



# H2U HYDROGEN VALLEY

Investment project of 3000 MWt electrolyzer plant construction with 5000 MWt renewable energy source in Bessarabia, Odessa region



# BRIEF DESCRIPTION OF THE REGION



Southern Bessarabia is:

- 1 the southwestern gate of Ukraine, transport hub on the way to Europe and Asia;
- 2 the territory with significant competitive advantages and potential for the maritime sector, transport, logistics development and innovations. The sea coast stretches for 300 km (from the mouth of the Danube to the Tilihul estuary), and from the sea to the north - for 200-250 km;
- 3 an ecologically clean region with unique climatic conditions for the development of a «green» economy - high-tech agriculture, food and processing industries, alternative energy and tourism;
- 4 an investments-worthy region.



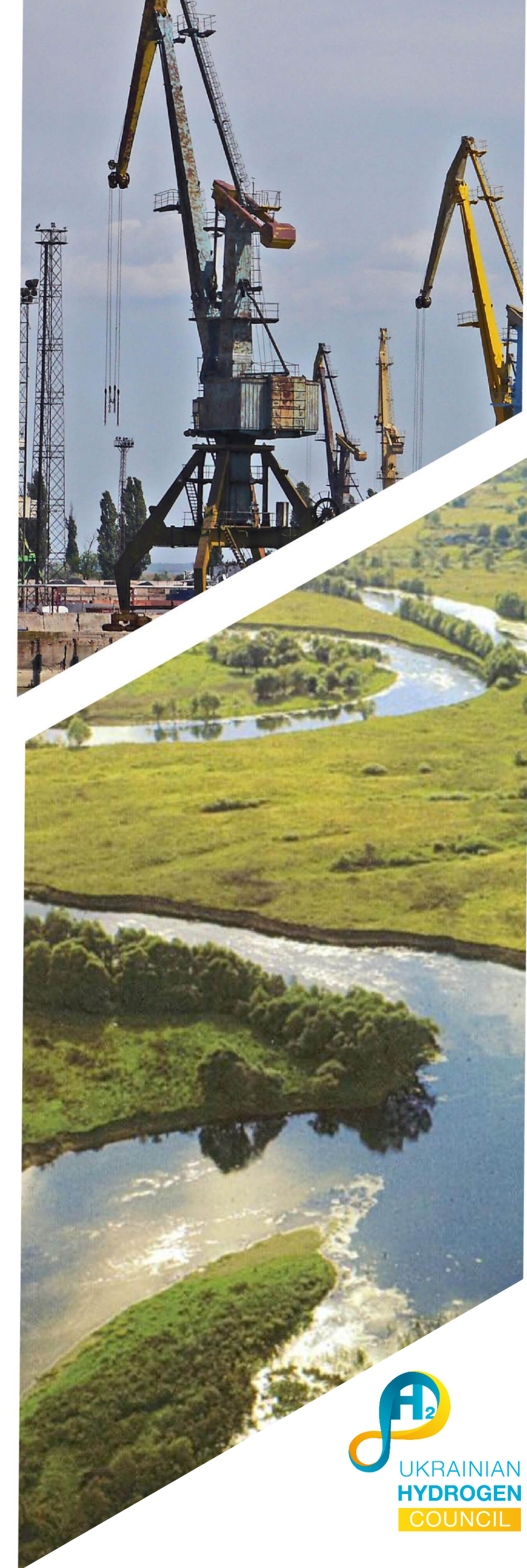
# PROJECT CONCEPT

H2U is a specialized holding company established for the implementation of a project for the construction of the renewable hydrogen plant with an electrolysis capacity from 500 MW in Southern Bessarabia, Odessa region.

The project goal is to create an energy cluster in the region focused on the production of electricity from renewable energy sources, the production of green hydrogen, and its export to the countries of the European Union.

The choice of the project implementation in the Southern Bessarabia is conditioned by the following factors:

- high potential for solar and wind activity
- competitive logistics routes to the consumer
- available fresh water resources
- developed infrastructure



