direct public funding (e.g. the enforcement of a regulatory measure may have an indirect cost for public or private sector stakeholders that is not easily quantifiable prior to adoption).

2.1 Trends in funding of innovation measures

The main trends in the public funding of innovation have been a slowing down during 2009 which has been followed by an acceleration of funding allocation and appropriation during 2010 and 2011, in particular for the Fund for the Promotion of Research (FAR, Fondo per la promozione della Ricerca): about €2bn were mobilised. An acceleration in the implementation of funds (allocation and new appropriation) has been registered also for the PON “Research and Competitiveness”. Some programmes such as “Industria 2015” registered a long delay (from 12 to 30 months) in funding allocation (especially to the projects “Energy Efficiency” and “Made in Italy”). In terms of funding instruments there was an increase in importance of loans and of tax credit; in particular the demand of tax credit for research activity was substantially higher than the available funds.

The balance among the different large categories of policy measures has not changed since mid-2009. Research and Technologies absorbed the largest amount of the innovation policy measures’ budget in 2010. The Fund for the Promotion of Research (FAR) and Public-private laboratories received the largest budget. A similar amount is allocated to the High Tech Poles within the convergence regions (Governance and horizontal research and innovation policies), followed by The Fund for Pre-competitive Research (FIT). Policy measures oriented to sustain creation and growth of firms account for the lowest number of measures and budget. The national operational programme PON “Research and Competitiveness” received €2.817m for the period 2011-2013. The funding from ERDF and ESF is 19.88% and of 20.11% respectively. The fund allocation has been implemented during the first half of 2011.

It is also evident that grants and loans remain the privileged tool of innovation policy, compared with indirect measures.

Least developed of policy measures in 2010, as in 2009, was the market and innovation culture category, including Support and guidelines on innovative Green Public Procurement, Impact assessment (on RDI) in new legislation/regulation, Measures to raise awareness and information on IPR (last INNO-Policy TrendChart update). Nonetheless the new planning documents devote attention to these measures.

Special attention has been devoted in 2010 by the Italian Government to the application of the Small Business Act (25/06/2008): a Directive of the Presidency of the Council of Ministers (4 may 2010) opened to a policy devoted to small firms, complementary to the current industrial policy. At the Ministry of Economic Development (MISE) a new institution- a permanent discussion forum for SMEs- has been established and new initiatives have been introduced: a Permanent National Committee for microcredit; an agreement between the Ministry of Economic Development and the Italian Association for Private Equity and Venture Capital (AIFI) (29-04-2010) to improve the property status of SMEs and their innovative investments. It is estimated that Venture capital funds could devote around €7m to such interventions. See FinanziamentiPubblici.it

Within the new policy rationale of low impact on the public budget and private institutions' involvement in innovation and economic growth are the following initiatives:

The Italian Investment Fund, launched in 2010: it is a private equity fund, devoted to qualified investors, with State participation in its management company. The Fund operates through minority equity capital shareholding in companies up to €100m of sale; its main aim is to support the leverage of companies' equity. It has gained the participation of credit banks, which are accustomed to participation in companies' equity capital.

The Jeremie (Joint European Resources for Micro to Medium Enterprises) Fund for the Mezzogiorno: it is established within the "Plan for the South" (Piano per il Sud) endorsed by the Ministers' Board in November 2010. It is an over-regional equity fund, for temporary and minority participation (at market conditions) in the equity capital of private companies. It is fed by public appropriations (national and European, coming from the funds for PONs and PORs) and by the funds cyclically returned by the industrial beneficiaries (hence "revolving"). It can offer credit and risk funding to SMEs and guarantees to banks in the South regions, helping the implementation of the Structural Fund policy. It is to become operational in the second part of 2011.

Figure 2 Broad share of available budgets by main categories of research and innovation measures (in million euros=m.)

