

ROMANIAN ENERGY MARKET

IN-DEPTH SECTOR ANALYSIS FOR MARKET ENTRY



11 APRIL 2008

This sample includes only selected pages from the original study

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1. EXECUTIVE SUMMARY

This Study analyses public policy and regulatory risks in the Romanian energy sector which could impact the rate of return on investment.

Key findings:

- Vague regulations, the lack of a specific energy ‘action plan’ and a volatile environment is an opportunity for actively shaping the policy.
- The energy strategy is seen as ineffective and brings about political dissent.
- The sector is dominated by the state, with regulators subservient to political interests.
- Politicians are keen to use price controls as a social policy tool.
- A PSD government after 2008 will raise important regulatory and political risks for [the client].
- Domestic gas production has decreased since 1990. The evolution of natural gas imports and the evolution of domestic coal production have been very volatile since 1990.
- Although the prices of fuel and electricity in Romania grew faster than in Western Europe, they remain below the average of these countries.
- Our models predict a convergence of prices with Western European countries.
- A growing budget deficit raises the risk that taxes and charges will be increased.
- The creation of the ‘national champion’ has delayed privatization in electricity. Welfare, national security and rent seeking behaviours further delay privatisation.
- The regulated electricity market outweighs the liberalised market, despite the government’s claim that the market has been fully opened.
- ANRE intervention on the market and direct contracts between state companies and politically connected traders both hinder domestic trade.
- Bills amending the green certificate scheme for RES and designing support mechanism for CHP are in the pipeline.
- Bucharest’s district heating system is in political and regulatory deadlock because of political and regulatory conflicts between stakeholders.

2. INTRODUCTION

The objective of this study is to support [the client's] decision making process as to whether to enter the Romanian market or not. We present the emerging opportunities and risks for business originating from the regulatory framework and its development on the macrolevel. In particular, we focus on developments surrounding public policy and regulatory issues that influence the potential return on investment and valuation of energy firms.

We have based our approach on assumptions of rational choice theory to analyse the political and regulatory risks that may affect [the client's] business interests in Romania.

The first part of the study presents the key political parties and party coalitions likely to influence energy policy in Romania in 2008 and beyond.

The second part presents the current public policy in the energy sector and forecasts the policy changes under different coalition scenarios. We concentrate on identifying the key stakeholders and analyse their policies on regulation, energy taxation, environmental legislation, privatisation, energy strategy, market opening and energy trading.

The third part analyses fuel and energy prices using the EU average prices as benchmarks. We then analyse the existing supporting mechanisms for RES and CHP and study the likely developments on sustaining environmentally-friendly energy.

The fourth part analyses the public policy concerning Bucharest district heating.

The fifth part presents the conclusions of this study.

Description of Romania's branches of government, political parties, regulators, market participants, taxes and graphs depicting development of the market in Romania are in appendix to this study, in addition to a presentation on 'Investment Opportunities in Romania: Regulatory evaluation.'

Table 1: List of abbreviations	
ANRE	National electricity and heat regulatory authority
ANRGN	National regulatory authority in natural gas sector
ANRM	National agency for mineral resources
ANRSC	National regulatory authority of public services and husbandry
AVAS	Office of state ownership and privatisation
CAGR	Compound annual growth rate
DAM	Day-ahead market
DH	District heating
EC	European commission
ELCEN	Electrocentrale Bucharest
EM	Equilibration market
GC	Green certificate
CHP	Combined heat production
ISC	Industry and services committee, Chamber of deputies and Senate
LRP	Local reference price
MAPE	Mean absolute percentage error
MBC	Market of bilateral contracts
ME	Ministry of environment
MEF	Ministry of economy and finances
OPCOM	Romanian power market operator
PC	Conservative party
PDL	Democratic liberal party
PNL	National liberal party
PPP	Public private partnership
PRM	Great Romania party
PSD	Social democratic party
RAB	Regulatory asset base
RADET	District heating company of Bucharest
RES	Renewable energy sources
UDMR	Union of Hungarians

3. ROMANIAN PARTY SYSTEM

This chapter briefly describes the Romanian political system. In particular we categorise political parties and predict what are the most likely government coalitions after 2008 elections.

3.1. Overview of Romanian political system

The Romanian parliament is bicameral and both its chambers (Chamber of Deputies, Senate) are elected for four-year terms. The chambers are of equal importance, with legislation needing to be passed in both houses. The president is elected by popular vote for five-year terms. The most important presidential powers include the appointment of prime ministers (who also need confirmation through a parliamentary vote of confidence) and returning legislative proposals back to the parliament to be rediscussed. The prime minister is the chief of executive and the supreme policymaker. See Table 1 in appendix for more detail.

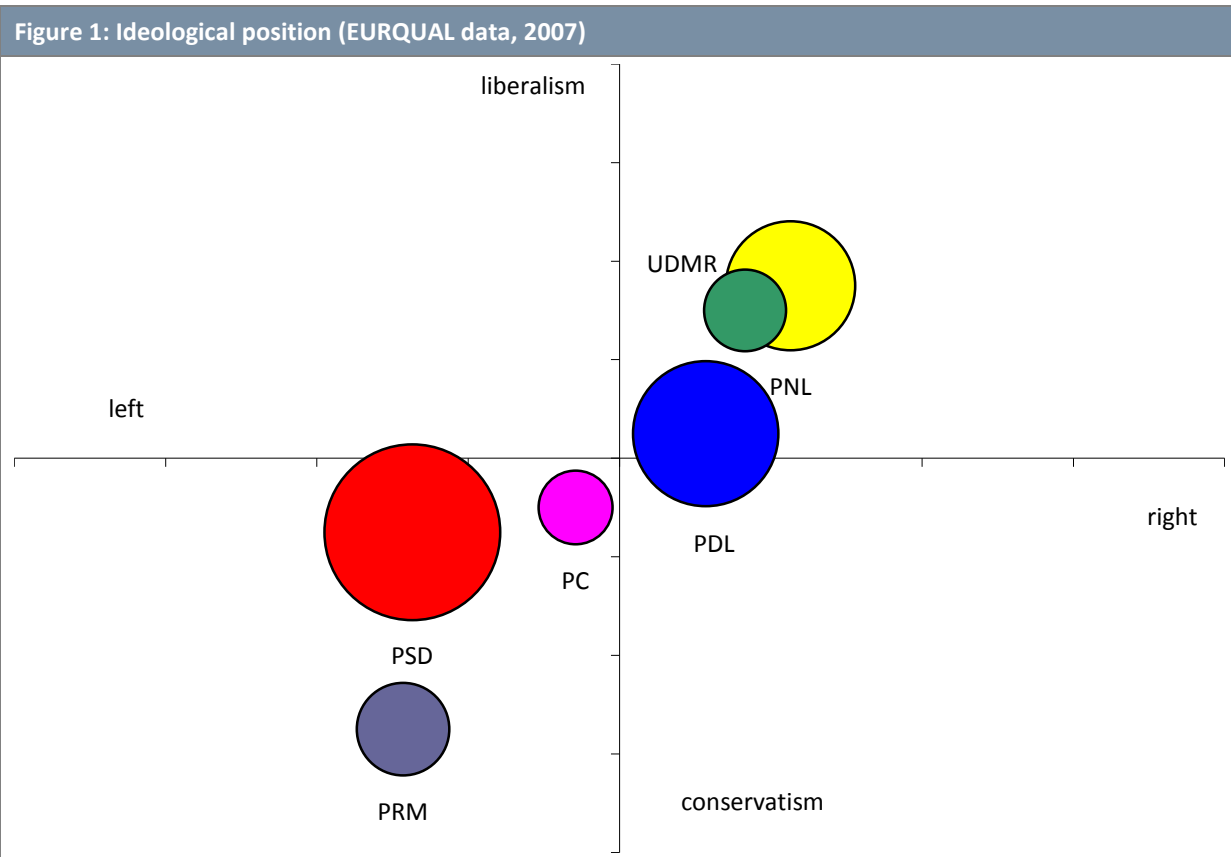
There are currently six political parties represented in the Romanian parliament: Social Democratic Party (PSD), Democratic Liberal Party (PDL), the National Liberal Party (PNL), Conservative Party (PC), Union of Hungarians (UDMR) and the Great Romania Party (PRM). See Table 2 in appendix for detail on the parties. Table 1 below presents the current parliamentary make-up and ideological orientation of the parties.

