Table 1. Green and digital impact							
MISSIONE 3: "Sustainable mobility infrastructures"	Green objectives				Digital objectives	Transition challenges	
COMPONENT 1 - High speed/capacity railway network and safe road	Climate Tag	Environmental Tag	Intervention field	DNSH		Green	Digital
Investment 1.1: High-speed railway connections to the South for passengers and freight							
High-speed railway network (Napoli - Bari)	*100%*	*40%*	*064*	*yes*	*0%*		
High-speed railway network (Palermo-Catania)	*100%*	*40%*	*064*	*yes*	*0%*		
High-speed railway network (Salerno-Reggio Calabria)	*100%*	*40%*	*064*	*yes*	*0%*		
Investment 1.2: High-speed lines in the North connecting to Europe							
High-speed railway network (Brescia-Verona-Padova)	*100%*	*40%*	*064*	*yes*	*0%*		
High-speed railway network (Liguria-Alpi)	*100%*	*40%*	*064*	*yes*	*0%*		
High-speed railway network (Verona-Brennero - opere di adduzione)	*100%*	*40%*	*065*	*yes*	*0%*		
Investment 1.3: Diagonal connections							
High-speed railway network (Roma-Pescara)	*100%*	*40%*	*068*	*yes*	*0%*		
High-speed railway network (Orte-Falconara)	*100%*	*40%*	*068*	*yes*	*0%*		
High-speed railway network (Taranto-Metaponto-Potenza-Battipaglia)	*100%*	*40%*	*068*	*yes*	*0%*		
Investment 1.4: Introducing the European Rail Transport Management System (ERTMS)	*40%*	*40%*	*071*	*yes*	*100%*		
Investment 1.5: Strengthening metropolitan nodes and key national links							
Technological development and infrastructural upgrading of key nodes	*100%*	*40%*	*068*	*yes*	*0%*		
Technological development and infrastructural upgrading of key links	*100%*	*40%*	*068*	*yes*	*0%*		
Investment 1.6: Strengthening regional lines	*40%*	*40%*	*069*	*yes*	*0%*		
Investment 1.7: Upgrading, electrification and resilience of railways South	*40%*	*40%*	*069*	*yes*	*0%*		
Investment 1.8: Upgrading railway stations in the South	*40%*	*40%*	*069*	*yes*	*0%*		
Investment 1.9: Renewal rolling stock	*40%*	*40%*	*072*	*yes*	*0%*		
Investment 2.1: Implementation of a dynamic monitoring system to control remotely the bridges, viaducts and tunnels (A24-A25)	*0%*	*0%*	*063*	*yes*	*100%*		
Investment 2.2: Implementation of a dynamic monitoring system to control remotely the bridges, viaducts and tunnels (ANAS network)	*0%*	*0%*	*063*	*yes*	*100%*		

