

- setting up a fund to cover patent expenditure in the individual countries in the event of the respective EU directive not being approved; provision for more rapid, incisive resolution clauses in the event of patent theft or counterfeit;
- unifying the revolving SIMEST funds, finalizing the range of subsidies available to small enterprises to encourage the planning, prototyping, engineering, testing and patenting of new products and models, earmarking a share of the funds to grant subsidiaries to companies in order to study and unlock value from patents commissioned from universities and non-profit making public and private research institutions;
- reform of the product labelling system;
- reflecting new EU regulations regarding aid to companies for innovation (CE regulation 364/04).

These initiatives are in addition to measures which the Italian parliament has already approved and the Italian government has already launched or is in the process of enacting, such as:

- reform of Italian bankruptcy law, seen by national and international players as a hindrance to the expansion of foreign investment in Italy. The framework legislative decree was approved by the Council of Ministers on 23 September 2005;
- reform of the labour market (Italian Legislative Decree 276/03) to increase the employment rate, enacting proxy-law no. 30/03 (the so-called “Biagi Law”) which instituted the National Labour Exchange, created the conditions for an effective system for bringing together supply and demand of labour, and introduced contractual instruments which can be adapted to meet the needs of both workers and companies;
- measures aimed at simplifying regulations:
  - action regarding the quality of regulation, regulatory re-organization and codification (Italian law 299/03); updating and streamlining measures in connection with company registers (Italian Presidential Decree 581/95);
  - reform of the institutions of “tacit assent” and “start of activity notification” (Italian Law 15/05);

- action aimed at streamlining regulation in the energy sector (L. 239/04);
- introducing stable co-ordination of responsibilities in the area of tourism (Italian Law 80/05) and reform of national tourist legislation (Italian Law 135/01), containing *inter alia* measures regarding the development of local tourism systems on an inter- or supra-regional scale;
- drawing up consolidated laws or special codes in the areas of dispossession orders for reasons of public utility (Italian Presidential Decree 327/01), construction (Italian Presidential Decree 380/01), industrial property (Italian Legislative Decree 30/05), electronic communications (Italian Legislative Decree 259/03) and insurance (as approved by the Council of Ministers in September 2005), with the introduction of direct indemnities in the area of third party liability;
- various forms of action aimed at reforming the administrative procedure and streamlining the public administration (Italian Laws 15/05, 145/02, 137/02, 76/00, 241/90, Italian Legislative Decrees 165/01 and 56/00).

Under the terms of the Plan, such action is to be complemented by projects which, according to the criteria indicated, are deemed to be able to create external economies for consumers of intermediate and final goods, such as:

- a special task force for the training of civil servants, with the aim of implementing all action required to achieve reform consistent with the objectives of Lisbon, and relaunch the Italian public administration's potential in terms of competitiveness. The purpose is creating a coherent system of training, giving priority to: modernization of the public administration, and simplifying bureaucracy in line with the principles of human governance; defining and managing local development policies; developing public communication units and services; broadening the range of instruments and technologies applied to growth of human resources;
- a programme to strengthen public administration training in Southern Italy (CIPE resolution 36/02);
- approval of a single incentives code;

- definition and introduction of mechanisms to strengthen citizens' and companies' security in the fight against crime;
- creation of digital districts in Southern Italy in the textile and agricultural/food industries;
- development, consolidation and networking of the 24 technological districts already launched or about to be launched, thus extending the experience of Italian industrial districts to sectors with high-tech content or potentially innovative sectors, involving regional authorities, local bodies, firms, universities and research centres;
- the ICT project to foster regional excellence, which is subdivided into 10 regional plans to make the fabric of local production more competitive internationally;
- setting up of an orientation and legal aid desk to protect "Made in Italy" products;
- incentives towards integrated water resource management in Southern Italy (AS 3533 Senate).

