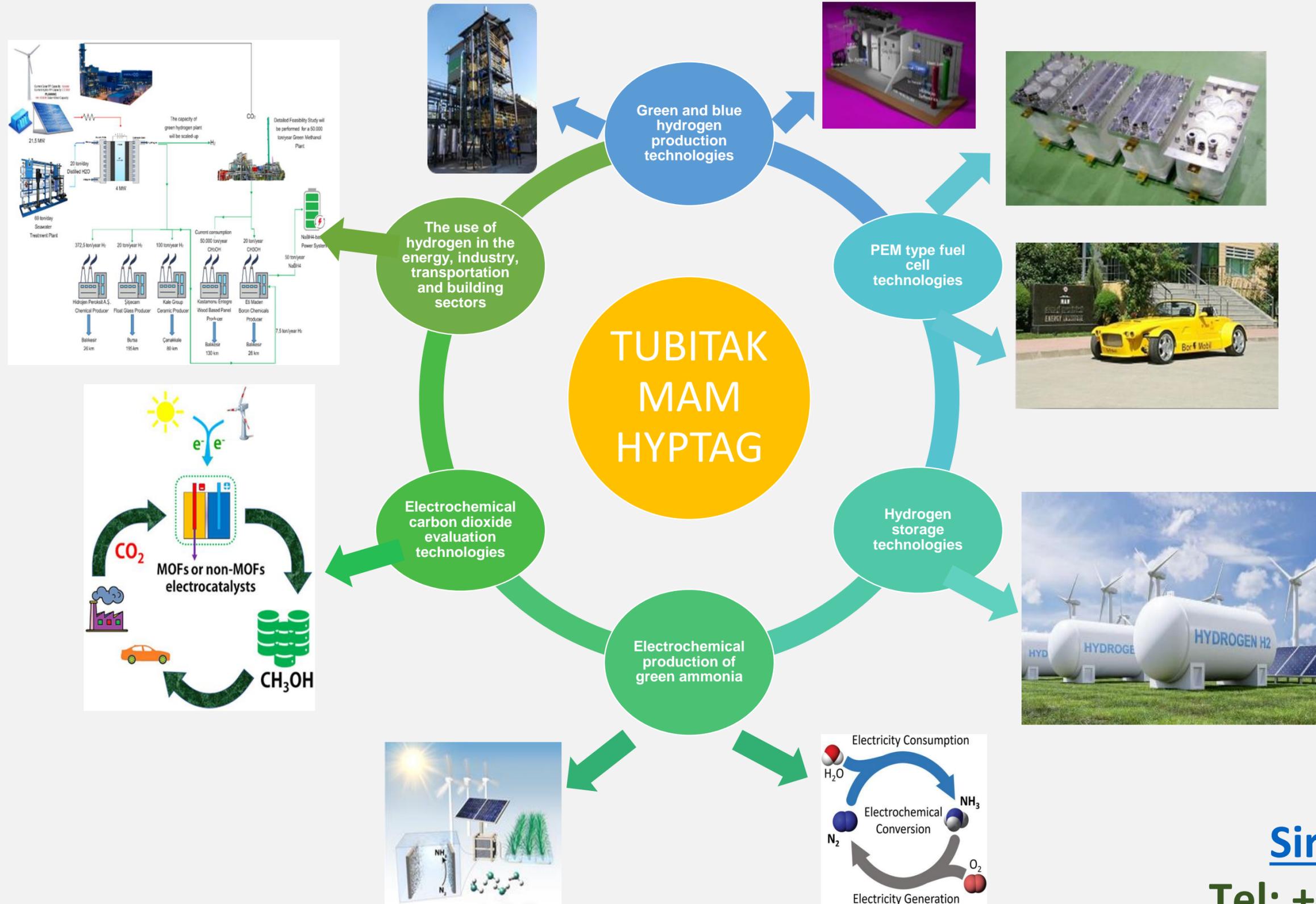




REPUBLIC OF TÜRKİYE  
MINISTRY OF INDUSTRY  
AND TECHNOLOGY



# HYDROGEN and FUEL CELL TECHNOLOGIES

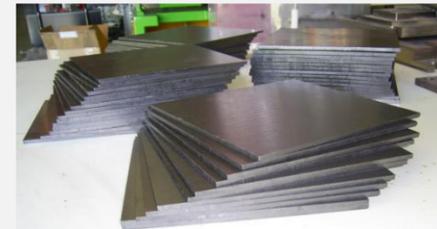
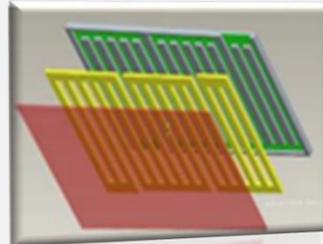
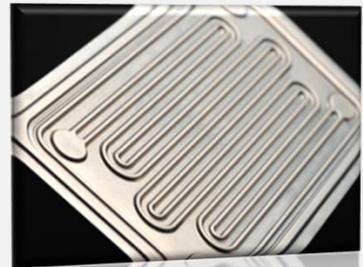


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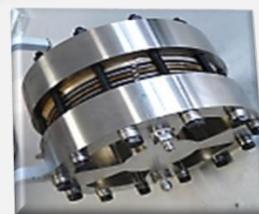
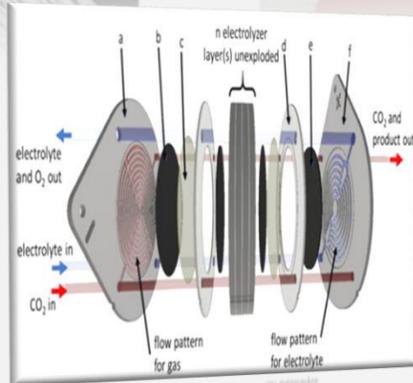
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# Hydrogen and Fuel Cell Technologies Production, Integration and Test Infrastructure



