



Clean Hydrogen JU



**National Infoday &
International Brokerage Event
on Clean Hydrogen
Partnership 2024 Call**

30.01.2024



Green and Digital Transformation in the 12th Development Plan (2024-2028)

"A stable, strong and prosperous Türkiye that is environmentally friendly, resilient to disasters, produces high value with advanced technology and shares income fairly in the Century of Türkiye"

Main Axes



Stable Growth,
Strong Economy



Competitive Production
with **Green and Digital Transformation**



Qualified Human
Resources, Strong
Family, **Healthy Society**



Disaster Resilient Living
Spaces, **Sustainable
Environment**



**Democratic Good
Governance** Based
on Justice

"Science, Technology & Innovation"

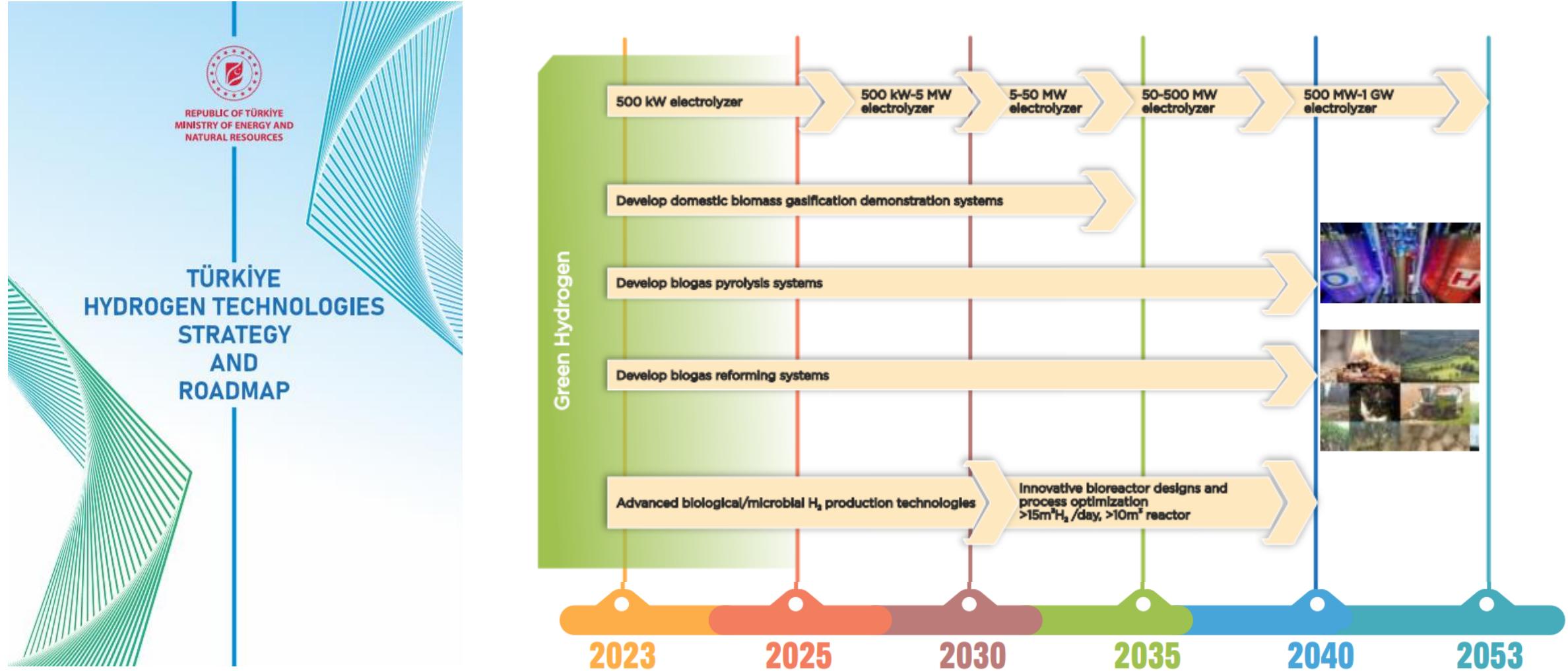
Policy/Measure Example:

"Support models covering the entire process from basic research to the final product will be developed for **platforms established in collaboration with universities, private sector and the public sector**"



Hydrogen Production Technologies Goal

Increase electrolyzer installed power capacity to 2 GW by 2030, 5 GW by 2035 and 70 GW by 2053.