Parties	Ideological orientation	Senate		Chamber of deputies		Total N
		%	N	%	N	
PSD	Centre left/Conserv	33.58	46	34.04	113	159
PC	Centre left/Conserv	8.03	11	5.72	19	30
PNL	Cetre right/Liberal	21.90	30	19.28	64	94
PDL	Centre right/Liberals	13.87	19	14.46	48	67
PRM	Extreme left/Conservative	15.33	21	14.46	48	69
UDMR	Centre right/Liberal Ethnic	7.30	10	6.63	22	32
Minorities	-	-	-	5.42	18	18
Total		100.00	137	100.00	332	469

Source: Central Electoral Bureau, 2004.

¹ Note: The score of PDL represents the number of MPs hold initially by the PD (in 2004).

Figure 1 below plots the ideological positions of Romanian political parties on two salient dimensions: economic left-right (LR) and socio-cultural conservatism-liberalism (CL). Contrary to the Western European party systems, the pro-market political parties in Romania are more liberal on cultural issues. The most important political risk to [the client]’s business interests comes from the influence PSD and PRM may have on the governmental energy policy after the national elections in 2008. This hypothesis will be tested and elaborated upon in the following sections.



Source: Own calculations, Eurequal data, 2007, University of Oxford

3.2. Coalition scenarios

The purpose of this section is to assess the probability of coalition formation scenarios that will define the formation of the government in 2008. First, we model coalition formation scenarios based on ideological distances between parties². Secondly, we model coalition formation based on the assumption that personal relationships matter more than ideology to control for conflicts between leaderships of PDL and PNL. Finally, we assess the probability of the main coalition configurations.

² We use mean scores of the party locations, and hierarchical cluster analysis, based on squared Euclidean distance to determine groups' formations.

Table 2: Coalition formation scenarios

Assumption	Dimension(s)	Coalition scenarios	Probability
Ideology matters	Left-right matters	PDL-PNL-UDMR	High
	Liberalism-conservatism matters	PDL-PSD (+PC)	Low
	Both matter	PDL-PNL-UDMR	High
Personal relationships matters	PDL-PNL conflict	PSD-PDL	Low
		PSD-PNL-UDMR-PC	Medium-High
	Conflict between president and PSD	PSD-PNL-UDMR-PC	Medium-High
	Presidential veto power matters	PDL-PNL-UDMR	Medium-High

Source: CP own research, Eurequal project, University of Oxford

Table 2 summarizes the main findings of the cluster analysis. The first set of scenarios stems from the assumption that political parties will form the next government primarily on the basis of their ideological proximity. We have identified three possible scenarios here:

1. the left-right axis will be the most salient dimension for coalition formation
2. the liberalism-conservatism axis will be the most salient dimension for coalition formation
3. both dimensions will be equally important

If the economic left-right matters most, the most likely coalition will be composed of PDL, PNL and UDMR. This scenario is highly probable, since it emulates the political configuration of the past governmental coalitions and voters will easily identify with such a coalition.

If the socio-cultural dimension (liberal-conservative axis) is a dominant factor, the outcome is a coalition composed of PDL and PSD, with the possible participation of PC. However, this scenario is unlikely for two reasons. Firstly, the socio-cultural dimension has never been the most salient arena of party competition in Romania and it is thus unlikely to outweigh the economic dimension. Secondly, a PDL-PSD coalition would dissatisfy voters of both parties.

If both dimensions are of equal weight, a likely coalition would be composed of PDL, PNL and UDMR. Because this coalition follows the traditional alliances, we regard this coalition as highly probable.

The second set of scenarios stems from the assumption that political parties will form the next government primarily on the basis of their personal proximity and the proximity of their political interests. See Table 2 above for alternatives based on the assumption that factors other than ideology are crucial.

The political conflicts that have affected Romanian politics during the last two years could make ideology less relevant for the coalition behaviour of the parties. The political conflict between president Basescu and prime-minister Tariceanu has translated into a deep conflict between PDL and PNL. Any coalition between the two parties is unlikely if the personal conflicts between the leaders remain salient. Consequently, the other political configuration, namely PSD-PNL-UDMR-PC, becomes more plausible.

If the PDL-PNL conflict is the most important factor, the possible coalitions are PSD-PDL or PSD-PNL-UDMR-PC. However, the first coalition is improbable for two reasons. The first is that PSD and PDL are main competitors in the party system. The second is that PDL has often said it would not join a political alliance with PSD.

Last but not least, the political preferences of the president will be decisive in the political configuration of the next government, unless a clear majority emerges from the elections. Given his political affiliation the president will most likely nominate PDL to form the government and try to make use of his constitutional powers in determining which other parties join this government. He has already used this mechanism in 2004 when refusing to nominate any PSD leader to form the government, forcing UDMR and PC to abandon the proposed PSD government and join a coalition with PD and PNL.

Overall, we think that the two following coalitions are most probable (in order of appearance). These coalitions are summarised in Table 3 below

1. PDL-PNL-UDMR. This coalition is highly probable because it is ideologically coherent and it takes into consideration the president’s formal political powers. It also follow the logic of past coalition formations.
2. PSD-PNL_UDMR-PC. This coalition has a medium-to-high probability of happening, since all parties share negative attitudes regarding the current president and PDL.

A PDL, PNL and UDMR coalition would in principle be favourable to business interests and free market solutions. However, the assumption that non-ideological factors may play a more important role in coalition formation than ideology is a significant political risk for [the client]’s interests. Indeed, PSD may be the most important party in the future coalition government.

Table 3: Likely coalitions after the 2008 elections (ranked from most probable to least probable scenario)

Coalition1	PDL-PNL-UDMR
Coalition 2	PSD-PNL-UDMR-PC

4. PUBLIC POLICY AND ENERGY MARKET

The objective of this chapter is to explain policy developments regarding the energy market. First, we assess political influence over the energy market and argue that low prices represent the main political objective of the government and political parties. Secondly, we identify instruments earmarked to achieve this policy. In doing so, we examine political risks and forecast likely developments under various government configurations.

4.1. Market overview: key market participants

The objective of this section is to summarise key market participants, including the main regulators. We assess links of relevant players with political parties or business interests.

The energy market in Romania is highly politicised for two major reasons. The most important is that political parties regard energy as a social policy tool. The second reason is that the energy sector provides valuable rent-seeking opportunities for politicians.

4.1.1. Regulators

The most important institution regarding energy policy is the Ministry of economy and finances (MEF) due to the ownership of three major generation companies and the responsibility for the implementation of the Energy strategy and related legislation. The national electricity and heat regulatory authority (ANRE) is the chief price-setting and authorisation body in the electricity (including CHP) and gas sectors, while the National regulation authority of public services and husbandry (ANRSC) is responsible for public services and district heating.

The regulating institutions are highly politicised. They are implementers of political decisions and do not have their own policies. In any coalition scenario, this will not change substantially after the following elections. Regulators will be maintained under political influence for two reasons. First, price regulation is essentially seen as a useful tool of social policy, which escapes the constraints of budgetary spending. Secondly, political nominations to those institutions are used to reward political allies.

For a more detailed overview of all the relevant regulators, see section 4.1.1 in appendix.

4.1.2. Market participants, generation of electricity and heat

The generation market (electricity, CHP) is a state monopoly for two reasons. First, politicians fear prices would go up if generation was privatised and secondly, state ownership provides them with rent-seeking opportunities, such as privileged access to contracts, as in the case of rogue energy traders (see exhibit 1 below for details).

The state - through MEF - is the sole shareholder in Termoelectrica, Nuclearelectrica and Hidroelectrica (see Figure 2 for their market share). For an overview of these companies, see appendix (section 4.1.2.)

Exhibit 1: Political scandal and energy trading

In 2006, president Basescu accused the government of corruption in the energy sector. He claimed that the government protects private energy traders who were connected with political parties from the governmental coalition. He accused the MEF of allowing these traders to obtain cheap energy using non-transparent contracts with MEF companies, particularly Hidroelectrica, CE Rovinari and CE Turceni. The conflict escalated after the government and opposition parties tried to impeach the president in May 2007. However, Basescu won a decisive victory in the referendum, obtaining around 80% the vote.

