

Erste Group

Group Infrastructure Finance and Public Sector

Die Finanzierung von Energie-Projekten in Public-Private-Partnership In Rumänien

Ladislav Tolmáči

Dritter Energietag Brasov
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Group Corporate & Investment Banking

Infrastructure Finance and Advisory and Public Sector Finance

Infrastructure Finance & Public Sector

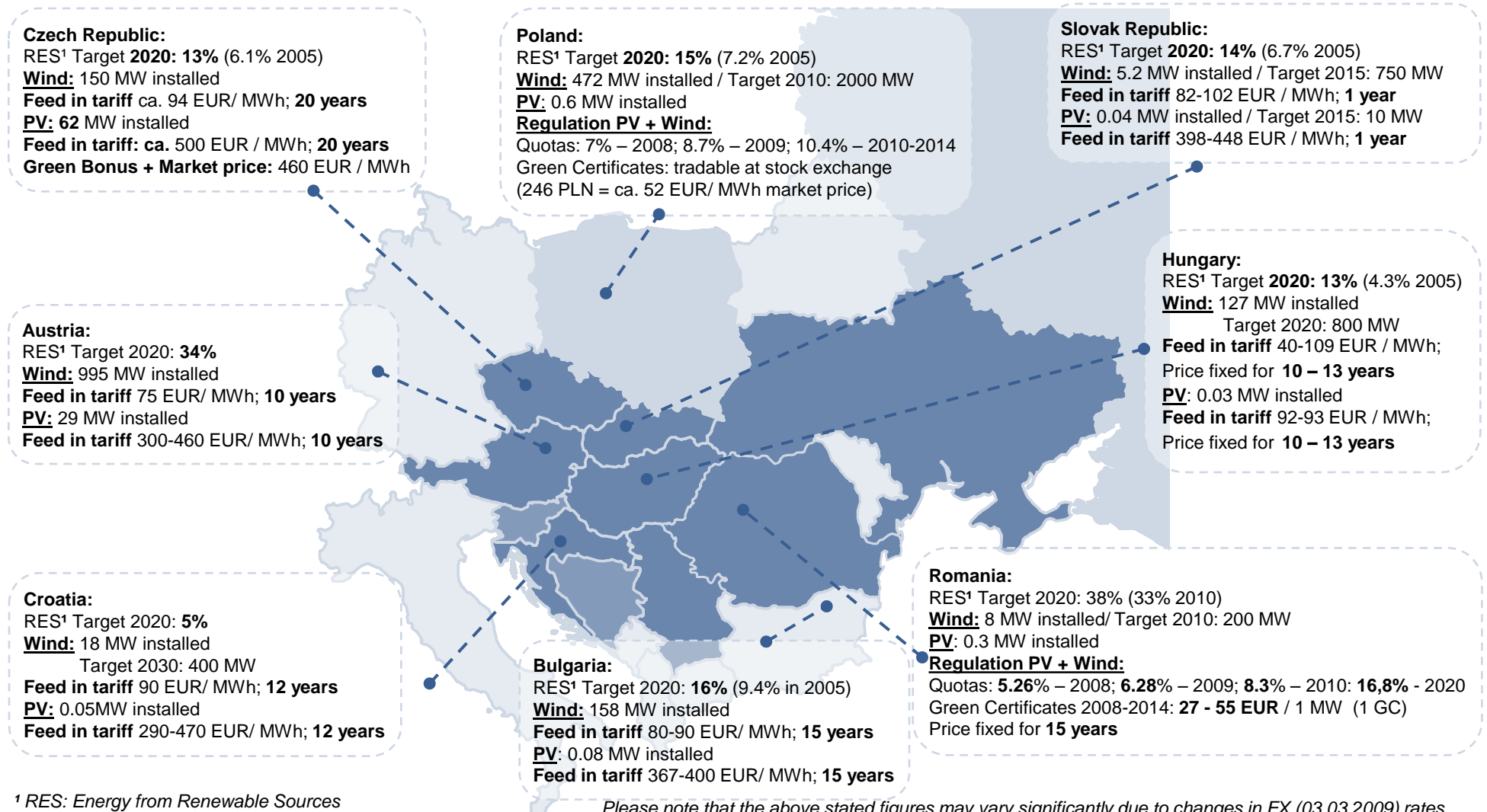
Financing solutions to **Public and Private Sector Clients** in the following sectors:

