ITALY RESTARTS

NRRP for R&D

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- "National and local champions" on specific key enabling technologies
- National public innovation research centres
- Sustainable growth fund
- A national fund for innovation, held by Cassa Depositi e Prestiti
- PhD destined to SMEs

Hydrogen: former industrial areas - 1

Mission 2 - Component 2.3 - Investment 3.1 promotes production, distribution and use of hydrogen in areas under deindustrialization.

M2C2 – Renewable energy, hydrogen and sustainable local mobility	Resources (EUR/mld)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	ACT-EU (d)	TOTAL NGEU (c) + (d)
1. Production and distribution of renewables and support for the supply chain	-	7,98	7,98	0,69	8,66
Renewable Energy Sources (ERFs)	-	*4,00*	*4,00*	-	*4,00*
Support for the renewable supply chain	-	*0,36*	*0,36*	-	*0,36*
Network infrastructure and smart grids	-	*2,72*	*2,72*	*0,18*	*2,90*
Projects of municipalities in line with NECP	-	*0,90*	*0,90*	*0,51*	*1,41*
2. Investments in the hydrogen supply chain and DRI transition to green steel	-	2,00	2,00	-	2,00
3. Sustainable local transport, cycleways and renewal of rolling stock	2,95	4,60	7,55	-	7,55
TOTAL	2,95	14,58	17,53	0,69	18,22

Hydrogen: former industrial areas - 2

According to a study dating back to 2011, deindustrialization in Italy covers 9,000 sq km, an area equal to that of the Umbria Region. The plan aims at turning those areas into hydrogen hubs, producing and distributing resources to local SMEs

The objective is to promote the local production and use of hydrogen in industry and in local transport, with the creation of 'hydrogen valleys', industrial areas with a hydrogen-based economy.

High - energy consumption sector - 1

Mission 2 - Component 2.3 - Investment 3.2 promotes the use of hydrogen in hard-to abate sectors.

M2C2 – Renewable energy, hydrogen and sustainable local mobility	Resources (EUR/mld)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	ACT-EU (d)	TOTAL NGEU (c) + (d)
1. Production and distribution of renewables and support for the supply chain	-	7,98	7,98	0,69	8,66
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TOTAL	2,95	14,58	17,53	0,69	18,22

Hydrogen can help decarbonise energy intensive sectors with no electrification options that could lead to savings.

High - energy consumption sector - 2

The hard-to-abate sectors include production of steel, concrete, glass and paper; in particular, steel is one of the sectors where hydrogen can play a relevant role in the perspective of a progressive decarbonisation.

As Italy is one of the largest steel producers, second only to Germany in Europe, this intervention also aims at the progressive decarbonisation of the whole steel production process.

R&D - the goals - 1

Mission 2 - Component 2.3 - Investment 3.5 promotes R&D on hydrogen.

M2C2 – Renewable energy, hydrogen and sustainable local mobility	Resources (EUR/mld)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	ACT-EU (d)	TOTAL NGEU (c) + (d)
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Objective: Improving knowledge of hydrogen-related technologies in all phases of production, storage and distribution.

R&D - the goals - 2

The plan promotes testing in the main market segments and the creation of prototypes for the purpose of increasing competitiveness and cost saving.

The goal of the project is to develop a hydrogen network to test different technologies and operational strategies, as well as providing services in R&D and engineering to help the industrial actors in need of a large-scale assessment about their products. The latter goal is in coordination with the Ministry of University and Mission 4).

R&D action plan

The R&D action plan involves 4 initiatives:

1. production of green hydrogen;
2. development of technologies for the storage and transport of hydrogen and for its transformation into other byproducts and green fuels;
3. development of fuel cells;
4. Enhancing existing infrastructures' resilience for hydrogen-spread future case scenarios.

Renewable energy and batteries development - 1

Mission 2 - Component 2.5 - Investment 5.1 promotes renewable energy and batteries development.

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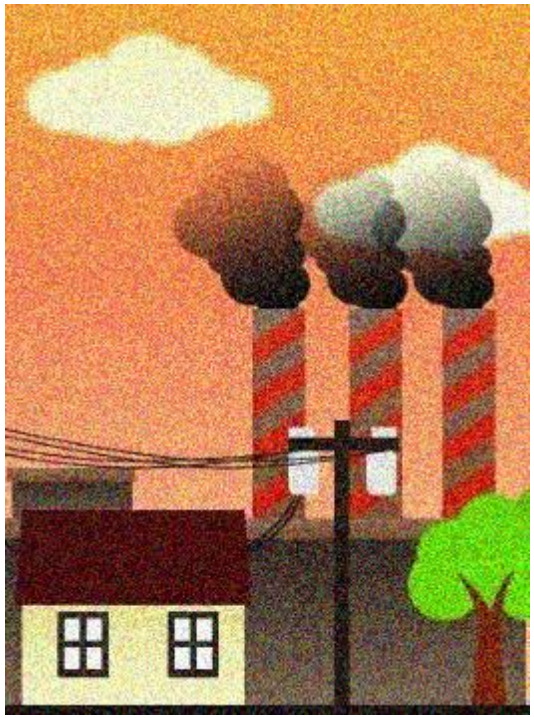
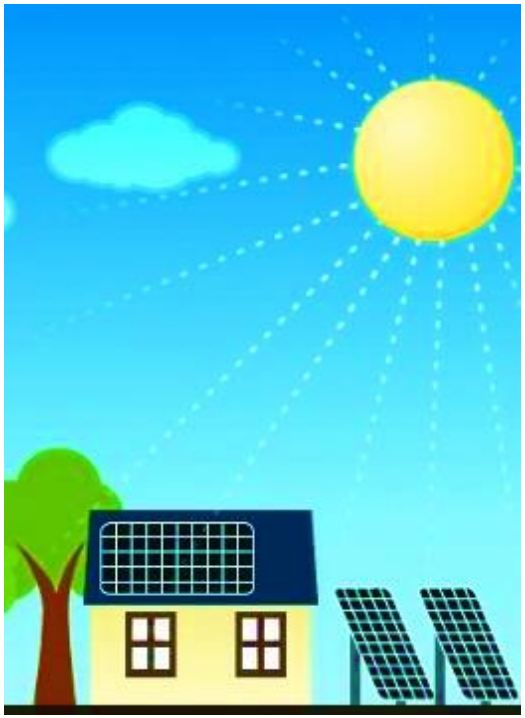
The new European energy system will enable decarbonization technologies.