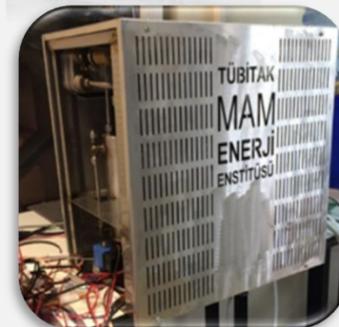
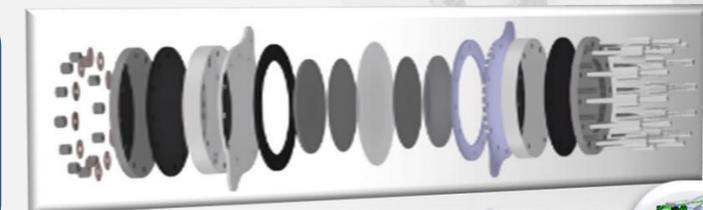
## Subcomponent Design & Manufacturing

Electrocatalyst, Membrane Electrode Assembly (MEA), Bipolar Plates, Hardware



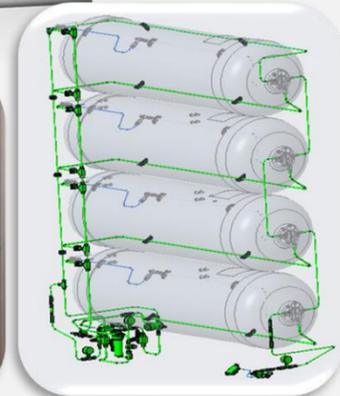
## Stack Development

Fuel Cell and Electrolyser Stack Integration



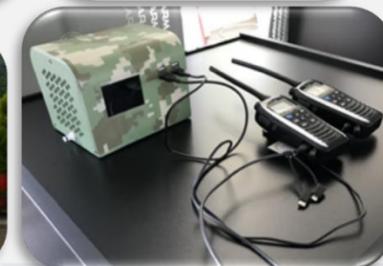
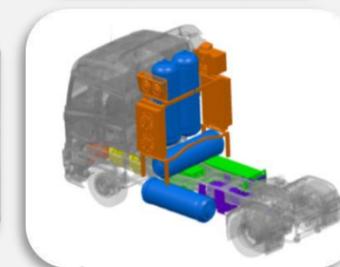
## Hydrogen Production and Storage

Reformer and catalytic process based production and boron-based storage, high pressure tanks & refueling strategies



