

## Decarbonisation of Danube Delta Multidisciplinary Initiative



## **Energy**

- Main drivers/key objectives and target actions: ensuring energy security, increasing the resilience of the energy system, and facilitating energy transition by clean and renewable energy production, adoption of new energy-efficient technologies, sustainable alternative (bio)fuels production and use, development of a charging and refuelling interconnected network/infrastructure etc.
  - Reduction of greenhouse gas emissions
  - Reduction of operational and embedded carbon (ex. decarbonisation of architecture) / Decarbonization of economy
  - Decarbonization of gases
  - Protect the ecosystem and support preserving bio-diversity/possitive effects for biodiversity
  - Reduce energy costs
  - Reduce the overall consumption of energy (green mobility, home insulation)
  - Alleviate energy poverty
  - Increase quality of life
- Increase efficiency of existing wind turbines by proposing new, more efficient design solutions
  - · More green energy
  - Less impact on the ecosystem
- > Develop integrated energy production systems capable of handling natural fluctuations in renewable energy production
  - Convert electrical power to (power-to-X) and from (X-to-power) storable
- Promote small scale, modular electricity production systems suited for real Danube Delta conditions
  - Suitable for small, isolated communities or individual households
  - Less intrusive into the protected Danube Delta ecosystem
  - Mobile, but capable to be easily integrated into larger scale units
  - Increasing the production and consumption of energy from renewable sources,
    Diversification of renewable energy production sources, Ensuring the sustainability of bioenergy
    - Wind (most common in the present)
    - Solar, Biomass, Hydrogen (green or blue)
    - Bioenergy and advanced (bio)fuels (biobutanol, biomethanol, biohydrogen, hydrotreated vegetable oils/renewable diesel (HVO/HEFA), biogas/biomethane, cellulosic ethanol), ammonia and (bio)synthetic fuels - from biomass, agricultural residues, agro-industrial (organic) wastes, lignocellulosic materials, novel and sustainable energy crops, microalgae/plant tissues cultures
- Innovative energy storage solutions