The traders were Energy Holding (linked to PSD and PC), Euro PEC (close to PSD and PC), and Petprod and Green Energy (close to PNL). Other traders were Buzmann, Enol and Luxten.

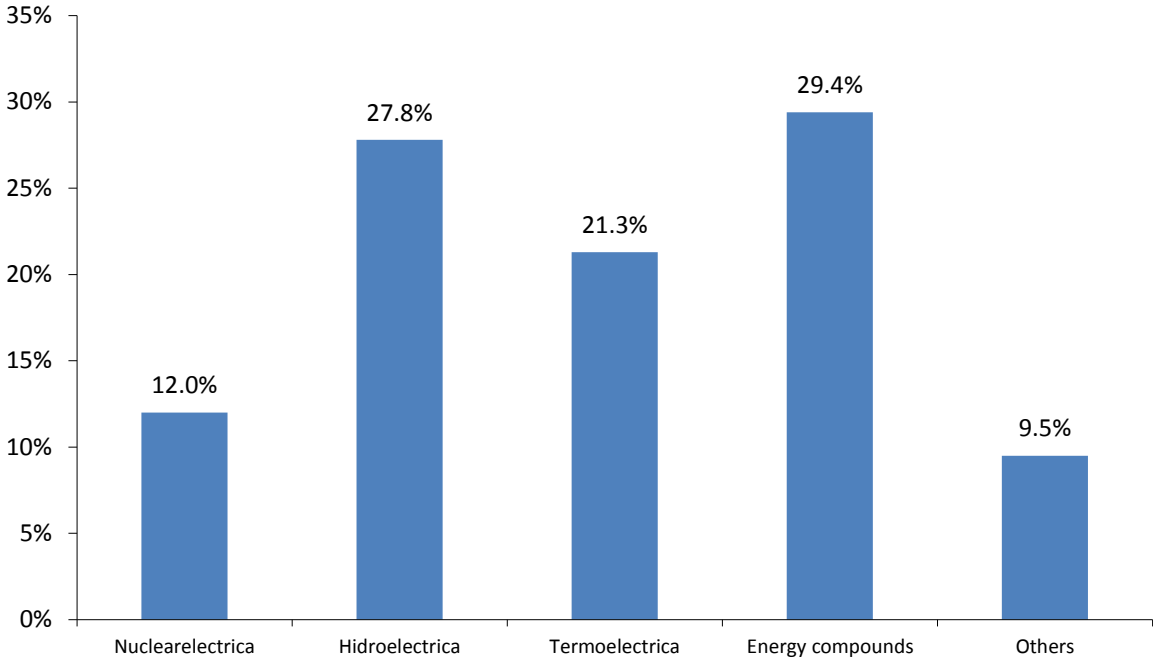


Figure 2: Market share of electricity producers

Source: ANRE’s monthly energy reports for 2007

Figure 2 shows the evolution of Romania’s electricity generation in the period between 1990 and 2005. The average annual decrease in electricity generation was 0.4%. The most significant drop in electricity generation took place between 1996 and 1999 and corresponding with the decrease in the production of coal, as well as decline in primary natural gas production (see Figures 7 and 8 below).

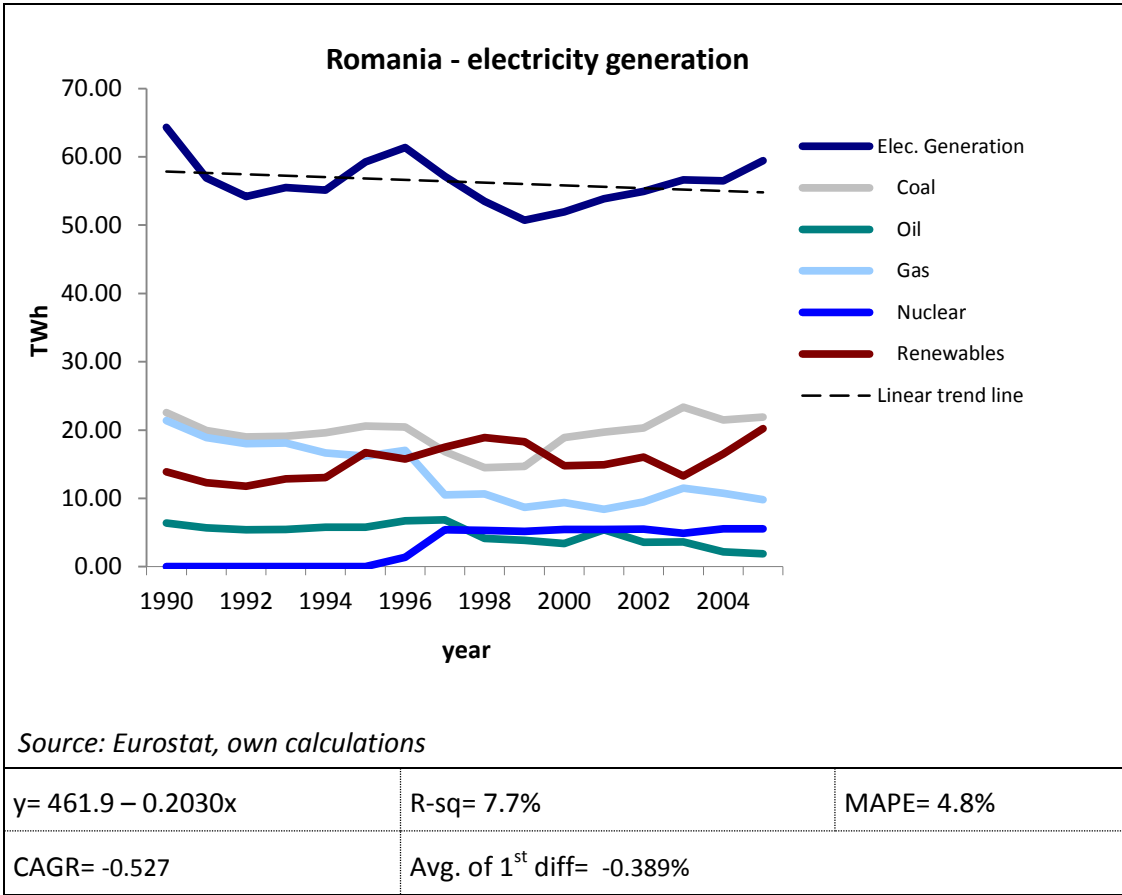


Figure 3: Evolution of electricity generation by types of sources

The comparison of the increase in electricity generation, industrial production and GDP indices illustrates that all three variables have been increasing since 1999. Figure 4 below shows that GDP has grown more rapidly than industrial production and electricity generation, which is confirmed by the comparison of compound annual growth rates for the three variables. The growth rate of electricity generation (2.7%) was lower than compound annual growth rate of industrial production (5%), while the figure for GDP was significantly higher than both of these indicators (16.2%)

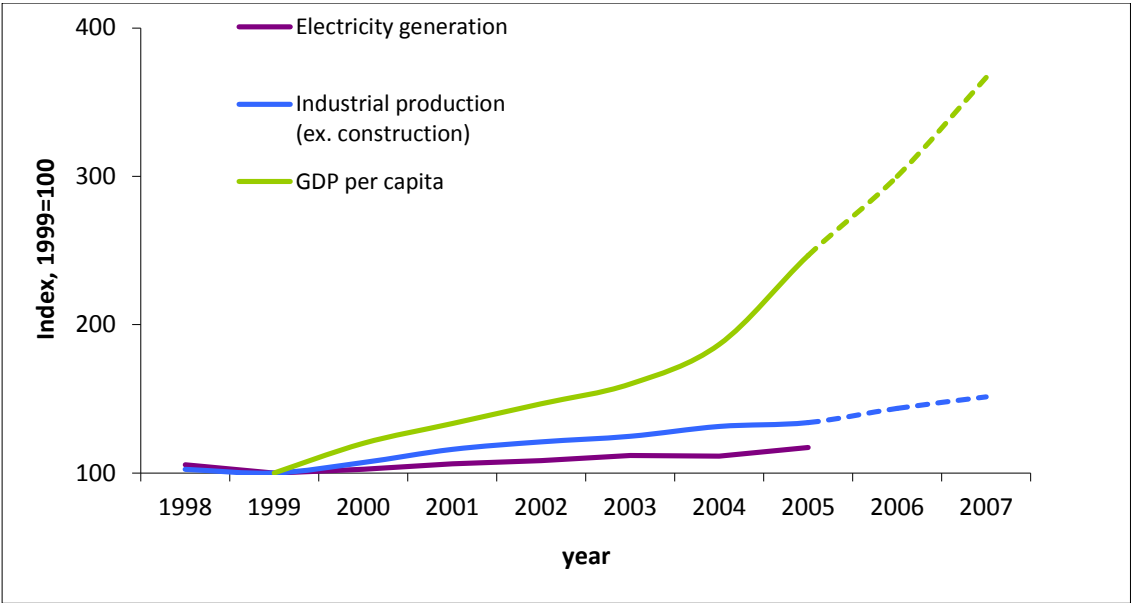


Figure 4: Evolution of electricity generation, compared to GDP and industrial production

