Hydrogen
for Climate Action

SILVER FROG

A leap forward to deliver a competitive Green EU industry

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PROJECT DESCRIPTION
Objectives

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1. Implement cutting-edge **manufacturing capabilities in Europe for solar PV and electrolysis** to support EU green industrial leadership
2. Exploit **Solar PV and Wind** resource to produce large amounts of renewable hydrogen to be used by the EU industry (steel and others)
3. Roll-out **large-scale water electrolysers**
4. **Transport renewable hydrogen** from production sites to final users via gas pipelines (existing, repurposed or new built)
5. **Manage the balance** between hydrogen production and consumption via large scale hydrogen storage solutions
6. **Adapt** end-user industrial processes
7. **Integrate** the various technology blocks together in a **'one-all' replicable solution** throughout Europe
8. Deployment in **several EU countries (incl. Italy)**

SOLAR PV INDUSTRIAL LEADERSHIP

From solar to power

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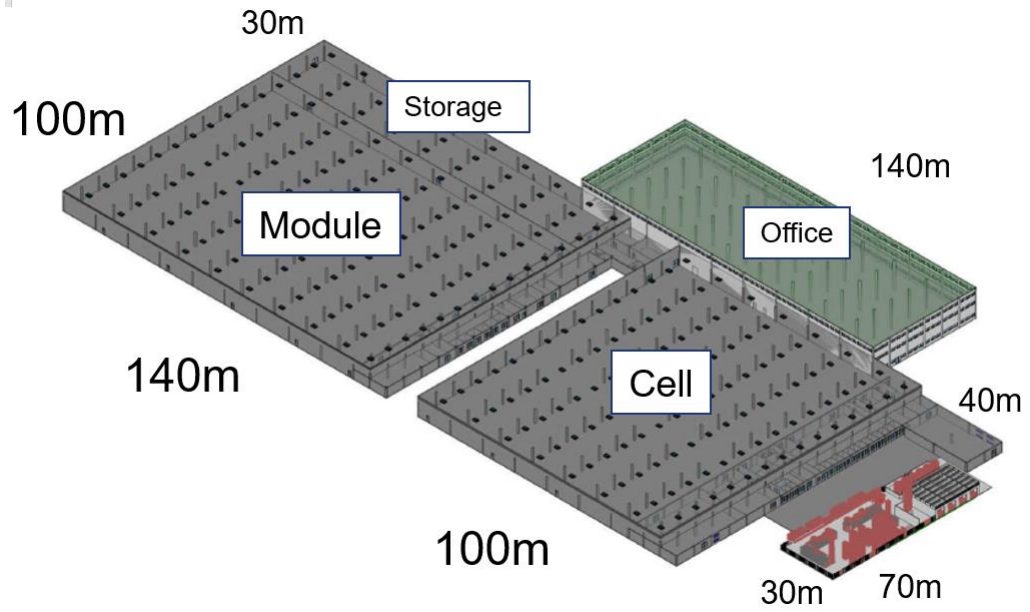
MEYER BURGER

Technology and solution provider (DE)

ecosolifer

Solar manufacturing company (HU)



Cell & module 2 GW FAB

- 1 GW/year → **2 GW/year**
- High efficiency technology (HJT)
- Increased energy yield (+30%)
- Developed and made in Europe

