AN INNOVATIVE APPROACH TO SUSTAINABLE INFRASTRUCTURES: THE ITALIAN EXPERIENCE

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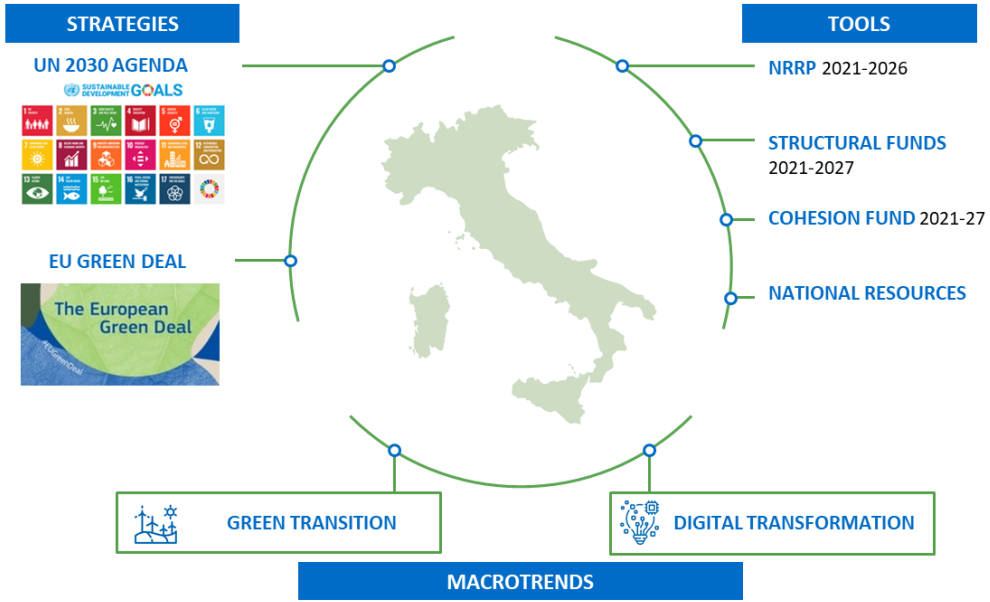
Italy has become an international best practice

- Putting **the G20 principles for sustainable infrastructures** into practice:
  - **Maximizing the positive impact** of infrastructure to achieve sustainable growth and development
  - Raising **economic efficiency** in view of life-cycle cost
  - Integrating **environmental considerations** in infrastructure investments
  - Building **resilience against natural disasters** and other risks
  - Integrating **social considerations** in infrastructure investment
  - Strengthening infrastructure **governance**
- **Ex-ante assessments of infrastructures policies** for the Sustainable Development Goals (SDGs) of the 2030 Agenda and the European Green Deal
- **15-years planning of infrastructure investments to bring Italy on a path of sustainable development and strengthen the resilience of the country and its ability to face the climate crisis**
- **Investments of 104 billion euros** on sustainable infrastructures and mobility systems
- **Guidelines for sustainable infrastructures,** implementing the ecological and digital transition, tackling the climate crisis
- **Mobilizing private savings** to build sustainable infrastructures

The big picture: 10 years to transform Italy



Mims priorities and objectives

One of the priorities of the Ministry for Sustainable Infrastructures and Mobility has been to carry out the digital and green transition through the **introduction of sustainability in project planning**, the design of **policies to decarbonize transport**, the improvement of **security for all infrastructures against climate change** and the **planning of resilient infrastructure** to accelerate the transition towards a zero-carbon economy.

Our ecological transition is based on a people-centred approach through **integrated and systemic interventions aimed at improving the quality of life of citizens** and the competitiveness of companies, **reducing inequalities between various territories, as** new investments in infrastructure and mobility must also ensure the **economic, social and environmental sustainability**.

The big picture: 10 years to transform Italy

February 2021

The Italian Ministry for Infrastructure and Transport became **Ministry for Sustainable Infrastructures and Mobility (Mims)**. This change has signaled the adoption of a **new vision** aligning the Ministry's objectives to EU strategies and Next Generation Eu principles and ensuring that the **economic recovery of Italy will be also sustainable** on a social and environmental level starting with the design of sustainable and resilient infrastructures and mobility networks.