5. Milestones, targets and timeline

Related reform or investment			Milestone or target name & number	Qualitative indicators (for milestones)	Quantitative indicators (for target)			Timeline for completion (indicate the quarter and the year)	Data source /Methodology	Responsibility for reporting and implementation	Description and clear definition of each milestone and target	Assumptions/ risks	Verification mechanism
					Unit of measure	Baseline	Goal						
Component 1 - High speed/capacity railway network and safe road													
Investment 1.1: High-speed railway connections to the South for passengers and freight		High-sped railway network (Napoli - Bari)	high speed/high capacity network km built		Km	0	69.5	4 Q 2023	Rete Ferroviaria Italiana	Ministry of Infrastructures and Transport	Conclusion of the process of award of works contracts (permissions, tenders, contracts) and implementation of 70 km of AV/AC network before 4 Q 2023.	Effectiveness in the compliance with implementation timing / environmental permit release timing	Quarterly monitoring by the Ministry of Infrastructures and Transport
		High-sped railway network (Palermo-Catania)									Additional 217 Km of AV/AC network is introduced before 4 Q 2026.		
		High-sped railway network (Salerno-Reggio Calabria)				0	#####	4 Q 2026					
Investment 1.2: High-speed lines in the North connecting to Europe		High-sped railway network (Brescia-Verona-Vicenza)	high speed/high capacity network km built		Km	0	0.0	4 Q 2023	Rete Ferroviaria Italiana	Ministry of Infrastructures and Transport	Conclusion of the process of award of works contracts (permissions, tenders, contracts) and implementation of 180 km of AV/AC network before 4 Q 2026.		
		High-sped railway network (Liguria-Alpi)											
		High-sped railway network (Verona-Brennero - opere di adduzione)				0	#####	4 Q 2026					
Investment 1.3: Diagonal connections		High-sped railway network (Roma-Pescara)	high speed/high capacity network km built		Km	0	0	4 Q 2023	Rete Ferroviaria Italiana	Ministry of Infrastructures and Transport	Conclusion of the process of award of works contracts (permissions, tenders, contracts) and implementation of 67 km of AV/AC network before 4 Q 2026.		
		High-sped railway network (Orte-Falconara)									NOTA: non disponibile KPI realizzazione (Orte-Falconara)		
		High-sped railway network (Taranto-Metaponto-Potenza-Battipaglia)				0	66.9	4 Q 2026					
Investment 1.4: Introducing the European Rail Transport Management System (ERTMS)			Km of network on which ERTMS is introduced		Km	0	800	4 Q 2023	Rete Ferroviaria Italiana	Ministry of Infrastructures and Transport	800 Km of network on which ERTMS is introduced before 4 Q 2023	Effectiveness in the compliance with implementation timing / foreign operators do not ensure the same level of upgrading in the train technological system	Quarterly monitoring by the Ministry of Infrastructures and Transport
							3,400	4 Q 2026			Additional 2.600 Km of network on which ERTMS is introduced before 4 Q 2026		
Investment 1.5: Strengthening metropolitan nodes and key national links	Technological development and infrastructural upgrading of key nodes		Progressive upgrading of nodes in the 12 metropolitan cities	*reduction of bottlenecks for the development of passenger and freight traffic / technological upgrading of congested sections / consruction and upgrading of stations*	Km	0	100	4 Q 2023	Rete Ferroviaria Italiana	Ministry of Infrastructures and Transport	100 Km of network upgraded before 4 Q 2023	Effectiveness in the compliance with implementation timing / environmental permit release timing	Quarterly monitoring by the Ministry of Infrastructures and Transport
							500	4 Q 2026			Additional 400 Km of network upgraded before 4 Q 2026		
	Technological development and infrastructural upgrading of key links		Progressive upgrading of railway lines	*performance adjustment / speed up lines and plants/ Doubling - quadrupling of congested lines*	Km	0	800	4 Q 2023	Rete Ferroviaria Italiana	Ministry of Infrastructures and Transport	800 Km of network upgraded before 4 Q 2023	Effectiveness in the compliance with implementation timing / environmental permit release timing	Quarterly monitoring by the Ministry of Infrastructures and Transport
							2,000	4 Q 2026			Additional 1.200 Km of network upgraded before 4 Q 2026		
Investment 1.6: Strengthening regional lines			Upgrading of regional railways (management RFI)		Km	0	771	4 Q 2026	Rete Ferroviaria Italiana	Ministry of Infrastructures and Transport	Additional 771 Km of regional railways will be upgraded by RFI before 4 Q 2026	Effectiveness in the compliance with implementation timing / environmental permit release timing	Quarterly monitoring by the Ministry of Infrastructures and Transport
			Upgrading of regional railways (management Regions, Municipalities, ...)		Km	n.a	n.a	4 Q 2026	Regions, Municipalities, ...	Ministry of Infrastructures and Transport		Effectiveness in compliance with the implementation times / implementation times of projects by the Regions and Municipalities	Quarterly monitoring by the Ministry of Infrastructures and Transport
Investment 1.7: Upgrading, electrification and resilience of railways South			Progressive upgrading of railway lines South		Km	0	YYY	4 Q 2026	Rete Ferroviaria Italiana	Ministry of Infrastructures and Transport			Quarterly monitoring by the Ministry of Infrastructures and Transport
Investment 1.8: Upgrading railway stations in the South			Progressive upgrading railway stations in the South		n°	0	55	4 Q 2026	Rete Ferroviaria Italiana	Ministry of Infrastructures and Transport			Quarterly monitoring by the Ministry of Infrastructures and Transport
Investment 1.9: Renewal rolling stock			Nr. of polluting vehicles substituted (rail)		n°	0	XXX	4 Q 2026	Ferrovie dello Stato	Ministry of Infrastructures and Transport	Nr. of polluting vehicles substituted (rail)		Semestral monitoring by the Ministry of Infrastructures and Transport
Implementation of a dynamic monitoring system to control remotely the bridges, viaducts and tunnels (A24-A25)			Number of controlled viaducts, bridges and tunnels		n° viaducts	0	75	4 Q 2022	Highway Concessionaires	Ministry of Infrastructures and Transport	dynamic monitoring system in 75 viaducts before 4 Q 2022	In depth analysis of the needs / administrative permits release timing	Quarterly monitoring by the Ministry of Infrastructures and Transport
							151	4 Q 2026			dynamic monitoring system in additional 76 viaducts before 4 Q 2026; maintenance work on the most critical bridges		
					n° tunnels	0	28	4 Q 2026			dynamic monitoring system in 28 tunnels before 4 Q 2026; maintenance work on the most critical tunnels		
Implementation of a dynamic monitoring system to control remotely the bridges, viaducts and tunnels (ANAS network)			Number of controlled viaducts, bridges and tunnels		n° viaducts	0	#####	4 Q 2026	ANAS - Highway Concessionaires	Ministry of Infrastructures and Transport	dynamic monitoring system in 12.000 viaducts before 4 Q 2026	In depth analysis of the needs / administrative permits release timing	Quarterly monitoring by the Ministry of Infrastructures and Transport
					n° tunnels	0	1,600				dynamic monitoring system in 1.600 tunnels before 4 Q 2026		

