



Life3H

Making Hydrogen Valleys a reality

LIFE NETWORKING EVENT

Pisa, 11/04/2024

Project contents overview



The LIFE3H project has received funding from the LIFE Programme of the European Union [LIFE 20 ENV/IT/000575]



GENERAL PROJECT INFORMATION

- **PROPOSAL REFERENCE:** LIFE20 ENV/IT/000575
- **FULL TITLE:** Hydrogen demonstration in city, port and mountain area to develop integrated hydrogen valleys
- **ACRONYM:** LIFE3H
- **CALL / PRIORITY AREA:** LIFE2020 – Environment and Resource Efficiency
- **SECTOR:** Air quality and emissions including urban environment
- **START DATE:** 01/09/2021 - **END DATE:** 31/12/2026
- **BUDGET:** € 8.734.309 – **EU contribution:** € 2.978.671





PARTNERSHIP



SOCIETÀ
CHIMICA
BUSSI S.p.A.



CITRAMS
CENTRO INTERDIPARTIMENTALE
TRASPORTI E MOBILITÀ SOSTENIBILE



Autorità di Sistema Portuale
del Mar Tirreno Centro-Settentrionale

PORTMOBILITY

rampini



Comune di Terni

TUA

TRASPORTO
UNICO
ABRUZZESE



CFFT

COORDINATING BENEFICIARY: Regione Abruzzo

ASSOCIATED BENEFICIARIES

- Società Chimica Bussi Spa
- Centro Interdipartimentale Trasporti e Mobilità Sostenibile - CITRAMS
- Autorità di Sistema Portuale del Mar Tirreno Centro Settentrionale
- Port Mobility S.p.A.
- CFFT
- Rampini Carlo s.p.a.
- Snam 4 Mobility spa
- Comune di Terni
- Società Unica Abruzzese di Trasporto (TUA) spa
- UNeed.IT Srl
- Università degli Studi di Perugia
- Università degli Studi Guglielmo Marconi



[LIFE 20 ENV/IT/000575]

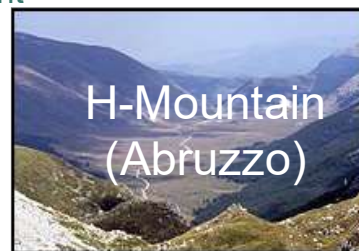
Making Hydrogen Valleys a reality



OBJECTIVES & SCOPE

To set up, demonstrate and exploit 3 Hydrogen Valleys starting from the implementation of H2 buses fueled with surplus H2 coming from local industrial productions thus closing the economical circle locally

- Build up the first 3 Italian HVs laying the basis of one transregional HV
- Develop common & sustainable road LPT mobility reducing emissions based on H2 buses applied to 3 totally different areas and scenarios
- Implement integrated H2 local policies & regulatory approaches
- Increase circular economy
- Develop a HV implementation strategy and a standard smart sustainable mobility management system that allows extension and replication in other sites
- Raise citizens' awareness & improving policy commitment



ACTIONS

Number	Action name	Months
A1	HRS, H2 Supply and BUS design and realization	M1-M43
B1	H-city-port-mountain	M32-M64
C1	Data collection, monitoring, technical and socio-economic analysis	M1-M64
D1	Communication and Public Awareness	M1-M64
D2	Hydrogen Valley growth strategy	M1-M64
E1	Project Management and monitoring of project progress	M1-M64



STAKEHOLDERS & TARGET AUDIENCE

- **34 STAKEHOLDERS** have signed the LOS before the project submission belonging to industries, research centers, international organizations, public administration, etc...

