

GREEN HYDROGEN FOR MOBILITY

ONESTI, ROMANIA



**Primaria
Municipiului Onesti**

Iunie, 2022



OBJECTIVE PRINCIPALE

GREEN HYDROGEN

- Green H2 Production
- Green H2 Utilization in Mobility
- Green H2 Utilization for Heating

RENEWABLE ENERGY PRODUCTION

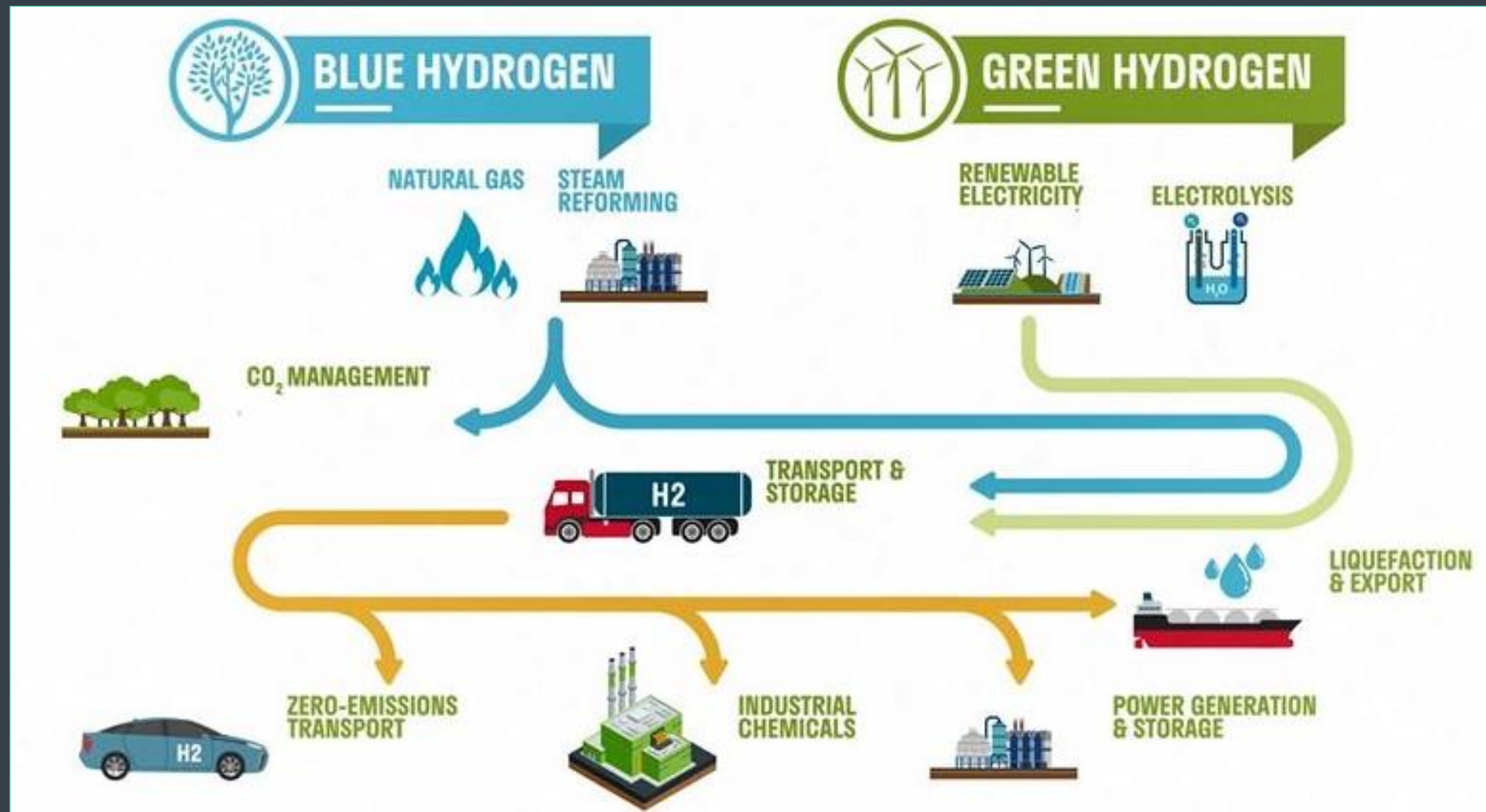
- Mixed Solar and Wind Park
- PV panels on public buildings' roofs

ENERGY SAVINGS

- Public and Residential Buildings Retrofit
- Intelligent Public Lighting
- Energy efficient traffic lighting

HYDROGEN VALLEY

Ecosisteme regionale ce reunes producerea hidrogenului, stocarea, infrastructura de transport respectiv utilizatori din multiple sectoare (mobilitate, industrie, stocare de energie, etc.) – un pas important in dezvoltarea economiei hidrogenului.