6. Financing and costs

Component		Investment/Reform	Relevant time period	Total estimated costs for which funding from the RRF is requested (mn EUR)	If available: Total estimated cost by year (mn EUR)							Funding from other sources				COFOG level 2 category / or type of revenue
												from other EU programmes		from the national budget	Other sources	
					2020	2021	2022	2023	2024	2025	2026	mn.bn nat. currency	specify the EU programmes and breakdown by programme if relevant			
High speed/capacity railway network	Investment 1.1: High-speed railway connections to the South for passengers and freight	High-speed railway network (Napoli - Bari)	2020-2026	1,400	27	76	168	262	247	269	351	-	-	-	-	04.5.3
		High-speed railway network (Palermo-Catania)	2020-2026	1,440	18	22	110	162	200	266	662	-	-	-	-	04.5.3
		High-speed railway network (Salerno-Reggio Calabria)	2020-2026	1,800	-	20	146	399	365	304	566	-	-	-	-	04.5.3
	Investment 1.2: High-speed lines in the North connecting to Europe	High-speed railway network (Brescia-Verona-Vicenza)	2020-2026	3,670	152	341	710	916	900	396	255	-	-	-	-	04.5.3
		High-speed railway network (Liguria-Alpi)	2020-2026	3,970	398	532	724	786	836	559	135	-	-	-	-	04.5.3
		High-speed railway network (Verona-Brennero - opere di adduzione)	2020-2026	930	-	8	20	126	174	280	322	-	-	-	-	04.5.3
	Investment 1.3: Diagonal connections	High-speed railway network (Roma-Pescara)	2020-2026	620	-	2	16	57	125	186	234	-	-	-	-	04.5.3
		High-speed railway network (Orte-Falconara)	2020-2026	510	-	1	27	61	94	128	199	-	-	-	-	04.5.3
		High-speed railway network (Taranto-Metaponto-Potenza-Battipaglia)	2020-2026	450	2	6	9	57	84	116	176	-	-	-	-	04.5.3
	Investment 1.4: Introducing the European Rail Transport Management System (ERTMS)		2020-2026	2,970	-	78	271	425	563	705	928	-	-	-	-	04.5.3
	Investment 1.5: Strengthening metropolitan nodes and key national links	Technological development and infrastructural upgrading of key nodes	2020-2026	2,970	48	145	224	350	436	500	467	-	-	-	-	04.5.3
		Technological development and infrastructural upgrading of key links	2020-2026		48	98	112	125	132	134	151	-	-	-	-	04.5.3
	Investment 1.6: Strengthening regional lines		2020-2026	2,670	n.a.							-	-	-	-	04.5.3
	Investment 1.7: Upgrading, electrification and resilience of railways South		2020-2026	2,400	n.a.							-	-	-	-	04.5.3
	Investment 1.8: Upgrading railway stations in the South		2020-2026	700	n.a.							-	-	-	-	04.5.3
	Investment 1.9: Renewal rolling stock		2020-2026	200	-	40	40	40	40	40	-			-		04.5.3
Safe road	Investment 2.1: Implementation of a dynamic monitoring system to control remotely the bridges, viaducts and tunnels (A24-A25)		2020-2026	1,150	n.a.							-	-	1,990	State source	04.5.1
	Investment 2.2: Implementation of a dynamic monitoring system to control remotely the bridges, viaducts and tunnels (ANAS network)		2020-2026	450	-	25	50	100	100	150	75	-	-	-	-	04.5.1

2 M3C2 - Intermodality and integrated logistics

Summary box

Policy area: Ports and Airports

Objectives: The objectives of this component are to: (i) strengthen the competitiveness of the Italian port system through an integrated development of intermodal infrastructures and last mile connections; (ii) ensure the environmental sustainability and energy efficiency of ports; (iii) digitalize the logistic supply chain and air traffic management systems; (iv) reduce emissions linked to the movement of goods.

