WIND POWER PROSPECTS IN HUNGARY

(PROJECT DEVELOPMENT EXPERIENCES) (PRESENTATION)

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Introduction

Until now, the reliable energy supply has been taken for granted in modern society, but the security of this supply is currently under threat. (Russian - Ukrainian debates on supply/payment issues // Persian / Arab Golf issues, etc.)

The member states of the European Union make –in general- big hopes to the wind power and in the frame of it to reach the mandatory target that 20 % of the energy be used by 2020 by the utilization of renewable energies.

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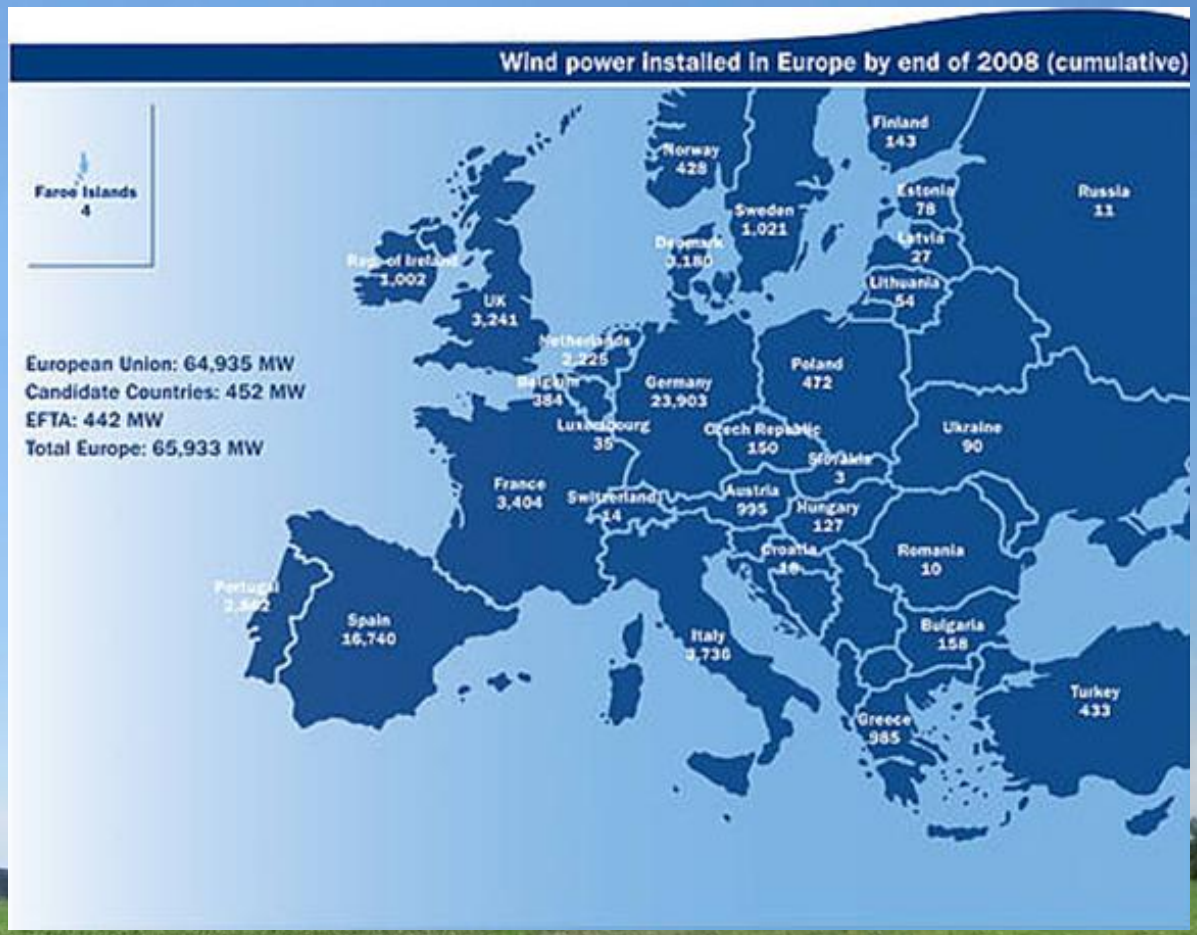
Chart 1.: Built in wind power capacity by end 2008 (EWEA)



What is the situation in Hungary, what are the wind power prospects?

Hungary started wind farms development by End 90th and until end 2008 71 wind turbines with a total capacity of 127 MW was installed.