INVESTITII PROPUSE

A. MOBILITATE URBANA

- Construirea unei statii de incarcare cu hidrogen
- Achizitia unei flote de microbuze si masini de colectare a deseurilor/curatare a strazilor ce folosesc hidrogenul ca sursa de energie (aproximativ 5 microbuze si 5 autoutilitare)

B. PRODUCERE DE ENERGIE DIN SURSE REGENERABILE

- Construirea unui parc mixt eolian si fotovoltaic cu capacitatea de 10 MW + producer hydrogen prin electroliza
- Montarea de panouri fotovoltaice pe acoperisurile unui set de cladiri publice

C. ILUMINAT PUBLIC

- Inlocuirea sistemului de iluminat public stradal cu sistem inteligent LED
- Inlocuirea sistemului de semaforizare cu un sistem nou LED

INVESTITII PROPUSE

D. CLADIRI PUBLICE SI REZIDENTIALE

1. Reabilitarea termica a unui numar de aproximativ 75 de blocuri de locuinte
2. Reabilitarea unui set de cladiri publice, cumuland aproximativ de 33 corpuri de cladiri respectiv 58,000 mp
3. Renovarea clădirilor ce adapostesc salile de cinema
4. Renovarea pieței centrale agroalimentare si Construirea unei copertine din panouri fotovoltaice ce va servi si ca parcare acoperita

Izolarea fațadelor și acoperișului, înlocuirea ferestrelor și ușilor și izolarea conductelor

Sistem iluminat LED nou, instalatii de aer condiționat, pompe electrice pentru încălzire și apă caldă și alte echipamente electrice;

Instalarea sistemelor de panouri fotovoltaice pe acoperișurile cladirilor.

5. Sala Polivalenta - creșterea eficienței energetice prin:
 6. Complexul sportiv central ce gazduieste salile de gimnastica si terenurile de tenis
- Instalarea unui sistem nou de producere apa calda si incalzire ce utilizeaza hidrogenul ca sursa de energie.

EXPECTED IMPACT

Key figures expected once all investments are implemented

- § Energy Savings – 31 GWh/y
- § Renewable energy production – 27 GWh/y
- § CO2 emission reduction – 3000 t CO2/year
- § Total investment value – EUR 57,000,000

Summary of results

Final energy consumption before the implementation of the investment project	70.597819	GWh/year
Expected final energy consumption after the implementation of the investment project	39.537145	GWh/year
Expected energy savings generated from the investment project	31	GWh/year
Expected renewable energy production from the investment project	27	GWh/year
Expected CO ₂ emission reduction	3022	t CO ₂ eq/year

Summary of results

Investment Sector	Investment size	
Public Buildings	25032000	EUR
Residential Buildings	13860000	EUR
Building integrated renewables	1125000	EUR
District heating	0	EUR
Smart grids	0	EUR
Sustainable urban mobility	7950000	EUR
Innovative energy infrastructure	9000000	EUR
Other sector	255000	EUR
Other sector	0	EUR
Expected total investment size	57222000	EUR

EXPECTED IMPACT

Creation of a **Hydrogen Ecosystem** through the production, storage and utilization of the green hydrogen in mobility and heating.

Working in an integrated approach with the current industrial stakeholders with existing H2 production facilities, we aim to close the loop in terms of H2 utilization. This will lead to:

- (i) Creation of new jobs of high qualification and professional reconversion towards a future oriented industry
- (ii) Additional economic benefits and jobs in interconnected segments of the economy and education
- (iii) Gain Visibility and become a benchmark for similar initiatives

ACTIVITIES FUNDED

- § **Engineering support for hydrogen projects:** indicative layouts for the H2 production facility and Hydrogen Refuelling Station, assess the site specifics & utilities requirements, perform safety assessment; due diligence on the current H2 supply chain, market status and perspectives; identify and engage with OEMs and potential private partners; sustainability analysis
- § **Legal framework review** on the matter of green hydrogen production, transportation, storage, and utilization.
- § **Architectural and Engineering** support for buildings retrofit, intelligent public lighting and traffic lights
- § **Financial analysis** – CAPEX & OPEX estimates, financial planning, ROI and business model analysis incl. available bank loans & public funds.

