



# ATENA

FUTURE TECHNOLOGY

*SCHEMA PROGETTO*

*Titolo:*

Zero-Emission Civitavecchia Port through a green Hydrogen ecosystem

*Acronimo:*

ZEPHYRO

*Ente Finanziatore:*

HORIZON 2020

*Call:*

2020 Call H2020-LC-GD-5-1-2020, Acion A

*Coordinatore:*

Autorità di Sistema Portuale del Mar Tirreno Centro Settentrionale

*Partner:*

Autoridad Portuaria Bilbao, Heraklion Port Authority AE, Transportwerk Magdeburgen Hafen GMBH, Brussels Research and Innovation Center for Green Technologies, Atena scarl, Enel Green Power spa, Fincantieri SI spa, Fraunhofer Gesellschaft zur Foederung der Angewandten Forschung E.V., Grimaldi Euromed spa, Ethniko Kentro Erevnas Kai Technologikis Anaptyxis, Ikerlan S. Coop., Kiwa Nederland BV, Kiwa Technology BV, Nuovo Pignone srl, SNAM spa, Fundacion Tecnalia Research & Innovation, University of Piraeus Research Center, Wartsila Norway AS

*Durata prevista:*

Data inizio:

Data Fine:

*Budget:*

	Totale	Atena	Parthenope
Budget Progetto	31.799.280	3.396.250	253.750
Agevolazione			

*Stato:*

Proposto

*Obiettivi:*

The energy policy of the European Union includes the need for a secure, sustainable and more efficient energy supply with less dependence on fossil fuels. In turn, the EU transport policy aims to promote clean, safe and efficient mobility, which supports the internal market for goods and the right of citizens to travel freely throughout the EU. Specifically in ZEPHYRO, we will tackle the emissions resulting from activities under the control of the port



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authority and those not under control of the port authorities as 2 clearly defined items, with in a first step (this Green Deal project) large focus on the emissions that are under control of the Port Authority.

The potential solution: Despite numerous privately funded actions, own investments and publicly funded projects aiming for reduction of the emissions in ports and in waterborne transport, the main realizations are limited to impact in one port on a specific set of cases or activities. The solution and real impact of ZEPHYRo is that a holistic approach is developed to realize an energy grid in the port with zero emission and 100% based on RES supplying the relevant use cases in the port with green energy and thus fully eliminating GHG emissions in the port.

The specific target: The challenge of the ZEPHYRo project will be to initiate the process towards zero emission waterborne transport and related activities through demonstration of use cases in the port of Civitavecchia and contribute to a Master plan to realize zero emission by 2050 in the Lighthouse port Civitavecchia and fellow ports Magdeburg, Heraklion and Bilbao.

The overall objective of the ZEPHYRO project is:

- ☑ To realize a GHG emission reduction in the port of Civitavecchia of at least 6.5 kton CO<sub>2</sub> (= 24% emission reduction under control of the PA and 15% on total emissions) by 2026 through the development, implementation, realization and demonstration of a RES-hydrogen based ecosystem in the port, including a set of use cases focused at electrification, H<sub>2</sub> use and energy efficiency through digitalization of the RES and hydrogen introduced activities with the already installed digital platform.
- ☑ To realize a cargo movement transition in the port by converting diesel based machinery, such as forklifts and yard trucks, towards hybrid hydrogen-Fuel Cell technology.
- ☑ To realize a maritime transition connected to the port by enabling the shore connection powered by renewable sources of Ro-Pax Ships.
- ☑ To develop a Master Plan 2022-2050 to work towards a full zero emission and off-grid operating port before 2050 with interim KPIs of respectively 60% by 2030 and 100% by 2040 on emissions under control of the PA and 44, 72 and 100% emission reduction by 2030, 2040 and 2050 overall port emission and to implement the lessons learned and successes in the Fellow and other (European) ports.