The installation was realized based on the quota licenses issued in April 2006. The total capacity by 2-3Q 2009. with capacities under construction reaches 200 MW.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The presentation aims to show the difficulties of the SME to participate in the wind farms development with special respect to the
-consequences of the regulatory update
-project risks assessment

Regulatory update

As it is known, in April 2006 the Hungarian Energy Agency (HEA) issued licenses (quotas) worth to 330 MW all together.

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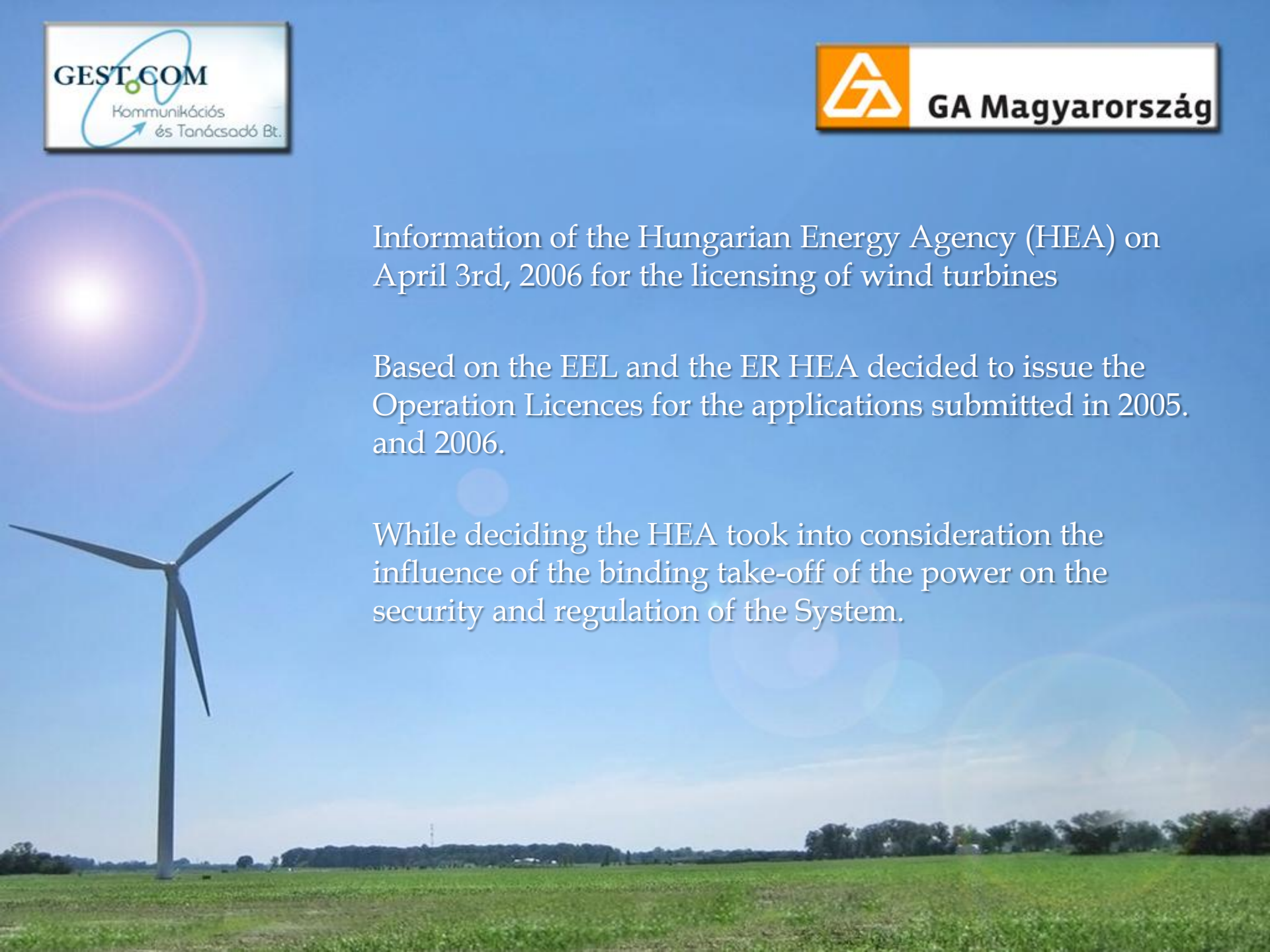
Declaration of the Hungarian Energy Agency (HEA) on January 19th, 2006 for the licensing of power plants utilizing wind for power production

-The subsidy system of the power supplied by the utilization of renewable energy has been significantly changed with the Electric Energy Law (EEL) issued in 2001 and its Executive Regulation (ER) issued in 2005

-The regulatory fix price binding take-off system has been amended with a quota system.