Broad category of research and innovation policy measure	Approximate total annual budget for <u>2010</u> (in euro)	Commentary
1. Governance & horizontal research and innovation policies	€77m FISIR (Special Integrative Fund for Research) €900m High Tech Poles in the convergent regions €400m Technological Districts in the North-Centre regions	Special Integrative Fund for Research FISIR has a budget planned by the National Research Plan 2011-2013.
2. Research and Technologies	€90m FIRB €30m Euro-trans-Bio €1240m FAR €785m FIT €180m PII mobility (Ind.2015) €280m PII Made in Italy (Ind.2015) €12.5m RIDITT-TT 200m Tax credit for industrial R&D €55m Tax credit for industrial firms committing R&D to Universities and PROs €915m Public-private laboratories in the convergence regions €2.3m National Aerospace Plan €95m Italian Fund of Investment €39m National Fund for Innovation (resources are €80m in 2011).	FIRB, FAR and FIT are committed funds. PII mobility and Made in Italy are expenditure. RIDITT is funded by FAS, the fund for less exploited areas. Tax credit for industrial R&D is an additional committed amount. Tax credit for R&D committed by industrial firms to Univ. and PROs is referred to 2011 (it is a committed sum). Fund for Public-Private laboratories is part of the PON "Research and Competitiveness" and the sum is planned for three years. National Aerospace Plan: the sum is the total budget for 2008-2010. Italian Fund of Investment, operating from 2010, is a Fund of Funds devoted to medium sized firms and low risk investment. The National Fund for Innovation is devoted to innovative projects for the exploitation of patent owned by SMEs. The Fund is a guarantee in favour of banks and other financial institutions financing these innovative projects. The amount of 39m is transferred by MISE for covering 2011 (accepted) projects.
3. Human Resources (education and skills)	€65.4m Tax incentives to non residential	
4. Promote and sustain the creation and growth of innovative enterprises	€39m National Fund for Innovation (resources are €80m in 2011). €35m FIT Start up 20m. PON Research and Competitiveness for Start up	Guarantee and capital risk funds, including the National Fund for Innovation for SMEs exploiting their patents, operational since 2011.
5. Markets and innovation culture	No budget available	

Some new innovation policy measures were added in 2011:

- **Technological Innovation Contract:** represents one of the instruments of FIT (Fund of Technology Innovation) established by the Ministry of Economic Development (Ministry Decree January 2011). These contracts will accompany the realisation of big projects (more than €10m) within a negotiated procedure between the Ministry and the (private and public) national and international actors. It will be funded by FIT, by the revolving Fund of the Cassa Depositi e Prestiti (a joint-stock company under public control, with the Italian government holding 70%; www.cassaddpp.it) and by PON "Research and Competitiveness". It is estimated that this instrument will mobilise an investment of €2m. Public funding will be accompanied by bank funding at market rate, as guarantee of the value of the firms investments.
- **Innovation Package,** promoted by the Ministry of Economic Development in 2011 is a support for SMEs patenting activity (€30.5m) and the commercialisation of products based on patents or design (€15m).
- **The Fund for Greenfield Infrastructures:** launched in March 2011, with a budget of €1.5bn in 2012. The State has a stake in the management company, which manages mutual funds of investments in new infrastructures. The two main institutional agents are the Ministry of Treasury and the Cassa Depositi e Prestiti (CDP), which collects the private saving and invests it in sectors such as energy and transport, research and innovation, SMEs. The three main Italian banks (Intesa, Unicredit and Bmps) are involved. The problem is to identify very long term investors (30 years) and to attract foreign private and institutional investors.
- **The Fund for renewable energy sources,** established by the 2008 Financial Law (art 3), will receive €20m per year for the period 2011-2013.

2.2 Departmental and implementing agency budgets for innovation policies

Figure 3 Innovation budgets of the main government departments and agencies

Name of the organisation (with link)	Number of staff responsible for innovation measures (% of total)	Innovation budget managed 2011 Meuros	Estimated share of budget earmarked for specific policy measures
MEF	n.a.	263	n.a.
MISE Energy	n.a.	342	n.a.
MISE ICT	n.a.	18,4	n.a.
MiUR Applied Research	n.a.	282	n.a.
Environment Ministry	n.a.	186	n.a.
Health Ministry	n.a.	951	n.a.
Defence Ministry	n.a.	119,8	n.a.
Cultural Heritage Ministry	n.a.	155,4	n.a.

This figure should be focused on innovation budgets of the main departments and agencies, but a warning is necessary, since it is very difficult to distinguish between innovation and applied research budgets. Basic research has been excluded and therefore the weight of the Ministry of University and Research has been reduced. Given this warning, from Fig 3 it appears that the Ministry of Health manages a very large budget and that, among the sectoral targets, the budget for Energy, as a whole, at the Ministry of Economic Development is relatively high

2.3 Future challenges for funding of innovation policy

The current mix of policy measures is concentrated on providing direct funding (mostly grants) to firms engaged in applied industrial research, product development and prototype creation as well as on measures to improve cooperation between public/academic/sectoral research institutions and enterprises.

The number of policy measures addressing SMEs' specific needs is now growing and the new measures supporting IPR and the commercialisation of patented innovation of SMEs go in the right direction. The challenge is to move from specialisation in traditional sectors towards a more research-based innovation and sector specialisation.

There is a relationship between the degree of innovation in a country and the intensity of risk capital on GDP, and there is room for a public role in the supply of risk capital for small sized firms. The generalist measures in favour of SMEs' access to credit and to venture capital can support an evolution of the national system towards entry of new innovative firms, and higher risk and innovation propensity within SMEs, which represent the real bulk of the national industrial system.