ELECTROLYSER INDUSTRIAL LEADERSHIP

From power to hydrogen

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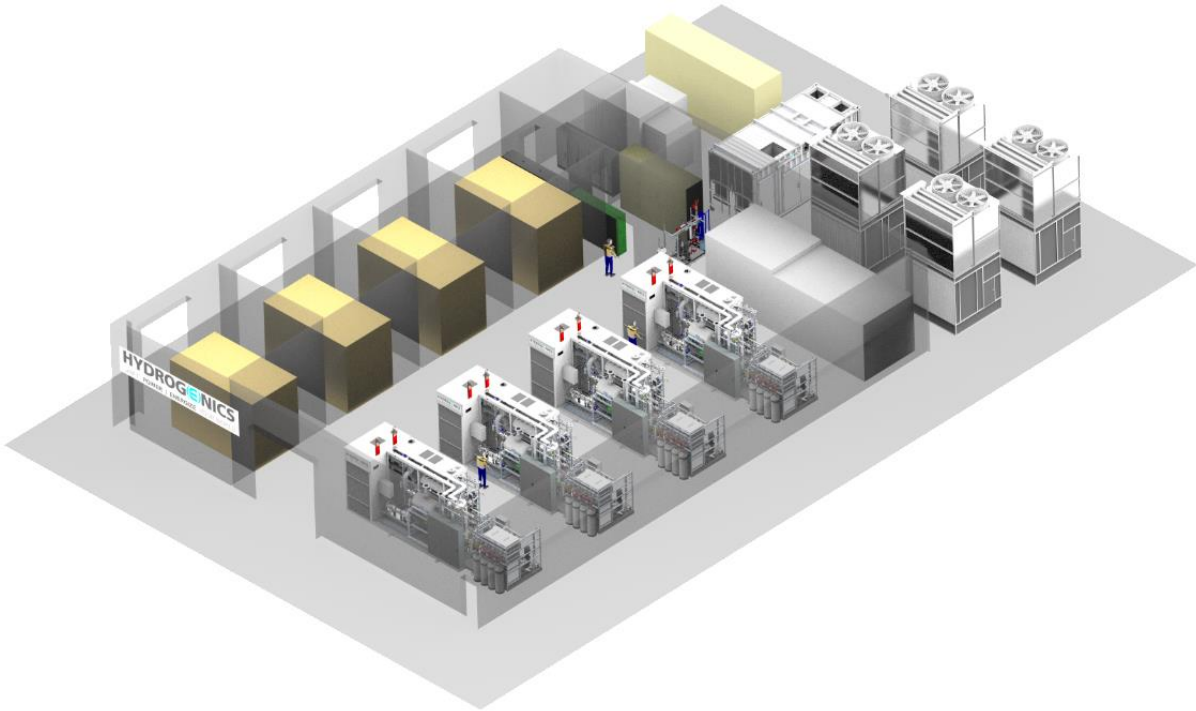
Water electrolyser 2 GW FAB

- 1 GW/year → **2 GW/year**
- PEM technology
- Highly dynamic in combination with RES
- Highest efficiency
- Lowest footprint