Source: Eurostat, own calculations

Coal-fired power plants dominated electricity generation in 2007 accounting for 35% of the total electricity output (see Figure 5 below). Hydroelectric power plants accounted for 30% of the total output. Romania’s sole nuclear power plant at Cernavoda produced 17% of the total electricity generated. The second unit of the Cernavoda PP became operational in 2007 and will be fully operational in 2008, from which time it is expected to account for 20% of the total electricity supply. Following the execution of the planned completion for two new reactors in 2014, nuclear power is expected to account for around one third of total electricity output. Wind energy has been negligible, accounting for less than 1% of the total output.

Romania - breakdown of energy sources (2007)

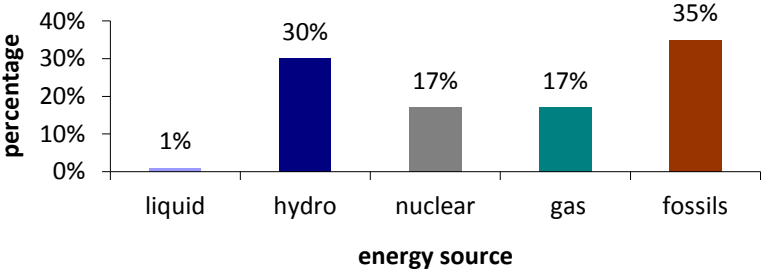


Figure 5: Energy sources and market share

Source: ANRE’s monthly energy market report, 2007

4.1.3. Market participants, electricity distribution

Five out of eight distribution companies are majority owned by foreign investors with the state remaining as a minority shareholder (see Table 3 in appendix for detail). The state-owned distribution companies were intended to be privatised prior to 2007. However, political resolution to create a vertically integrated energy company has halted this process (see Section 4.3 on energy strategy for details).

PNL and PSD are the main supporters of the creation of the ‘national champion.’ Under the coalition scenario 2 (PSD-PNL-UDMR), the state distribution companies will be most likely be merged into a vertically integrated company. Under coalition scenario 1 (PDL-PNL-UDMR), privatisation is more plausible, but the lack of policy agreement within PDL raises the risk of deadlock on the issue.

4.1.4. Market participants, gas

This section briefly presents the major companies in the gas sector and the evolution of production and imports between 1994 and 2005. The major production companies are Romgaz and Petrom. Please see section 4.1.4 of appendix for detail. Around one third of the gas consumption is covered by imports from Russia. Figure 6 below presents the major gas importers in 2006.³

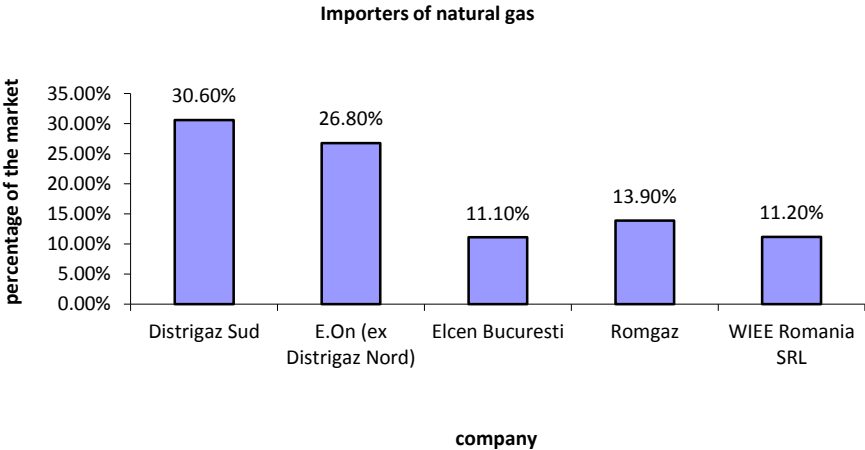


Figure 6: Gas importers and market share, 2006

Romania domestic gas production has been decreasing since 1990, while the evolution of imports of natural gas has been rather volatile (R-sq of linear model 6.7%, mean percentage error of 23%). Figure 7 below shows the decrease in Romania’s primary gas production by 34.6% between 1994 and 2005, which constitutes a 3.7% average annual decline. The linear model performs reasonably well, explaining 84% of the variance in data. Please see fitted equations in the chart below. The most significant drop in primary natural gas production year-on-year was recorded in 1997, when production decreased by 13.5%.

³ WIEE Romania is a joint-stock company made up of Wintershall of Germany and Gazprom.

The largest increase in imports was recorded in the periods between 1994-1996 (51%) and 2001-2004 (84%). The average annual increase was, however, only 3.7%. There are three reasons why Romanian governments have limited the gas imports from Russia. The first reason is the protection of local business and consumers given that the price of gas from imports is higher than the domestic price (see the section 5.1.2 on prices). The second reason is the intention to reign in the soaring trade balance deficit. The third reason is mitigating economic dependence on Russia.

