

# ROLE OF HYDROGEN IN THE ENERGY TRANSITION OF EAP AND ENERGY COMMUNITY CONTRACTING PARTIES

Eastern Partnership Network  
“Transition towards hydrogen and green gases”  
22 April 2021 - Videoconference

**Janez Kopač**

Director

Energy Community Secretariat

- I Hydrogen & the Contracting Parties
- II The Energy Community study
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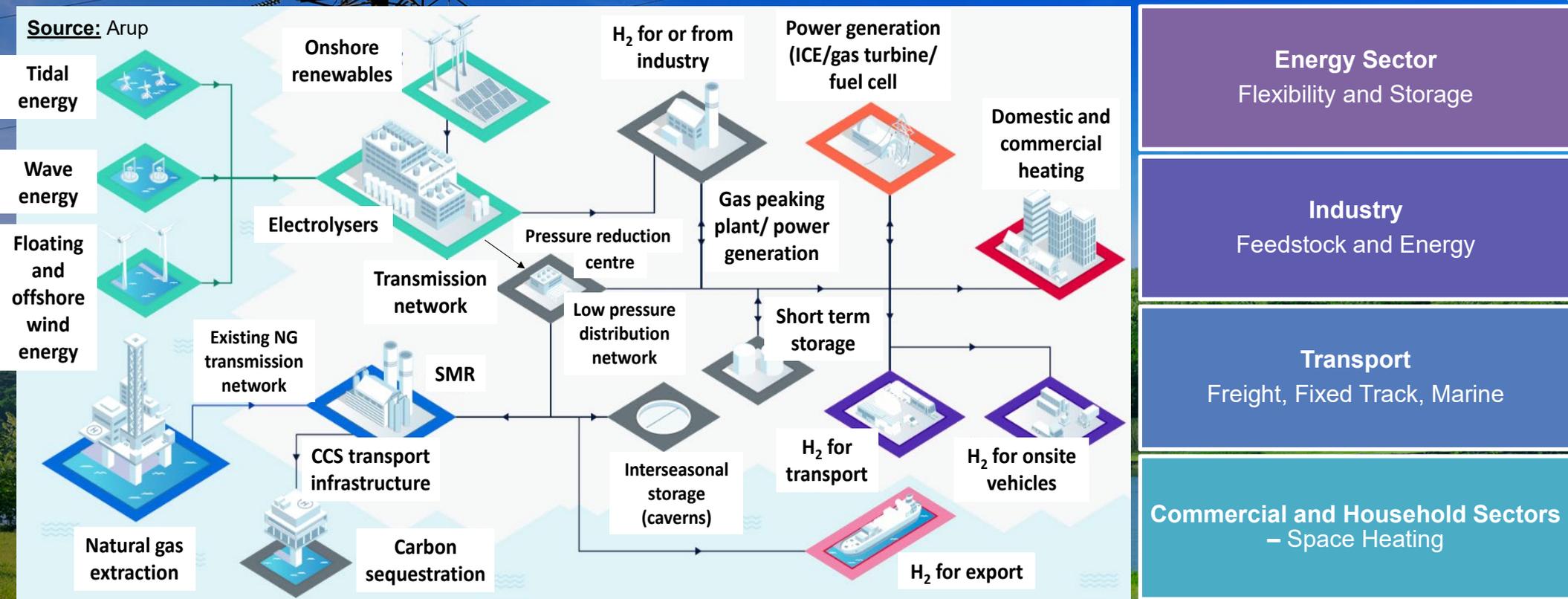
The entire study will be publicly available on the website of the Secretariat during the course of May.

Study tries to assist CPs in assessing their potential to:

- 1) produce, transport and use hydrogen in different sectors;
- 2) to raise awareness and initiate discussion;
- 3) to draw a realistic picture and ascertain the potential way forward for each Contracting Party and
- 4) to provide a “menu” of options and ideas for the policy makers, project owners, developers and investors

# I. Intro: green H<sub>2</sub> in the future energy mix

Potential H<sub>2</sub> applications are diverse across and even within sectors  
 Countries have to find their competitive edge and focus on high potential sectors



## II. The Energy Community study

### Synthesis Document

- Observations
- Recommendations
- Projects

### International Review

- H<sub>2</sub> value chain, drivers for H<sub>2</sub> use, support policies and instruments, country and project case studies