Sector Expertise	Energy & Environment	Transport	Social Infrastructure	Telecom
	<ul style="list-style-type: none">• Power plants• Renewable Energy• Water / Waste treatment• Gas / Electricity transmission	<ul style="list-style-type: none">• Airports• Ports• Toll roads• Railways• Rolling Stock	<ul style="list-style-type: none">• Hospitals• Public Buildings• Schools, Universities• Prisons and Courts• Car parks• Sport Stadia	<ul style="list-style-type: none">• Telecommunication and Media networks• Media-Transactions
Products	<ul style="list-style-type: none">• Long term infrastructure financing• Financial advisory• Financial engineering• PPP advisory		<ul style="list-style-type: none">• PPP financing• EU Funding support	

The Infrastructure and Public Sector business comprises of a large team of professional finance executives with a track record in Infrastructure Finance and Public Sector business in Vienna at Erste Bank Holding as well as in the region.

Regulation in Countries Where Erste is Active

Regulations and current capacities in CEE



¹ RES: Energy from Renewable Sources

Please note that the above stated figures may vary significantly due to changes in FX (03.03.2009) rates.

Renewable Electricity Projects

- **Potential**
 - small-hydro and wind
- **Legal framework**
 - certificates + law
- **Project development process**
 - investors point of view
- **Banks requirements**
 - what we request from the projects



Heat and co-generation

- **Support of Municipalities**
 - local situation
- **Regulation and legal environment**
 - calculation of heat price and heat revenues
- **Biomass utilization**
 - great potential + available resources and technological solutions
- **Heating grids**
 - efficiency and status



- **Project Financing – a common structure used for Energy transactions**
 - strong risk mitigation for project sponsors/ investors

1. RENEWABLE ELECTRICITY

Key issues in Energy Financing in Romania

Potential in Wind and Hydro

The Potential of Renewable Energy Sources

Source	Annual potential	To be used for:
Solar	60 P J/an	Heat
	1,200 Gwh	Electricity
Wind	23,000 GWh	Electricity
Hydro	36,000 GWh	Electricity
of which under 10MW	3,600 GWh	
Biomass and biogas	318 PJ	Heat
		Electricity
Geothermal	7 PJ	Heat

RES & Electricity Targets

Share of Renewable energy, 2005 (reference)	Share of Renewable energy, 2008	Target Share of Renewable energy, 2020
17.80%	20.30%	24.00%

Share of Renewable Electricity, 2005	Target Share of Renewable Electricity, 2010	Target Share of Renewable Electricity, 2015	Target Share of Renewable Electricity, 2020
31.40%	33.00%	35.00%	38.00%

Share of Wind Electricity, 2005	Share of Wind Electricity, 2008
0.00%	0.01%

Source: European Commission, Romanian Institute of Statistics, Erste Group Research

Key issues in Energy Financing in Romania

Potential in Wind and Hydro

Forecast of Gross Final Energy Consumption

Indicator	Unit	2010	2015	2020
Cross Final Energy Consumption	ths.	25,246	27,966	31,212
	toe			
Consumption of energy from renewable sources	ths.	4,807	5,758	7,491
	toe			
Share of Renewable Sources	%	19.04%	20.59%	24.00%

- Comparison of the data in the table of Romanian RES potential with Forecast of Gross Final Energy Consumption table shows, that to achieve the 2020 target, Romania must develop 63.5% of the potential of its renewable energy sources.
- In Wind sector, this results in the following potential:

Electricity generation - Wind, 2008 (GWh)	Annual Wind Energy Potential (GWh)	63.5% of the potential (GWh)	Required capacity to be installed (MW)*	No. of 2MW Wind Turbines required*
4	23,000	14,605	6,350	3,175

