

Role of RES in Czech Energy Policy

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Present position of RES in CR

- CR is located in the Central Europe and has not favourable conditions for the exploitation of hydro, wind, solar energy – biomass is challenging
- At present the use of RES is promoted by:
 - Priority of access to networks and priority transport and distribution of electricity generated from RES
 - Obligatory purchase of electricity and heat produced from RES
 - National (long term) and State (yearly) Program for the promotion of RES (investment grants from state budget and special funds, dissemination of know-how, awareness campaigns)
 - Time limited and partly tax relieves (income, property, VAT)



Electricity generated from RES

In GWh	2000	2001	2002	2003
Hydro	1805	2104	2563	1242
Wind	0	1	1	3
Biomass + biogas	517	514	494	530
Total RES	2 322	2 619	3 057	1 772
Gross consumption	63 449	65 108	64 961	67 014
Share of RES %	3,66	4,02	4,71	2,64





Czech Energy Policy

- Approved by the Czech Government on March 10, 2004
- Fully complies with EU policy and legislation
- Main goals are:
 - Maximising energy efficiency
 - Ensuring effective amount and structure of primary energy sources consumption
 - Maximising environmental friendliness
 - Completing transformation and liberalisation of energy management



Main policy targets as concerns RES

- Indicative national target for RES share in Gross electricity consumption is 8% in 2010
- Indicative targets for the share of RES in 2030:
 - 15-16 % on Total primary energy resources
 - 16-17 % on Gross electricity consumption
- Promotion of RES included in:
 - Amended Energy Act; and
 - New Act on Promotion of RES



Promotion System Electricity -1

- Priority rights of RES and CHP generators to be connected into electricity network and for transmission and distribution of electricity;
- Time limited partial tax relieves (income tax, property tax, VAT);
- Obligatory purchase (at regulated prices) of electricity from RES until full electricity market opening;
- Obligatory premium to RES generators for connection to lower voltage levels (saving in network losses);
- No more investment grants;



Promotion System Electricity -2

- After full liberalisation of electricity market (1.1.2006) new system will be implemented:
 - System of green certificates (regulated prices) for electricity generated from RES;
 - Quota to purchase green certificates by defined electricity suppliers
 - Sanctions for not compliance with requirements;
- The system is based on the principle that producer of electricity will receive:
 - market price for electricity sold to the market, and
 - regulated price from the market with green certificates;
- The small generators (less than 200 kW and all photovoltaic installations) will have the right for obligatory purchase of electricity (at regulated prices) by DSOs (to cover their losses and self-consumption);