Mims

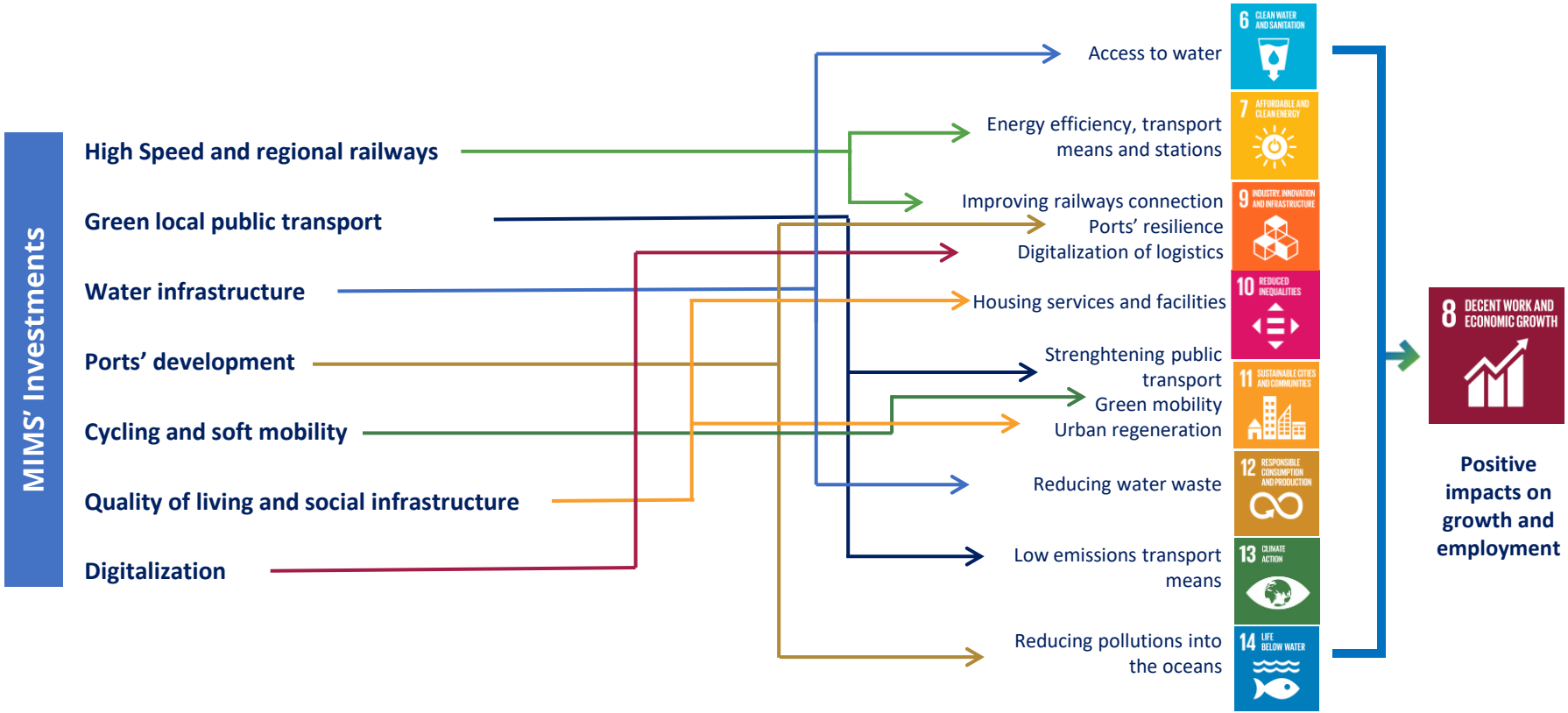
April 2021

The Government submitted the **Italian National Resilience and Recovery Plan (NRRP)** to the EU Commission. Investing in the new generations, improving gender equality and reducing disparities among regions in terms of standards of living are the cross priorities underpinning all the investments, reforms and projects under the Plan. 27% of the NRRP's financial resources are allocated to digitalization, 40% to investments for climate change adaptation and mitigation and more than 10% to policies aimed at strengthening social cohesion. More than **70% of the projects of the NRRP under the responsibility of Mims**, which are financed for a total of 61,5 billion EUR (including CP), **can be tracked as "climate oriented"** contributing to ecological transition objectives.

July 2021

The 2021 Infrastructures Annex to the Economic and Financial Document, "10 years to transform Italy» explains the Government's priorities and goals related to infrastructures and mobility and represents the Ministry's programmatic document to design policies related to Italy's infrastructures, transport and mobility networks. Indeed, **infrastructures are key to promote a more inclusive, resilient and sustainable development model and** achieve Sustainable Development Goals (SDGs) of the UN 2030 Agenda.