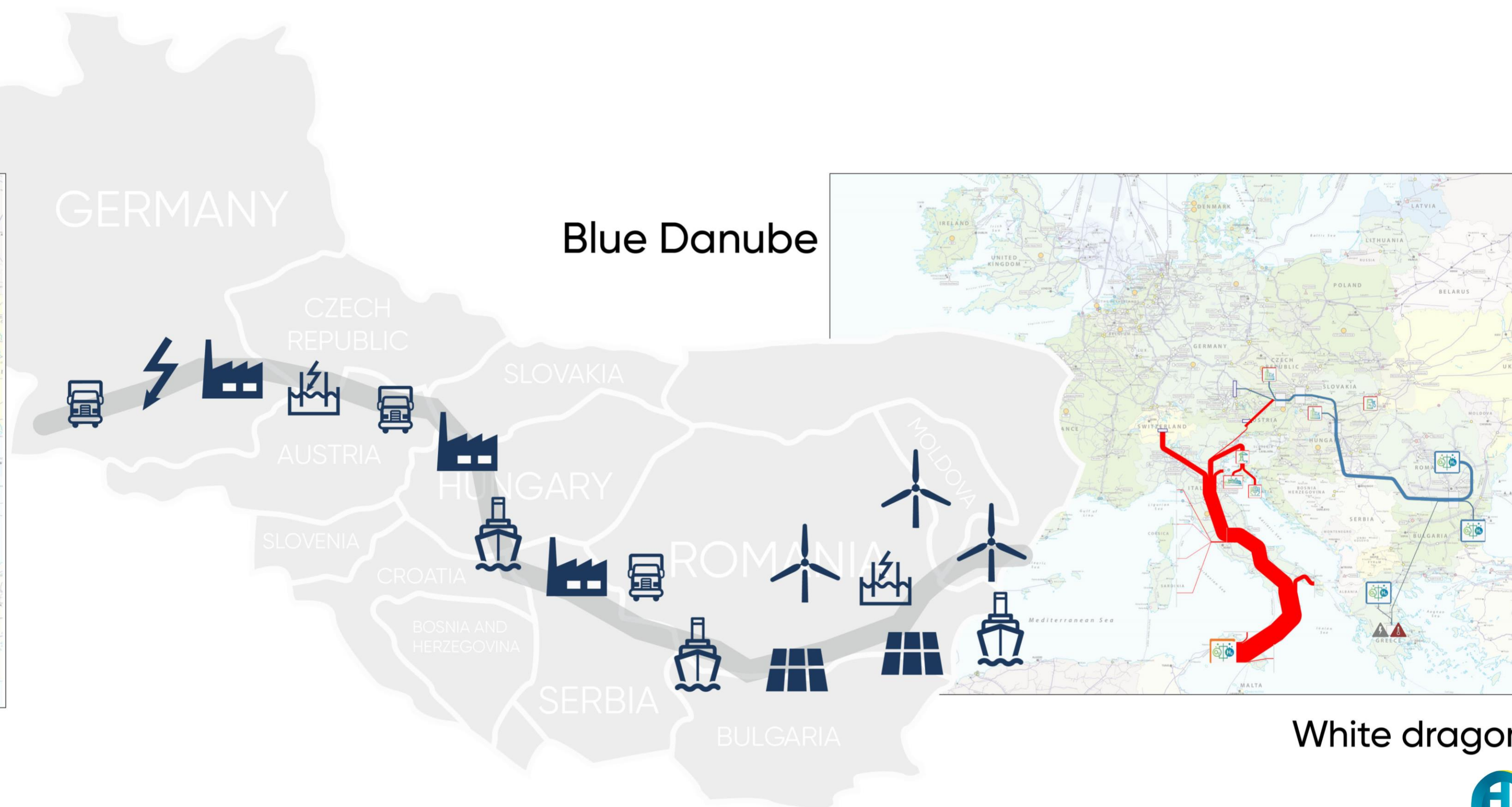


# The project implementation in South Bessarabia was stipulated by:

The potential to be connected to 3 IPCEI – Blue Danube, Black Horse and White dragon



