



ZAgora sustainable HYdrogen Region (ZAHYR)

Call: HORIZON-JTI-CLEANH2-2022-06-02: **Hydrogen Valleys (small-scale)**

Stage: Grant Agreement Preparation (GAP)

Rumyana Grozeva

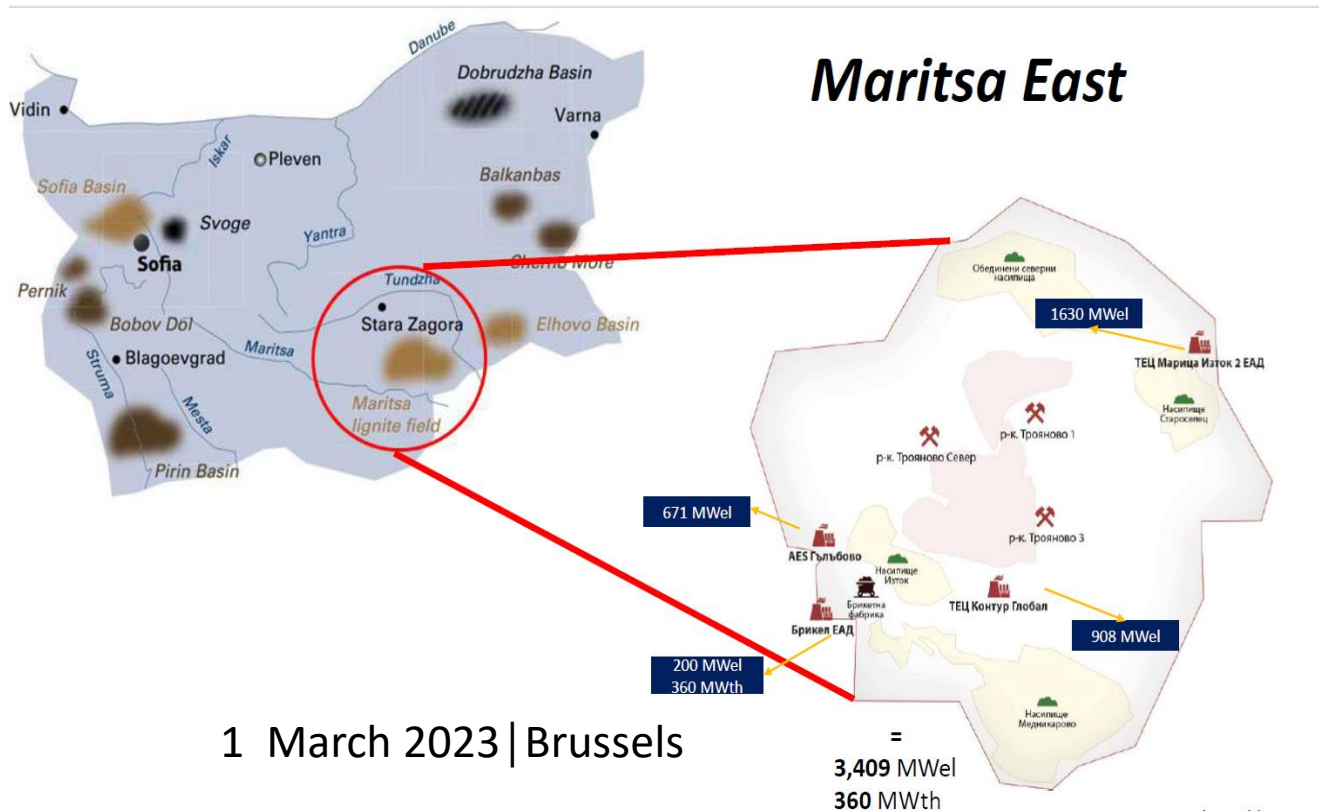
rumyana@szeda.eu

Workshop on Hydrogen Valleys - Capacity Building in CEE countries
| 1 March 2023 | Brussels