Amounts to be set aside to implement measures and projects come to € 2,139.8m, € 817m of which has already been provided in the budget, and € 1,322.8m of which is to be charged to the new method of funding identified, without impacting on the state's finances in 2006-2008 as agreed at European level.

### **3.2 incentives for scientific research and technological innovation**

Technology transfer is one of the most important tools for achieving economic growth in the long term. The basis for achieving this is increasing awareness of the importance of digital technologies and their use for innovation in terms of process and product. This is particularly true for the Italian economy, given its productive structure, and more specifically for smaller-sized companies.

Despite the fact that it is one of the fundamental aspects of innovation, research on its own is not sufficient if the networks of

relations and co-operation between universities, laboratories and companies are not also renewed.

To address these needs, the 2005-2007 National Research Programme (NRP) has been drawn up and will act as the point of reference for all initiatives to be promoted. General measures reflected in the Plan consist of:

*- reorganizing the national research system:*

- adapting the mission and organizational structure of the public research system to the new European context, in order to help it take its place on the world stage;
- redefining the system whereby ordinary university funding is allocated, basing it on results achieved in terms of teaching assessment and research activity;
- implementing the National Space Programme drawn up by the Italian Space Agency ASI (“Agenzia spaziale italiana”), aimed at advancing knowledge, developing technologies and building the innovation capacity of SMEs operating in the environmental, telecoms, transport and healthcare sectors;

*- granting research and development spending incentives via:*

- extension of subsidies in respect of R&D spending (Italian Law 326/03), by deducting a share of such expenditure from corporate income tax;
- introducing measures to reverse the brain drain, e.g.:
  - granting tax breaks for researchers returning to Italy, abolishing IRAP, or Italian regional production tax, on costs incurred by companies for this purpose, and limiting IRPEF to 10% of income;
  - part of the provision for universities’ ordinary funding will be earmarked for executing contracts with foreigners or Italians abroad, with a view to bringing specific research projects to Italy (Italian Ministerial Decree 18/05);
- bringing forward the pay increase for university researchers (Italian Law 43/05);

- granting tax breaks for labour costs in respect of staff involved in R&D, abolishing IRAP entirely and definitively (2005 budget law);
  - mobilizing reduced rate loans granted by the EIB in support of large-scale R&D projects. Italy was the recipient of the first EIB loan, which was granted for the purpose of developing the Trieste synchrotron.
- *encouraging innovation and technology transfer via:*
- strengthening Industrial liaison offices (ILOs) as interconnecting structures between universities and the productive system in respect of research and innovation requirements, in order to facilitate the transfer of technology;
  - refinancing and rationalizing the Technological Innovation Fund, and setting up a Fund for investment in risk capital of high-tech enterprises;
  - action to support industrial innovation aimed at facilitating the development of smaller-sized companies towards becoming high value-added organizations, via the strengthening of the network of technological transfer to companies involved in RIDITT (“Rete per la Diffusione dell’Innovazione e il Trasferimento Tecnologico alle imprese”, the Italian network for innovation and transfer of technology to companies) and industrial districts, *inter alia* by involving regional governments;
  - developing a methodology for technology ratings which is shared by companies, the research world, and banking and financial institutions, for the purpose of evaluating the creditworthiness of intangible assets with technological content;
  - strengthening the Italian Institute of Technology (IIT) in order to develop research projects able to produce technological innovation. Scientific programmes have already been launched in the neuroscience, nanobiotechnologies and robotics segments;
  - establishing an innovation forum between the main ICT industries operating in Italy, with the aim of facilitating the

incorporation of ICT technologies into the country's production and consumption processes;

- setting up a single certification body of laboratories and companies to replace the three currently in existence.

