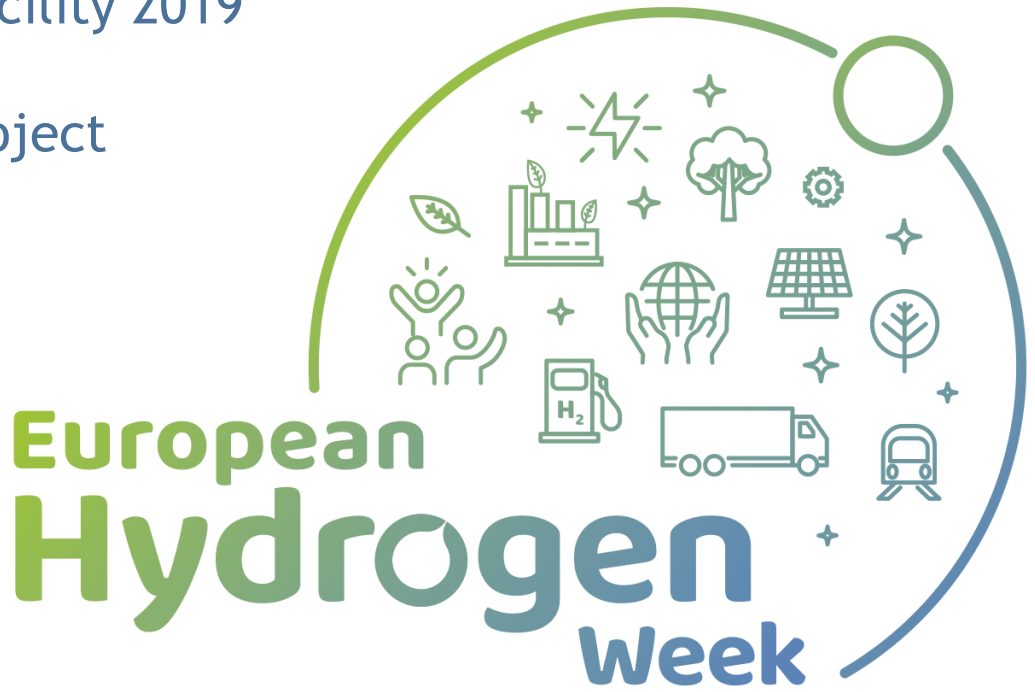
Connecting Europe Facility 2014-2020

Transport Blending Facility 2019

MULTICIT'HY Project



Stéphane MANGINOT,

HYNAMICS – EDF Group

Business development unit

Head-of H2 mobility projects

stephane.manginot@hynamics.com

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MULTICIT'HY Project Overview

Call year: 2019

Call topic:
Connecting Europe Facility – Transport calls for proposals – **CEF-T-2019-MAP-BF-AF-2**

MULTICIT'HY

Project dates:
01/06/2021 - 31/12/2023

Total project budget:
44 538 000 €

% stage of implementation
01/11/2021:20 %

FCH JU max. contribution: NA.
CEF financial contribution: 8 907 600 €

MULTICIT'HY Project in a Nutshell

Overall context

In line with the Paris Agreement, with the objective to keep the global temperature increase to well below 2°C and pursue efforts to keep it to 1.5°C, EU 2030 Climate Target Plan aim to reduce GHG emissions at least 55% below 1990 levels by 2030 and to reach carbon neutrality toward 2050.

Transport (heavy vehicles, buses, trucks) is a major target sector, which has grown significantly since the 1990s, and now accounts for 29 % of total CO_2 emissions in France (2018).

Low-carbon hydrogen and fuel-cell vehicles hold thus a strong potential for zero-emission mobility to meet climate neutrality objective in 2050. Although hydrogen production technologies are quite mature, they are far from being mainstream and there is a current lack of infrastructure for store, transport and distribution of H_2 : It became crucial to address H_2 production scaling-up and those infrastructure to fulfill this growing need.

H_2 ecosystem deployment and uses are also essential, as heavy-duty vehicles H2-powered are still limited.

MULTICIT'HY Project in a Nutshell

Specific objectives

Objective of MULTICIT'HY Project is to deploy 4 electricity-based hydrogen refueling stations in key sections of the the Ten-Tec Core Network and targeting primarily public transportation and heavy-duty transport

- Aggregate the local demand for H2-powered mobility in key areas of TenTec Corridors and in the Core Network
- Initiate the development of 4 H2 mobility ecosystems
- Maximize HRS usage : Targeting heavy-duty transport and public transportation
- Implement standardized H2 infrastructure delivery model
- Minimize GHG emissions with low-carbon H2 supply
- Improve air quality and reduce transport-related noise pollution

MULTICIT'HY Project in a Nutshell

Locations along TenTec Core Network and market areas

Creation of 4 replicable local hydrogen ecosystems based on multi-uses deployment

- **Belfort**

North Sea Mediterranean Corridor
Production : 1MW
Uses: Buses, other.