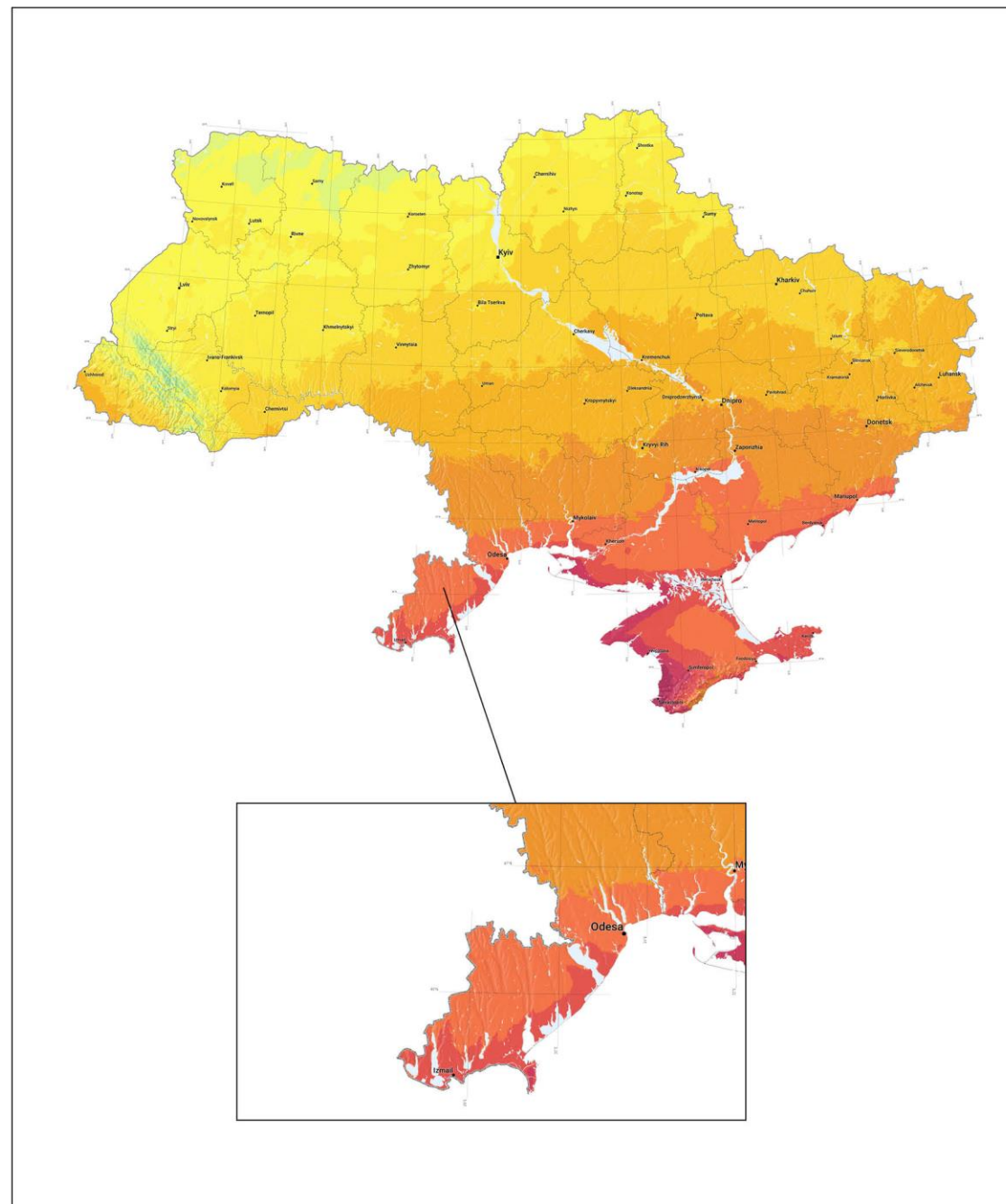
Black Horse



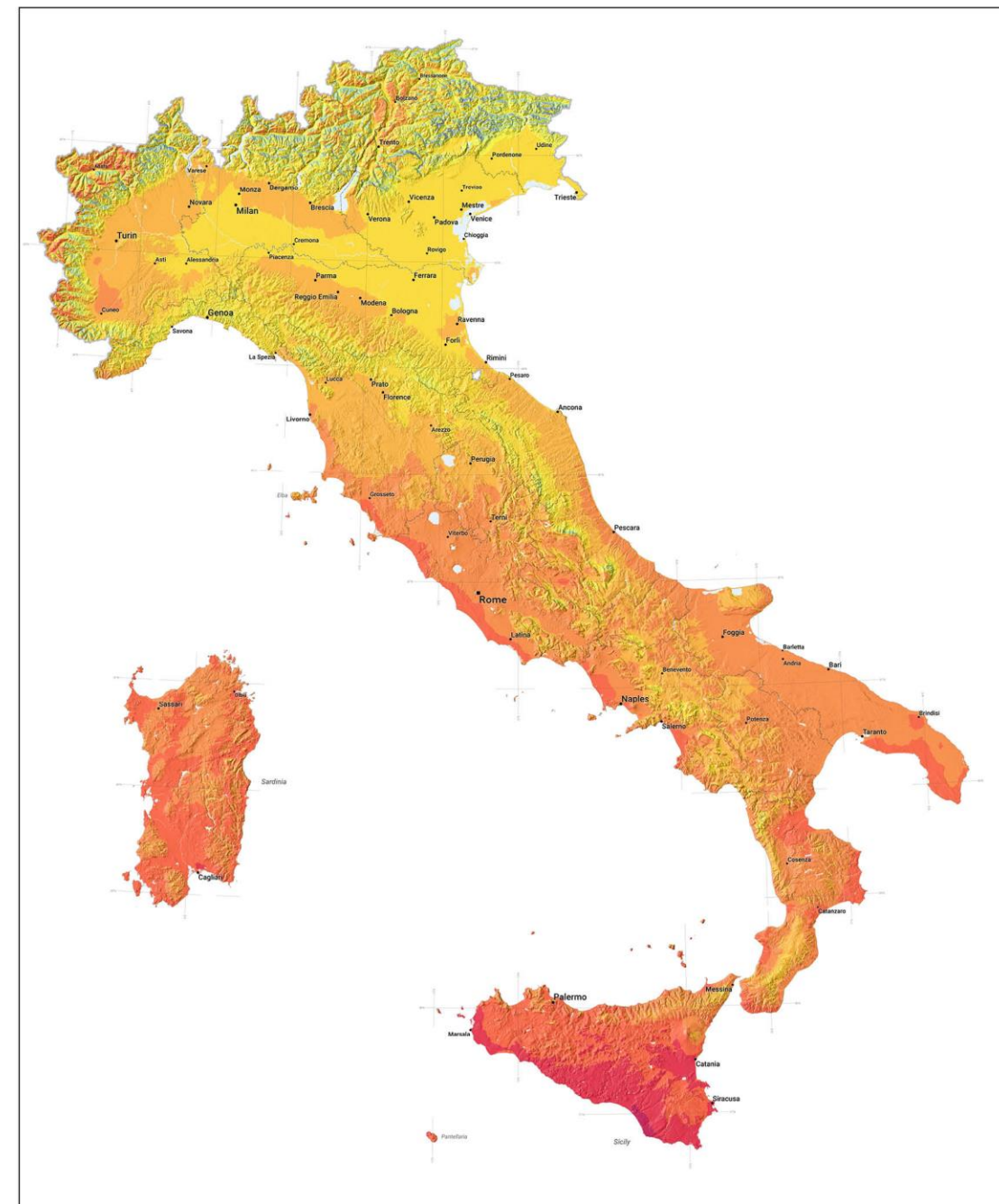