These measures would complement others such as:

- implementation of European sector-wide technology platforms (ETPs), the objective of which is to create partnerships between the worlds of research and finance/business, institutions and civil society at sector level (e.g. for the textiles, clothing, footwear, electronics, logistics, shipbuilding, precision mechanical engineering, nanotechnologies and automotive industries), with a view to reducing the technology gap between Europe and its main world competitors;
- implementation of Italian initiative technology platforms. These are private organizations, which draw on the economic support of the Italian national and European Community public authorities to identify R&D programmes to support improving competition in different sectors, encouraging co-operation between the various public and private players at different geographical levels;
- Memoranda of understanding for research programmes with non-Italian partners of particular strategic or political importance, which provide for reciprocal commitments, including of a financial nature.

Alongside these general measures, the Plan provides for the following projects:

- twelve strategic research programmes (ten of which were identified by the 2005-2007 National Research Programme, and two of which were added under CIPE resolution approved on 15 July 2005), which make provision for co-ordinated initiatives between the public and industrial systems, *inter alia* in conjunction with industrially-advanced countries, and targeting specific strategic areas. Under Italian Ministerial Decree 1621/05, applications are invited for ideas and projects in respect of twelve different areas: 1) healthcare; 2)

- pharmaceutical; 3) biomedical; 4) advanced manufacturing systems; 5) automotive; 6) shipbuilding and aeronautics; 7) advanced materials (ceramics); 8) telecommunications; 9) food and agriculture; 10) transport and advanced logistics; 11) ICT and electronic components; 12) energy saving and micro-generation;
- twelve “dedicated” laboratories for Southern Italy, to create synergies between universities and companies in promoting innovation and technological transfer in: 1) advanced medical diagnostics; 2) high-temperature thermal solar energy; 3) advanced production systems; 4) e-business, with applications in the food and agriculture, tourism, cultural heritage and new product segments; 5) bio-technologies, to identify new anti-infection drugs; 6) genomics applied to improving and certifying vegetal species of specific, major economic interest; 7) polymer-based materials of interest to the electronics industry with a view to production of new chips; 8) bio-informatics applied to genomics; 9) new materials and new planning methods for the railway sector and medium-sized carriers; 10) effectiveness of drugs on humans and on animals; 11) open source of software; 12) analysis of the terrestrial crust with a view to mitigating seismic risks and exploiting subterranean fluids;
  - strengthening the public-private laboratories already operating in Central and Northern Italy, in sectors such as defence, advanced materials, tissue engineering and bio-informatics;
  - advanced ophthalmological research for the application of a substance defined as the “growth factor for nerve cells” in illnesses involving the ophthalmic apparatus. Italian researchers have a leading role in the international working group already active in this area;
  - initiatives of strategic relevance having technological or social implications:
    - implementation of high technology security systems for improved control of Italian national airspace and updating surveillance systems;

- activity in the aerospace sector, the refinancing of Italian Laws 808/85, 140/99 and 388/00 to promote implementation of investment projects with extensive ability to cross-fertilize throughout the economic system;
- taking part in the FREMM frigate project, a joint Italian-French programme to build new multi-use anti-submarine frigates;
- taking part in the Eurofighter helicopter project, a joint Italian/UK/German/Spanish programme to build and produce advance specification fighter aircraft;
- support for the development plan in the naval/mechanical engineering sector to renew the industry on a technological, organizational, and equipment level;
- basic research on healthcare, ICT and nano-sciences and other subjects proposed by companies pursuant to CIPE resolution dated 27 May 2005.

Amounts set aside to implement the above measures and projects total € 9,324.9m, € 5,236.6m of which has already been provided in the budget, and € 4,088.3m of which is to be charged to the method of financing previously identified, without impacting on the state's finances for the 2006-2008 period as agreed at a European level.

### **3.3 strengthening education and training of human capital and extending its benefits to the rest of the population, with particular reference to young people**

The importance of empowering human capital via education and training, widely advocated *inter alia* by experts and social partners, finds ample expression in the Plan. Initiatives already launched which can legitimately be linked entirely to the Lisbon Strategy, and new initiatives more directly the result thereof, aim to train citizens so they can take their place in a knowledge-based society.