Investments focused on improving seaside and digital accessibility, port capacity, energy efficiency, and intermodal connections, will be combined with reforms aimed at increasing strategic planning, a single Customs portal, an interoperable digital platform, and a review of the regulation regarding port concessions. The focus will be on ports that are part of the Integrated National Transport System (SNIT), with a priority on the TEN-T nodes. In addition, the component includes investments in the digitalization of airports to manage air traffic in an environmentally sustainable way. The above objectives are in line with the nationwide strategy on mobility outlined in "#ItaliaVeloce".

The component champions the European Flagship 'Recharge and refuel' by promoting the electrification of docks at numerous ports (cold ironing project). By 2026, the proposed investments will ensure the electrification at 41 ports.

Twin transition: By supporting the electrification of quays, renewable energy sources and energy efficiency measures in port areas and the shift to rail transport, as well as the digitalization of port and airport traffic management systems, this component promotes both the green and the digital transition.afety and climate resilience, this component promotes both the green and the digital transition.

Jobs and growth: By improving the competitiveness and productivity of Italian ports this component is expected to support an increase of passengers (56 million in 2019, including 12 million from cruise ships) and freight volumes (479 million tons in 2019), thereby creating jobs and contributing to growth at local and national levels. Jobs will be created not only in port areas but also inland along the logistic value chains.

Social resilience: The Covid pandemic has highlighted the importance of a resilient transport and logistic system, which continues functioning and transporting goods, medicines and food even during lockdown phases. The proposed investments in the capacity, productivity and environmental sustainability of key transport nodes (ports and airports) are hence important to support social resilience. The component also includes investments in numerous ports in Southern Italy (with a focus on Naples, Salerno, Cagliari, Manfredonia, Taranto, Brindisi, Palermo, Catania, Trapani, Messina, Milazzo, Villa San Giovanni and Reggio Calabria) thereby contributing to social cohesion.

Reforms and investments:

Outcome 1: Improve the strategic planning process of ports and the award of concessions in port areas.

Reform 1.1: Simplification of the procedures for the strategy planning process.

Reform 1.2: Regulation defining the competitive award of concessions in port areas.

Outcome 2: Improve seaside accessibility, increase capacity and establish last-mile intermodal connections of Italian ports.

Investment 2.1: *Seaside accessibility and resilience to climate change*: ports of Genoa, Vado Ligure, Marina di Carrara, Civitavecchia, Naples, Salerno, Brindisi, Taranto, Manfredonia, Palermo, Catania and Venezia.;

Investment 2.2: *Capacity increases*: ports of La Spezia, Venice, Trieste, Ravenna, Naples, Salerno, Cagliari, Brindisi and Trapani.;

Investment 2.3: *Last mile rail/road connections*: ports of Venice, Trieste, Civitavecchia, Ancona, Naples and Salerno;

Investment 2.4: *Increase in energy efficiency*: ports of Messina, Milazzo, Villa San Giovanni and Reggio Calabria.;

Outcome 3: Increase the digitalization of transport and logistic services, simplifying custom procedures.

Reform 3.1: Implementation of a Single Customs Window ("Sportello Unico Doganale");

Reform 3.2: Establishment of a National Strategic Platform (UIRNET) for the network of ports, in order to introduce the digitalization of passenger and freight services;

Reform 3.3: Simplification of logistics procedures and document digitization, through the adoption of an electronic "*Convention relative au contrat de transport international de marchandises par route*" (CMR) to freight shipments;

Investment 3.1: The digitalization of the logistic chain;

Investment 3.2: The digitalization of air traffic management;

Outcome 4: Reduce GHG emissions by increasing electrification, energy efficiency and renewable energy use.

Reform 4.1: Simplify authorization procedures to provide electricity to piers ;

Investment 4.1: Electrification of piers (Cold ironing);

Investment 4.2: Green ports: renewable energy and energy efficiency interventions at ports.

Estimated costs:

Cost of EUR 3,680 million to be covered by RRF

M3C2 - Intermodal connections and integrated logistics					
	Resources (euro/mld)				
	Existing	**New**	**Total**	**REACT-EU**	**TOTAL NGEU**
	(a)	**(b)**	**(c) = (a)+(b)**	**(d)**	**(e) = (c) + (d)**
Integrated project "Ports of Italy"	**0.48**	**2.84**	**3.32**	**-**	**3.32**
- Ports and intermodal connections to the great European and national communication routes and development of ports in southern Italy	*0.48*	*1.62*	*2.10*	*-*	*2.10*
- Green Ports and Cold ironing	*-*	*1.22*	*1.22*	*-*	*1.22*
Digital innovation of airport systems and of logistics systems	**-**	**0.36**	**0.36**	**-**	**0.36**
TOTAL	**0.48**	**3.20**	**3.68**	**-**	**3.68**

