GREEN HYSLAND

Green Hydrogen production in INA

Kristina Crnković-Gjukić

This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking (now Clean Hydrogen Partnership) under Grant Agreement No 101007201. This Joint Undertaking receives support from the European Union's Horizon 2020 Research and Innovation programme, Hydrogen Europe and Hydrogen Europe Research.

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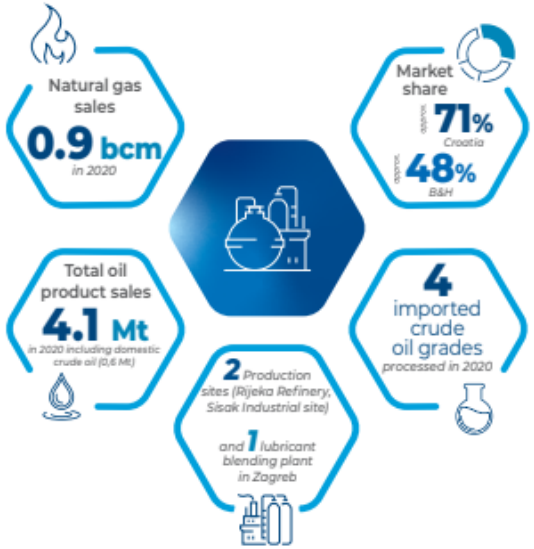
INA GROUP AT A GLANCE

INA is a medium-sized European oil company with a leading role in Croatian oil business and a strong position in the region.

headquarters
Zagreb
Croatia

EXPLORATION AND PRODUCTION

REFINING AND MARKETING



CONSUMER SERVICES AND RETAIL

*Including five service stations in Slovenia that are leased to MOL Slovenia
**Retail locations imply: 511 service stations and six other retail locations (auto bar / restaurants, carwash, shop, heating oil sales point, LPG sales point) in region

INA

Make transport greener

GREEN HYSLAND

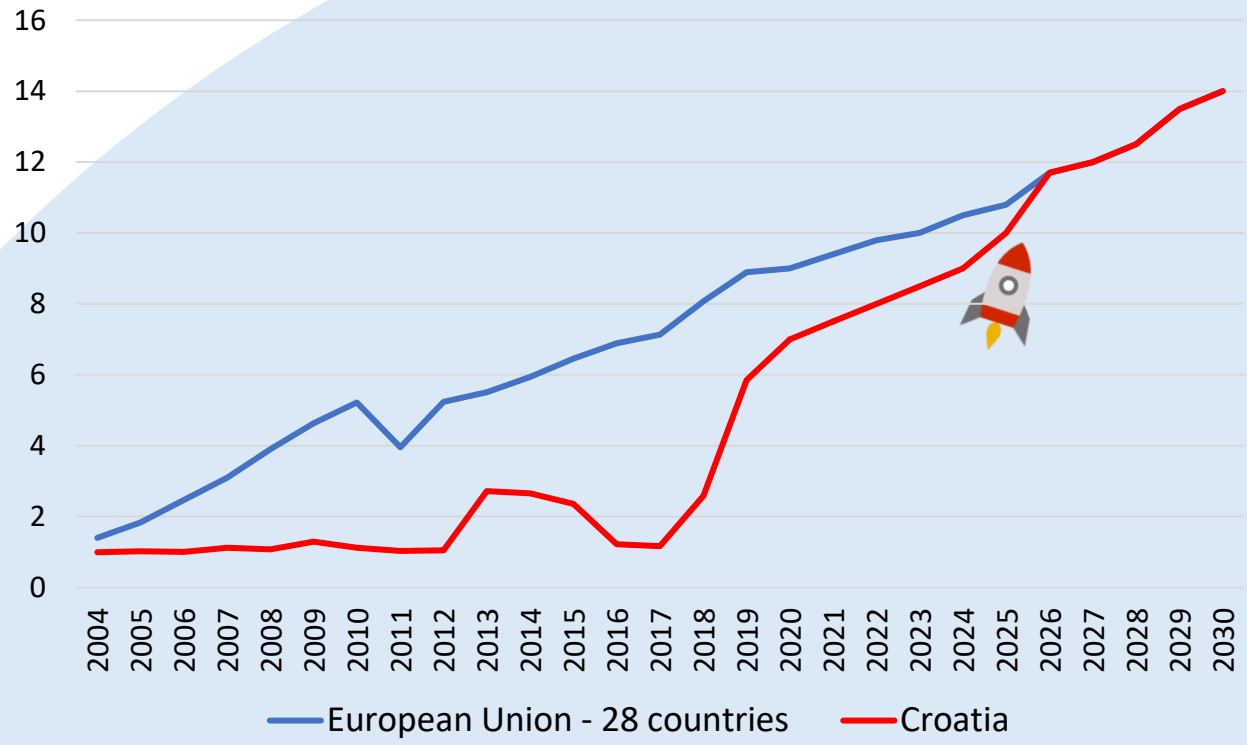
Targeted reduction in transport GHG intensity