The reform of school and university cycles is to be distinguished above all by the quality of training offered, the flexibility and degree of choice available in study programmes, the ability to adapt to changing socio-economic requirements, a major recovery of values,



and greater openness to the country's needs. The reform also offers support for ongoing teacher training and improvement of the technological facilities available for schools and universities.

- Reform of the education and vocational training system (Italian Law 53/03) has been completed insofar as regards infant school and first-grade primary and secondary education, whereas the process of approving reform at second-grade secondary school level is still underway.

The reform aims to:

- improve the quality of the school system by overhauling *curricula*, instituting a programme for teacher training, and introducing a national assessment system;
  - enhance inclusion by recognizing a minimum of twelve years' schooling as a right and duty for all, rather than ten years, as is currently the case;
  - provide better guidance for young people in their cultural and educational choices, give them the best chance of success in academic and vocational terms and encourage their integration into society by (a) introducing new teaching methods (in view of the school-work arrangement) and new courses of educational and vocational training; and (b) preventing disturbance factors and early school-leaving;
  - improve relations with the workplace through innovation in the secondary education cycles and by creating two different options of equal value and standing: high schools (*licei*), with revised areas of specialization, and vocational training, with the possibility of transfer;
- reform of the university system (Italian Ministerial Decree 509/99) with a view to:
    - making the system more productive, increasing the ratio between those who enroll at university and those who graduate, and reducing the length of degree courses and drop-out rates;
    - tailoring higher education more closely to the needs and requirements of the labour market.

In line with the inter-governmental commitments included in the Bologna process, the reform provides for university courses to be subdivided into single-cycle specialist

degree courses and three-year degree courses plus two-year specialist degrees, and Ph.D programmes. Figures for 2004 already show a 33% increase in the number of students graduating compared with 2001; and the drop-out rate had fallen by 6% after the first year. The average time taken for graduates to find their first job has also been cut;

A wide-ranging action plan has been devised to support these reforms' objectives. For the education and professional training systems, this will involve :

- improving the quality of teacher training, by updating programmes involving new technologies, organizational innovation contemplated by the reform, scientific culture, foreign languages and preferential rates for buying PCs;
- funding school training projects in areas with high risk of dispersion and strong immigration processes;
- introduce innovative teaching methods into schools and universities, featuring digital content and technology platforms (e-inclusion project);
- activating inclusion and integration projects in respect of education, training and employment for the weakest individuals in society;
- implementing a national school and training orientation system, and in general to implement support action to complement the pursuit of quality in different training options;
- improving teaching vis-à-vis students with disabilities, making it easier for them to gain access to IT resources (Italian Law 4/04);
- guaranteeing lifelong learning in order to develop core skills and promote social inclusion, *inter alia* for immigrants: over 23,000 courses were launched in 2004/2005 (including online) via permanent adult education local centres, in which 450,000 students took part, 116,000 of whom were not of Italian origin. Action already implemented in this regard will be complemented by one-off measures to empower the network of services between local centres and secondary schools;

- guaranteeing adult education between the ages of 20 and 29 years (EDA 2010 project);
- creating technology training poles aimed at relaunching competitiveness in sectors undergoing crisis and at encouraging technology transfer, based at multi-functional centres bringing together schools and training institutions, local entities, the local productive system and centres for scientific and technological research;
- reducing the digital divide by implementing an IT literacy plan via the media and an internet training course programme for regions in Southern Italy.

