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# Wind Potential in Hungary

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# Hungary – Country Specific Information



## Hungary

93 030 km<sup>2</sup>

10 Mio.

107 ppl. / km<sup>2</sup>

40 TWh/year

7,5%

13%

## Germany

357 104 km<sup>2</sup>

82 Mio.

229 ppl. / km<sup>2</sup>

639,1 TWh/year

14.8%

18%

Hungary has not submitted the 2010 NREAP to the European Commission yet

However, in 2008, the government approved the **Renewable Energy Strategy for 2007-2020**. The policy targets the increase of RES production to 15% by 2020. The strategy will favour decentralized energy production, the cogeneration of heat and power and the establishment of small power stations utilizing renewable sources locally. The strategy forecasts a substantial amount of new investments by 2020, in the field of biomass, wind, solar and geothermal energy. Electricity generation from RES will grow faster than heat generation.

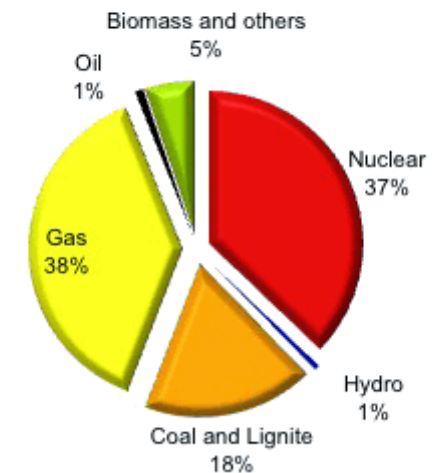
Currently the RES mix includes biomass 90% and geothermal energy 8%

The country's extensive geothermal potential will continue to be exploited

The wind sector is living a dynamic era, with 330 MW installed capacity in 2010 and expecting 740MW in a few years