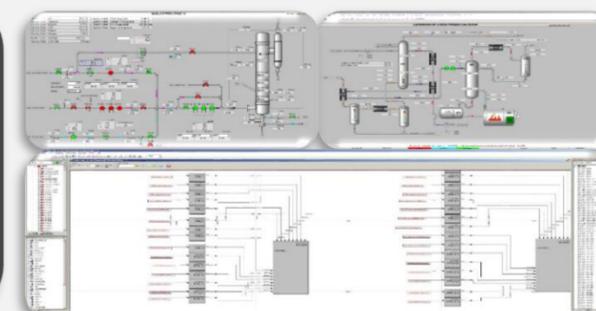
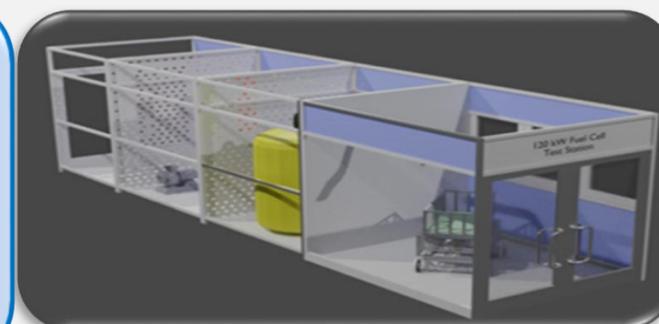
## End User Integration

Portable & Stationary Power Supplies, Platform Integration: Electric Vehicle, Heavy Duty Trucks, Unmanned Aerial Vehicle, Military Platforms and Standardized Tests



## Process & Energy Management, Performance Tests

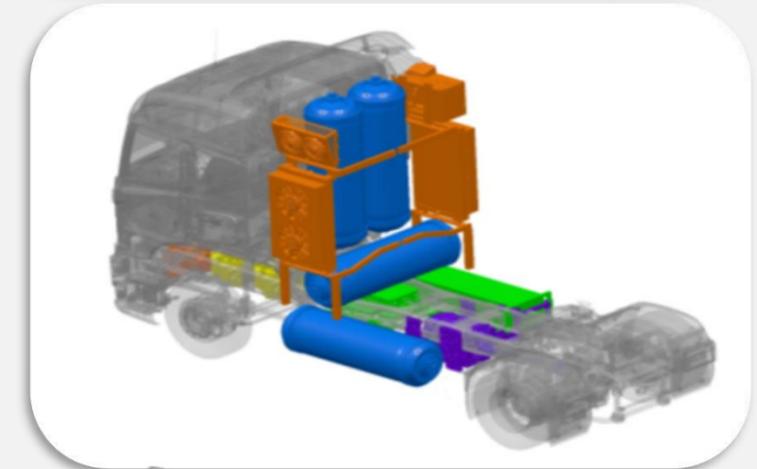
Process Design & Instrumentation, Real Time Data Management Control, Algorithm Development, Digital Twin, 120 kW Fuel Cell, 50 kW Electrolyzer Performance Test Infrastructure