For the university system, action envisaged comprises:

- strengthening the network of top-level training, Ph.D programmes at high-class scientific research poles, and experimental senior school initiatives launched at university level;
- action in support of science degrees (Italian Law 170/03 and Interministerial Decree 262/04), with a view to increasing the numbers of students enrolling and graduating in science subjects, via redefinition of classes of science degree, and planning new first-level courses closely related to the requirements of the labour market;
- empowering the right to study, by building accommodation for 16,000 students and increasing the guarantee fund for trustee loans and loans for deserving students from less well-off backgrounds;
- empowering support activities for guidance, tutoring and integrated training to improve students' chances of success both in educational terms and of finding employment, reducing the length of degree courses and cutting the drop-out rate;
- action to set up a Euro-Mediterranean Higher Education Area (the so-called "Catania process"), by developing centres of excellence for teaching and research, the Euro-Mediterranean university distance-learning system, and promoting mobility of teachers and students throughout the Mediterranean region;

- empowering support for university internationalization programmes, which contemplate mobility of students, teachers, Ph.D candidates and research grant-holders;
- overhauling the mechanisms for recruiting teaching and research staff, to make selection more rigorous and recruitment more flexible, to reduce the average age of teaching staff and to hire more teachers for priority areas for the growth of the country, e.g. ICT, bio-engineering, robotics, nano-technologies, and bio-sciences.

Amounts set aside to implement the measures and projects described above total € 1,557m, € 1,149.8m of which has already been provided in the budget, and € 407.2m of which is to be charged to the method of financing previously identified without impacting on the state finances for the 2006-2008 period as agreed at European level.

### 3.4 Upgrading tangible and intangible infrastructure

Considerable progress has been made in upgrading the network of tangible and intangible infrastructure in Italy over the entire period in which the Lisbon Strategy has been implemented. Action already undertaken and that which has already been decided on in order to re-launch the strategy may be grouped together in the following two categories:

- *tangible and intangible infrastructure with system impact:*

- construction of TEN-T networks in Italy, which comprises the following projects:
  - railway corridor no. 1 Berlin–Palermo;
  - railway corridor no. 5 Lisbon-Budapest;
  - “two seas” railway corridor Genoa-Rotterdam;
  - “Motorways of the sea”, in respect of which two areas of action are envisaged:
    - \* action to re-launch intermodal transport: support of shipping companies and short sea shipping (Italian Laws 166/02 and 413/98) and incentives to road transport to transfer traffic from all-road to combined road-sea, i.e. the

so-called “ecobonus” (Italian Law 265/02); empowering port equipment and logistics platforms (Italian Law 443/01), and setting up a new company, RAM S.p.A., aimed at promoting and co-ordinating action at European level for purposes connected with the drawing up of a Mediterranean master plan for the “Highways of the sea”;

\* action targeting logistics in Southern Italy: setting up clusters of ports, such as those in Campania (Naples-Salerno) and Calabria (Gioia Tauro, Crotona/Corigliano); transforming these port clusters into regional interport logistics platforms which are able to facilitate intermodal transport;

- upgrading other strategic infrastructure, such as the Salerno-Reggio Calabria motorway;
- measures aimed at strengthening IT provision in quantitative and qualitative terms for both schools and households, including:
  - incentives to help less well-off families and young people buy PCs and educational software; incentives to promote acquisition of new digital communication technologies;
  - setting up a broadband network for schools to provide an adequate technological connection both for educational and administrative activities;
  - the CIPE-school project, aimed at upgrading IT provision in schools in Southern Italy;
- energy sector measures, including:
  - defining a national 2005-2030 energy programme;
  - adopting simplified procedures to facilitate and set up a new unit for authorizations in respect of investment in energy infrastructure with a view bringing down the cost of energy vis-à-vis the EU average;
  - updating the safety and emergency plan for the electricity system (“Piano di Emergenza e Sicurezza del Sistema Elettrico”, or PESSE), in order to ensure that national demand for energy is met;
  - implementing energy technology co-operation and development programmes;

- setting up of pilot energy districts for use of renewable energy sources;
- the ongoing programme to increase use of methane gas in Southern Italy.