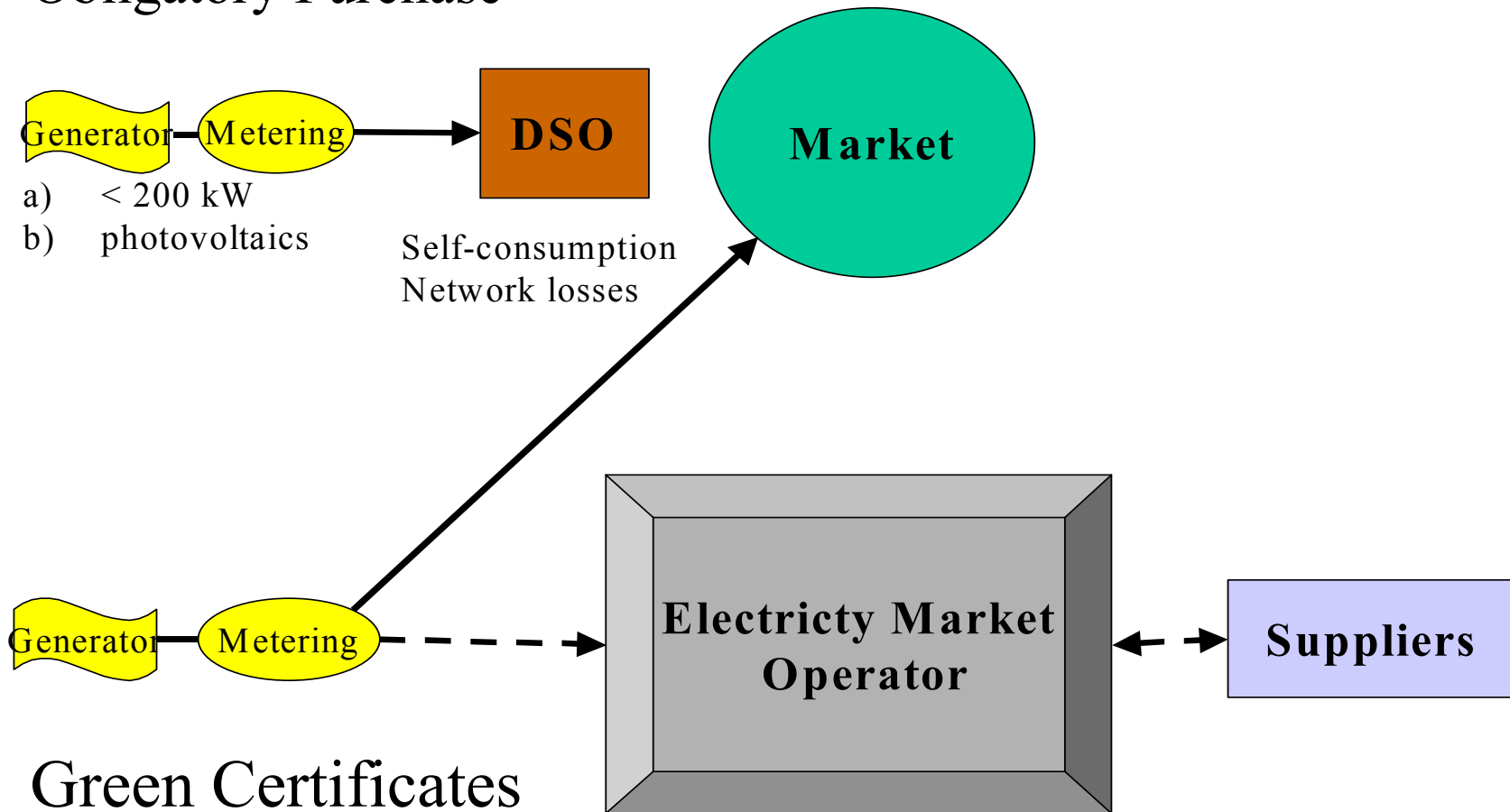


Promotion System Electricity -3

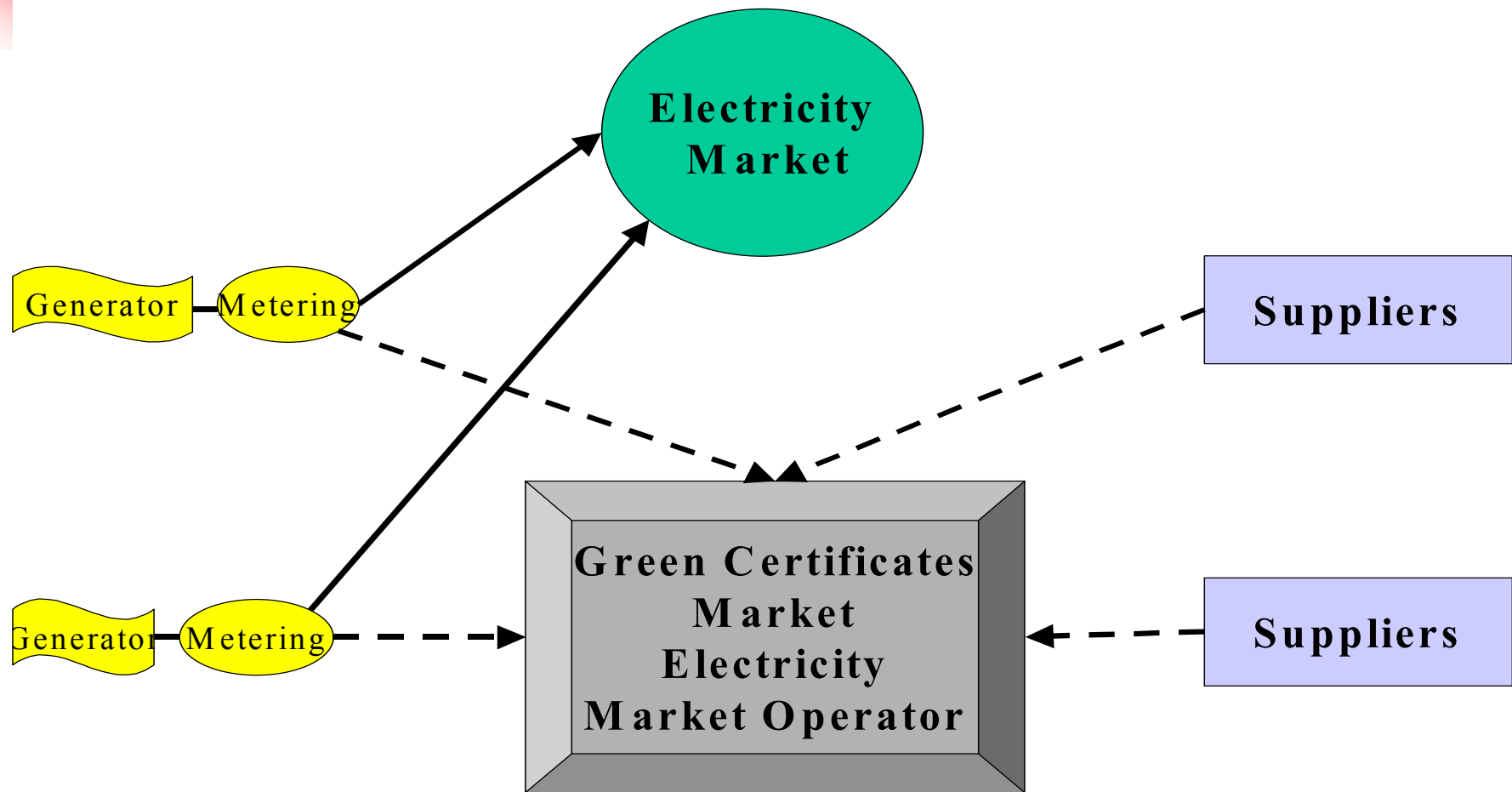
- Feed in tariffs and prices of green certificates will be set up differentially for individual technologies to promote all types of RES and create enough motivated framework for investors and to respect different costs of investment, operation, connection to grid and risk in sale of electricity on the market;
- Guarantee to investors that also the future support systems will give them profitability for 15 years;
- Of course all additional costs outgoing from the system of obligatory purchase, from purchase of green certificates, etc. will be incorporated into the final customers price of electricity;