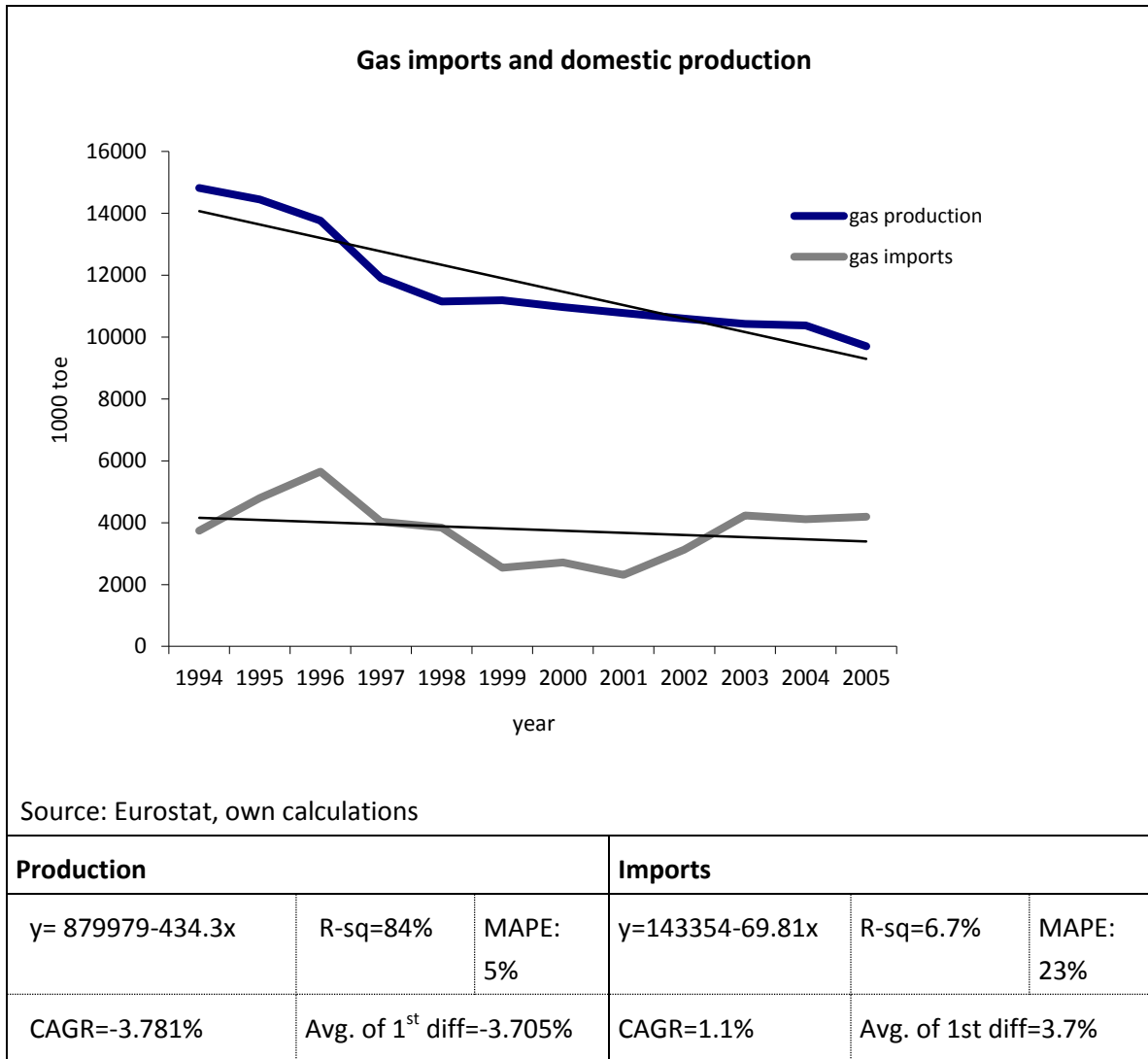


Figure 7: Evolution of gas production and imports, 1994-2005

There are not major political differences among the parties regarding domestic gas output and the level of imports. In both coalition scenarios, parties will try to limit the Russian imports for welfare reasons.

4.1.5. Market participants, coal

This section outlines the largest companies in the coal sector and the evolution of production and imports between 1990 and 2008.

All coal mining firms are state-owned, either directly through the Office of state ownership and privatisation (AVAS), or indirectly through Termoelectrica (see Table 4). Termoelectrica owns three important coal mines as part of its three energy compounds: CE Rovinari, CE Turceni and CE Craiova. These energy compounds have been involved in the energy scandal outlined in exhibit 1. Section 4.1.5 in appendix details these energy compounds, including information about business opportunities with these firms over the next 2-4 years.

Table 4: Coal companies

Company name	Field of activity	Ownership	Output (mil tonnes)
CNH Petrosani	National hard coal company	state-owned	3.5
SNLO Tg. Jiu	National lignite company	state-owned	14.0
SNC Ploiesti	National coal company lignite and brown coal	state-owned	2.7
Energy Compound Turceni	Energy compound	MEF subordination	4.8
Energy Compound Craiova	Energy compound	MEF subordination	0.65
Energy Compound Rovinari	Energy compound	MEF subordination	8.0

Source: CP's own research

The evolution of coal production data has been very irregular (see Figure 8). Linear regression explains only 16% of the variance in data, which implies that coal output varied significantly between 1990 and 2007. The overall decrease is 6.4%, although the compound annual growth rate is only -0.42%. A positive average year-on-year difference of 0.41% confirms the dispersed distribution of data. The most significant drop in coal production took place between 1996 and 1999, when the output decreased by 45.2%. The main reason for such change stems from the restructuring of the mining industry taking place in the period between 1996 and 2000. This process led to lay offs causing a series of mining workers' strikes in early 1999, when coal mines significantly decreased their production. Between 1997 and 1999, the mining workforce was reduced by 51.9%. The process of restructuring was related to the change in the system of subsidies – while in the early 1990s, companies were subsidized according to the level of outputs, after the restructuring process, subsidies were only granted for the production sold on the market.

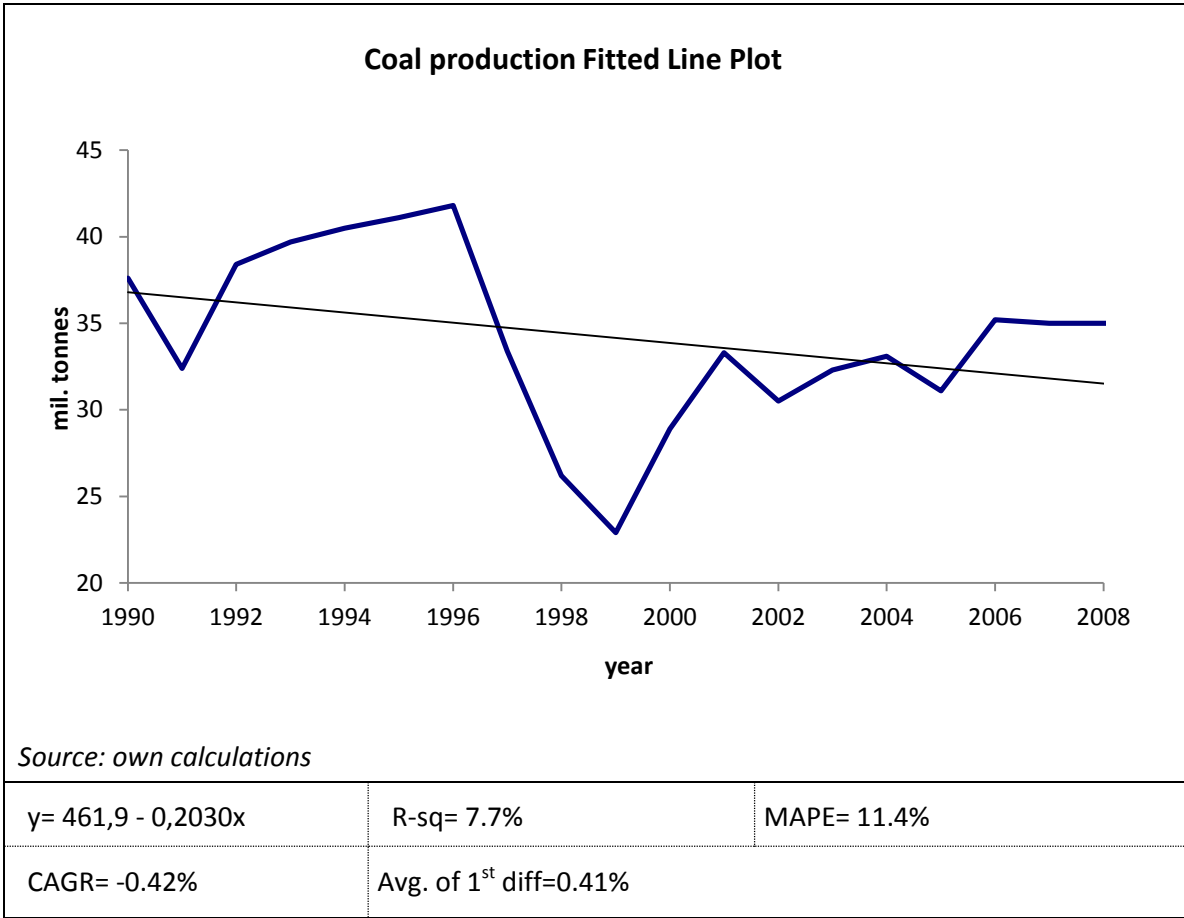


Figure 8: Evolution of coal output, 1990-2008

4.1.6. Conclusions

The state still owns the largest part of the energy sector, particularly in electricity and mining. Electricity and gas distribution has been largely privatised, but the production is under strict government control. Petrom is an exception in the gas sector. As we detail in Section 4.2, coalition scenario 1 is both more likely and more favourable to privatisation than scenario 2.

4.2. Regulation

The objective of this section is to explain how electricity and heat markets are regulated and how is the regulatory framework likely to develop. In addition, we explain political developments affecting prices and price support mechanisms.

4.2.1. Party position on controlling energy prices

The objective of this section is to explain what political parties think about energy prices and how they should be regulated. We argue that parties and government are interested in keeping prices down because of welfare concerns.

We predict that there is a negative association between the level of support for price control and the ideological positions of parties on the LR dimension. Left-leaning political parties should be more

tempted to control the price of energy for welfare reasons, whereas the Right-leaning parties will favour prices dictated by the market.

Figure 9 illustrates the distribution of political opinions on the desirability of price regulation against party position on the LR dimension. In line with intuition, the two dimensions correlate negatively. The Leftist political parties support price regulation more than parties on the economic right. Party groups are very well defined with PRM and PSD being most in favour of direct control⁴ and PDL, PNL and UDMR less in favour.