- R&D infrastructure support in scientific and technological areas
- Establish research centers and institutes in strategic areas to strengthen the technological infrastructure of the country



Source: TÜBİTAK (2023) <<https://www.tubitak.gov.tr/tr/haber/tubitak-60-yasini-kutladi>>



TÜBİTAK's 60th Anniversary:
July 24, 2023

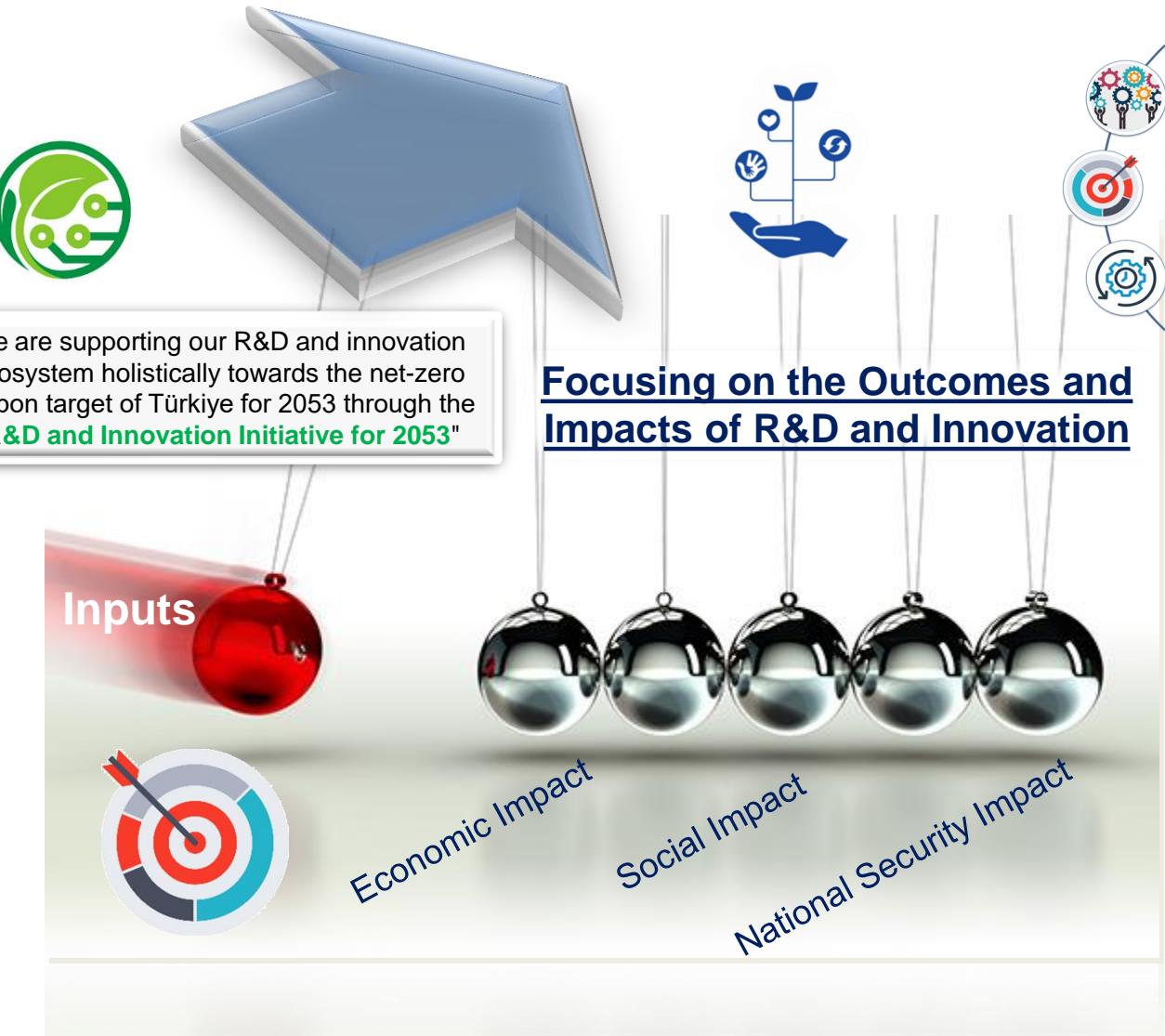


Note: Compiled from the duties given in Article 41 of the Presidential Decree No. 4, Section TÜBİTAK.