White dragon



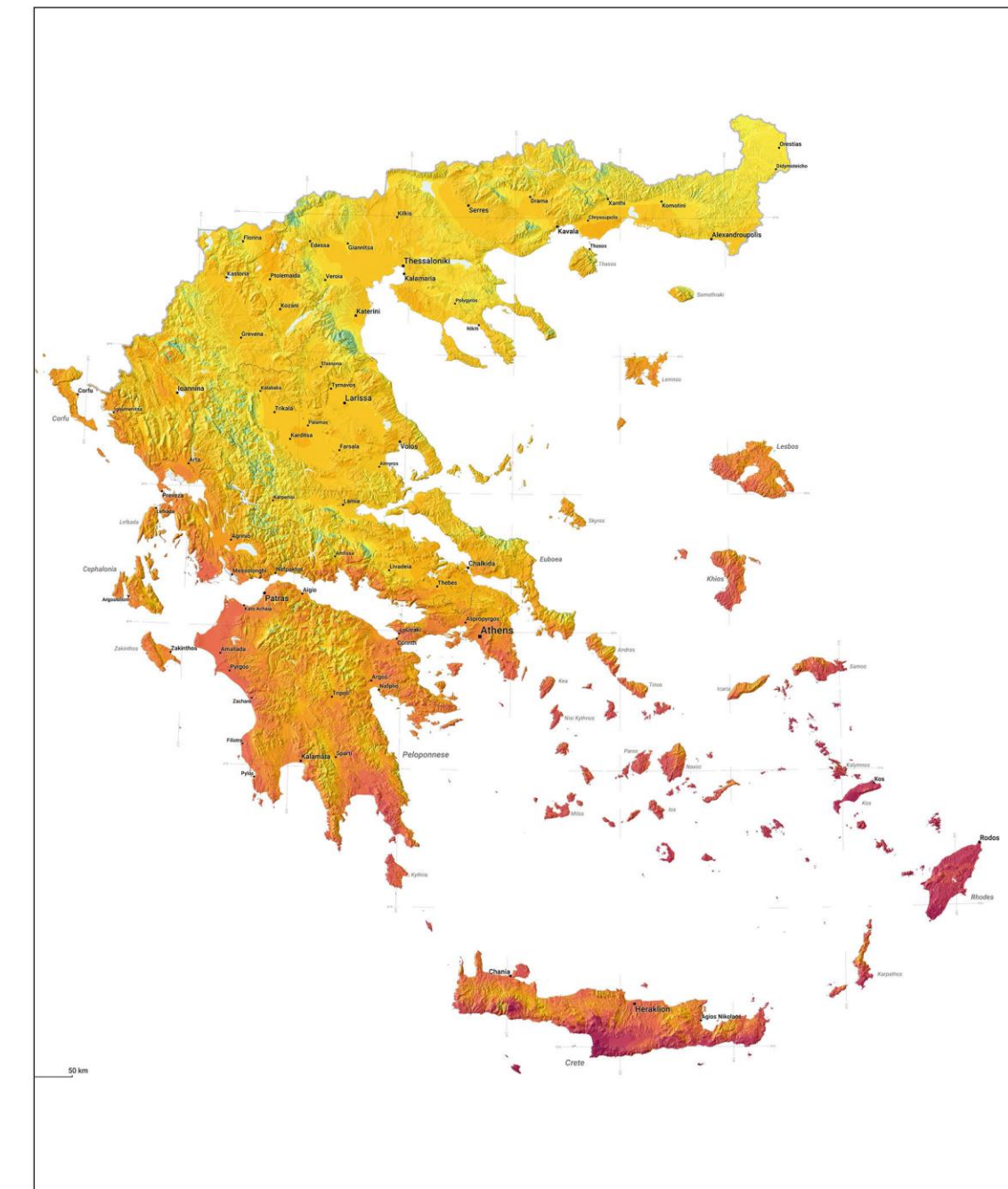
# SOLAR ACTIVITY POTENTIAL IN BESSARABIA