Renewable energy and batteries development - 2

The initiative is aimed at strengthening the supply chains in renewable energy and battery storage for the transport sector and for the electricity sector, favouring:



1. **New jobs**
2. **Investments in high-tech industrial and automation infrastructures**
3. **R&D and innovative patents**
4. **HR reskilling and upskilling**



R&D for the production - 1

Mission 2 - Component 2.5 - Investment 5.1 promotes R&D for the hydrogen production.

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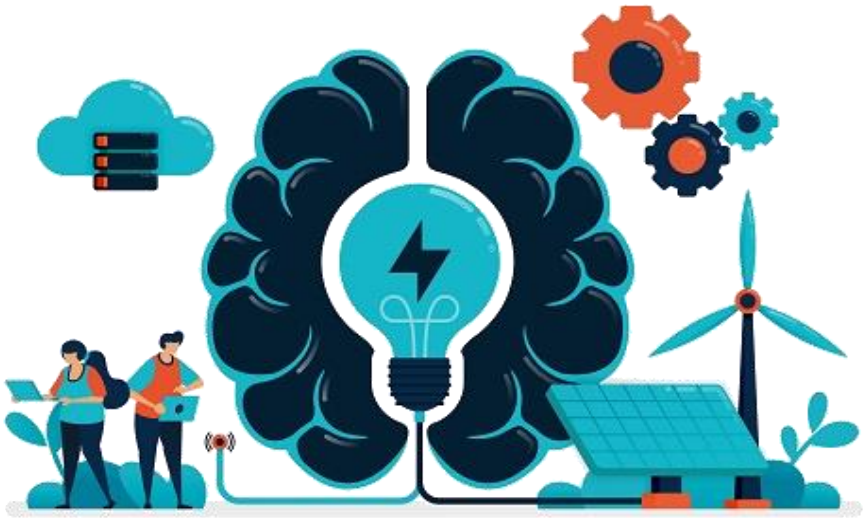
About 5 GW of electrolysis capacity by 2030 is expected to be reached in Italy, to develop the hydrogen market.

R&D for the production - 2



It is also expected to develop additional technologies to support hydrogen final use (i.e. fuel cells for trucks).

Policies include:

- Developing new proprietary technologies
- Creating a European chain in the production and use of hydrogen.

Start-ups and venture capital investments - 1

Mission 2 - Component 2.5 - Investment 5.1 promotes support for startups and venture capital in the ecological transition.

M2C2 – Renewable energy, hydrogen and sustainable local mobility	Resources (EUR/mld)				
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Innovation nurtured in research laboratories, start-ups or SMEs is a key element to enable and accelerate the ecological transition.

Start-ups and venture capital investments - 2

Italy offers a fertile ground for green start-ups development. Italy's the ninth Country in the world for research quality on environmental sciences, and a country with the largest pool of talent and the best university in STEM subjects.

Italy suffers from a market failure as scientific research does not create patents and business innovation. This prevents the country to scale up innovative solutions for the ecological transition

Green Transition Fund

The aim is to encourage and stimulate the growth of an innovation ecosystem, with a particular focus on green transition (such as renewables, sustainable mobility, energy efficiency, circular economy, waste treatment, batteries) through direct and indirect venture capital investments.

The intervention involves the introduction of a dedicated fund: the Green Transition Fund (GTF) which provides an investment strategy focused on specific sectors and covering different development phases. GTF features investments in the most important venture capital funds in the green sector, in startups and incubators and / or acceleration programs, supporting the most innovative venture capitalists and system managers.

PhD, the Italian gap - 1

Mission 4 - Component 1.4 - Investment 4.1 promotes more PhD specifically designed for Public administrations and Cultural heritage management

Italy is currently among the lowest PhD attendance countries in the EU. A decreasing trend, about - 40%, between 2008 and 2019.

M4C1 – Enhancement of skills and right to study	Resources (EUR/bn)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	REACT-EU (d)	TOTAL NGEU (c) + (d)
1. Access to education and reduction of territorial gaps	**1.60**	**7.40**	**9.00**	**0.45**	**9.45**
Students' housing	-	100	1.00	-	1.00
Scholarships and free access to the university	-	0.90	0.90	0.45	1.35
Full-Time School Fund	-	1.00	1.00	-	1.00
Reduction of territorial disparities in skills and combating early school leaving	-	1.50	1.50	-	1.50
Nursery and Integrated Services Plan	1.60	2.00	3.60	-	3.60
Strengthening childrens schools (3-6 years) and "spring" sections	-	1.00	1.00	-	1.00
2. STEM skills and multilingualism	**1.39**	**2.73**	**4.12**	**0.90**	**5.02**
Integrated digital didactics and continuing training of schools staff	0.39	0.03	0.42	-	0.42
STEM skills and multilingualism for teachers and students	-	1.10	1.10	-	1.10
School 4.0: innovative schools, wiring, new classrooms and laboratories	1.00	1.10	2.10	0.90	3.00
University advanced didactics and competences	-	0.50	0.50	-	0.50
3. Professional education and ITS	-	**2.25**	**2.25**	-	**2.25**
Development and reform of ITS	-	1.50	1.50	-	1.50
Vocational training and collaboration universities – territories	-	0.50	0.50	-	0.50
Active orientation in the school-university transition	-	0.25	0.25	-	0.25
TOTAL	**2.99**	**12.38**	**15.37**	**1.35**	**16.72**