Transformations

-  Natural Disasters
-  Climate Change Mitigation and Adaptation
-  Net-Zero GHG Emission Targets
-  Increasing Green Growth Options
-  Human-Centered Technology Development
-  Industry 5.0
-  Digitalization
-  Infectious Diseases

Strategic Approach through TÜBİTAK Support Programs



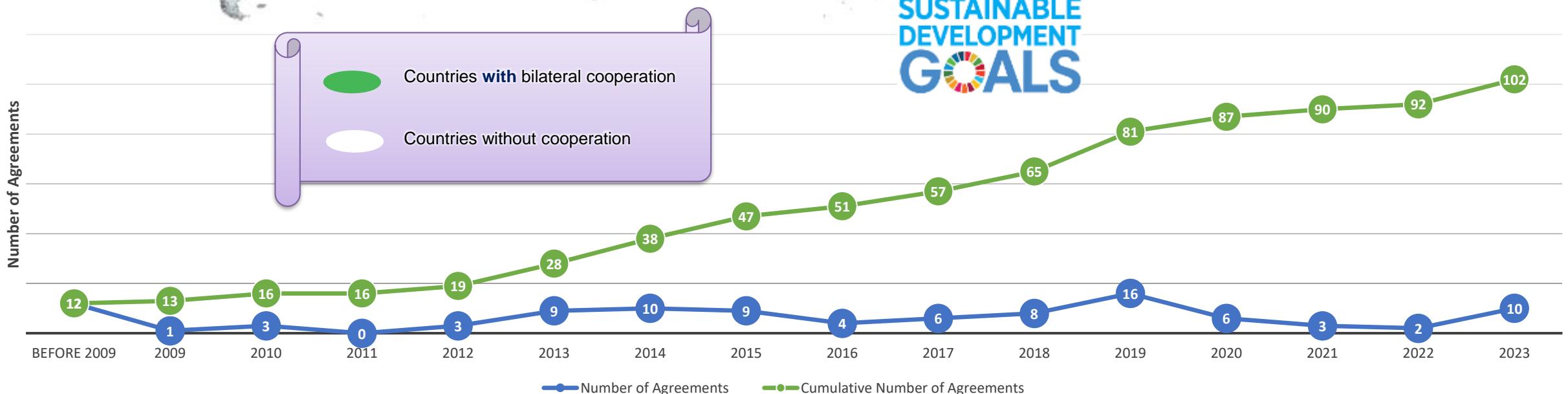
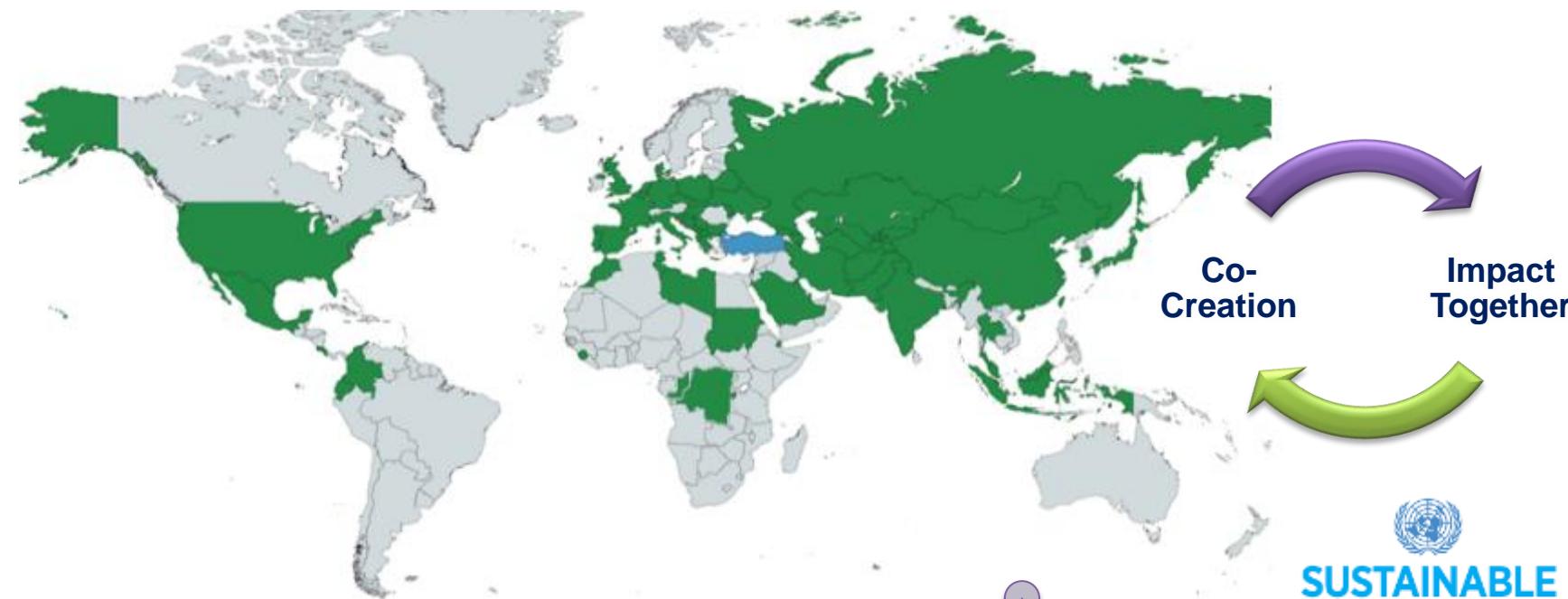
Target Oriented