HYDROG(E)NICS
SHIFT POWER | ENERGIZE YOUR WORLD

HARVESTING RENEWABLE ENERGY IN ITALY

Excellent solar irradiation and good wind speeds

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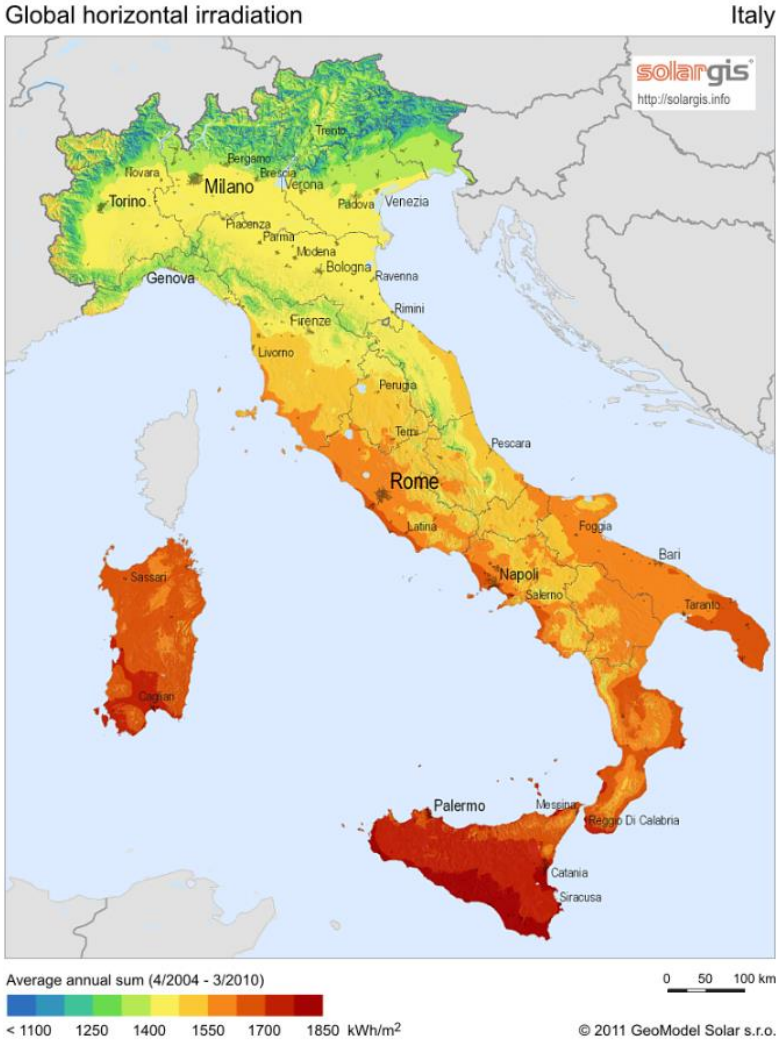