## DEFENSE and EMERGENCY

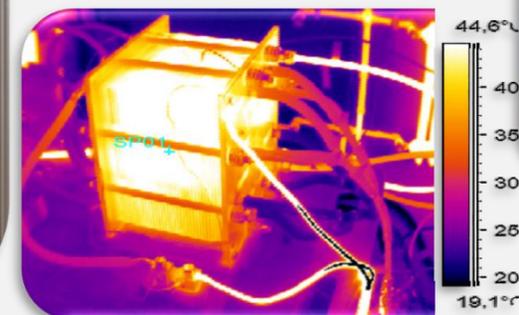
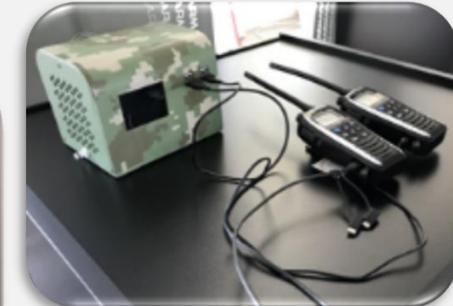
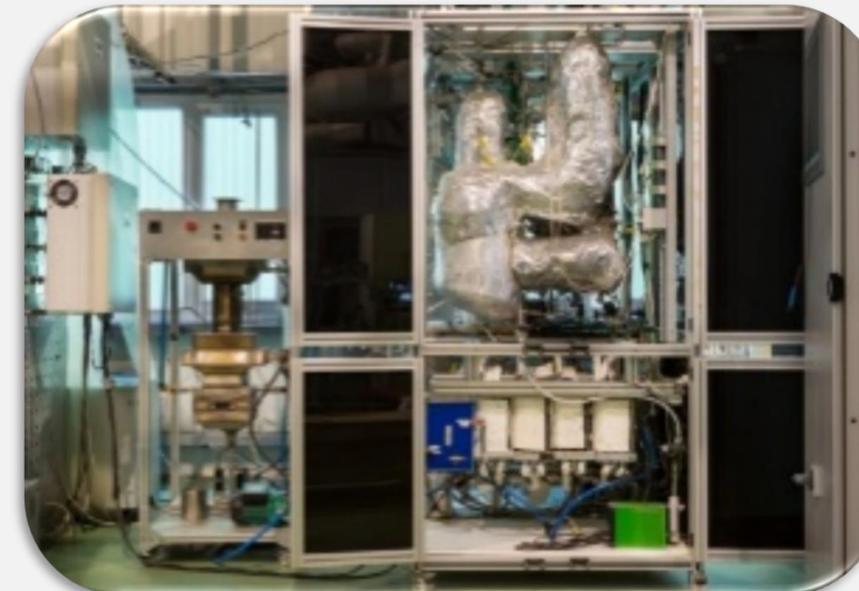
### Hydrogen-based Range Extender Systems for Military Vehicle Platforms

- Long operational duration
- Low thermal and acoustic signature
- Flexible and modular design according to specific mission and payload profile