New Knowledge Creation Models

Human Resources for Co-Creation

Based on the Approach of "Succeeding Together"

Global View International Scientific and Technological Cooperation



EU Framework Programmes



EU's core funding

programme for research and innovation



■ 2002

Turkey's participation in the program

TÜBİTAK has been the National Coordination Office since 2002.

Turkey's Performance

Project Applications: 8,320

Funded Budget: 297.3 M€

Funded Projects: 948

Success Ratio: %9.8

- **1328** Turkish Partners
- Number of Coordinator:
 - before 2019: **7**
 - as September 2021: **29**

■ 2014-2020

HORIZON 2020

■ 2021-2027

HORIZON EU

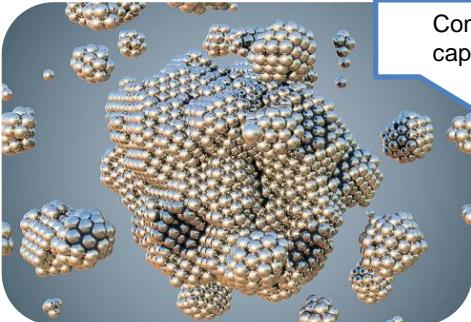
It is the biggest and most ambitious programme of its kind ever with a budget of over **€95 billion**.

Turkey is officially associated to Horizon Europe since Oct. 27,2021

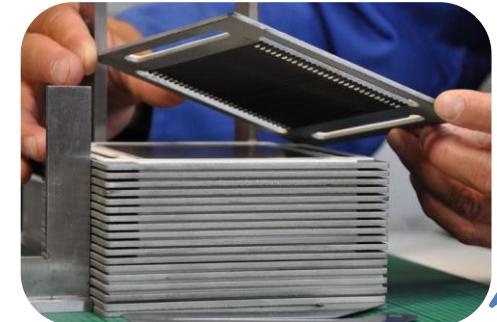
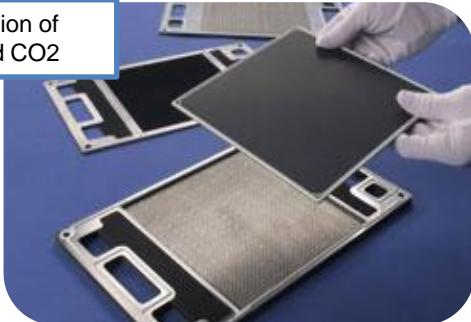
H2020 Project Examples – Hydrogen Ecosystems



EBIO: Biofuels through Electrochemical transformation of intermediate BIO-liquids / TÜPRAŞ / Ufuk 2020 RIA



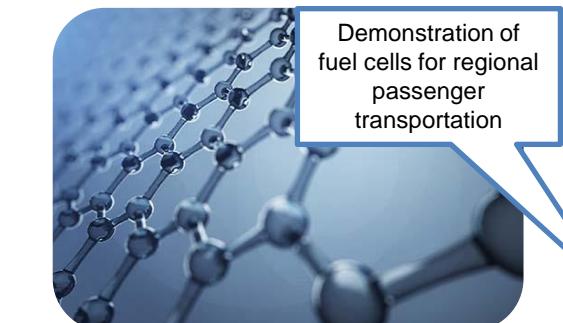
CO2MOS: Efficient CO₂ conversion over multisite Zeolite-Metal nanocatalysts to fuels and OlefinS / TÜPRAŞ / Ufuk 2020 RIA