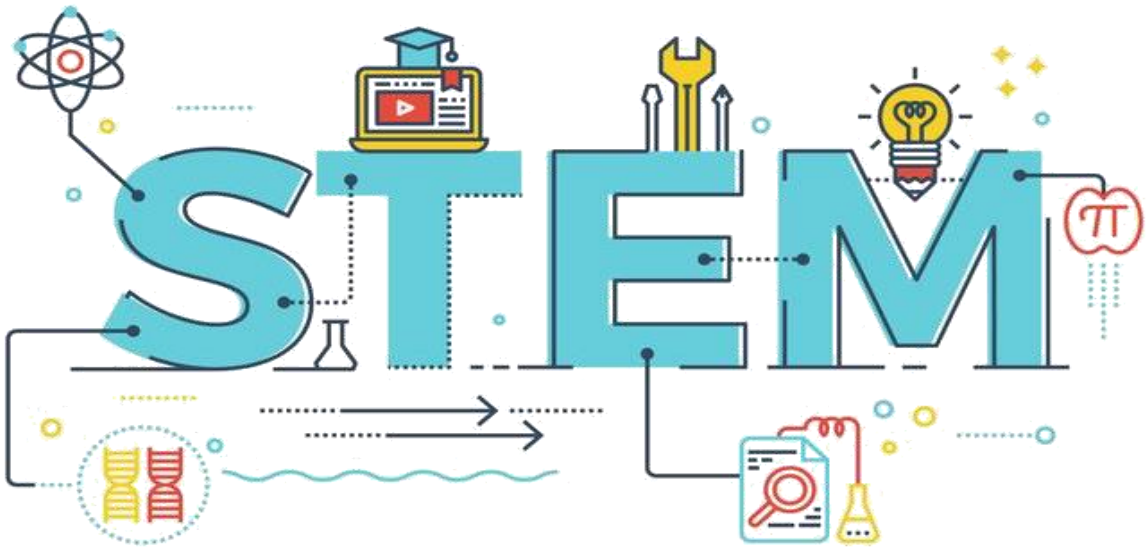
PhD, the Italian gap - 2

According to Eurostat, in Italy only 1 in 1,000 people between 25 to 34 years old completes a PhD program each year, compared to an EU average of 1.5 (in Germany it is 2.1).

Istat also reports that almost 20% of Italians holding PhDs move abroad, while those who remain in Italy suffer from educational mismatch. They are overqualified and underpaid.

Innovative PhD for the PA: the goals

The measure is aimed at reducing the gaps with the main European competitors and fighting brain drain.
With the new innovative doctorates, the goal is to increase PA's productivity, which is below the average, increasing the share of personnel with high specializations in STEM subjects, (Science, Technology, Engineering and Mathematics), since Italian PA suffers from an over presence of jobs holder with degrees in humanities and law.



Innovative PhD for the PA: the actions

The initiative is in partnership with the Department of Public Administration of the Presidency of the Council of Ministers and has the objective of increasing PhD degrees by 3,000 units, activating three cycles from 2021 onwards. Each cycle will benefit from 1,000 scholarships, plus 600 grants funded by the Ministry of Culture.
The Ministry for University and Research will supervise the policy.

Presidenza del Consiglio dei Ministri
Dipartimento della Funzione Pubblica

MiC MINISTERO DELLA CULTURA

Ministero dell'Istruzione
Ministero dell'Università e della Ricerca

National Research Program (PNR)

Mission 4 - Component 2.1 - Investment 1.1 promotes the National research program Fund (PNR) and Research Projects of National Relevance (PRIN).

The Fund is aimed at strengthening the scientific research support measures indicated in the National Research Program (PNR) 2021-27 to ensure the implementation of the strategic lines on scientific research.

M4C2 – From research to business	Resources (EUR/bn)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	REACT-EU (d)	TOTAL NGEU (c) + (d)
1. Strengthening Research and Development and IPCEI initiatives	**1.38**	**5.91**	**7.29**	-	**7.29**
Enlarged partnerships extended to universities, research centres, enterprises and funding basic research projects	-	1.61	1.61	-	1.61
Funding young researchers	-	0.60	0.60	-	0.60
Agreements for Innovation	-	0.70	0.70	-	0.70
IPCEI, Partnerships in Research and Innovation	-	1.00	1.00	-	1.00
National Research Programme Fund	0.45	0.40	0.85	-	0.85
New PRINs – Researches on topics of major national interest	0.35	0.60	0.95	-	0.95
Fund for Constructions and Research Infrastructures	0.58	1.00	1.58	-	1.58
2. Technology transfer and support for innovation	-	**4.00**	**4.00**	**0.48**	**4.48**
Innovation ecosystems and territorial champions of R&D	-	1.30	1.30	-	1.30
Strengthening research facilities and creation of national R&D samples on Key Enabling Technologies (Agritech, Fintech, IA, Hydrogen, Biomedics)	-	1.60	1.60	-	1.60
Upgrading and thematic and territorial extension of technology transfer centres by industry segments	-	0.50	0.50	-	0.50
Innovative PhDs for business and placement of researchers in companies	-	0.60	0.60	-	0.60
PhDs and researchers green and innovation	-	-	-	0.48	0.48
TOTAL	**1.38**	**9.91**	**11.29**	**0.48**	**11.77**

National Research Program (PNR): the initiatives

NRRP's initiatives follows the six clusters established by the Framework Programmes for Research and Technological Development 2021/27:

Health Culture, Creativity and Inclusive Society Civil Security for Society Digital, Industry and Space Climate, Energy and Mobility Food, Bioeconomy, Natural Resources, Agriculture and Environment.

Funded Projects

The investment will finance 5,350 projects until 2026 through PRIN - Research Projects of National Relevance. Each of them will last three years, due to their complexity and nature, and require full collaboration of Research institutes (such as the CNR-National Research Council) and universities.

Some projects, under the “curiosity driven tenders”, are selected by the Ministry of University on the basis of the quality of manager profiles, as well as due to the originality, the methodological adequacy, the impact and feasibility of the research project.

This type of activity will boost the development of initiatives promoted by researchers to break methodological boundaries, favouring a stronger interaction between universities and Research institutes.

Financing young researchers - 1

Mission 4 - Component 2.1 - Investment 1.2 promotes financing projects presented by young researchers

The measure aims to offer new opportunities dedicated to young researchers,
in order to keep them within the Italian economic system.

The measure aims to offer new opportunities to young researchers, in order to counter brain drain.