### Stationary and Portable Power Systems

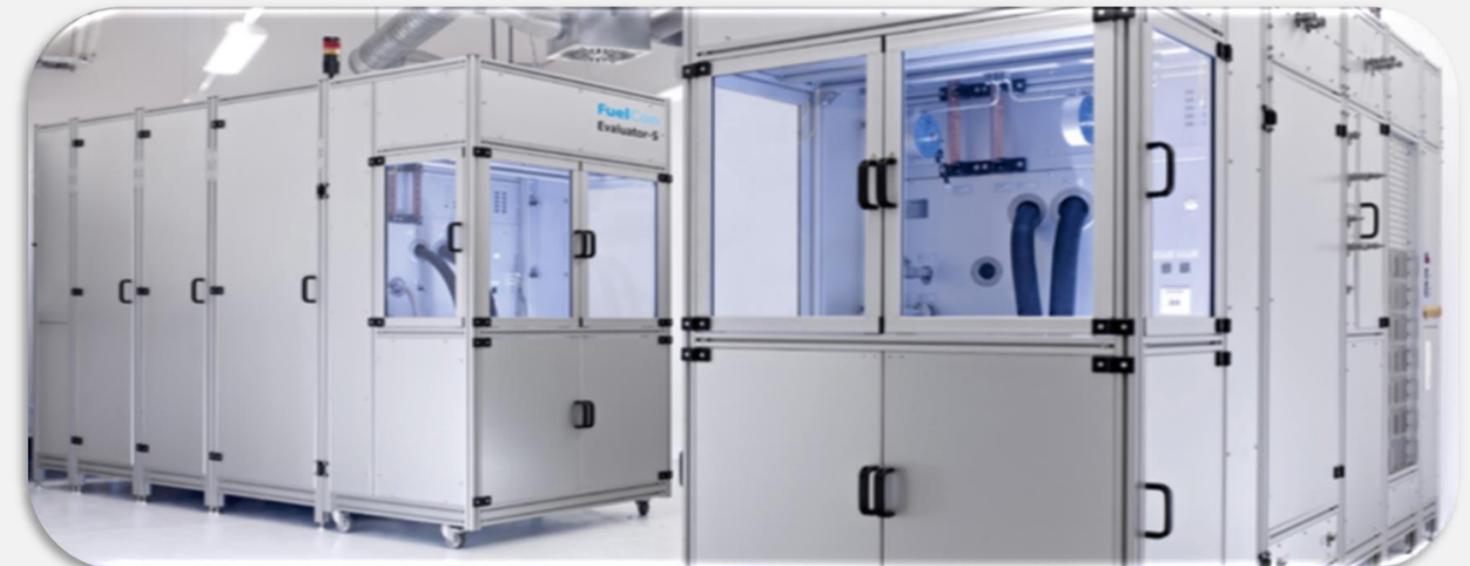
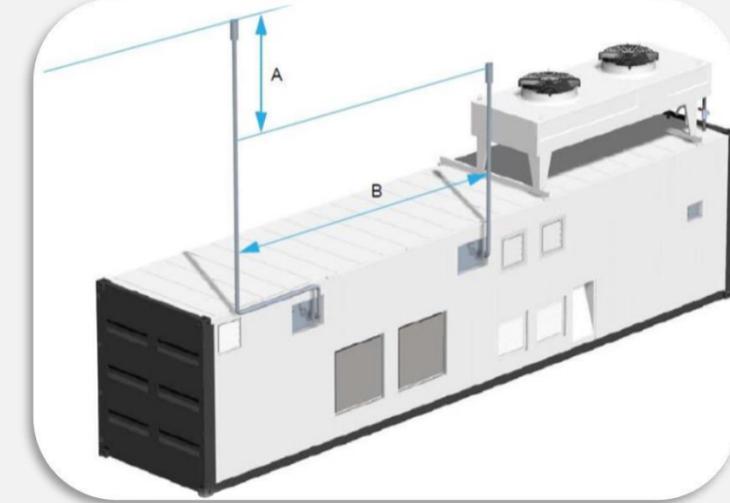
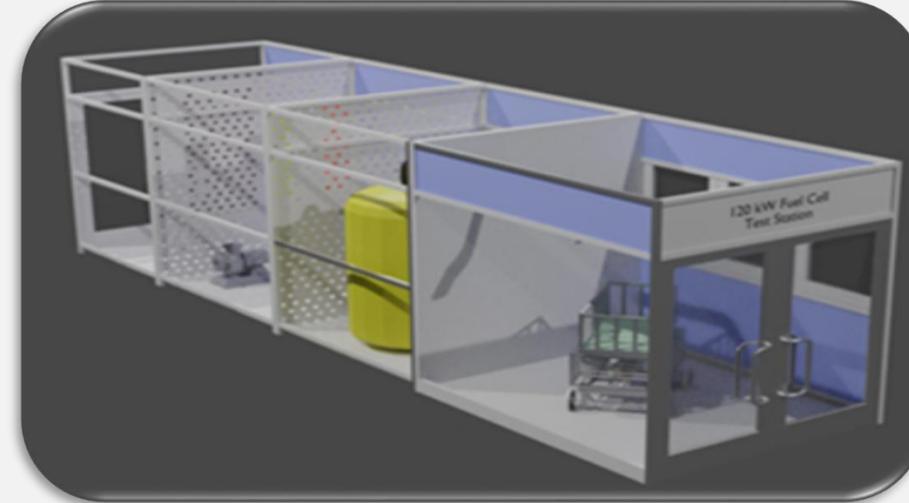
- Portable power and heat generation for military field operations and disaster areas
- High-pressure storage or on-site hydrogen production options
- Design and production, ranging from portable backpack-sized units to containerized system scale



# Areas of Collaboration

## High-Capacity Joint Hydrogen Infrastructure HORIZON EU FRAMEWORK

- One of the largest hydrogen testing infrastructures at EU and global scale in TÜBİTAK Marmara Research Center
  - 120 kW Fuel Cell Test Station
  - 50 kW Electrolyser Test Unit
- Compatible with , defense, automotive, stationary, and portable power systems
- Contribution to Green Deal goals with green hydrogen production
- Active collaboration in Horizon EU calls with a «member and associate member cooperation» approach





REPUBLIC OF TÜRKİYE  
MINISTRY OF INDUSTRY  
AND TECHNOLOGY



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TECHNOLOGY  
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# THANK YOU

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