MACBETH: Membranes and Catalysts Beyond Economic and Technological Hurdles / TÜPRAŞ / Ufuk 2020 IA



BiZeolCat: Bifunctional Zeolite based Catalysts and Innovative process for Sustainable Hydrocarbon Transformation / TÜPRAŞ / Ufuk 2020 RIA



COSMOS: Computational Simulations of MOFs for Gas Separations / Koç Üniversitesi / ERC Starting Grant



HyStorIES: Hydrogen Storage In European Subsurface / ODTÜ (Third Party)



THREE PILLARS FOR IMPLEMENTATION



Pillar 1 EXCELLENT SCIENCE

European Research Council

Marie Skłodowska-Curie Actions

Research Infrastructures



Pillar 2 GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters

- Health
- Culture, Creativity and Inclusive Society
- Civil Security for Society
- Digital Industry and Space
- Climate, Energy and Mobility

Resources, Agriculture and Environment

Joint Research Centre



Pillar 3 INNOVATIVE EUROPE

European Innovation Council

European innovation ecosystems

European Institute
of Innovation and Technology

WIDENING PARTICIPATION AND STRENGTHENING THE EUROPEAN RESEARCH AREA

Widening participation and spreading excellence

Reforming and Enhancing the European R&I system

HORIZON EUROPE PROGRAMME PARTNERSHIPS

HORIZON EUROPE PILLAR II - Global challenges & European industrial competitiveness

CLUSTER 1: Health	CLUSTER 4: Digital, Industry & Space	CLUSTER 5: Climate, Energy & Mobility	CLUSTER 6: Food, Bioeconomy, Agriculture, ...
Innovative Health Initiative	Key Digital Technologies	Clean Hydrogen	Circular Bio-based Europe
Global Health Partnership	Smart Networks & Services	Clean Aviation	Rescuing Biodiversity to Safeguard Life on Earth
Transformation of health systems	High Performance Computing	Single European Sky ATM Research 3	Climate Neutral, Sustainable & Productive Blue Economy
Chemicals risk assessment	European Metrology (Art. 185)	Europe's Rail	Water4All
ERA for Health	AI-Data-Robotics	Connected and Automated Mobility (CCAM)	Animal Health & Welfare*
Rare diseases*	Photonics	Batteries	Accelerating Farming Systems Transitions*
One-Health Anti Microbial Resistance*	Made in Europe	Zero-emission waterborne transport	Agriculture of Data*
Personalised Medicine*	Clean steel – low-carbon steelmaking	Zero-emission road transport	Safe & Sustainable Food System*
Pandemic Preparedness* Co-funded or co-programmed	Processes4Planet	Built4People	
	Global competitive space systems**	Clean Energy Transition	
		Driving Urban Transitions	

- █ Institutionalised Partnerships (Art 185/7)
- █ Institutionalised Partnerships / EIT KICs
- █ Co-Programmed
- █ Co-Funded

* Calls with opening dates in 2023-24

** Calls with opening dates not before 2022

PILLAR III - Innovative Europe

EIT (KNOWLEDGE & INNOVATION COMMUNITIES)	SUPPORT TO INNOVATION ECOSYSTEMS
InnoEnergy	Innovative SMEs
Climate	
Digital	
Food	
Health	
Raw Materials	
Manufacturing	
Urban Mobility	
Cultural and Creative Industries	

CROSS-PILLARS II & III

European Open Science Cloud

Recent Developments in the Horizon Europe Pillars of Implementation

Through co-creation based collaboration, **760 institutions** from our ecosystem have joined forces in supporting all pillars of implementation of Horizon Europe with a **total of 458 different projects**.



Hydrogen related Capability and Infrastructre: HYSouth Marmara Project



Kale



Sabancı
Üniversitesi



HİDROJEN PEROKSİT SANİYİ



- Largest Capacity Green Hydrogen Plant of the Turkish Industry
- Türkiye's First Regional Hydrogen Roadmap
- Investment Feasibilities in the Production of Green Hydrogen Derivatives

- First Commercial Production of a New Boron Chemical : Solid Phase Hydrogen Storage Material – Sodium BoroHydride
- Sodium BoroHydride-based New Power System
- Turkey's First Domestic Hybrid Ceramic Tile Kiln Using Hydrogen



Thank you for your attention.

Cluster 5 National Contact Points (Energy)

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 UfukAvrupa_TR

 TÜBİTAK Ufuk Avrupa Programı