/Figure 1/



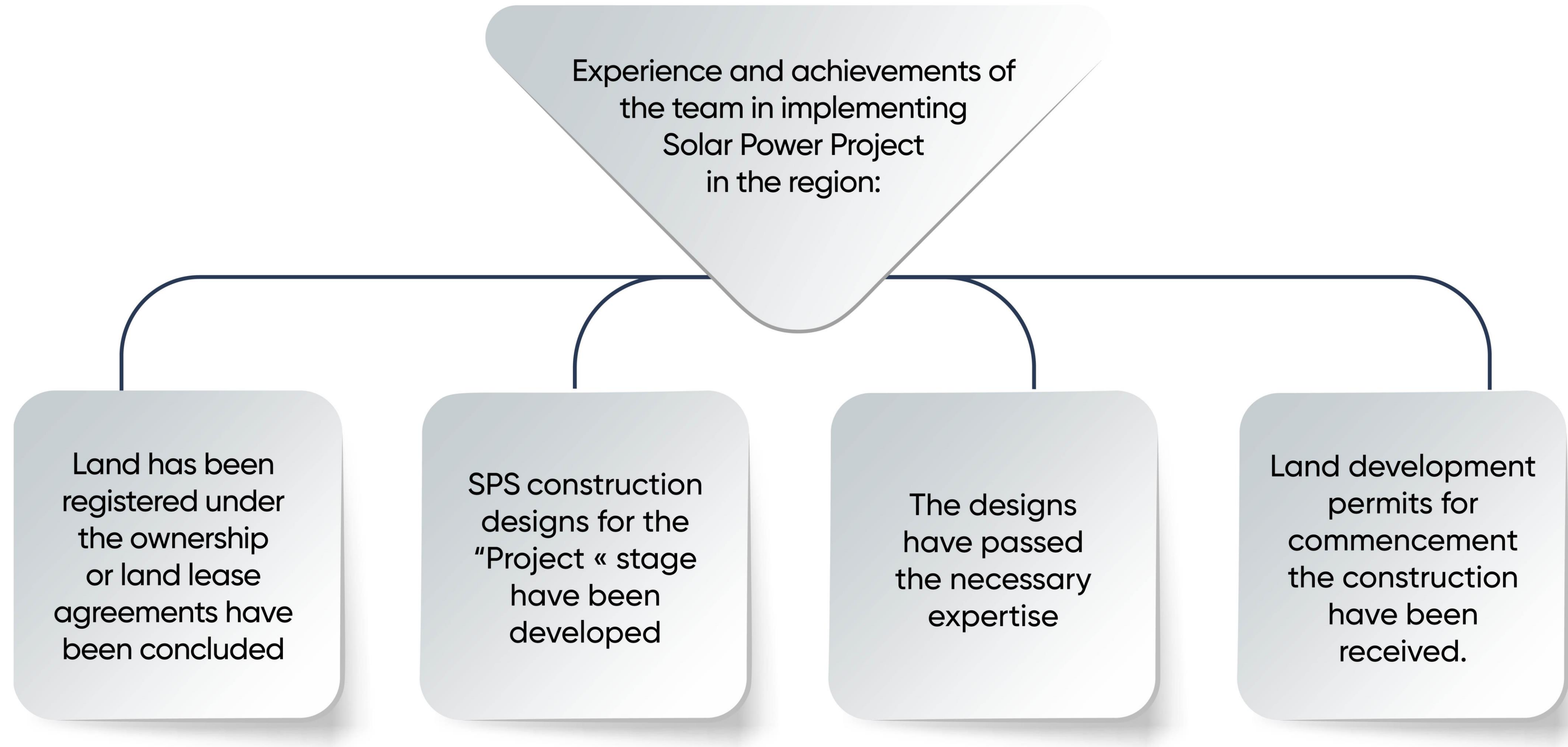
/Figure 2/ Production of electricity is comparable with solar power stations around Western Macedonia (Greece) or Central part of Italy



The average annual solar radiation in this region is about 1600 kWh/m<sup>2</sup>. There are 310–320 sunny days in Southern Bessarabia every year. It is the sunniest region of the post USSR. Average temperature in summer is about 23 °C what allows generating electricity with minimum temperature losses and maximum efficiency.