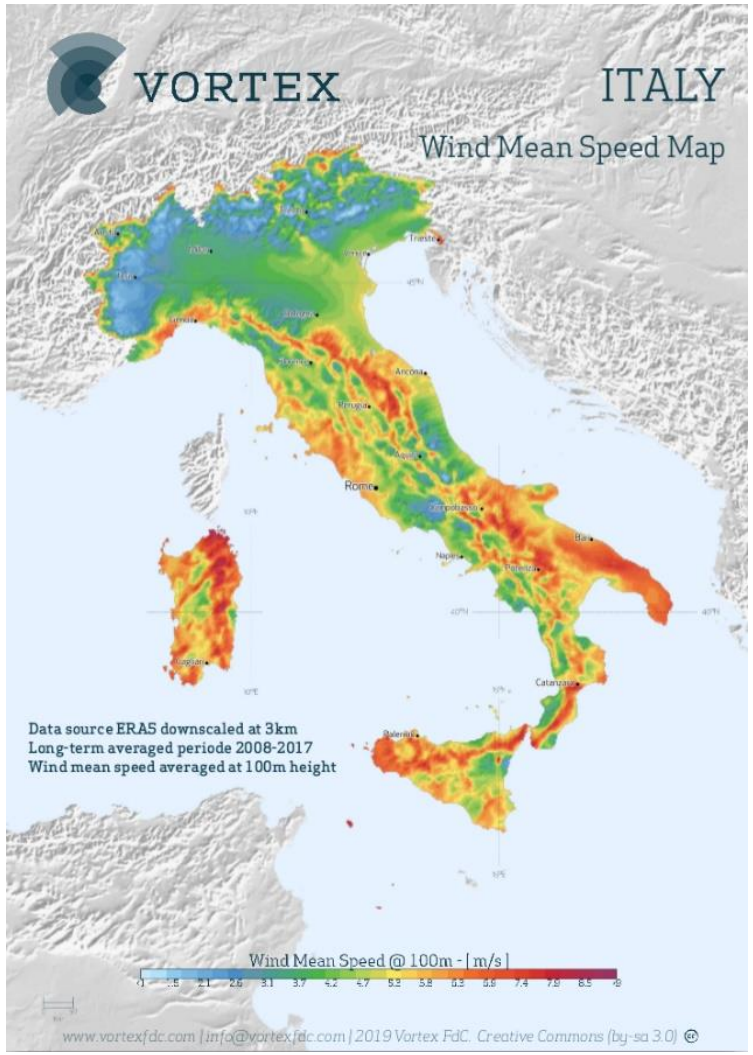

TRANSPORT AND STORAGE OF HYDROGEN

From production sites to end-users

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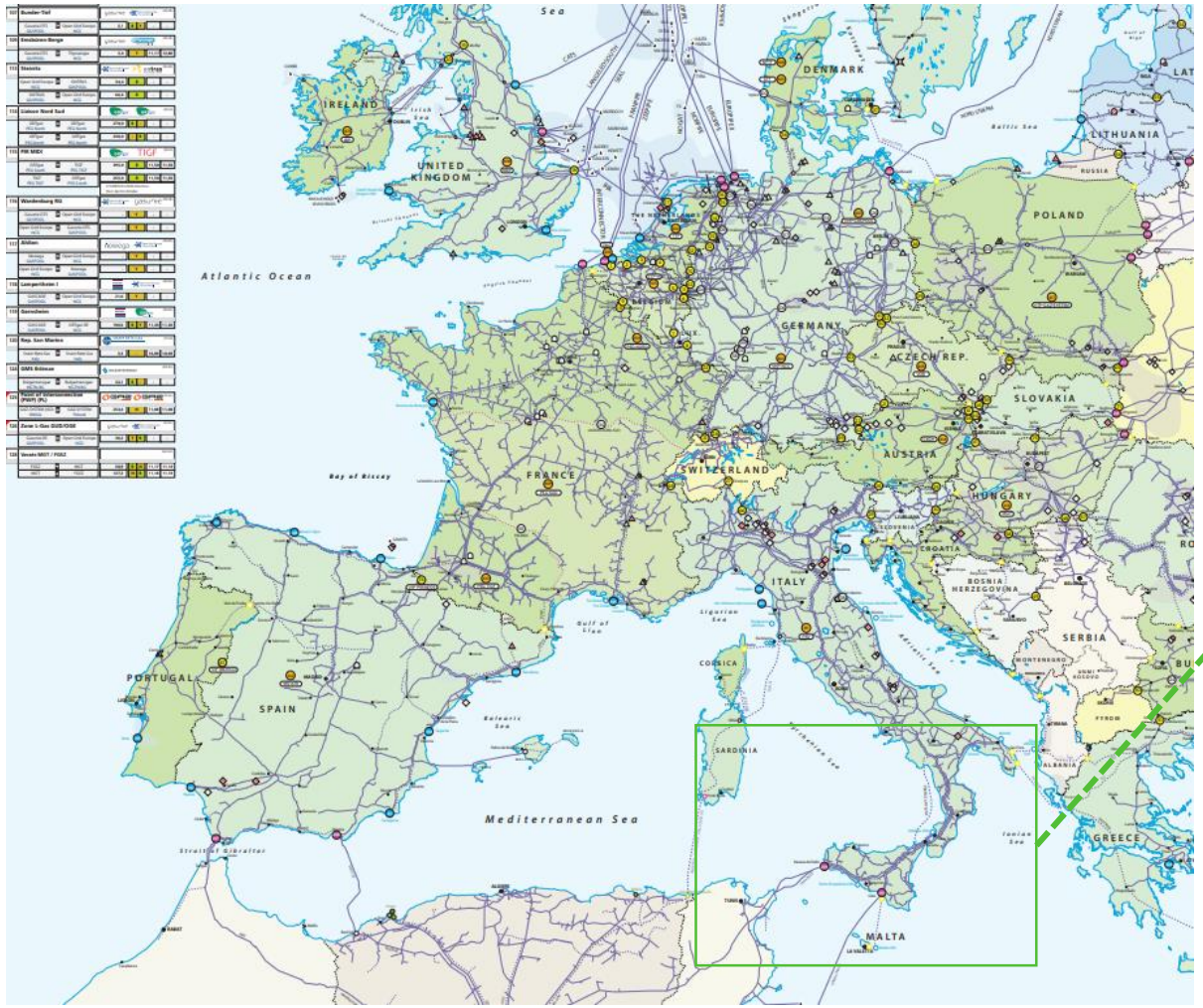

