



Wind energy in Romania

EWEA Wind Energy - The Facts' Workshop
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Energy strategy of Romania for 2007 - 2020

Promotion of electricity produced from renewable energy sources (E-RES) is a high priority of now-a-days for reasons of environmental protection, increase the energy independence from imported electricity by getting a wider range of energy sources as well as for other reasons of economic and social cohesion.

Romania has transposed the Directive 2001/77/EC provisions into its own legislation (GD no. 443/2003 with modification of GD no.958 / 2005).



Energy strategy of Romania for 2007 - 2020

National targets

Electricity share produced from RES in gross national electricity consumption

ü 33% in 2010 (commitment according to Directive 2001/77/EC)

ü 35% in 2015

ü 38% in 2020

According to the EU new Directive for promotion of RES in 2008 and draft Directive.../2009

ü The share of energy produced from RES in gross national energy consumption for 2020: 24%



Energy strategy of Romania for 2007 - 2020

National potential of renewable energy sources*

Sources	Yearly potential	Technology
Solar energy	60 PJ 1,2 TWh	Thermal energy Electricity
Wind energy (theoretic potential)	23 TWh	Electricity
Hydro of which with capacity <10MW	36 TWh 3,6 TWh	Electricity
Biomass and biogas	318 PJ	Thermal energy Electricity
Geothermal energy	7 PJ	Thermal energy

*GD 1069/2007 Energy strategy of Romania for 2007-2020

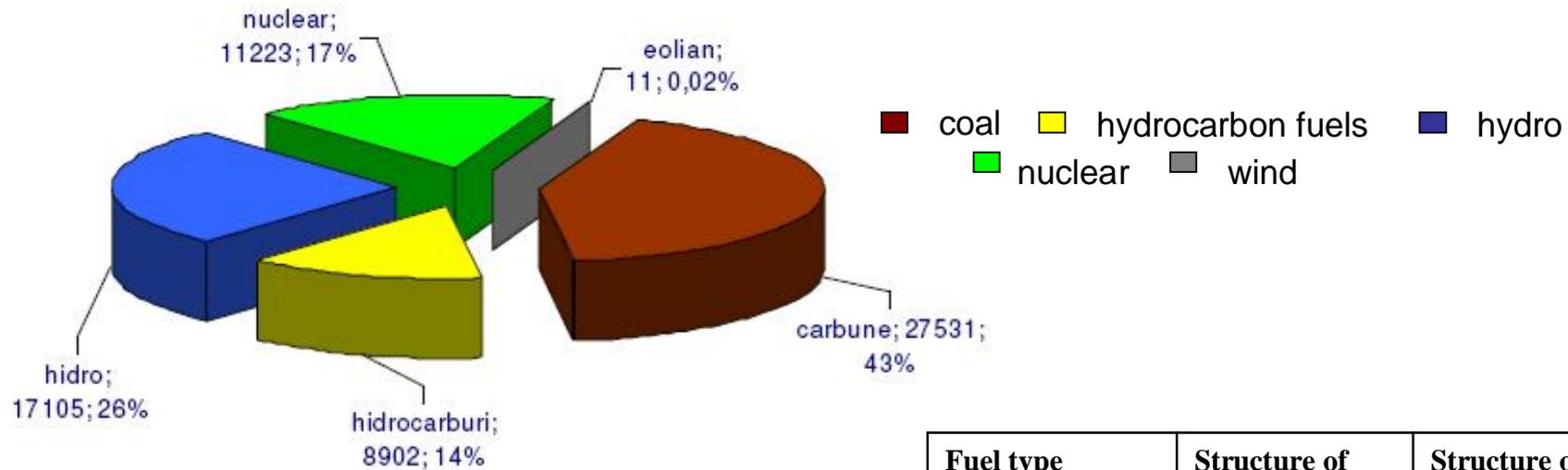


Estimations for Romania according to Phare project: Technical and economic potential of renewable energy sources in Romania – Energy Consulting Network

- Average wind speed to be above **6.3 m/s** (at 60 m above ground level) favourable regions in Romania are: Dobrogea, Moldova hills, other hilly or mountainous plateau
- Size: **10-40MW** for a wind farm. The unit size is **2-2.5MW**.
- Typical production is equivalent to **2300-2800 equivalent hours/year at rated power**
- Wind generators units with 60-100 m high towers and 60-90 m diameters rotors are distanced to 3-8 rotor diameters each to other.
- Wind offshore may become competitive in few years: distance >> 4km from shore; water depth up to 30m
- Land use limitation: A general indicator 4-8 ha/MW. Typical land requirements for foundation is 300-500m²/unit



Structure of primary energy sources for electricity production and installed capacity in Romania 2008 - data published by Transelectrica*



Fuel type	Structure of installed capacity (MW) by fuel type in Romania 2008	Structure of electricity production (GWh) by fuel type in Romania 2008
coal	7472	27531
hydrocarbons	5110	8902
hydro	6377	17105
nuclear	1413	11223
wind	8	11
total	20380 MW	64772 GWh

*Transelectrica – Transport and System Operator

www.transelectrica.ro



Current situation of wind energy investments

There is a huge interest of investing in wind energy in Romania, especially in Dobrogea region

- According to a study* performed by Transelectrica, by february 2008 there were given technical connection approvals for **910MW** and approvals for complying with the national power system for **620MW**.