# DEVELOPER'S EXPERIENCE IN THE REGION

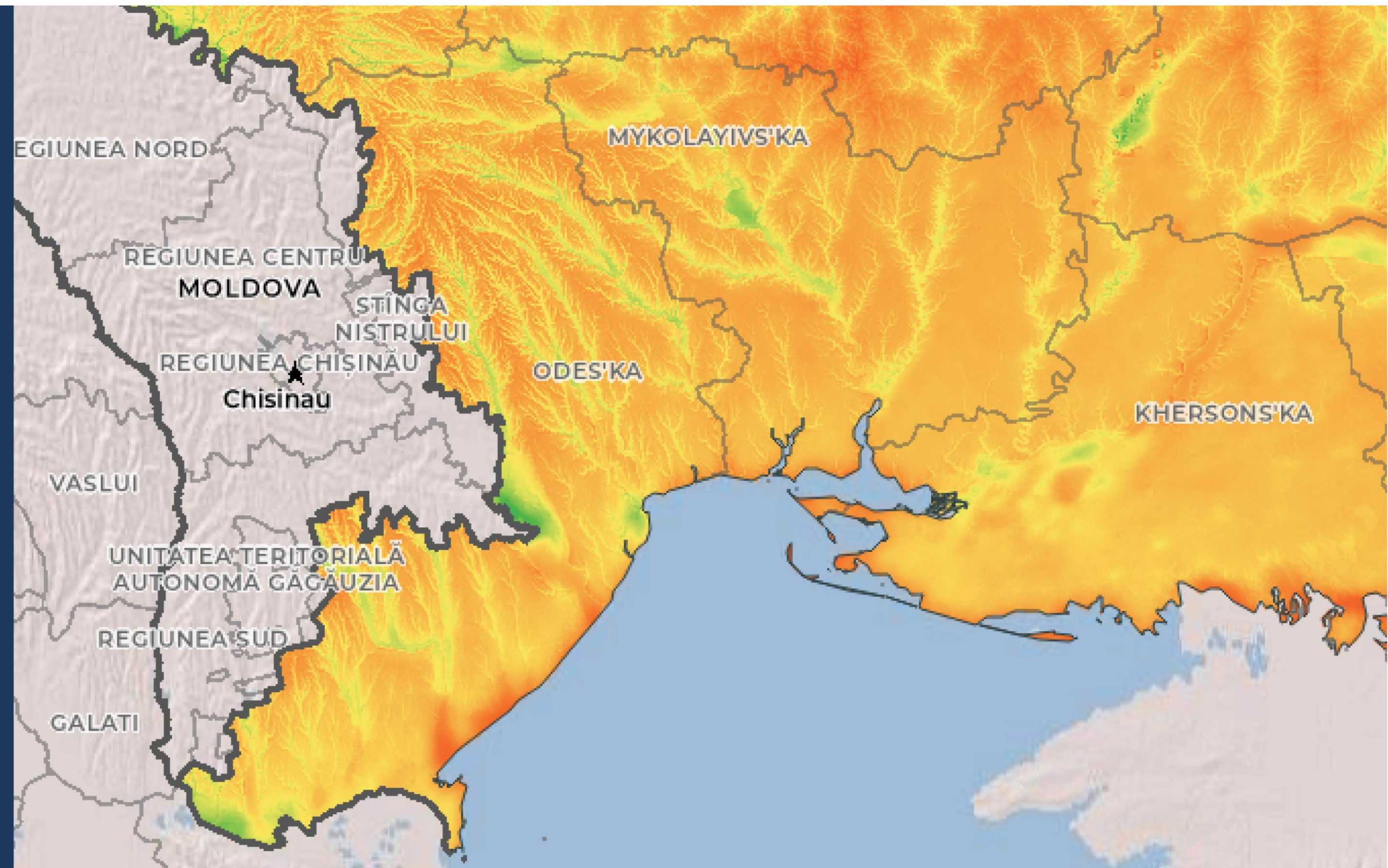




# WIND ACTIVITY POTENTIAL IN BESSARABIA

The wind potential of Bessarabia ranges from 1,5 – 4 GW, so wind power plants can be built both onshore and offshore.

The most promising are the southern and southwestern regions. The average annual wind speed exceeds 8,0 m/s at an altitude of 120 m, and exceeds 8.5 m/s on the coast of the Black Sea. Load factor is 44 – 46%.





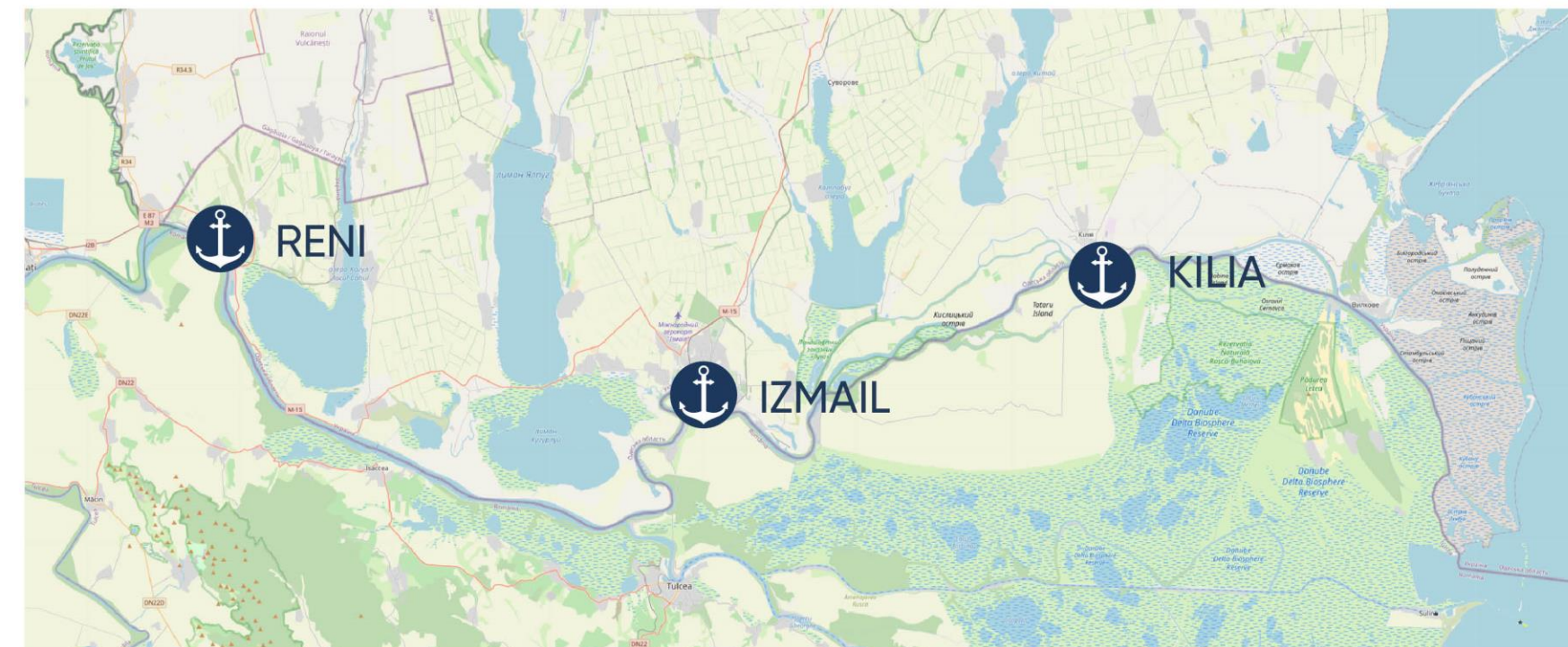
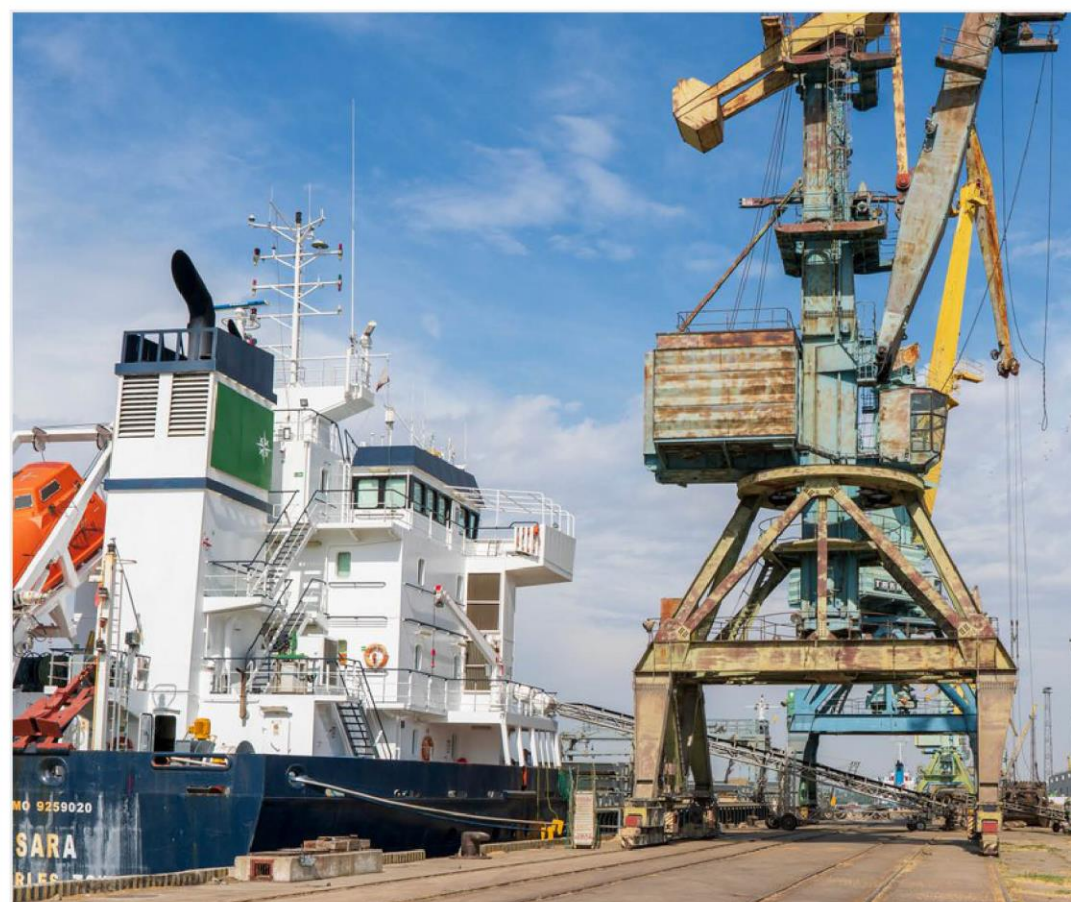
# EXPERIENCE AND ACHIEVEMENTS OF THE TEAM IN IMPLEMENTING WPP PROJECTS IN THE REGION