Although PDL, PNL and UDMR state that prices are high for low-income groups they reject the argument that price control should be a social policy tool. They are more inclined to accept that supply and demand should determine prices, rather than the state. They say that the state should rather subsidise low-income groups directly to mitigate the negative impact of prices that are perceived to be high. This may be difficult, however, due to constraints imposed by the EU convergence criteria on budget deficit and it is thus unlikely that Romania would give up price control as a welfare mechanism anytime soon, irrespective of political configuration.

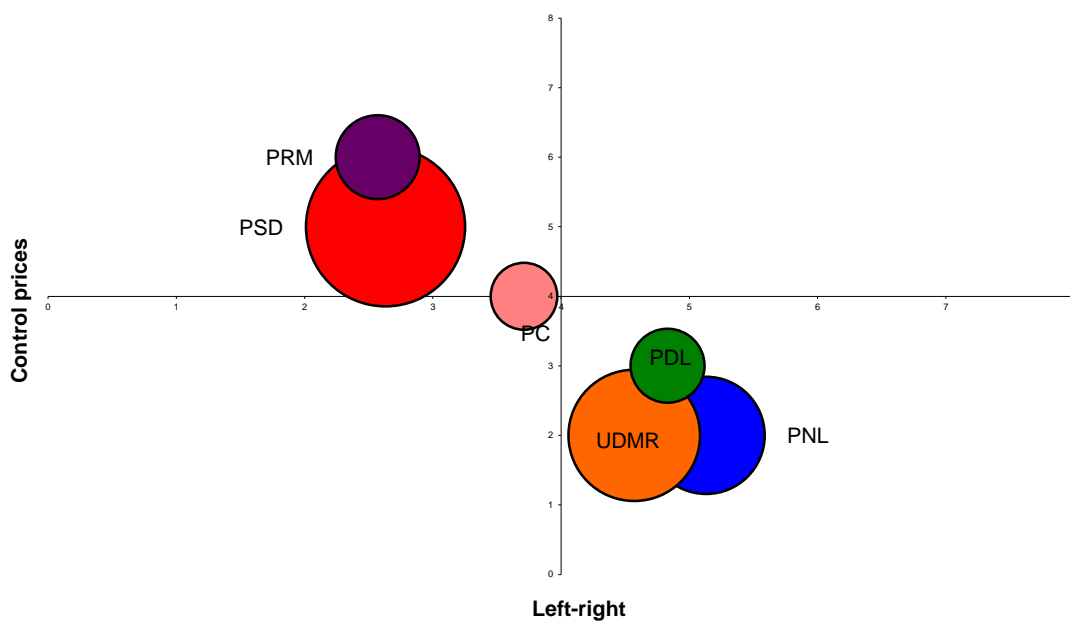


Figure 9: Party positions on controlling energy prices

Source: CP interviews 2008, own calculations

4.2.2. Electricity regulation

The objective of this section is to explain both formal and informal regulatory processes.

⁴ Interview with Traian Novolan, MP PSD, 20.02.2008.

ANRE uses RPI-X (see Table 5) price-cap regulation for distribution, revenue caps for transmission in the electricity sector and rate of return based regulation for generation and heating produced in cogeneration. The current regulated rate of return on regulatory asset base (RAB) is 12% for electricity and 5% for heating generation, including heating produced in cogeneration. Mr Alicus, director of prices and tariffs department, ANRE, claims that reasonable profit on the regulated generation market can be anywhere between 10-15% on RAB.⁵ For gas, ANRE issues the so called ‘recommended price,’ which is a delivery price for end consumers. Gas producers may ignore it, but distribution companies have to respect it.

Romania is now in the second regulatory period. In 2013, there will be a transition to the third regulatory period and ANRE will introduce a proper weighted average cost of capital (WACC) based methodology for all electricity sectors.⁶ At this time, ANRE uses WACC only for distribution and transmission.

The biggest risk for private investors stemming from the regulatory framework is that ANRE does not stick to the formal methodology. As we argue in section 4.1.1, ANRE is subservient to political interests and is pressured to keep prices as low as possible. For example in order to keep distribution tariffs low ANRE often does not recognise interest expenditures and costs linked to congestion management as justified costs in the regulatory formula.⁷ It even arbitrarily sets up lower regulated rate of return than specified in the formula.⁸ OPCOM’s transaction tariff for MBC and DAM was cut from RON 0.31/MWh to RON 0.30/MWh⁹ following a disagreement regarding the level of operating costs Mr. Lupului (director, OPCOM) says.

Table 5: Regulatory formulas for electricity: generation (including CHP), transmission, distribution

Regulation	Formula
Regulatory asset base (RAB)	$BAR_t = BAR_{t-1} + IA_t / 2 - EA_t / 2 - AM_t - PDI_t + \Delta NFRR_t$ <p>where:</p> <p>AM_t – annual depreciation for actives included in RAB +/- the depreciation of actives included/taken out during the period t.</p> <p>EA_t – assets existing or the sold assets during period t.</p>

⁵ Interview with Viorel Alicus, director of prices and tariffs department, ANRE, 06.02.2008.

⁶ ANRE currently has no proper information about market value of equity and debts, because the energy firms are not listed on the stock exchange.

⁷ Interview with Messrs. Sorin Pispiris, director, commercial division, Transelectrica, and Vasile Zacheu Stefanescu, head of transmission contracts administration department, Transelectrica, 25.02.2008.

⁸ Interview with Alexandru Sandulescu, general director, energy policy department, MEF, 15.02.2008. Distribution companies have had a 2.5% real regulated rate of return in 2007.

⁹ Traders pay this tariff for each MWh traded on OPCOM platforms.

	<p>IA_t – bought assets, recognised by ANRE, during period t.</p> <p>PDI_t – provisions</p> <p>$\Delta NFRR$ – changes in regulated contingency fund for year t.</p>
Profitability of BAR (RC)	<p>$RC = RRR \cdot BAR$</p>
Regulated Rate of Return (RRR)	<p>$RRR = CCP \times Kp / (1 - T) + CCI \times Ki$</p> <p>where:</p> <p>CCP – cost of own capital (%) in real terms, after tax, recognized by ANRE</p> <p>CCI – cost of debt (%) in real terms, before tax, recognised by ANRE</p> <p>$Kp; Ki$ – weight of own capital/debt in total capital.</p>

Source: ANRE regulations

There has been no coordinated re-evaluation of assets in the energy sector and, according to MEF, there is no government plan for RAB revaluation.¹⁰ MEF claims that each firm can revalue its assets at will. For example new owners of distribution networks can decide to revalue fixed assets upon privatisation.

In addition to prices, ANRE regulates mandatory quota for energy produced from RES. Each firm has to reach an individual target for energy produced from RES (see Figure 17, section 5.2.1). Companies which are unable to reach their RES target have to buy green certificates (GC). GCs can be bought either through direct contracts between sellers and buyers or from the GC market operated by OPCOM. There is a cap and floor price for GC of EUR 42 and 23. However, to keep prices low, ANRE reduces the mandatory quota of firms when there is a shortage of GCs on the market (see section 5.2.1). The value of GCs will increase in the coming years because the government has expressed an interests in sustaining the production of energy from RES. Ongoing draft legislation supports an increase of the floor and cap price of GC certificates to EUR 30 (floor) and EUR 60 (cap)/GC.

4.2.3. Heating regulation

Regulation in heating is divided between ANRE and ANRSC. According to the heating law, ANRE regulates the price of heating produced in cogeneration. ANRSC regulates the price of heating produced with other technologies, such as heating produced from RES (including bio-mass and bio-gas). Heat generation, transmission and distribution are regulated by the rate of return on the RAB methodology. The regulated rate of return has recently been 5%. In addition to heat generation ANRSC sets transmission and distribution tariffs and the local reference price. Please see Table 6 below for details on the local reference price. Municipalities may set lower price than the regulated

¹⁰ Interview with V. Alicus, director, prices and tariffs department, ANRE, 06.02.2008.

local delivery price, but they must subsidise the difference from their own resources. Subsidies to cover the difference between the regulated price and the local delivery price are paid monthly, based on real costs (invoicing). For specific values of heating price and subsidies, see chapter 6. ANRE regulates about 80% of heating generation in Romania.