The big picture: 10 years to transform Italy



The big picture: 10 years to transform Italy

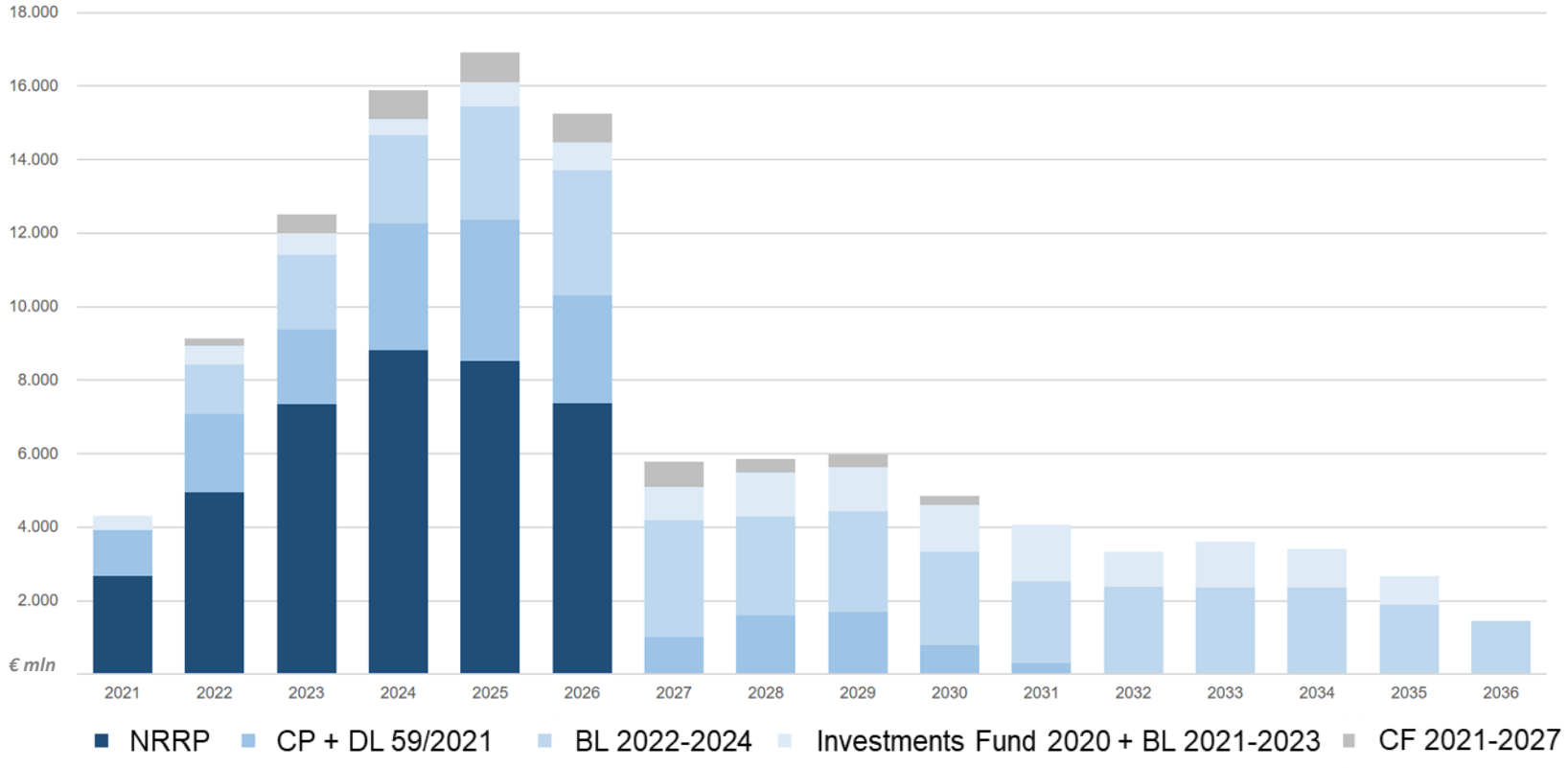
Investments for sustainable infrastructures and mobility (€ million)

Lines of intervention	NRRP and CP *(€million)*	Budget Law 2022 *(€million)*	CF 2021-27 Flaghsip projects *(€million)*	CF 2021-27 Other projetcs *(€million)*	Total* *(€million)*
Roads	1 980	10 800	2 621	476	**15 877**
Railways	36 600	15 900	2 307	12	**54 819**
Rapid Mass Transport	3 600	4 700	371	19	**8 690**
Water infrastructures	1 800	440	130	312	**2 682**
Urban regeneration and construction	5 200	255		6	**5 461**
Other investments	12 189	3 985	15	8	**16 197**
Total* *(€million)*	**61 369**	**36 080**	**5 443**	**833**	**103 725**

** Totals may differ due to decimal rounds.*

The big picture: 10 years to transform Italy

Investments for sustainable infrastructures and mobility (€ million)



The big picture: 10 years to transform Italy

July 2021

With the new **Guidelines for the Technical and Economic Feasibility Project of Public Works** issued by the High Council of Public Works, a **Sustainability Report of the investments has been introduced as a new ex ante analysis document to run projects financed by the NRRP**.