- In 2008 ANRE has approved setting-up authorisations for an installed power of **628.2MW** in new wind generators**

- ISPE*** has reported as by 14 May 2009 the following data: performed studies by ISPE for a wind energy capacity of **18000MW**, from which **8000MW** have received the approval for the grid connection assessment study and **> 3000MW** have technical connection approval from Transelectrica. For **> 800MW** there is a grid connection contract.

* Studiu de fundamentare a strategiei Transelectrica de integrare in SEN a centralelor eoliene februarie 2008

** ANRE 2008 annual report

*** prezentare ISPE – „Solutii integrate globale pentru parcuri eoliene in Romania” – 14 aprilie 2009 Hotel Mariott



Wind energy potential

1. Theoretical wind energy potential according to **GD 1069/2007** Energy strategy of Romania for 2007-2020 has been estimated to be **23 TWh**
2. Conclusions of **Phare project: Technical and economic potential of renewable energy sources in Romania – Energy Consulting Network:**
 - The present technical potential for wind power is assumed to be **1200MW** nominal capacity producing **2.7TWh** electricity per year.
 - Towards 2025 the technical wind potential is **3000MW** nominal capacity, producing approximately **7.7TWh** electricity per year (assumption of **15% wind capacity share**)
 - The technical potential will extend by reinforcing the power grid system and wind prediction techniques, involving part of hydro capacities as reserve capacities and a good interconnection.



Main steps of wind energy investments

1. Assessment of wind energy potential (short term measurements at least one year and correlation with long term meteorological data)
2. Assessment of environmental impact of the wind project (noise, electromagnetic compatibility, birds etc) - Order 863 -26/09/2002 of the Ministry of Environment
3. Obtaining the authorisations and approvals needed for building-up the generation capacity (Law 50/1991)
4. Obtaining the technical grid connection approval from the electrical grid operator (GD 90/2008)
5. Obtaining licenses related to electricity and green certificate market (HG 540/2004)
6. Obtaining the qualification certificate for the electricity priority production,
7. Registration at the Electricity Market Operator (SC OPCOM SA) – for selling E-RES on the DAM (Day Ahead Market),
8. Registration at TSO (CN TRANSELECTRICA SA) – for obtaining the green certificates
9. Registration at the Green Certificates Market Operator (SC OPCOM SA) – for participating on the centralized market of the green certificates



Promotion of Renewable Energy Sources in Romania

Operational stage:

Energy quota obligation and green certificate system – but only for electricity produced from RES (Law 220/2008)

Investment stage: Structural Funds

Environmental funds and other similar co-financing sources.



National legislation related to RES

1. Energy law (13 / 2007) – general provisions for promotion of renewable energy sources
2. GD:
 - ü GD 443 / 2004 for promotion of renewable energy sources
 - ü GD 1892 / 2004 for the establishment of the promotion system of the energy produced from renewable energy sources
 - ü GD1535 / 2003 Strategy for promotion of RES
 - ü GD 958/2005 for modification of GD 443/ 2003 and GD 1892/ 2004
3. **Law 220/ 27 october 2008 for the establishment of the promotion system of the energy produced from renewable energy sources.**



National specific legislation

4. ANRE regulations:

- Certification procedure of priority electricity production from RES (Ord. 39/2006 – ANRE)
- Regulations concerning green certificate market (Ord.38 /2006 – Monitoring procedure for green certificate market)
- Regulations concerning emission of guarantee of origin (Ord. 23 /2004 – Supervising procedure for emission of guarantee of origin for electricity produced from RES, GD 1429/2004 for approval of certification regulation of electricity origin produced from RES)
- Regulations concerning energy labeling (Ord 41/2004 Regulation for electricity labeling at end users)

5. Procedures of power market operator (OPCOM) and transport - system operator (TSO)

For emission of green certificates

For organizing the green certificate market

6. Regulation for the connection of users to public electricity networks (GD 90/2008)



National specific legislation for wind energy

Norma tehnica ANRE: Conditii tehnice de racordare la retelele electrice de interes public pentru centralele electrice eoliene (Technical specification: Tehnical requirements for connection of wind generators to the electrical grids) has been approved as ANRE Ord. 51/2009