The quantity produced with the utilization of renewable energy (RE) to be taken binding over shall be disclosed in the operation license (OL) issued by HEA in the frame of a licensing procedure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Information of the Hungarian Energy Agency (HEA) on April 3rd, 2006 for the licensing of wind turbines
Based on the EEL and the ER HEA decided to issue the Operation Licences for the applications submitted in 2005. and 2006.
While deciding the HEA took into consideration the influence of the binding take-off of the power on the security and regulation of the System.

(Annex: Hungary`s map with regions where quotas have been granted)

This practice was criticized by the time of its disclosure already, its non practicability has been proven since the time passed.

HEA has not even tried to withdraw the quota allocated to companies who did not built their turbines, while the laws grant option for it.

The idea limiting in 330 MW the wind power capacity to be connected to the grid as the Hungarian Energy System cannot receive more could not be accepted.

It is possible to balance the intermittent wind power production because of the intermittent nature of the wind with the construction of Energy Storage Systems.

There are tasks in the field of meteorological forecasts as well.

New Energy policy" chapter of the Government:

"…..The security of the energy supply is the primary interest of our country….."

"…..We shall increase the number of supply sources….."

"…..Besides the traditional energy sources we shall increase the utilization of the renewable energy sources……"

In accordance with it the Parlament passed in 2007 a new EEL regulating anew the construction of wind turbines.


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"…..Wind turbines and wind farms resp. can be licensed upon a tendering procedure issued by the Agency (HEA) in cooperation with the System Operator (MAVIR)….."
"…..The conditions of the tendering procedure for the installation of wind turbines, the minimal content obligations of the tender, as well as the rules of the tendering procedure and the important conditions of the grid connection be disclosed in a rule……"
This rule has been published in June 2009, while its date had been decided by the legislators for December 31, 2007.

Decree on the „Tender process `conditions for the installation of wind turbines capacities, the minimal content elements and of the rules of the tendering process:

„…. the aim of the new regulation is the encouragement the installation of new up to date wind turbines capacities in the interest of satisfying the user`s demands, the enforcement of the principles of the energy efficiency and energy economy in the interest of the sustainable development and the increase the proportion of the power to be produced from renewable energy sources …..”.

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Acc. to the Decree HEA

- is obliged to examine and analyze the energy system`s expected production balance, its regulation and security at medium term decide on whether new wind turbines capacities can be built,

- decide, under which system regulation conditions can the wind turbines be connected to the grid.

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Should the outcome of the analysis be positive and affirm that new wind turbines capacities can be built, than tender invitation shall be issued

- capacity to be built
- technical data of the wind turbines
- ideas for the regulation taking into consideration the intermittent nature of the wind
- the security for funding

Only projects possessing environmental license, construction permit, technical documentation for the grid connection and LOI for take-off agreements may apply.

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The basic contradictions of the Decree:

- the yearly (!) extended range forecast of the HEA while the project developers know, that the preparation of the installation of wind turbines and/or wind farms require at least 3-4 years.

- project developers have to prove the availability of EUR 60.000/MW fund for each of the started MW of the tendered wind turbines capacity as a guarantee for the installation in case the license will be granted in the frame of the application process and to keep it up to the disclosure of the tender process results.

- project developers have to present a technical solutions for the energy system regulation and voltage quality amelioration

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The Hungarian grid system is striving with system regulations problems for years and the intermittent nature of the wind causes additional serious problems in the system stability. This problem can be managed with the construction of energy storage facilities; as its application assists to maintain the schedule and allows that wind turbines become an appropriate alternative against the traditional base and peak power stations.

There are 20-30 applicants with 600-700 MW capacities where project developers shall tender for the Operation Licenses but only those may expect licenses being granted who dot not apply for binding take-off agreements.

Most of the applications (10-15 projects, with 300-400 MW capacities) shall be submitted for the North-Western part of Hungary while only a few for the Southern regions.