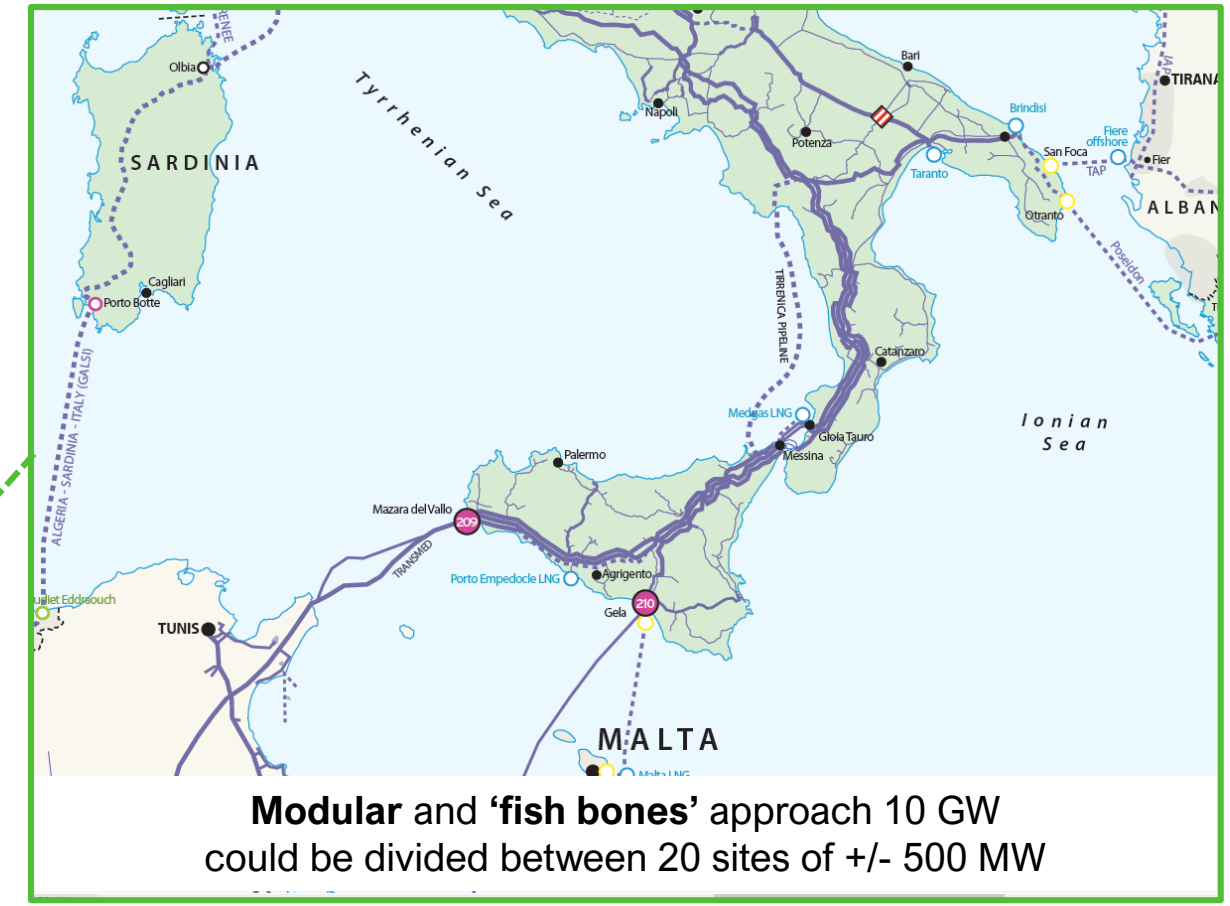

Modular and **'fish bones'** approach 10 GW
could be divided between 20 sites of +/- 500 MW

USING RENEWABLE HYDROGEN IN HARD TO DECARBONIZE SECTORS

From solar & wind to green steel (and other industries)