But problems can make this change difficult and represent a second level challenge: the effectiveness of innovative finance. The new high tech entrepreneurship needs not only to start but also to grow; the Fund for Investment is oriented towards medium sized firms and low risk; the selection for project funding on the basis of market criteria (economic return) can exclude less known and more risky solutions.

The other challenge is to focus the policy aid for the Southern Objective 1 regions on research and competitiveness and to produce innovation effects. But the situation is unfavourable at macro level: Svimez⁷ analysis indicates that in 2011 the GDP growth in the South will be 0.1%, far from the already low 0.8% of the Centre-North regions. In 2010 economic growth in the South was near to zero. In this situation the three government actions (2010 and 2011) of public expenditure reduction has impacted asymmetrically and mostly on the South (the country area more dependent on public finance) with a recessive effect.

Finally, the main challenge for innovation public policy is to trigger private firms' investments, which, notwithstanding the large set of public interventions, remain far lower than Lisbon target.

⁷ SVIMEZ, Report 2010 on the economy in the Mezzogiorno, ed Il Mulino (SVIMEZ, Rapporto 2010 sull'economia del Mezzogiorno, Il Mulino)

3. Thematic report: Demand-side innovation policies

For the purposes of this report, the following categorisation of demand-side innovation policy tools is adopted:

Figure 4 Categorisation of demand-side policies

Demand side innovation policy tool	Short description
Public procurement	
Public procurement of innovation	Public procurement of innovative goods and services relies on inducing innovation by specifying levels of performance or functionality that are not achievable with 'off-the-shelf' solutions and hence require an innovation to meet the demand. ⁸
Pre-commercial public procurement	Pre-commercial procurement is an approach for procuring R&D services, which enables public procurers to share the risks and benefits of designing, prototyping and testing new products and services with the suppliers ⁹ .
Regulation	
Use of regulations	Use of regulation for innovation purposes is when governments collaborate broadly with industry and non-government organisations to formulate a new regulation that is formed to encourage a certain innovative behaviour. ¹⁰
Standardisation	Standardisation is a voluntary cooperation among industry, consumers, public authorities and other interested parties for the development of technical specifications based on consensus. Standardisation can be an important enabler of innovation. ¹¹
Supporting private demand	
Tax incentives	Tax incentives can increase the demand for novelties and innovation by offering reductions on specific purchases.
Catalytic procurement	Catalytic procurement involves the combination of private demand measures with public procurement where the needs of private buyers are systemically ascertained. The government acts here as 'ice-breaker' in order to mobilise private demand. ¹²
Awareness raising campaigns	Awareness raising actions supporting private demand have the role to bridge the information gap consumers of innovation have about the security and the quality of a novelty. ¹³
Systemic policies	
Lead market initiatives	Lead market initiatives support the emergence of lead markets. A lead market is the market of a product or service in a given geographical area, where the diffusion process of an internationally successful innovation (technological or non-technological) first took off and is sustained and expanded through a wide range of different services ¹⁴ .
Support to open innovation and user-centred innovation	Open innovation can be described as using both internal and external sources to develop new products and services ¹⁵ , while user-centred innovation refers to innovation driven by end- or intermediate users. ¹⁶

⁸ NESTA (2007) Demanding Innovation Lead Markets, public procurement and innovation by Luke Georghiou

⁹ http://ec.europa.eu/information_society/tl/research/priv_invest/pcp/index_en.htm

¹⁰ FORA, OECD: New nature of innovation, 2009, <http://www.newnatureofinnovation.org/>

¹¹ Commission Communication: Towards an increased contribution from standardisation to innovation in Europe COM(2008) 133 final 11.3.2008

¹² Edler, Georghiou (2007) Public procurement and innovation – Resurrecting the demand side. Research Policy 36. 949-963

¹³ Edler (2007) Demand-based Innovation Policy. Manchester Business School Working Paper, Number 529.

¹⁴ COM 2005 "Industry Policy" http://ec.europa.eu/enterprise/enterprise_policy/industry/index_en.htm and Mid-term review of industrial policy