Source: European Commission, Romanian Institute of Statistics, Erste Group Research

Highlights

- The wind energy sector in Romania is still at the beginning of its development
- The total installed capacity in 2009 was only 14MW, which represents just 0.01% of the total electricity production

Key issues in Energy Financing in Romania

Legal Situation

Law 220/2008 introduces the support scheme for the following types of projects:

- Wind parks, Hydro power projects with an install capacity of max. 10 MW, Biomass projects, Solar power projects, Biogas
- The initial legislation was ambiguous, and was not covering the risk of an inflation of green certificates, very probable as per our analysis.
- Also, the secondary legislation expected to be drafted by ANRE in 2009, was not issued.
- This aspect affected the bankability of the projects but also the willingness of the investors to proceed with this type of projects.
- Therefore, 2009 and the first half of 2010 were dominated by speculation in this industry, with very few materialized projects.

Principalele proiecte eolene din Romania		
Investitor	Park eolian	Putere
Tomis Team (CEZ)	Fantanele Vest (Constanta)	255 MW
Ovidiu Development (CEZ)	Cogealac (Constanta)	255 MW
Blue Line Impex	Agighiol-Valea Nucarilor (Tulcea)	205 MW
Sabloal Energie Eoliana	Pestera (Constanta)	204 MW
Verbund	Casimcea (Tulcea)	200 MW
Evind SRL	Pantelimonu (Constanta)	150 MW
Sabloal Energie Eoliana	Valea Dacilor (Constanta)	147 MW
Cernavoda Power (EDP)	Cernavoda	138 MW
MW Team Invest (CEZ)	Fantanele Est (Constanta)	90 MW
Renovatio Power (EDP)	Pestera (Constanta)	90 MW
Eolica Dobrogea	Mihai Viteazu (Constanta)	80 MW
Land Power	Cerna (Tulcea)	72 MW
Blue Energy	Corugea-Cismeaua Noua (Tulcea)	70 MW
Corni Eolian	Corni (Galati)	70 MW

Key issues in Energy Financing in Romania

Project development process

- Process of developing investments involves a large number of steps
- All these hold up time and eat up a lot of funds – with unknown outcomes
- Procedures for biogas, hydro, wind
- Up to 80 consents needed in some cases

1.1.	Authorisations, approvals, permissions		
1.1.1.	Aviz de amplasament Placement approval from electric company	1.1.9.	Contract for PUZ (zonal development plan) documentation
1.1.2.	Certificat de Urbanism Urbanity Certificate	1.1.10.	Acord de mediu Getting the environmental approval
1.1.3.	Studiu topografic Topographical study	1.1.11.	Autorizatie de constructie Construction authorisation
1.1.4.	Scoatere din circuitul agricol Approval for switching the agricultural land into construction land	1.1.12.	Aprobarea pentru conectare la retea Approval for connecting to the grid
1.1.5.	Studiu Geologic Geological study	1.1.13.	State Inspector for construction
1.1.6.	Documentatie pentru mediu Environmental documentation	1.1.14.	Obtinerea licentei de producator de electricitate Getting the licence for electricity producer
1.1.7.	Aprobari de la alte institutii Approvals from other institutions	1.1.15.	Aprobare pentru obtinerea certificatelor verzi Approval for receiving green certificates
1.1.8.	studiu de impact Influence on the environment study	1.1.16.	Documentation for closing contract with OPCOM, ENEL, Transelectrica, OMEPA, for selling green certificates

Key issues in Energy Financing in Romania

Banks requirements – Wind and Small Hydro Checklist

From our perspective, due diligence must in particular cover the following areas:

- Financial model
- Technical Due Diligence

Legal Advisory by an independent law firm

- Market study - including reviewing assumption on the price of the electricity during the life-time of the loan, review of the other renewable projects planned in Romania, grid connection capacity etc (for projects larger than EUR 15mn - total investment)
- Customary Know Your Customer procedures
- All independent experts shall be acceptable to the Bank