2. Main challenges and objectives

a) Main challenges

- The competitiveness of the Italian Port system: according to the Logistic Performance Index elaborated by the World Bank – which considers the time and costs of logistic systems, as well as the transparency, quality and reliability of the services offered – in 2019 Italy ranked 19th in the World, with the first three countries being Germany, Sweden and Belgium. Even if in terms of distance to market, Italian ports could be competitive for trade between Europe and the Far East, over recent years they have lost market shares, also towards other Mediterranean ports. The perception among the big shipping companies is that Italian ports do not offer a reliable logistic system, which leads them to prefer other ports, even if located further away. The higher travel costs to these ports are compensated by the lower handling costs and times, and by better railway connections to the production/consumption centres.
- Economies of scale of ports: with the traffic of mega-container ships growing, another element that large shipping companies consider when choosing among ports is their capacity in terms of access and logistics, and hence the possibility to benefit from economies of scale, in order to reduce the unit cost per ton of merchandise handled. Ports in Northern Europe have high levels of capacity and offer a broad set of logistic services (not distinguishing between gateway and transhipment as in the Mediterranean).
- The lack of an updated strategic plan: In line with the provisions of Legislative Decree no. 169 of August 2016 "Reorganization, rationalization and simplification of the discipline concerning Port Authorities pursuant to Law no. 84 of January 28th, 1994", 16 Port System Authorities were created . However, the strategic plans of many of these Port Authorities have not been updated, which has not allowed to reap the benefits that were expected from a more integrated and coordinated system, in which ports could specialize according to their comparative advantages.
- The need to develop port inter-modality and last mile connections: the freight traffic in Italy is typically over land (road or rail) and is not very integrated with sea traffic. Since the extreme points of the freight railway corridors (created with Regulation 913/2010) are typically ports, the resolution of the “last-mile” connections (by rail or road) is key to ensure the competitiveness of Italian ports. In some recent studies of the European Commission and in the Strategic National Plan of Ports and Logistics, the key bottlenecks that impede a quick connection of the national railway lines with the port infrastructures are mentioned: inadequate length and number of the railway tracks, excessive distance of the tracks from the piers and high costs of handling operations at ports.
- The need to upgrade the digital infrastructures and services at ports and airports:

the logistic inefficiencies of Italy have been estimated to have a cost of around EUR 70 billion per year , of which EUR 30 billion are linked to bureaucratic costs and digital delays. The development of digital systems is hence considered to be key to improve the efficiency of logistic operations and to allow an efficient management of the flow of information linked to the flow of goods. Over recent years Italian ports and logistic operators have established Port Community Systems (PCS), which manage the electronic flow of documents and commercial information related to port operations, facilitating the interaction between the various stakeholders (terminal and transport operators, and customs). Concerning airports, a higher level of digitalization could contribute to better traffic management, reducing the fuel consumption of airplanes and the related environmental impact.

- The environmental impact and sustainability of ports: it is necessary to reduce the environmental footprint and pollution caused by ports, which are often located close to city centres with a negative impact on air quality. This can be achieved by developing the electrification of the piers (*"cold ironing"*) and improving the energy efficiency of operations and increasing the renewable energy sources (*"Green ports"*).

The objectives of the component are to:

(i) strengthen the competitiveness of the Italian port system through an integrated development of intermodal infrastructures and last mile connections;
(ii) ensure the environmental sustainability and energy efficiency of ports;
(iii) digitalize the logistic supply chain and air traffic management systems;
(iv) reduce emissions linked to the movement of goods.

These objectives will be pursued by:

- supporting an interconnected port system with adequate economies of scale to develop trade flows, both between Europe and Far East and within Mediterranean;
- offering an effective, digital and reliable logistic system for transport to/from final destinations;
- realizing systemic interventions at ports, that include both seaside accessibility and last-mile land connections;
- considering ports not only as transit points, but as integrated local development nodes, both for local industries and value chains as well as for tourism.

The interventions will focus mainly on ports that are connected to the TEN-T corridors. The ports in the North of Italy are key strategic gateways for the oceanic trade flows of Italy and Europe, in particular with the Near and Far East. Ports in the Centre and South instead aim their activity at the inter-Mediterranean trade flows, facing a growing competition of the ports of North Africa. In particular, the accessibility and connectivity of ports in the Centre and South needs to be improved in order to stimulate local value chains. In this respect, the creation and development of Special Economic Zones in the South of Italy will provide incentives for the location of production and logistic centres

close to ports.