14% by 2030

Targeted RES in gross final energy consumption in transport in Croatia

11,7% by 2026

Renewable energy sources (RES) share in gross final energy consumption in transport (%)



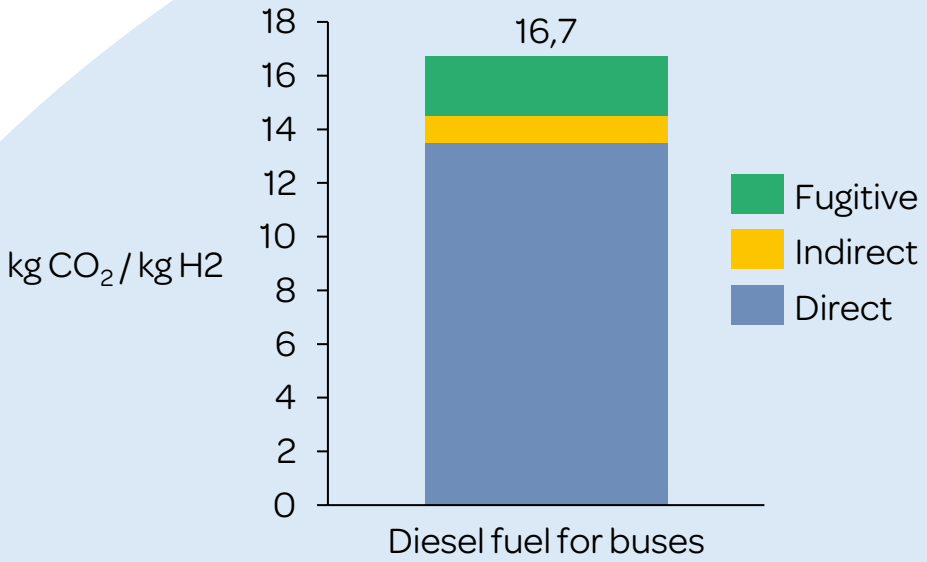
Source: EUROSTAT

INA

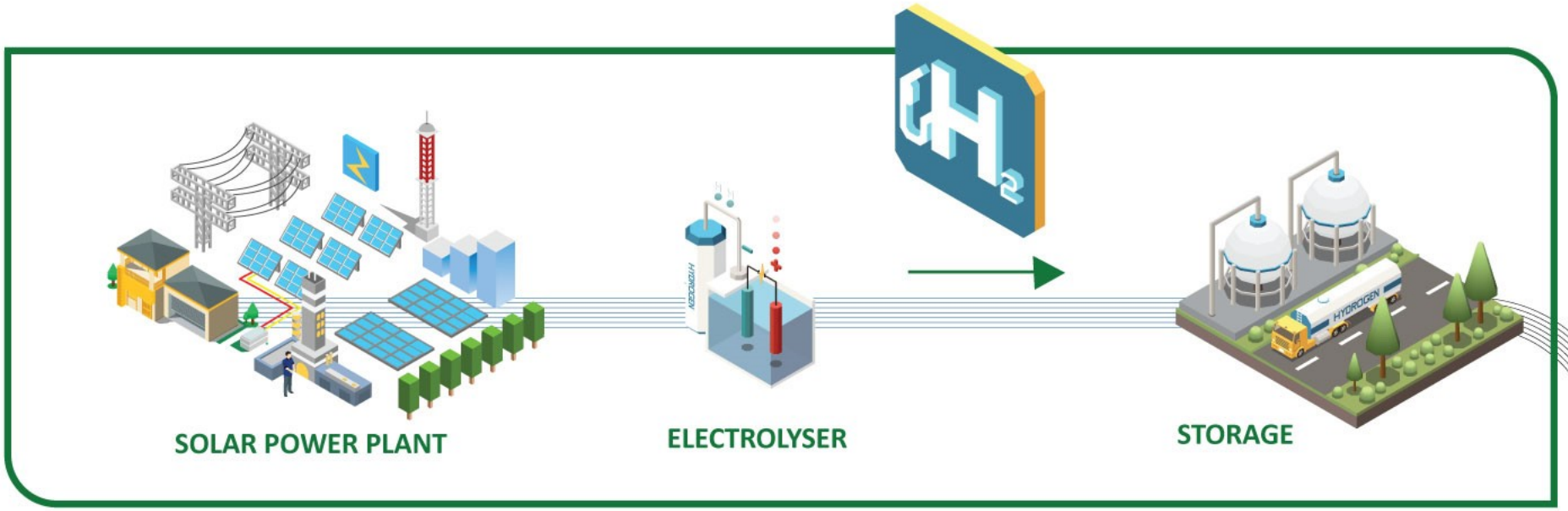
Hydrogen in INA – today & tomorrow

- Big hydrogen consumer in refining process within Rijeka Refinery