¹⁵ Chesbrough (2003) Open innovation. Harvard Business School Press

¹⁶ Von Hippel (2005) Democratizing innovation. The MIT Press, Cambridge

3.1 Trends in the use of demand-side innovation policies

Demand-side innovation policy has no tradition in Italy and even if experiences can be identified they are not explicitly recognised as such in the official documents. This is not only because these experiences are strongly inter-twined with the innovation policy, but also because there is a lack of culture and awareness about this policy lever even among policymakers. Public procurement has never played a relevant role within the national research and innovation strategy, and this weakness has been sometimes identified at academic level. Notwithstanding this, some recent experience of demand side innovation policy can be identified: the eco-sustainable procurement of the public administration, which can be classified as procurement of innovative goods; the different measures used for sustaining the introduction of the renewable energy sources, especially at regional level, which could be classified as promoting lead markets; the technological platforms, a policy instrument included in the three year National Research Program of MiUR, which could be also defined as supply chain policy or systemic policy, since various stakeholders, suppliers and users, private and public organisations, define together the next technological developments. Technological platforms are also instruments for introducing standards and setting up innovation targets. Regulation is an instrument largely used within environment policy: it is a source of innovation and in some sectors (oil sector, but also aerospace, automotive etc) source of new explorative research. Demand subsidies and tax incentives are used in energy policy for promoting new consumer behaviour. The aspect most explicitly dealt with is pre-commercial procurements. This is an R&D procurement, not yet introduced in Italy, but which is attracting the attention of the Ministry of Public Administration and Innovation and of the Ministry of Economic Development, which supports regional policy (PON, POR) and regional actions. Some (rare) debates are organised with a specific focus on public procurement. One of them was organised with the support of CIACE, (Inter-Ministerial Committee for EU Affairs) in 2010¹⁷ and saw the participation of representatives from the Ministry of Economic Development and the Ministry of Public Administration and Innovation.

3.2 Governance challenges

Since there is not an explicit identification of a demand driven innovation policy within policy documents, governance is the same of the research and innovation policy, therefore shared by MiUR and MISE, and the challenges are the same identified within the National Research Programme 2010-2013.

3.3 Recent demand-side innovation policy measures

In Italy there is little use of public procurement for supporting innovation, even if there are legal instruments, deriving from international agreements, such as the multi-lateral agreement on government procurement (GPA) established within WTO, which opens the road to new administrative procedures. In particular such procedures provide that when the object of the procurement is a good or a service which is not yet on the market, it is possible to have more than one supplier, prices lower than market ones, joint ownership of the results and use of a multistage procedures for the management of the contract. The Ministry of Economic Development is interested in developing a new approach of pre-commercial public procurement bid within regional POR programmes funding innovation and research, different from the usual one where the project proposal is made by public-private consortia, whose members are located in a same region. A three stage model has been proposed and will be tested in some regions: (i) the zero phase is that of a technological foresight; (ii) the pre-commercial procurement- i.e. the “innovation public procurement”- is positioned in phase 1 ; (iii) phase 2 is that in which the public administrations manage directly the (pre commercial) procurement bid co-funded by the region: for instance hospitals order innovative disposals to test, or public administrations adopt innovative technologies to achieve energy saving within their buildings.

¹⁷ cited before

MISE is promoting the new approach within regions by drawing up a set of administrative documents, presenting examples of actions.

The technological foresight phase is considered important, through which the technological priorities and the critical developments are identified by sector and by technological areas that can support more competitive behaviour of enterprises or public administrations. It is suggested that it can be useful to define the positioning of the regions through patent and competences analysis. The answer to the technological priority needs can be found through public-private collaborations, an incentive policy or public procurement in such a way as to offer innovation and collaboration opportunities to industrial suppliers.

Some constraints are identified in the current public administration culture and in the risk of the investment; possible solutions are the promotion of a better awareness within P.A.; the diffusion of best practice; the participation of stakeholders of the emerging technologies to the validation of the results; a better coordination among the administrations within a same region.

Other possible solutions for promoting foresight are inserting foresight costs within accompanying measures of the Structural Funds and supporting expert groups to help those regions, which are available to develop technological foresight.

The DIT¹⁸ department of the Ministry of Public Administration and Innovation has started recently to work on the innovation procurement and pre-commercial public procurement (PCP) at P.A. Innovation policy can deal with the use of the public budget for stimulating demand and pro-active innovation policies. In the field of the PCP, when the public administration buys something that is not yet on the market, DIT sustains the necessity of separating the research stage from the manufacturing stage and the necessity of sharing risks and benefits of research activity with the suppliers. Suppliers are invited to be the owner of IPR and P.A. buys the possibility of exploiting these IPR. In July 2011 DIT produced a guideline document on PCP.

The e-procurement is an innovative public procurement practice within P.A.; the value of the transactions was €96m in 2009, but the weight on the total purchasing of P.A. is only 4%. Half of the public administration organisations have used e-procurement. In Italy it was introduced by the 2000 Financial Law with the aim to rationalise the public procurement of goods and services and to modernise the P.A. through the diffusion of ICT technologies. The following Financial Laws allowed also the Ministry of Economy and Finance (MEF) to promote the aggregation of the public demand of single public administrations and extended the opportunity of using e-procurement within local public administrations. In future the digital market of P.A. will grow through a larger adoption of digital technology by the various administrations and the integration of the local and national digital systems.

http://www.osservatori.net/eprocurement_nella_pubblica_amministrazione/rapporto/rapporto/journal_content/56_INSTANCE_oHsI/10402/735514).