Promotion of Renewable Energy Sources in Romania

Law 220/27 October 2008 for the establishment of the promotion system of the energy produced from renewable energy sources :

-The validity of quota obligation has been extended from 2.74% in 2007 to 16.8% by 2020

-For the period 2008-2014 the trading value of Green Certificates ranges between a **minimum value of 27 euro/certificate** and a **maximum value of 55 euro/certificate**.* The value in Romanian Currency (Lei) will be calculated at the exchange rate determined by Romanian National Bank as the average exchange rate for the month of December of the previous year. **(Law 220/27.10.2008).**

* According to GD 1892 / 2004 the minimum value was 24 euro/certificate and the maximum value was 42 euro/certificate



Promotion system for wind energy technologies according to Law 220/27 october 2008 for the establishment of the promotion system of the energy produced from renewable energy sources :

- 15 years for new energy units
- 5 years for wind turbines which have been previously used in other countries for electricity production
- 2 green certificates for 1 MWh until 2015 and 1 green certificate for 1MWh starting from 2016

Project of a new GD for the establishment of the promotion system of the energy produced from renewable energy sources based on Law 220/2008 is a draft at the moment and if approved, it will repeal GD 1892 / 2004



Law 220/27 october 2008 for the establishment of the promotion system of the energy produced from renewable energy sources

International opening of green certificate (GC) market

- Buying green certificates from other country starting by 2010

-Selling green certificates to other countries:

- if national quota obligation are fulfilled

- under regulatory conditions fixed by ANRE



Investment aid: Structural funds

SOP Increase of Economic Competitiveness: Priority Axis 4: Improvement of energy efficiency and sustainable development of the energy sector

Indicative operation

- investments in upgrading, rehabilitation and building new power and heating production capacities by valorisation of renewable energy resources: **wind**, hydro (in small scale hydro capacities), biomass, biofuels, solar, geothermal, and other.

Financial allocation (2007-2013) **260 million euro**

220 million Euro from EU
and 40 million Euro National Contribution

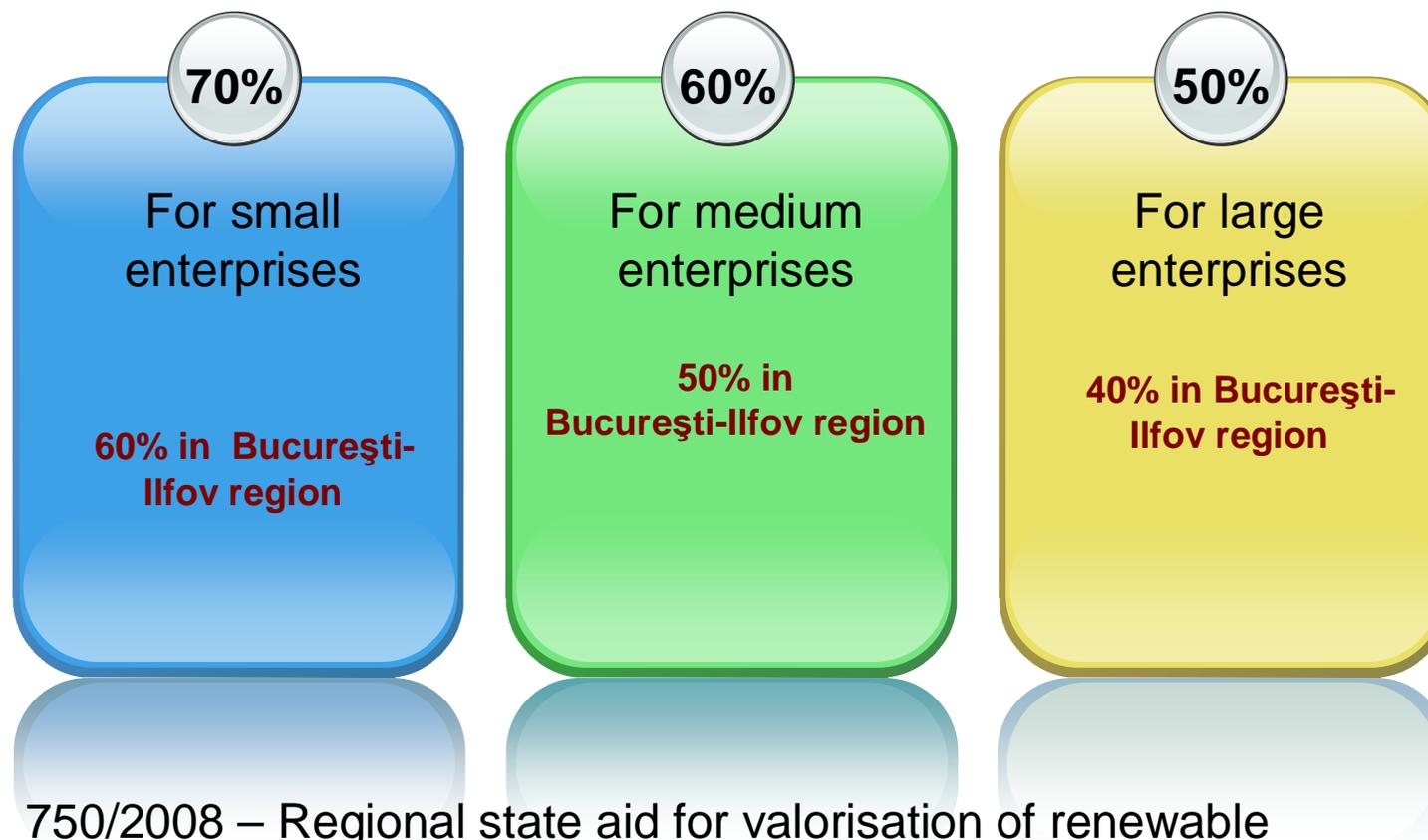
For first call of projects in 2008, the financial allocation was 275.000.000 lei (80 million Euro)