- Refinery capacities expected to grow from 2024, after finishing residue upgrade project
- Producing hydrogen from natural gas for fuel production with high CO_2 footprint
- New business: Produce green hydrogen on Rijeka Refinery site to supply transport market

CO_2 emission savings @ 25,200 t/year for planned hydrogen capacity of 1,500 t H_2/year



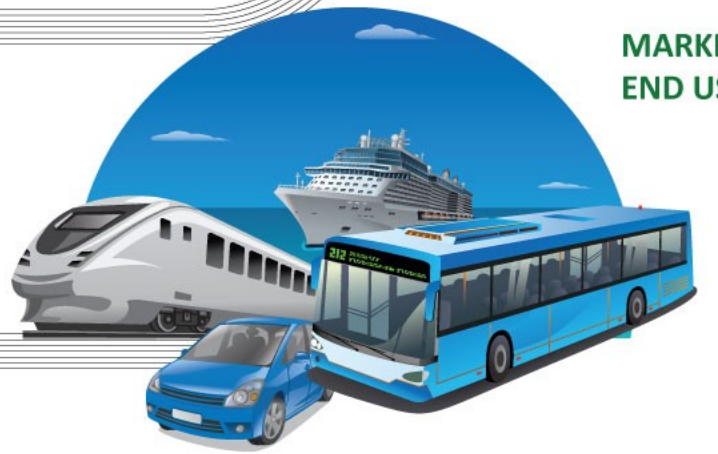
Green hydrogen production



REFINERY

HYDROGEN REFUELLING STATION (HRS)