Twin transition:

The proposed investments in energy efficiency and renewable energy sources (Green ports) and electrification (cold ironing) of ports will result in a reduction of GHG emissions. In parallel, the digitalization of port and airport traffic flows and logistics will increase the productivity, predictability and efficiency of operations, hence reducing congestion and pollution levels.

Jobs and Growth:

In 2019 Italian ports have handled 479 million tons of freight (mainly liquid goods representing 38%, followed by containers 23%, Ro-Ro 22%, and solid goods 12%) and 56 million passengers. The value of the economic contribution of ports to the Italian GDP is estimated to be EUR 8.1 Billion. Italy is currently a market leader in short sea shipping, with a market share of 39% in the Mediterranean (246 million tons in 2019), and also for cruise ships passengers (12 million). The proposed investments aim at improving Italy's competitive position in the Mediterranean and hence increasing passenger and freight traffic levels, while ensuring that the envisaged growth is environmentally sustainable. The investments foreseen will have important spill over effects along the logistic value chains and are expected to safeguard local jobs and stimulate private investments (by terminal and logistic operators).

c) National strategic context

The component is well aligned with the priorities of the National strategy for ports, which are outlined in the document "#ItaliaVeloce". In particular, the component is focused mainly on ports included in the Integrated National Transport System (SNIT).

Following the recent reorganization and rationalization of the Port Authorities (based on Legislative Decree 169/2016), the 1st level nodes of the SNIT cover 16 Port System Authorities, which in turn include 58 ports of significant international and national interest. In addition, the national port system also includes the category I seaports referred to in article 4 of Law 84/1994, that is ports for military defence and state security, and 217 minor ports of call dedicated mainly to pleasure boating, fishing and the transport of local passengers and tourists.

The strategy defined by "Italiaveloce" identifies the following priorities, with the objective to make ports increasingly more green, digital and resilient:

- The last mile connection (with railway where possible, otherwise road);
- The accessibility from the sea, allowing the access of larger sized ships;
- The selective increase of port land side capacity, especially for Ro-Ro and containers;
- The energy efficiency and environmental sustainability of the ports;
- The digitalization of port logistics and ICT;

- The development of industrial activities in ports;
- The development of waterfronts for cruise ships and touristic purposes.

The component proposed under the RRF follows the above priorities. The investments aiming at electrification, energy efficiency, and digitalization regard numerous ports (up to 41 in the case of cold ironing, of which 39 are part of the TEN-T network). Larger sized investments related to seaside accessibility, landside capacity increases and/or last mile connections concern 23 individual ports: 10 ports in the North/Center of the country (Savona, Genoa, La Spezia, Civitavecchia, Trieste, Venice, Piombino, Ravenna, Marina di Carra and Ancona) and 13 ports in the South (Naples, Salerno, Cagliari, Manfredonia, Brindisi, Taranto, Messina, Milazzo, Villa San Giovanni and Reggio Calabria, Catania, Palermo and Trapani).

As stated in the document "#ItaliaVeloce", in the programming and planning process of transport infrastructure projects, quantitative assessment tools are used by the Ministry of Infrastructure and Transport to forecast mobility demand and estimate the level of infrastructure use, as well as the impact of changes in economic and territorial development with a view to integrated "transport-territory" planning. The proposed investments have been selected by the MIT, giving priority to those works which can be completed within the timeframe required by the RRF.

3. Description of the reforms and investments of the component

1) Improve the strategic planning process of ports and the mechanism for awarding concessions in port areas.

Reform 1.1: Simplification of the procedures for an update of the strategy planning process.

Challenges: The planning documents of many Port Authorities are outdated and do not take into account the reform of the Italian port system (implemented in 2016). Only a minority of the 16 Port Authorities have drafted the Document for Strategic Planning (DPSS). The delays in the development of the strategic plans do not allow to update the individual Port Master Plans (PRPs).

Objectives: A strategic and systemic vision of the Italian port system is needed, based on an update of the Documents for Strategic Planning (DPSS) and of the Port Regulatory Plans (PRP). The DPSS defines the development objectives of the Port System Authorities; it identifies the areas dedicated to port activities and retro-port functions, the areas of port-city interaction and the last mile road and rail interconnections, as well as the crossings of the urban center. In addition, the DPSS identifies the rules and procedures for the drafting of the individual port master plans.

Implementation: The Ministry of Infrastructure and Transport will formulate a proposal to simplify the norms concerning the port planning process, in order to allow ports

to adopt and adapt their plans quickly and without procedural uncertainties. In particular, the MIT will propose some changes to the current regulatory text aimed at: (i) simplifying the approval procedures of the DPSS and better defining its contents; (ii) streamlining the approval procedures of PRPs; (iii) providing for a clear hierarchy of planning acts, avoiding the coexistence of several plans insiting on the same perimeter; (iv) rationalizing the need for variants and technical functional adjustments of the plans.