- **Nice**

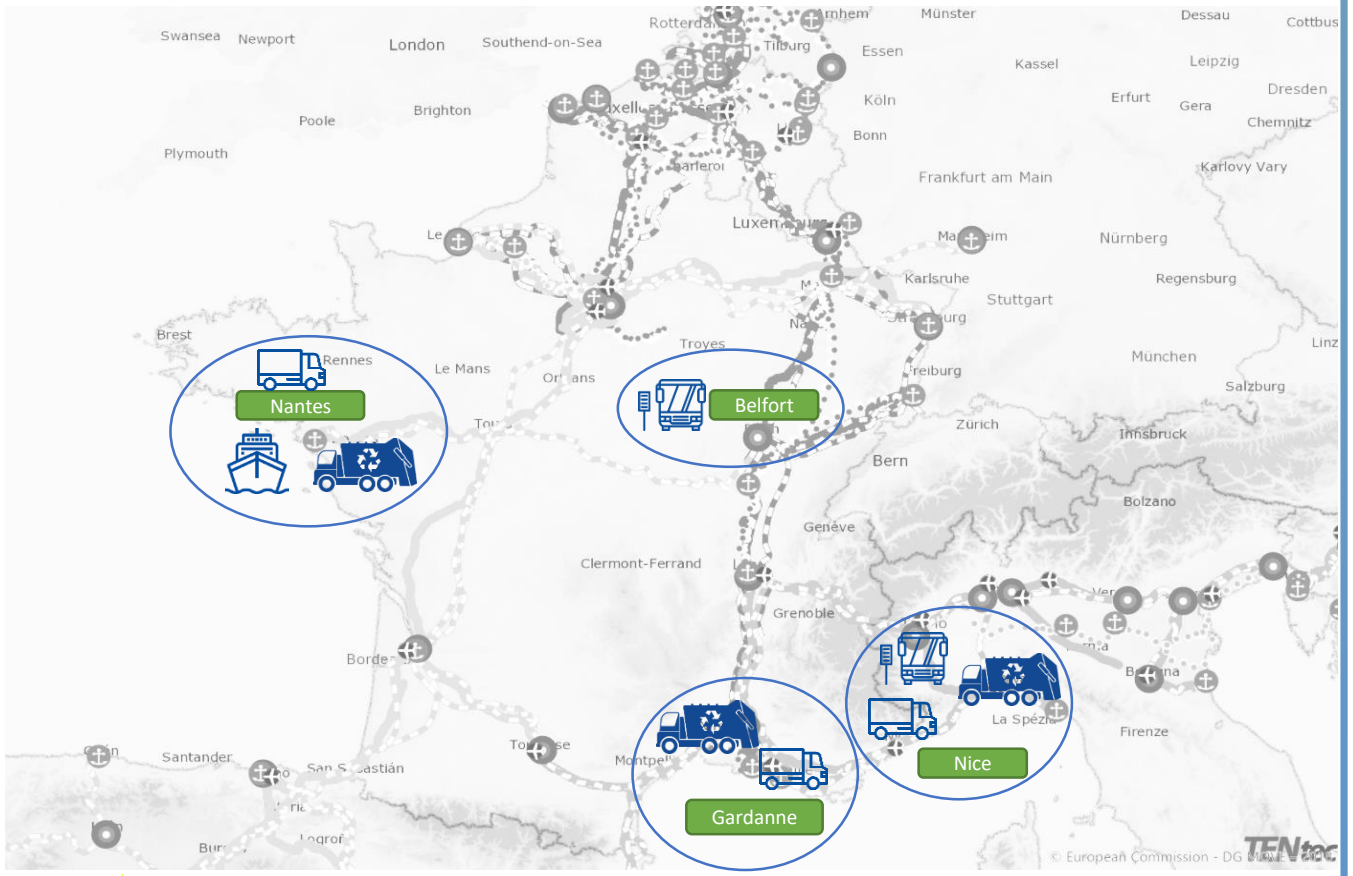
Mediterranean Corridor, Core Network and industrial complex
Production: 2MW
Uses: Buses, Trucks, Waste Collection, other.

- **Nantes – Saint Nazaire**

Alantic corridor, Core Network, Port
Production : 4MW
Uses: Trucks, Waste collection, Waterborne, other.

