

UKRAINIAN HYDROGEN STRATEGY

"ACCELERATING HYDROGEN ECOSYSTEM"









Lithuanian RDI Liaison Office

National Centre for Research



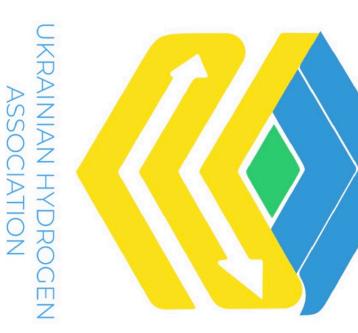
NATIONAL RESEARCH, DEVELOPMENT

AND INNOVATION OFFICE

HUNGARY











Clean Hydrogen Partnership

European Association for Storage of Energy

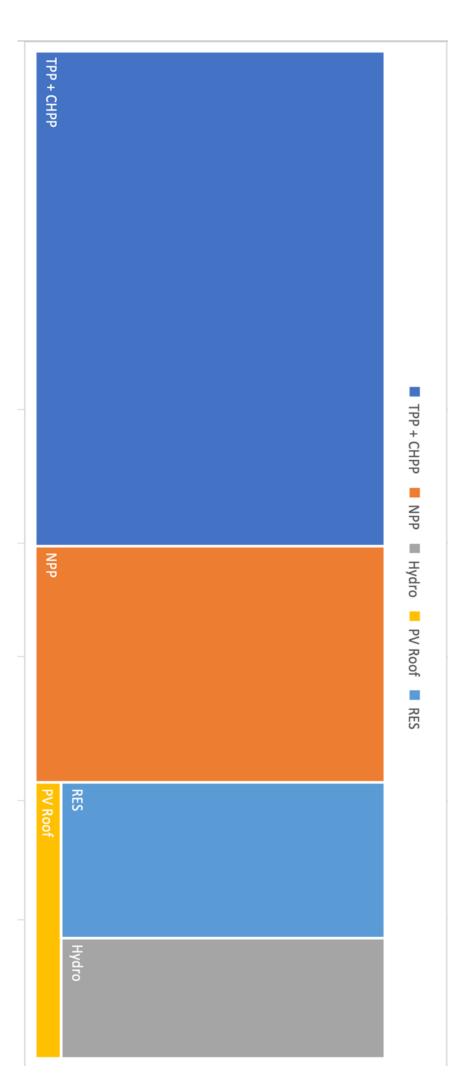
Pilot Project Partners



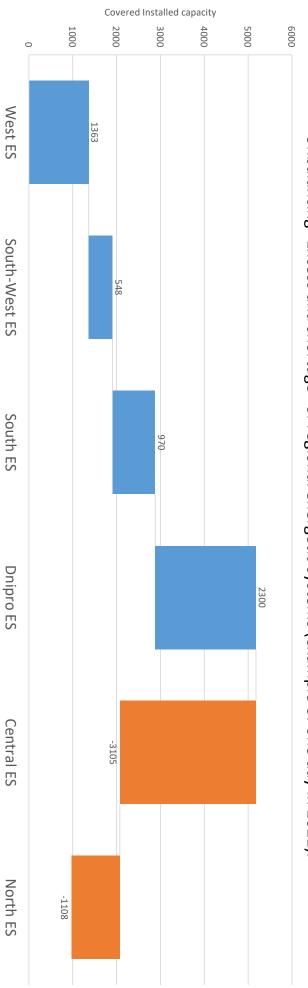
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BUSES/TROLLEYBUSES AND PROPULSION SYSTEMS IN UKRAINE. DECEMBER 2021 WITH OUR PARTNERS, WE ESTEBLISHED PRODUCTION OF HYDROGEN



balance the system (up to 30% of total generated power). plants, but most of the power was generated by nuclear plants (55%), and coal and gas plants were used to centralized and direct dispatchable control. Near 50% of generation installed capacity is coal/gas power year, was designed and built in the middle of the last century, according to the obsolete principles of The Ukrainian power system with installed capacity 59 GW with electricity production 156 000 GWh per



Unbalancing "Excess and shortage" of regional energetic systems (example of one day in 2021).

- interconnected by high-voltage transmission lines. Ukrainian energy system consists of regional energy systems (energy rings-islands), which are
- region was up to 3 gigawatts in deficit in generation) and eastern regions were taking electricity from decentralized system of energy management and energy storage. In fact, the central regions (Kyiv the surplus southern and western regions These regional energy systems and whole Ukrainian system is not balanced and do not have a
- Transmition huge amount of electricity through the old grid, with a technological loss of up to 15 %, from the southern regions.



supplied with electricity example, in the Kiev region, power is cut off for 12 - 14 hours a day, and the Lviv region is only 30%of transmitting electricity through the grid between energy regions and leads to emergency shutdowns of nuclear power plants. Needs balancing and storage systems around 5 gigawatts installed capacity. For The impact of attacks on the energy system, leads to an inability to balance consumption, to the impossibility

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UKRAINIAN HYDROGEN STRATEGY Government YULIA PIDKOMORNA

Deputy of Minister of Energy of Ukraine Responsible for Energy Efficiency and Energy Saving

Head of the inter-ministerial Working Group on High level Hydrogen Strategy Development

Ukrainian Hydrogen Association take a part in creating national strategy



UKRAINIAN HYDROGEN STRATEGY Parliament YURII KAMELCHUK

Member Committee on Energy, Housing and Utilities Services Head Parliament Working Group "Implementation of EU GreenDeal, green finance and innovations, hydrogen

energy solutions, energy storage to Ukrainian legislative

system".

Ukrainian Hydrogen Association - coauthor voted "energy storage" law and participant in the hydrogen draft law.

 Electrolyzers Pipeline Compressors Turbines H2 Methanol and ammonia Coal mix ammonia Solid oxide fuel cell (SOFC) Calculation model Hydrogen production potential Environmental research and protection of natural resources Legislative integration in the EU (GO). 		R&D Technology
 Renewable hydrogen Low-carbon hydrogen for mobility and private sector Green ammonia Green methanol RED III 		Production
 Pipeline Trans-European Transport Network (TEN-T) International production network (cross border projects). 	Regional and international co-c	Transmission
 Depleted gas field Underground gas storage (biggest in EU). Salt cavern in the West Big Tank for H2 Storage (25-100 bar) in connection area with pipeline 	co-operations/connections	Storage
 Hydrogen cluster, circular economy, decentralization. Refueling station and municipal infrastructure. H2 Rail, Trucks, Bus H2 for balancing electricity grid H2 to production heat for industrial and private sectors. CO2 capture to green methanol Dissociated H2 ammonia Green Steel 	S	End use Mobility Industry Energy Buildings
 Tax free H2 (pilot period) CO2 tax GO CBAM Recovery EU plan 		Governance & regulation

NATIONAL HYDROGEN CLASTER ALONG THE VALUE CHAIN and for ENERGY SECURITY Elements Hydrogen Strategy and EU



VASYL DORONIN, President UKRAINIAN HYDROGEN ASSOCIATION HydrogenUkraine.org