The National Plan for Green Purchases within P.A. is a national action plan (Financial Law 2007), which promotes the environmental sustainability of public procurement. The Plan includes general and operational indications, priority products, stakeholders, operational modalities- which the public administrations have to adopt. A monitoring activity is included. The funding of the plan is still now under evaluation.

The National Strategy for Biodiversity is intended to promote the integration of the “Biodiversity saving” within economic and sector policies. The funding of the plan is still under evaluation. The implementation of the Decree for the institution of the Committee for the Biodiversity and of the Observatory for Biodiversity is on going.

¹⁸ DIT= Digitalizzazione e Innovazione Tecnologica (Digitization and Technological Innovation)

Figure 5 Key demand-side policy measures

Measure name (duration)	Short description of objectives, main activities or types of funding support, etc.	Key implementation details
CAD -Code of the Digital Administration	The D.Lgs.235/2010 introduced a reform of the legal framework for the digitalisation of P.A.	It is now operational and it has not introduced additional cost on the public budget. The 2011 CAD introduces a list of new rights for end users and new opportunities and duties for the administrations (see www.digitpa.gov.it).
E –procurement	Aims: rationalisation of public procurement and modernisation of P.A. through ICT adoption.	At present one national system (AcquistinRetePA) and five regional systems are operational and they are going to be connected for getting better synergies.
National plan for Green purchases within P.A.	It is a national action plan (Financial Law 2007) which promotes the environmental sustainability of public procurement. The Plan includes general and operational indications, priority products, stakeholders, operational modalities- which the public administrations have to adopt. €50.000 is the <i>una tantum</i> cost of the Plan. A monitoring activity is included.	In 2011 the Plan has been implemented for seven (out of eleven) priority groups of products, for which environmental sustainable criteria have been defined.
Pre-commercial public procurement	The Ministry of Economic Development is interested in developing the new approach within regional POR programmes funding innovation and research	MISE is promoting the new approach within regions by drawing up a set of administrative documents, presenting examples of actions.

3.3.1 Sectoral specificities

The National Research Programme 2011-2013 fosters the concentration of resources on a number of large interventions in order to develop technologies and sectors in coherence with the “Industria 2015” programme managed by MISE and with the “Piano Sud” also managed by MISE, with the aim of promoting a more innovative and competitive industrial system in the South. Some of the projects included in the list are:

- The implementation of a GRID infrastructure for a new IT services supply “on demand” devoted both to public and private users;
- The definition of a first standard of international quality certification for the low risk use of nano-materials, with the aim of protecting against toxicity in the environment and food products;
- Improvement of infrastructures for research and production in the field of new materials and nano-composites, linked to the specific needs of aeronautic technologies and transports;
- The realisation of a centre for the development of photovoltaic energy for low – power use and consumer electronics;
- The development of technological processes and architectures NVM and PCM for the new generation of mobile phones, computers and consumer electronics.

The combination of suppliers and users of technologies is often present in the public-private research and innovation partnership; the PIIs (Industrial Innovation Projects) of the “Industria 2015” are large combinations of different actors for the development of strategic technological areas, linked to societal needs. MISE have selected as areas of strategic intervention: Energy efficiency; Sustainable mobility; New technologies for the ‘Made in Italy’ initiative; New technologies for health; Innovative technologies for cultural heritage goods and activities.

The National Technological Platforms are an innovative instrument included in the National Research Programme, 2011-2013 promoting collaborations among public administrations, the public research system and the industrial firms with the scope of identifying medium –long term scenarios of technological development and priorities together with the instruments of implementation. They interface with similar experience at European and international level.

A National Action Plan for the Renewable Energy Sources, 2010-2020 has been enacted (July 2010) following the request of the European Directive 2009/28/CE for a reinforced commitment in the field. The aims of such strategy are: reduction of energy cost for citizens and firms, promotion of innovative technological filières, environment protection and sustainable development. Italy has the need to find in the medium-long term a new energy mix, being currently too dependent on the import of fossil fuel. This Plan is articulated in a very large set of measures for developing supply and demand: incentives for the production of electricity by renewable sources (green certificates and other), incentives to consumers (feed in tariff and others), infrastructures, research, training and many other instruments. This policy could be identified as a lead market policy.

Regional and interregional cooperation for the promotion of renewable energy sources are among the horizontal priorities of the regional programmes; the largest investments are made in the Objective 1 regions within the ERDF regional operational programmes.