- **Gardanne**

North Sea Mediterranean Corridor
Production : 1MW
Uses: Trucks, Waste collection, other.



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MULTICIT'HY: Scope of activities

4 main activities for the overall sites

- **Activity 1**
  - Power Supply
- **Activity 2**
  - On-site hydrogen production
- **Activity 3**
  - Hydrogen compression, storage and delivery
- **Activity 4**
  - Monitoring and control systems

On-site H2 production, compression, storage and delivery

Objectives and work plan

Achievement to-date

20%

- 4 electrolysis units installed
- 4 operational HRS

- Objectives:
  - To install 8 MW electrolytic H2 units on the 4 sites
  - To deploy 4 HRS providing a total of 16 H2 supply points on the TEN-T Corridors with a 4,8 tons total storage capacity

- Tasks:
  - Delivery, installation and integration of the full electrolysis system (BoP: power supply, automation, control and command system, cooling, water treatment, dehumidification, purification systems, etc.)
  - Installation of low-pressure buffer storage to optimize hydrogen supply and high pressure storage and H2 dispensers
  - ✓ Publication of tenders for electrolysis compression, storage and delivery systems

On-site H2 production, compression, storage and delivery

Achievements: MULTICIT'HY site configuration

Belfort site plan

Risks, Challenges and Lessons Learned

Target multi-uses sites is crucial to ensure project viability

- Long-term fastened H_2 production and consumption (trucks, waste collection, waterborne, buses, vans, etc.) because H2 needs will increase
- Massive production will lead to reduce the cost of H2 production and thus minimize initial investment, standardising roll-outs and alleviating the overall project risks
- Cities located on transport axis with strong industrial activities are strategics because there is a high H2 needs that could catalyze local H2 ecosytems implementation.

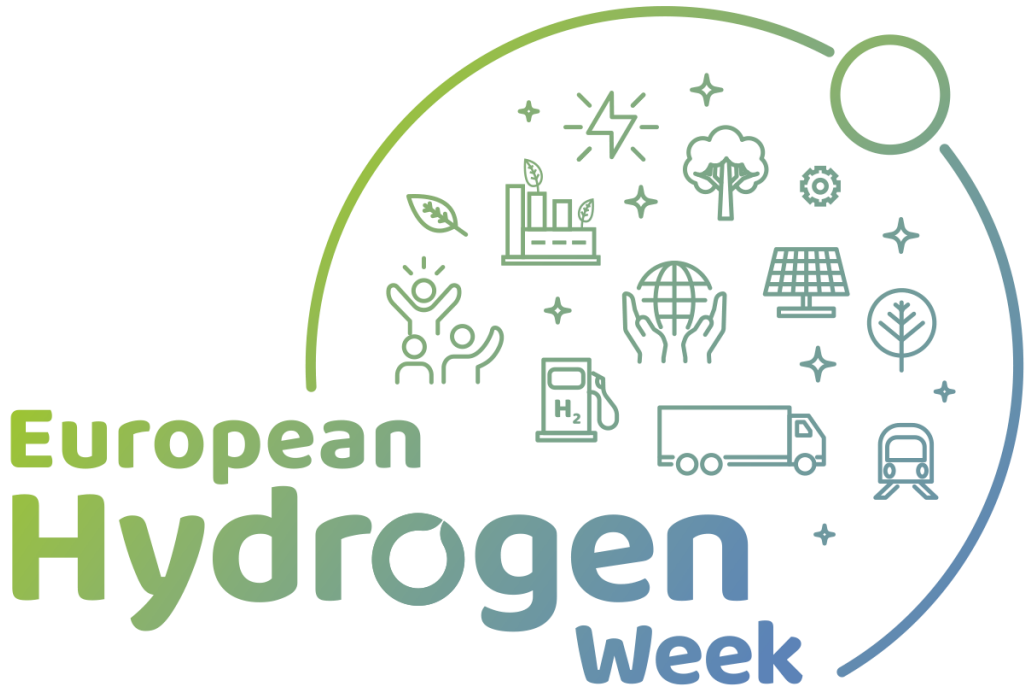
MULTICIT'HY : Expected impacts

16 Hydrogen Refuelling Stations associated to installation of 4 electrolysis units.

4 Hydrogen mobility ecosystems representing 8 MW and 3,2 tH2/day cumulated along North-Mediterranean, Mediterranean and Atlantic Corridors.

More than 320 000 tons of CO2 avoided during the projet deployment (20 years).

Replicability of H2 ecosytem deployment and promoting H_2 sector structuration at local and regional scale.



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