Target population: the Port Authorities.

Timeline: regulatory change by 4Q 2021.

Reform 1.2: Implementation of a regulation defining the competitive award of concessions in port areas.

Challenges: There are delays in the implementation of the 1994 reform, which foresaw the issuing of a Regulation on concessions (article 18, paragraph 1 of Law no. 84/1994). This regulation is necessary to establish the criteria and conditions for the competitive tender of concessions in ports and to allow an efficient participation of the private sector in port activities.

Objectives: The aim of the regulation is to define the conditions concerning the length of the concession, the supervisory and control powers of the conceding authorities, the renewal procedures, the transfer of the facilities to the new concessionaire upon expiry of the concession, and the identification of the minimum fees that the concessionaires will be required to pay.

Implementation: The criteria for awarding concessions are to be defined by a specific decree of the Minister of Infrastructure and Transport (MIT), in agreement with the Minister of the Economy and Finance (MEF). To date, the MIT has issued a special circular dated 5 February 2018, which established specific technical and economic criteria to be used by the conceding entities to compare applications for the granting of the concessions. These criteria have been incorporated into the regulations for the use of the maritime domain by the Port System Authorities. The finalization of the regulation on concessions however requires further iterations between MIT and MEF.

Target population: companies in the maritime and intermodal freight sector.

Timeline: To be defined.

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2) Improve seaside accessibility, capacity and last-mile intermodal connections of Italian ports.

Investment 2.1: Developing seaside accessibility and resilience of port infrastructures

to climate change.

Challenges: In recent years, the Italian port system has lost market shares, especially with respect to competitors in North Africa and the East Med, in part due to lower reliability and productivity, but also due to lower maritime accessibility.

Objectives: The objective of the proposed investments is to improve maritime accessibility through strengthening and consolidation works on dykes, docks, piers and quays, thereby allowing Italian ports to adapt to the increasing tonnage of ships.

A flagship project in this regard is the one related to the port of Genoa, where the construction of a new breakwater is planned, which will allow the access of larger new generation ships, the protection of the inner port areas and the raising of the safety levels of entry and internal maneuvers. The expected increase of scale of the ships handled will allow to activate private investments on the land side and a more intensive use of the existing and envisaged operating terminals. The handling and exit of the goods will be facilitated by the fact that the port of Genoa is connected by rail to the Liguria-Alpes line.

Interventions of a similar nature are planned in the following ports:

- Vado Ligure: first phase of new dam;
- Venice: works of restoration of sea banks;
- Marina di Carrara: new waterfront;
- Civitavecchia: quay extension and new access to the historical basin;
- Naples: extension and completion of the eastern dock - extension of the duca d'aosta dam to protect the new eastern container terminal;
- Salerno: Consolidation and functional adaptation of some piers and quays - extension of Molo Manfredi;
- Brindisi: Completion of the dock in the Capobianco area and realization of dredging reaching -12 m below the sea level;
- Taranto: new breakwater for the protection of the port - eastern and western section;
- Manfredonia: deep-sea pier;
- Catania: consolidation of the breakwater;
- Palermo: consolidation of the quays south of the Piave and S. Lucia piers and adjustment of the Vittorio Veneto quay - consolidation of the breakwater Acquasanta - completion of the outer breakwater of the Arenella harbour.

Investment 2.2: Selective increase in port capacity.

Challenges: Considering the increasing size of both passenger and container ships to reach economies of scale, it is necessary to adjust the capacity of some ports, both sea-side and land-side, in terms of terminals and freight handling facilities.

Objectives: The objective of the proposed intervestments is to increase port capacity, both through dredging works and the development of new piers and/or of new logistic platforms.

A flagship project in this case is the port of Trieste, which has made strategic agreements with important European operators that project the port in the international arena. In particular, the development of the logistic platform and related retroport connections is foreseen, as well as the extension of the common infrastructures to a new area ("Punto Franco Nuovo"). In addition, preparatory works are foreseen for the development of logistic and industrial activities in the Noghere area (integrated with the building of a new port terminal), the dredging of the service channel, the connection to the road system, as well as the functional modernization of the container terminal of Pier VII.

Interventions to increase overall port capacity are also planned in the following ports:

- La Spezia: realization and electrification of the new cruise ship pier;
- Venice: Montesyndial - new container terminal;
- Ravenna: deepening of the canals to -14,50 m and construction of a treatment plant for the excavated materials;
- Naples: enhancement and upgrading of the infrastructures for passenger traffic;
- Salerno: dredging of the commercial port and of the entry channel;
- Cagliari: Works for the realization of the quays of the new Ro-Ro terminal;
- Brindisi: reclamation of land and dredging of the middle harbour;
- Trapani: Dredging works at the outer port and at areas to the west.