The actual financial crisis as well has an unfavorable influence on the wind turbines `installation in Hungary, as the project funding sources are decreasing and the remaining ones turn to less hazardous markets

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(Annex: Hungary`s map with the most important projects site)

Project risks assessment

When starting a project`s development the developers examine the risks related to the construction of the wind turbines – we did it as well. We took into account the

People

- Key people in the project(s),
- Strength and weaknesses relative to the projects requirements
- Key peoples `network of contacts
- The investment (s) raised in those projects
- Details of Consultants working on the project(s)

Environment

- Attitudes and reaction of the habitants of the location and its surrounding (locations)
- Attitudes and reaction of the civil organizations
- Attitudes and reaction of the authorities and
- Eventual changes in the regions of the international ecological network (called Natura 2000)

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Technical aspects

- Existence of appropriate wind power
- Grid connection possibilities
- Requirements on the design documents
- The „route” to reach the Ready for Construction state
- Key planners involved in the planning, their expertise/references
- Interest of wind turbines manufacturers - the project developers look to buy 2MW wind Turbines mostly Vestas and Gamesa
- Technical specification

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Permits and licenses

- List of permits and licenses to be obtained
- Requirements/time to obtain
- Money required to obtain
- „Type" Permit of Supplier

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Changing rules and regulations

The projects development started in 1999 and in 2001 resp. They reached the Pre-Ready for Construction state in 2004 and 2007 resp. (!)

Since their start-up the EEL has been changed at 3 times, its ER 2 times!

Result: till 1Q/2010 no quota / license has been allocated them!

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Investment / funding risks

- SME started developing the projects – their financial instruments were/are limited, but
- Investors / banks investigate funding only at RfC state, i.e.
- SME developed them at own risk and based on own resources assuming Operation License allocation on behalf of HEA and funding on behalf of an Investor!
- Grid / System Operators
- OL allocations
- PPA – max for 15 years, while lifecycle of the turbines is around 25 years
- FIT

With reaching the Pre-Ready for Construction state

- Business Plans based on assumptions in respect of PPA
- Construction plan assuming Operation License shall be granted
- Time & cash flow
- Marketing to find an Investor

Operation risks

- Maintaining the Schedule because of the wind `s intermittent nature

In case of difference Penalty – about 2 Ecent/kWh (20% of the FIT)- has to be paid to the SO

The Hungarian SO requires 15 minutes schedule monthly schedules, which can be modified latest 24 hours in advance, in case of holidays 48 or sometimes 72 hours in advance.

The schedule must be within +/- 30% range of the planned ones.

No penalty in case of vis major cases, but whether (changes) do not represent a vis major case.

The Hungarian Meteorology Service cannot give but max 2* a day 24 hours forecast – even this service was introduced by 2005 only based on wind farms developers demand!

- FIT

It`s value is laid down in the EEL.

In different countries of the world it the FIT is different but it is between 3-40 Ecent/kWh. In Hungary it is worth to about 10,5Ecent/kWh (rate dependent)

It will be paid up to the validity of the PPA decided by HEA in the Operation License, but max 15 years.

SO is against the licensing of new wind turbines / farms with the remark, that the amount to be paid to the wind turbines / farms operators for supplying the power in the frame of the FIT budget is to high. (Total amount paid in 2009. 1st Half was EUR 160 Millions, out of which however 72 % i.e. EUR 115,2 Millions was paid for the CC power plants and only 4 % i.e.6,4 Millions was paid for wind.

Summarisation

- About 1800-2200 MW capacities are under development actually – most of the projects with less than 10 MW capacities
- Turbines types: generally 2 MW types – in case of newer projects we suggest 2,5 or even 3 MW types with min 100-120 m heights.
- About 900-1100 MW can be connected to the grid without serious regulation problems – out of this capacity only 200 MW are connected by now – and should all the quotas issued in 2006 and the capacities licensed int he forthcoming mobnths be constructed we do not reach this total capacity.
- While in total 330+410 MW licences have resp. will been issued by 2Q10 we do not expect more than 500-550 MW in operation by 2012 which is far below of the should be capacities – the expected figures shall not be reached either for 2010 or for 2020.
- Work and money are lost for those without appropriate lobby capabilities.
- In case of missing binding take-off agreements the return can not be expected in 15 years.
- For the connection of further capacities the regulation problems have to be solved – the energy storage is an opportunity for it – we suggest the chemical storage technology for consideration.

References

-Ostffy Project

-- Pannonia Ring Project

- Ceglédbercel Wind farm Project

- Wind farms under development in the Southern region.

Thank you for your attention!

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