M4C2 – From research to business	Resources (EUR/bn)				
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Fund for Constructions and Research Infrastructures	0.58	1.00	1.58	-	1.58
2. Technology transfer and support for innovation	**-**	**4.00**	**4.00**	**0.48**	**4.48**
Innovation ecosystems and territorial champions of R&D	-	1.30	1.30	-	1.30
Strengthening research facilities and creation of national R&D samples on Key Enabling Technologies (Agritech, Fintech, IA, Hydrogen, Biomedics)	-	1.60	1.60	-	1.60
Upgrading and thematic and territorial extension of technology transfer centres by industry segments	-	0.50	0.50	-	0.50
Innovative PhDs for business and placement of researchers in companies	-	0.60	0.60	-	0.60
PhDs and researchers green and innovation	-	-	-	0.48	0.48
TOTAL	1.38	9.91	11.29	0.48	11.77

Financing young researchers - 2

The measure, implemented by the MUR, plans to support research activities for a maximum of 2,100 young researchers - on the model of calls such as the European Research Council, Marie Skłodowska-Curie Individual Fellowships and Seal of Excellence -, in order to allow them to gain a first experience in researching.

Part of the contribution will be bound to the hiring of at least a "non-tenure-track" researcher, another contribution will be dedicated to funding short periods of mobility for research activities or teaching elsewhere in Italy or abroad.

Extended partnership - 1

Mission 4 - Component 2.1 - Investment 1.3 promotes "Extended partnerships" between universities, research centers, SMEs, with the purpose of financing research projects.

The Ministry of University and Research is in charge to fund up to a maximum of 15 research and innovation programs, carried out in "extended partnerships".

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Upgrading and thematic and territorial extension of technology transfer centres by industry segments	-	0.50	0.50	-	0.50
Innovative PhDs for business and placement of researchers in companies	-	0.60	0.60	-	0.60
PhDs and researchers green and innovation	-	-	-	0.48	0.48
TOTAL	**1.38**	**9.91**	**11.29**	**0.48**	**11.77**

Extended partnership - 2

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Programs will be selected according to three criteria:

I. adherence to the objectives and priorities of the NPPR;

II. Consistency with these indicators: TRL (Technology Readiness Level) and SRL (Society Readiness Level);

III. consistency with European programs (such as, for example, "Knowledge and Innovation Communities " Program, promoted by the European Institute of Innovation and Technology).

The funds

The average investment of each Program will be around 100 million, with a contribution for each project between 5 and 20 million euros.
100 fixed-term researchers will be hired in each program for an overall cost of maximum 25 million. Fixed-term researchers will rise from the current 34% to 40%. This is one of the most important targets to be reached.

National champions and key enabling technologies - 1

Mission 4 - Component 2.1 - Investment 1.3 promotes Enhancing research facilities and establishing "National champions on R&D" with the objective of disseminating good practices concerning Key Enabling Technologies.

The measure aims to finance the creation of National research centers, selected with competitive procedures, able to trigger, through the collaboration of universities, research centers and businesses, digital transition in Italy.

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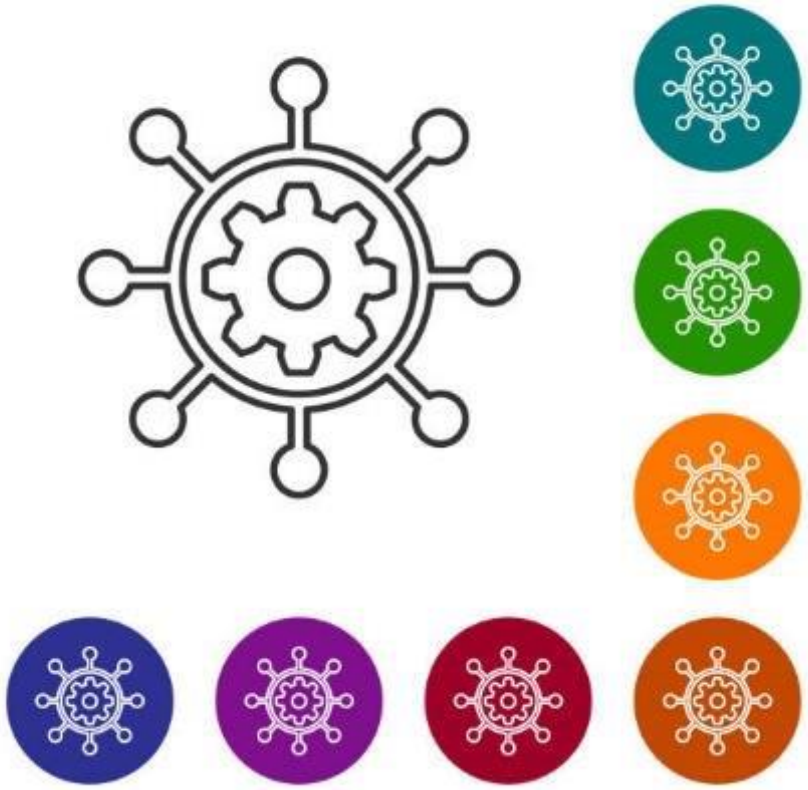
TOTAL	**1.38**	**9.91**	**11.29**	**0.48**	**11.77**

National champions and key enabling technologies - 2

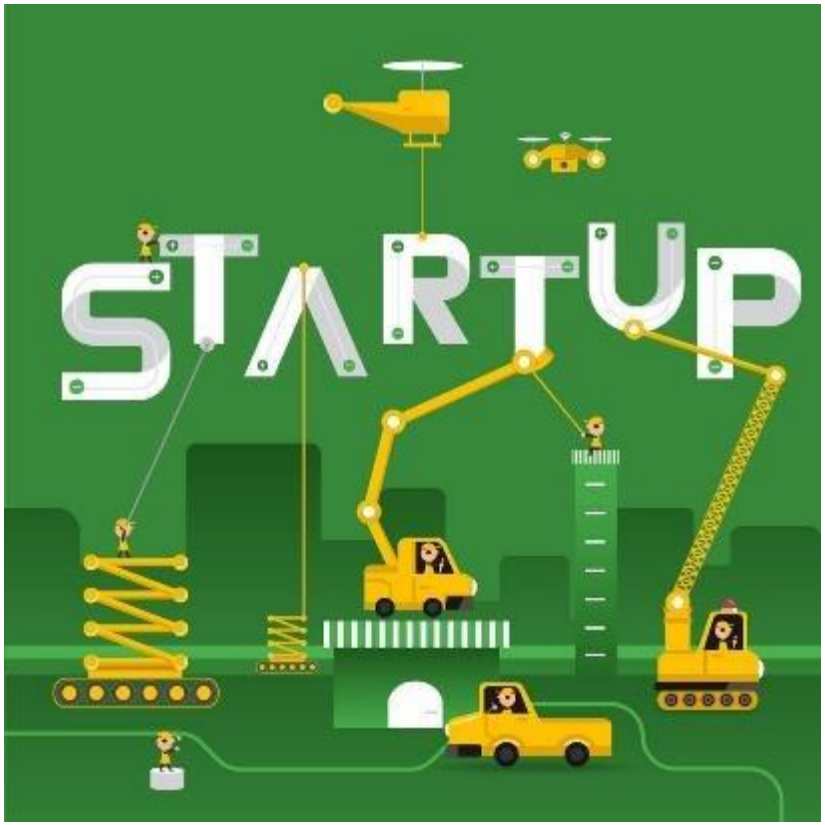
Call for tenders destined to finance the best projects are already to be enacted. To date, the Government has selected some crucial issues that the future Research centres should cover, such as: big data, environment and energy, quantum computing, biopharma, agritech, fintech, technologies for the digital transition, sustainable mobility, applied technologies to cultural heritage, technologies for biodiversity.
The actual choice will be based on competitive calls which Extended partnerships could apply to.