As part of the wind power projects development, including Limanskaya, Yuzhnoye Energy, OVOD-WIND-1-2-3, Danube (Artsizskaya WPP-1, Artsizskaya WPP-2, Kiliyskaya WPP) with a total capacity of 460 MW:

- A detailed site plan for the wind farms construction has been developed and approved
- Land easements have been issued and land lease agreements have been concluded
- Construction designs of the “feasibility study” and “P» stages have been developed
- The designs have passed the necessary expertise
- GASK Construction permits have been received

In Southern Bessarabia, wind measurement campaigns have been carried out during the implementation of the following projects: Artsizskaya WPP-1, Artsizskaya WPP-2 and Kiliyskaya WPP. At present, we have already received wind measurement data from those regions, as well as from the town of Tatarbunary.





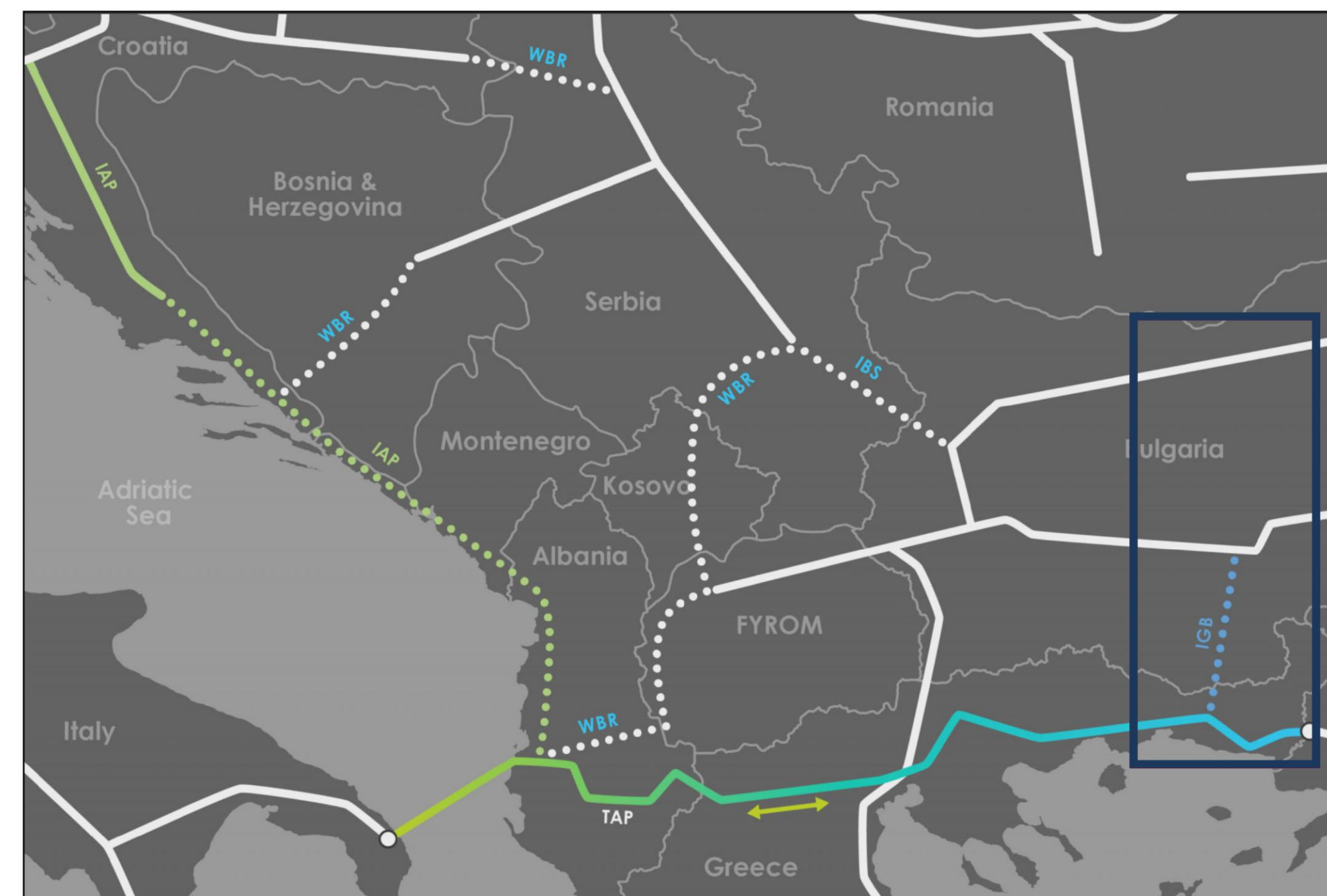
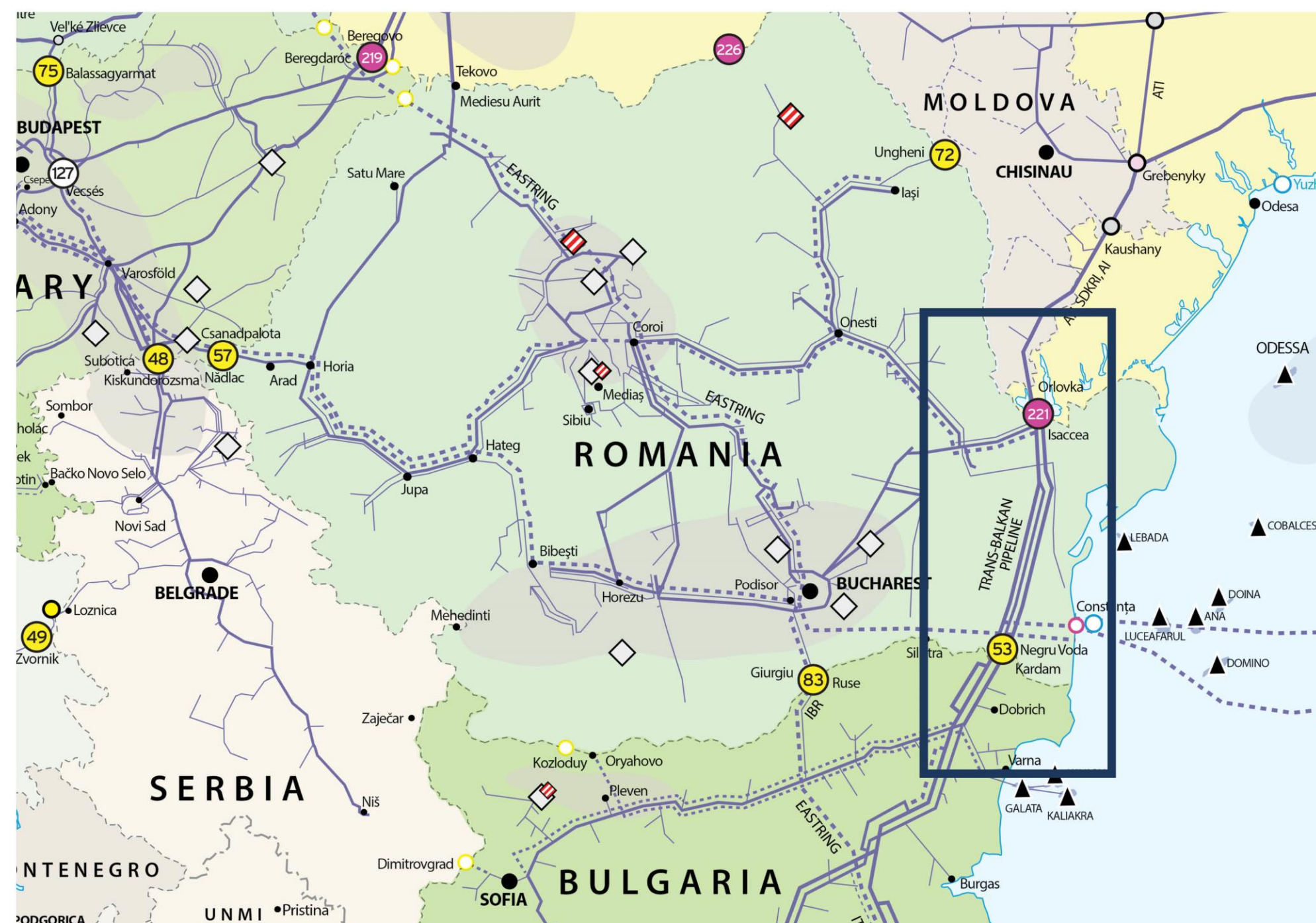
# SEA PORTS OF BESSARABIA

Along 60 km of the Danube in Bessarabia region there are two main seaports. No other European country has the same port infrastructure density. Reniyskyi port is one of the largest deep-water ports among all Danubecountries, with cargo tonnage more than 15 million tons per year.