1200 MW installed wind capacity by 2020 expected by HWEA

Electricity Production by Energy Carriers  
Hungary 2008





# Hungary – Key Energy Sector Players and Regulatory Bodies



## Utility companies >

MOL  
E.On  
EDF Dámász  
North hungarian Power Service Plc

## Grid Operators >

E.On ,  
ELMŰ network Ltd.  
EDF DÉMÁSZ

## Key banks investing into renewables >

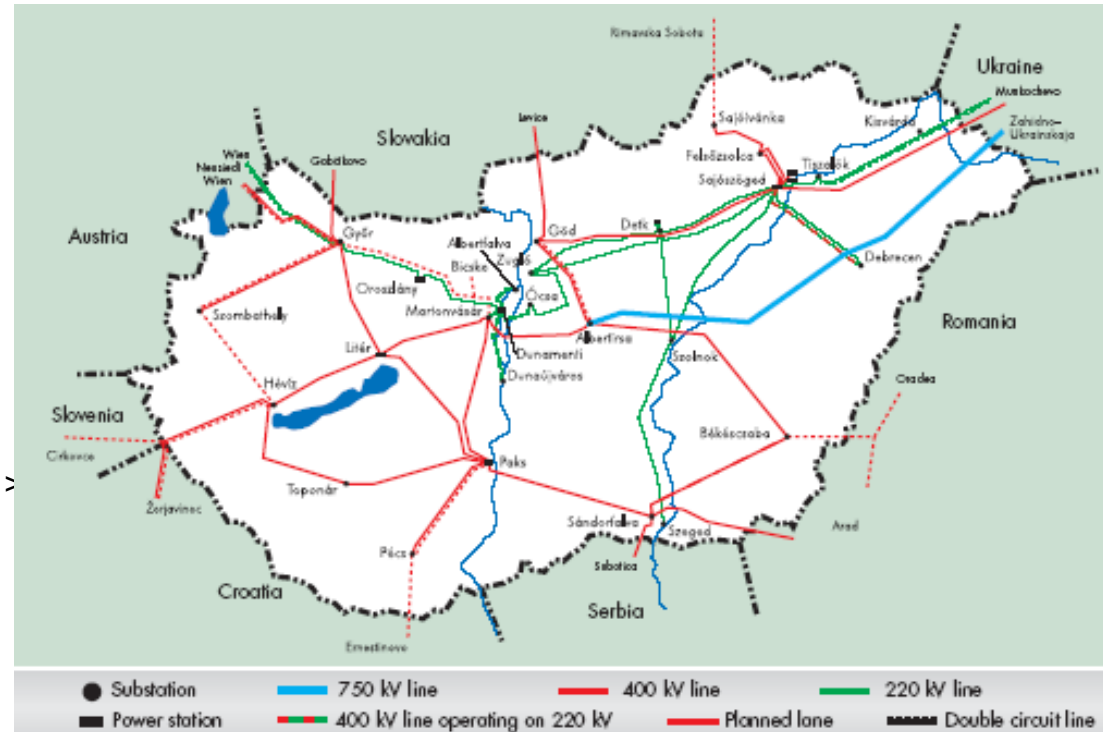
OTP Bank  
MFB  
MKB  
Unicredit

## Investors into Wind energy >

Iberdrola  
Renovalia Energy  
Callis energetik

## Regulatory bodies >

Magyar Energia Hivatal  
(Hungarian energy office)



## Feed-in tariff for Wind in Hungary

in 2010 stands at 26,46 HUF/kWh = **95,3 EUR/MWh**

## Project time

Grid connection takes an average of 45 months in the country, and 10% of total project costs are spent on getting it.

## Permitting process

Environmental license

Plan and Permit for construction

Network connection agreement with Transmission System Operator (TSO)

Network connection agreement with Distribution System Operators (DSO)

The simplified license relates to the selection of the primary energy source, establishment and electricity generation of small power plants between 0.5 MW and 50 MW from Hungarian Energy Office.



TÜV SÜD AG

TÜV SÜD CEE s.r.o.

ÉMI-TÜV SÜD Kft.

More than 170 employees in nine segments offer the most wide-ranging services in Hungary, in the field of laboratory testing, certification of products and systems as well as periodical inspections that are carried out according to national and international accreditations.

ÉMI-TÜV SÜD, with its activity, serves **technical safety** and **quality** in Hungary, too. During their technical projects, we support our clients with high quality services. By means of extensive market knowledge, industrial know-how and advanced laboratories, the Hungarian team of TÜV SÜD offers, at all times, appropriate and **tailor-made solutions** for the successful completion of technical projects.