Elements of the sustainability report

Dimensions	Main elements of evaluation
Economic	• **Contribution to the Sustainable Development Goals (SDGs)** • Estimate of **medium-long term impacts** in terms of economic and social development of the territory
Environmental	• **Do-not-significant-harm principle (DNSH) Verification** • **Carbon Footprint of the work and Energy Balance** • **Life Cycle Assessment and Resilience Analysis**
Social	• **Employment impacts** • **Measures to protect decent work** along the whole procurement chain
Institutional and Governance	• **Models and tools for stakeholder engagement**

The DNSH principle within the Sustainability Report

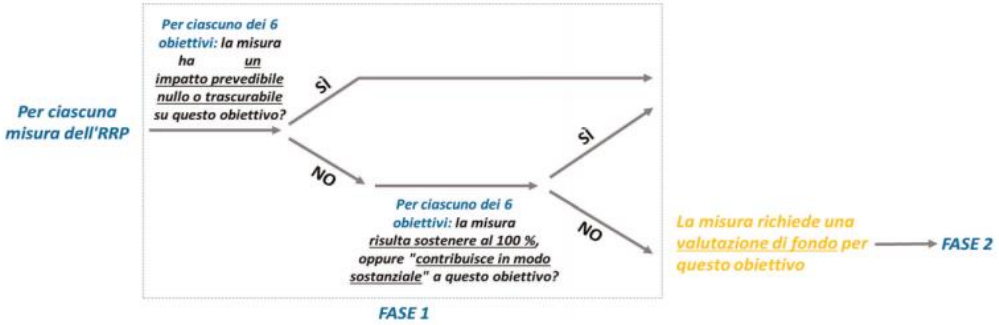
The environmental dimension assessment is developed in line with the Regulation establishing the Recovery and Resilience Mechanism and the EU Taxonomy. The analysis aims to **identify the 'positive' and 'negative' components of possible environmental impact.**

'POSITIVE' DIMENSION

1 VERIFICATION OF POSSIBLE 'SIGNIFICANT CONTRIBUTIONS' TO ONE - OR MORE - OF THE 6 PRIORITY ENVIRONMENTAL OBJECTIVES WITHIN THE EU

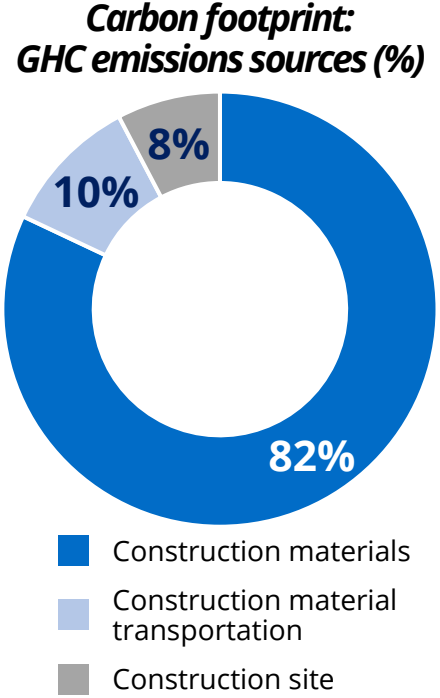
'NEGATIVE' DIMENSION

2 VERIFICATION OF COMPLIANCE WITH THE PRINCIPLE OF "DO NOT SIGNIFICANT HARM" (DNSH) WITH REFERENCE TO THE SAME ENVIRONMENTAL OBJECTIVES



The Sustainability report in practice: Carbon footprint and mitigation solutions

Project appraisal of a railways project



Worst case	Mitigation option
▪ No reuse of excavated materials ▪ All construction materials are taken «outside»	▪ Reuse of excavated materials (80%) ▪ Landfilling and other utilization(20%)
35.557 tCO_{2e}	**23.865 tCO_{2e}**

Saving: -33%

11.692 tCO2e

The need of an integrated set of information

Technical Guidelines for ex-ante evaluation

Mims has published a set of **technical and sector-based Guidelines** with the aim to ensure **a set of integrated** information for project evaluation and assessment

Railways

Roads

Water sector

Mass rapid transit

"Which/What"