MARKET END USER



Scope of the project

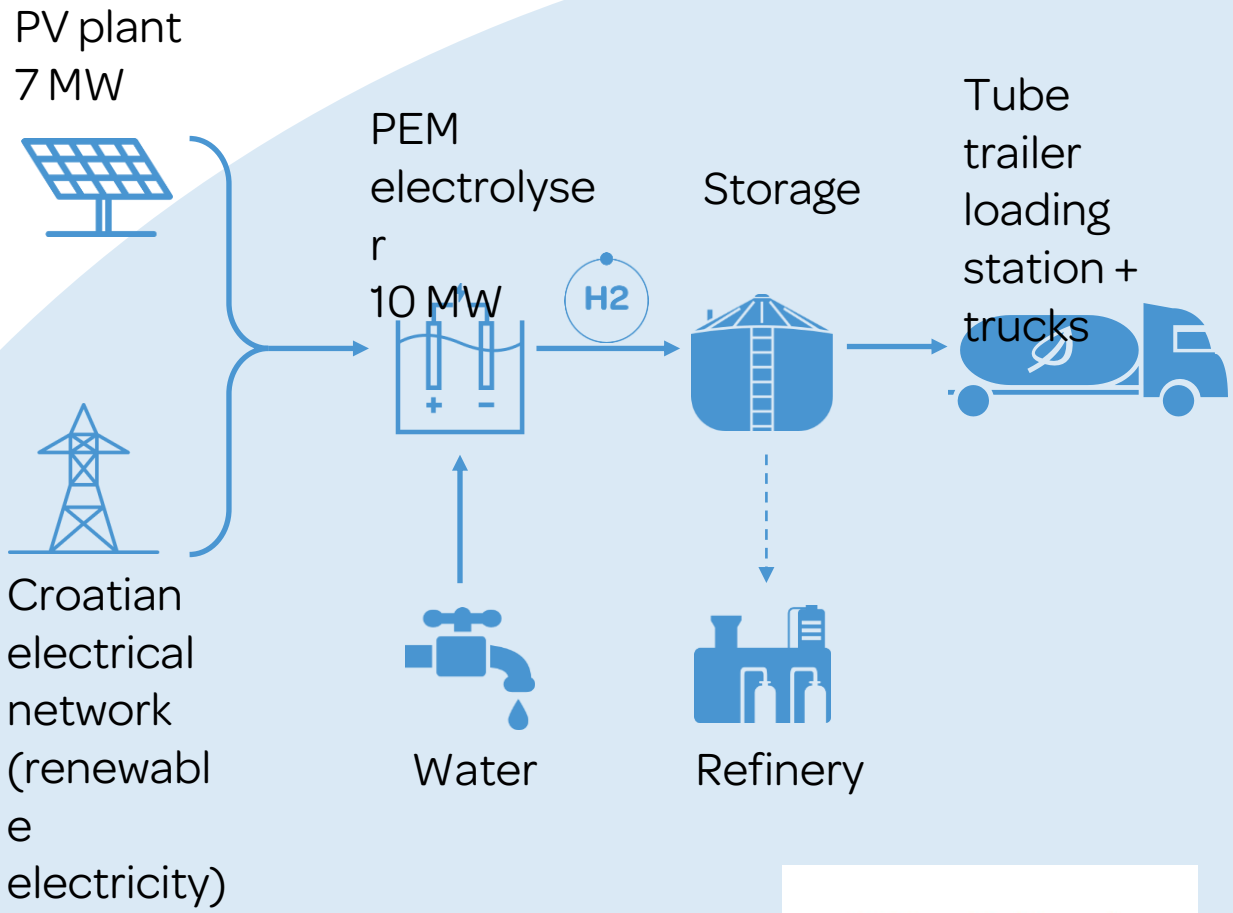
Production of renewable hydrogen for transport purposes in Rijeka Refinery and distribution to HRSs

Feedstock

- Renewable electricity produced on own PV plant
- Renewable electricity from national network
- Water

Assets

- PV plant (7 MW)
- PEM Electrolyser (10 MW)
- Storage & road distribution



National Recovery and Resilience Plan and Croatian Hydrogen Strategy

	2021 – 2025	2026 – 2030	2030 ->
	10 MW	+ 20 MW	70 MW
H2	1.500 t/y	3.000 t/y	10.500 t/y
	6 HRS	4 HRS	15 HRS
CO_2	~ 25.200 t	~ 52.400 t	~ 176.400 t

Targeted markets

ROAD

- Public transport
- Utility services
- Other shipping and delivery companies
- Private users

RAIL

- Non-electrified railways

SEA

- Developed maritime transport

An operating range like diesel bus (>350 km)

Short refueling time (< 10 min)

CO2 reduction: 85% compared to diesel bus over lifetime for green H_2

High fuel efficiency:

- 9 – 10 kg/100 km for 12 m long bus
- 26% more efficient than Diesel bus

GREEN HYSLAND

Thank you for your attention

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