Benefits of local TÜV SÜD involvement in wind projects

- Advice on local legislative / licensing procedures

- Advice on local technical requirements

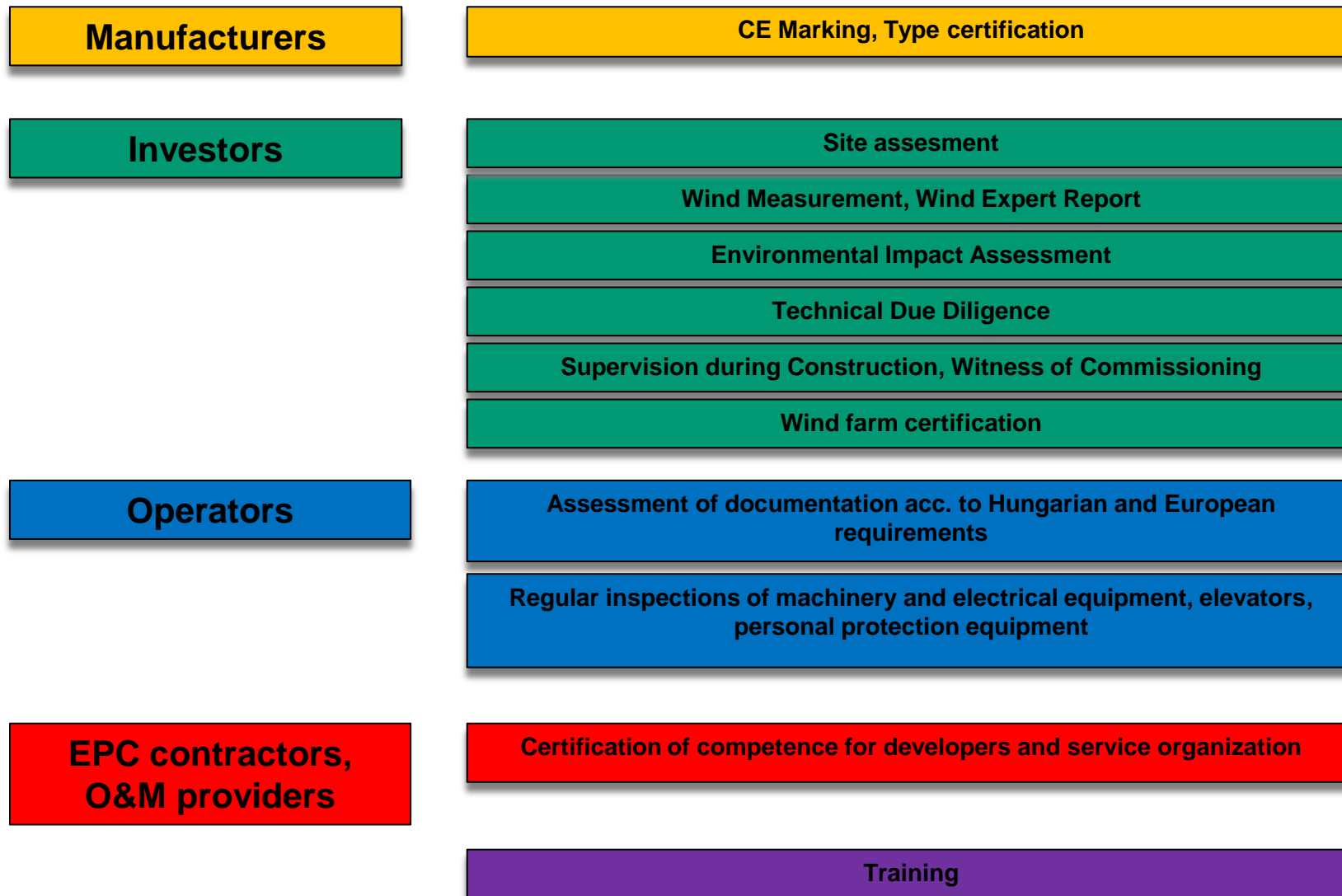
- Cultural awareness

- Overcoming language barriers