Table 6: Local reference price

<p>The local reference price (LRP) is calculated as:</p> $\text{LRP (RON/GCal)} = \text{RP} - \text{Subsidy of municipality (SM)} - \text{fuel subsidy paid by the state (SG, government)}$ <p>where RP is the regulated price calculated according to the rate of return on RAB methodology</p> <p>SG = 45% of fuel costs</p> <p>SM = X% multiplied by RP, where X > 10%.</p>

Source: ANRE’s decision no. 21/2006; ANRSC’s decision no. 514/2006

From 1999 to 2006, the setting of heating prices was divided between national reference price and local reference price. The national price was initially introduced as a form of social protection when government transferred heating assets to municipalities. In 2006, the law on heating abandoned the national reference price and maintained only local prices.

4.3. Energy strategy

The objective of this section is to provide [the client] with an understanding of energy strategy goals and the implementation policy. We explain how different stakeholders view the current strategy and how this is likely to change after the 2008 elections.

The government adopted the strategy in November 2007. The strategy covers the period between 2007 and 2020. The main goal of the strategy is to increase energy output at the lowest possible price. In addition to the headline goal, three additional concrete objectives are as follows: to secure the energy resources, sustain the development of the economy and to promote competition on the market (see Table 7).

Table 7: Main objectives, Romanian energy strategy

Strategic objectives		
Energy security	Sustainable development	Competitiveness
Expand domestic energy resources and limit imports;	Increase energy efficiency	Stimulate competition on electricity, gas, oil, uranium, green certificate (GC), emission allowances markets
Diversify import resources, energy resources and transmission routes;	Endorse production of energy from renewable energy sources (RES)	Liberalise transmission, guarantee free access to grid system

Upgrade transmission networks for electricity, gas and oil;	Endorse CHP, particularly CHP of high efficiency	Restructure and privatise electricity, heating and gas
Protect critical infrastructure	Sustain research and dissemination of results in energy	Continue the restructuring of the lignite sector
	Protect the environment	
	Make efficient and rational use of primary energy resources	

Source: Romanian energy strategy, 2007-2020.

The strategy states that the energy sector (electricity, gas, and mining) requires large capital spending to upgrade its assets. It estimates that the energy sector needs investments of around EUR 35 billion to upgrade energy plants and implement environmental programs. Privatisation, stock exchange listing and Public Private Partnerships (PPPs) should cover most of the investment expenditures.

The strategy outlines the following short-term action points:

- The state will maintain control over Hidroelectrica and Nuclearelectrica. These plants should be merged with distribution companies that are still state owned into a national energy champion.
- The state will either privatise energy compounds (Rovinari, Turceni, Craiova) or they will be merged with the national energy champion if the government pursues this policy.
- Termoelectrica’s inefficient units (some assets from the Braila, Doicesti and Borzesti plants) will be closed. Some of its branches, such as the efficient units from the Braila, Doicesti, Borzesti and Galati plants, should be developed in the PPP framework.
- Hidroelectrica’s micro hydro plants will be privatised. A minority share of Hidroelectrica will be listed on the Bucharest stock exchange.
- Units 3 and 4 of Nuclearelectrica’s CNE Cernavoda should be developed in the PPP framework. The state will maintain control but 15% of shares will be listed on the stock exchange.
- Investment incentives for private investors in district heating (DH) (see section 5.2.4 on draft legislation for supporting CHP).

The majority of stakeholders oppose the energy strategy (see Table 8) for three reasons: welfare concerns, inefficiency, and national security. The welfare concerns are based on the assumption that privatisation of the energy sector will increase prices. The national security argument also stems mainly from concerns about privatisation. Stakeholders claim that energy is a strategic industry and should therefore remain state-owned. Finally, stakeholders disregard the strategy because it lacks any implementation plan.¹¹

¹¹ CP interviews, February 2008

PSD and PRM are particularly opposed to the privatisation of energy compounds, claiming that they are strategic assets.¹² In addition, they support the creation of the national champion and regard it as a major policy goal. PDL, PSD and PC are all against the current energy strategy since the document lacks any concrete measures.¹³ Industry representatives also criticise the strategy on the grounds that it lacks implementation plan. They argue that the objectives are not feasible because the state does not have the necessary funds to invest in the energy sector.¹⁴ Energy firms have claimed that the creation of a national champion will distort the market.

Because of political deadlock and expected elections,¹⁵ it is very likely that the new government will re-draft the strategy, irrespective of the coalition scenario.

Table 8: Evaluation of energy strategy by party and governmental role

Party Name	Ideological orientation	Overall evaluation of energy strategy	Satisfaction with implementation of strategy	Incumbent vs opposition
PNL	Classical Liberals	Very positive	Dissatisfied	Incumbent
PDL	Right Liberals	Negative	Very Dissatisfied	Opposition
PSD	Social Democrats	Negative	Very Dissatisfied	Opposition
UDMR	Ethnic	Neutral	Dissatisfied	Incumbent
PRM	Populist	Negative	Very Dissatisfied	Opposition
PC	Conservative	Negative	Dissatisfied	Opposition

Source: CP interviews, 2008.

With a PDL-PNL-UDMR coalition government, privatisation is likely to continue. PDL in particular opposes the creation of a national champion and it is likely that PDL will try to close the gap between real and legal market opening when it is in government (see Section 4.5 for details). RES and CHP are not as divisive issues as privatisations. Neither of them raise serious policy conflicts between the major parties. Hydro- and wind-energy are seen unanimously as important in the future development.

4.4. Energy taxation

The objective of this section is to present the main taxes and tariffs that will have an impact on the return of investments if [the client] enters the Romanian market.

¹² Interview with T. Novolan, MP, PSD, 20.02.2008.

¹³ Iulian Iancu, MP, PSD, and Radu Berceanu, MP, PDL, regard the document as a compilation of intentions.

¹⁴ Interview with Ionut Purica, economic forecasting department, Romanian Academy, 13.02.2008.

¹⁵ Interview with Corneliu Momanu, MP, PDL, 24.02.2008.

The Romanian tax system is extremely dense for two reasons. The first reason is the shortage of funds for social programmes. The second reason is the vested interests of the number of various agencies administering taxes (i.e. they are unwilling to give up their responsibilities).

Table 5 in appendix presents the taxes relevant for [the client]'s business interests. The VAT of 19% is very unlikely to be increased due to social concerns and it will not decrease due to the need put the budget deficit in line with convergence criteria. However, the tax on profit could be raised if PSD leads the new government. PSD opposes the flat-rate tax of 16% and argues that it should be increased to finance welfare programmes. PNL and PDL support the current level since the tax reform was implemented under their tenure. UDMR has no particular position on taxation and is likely to accept the policy of the major party in the government.

The exploration tax increased from RON 10/km² to RON 1,000/km². After two years of exploration, the value doubles and after four years the value increases by five. The current level of exploitation tax is RON 25,000/km². The mining royalty represents 4% of the value of the mining production. It was increased at the beginning of this year from 2% in 2007.

Environment costs have not been significant until 2007, since governments have been more concerned with welfare. For example, the mining sector is excluded from the system of GCs. Environmental costs have become important since last year, however, as the EU decreased the quota for CO₂ certificates allocated to Romania by almost 20% from 95.7 to 75.9 million tonnes CO₂ for 2008 to 2012.¹⁶ Mining firms will have to invest in cleaner and more efficient technologies to stay competitive (please see Section 5.1 on prices). Currently, some big polluters (e.g. Mittal steel) receive allowances for free.

Relevant taxes for electricity generation are tariffs paid to ANRE, while the excise duty and water tariff paid to Apele Romane (National Waters). The excise duty for 2008 is EUR 0.68/MWh (increasing from EUR 0.52/MWh in 2007), but it is fully passed on to end-consumers. The levels of water tariff are different for thermo and hydro plants. Thermo plants pay RON 35/thousand cubic meters. Hydro plants pay RON 0.20/thousand cubic meters. The tariffs were set in 2005 and given the need for additional funds to, it is likely that the government will increase these tariffs in the coming years. The future government will define these taxes and therefore predicting the exact values is impossible at the current time.

For gas, the most important taxes are excise duty, oil royalties and ANRE tariffs. The excise duty for natural gas used in heating increased this year from EUR 0.17/GJ to EUR 0.22/GJ. The oil royalty for 2008 is 3% of the gross income of the gas storage activity.

The costs of green certificates will be discussed in chapter 5, section 2.1.