WHY Hydrogen Valley in Stara Zagora

The region needs urgent decarbonization solutions



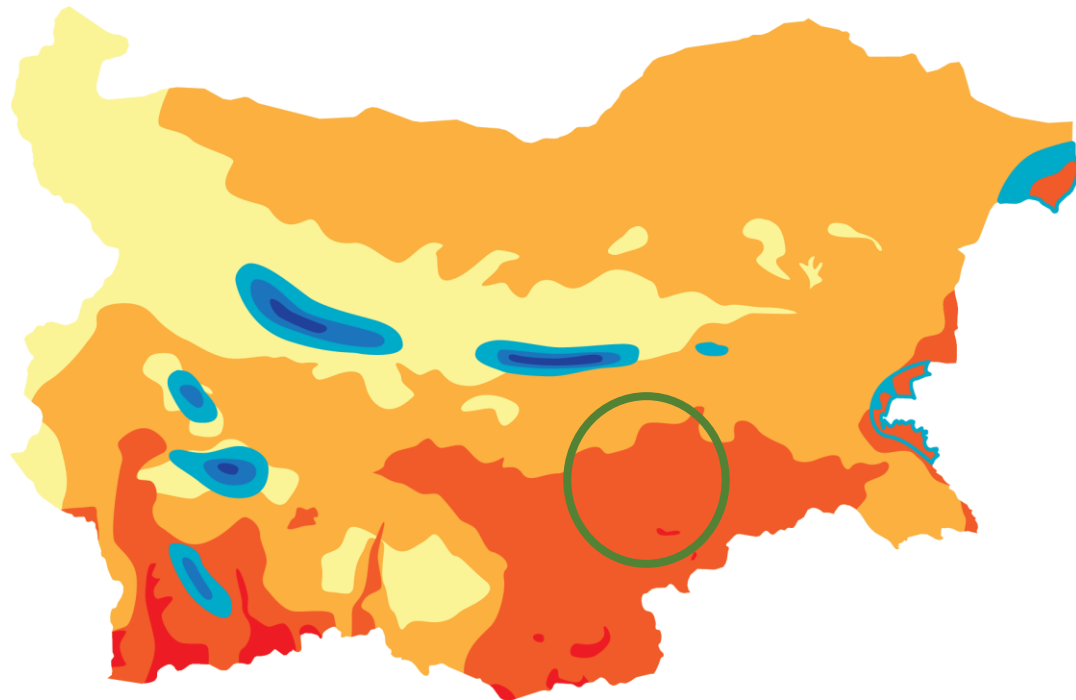
1 March 2023 | Brussels

- Maritza East Energy Complex:
 - coal open-pit mine (>90% low calory lignite in BG)
 - 3,4 GW Thermal Power Stations
 - > 8000 direct working places
 - Should be closed stepwise

- Emissions evaluation 15800 Kt/y (990 kg/MWh)

WHY Hydrogen Valley in Stara Zagora

Excellent conditions



Average annual solar radiation



< 1400 kWh/m² 1500 >

Wind Energy Speeds (m/s)



Workshop on Hydrogen Valleys - Capacity Building in CEE countries

| 1 March 2023 | Brussels

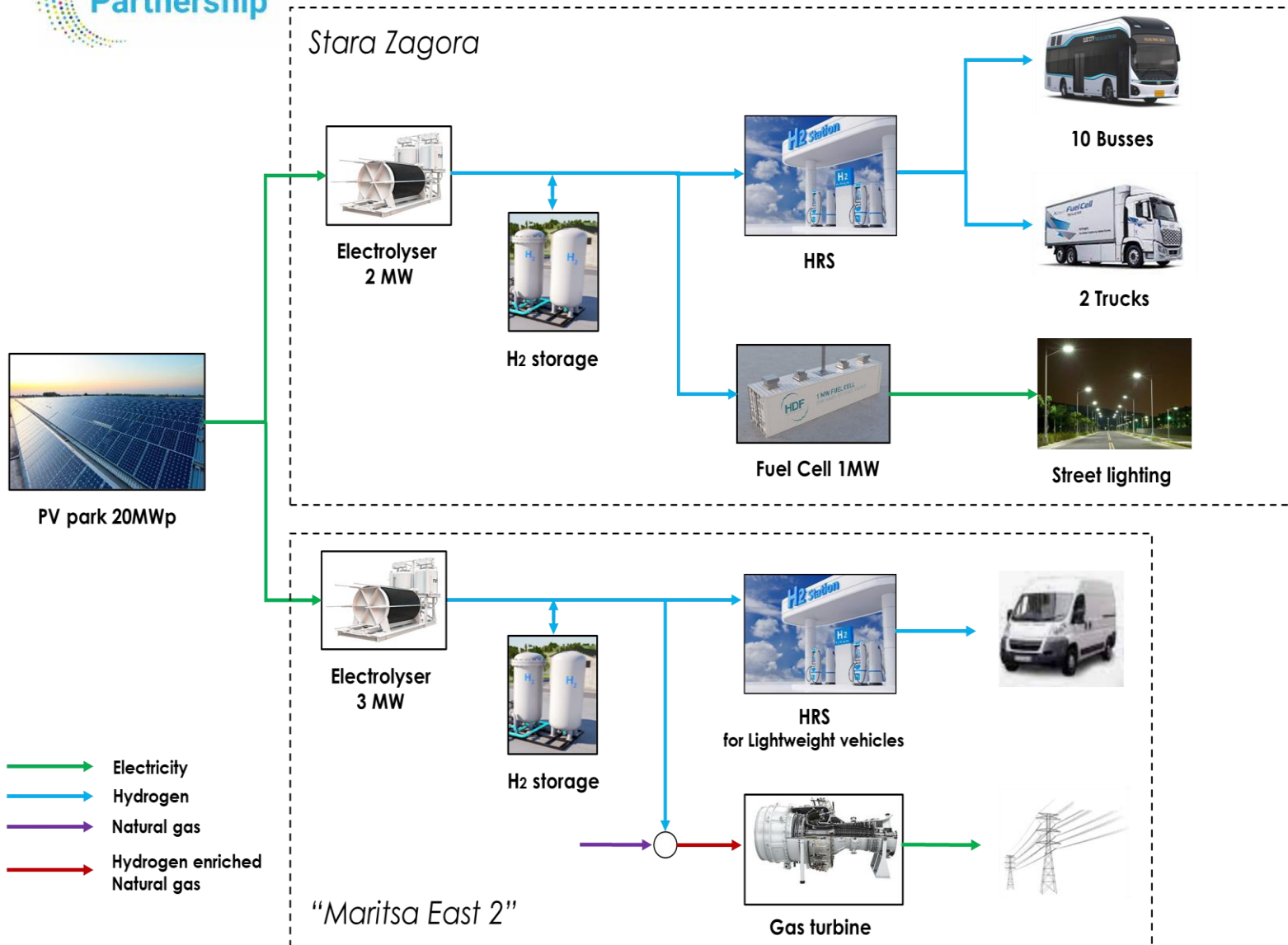
- 25 000 ha potential industrial area
- 1600 h/year PV @ peak load
- TEN-T corridors: 8, 9, 4 + Railway & Air
- Ports:
 - Bourgas (Black sea) – 180km E;
 - Russe (Danube) – 235km N;
 - Alexandroupoulos (Aegean sea) – 300km S
- Gas network & Energy infrastructure
- Industry: Machinery, Chemicals (ammonia), Technology & Materials
- Expertise in PV design, instalations and operations