- Competitive position on the local market

- Complementary service to a dedicated wind expert team

# Services of TÜV SÜD for Wind Business in Hungary



# Hungary - Geography

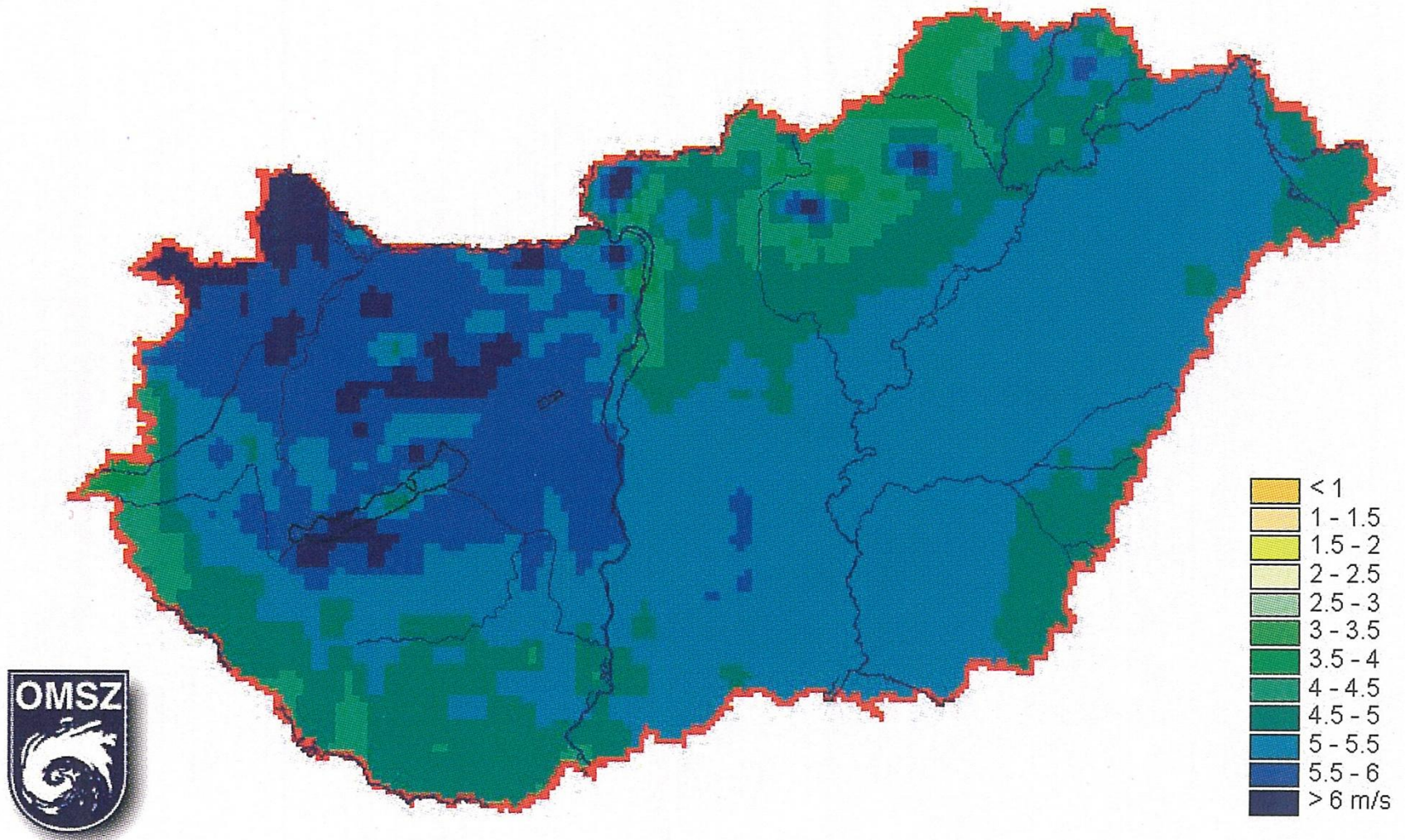


Little Hung. Plain