Beneficiaries: private companies and public authorities but not microenterprises



Investment aid: Structural funds

- Maximum value of financing (% from eligible expenditures)



-GD 750/2008 – Regional state aid for valorisation of renewable energies

- Total project value: min 100.000 euro (355.000 lei) and max. 50.000.000 euro with a max. financing from EU funds of 20.000.000 euro (71.000.000)



Website O.I.E. oie.minind.ro



15 Septembrie 2008

NOU

CERERI DESCHISE DE
PROPUNERI DE PROIECTE

31 IULIE 2008

Informații complete... Închide



Instrumente Structurale
2007 - 2013

DIRECȚIA GENERALĂ POLITICĂ ENERGETICĂ

ORGANISMUL INTERMEDIAR PENTRU ENERGIE

MENIUL

- O.I.E.
- P.O.S.-Competitivitate
- Legislație relevantă
- Documente relevante
- Structura O.I.E.
- Atribuțiile O.I.E.
- PREGĂTIRE-PROIECTE
- Beneficiarii Axei IV
- Calendar proiecte
- Clarificări
- Circuitul proiectului
- Intrebări frecvente
- COMUNICARE PUBLICĂ
- Stiri - ARHIVĂ
- Legături utile
- CONTACT

ȘTIRI - ATENȚIE!

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ARHIVĂ - ȘTIRI

GHIDURI



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SOLICITANTILOR

CALL FOR PROPOSAL



CERERI DESCHISE DE
PROPUNERI DE
PROIECTE !

FINANȚARE



CONTRACTUL DE
FINANȚARE - [aici](#)

BENEFICIARI



LISTA POTENȚIALILOR
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În cadrul procesului de pregătire a cadrului instituțional pentru coordonarea, gestionarea și implementarea asistenței financiare comunitare a apărut necesitatea înființării Organismului Intermediar pentru Energie.

Baza legală de organizare și funcționare a Organismului Intermediar pentru Energie (OIE) - Direcția Generală Politică Energetică o reprezintă **H.G. nr. 497/2004** cu modificările și completările ulterioare care stabilește cadrul instituțional pentru coordonarea, implementarea și managementul instrumentelor structurale și **H.G. nr. 386/2007** privind organizarea și funcționarea Ministerului Economiei și Finanțelor.

DOCUMENTE PROGRAMATICE



PND

[Planul National de Dezvoltare 2007-2013](#)



CSNR

[Cadrul Strategic National de Referință](#)



POS

[POS COMPETITIVITATE](#)



DCI

[Documentul Cadru de Implementare a POS CCE](#)
(in stadiu de proiect)



UNIUNEA EUROPEANĂ

Pentru informații detaliate despre celelalte programe finanțate de Uniunea Europeană, vă invităm să vizitați adresa web a Centrului de Informare pentru Instrumentele Structurale în România



Conclusions:

üRomania has a very important wind energy potential especially in Dobrogea which is unused

üAccording to the ECN study: Technical potential for wind energy in Romania has been estimated to be around 1200MW (2.7TWh) at present and forecasted to be 3000MW (7.7TWh) by 2025.

üStructural funds are an important option to develop wind market in Romania

Thank you for your attention

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