3.3.2 Good practice case

Figure 6 Renewable energy and sustainable development at regional policy

Eco-sustainability is a priority area in which Italian regions have started to invest with the following aims:

- The prevention of environmental risk;
- Improvement of quality and efficiency in the use of water resources;
- Energy efficiency and production of renewable energy;
- Rationalisation of the waste cycle;
- Protection of biodiversity.

Regional authorities, pending a better implementation of national and regional plans, oriented themselves towards an increase in renewable energy production, the improvement of energy efficiency both on supply and demand-side and on a diversification of energy sources. A specific commitment has been devoted to incentivise industrial firms to introduce energy efficiency and use of renewable energy. Regional authorities have also financed interventions for energy saving in the construction industry through the diffusion of new eco-sustainable technologies, the promotion of the use of bio-materials and the culture of energy efficiency. Regions have produced guidelines of innovative technological standards for the construction industry (an example is the region Emilia Romagna). The Puglia region has produced an authorisation procedure for the realisation and use of electrical energy production plant based on renewable sources and a regional program for the reduction of the greenhouse gas emissions. The Umbria region has established aid regimes for sustaining the introduction of eco-innovations (technologies and production processes with low environmental impact) within SMEs. Lombardia has established a set of integrated actions for sustainable development. The Toscana region has launched a regional plan (2008-2010) with the allocation of €48.8m for the application of the European objectives on energy and environment protection. The plan includes a set of interventions: research, education, green purchases, sustainable constructions, territorial areas ecologically equipped for firms localisation.

Document of Economy and Finance, Part III, National Reform Program, Ministry of Economic Development, 2011 (Documento di Economia e Finanza, Parte III, Programma Nazionale di Riforma, Ministero dell'Economia e delle Finanze, 2011).

Appendix A : Research and innovation policy measures in Italy

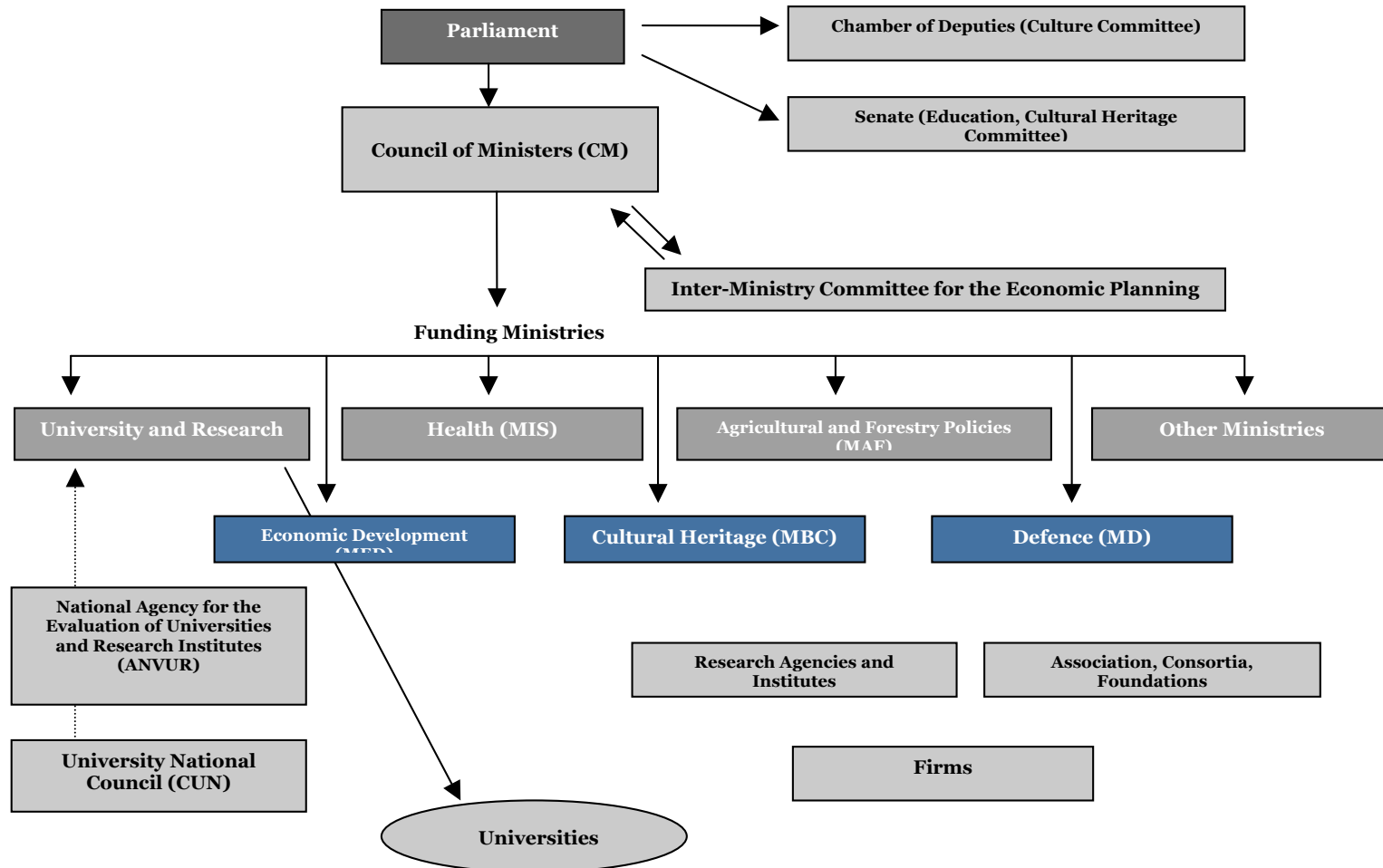
(m.= Meuros= million of euros)