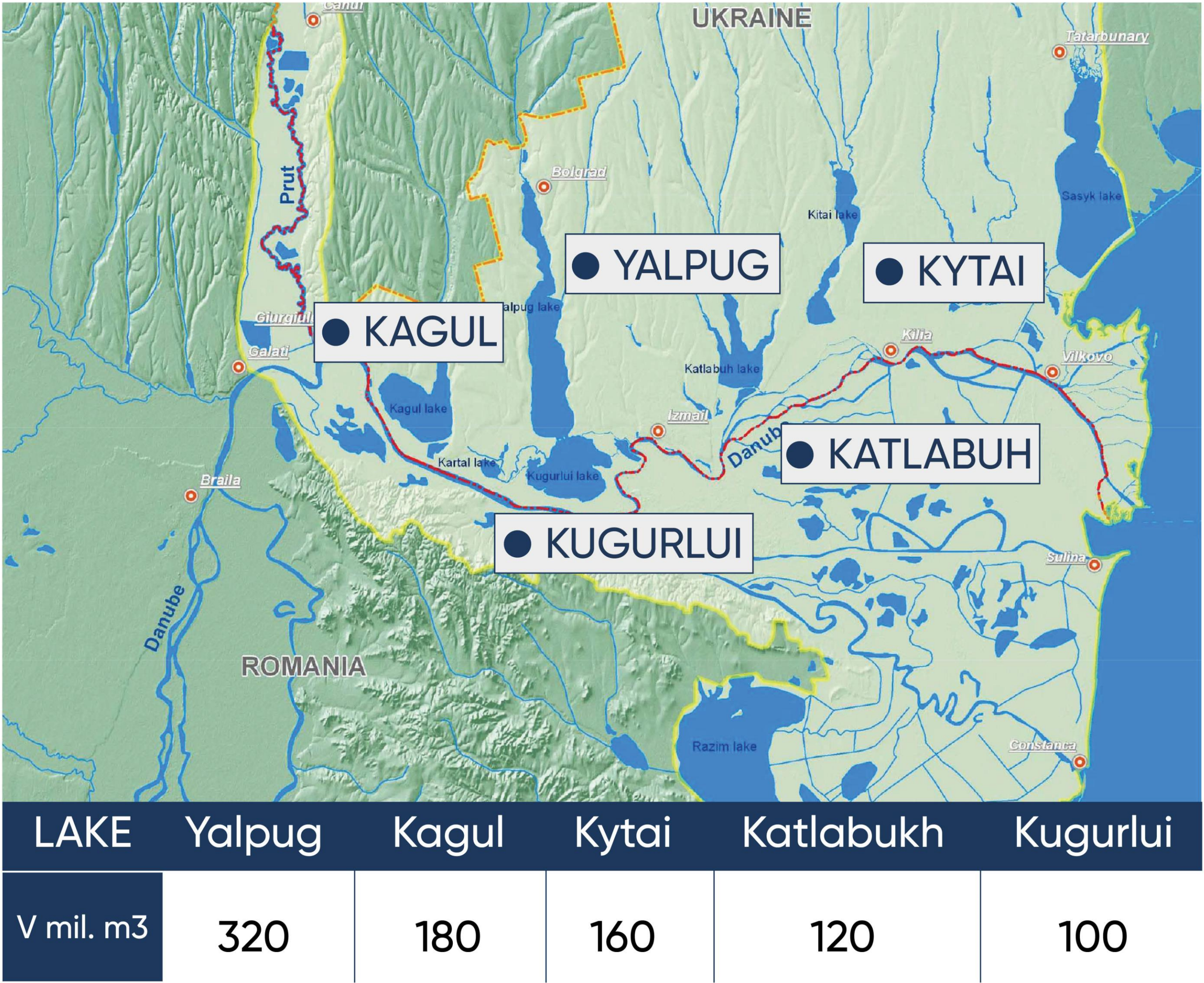
# GAS TRANSPORT SYSTEM OF UKRAINE

A part of the national gas pipeline in the direction of Romania passes through the territory of Bessarabia. This direction can be used for connection to the TAP and supplying H<sub>2</sub> to Romania, Bulgaria, Greece and Italy. The throughput capacity for gas transportation in this direction is 7.5 million m<sup>3</sup> / day. The total capacity is 2.5 billion m<sup>3</sup>, which corresponds to 150 million tons of H<sub>2</sub>.





# WATER POTENTIAL OF THE DANUBE



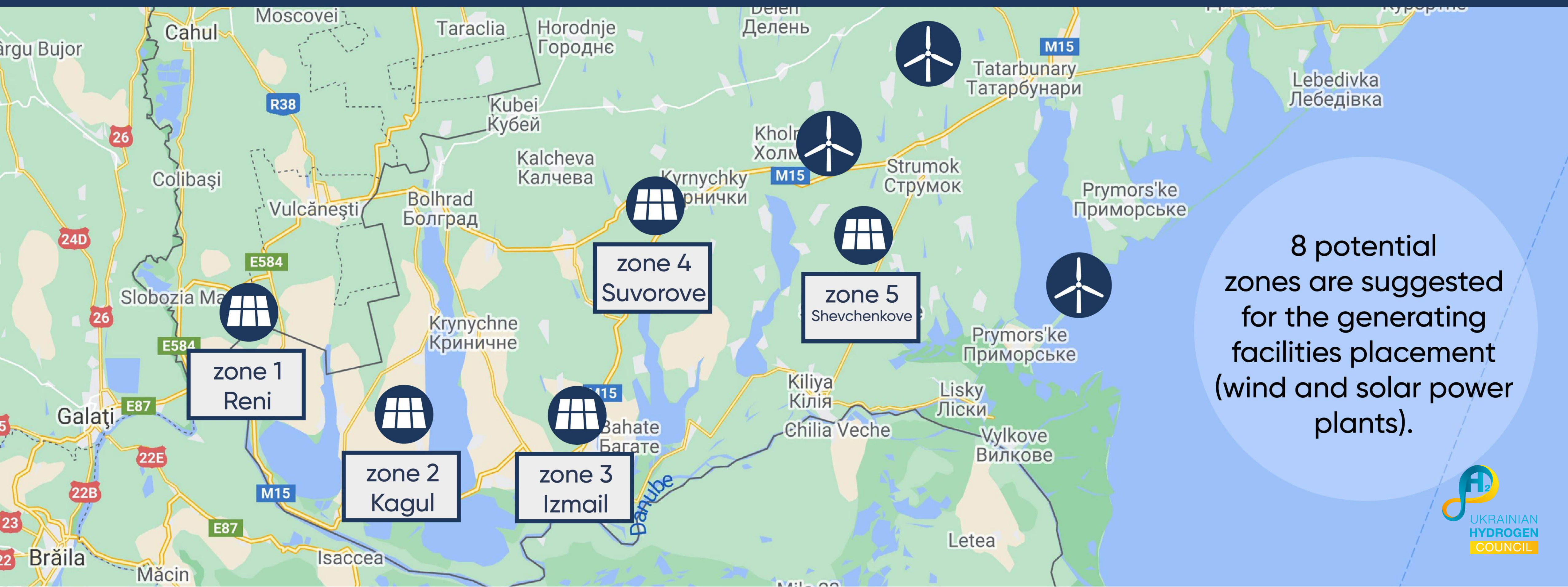
A prerequisite for hydrogen production is the availability of freshwater resources.

One of the advantages of the territory under consideration is the possibility of freshwater intake from the Danube or from the basins of the largest freshwater lakes in Ukraine – Kahul, Yalpuh, Kuhurlui, Katlabukh, Kytai.



# HELICOPTER VIEW OF THE PROJECT

Some parts of the project are ready for commencement the construction. A hydrogen plant can be built in Reni or Izmail on the territory of the seaport or near it. The gas pumping station is located between zones 1 and 2. The distance to the border with Romania is 16 km.





**THANK YOU FOR ATTENTION!**

**DANUBE  
HYDROGEN  
VALLEY**

**Oleksandr Riepkin**  
[riepkin@hydrogen.ua](mailto:riepkin@hydrogen.ua)