ZAHYR Partnership

Participant No. *	Participant organisation name	Country
1 (Coordinator)	Holding Zagora (HGZ)	Bulgaria
2	Hraininvest Hranmashcomplect (HMC)	Bulgaria
3	TPP Maritsa East 2 EAD (ME2)	Bulgaria
4	Progress (PRO)	Bulgaria
5	HyCologne Wasserstoff Region Rheinland e.V. (HYC)	Germany
6	Zagora Mobil (ZMO)	Bulgaria
7	Troleibusni I Avtobusni Prevozi LTD (TAP)	Bulgaria
8	Transpress (TRP)	Bulgaria
9	German Hydrogen and Fuel Cells Association e.V. (DWW)	Germany
10	Hydrogen Valley Stara Zagora Association (HVSZ)	Bulgaria
11	Latvian Hydrogen Association (LHA)	Latvia
12	Electroenergien Sistemen Operator EAD (ESO)	Bulgaria
13	Zagora Energy (ZEN)	Bulgaria
14	Trakia University (TRU)	Bulgaria
15	Bulgarian Hydrogen, Fuel Cell, and Energy Storage Association (BGH2A)	Bulgaria
16	European Digital Innovation Hub Zagore (EDIH)	Bulgaria
17	Hungarian Hydrogen Technology Association (HHTA)	Hungary

- 17 partners from 4 countries
- 9 BG Industrial partners from sectors:
 - Energetics (Maritza East 2 TTP; ESO)
 - Transport
 - Industrial production (machinery)
- 4 Hydrogen Associations (HE members)
- 2 Regional Structures
- 1 University

ZAHYR Technical Implementation (WP 2, 3, 4)



Work package No	Work Package Title
1	Coordination and management
2	Hydrogen production
3	Energy applications
4	Transport applications
5	Replicability and future development
6	Training and education
7	Communication, dissemination, and exploitation of results

ZAHYR Replicability, Training, Public Awareness (WP 5, 6, 7)

- **Hydrogen Valley Development Group**
 - Already 10 external organizations (LoS): BG ministries, Municipalities, H2 Associations, California H Hub
 - Followers
- **Scalability – towards Lighthouse project bLion**
- **Training**
- **Increase public awareness – coal mining region!!**


Work package No	Work Package Title
1	Coordination and management
2	Hydrogen production
3	Energy applications
4	Transport applications
5	Replicability and future development
6	Training and education
7	Communication, dissemination, and exploitation of results

Septemvri – Dobrinishte Narrow Gauge Line - with Hydrogen Electric Locomotive

Zero emission
hydrogen train with
own expertise:
PUBLIC INITIATIVE
under ZAHYR



Septemvri – Dobrinishte Narrow Gauge Line - with Hydrogen Electric Locomotive



Zero emission
hydrogen train with
own expertise:
PUBLIC INITIATIVE
under ZAHYR



THANK YOU FOR YOUR ATTENTION