The **involvement of stakeholders in the project activities, replications and exploitation** is a **pillar** of the project and mostly fostered in Actions D.1 and D.2



CONTINUATION – DEDICATED ACTIONS AND PLANS

- **Realization of a strategy for the continuous investment and development of the 3 HVs** - dedicated action (D2. Hydrogen Valley Growth Strategy), where the exploitation strategy is focused (D2.3), as well as a deliverable dedicated to the AfterLife implementation strategy (D5.6, D5.7)
- Dedicated **agreements between the project partners**
- **Replicability in two new sites** (subaction D2.2)
- **MOU** between the **three Regions** (subaction D2.3)
- Continuous involvement of **stakeholders**
- **Integration and coordination** of initiatives, strategies and funding



CONTINUATION – DEDICATED FUNDING

LIFE3H is able to activate a virtuous circuit of attraction of public and private financial resources for the sustainability of the HVs:

- The funds of the Italian Ministry of Infrastructures and Transport for the implementation of the **National Strategic Plan for Sustainable Mobility** (PSNMS, approved with Dpcm of 24 April 2019, no. 1360);
 - **PNRR funds**. 57 mld have been foreseen for the mission named “green transition” which clearly includes hydrogen between its main actions (production and use in industry and transport, realization of refuelling stations, research);
 - The **2021-2027 Structural Funds**, with particular attention to fund related to the following priorities: Smarter Europe; Greener carbon free Europe; More connected Europe;
 - At **EU level**, main funds suitable for hydrogen based activities and projects are: Horizon Europe; CEF; Innovation Fund;
 - **Synergie between public and private partners** and between **regions / public administrations**.
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EXPECTED IMPACTS AT THE END OF THE PROJECT

1. Air pollutants (PM, CO, Nox) can be reduced in total **8.992 kg/year** – **90.020 kg/year**
2. CO₂ emissions can be reduced **954 t_{eq}/year** – **9.543 t_{eq} /year**
3. Energy consumption can be reduced **2.653 MWh/year** - **26.538 MWh/year**

TIMELINE	KEY INDICATOR	Estimated Impact	BRIEF DESCRIPTION
AT THE END OF THE PROJECT	PM	146 kg/year	Emissions avoided are related to the mean emissions of present Diesel bus. With H2 buses emissions are completely avoided.
	CO	2.827 kg/year	
	NOx	6.019 kg/year	
	CO2 emissions avoided	954 tons/year	
	Reduced energy consumption	2.653 MWh/year	Since hydrogen buses are more efficient, there will be a general reduction of energy consumed
5 YEARS AFTER THE PROJECT	PM	1.460 kg/year	After 5 years the number of buses is expected to reach 60 buses
	CO	28.370 kg/year	
	NOx	60.190 kg/year	
	CO2 emissions avoided	9543 tons/year	
	Reduced energy consumption	26.538 MWh/year	