The R&D network - 1

New Research centres will follow the spoke–hub distribution paradigm, with the central hub in charge to fulfill administrative tasks and single spokes undertaking research independently. Extended partnerships will involve different centres and SMEs as "spokes".



The R&D network - 2



Essential features of each National Center will imply:
a) To create relevant research facilities;
b) to involve the private sector in the implementation of research projects;
c) to support start-ups and spin-offs' burgeoning.

The selection will be made with calls, the first of which will be issued by early 2022. Selection criteria will follow the European Innovation Advise.

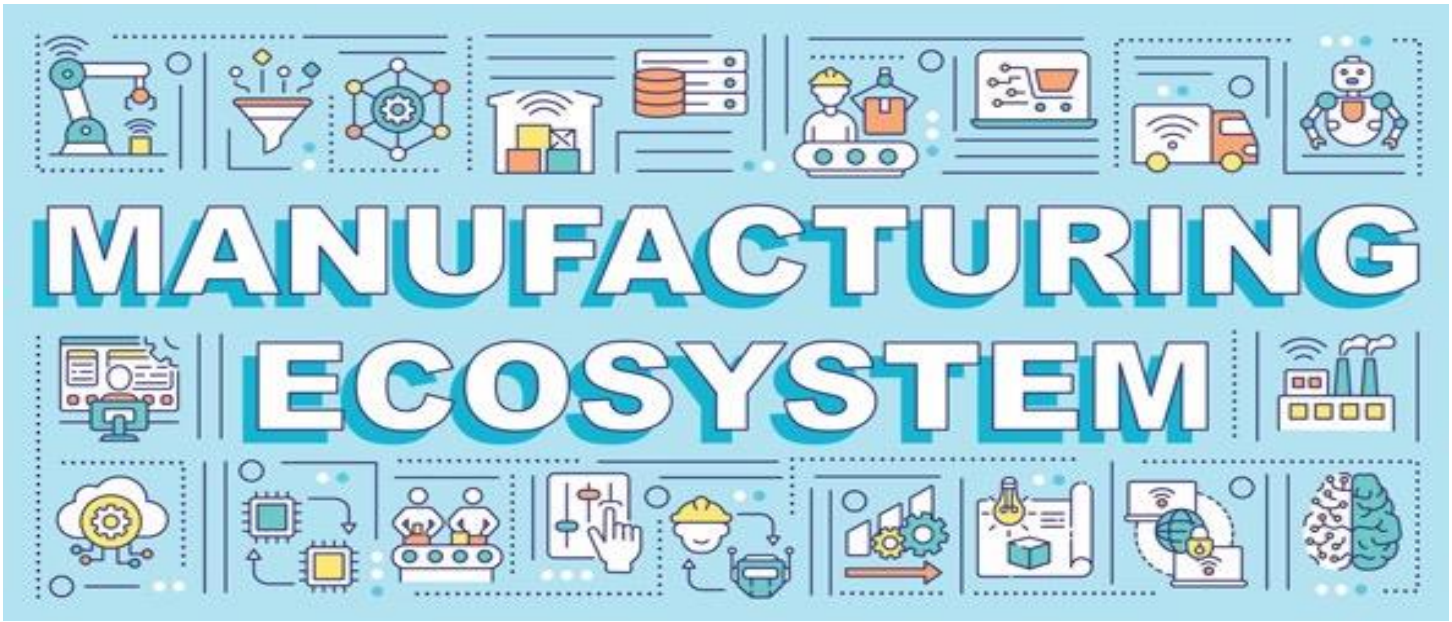
R&D local champions - 1

Mission 4 - Component 2.1 - Investment 1.5 promotes strengthening «Innovation ecosystems», and regional R&D leaders.

M4C2 – From research to business	Resources (EUR/bn)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	REACT-EU (d)	TOTAL NGEU (c) + (d)
1. Strengthening Research and Development and IPCEI initiatives	**1.38**	**5.91**	**7.29**	**-**	**7.29**
Enlarged partnerships extended to universities, research centres, enterprises and funding basic research projects	-	1.61	1.61	-	1.61
Funding young researchers	-	0.60	0.60	-	0.60
Agreements for Innovation	-	0.70	0.70	-	0.70
IPCEI, Partnerships in Research and Innovation	-	1.00	1.00	-	1.00
National Research Programme Fund	0.45	0.40	0.85	-	0.85
New PRINs – Researches on topics of major national interest	0.35	0.60	0.95	-	0.95
Fund for Constructions and Research Infrastructures	0.58	1.00	1.58	-	1.58
2. Technology transfer and support for innovation	**-**	**4.00**	**4.00**	**0.48**	**4.48**
Innovation ecosystems and territorial champions of R&D	-	1.30	1.30	-	1.30
Strengthening research facilities and creation of national R&D samples on Key Enabling Technologies (Agritech, Fintech, IA, Hydrogen, Biomedics)	-	1.60	1.60	-	1.60
Upgrading and thematic and territorial extension of technology transfer centres by industry segments	-	0.50	0.50	-	0.50
Innovative PhDs for business and placement of researchers in companies	-	0.60	0.60	-	0.60
PhDs and researchers green and innovation	-	-	-	0.48	0.48
TOTAL	**1.38**	**9.91**	**11.29**	**0.48**	**11.77**

R&D local champions - 2

Innovation ecosystems are places of contamination and partnership between universities, research centers, companies and local institutions, which pursue high-level training, innovation and applied research defined on the basis of territorial vocations.
They are already widespread in Italy and recently they have represented a new economic and social model in innovation.