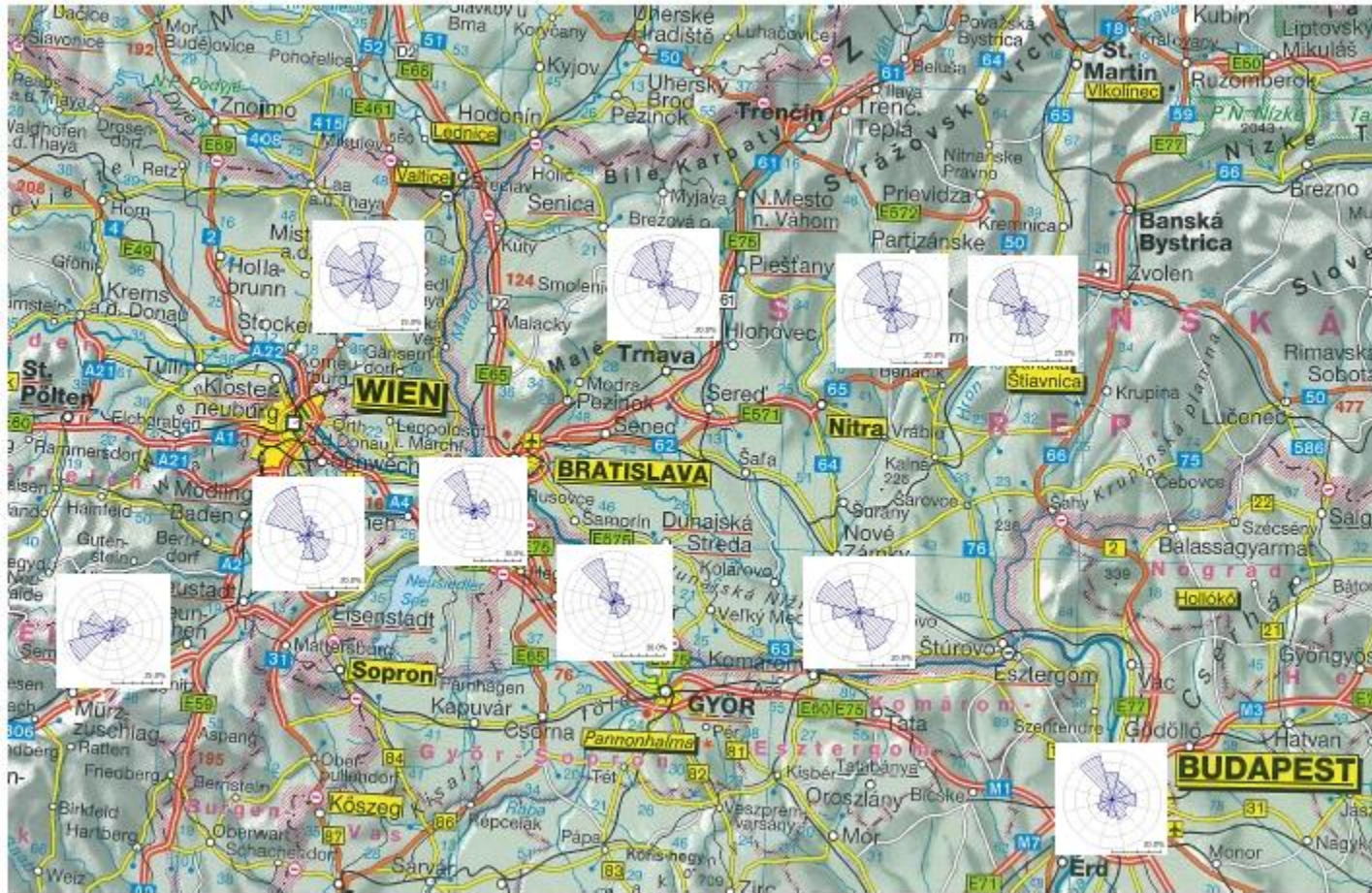
Bakony

Great Hung. Plain

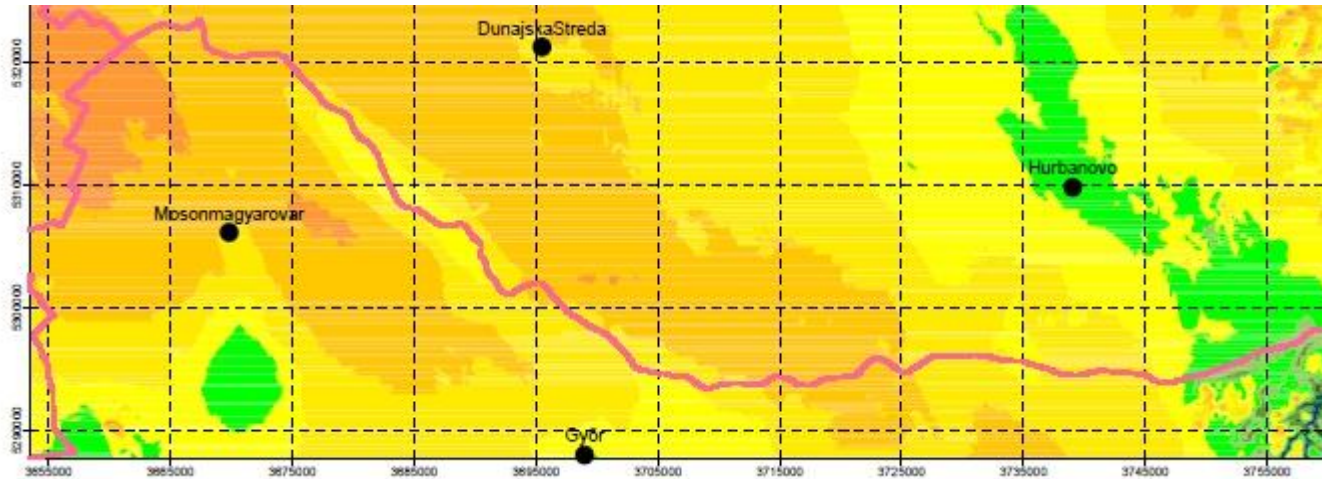
# Hungary – Wind Potential Analysis I



# Hungary – Wind Roses Border SK / HU



# Hungary – Wind Potential Analysis II



# Hungary – High resolved results