### Contracting Parties' Review

- Comparative assessment, reviews

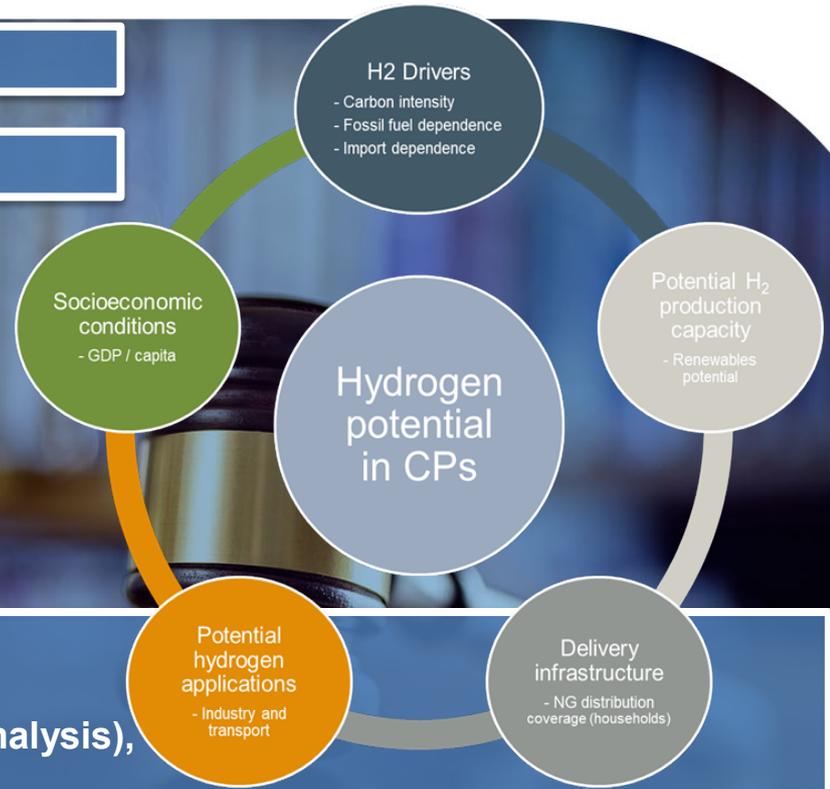
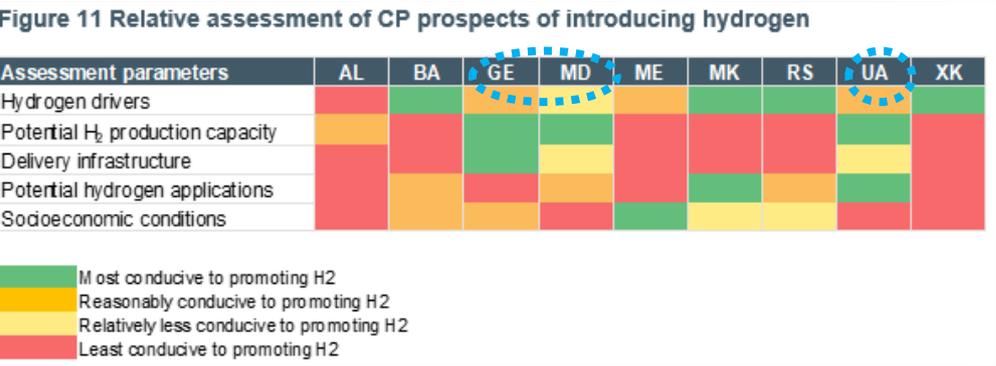
### Economic Analysis

- feasibility review of H<sub>2</sub> applications in the transport, industry, power and storage and domestic heating sectors

# III. Preliminary Findings

1) H<sub>2</sub> potential in the CPs was evaluated based on five categories:

2) And relative prospects were aggregated:



3) Based on the:

- current and forecasted cost-base of H<sub>2</sub> applications (Economic Analysis),
  - Contracting Parties review and international experience
- five cohorts of countries were identified, where there is *potential* for H<sub>2</sub> applications

4) Potential pilot-projects were scoped for each cohort.

# III. Preliminary Findings – Cohorts



# Pilot Project proposals - highlights

1

Power Gen  
and Grid  
Services

Combine grid flexibility demonstration of electrolyzers with other trials to demonstrate **grid flexibility impact** and learn about **regulatory and legislative barriers** in generating feasible revenue streams (e.g. flexibility market)

2

Industry –  
Ammonia and  
Steel

Small-scale/demonstrational project where green  $H_2$  is **injected** alongside fossil hydrogen **as feedstock or blended** with methane in a closed gas grid/industrial site

3

Blending or  
 $CH_4$   
replacement  
for space  
heating

Small scale Power2 $H_2$  demonstration projects involving **injection to local/closed grid**

4

$H_2$  for export

Demonstration of the **gas grid's viability** to blend  $H_2$  or dedicate entire routes **to  $H_2$**   
Demonstration of long distance **transport by road/rail/waterborne** of cryogenic  $H_2$  or  $H_2$  contained in a carrier e.g. ammonia or other liquid organic  $H_2$  carriers (LOHC)

5

Transport  
focus

Introduction of  $H_2$  in a **captive fleet with electrolysis-based hydrogen refueling stations (HRS)** – city buses, taxis, delivery vehicles-corporate fleets (**in large urban areas**)

Potential H<sub>2</sub> applications are diverse across, and even within sectors. Synergies exist.

The Contracting Parties and their environmental potential; economic-, regulatory- and legislative conditions are diverse.

No “one size fits all” H<sub>2</sub> solution. Policies, strategies and projects will be country-specific. Of course learning from each other and existing experience and best practices is crucial.

The goal is not “hydrogen” as such. Hydrogen is a tool to achieve GHG free economies in the long-term and contribute to the decarbonisation of various sectors.



**THANK YOU**  
**FOR YOUR ATTENTION**

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