Guidelines for the Technical and Economic Feasibility Project of Public Works

"How"

The big picture: 10 years to transform Italy

A people centred green transition: Mims contribution in defining new policies and regulations

January 2022

The Ministry's priorities and strategic objectives for 2022 have been defined by the Minister's **Directive defining general guidelines for the administrative activity of 2022**. These objectives are based on a global vision adopting **the 2030 Agenda and the EU strategies as fundamental frameworks to design policies aimed at achieving country's sustainable development**.
Indeed, the four strategic objectives clearly show the **people centred approach adopted by the Ministry**: *(i)* Improving the security of infrastructures, mobility and people; *(ii)* Developing resilient and sustainable infrastructures, taking into account climate change; *(iii)* Increasing the efficiency and sustainability of transport systems; *(iv)* Improving the effectiveness of the Ministry and the sustainable management of its phisical assets.

February 2022

Presented the Reports **"Climate change, infrastructure and mobility" and "Investing in infrastructure: financial instruments and sustainability"** of the Commissions set up by the Ministry advancing recommendations for the definition of the new strategy for sustainable infrastructures and mobility as well as analyses and proposals to mobilize public and private financial resources towards investments able to accelerate the ecological transition.

February 2022

Presented **a new scoring model (Score for Sustainable Infrastructure and Mobility – SIMS) for the evaluation of investments under the responsibility of the Mims.**

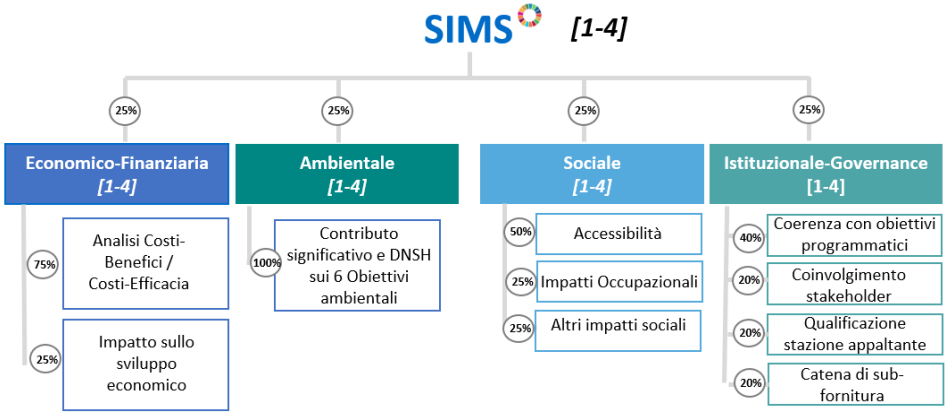
SIMS

"The SIMS model–Score for sustainable infrastructure and mobility"

G20 Principles

- **Integrating environmental considerations in infrastructure investments**
- **Integrating social considerations in infrastructure investments**
- **Strengthening infrastructures governance**

In February 2022, **a new model for the evaluation of investments under the responsibility of the MIMS** has been presented. The SIMS model is based on a scoring system that will allow to evaluate, in the selection phase of the order of priority, jointly the different dimensions that identify the sustainability of a work. The SIMS was applied for the first time in the selection of interventions for the programming of the New National Water Infrastructure Plan.



Monitoring and evaluation

Monitor and evaluate investment in infrastructure in order to ensure continuous **improvements in the quality of investment** and **accountability**, using innovative sets of indicators on economic, social and environmental outputs and outcomes

The need to mobilize public and private capital

Sustainable finance and Green Bonds

- In 2021, the Italian government entered the **green bond market** for the first time by launching the 2045 BTP Green, of which two tranches were issued for a total nominal value of **EUR 13,500 million**. The first issue achieved a record number of bids for inaugural sovereign Green Bond issues in Europe with the participation of approximately 530 investors, more than half of whom were ESG investors; total demand amounted to more than EUR 80 billion.

- The **transport category constitutes the largest item** (amounting to EUR 7.62 billion), accounting for **57.0%** of total expenditures. A large part of this category is attributable to capital investments (railway infrastructure, electrification of railway sections, construction of new sections of the High Speed/High Capacity rail network – HS/HC), and to contributions in support of railway mobility.

- Examples of projects are: the **Genoa and Terzo Valico dei Giovi junction project**, which allows for the transfer of an important share of traffic from road to rail (in line with European objectives), and the works related to the HS/ HC Naples-Bari railway section or the Brescia -Verona one of the HS/HC Milan-Venice line, with their positive effects on air and noise pollution (emissions at local level) and on climate change (through the reduction of greenhouse gas emissions