The features

Each project has the following features:

- ❑ innovative training activities conducted in synergy with universities and companies, aimed at reducing the mismatch between the skills required by companies and those provided by universities, as well as hiring PhDs;
- ❑ research undertaken by Extended partnership in liaison with the private sector.
- ❑ to support start-ups
- ❑ involving communities.

Selection criteria

The selection criteria are the following:

I. scientific and technical quality and its consistency with the territorial vocation;

II. the actual aptitude to stimulate innovative capacity of enterprises, in particular of SMEs;

III. the ability to generate national and international relations with important research institutions and leading companies;

IV. the actual capacity for local communities engagement.

Innovation processes and technology transfer

Mission 4 - Component 2.2 - Supports innovation processes and technology transfer.

This policy aims at strengthening the innovation in the manufacturing sector, encouraging a systemic use of research results to promote creation of international networks.

Initiatives include direct support for businesses, reorganization, rationalization and strengthening of facilities offering advanced technological services and technology transfer

M4C2 – From research to business	Resources (EUR/bn)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	REACT-EU (d)	TOTAL NGEU (c) + (d)
1. Strengthening Research and Development and IPCEI initiatives	**1.38**	**5.91**	**7.29**	**-**	**7.29**
Enlarged partnerships extended to universities, research centres, enterprises and funding basic research projects	-	1.61	1.61	-	1.61
Funding young researchers	-	0.60	0.60	-	0.60
Agreements for Innovation	-	0.70	0.70	-	0.70
IPCEI, Partnerships in Research and Innovation	-	1.00	1.00	-	1.00
National Research Programme Fund	0.45	0.40	0.85	-	0.85
New PRINs – Researches on topics of major national interest	0.35	0.60	0.95	-	0.95
Fund for Constructions and Research Infrastructures	0.58	1.00	1.58	-	1.58
2. Technology transfer and support for innovation	**-**	**4.00**	**4.00**	**0.48**	**4.48**
Innovation ecosystems and territorial champions of R&D	-	1.30	1.30	-	1.30
Strengthening research facilities and creation of national R&D samples on Key Enabling Technologies (Agritech, Fintech, IA, Hydrogen, Biomedics)	-	1.60	1.60	-	1.60
Upgrading and thematic and territorial extension of technology transfer centres by industry segments	-	0.50	0.50	-	0.50
Innovative PhDs for business and placement of researchers in companies	-	0.60	0.60	-	0.60
PhDs and researchers green and innovation	-	-	-	0.48	0.48
TOTAL	**1.38**	**9.91**	**11.29**	**0.48**	**11.77**

IPCEI Fund - 1

Mission 4 - Component 2.2 - Investment 2.1 IPCEI (Important Projects of Common European Interest).

The objective of the measure is to integrate the current IPCEI Fund - pursuant to art. 1, paragraph 232, of the 2020 Budget Law - with additional resources so as to finance new projects.

M4C2 – From research to business	Resources (EUR/bn)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	REACT-EU (d)	TOTAL NGEU (c) + (d)
1. Strengthening Research and Development and IPCEI initiatives	**1.38**	**5.91**	**7.29**	**-**	**7.29**
Enlarged partnerships extended to universities, research centres, enterprises and funding basic research projects	-	1.61	1.61	-	1.61
Funding young researchers	-	0.60	0.60	-	0.60
Agreements for Innovation	-	0.70	0.70	-	0.70
IPCEI, Partnerships in Research and Innovation	-	1.00	1.00	-	1.00
National Research Programme Fund	0.45	0.40	0.85	-	0.85
New PRINs – Researches on topics of major national interest	0.35	0.60	0.95	-	0.95
Fund for Constructions and Research Infrastructures	0.58	1.00	1.58	-	1.58
2. Technology transfer and support for innovation	**-**	**4.00**	**4.00**	**0.48**	**4.48**
Innovation ecosystems and territorial champions of R&D	-	1.30	1.30	-	1.30
Strengthening research facilities and creation of national R&D samples on Key Enabling Technologies (Agritech, Fintech, IA, Hydrogen, Biomedics)	-	1.60	1.60	-	1.60
Upgrading and thematic and territorial extension of technology transfer centres by industry segments	-	0.50	0.50	-	0.50
Innovative PhDs for business and placement of researchers in companies	-	0.60	0.60	-	0.60
PhDs and researchers green and innovation	-	-	-	0.48	0.48
TOTAL	**1.38**	**9.91**	**11.29**	**0.48**	**11.77**

IPCEI Fund - 2

These projects have been previously planned at a European level and articulated through the six key strategic value chains that the High Level Industrial Roundtable, summoned by the European Commission, identified in 2019.

The objective is to pool together knowledge, skills, financial resources and economic actors from all over the Union, to further collaboration between public and private sectors.

The measure, implemented by the MISE - Ministry for Industrial development -, funds Italian SMEs to enter global supply chains through innovative projects.

Horizon Europe Partnerships - 1

Mission 4 - Component 2.2 - Investment 2.2 promotes Horizon Europe Partnerships

The objective of the measure is to support R&D and innovation, through specific calls, the European Partnerships, in compliance with the "Horizon Europe " project.