These new measures are complemented by others that have already been approved:

- building infrastructure to bridge the digital divide; granting bonuses to households to encourage uptake of broadband services; setting up of public access centres for digital services, and advanced social connectivity centres;
- development of digital signatures, electronic ID cards, and the national service charter;
- implementation of a supporting infrastructure to enhance the level of Italian companies' international operations (Italian Law 56/05), through development of foreign "single counters", reorganization of provisions in respect of companies' non-Italian activities, including redefinition and reorganization of entities operating in this area, and enactment of the Framework Agreement signed by the Italian Ministry of Productive Activities, ICE ("Istituto nazionale per il commercio estero", National institute for foreign trade) and the council of rectors of Italian universities;

- *tangible and intangible infrastructure with micro-economic or sector impact:*

- the Galileo project: this is the first localization and navigation system in the world designed to meet civic needs. Galileo brings together many high value-added project initiatives, such as control of fleets on road and rail networks and shipping lines, with possible developments in the area of research to promote the "Highways of the sea". Linked to this is the implementation of the EGNOS project, already funded by the European Commission, aimed at applying satellite-based air traffic control techniques over Mediterranean air space;
- the SESAME project: a new-generation system for air traffic management. This Community project aims to modernize the

- current European ATM system so as to make it more economic, secure and efficient, and better able to handle the ever-increasing volumes of traffic;
- implementation of IT platforms in strategic sectors:
    - healthcare IT platform aimed at standardizing and sharing healthcare information between all parties involved in the national healthcare system;
    - tourism IT platform, to be achieved via implementation of the “Scegli Italia” (Choose Italy) project, which comprises a variety of measures aimed at relaunching “brand Italy”, to promote the nation’s heritage in terms of culture, environment and food/agriculture, and improve the Italian tourism industry’s product offering, including via creation of digital tourism districts;
    - integrated infomobility platform, to create a new system for handling mobility of passengers and merchandise;
    - project for making available public databases, to improve their quality and accessibility for citizens and companies;
    - national infrastructure for accessing and exchanging regional data, with the aim of standardizing such information and making it more accessible;
  - National Logistics Pact, which consists of an agreement between the Italian government and various stakeholders to provide an answer to the challenges posed by intermodal transport and to provide companies with high value-added, lower-cost logistics services, optimizing the entire production cycle at the manufacturing, distribution and consumption stages;
  - secure interoperability for national citizen identification systems project: this is a supporting infrastructure for the introduction of electronic ID cards.

Amounts set aside to implement the above measures and projects total approximately € 31,384.5m, € 26,148.4m of which has already been provided in the budget, and € 5,236.1m of which is to be charged to the method of financing identified above, without impacting on the state’s finances for the 2006-2008 period, as agreed at European level.

### 3.5 protecting the environment

The “Gothenburg pillar” has been fully reflected in PICO as an integral and essential part of the Lisbon Strategy. Measures adopted so far in this direction refer to two CIPE resolutions (including insofar as regards funding):

- resolution no. 57/02 on the Environmental action strategy for sustainable development in Italy, implementing directives issued at the Gothenburg European Council in 2001;
- resolution no. 120/02, approving the National plan to reduce greenhouse gas emissions, which will allow Italy to comply with the commitments of the Kyoto protocol in a manner consistent with the aim of modernizing and increasing the efficiency of the Italian economy.

Included among the system-impacting measures it is proposed to initiate and complete are:

- implementation of the government mandate provided for under Italian Law 308/04 to reorganize, co-ordinate and complete environmental legislation;
- approval of a framework law being approved by the Italian Senate (*Atto del Senato* no. 188) to make environmental accountability part of national accountability;
- implementation of urban mobility plans (Italian Law 340/00) which consist of an organic body of tangible and intangible measures to abate atmospheric and noise pollution levels, increase transport and traffic safety levels, minimize use of cars and increase use of collective transport systems in order to reduce congestion in urban areas;
- follow-up to local Agenda 21 processes and other pilot measures to increase sensitivity to environmental issues (CIPE resolution 27/04);
- introduction of tax incentives to encourage energy saving by facilitating market penetration for reduced CO2 emission and low-consumption motor vehicles;