Name of the Support measure	1 st Priority	Start date	End date	Status (CC to complete)	Estimated public budget in 2010 in euro	Comment
Anew call for tender for public-private laboratories promotion and high tech districts	2.2.3 R&D cooperation (joint projects, PPP with research institutes)	2010	2012	New in IIMS		PON Research and Competitiveness: appropriation of €915m for three years: €282m. for support to existing HT Districts, €107m. for support to existing PP labs and €526m. for new PP labs and HT districts in the Convergence regions.
Basic Research Investment Fund (FIRB)	2.1.1 Policy measures concerning excellence, relevance and management of research in Universities	2002		Still in place	Around 90m.(of which 50m. for a bid for young researchers)	The National Research Programme 2010-2012 forecasted an allocation of €92m.
CNR Interdepartmental Program on Environment and Health (PIAS-CNR)	2.1.1 Policy measures concerning excellence, relevance and management of research in Universities	2008	2010			Total budget 0,3 m. www.dta.cnr.it
EUROTRANS-BIO	2.3.1 Direct support of business R&D (grants and loans)	2006			30m.	The last call ended in Feb. 2011. www.eurotransbio.eu
Fund for the promotion of Research	2.3.1 Direct support of business R&D (grants and loans)	2001		Still in place	1,240m.	The 2010 appropriation of €1,240m has not been allocated until June 2011. The allocation should be: €600m. for bottom up projects ; €400m for technological districts in the North-Centre of Italy; €85m for the employment of researchers within industrial firms; €60 m for cooperative inter-governmental projects; €50m for re-launch of industrial research structures; €30m for support to technological sectors-non indicated- and €10m for industrial spin offs. The 2010-2012 National Research Programme forecasted an allocation of €2,029m to the Fund.
Funds to sustain Innovation and Technology Development in Enterprises	4.1.1 Support to sector innovation in manufacturing	1982 but from 2001 a new regulation		Still in place	785m.	FIT –Innovation contracts (public bids, L-46/1982). Resources available from FRI (Fondo Rotativo per imprese e investimenti).

Name of the Support measure	1 st Priority	Start date	End date	Status (CC to complete)	Estimated public budget in 2010 in euro	Comment
Guarantee Fund for SMEs-Special section on Digital Technologies	4.3.2 Support to risk capital	2005		Still in place		No budget information available.
Guarantee Fund for SMEs	4.3.2 Support to risk capital	2009	Still in place- Permanent instrument	New in IIMS	No added cost impact for public budget	The Guarantee Fund doesn't transfer money to firms, but reduces the risk till €2.5m (MISE Decree 11/11/2010)
High Technology Poles	1.3.1 Cluster framework policies	2010	Still in place		900m for the convergence regions.	MiUR (Piano per il Sud, 29 November 2010) allocated €900m to convergence regions, of which €526m for new technological Poles and Districts.
Incentives for Electronic Commerce	5.2.1 Fiscal incentives in support of the diffusion of innovative technologies, products and services	2000		ended		L. 388/2000
Industrial Innovation Project- Sustainable Mobility	2.2.3 R&D cooperation (joint projects, PPP with research institutes)	2007	2008		180 m . euros on 450 m. Euros of investments	A bid of "Industria 2015"; 25 projects accepted; 250 enterprises and 100 Public research organisations
Industrial Innovation Projects- Technologies for Made in Italy	2.2.3 R&D cooperation (joint projects, PPP with research institutes)	2008	2009	New in IIMS	280m.	A bid of "Industria 2015": 104 projects accepted
Industrial Innovation Projects- New Life Technologies	2.2.3 R&D cooperation (joint projects, PPP with research institutes)	2008		New in IIMS		
ETA-DISTRICT, Erasme2	2.2.3 R&D cooperation (joint projects, PPP with research institutes)					ERA net transnational cooperative project. No information available
National Aerospace Plan (PASN) 2008-2010	1.2.1 Strategic Research policies (long-term research agendas)	2008	2010	Ended	2.3m total budget	
PUS Fund for the diffusion of scientific culture	3.1.1 Awareness creation and science education	2000	Still in place-			No budget information available
Research in the National Health Plan 2006-2008 (RPSN)	1.2.1 Strategic Research policies (long-term research agendas)	2006	2008	A new Health Research Program has been included in the new National Health Plan 2011-2013		No budget information available for the new Health Research Program included in the new National Health Plan 2011-2013