M4C2 – From research to business	Resources (EUR/bn)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	REACT-EU (d)	TOTAL NGEU (c) + (d)
1. Strengthening Research and Development and IPCEI initiatives	**1.38**	**5.91**	**7.29**	-	**7.29**
Enlarged partnerships extended to universities, research centres, enterprises and funding basic research projects	-	1.61	1.61	-	1.61
Funding young researchers	-	0.60	0.60	-	0.60
Agreements for Innovation	-	0.70	0.70	-	0.70
IPCEI, Partnerships in Research and Innovation	-	1.00	1.00	-	1.00
National Research Programme Fund	0.45	0.40	0.85	-	0.85
New PRINs – Researches on topics of major national interest	0.35	0.60	0.95	-	0.95
Fund for Constructions and Research Infrastructures	0.58	1.00	1.58	-	1.58
2. Technology transfer and support for innovation	-	**4.00**	**4.00**	**0.48**	**4.48**
Innovation ecosystems and territorial champions of R&D	-	1.30	1.30	-	1.30
Strengthening research facilities and creation of national R&D samples on Key Enabling Technologies (Agritech, Fintech, IA, Hydrogen, Biomedics)	-	1.60	1.60	-	1.60
Upgrading and thematic and territorial extension of technology transfer centres by industry segments	-	0.50	0.50	-	0.50
Innovative PhDs for business and placement of researchers in companies	-	0.60	0.60	-	0.60
PhDs and researchers green and innovation	-	-	-	0.48	0.48
TOTAL	**1.38**	**9.91**	**11.29**	**0.48**	**11.77**

Horizon Europe Partnerships - 2

Such transnational research initiatives can be an important driving force in Research and Innovation on strategic issues to relaunch country's growth.
In particular, support will be provided on the following initiatives:
High Performance Computing; key digital technologies; clean energy transition; blue oceans - A neutral climate, sustainable and productive; Blue economy; innovative SMEs.

Technology Transfer Centers -1

Mission 4 - Component 2.2 - Investment 2.2 promotes reinforcing Technology Transfer Centers.

Such centers will impact on:

a) the low willingness to cooperate between companies, universities and research centers;

b) the scarce attractiveness of existing centers;

c) the fragmentation of the manufacturing system and the presence of too many actors without a clear mission and a definite purpose;

d) the lack of clear governance.

Technology Transfer Centers - 2

The measure is aimed at rationalizing and reorganizing the existing Centers (almost 60) destined in supporting business and favouring Technology Transfer.
Moreover, a service upgrade will be provided to all the beneficiaries

M4C2 – From research to business	Resources (EUR/bn)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	REACT-EU (d)	TOTAL NGEU (c) + (d)
1. Strengthening Research and Development and IPCEI initiatives	**1.38**	**5.91**	**7.29**	**-**	**7.29**
Enlarged partnerships extended to universities, research centres, enterprises and funding basic research projects	-	1.61	1.61	-	1.61
Funding young researchers	-	0.60	0.60	-	0.60
Agreements for Innovation	-	0.70	0.70	-	0.70
IPCEI, Partnerships in Research and Innovation	-	1.00	1.00	-	1.00
National Research Programme Fund	0.45	0.40	0.85	-	0.85
New PRINs – Researches on topics of major national interest	0.35	0.60	0.95	-	0.95
Fund for Constructions and Research Infrastructures	0.58	1.00	1.58	-	1.58
2. Technology transfer and support for innovation	**-**	**4.00**	**4.00**	**0.48**	**4.48**
Innovation ecosystems and territorial champions of R&D	-	1.30	1.30	-	1.30
Strengthening research facilities and creation of national R&D samples on Key Enabling Technologies (Agritech, Fintech, IA, Hydrogen, Biomedics)	-	1.60	1.60	-	1.60
Upgrading and thematic and territorial extension of technology transfer centres by industry segments	-	0.50	0.50	-	0.50
Innovative PhDs for business and placement of researchers in companies	-	0.60	0.60	-	0.60
PhDs and researchers green and innovation	-	-	-	0.48	0.48
TOTAL	1.38	9.91	11.29	0.48	11.77

Technology Transfer Centers - resources

A 140% increase in the value of the technology transfer service is expected, reaching around 600 million euros, from current 250 million euros.
Existing Centers will be financed due to fiscal needs or under performance evaluation. The prerequisite for financing new centers relies on private funding, which is essential for guaranteeing the sustainability of the centers.
These centers differ from research centers, which involve universities and companies, because will benefit from TRL (Technology Readiness Level) investments, destined to provide market-oriented assets.

Better conditions to support research and innovation

Mission 4 - Component 2.3 - promotes better conditions to support research and innovation.

The line of intervention aims at strengthening the conditions enabling research and innovation development, acting on:

- infrastructural equipment, also by encouraging the manufacturing sector to deal with research
- skills development, by supporting doctorates dedicated to specific business needs,

particularly in green and digital policies;

- financial instruments intended to support investments in research and innovation by SMEs.

M4C2 – From research to business	Resources (EUR/bn)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	REACT-EU (d)	TOTAL NGEU (c) + (d)
1. Strengthening Research and Development and IPCEI initiatives	**1.38**	**5.91**	**7.29**	**-**	**7.29**
Enlarged partnerships extended to universities, research centres, enterprises and funding basic research projects	-	1.61	1.61	-	1.61
Funding young researchers	-	0.60	0.60	-	0.60
Agreements for Innovation	-	0.70	0.70	-	0.70
IPCEI, Partnerships in Research and Innovation	-	1.00	1.00	-	1.00
National Research Programme Fund	0.45	0.40	0.85	-	0.85
New PRINs – Researches on topics of major national interest	0.35	0.60	0.95	-	0.95
Fund for Constructions and Research Infrastructures	0.58	1.00	1.58	-	1.58
2. Technology transfer and support for innovation	**-**	**4.00**	**4.00**	**0.48**	**4.48**
Innovation ecosystems and territorial champions of R&D	-	1.30	1.30	-	1.30
Strengthening research facilities and creation of national R&D samples on Key Enabling Technologies (Agritech, Fintech, IA, Hydrogen, Biomedics)	-	1.60	1.60	-	1.60
Upgrading and thematic and territorial extension of technology transfer centres by industry segments	-	0.50	0.50	-	0.50
Innovative PhDs for business and placement of researchers in companies	-	0.60	0.60	-	0.60
PhDs and researchers green and innovation	-	-	-	0.48	0.48
TOTAL	**1.38**	**9.91**	**11.29**	**0.48**	**11.77**

Fund in the Research and Innovation sectors- 1

Mission 4 - Component 4.2 - Investment 3.1 promotes a Fund to support facilities building in the Research and Innovation sectors.

The Fund aims to facilitate the osmosis between the scientific knowledge generated in high-quality research infrastructures and the economic sector, fostering innovation.