Investment 2.3: Last Mile Rail/Road Connections.

Challenges: Many ports in Italy lack an adequate connection with the destination/origin areas of the goods, especially via rail. This makes Italian ports less competitive in the handling of freight and increases congestion and pollution levels in urban centers.

Objectives: The objective of the proposed investments is to complete a series of last mile rail and road connections included in the document #Italiaveloce. In particular, interventions are planned in the following ports:

- Trieste: extension of common infrastructures for the development of a new area ("Punto Franco Nuovo");
- Venice: a new railway bridge over the Western channel, and railway and road works at the node of via della Chimica;
- Civitavecchia: a connecting bridge;
- Ancona: intervention on the northern waterfront with materials of seabed excavation;
- Naples: reorganization of the last mile railway connections and of the road network;
- Salerno: interventions at the "porta ovest".

Investment 2.4: Energy efficiency.

Challenges: The intense traffic of passengers and freight in the Strait of Messina produces a high amount of emissions.

Objectives: The proposed energy efficiency project called "Green Strait" is in line with the Recharge and Refuel flagship area indicated by the European Commission. The project will involve the ports of the Authority of the Strait (Messina, Milazzo, Villa San Giovanni and Reggio Calabria). It will encourage the energy transition of maritime mobility in the Strait, by establishing a coastal LNG depot and providing for the electrification of the quays of the ports.

Implementation: The above mentioned projects 2.1 to 2.4 will be implemented by the Port System Authorities, each according to their own timetable. They are generally works with advanced design levels and with foreseen completion by 3Q2026. In the selection phase of the ports, the MIT required a series of process and result indicators for each port (see details in Table T2). The main milestones are the finalisation of the project design, the publication of the tender for works, the awarding of the works, and the finalisation of the works. Considering that the foreseen investments are numerous and subdivided in various lots, a common and accurate monitoring mechanism will have to be established in order to follow the progress.

Target population: users of 15 Port Authorities.

Timeline: by 3Q2026.

3) Increase the digitalisation of transport and logistic services, simplifying customs procedures.

Reform 3.1: Simplification of import/export operations through the effective implementation of the "Sportello unico doganale"(Customs one stop shop)

Challenges: One of the reasons for the loss of market share of the Italian port system is that it has higher average handling costs and longer handling times compared to other European ports.

Objectives: Creation of a special portal for the "Sportello Unico Doganale", which will allow the interoperability with national databases and the coordination of the control activities by Customs.

Implementation: based on a proposal of the Ministry of the Economy and Finance (MEF), a Presidential Decree (DPR) was prepared, defining the methods and specifications for setting up the "Sportello Unico Doganale". In order to finalise the process, the relevant opinion of the Council of State is awaited.

Target population: users and companies in the maritime and intermodal freight sector.

Timeline: realization of the "Sportello Unico Doganale" by 4Q 2021.

Reform 3.2: Coordination of the National Strategic Platform UIRNET with the network of ports in order to activate the Port Community Systems (PCS).

Challenges: The IT systems developed by the various port authorities are not interoperable, and therefore do not allow the exchange of information necessary for the efficient management of flow of goods.

Objectives: The proposed reform has the objective to make the PCS of the individual Port System Authorities compatible with each other and with the national strategic platform UIRNET. This will allow to increase the digitization of passenger and cargo movements.

Implementation: The project will be implemented under the guidance of a steering committee established at the Ministry of Infrastructure and Transport (MIT), with the participation of representatives of UIRNET, the Port System Authorities, and of the Freight Transport categories. This steering committee will elaborate an agreement between the parties, which will outline the implementation modalities of coordination between the individual IT systems.

Target population: users and companies in the maritime and intermodal freight sector.

Timeline: by 4Q 2023.

Reform 3.3: Simplification of logistics procedures and document digitization, through the adoption of an electronic "Convention relative au contrat de transport international de marchandises par route" (CMR) to freight shipments.

Challenges: The Logistics and Freight Transportation sector is undergoing a profound global transformation due to the boom in the online sales market, which grew at an average annual rate of 22% between 2015 and 2018. The global logistics market has Asia-Pacific as the main region, followed by North America and Europe. The Mediterranean is increasing its centrality in global maritime trade, with Italy having the potential to act as a logistics hub for ships to and from the EU.

The consignment note for international transport of goods, established in 1956 by the CMR Convention (Convention des Marchandises par Route), undersigned by 58 countries, is a document that regulates in a uniform way almost all international transports and certifies their regularity.

In 2008 an Additional Protocol to the CMR Convention was signed (entered into force on