Name of the Support measure	1 st Priority	Start date	End date	Status (CC to complete)	Estimated public budget in 2010 in euro	Comment
RIDITT 2009. Measure A - Technology Transfer to Companies	2.2.2 Knowledge Transfer (contract research, licences, research and IPR issues in public/academic/non-profit institutes)	2009		A new RIDITT bid launched in 2010	12.5m	The Ministry for Economic Development has allocated €12.5m from the fund FAS for technological transfer and creation of new HT firms in the less developed regions bandoridtt@ridtt.it
Scientific Degrees National Plan	3.1.1 Awareness creation and science education	2010	2012			MiUR has reformulated the Scientific Degree Project into a Scientific Degree National Plan. No information available on budget.
Special Integrative Fund for Research FISR	1.2.1 Strategic Research policies (long-term research agendas)	2011	2013			The National Research Programme 2011-2013 forecasts an allocation of €77m to the Fund.
Support for the promotion and the development of new innovative enterprises	4.3.1 Support to innovative start-ups incl. gazelles	2010				A Permanent National Committee for the microcredit, an agreement between the Ministry of Economic Development and the Italian Association for private equity and venture capital (AIFI) (29-04-2010) to improve the property status of SMEs and their innovative investments. It is estimated that Venture capital funds could devote around 7 billions of euros to such interventions
Tax credit for R&D	2.3.2 Indirect support to business R&D (tax incentives and guarantees)	2010	Still in place			The Financial Law 2010 assigns a new 200 m euros for 2010 and 2011. The D.Lgs 13/05/2011 assigns €55m e for 2011, €180m for 2012, €157m for 2013.
Technological Districts	1.3.1 Cluster framework policies	2010	Still in place		400m for technological Districts in the North-Center of Italy; 900m for the convergence regions.	MiUR (Piano per il Sud, 29 November 2010) allocated €900m to convergence regions, of which €526m for new technological Poles and Districts.
Tax incentives to non residential researchers	3.2.3 Mobility of researchers (e.g. brain-gain, transferability of rights)	2007	2009		65.4m	D. Lgs 185/2008
TT Pilot projects in less favoured regions: a new funding opportunity promoted by IPI	2.2.3 R&D cooperation (joint projects, PPP with research institutes)			Delete		It is the same measure described as RIDITT 2009.
Italian Fund of Investment (FII)	2.3.2 Indirect support to business R&D (tax incentives and guarantees)	2011		New in IIMS		Promoted by MEF; first allocation of €95m. It is a Fund of funds sustaining the growth of SMEs.

Appendix B Structure of the Italian RTDI system



Appendix C : List of Ministries/acronyms

AIFI: Italian Association for Private Equity and Venture Capital
 ANVUR: National Agency for the Evaluation of Universities and Research Institutes
 CIACE: Inter-Ministerial Committee for EU Affairs
 CIPE: Inter-Ministerial Committee for Economic Programming
 DGIR: Directorate General for the Internationalization of the Research
 DIT: Digitalization and Technological Innovation Department
 DPS: Department of Development and Cohesion
 ERDF: European Regional Development Fund
 ESF: European Social Fund
 ESFRI: European Strategy Forum on Research Infrastructures
 FP: Framework Programme
 FAR: Fund for the Promotion of Research
 FAS: Fund for Underdeveloped Areas
 FISIR: Special Integrative Fund for Research
 FIT: Fund of Technological Innovation
 FRI: Revolving Fund for firms and investments
 IT: Information technology
 IPRs: Intellectual Property Rights
 MEF: Ministry of Economics and Finance
 Meuros: Million euros
 MISE: Ministry of Economic Development
 MiUR: Ministry for Education University and Research
 PIIs: industrial Innovation Projects
 PON: National Operational Program
 POR: Regional Operational Program
 NRP: National Research Program
 NSF: National Strategic Framework
 P.A.: Public Administration
 PCP: Pre-commercial public procurement