To this end, the measure, implemented by the MUR, supports the creation of infrastructures of research and innovation, linking the industrial sector with the academic one

M4C2 – From research to business	Resources (EUR/bn)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	REACT-EU (d)	TOTAL NGEU (c) + (d)
1. Strengthening Research and Development and IPCEI initiatives	**1.38**	**5.91**	**7.29**	**-**	**7.29**
Enlarged partnerships extended to universities, research centres, enterprises and funding basic research projects	-	1.61	1.61	-	1.61
Funding young researchers	-	0.60	0.60	-	0.60
Agreements for Innovation	-	0.70	0.70	-	0.70
IPCEI, Partnerships in Research and Innovation	-	1.00	1.00	-	1.00
National Research Programme Fund	0.45	0.40	0.85	-	0.85
New PRINs – Researches on topics of major national interest	0.35	0.60	0.95	-	0.95
Fund for Constructions and Research Infrastructures	0.58	1.00	1.58	-	1.58
2. Technology transfer and support for innovation	**-**	**4.00**	**4.00**	**0.48**	**4.48**
Innovation ecosystems and territorial champions of R&D	-	1.30	1.30	-	1.30
Strengthening research facilities and creation of national R&D samples on Key Enabling Technologies (Agritech, Fintech, IA, Hydrogen, Biomedics)	-	1.60	1.60	-	1.60
Upgrading and thematic and territorial extension of technology transfer centres by industry segments	-	0.50	0.50	-	0.50
Innovative PhDs for business and placement of researchers in companies	-	0.60	0.60	-	0.60
PhDs and researchers green and innovation	-	-	-	0.48	0.48
TOTAL	1.38	9.91	11.29	0.48	11.77

Fund in the Research and Innovation sectors- 2

The Fund will fund national and pan-European facilities building in the Research and Innovation sectors, relying on private partnerships.

In particular, the measure will finance up to 30 infrastructural projects, led by a research manager for each infrastructure.

National Innovation Fund - 1

Mission 4 - Component 4.2 - Investment 3.2 promotes Start-ups financing

The measure is aimed at integrating the resources of the National Innovation Fund, managed by the Cassa Depositi e Prestiti, to support Venture Capital's development.

M4C2 – From research to business	Resources (EUR/bn)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	REACT-EU (d)	TOTAL NGEU (c) + (d)
1. Strengthening Research and Development and IPCEI initiatives	**1.38**	**5.91**	**7.29**	**-**	**7.29**
Enlarged partnerships extended to universities, research centres, enterprises and funding basic research projects	-	1.61	1.61	-	1.61
Funding young researchers	-	0.60	0.60	-	0.60
Agreements for Innovation	-	0.70	0.70	-	0.70
IPCEI, Partnerships in Research and Innovation	-	1.00	1.00	-	1.00
National Research Programme Fund	0.45	0.40	0.85	-	0.85
New PRINs – Researches on topics of major national interest	0.35	0.60	0.95	-	0.95
Fund for Constructions and Research Infrastructures	0.58	1.00	1.58	-	1.58
2. Technology transfer and support for innovation	**-**	**4.00**	**4.00**	**0.48**	**4.48**
Innovation ecosystems and territorial champions of R&D	-	1.30	1.30	-	1.30
Strengthening research facilities and creation of national R&D samples on Key Enabling Technologies (Agritech, Fintech, IA, Hydrogen, Biomedics)	-	1.60	1.60	-	1.60
Upgrading and thematic and territorial extension of technology transfer centres by industry segments	-	0.50	0.50	-	0.50
Innovative PhDs for business and placement of researchers in companies	-	0.60	0.60	-	0.60
PhDs and researchers green and innovation	-	-	-	0.48	0.48
TOTAL	**1.38**	**9.91**	**11.29**	**0.48**	**11.77**

National Innovation Fund - 2

This initiative, implemented by the MiSE, will expand the number of innovative companies that can be benefitted by the Fund, by financing private investments capable of generate positive impacts and added value both in the field of research and on the national economy.

The investment will support 250 innovative small and medium-sized enterprises with an investment of 700 million euros, with an average holding of 1.2 million.

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Ministero dello sviluppo economico

Innovative PhDs - 1

Mission 4 - Component 4.2 - Investment 3.3 promotes the Introduction of innovative PhDs that meet the needs of businesses and welcome the recruitment of researchers in SMEs.

M4C2 – From research to business	Resources (EUR/bn)				
	Existing (a)	New (b)	Total (c) = (a)+(b)	REACT-EU (d)	TOTAL NGEU (c) + (d)
1. Strengthening Research and Development and IPCEI initiatives	**1.38**	**5.91**	**7.29**	**-**	**7.29**
Enlarged partnerships extended to universities, research centres, enterprises and funding basic research projects	-	1.61	1.61	-	1.61
Funding young researchers	-	0.60	0.60	-	0.60
Agreements for Innovation	-	0.70	0.70	-	0.70
IPCEI, Partnerships in Research and Innovation	-	1.00	1.00	-	1.00
National Research Programme Fund	0.45	0.40	0.85	-	0.85
New PRINs – Researches on topics of major national interest	0.35	0.60	0.95	-	0.95
Fund for Constructions and Research Infrastructures	0.58	1.00	1.58	-	1.58
2. Technology transfer and support for innovation	**-**	**4.00**	**4.00**	**0.48**	**4.48**
Innovation ecosystems and territorial champions of R&D	-	1.30	1.30	-	1.30
Strengthening research facilities and creation of national R&D samples on Key Enabling Technologies (Agritech, Fintech, IA, Hydrogen, Biomedics)	-	1.60	1.60	-	1.60
Upgrading and thematic and territorial extension of technology transfer centres by industry segments	-	0.50	0.50	-	0.50
Innovative PhDs for business and placement of researchers in companies	-	0.60	0.60	-	0.60
PhDs and researchers green and innovation	-	-	-	0.48	0.48
TOTAL	**1.38**	**9.91**	**11.29**	**0.48**	**11.77**

Innovative PhDs - 2

The objective of the measure, implemented by the Ministry of the University, consists in enhancing high-profile skills, especially in the areas of Key Enabling Technologies, through:

- establishing dedicated doctoral programs, involving the business sector;
- incentives for companies to hire junior researchers.

Linea Amica

Ministro per la Pubblica Amministrazione

Presidenza del Consiglio dei Ministri
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