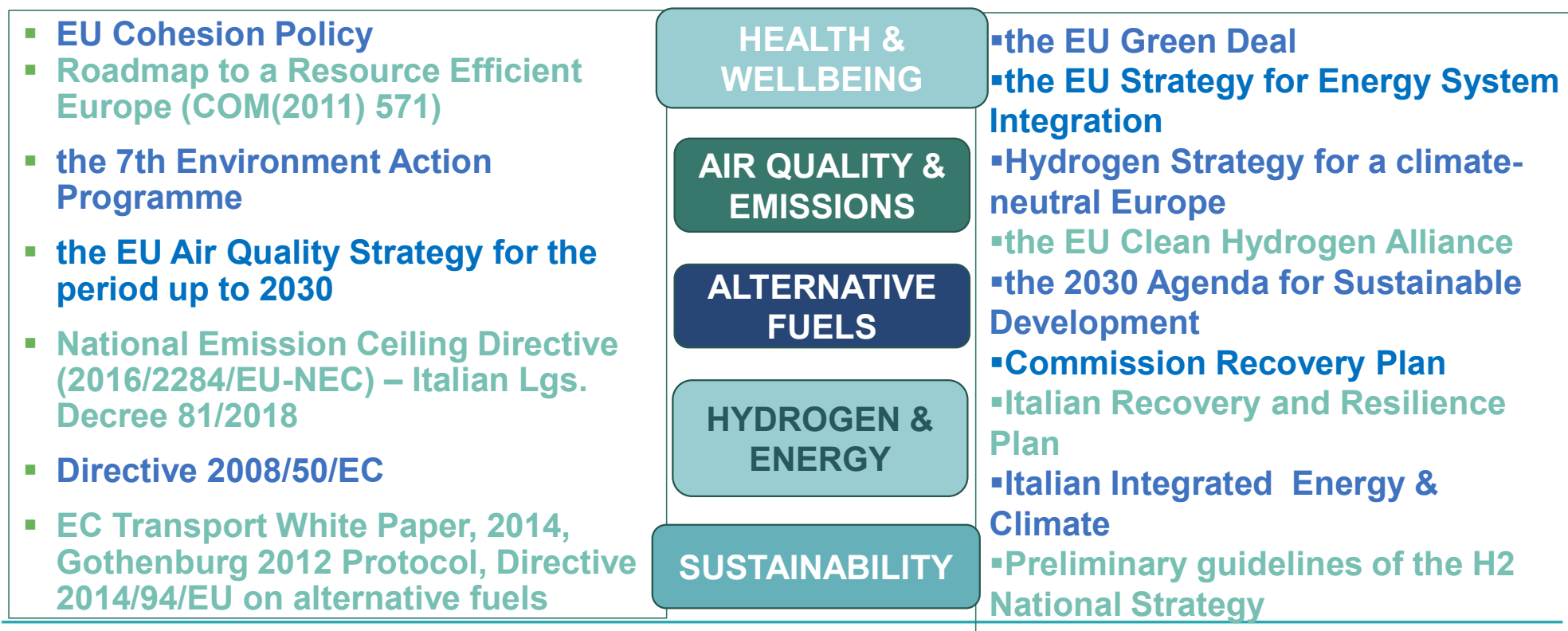


EXPECTED IMPACTS AT THE END OF THE PROJECT

TIMELINE	KEY INDICATOR	Estimated Impact	BRIEF DESCRIPTION
AT THE END OF THE PROJECT	EMPLOYMENT – jobs created	35	3 HRSs operators for each sites, total of 9; 2 maintenance staff for FCBs and HRSs for each sites, total of 6; 3 site manager (one for each demo); 4 FCBs drivers (only in Abruzzo the line is new); 3 designers, for FCBs and HRSs; 10 workers to build FCBs and HRSs.
	N. OF REPLICATION SITES	2	Involved regions or new regions
	MARKET SIZE IN NUMBER OF CUSTOMERS	600.000	Estimated bus passengers
	AWARENESS RAISING - Number of entities/individuals reached/ made aware	605.000	Students, their families, events, notice board
	WEBSITE	48.000	
	STAKEHOLDERS INVOLVED	100	
5 YEARS AFTER THE PROJECT	EMPLOYMENT – jobs created	120	
	N. OF REPLICATION SITES	4	
	MARKET SIZE IN NUMBER OF CUSTOMERS	30.000.000	Estimated bus passengers
	AWARENESS RAISING - Number of entities/individuals reached/ made aware	1230000	
	WEBSITE	72.000	
	STAKEHOLDERS INVOLVED	200	



POLICY IMPLICATIONS AT EU & NATIONAL LEVEL AND ...



AT LOCAL & REGIONAL LEVEL ...

AIR QUALITY & EMISSIONS

- **Regional Air Quality Plans (Abruzzo, Umbria, Lazio)**
- **ARPA/ARTA (Regional Agencies for the Environment) air quality monitoring networks**
- **the Energy and Environmental Planning Document (DEASP) of Port Authority (PAC) concerning with mobility, energy and air quality policies and which highlights the monitoring data by ARTA and the production and use of green hydrogen in the port area.**

MOBILITY

- **The Integrated Regional Transport Plan of Abruzzo Region (PRIT)**
- **PUMS (Urban Plan of Sustainable Development) adopted by municipalities (L'Aquila and Pescara in Abruzzo; Terni in Umbria and Rome in Lazio)**
- **The Regional Strategy on Sustainable Development, which is under realization at Abruzzo and Umbria Regions and which has been approved by Lazio Region**

Thanks to ALL

UNEEDIT