Our renewable energy project checklists are available for investors for wind, hydro and solar projects in particular:

The image shows a screenshot of a document titled 'ERSTE Energy Group' containing two checklists. The first checklist, 'List of requirements for wind energy projects', is organized into sections: 1. GENERAL PROJECT INFORMATION (11-18), 2. DOCUMENTATION RELATED TO THE WIND TURBINE GENERATOR MANUFACTURER (21-26), 3. BUDGETARY ISSUES (31-32), 4. ELECTRICAL CONNECTION (41-47), 5. BUILDING CONSTRUCTION CONTRACTS (51-54), 6. SOIL AND ACUSTIC STUDIES (61-63), 7. EVALUATION OF THE WIND AND DESIGN PRODUCTION (71-76), 8. APPROVALS AND PERMITS (81-83), 9. APPROVAL PROCESS OF NOTIFICATIONS AND OBLIGATIONS (91-93), 10. BUILDING CONSTRUCTION CONTRACTS (101-103), and 11. OTHER (111). The second checklist, 'Eligibility Criteria for Small Hydro Projects', includes sections: 1) Energy potential and head availability, 2) Building and Technology of the plant, 3) Investment costs, 4) Grid connection, 5) Plant operation, 6) Regulatory Compliance, 7) Technical Feasibility, 8) Water quality, 9) Property rights, and 10) Costs related to operations.

Banks requirements

Tenor

- 10-12 years, depending of the specific figures of the project.

Regulatory

- Full enforcement of the renewable energy law as condition precedent for drawdown.

Other aspects

Land securitisation

- Full permitting (or obtaining the main permits: ATR, building permit);
- The project will be developed on a separate SPV, with share pledge in favor of the bank;
- Reputable equipment suppliers (eg. Nordex, Vestas, GE on wind power).

Banks requirements

Other aspects

Level of Sponsor engagement

- The Sponsor shall support the project depending on the model with at least 20-30% of the development costs.
- Non reimbursable funds or grants might be associated with equity, depending on conditions.

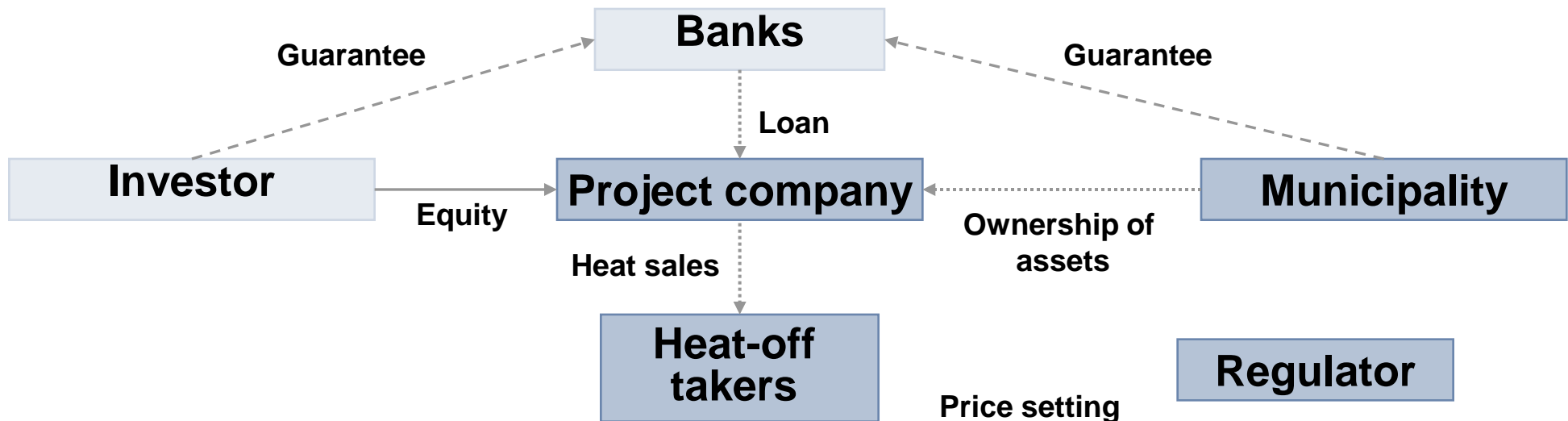
Project finance recourse or non-recourse approach

- Depending on the quality of the sponsor, we could consider a non recourse transaction.