PROJECT MANAGER

Dept. of Local Development &
EU Funds

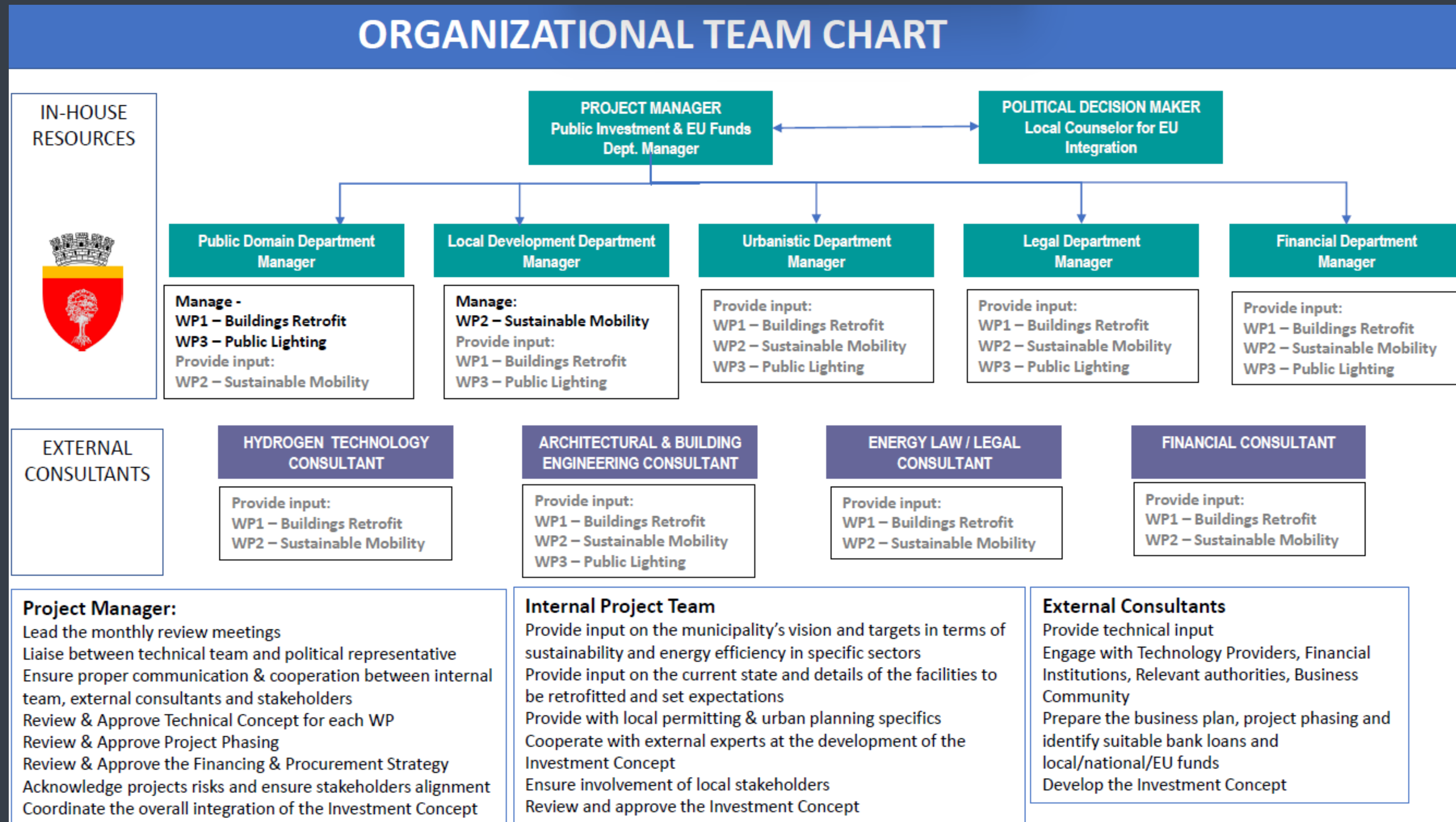
HYDROGEN TECHNOLOGY
CONSULTANT

ARCHITECTURAL & BUILDING
ENGINEERING CONSULTANT

ENERGY LAW / LEGAL
CONSULTANT

FINANCIAL CONSULTANT

GOVERNANCE FOR THE IC DEVELOPMENT



Organization	Municipality of Onesti
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Evaluation result
TOTAL SCORE (considering weightage factors)
22.25 / 25

OVERALL FEEDBACK:

Overall, the application addresses the EUCF criteria in an outstanding manner. The aim of the application is to promote sustainable mobility which is very well aligned with the EUCF objectives. The main strengths are the stakeholder engagement strategy and the ambition level of the expected investment size and energy savings. More detailed feedback per evaluation criterion can be found below.

MULTUMIM!

GUST OF CHANGE

HAGUE, THE NETHERLANDS | BUCHAREST, ROMANIA