



Asociația Română pentru Energie Eoliană

YES, WE DO HAVE A LAW FOR
PROMOTING RENEWABLE
ENERGY

Romanian Wind Energy
Association

CONTENT :

- 1. Economical Benefits of Wind Energy
- 2. Worry no 1 : Wind Energy is Expensive
- 3 Worry no 2: Romania overcompensates Wind Energy
- 4. Forecast for wind industry in 2020
- 5. Next Steps for Real Promotion of Renewable Energy
- 6. Sad reality vs optimistic future

Economical benefits of Wind Energy

FACTS FOR 4000 installed MW

- ➔ Total investment of over 7 billion Euro (4000 X 1,8 mil Euro/MW)
- ➔ 4 000 installed MW Romania gets 100 mil Euro as a compensation for respecting the CO2 emissions quota established by Kyoto protocol. Money is directed to environmental projects
- ➔ 332 307 mil Euro cost of fossil fuel avoided yearly
- ➔ 6,6 m tone of avoided CO2 equal to more than 3 mil cars off the road
- ➔ 4000 MW- produce yearly 16% of the electricity consumption of Romania

Worry no 1: Wind Energy's Cost

Oil, which influences the price of gas, has increased from an average of **\$ 14 in 1998 (in real terms) to \$ 60 in October 2006.**

- **Wind power's costs are predictable and falling.** Historically, **the costs per produced kWh** for new turbines have fallen by between 9 % and 17 % for each doubling of installed capacity. At a coastal position, for example, the average cost has decreased from approximately 9.2 € cents/kWh for a 95 kW turbine in the mid-1980s to approximately 4.4 € cents/kWh for a 2 MW machine now.
- the European Commission puts the cost of **new combined cycle gas generation at 3.5-4.5 € cents/kWh** and combined cycle coal at 4-5€ cents/kWh.
- A 2004 MIT (Massachusetts Institute of Technology) study estimated the cost of **nuclear generation at 5.1 € cents/kWh.**
- Turbine manufacturers expect the cost of production to fall by 3-5 % for each new generation of wind turbines they develop.

Worry no 1: Wind Energy's Costs

- If the "external" costs of damage to health and other environmental effects of different fuels are added in, the European Commission Extern.E project has concluded that the cost of **coal fired generation would double** and the cost of **gas-fired generation increase by 30 %**.
- A recent study by Emerging Energy Research for turbine manufacturer Vestas concludes that if a cost of € 30 per tone of CO₂ was applied to emissions from fossil fuel power stations, onshore wind energy would be the cheapest source of new power generation in Europe.

2. Worry no 2: Romania Overcompensates Wind Energy

Revenues received for 1 MWh by wind farm in 2009				
Nr	Country	Revenues for 1 MWh	Green Certificate revenues per 1MWh	Total revenues for 1 MWh
1	Italy	63.8	86.5	150.3
2	United Kingdom	41.7	56.9	98.6
3	Belgium (Wallonia)	39.4	88.8	128.2
4	Romania	33.7	55	88.7

Period for issuing green certificates:

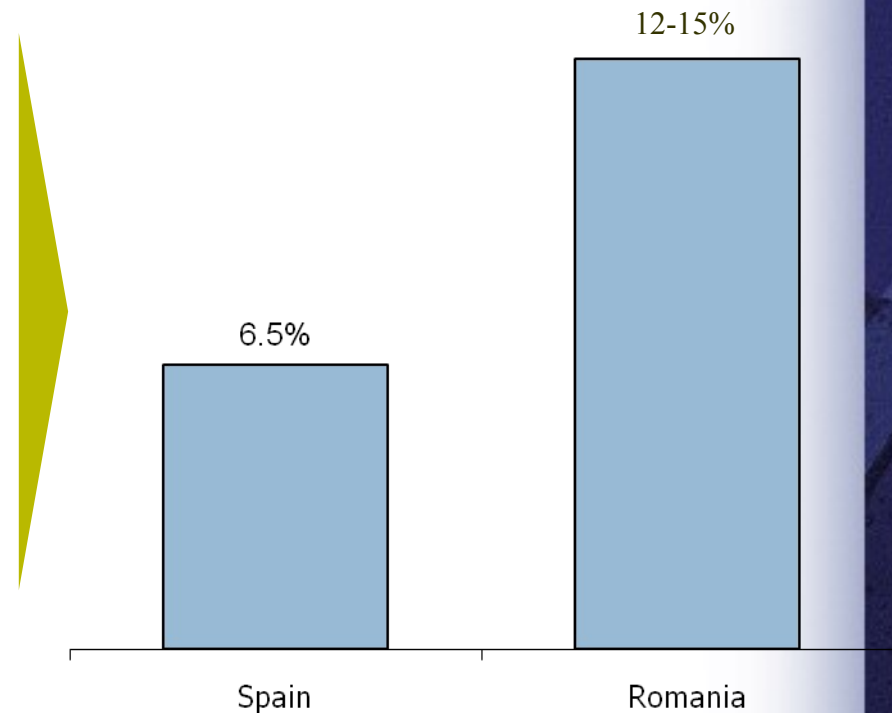
Italy - 15 years			
UK -20 years	Additionnaly RES-E is exempted from the climate change levy on electricity of £4.3/MWh (approx. €5 /MWh)		
Belgium - 15 years			
Romania- 15 years			