2. HEAT - BIOMASS

Key issues in Energy Financing in Romania

Heat - Involvement of Municipalities



- Corporate liable for debt service
- On the balance sheet of the Corporate
- Difficult for mixed ownership (joint ventures)
- Off balance sheet
- Non recourse/ limited recourse to the sponsors
- Creditworthiness depends on generated cash flows by the project
- Risk sharing between participants

Key issues in Energy Financing in Romania

Heat - Regulation

- Regulation is a key aspect for financing projects in heat
- Stable environment with predictable cash-flows
- Best method is heat price calculation approved by regulatory authority

Variable Costs €/kWh	<ul style="list-style-type: none">▪ Natural gas, coal, biomass...▪ Electricity, water, technological fluids CHANGING ON AMOUNT OF ELECTRICITY PRODUCED
Fixed Costs €/kW	<ul style="list-style-type: none">▪ Depreciation, interest payments, rent, O&M▪ Personnel and other operational costs THE LEVEL STAYS THE SAME WITH HEAT PRODUCTION – IS DEVIDED BETWEEN CONSUMERS
Reasonable Profit €/kW	TOGETHER WITH DEPRECIATION SOURCE OF LOAN REPAYMENT

Key issues in Energy Financing in Romania

Heat - Biomass utilization

Construction risk

- Standard suppliers accept no down-payments, uncovered by guarantee
- Extraordinary warranty period for performance reliance and efficiency ratios

Performance risk

- Proven technology
- Straw combustion – still risky /fuel feeding & dust disposal/
- Reasonable heat price reduction at 90% heat production from biomass

Fuel logistics risk

- Local biomass market analyses required
- Redundancy of biomass suppliers
- Additional biomass storage capacity required
- Tendency to develop self sufficiency of biomass

Factors affecting sector development

- Oil price development
- Privatization in former state owned industries
- Renewable sector investments and regulation
- Fast development of SEE & CEE economies
- Recession and down of energy demand in wake of crisis
- Integration and transparency of markets
- (De-) Regulation of networks
- Energy shortages due to political issues (Rus/Ukr)



Werner Weihs-Raabl

Erste Group
Head of Group Infrastructure Finance & Group Public Sector
1020 Vienna, Obere Donaustraße 17 - 19

Tel.: +43 (0) 50100 - 18010
Fax: +43 (0) 50100 - 9 18010
mobile: +43 (0) 664 818 05 27
werner.weihs-raabl@erstegroup.com



Ladislav Tolmaci

Vice President
Erste Group
Energy & Environment Finance
1020 Vienna, Obere Donaustraße 17 - 19

Tel.: +43 (0) 50100 - 18006
Fax: +43 (0) 50100 - 9 18006
ladislav.tomaci@erstegroup.com



Florian Philipp

Director
Erste Group
Energy & Environment Finance
1020 Vienna, Obere Donaustraße 17 - 19

Tel.: +43 (0) 50100 - 18046
Fax: +43 (0) 50100 - 9 18046
mobile: +43 (0) 664 818 36 99
florian.philipp@erstegroup.com



Bojana Marusic

Analyst
Erste Group
Energy & Environment Finance
1020 Vienna, Obere Donaustraße 17 - 19

Tel: +43 (0) 5 0100 - 18039
Fax: +43 (0) 5 0100 9 - 18039
bojana.marusic@erstegroup.com



Janina Müllner

Analyst
Erste Group
Energy & Environment Finance
1020 Vienna, Obere Donaustraße 17 - 19

Tel: +43 (0) 5 0100 - 18049
Fax: +43 (0) 5 0100 9 - 18049
janina.muellner@erstegroup.com