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DELIVERING THE GREEN DEAL WITH EUROPEAN GREEN STEEL AND OTHERS GREEN INDUSTRIES

CONSORTIUM
Participating companies and countries

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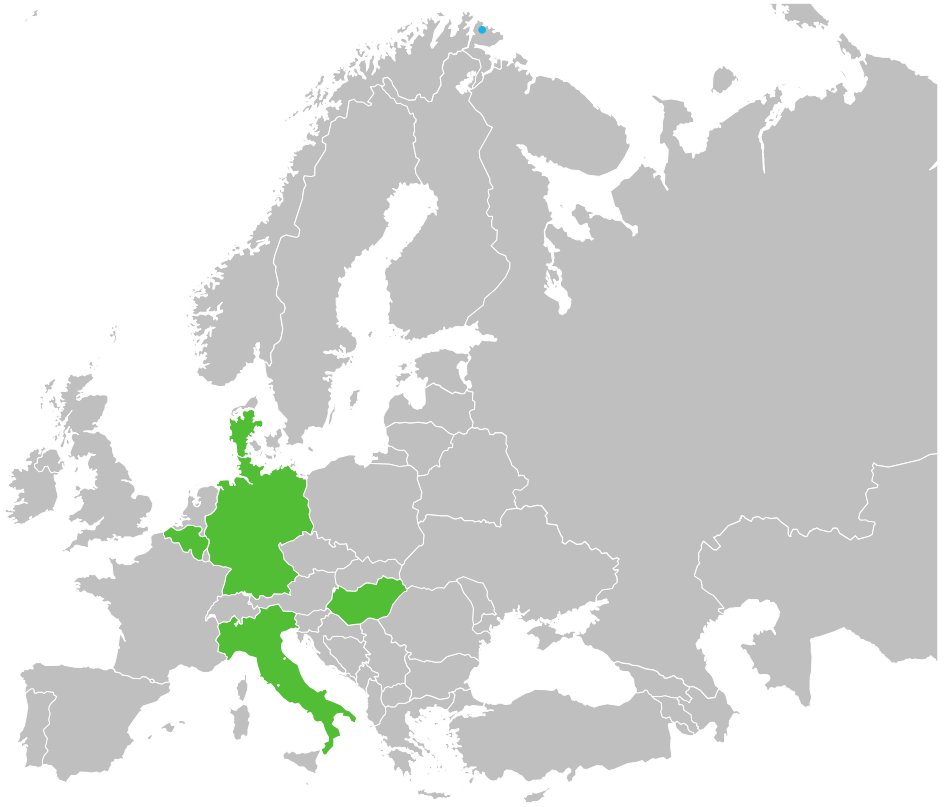
Solution providers	Renewable hydrogen end-users
SolarPower Europe HYDROGENICS SHIFT POWER | ENERGIZE YOUR WORLD MEYER BURGER ecosolifer EUROPEAN ENERGY …	Steel industry Refineries Chemical plants Fertilizer industry …
	Infrastructure
	Gas pipeline operator



PROJECT FACTSHEET

What you need to remember

Hydrogen for Climate Action

- New leading **manufacturing plants** : 2 GW/y PV + 2 GW/y water electrolyser
- Deployment in Europe : **10 GW Solar PV + 5 GW wind, 10 GW water electrolysis**
- Dedicated renewable power plants for **100% renewable hydrogen**, transported by gas **pipelines** to end users
- Hydrogen consumed by large industrial customer (**green steel** and other industries)
- Project duration: **8 years**
  - Expected CO_2 mitigation: **8 Mt/year (~0.6 % of actual EU CO2 emissions)**
  - Expected job creation: **6.000 jobs**
  - Renewable hydrogen production: **800 kt/year (~0.8% global market)**
  - Total investment costs: **12-15 B€**

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Thank you for your attention!

For more information on the IPCEI on hydrogen, please visit www.hydrogen4climateaction.eu.