Structure of promotion of RES

Obligatory Purchase



Electricity and green certificates markets



Assessment on potential support to RES in CZK/MWh

	Feed in tariff	Green certificate	Market
Small hydro	1950	1350	600
Wind	3000	2800	200
Biomass	3000	2300	700
Biogas	3500	2800	700
Landfill and sewage gas	2000	1300	700
Geothermal	6000	5300	700
Photovoltaic	15000		



Promotion of the use of RES in production of heat energy

- In the EU does not exist the unified system of promotion;
- The new Act to be valid in the CR is based on:
 - Continue in the partly obligatory purchase of heat, tax relieves, etc.;
 - The construction or reconstruction of heat source must be done with partly use of RES (conditions/limitations are defined in the Act);
 - The construction or reconstruction of buildings, financed partly from public budgets must include the possibility to use partly RES for heat supply (conditions/limitations are defined in the Act)



RES Projects financing

- National Programme of RES promotion – combination of public financial sources, foreign FS and of bank FS
 - - PFS: budget, extra-budget
 - - FFS: revolving fund, carbon funds, structural funds
 - - BFS: local and foreign banks



FINANCIAL SOURCES

Budget sources:

- Ministry of Industry and Trade --- Czech Energy Agency: 2003: CZK 100 Mill.
- Ministry of Agriculture: 2003: CZK 1200 Mill.
- Ministry of Transport: 2003: CZK 480 Mill.

Extra-budget sources:

- National Environmental Fund: 2003: CZK 325 Mill.
- National Fund for Housing Development:
2003: CZK 430 Mill.



EU Programmes

- Operational programme for industry and entrepreneurship (MIT)
- Operational programme Infrastructure (ME)



DG Benefits

- Meeting 8% RES target in 2010 would give reduction of emissions (as compared to 2000):
 - CO₂ - 2 million ton
 - SO₂ - 1 800 ton
 - NO_x - 1 240 ton
- Additional reduction of emissions from production of heat based on RES



Potential of RES in CR

	unit	Technical	Available
Hydro, electricity	GWh/y	13 100	2 280
Wind, electricity	GWh/y	16 324	4 000
Solar, heat	PJ/y	25	17
Solar, electricity	GWh/y	23 000	5 500
Geothermal, electricity	MW	35 000	3 500
Geothermal, heat (incl.HP)	MW	30 000	4 000
Biomass, electr.+heat	PJ/y	275	205
Biogas, electr. + heat	PJ/y	33	16

Expert assesment from 2003



Electricity production from RES 2010-2030

in GWh	2000	2010	2030
Hydro	1805	2300	2300
Wind	0	930	1 440
Photovoltaic and geothermal	0	10	20
Biomass and Biogas		2 460	11 000
Total	2 322	5 700	14 770
Gross consumption	63 449	71 240	88 000
Share of RES	3.66	8.0	16.8



New RES projects

- The potential of RES, legal and promotion framework creates the following conditions for investors:
 - **Short- and medium term:**
 - Wind
 - Biomass and biogas including co-firing
 - Geothermal –namely heat pumps
 - Small hydro
 - **Long-term:**
 - Solar
 - Biomass and biogas
 - Geothermal



Conclusions

- Reasonable support to RES is of a great interest to CR and complies with the EU
- RES gives energy, environmental economic and employment benefits
- CR has limited resources of RES nevertheless 8% target till 2010 is challenging
- Reasonable potential exists for investors in the use of biomass and wind energy in short-term and in solar and geothermal energy in long-term period



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