Why Romanian projects require higher returns: because of the higher capital costs

Comparison of typical financial conditions between Spain and Romania

	<u>Spain</u>	<u>Romania</u>
Reference fixed rate (EURIBOR & ROBOR)	320 bp	800-900 bp
Spread over reference rate	250 bp	350 bp
Country risk ⁽¹⁾	60 bp	290 bp
Potential leverage ⁽²⁾	80%	60%

Weighted Average Capital Cost (%)



(1) Spread over German bond
(2) Debt as % of enterprise value

Romania wind energy forecast 2010-2013

Company	Location	MW to be installed per year				
		2009	2010	2011	2012	2013
Miscellaneous companies	Different projects-already running	14.1				
CEZ	Fantanele		250	50		
	Cogealac			300		
EDPR/Renovatio	Pestera		90			
	Cernavoda		138			
	Dobrogea and Moldova area			75	156	200
ENEL	Valea Nucarilor			50	160	
OMV Petrom	Dobrogea area			45		
Holrom	Dobrogea area		5	69		
Blue Planet	Baia		10	25		
Global Wind Power	Tulcea County		40			
Monsson Group	Dobrogea area		10	35	20	
Bogaris	Dobrogea area				72	92
IMA PARTNERS	Casimcea, Topolog, Daieni				100	332
Land Power	Topolog				168	
VERBUND/IMA Partners	7 locations from North of Vaslui and South of Iasi				200	442.5
Martifer	Babadag		10.5	31.5		
	Casimcea				40	
EP Global Energy	Chirnogeni-Independenta			80		
Electricom	Dobrogea area			20		
Karomex	Dobrogea area				40	
TOTAL		14.1	553.5	780.5	956	1067
Grand TOTAL		3370.6				

The accuracy level is over 90% for 2010 and 2011.

For 2012 and 2013 there is also a high degree of accuracy, nevertheless, the development will depend on the evolution of the law 220 and on Romania's general economical development.

NEXT STEPS

EU commissioner for climate action Connie Hedegaard says she will present a document within weeks showing how Europe can move to a 30% cut in greenhouse gas emissions by 2020.

Wind Industry urges the Romanian authorities to:

Adopt a secure promotional mechanism (PARLIAMENT)

Increase the target and quota to 41% respectively to 20% until 2020 (PARLIAMENT, MECMA)

Increase the period granting the wind energy with two certificates until 2018 due to delay in applying the law 220 (PARLIAMENT, MECMA)

Properly notify the European Commission, supporting and allowing the development of renewable energy in Romania (MECMA, ANRE)

Publish secondary legislation without which the enforcement of the law will be delayed again (ANRE)

PESSIMISTIC : 2010 REALITY

Analiza E-RES Romania 2005 - 2011

A	B	C	D	E	F
Anul	Total MWh generati din energie eoliana	Total MWh generati din toate tipurile de E-RES (inclusiv energie eoliana)	Procent E-RES (col C) din total productie energie electrica generata in Romania	Cota obligatorie E-RES din total productie energie electrica generata in Romania	Procentaj neacoperit din cota obligatorie de E-RES
2005	329	7608	0,04%	0,70%	94,2%
2006	1089	22745	0,12%	2,38%	94,9%
2007	7186	46299	0,29	3,74%	92,2%
2008	10803	132445	0,78	5,26%	85,1%
2009		TBD	TBD	6,78%	TBD
2010		TBD	TBD	8,3%	TBD
2011		TBD	TBD	8,3%	TBD

OPTIMISTIC SCENARIO: 2020

- The quota for renewables shall be fulfilled
- 5500 MW to be installed in wind energy
- Increasing the back up for supporting this energy and improvement of the grid
- Romania shall become a manufacturer of at least for a part of components of wind generators

Thank you for your attention!

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