Taxes (particularly royalties and excise duties) will increase next year in order to cover the existing budget deficits, irrespective of the configuration of the government coalition. The level of taxes (in

¹⁶ Source: Europa Rapid press release 22 Oct 2007:

<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1566>

%) doubled between 2003 and 2008. Thus, given the government's need for additional budgetary funds to support welfare programmes, we expect those taxes to increase further in the coming years.

Taxes and tariffs will increase at a higher rate if PSD forms the future coalition government. The party is against the flax tax reform and claimed it would raise taxes to distribute wealth more fairly in society. Under a PDL government, VAT, income and corporate taxes are unlikely to increase. However, [the client] should expect some increases in the tariffs (particularly royalties and exploitation taxes) even if PDL forms the future government.

4.5. Environmental legislation

The system of emission allowances does not yet work properly in Romania since the ministry of environment failed to issue a book in which the transactions should be registered. Therefore, emission allowances are bought on foreign markets. Legally, there is a possibility of pooling, but it has not occurred thus far in Romania so far. Banking of emission certificates was abandoned when Romania moved from national allocation plan (NAP) 1 to NAP 2.

Romanian firms buy emission certificates from European markets. Given that the European Commission (EC) has reduced the number of emission allowances for Romania by 20% (from 95.7 million tonnes CO₂) for the period 2008-2012, energy firms (particularly thermo) will have to buy more CO₂ certificates after 2008. Experts estimate that the price of energy will increase by 10% due to the increasing price of emission certificates.¹⁷

The NAP allocates around 60% of emission certificates to energy. It is estimated that, under proportional allocation, the energy firms belonging to the MEF need to buy an additional 35.5 million certificates for 2008-2012. Romania will maintain the existing system of allocation until 2013. From 2013 to 2020, the market of emission allowances will gradually be opened. Initially, most of the allowances will be received for free and only a minority will be sold through auctions. By 2020, it is estimated that certificates will be bought exclusively through auctions. Currently, there is no intention to create a free floating system.

Environmental costs are likely to be passed onto consumers in the form of higher prices.

4.6. Privatisation – general policy

This chapter explains the political thinking behind privatisation and forecasts the impact of future government on privatisation policy. In addition we present some specific investment opportunities with Termoelectrica in this chapter. Other investment opportunities are outlined in chapter 6 (Bucharest district heating) and Table 6 in the appendix. For specific investment opportunities, please see the presentation which is attached to this report.

Romanian political parties oppose privatisation for three reasons. One reason is that privatisation leads to higher consumer prices. The second reason is that some parties regard energy a strategic

¹⁷ Interview with I. Purica, economic forecasting department, Romanian Academy, 13.02.2008.

industry, where the state should retain control. The third reason is that parties treat state-owned energy companies as sources of income for political clients.

PSD¹⁸ opposes privatisation because it believes privatisation increases prices for households. PSD thus supports the creation of the vertically integrated company to control prices along the value chain. PSD is in particular opposed to privatisation of energy compounds at least until a decision on the creation of the national champion is taken. PRM opposes privatisation for the same welfare reasons. In addition PRM also believes that energy assets are strategic and control over them should not be ceded to foreigners. In principle, PDL and PNL support privatisation because they see it as a way of increasing efficiency in the sector.¹⁹ But PNL believes the national champion should be created, whereas PDL is rather against this policy.

Both PNL and PSD are ambivalent, since they control a number of directors in state-owned energy firms whom they appointed. Ioan Ungureanu (general director, Termoelectrica), for instance, is close to PSD. Chairmen of Hidroelectrica and Transelectrica are also political nominees being appointed by PNL and PSD respectively. Mr Ungureanu does not see the outright sale of assets as a serious option, but prefers PPPs for two reasons. First, he wants stay in control of the firm. The second reason is that most of Termoelectrica’s assets are around 45 years old and he believes that the sale of those run-down assets would not maximise revenues for the state budget. Termoelectrica would therefore like to initiate PPPs for four plants (see Table 9). Since managers of state-owned companies are essentially politically appointed bureaucrats, they need the decision of their political bosses before initiating any programme, such as PPPs.

Termoelectrica, Hidroelectrica and Nuclearelectrica remain within the MEF portfolio. This means that the government will not be interested in privatising any of these companies in the near future. The energy compounds are exceptions because they raise environmental problems. The state does not have the financial resources to invest in the energy compounds and they will become inefficient under new EU legislation concerning emission allowances. Even for them there is not any serious timetable for privatisation. The former plan to privatise the three energy compounds (formally owned by AVAS at the moment) has been halted until the government decides on the creation of a vertically integrated company. Given the current political deadlock, this is unlikely to happen in 2008. Only the privatisation of small hydroelectric plants was agreed and is being implemented. For a summary of past and future privatisations, see Table 6 in appendix.

Table 6: Termoelectrica interests in PPPs

Plants	Interested partners
Galati	Enel
Braila	Enel-Eon (partnership)

¹⁸ Interview with T. Novolan, MP, PSD, 20.02.2008.

¹⁹ Interview with C. Momanu, MP, PDL, 24.02.2008.

Doicesti	Electrabel and Mecel (Russian)
Borzesti	Electrabel, Eon and CEZ

Source: Interview with Ioan Ungureanu, general director, Termoelectrica, 14.02.2008

Figure 10 plots party positions on the support for privatisation in the electricity sector against positions on the LR dimension. It confirms our speculation that the position on economic issues is a good predictor of a party’s stance on privatisation, with parties on the economic right being significantly more in favour of privatisation than parties on the left. The fitted slope equation for economic LR is $y = 1.5988x - 2.0792$ as opposed to $y = 1.0638x$ on conservative-liberal issues (please see annex for details).

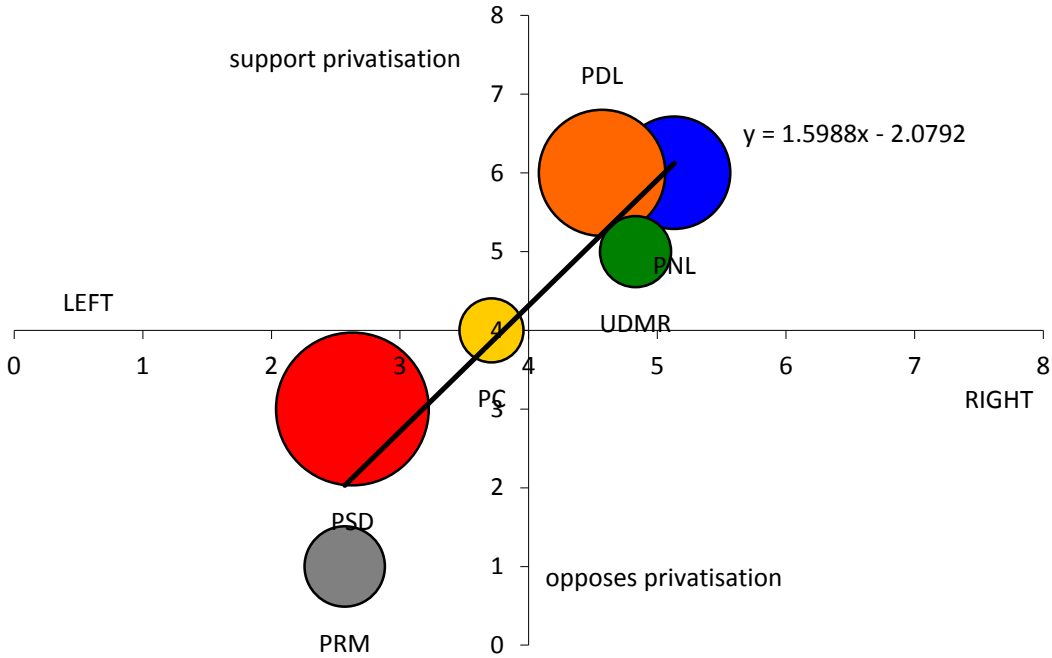


Figure 10 Distribution of political parties on LR and level of support for privatization in electricity

Source: CP interviews 2008, own calculations.

In gas, the LR position is not a good predictor of the level of support for privatisation (see Figure 11). Except for PNL, all other parties are against further privatisation. Even PNL is a moderate supporter of Romgaz privatisation, largely because of its vested interest. Dinu Patriciu, influential PNL leader and owner of Rompetrol - a competitor of OMV-Petrom - would like to buy assets from Romgaz.

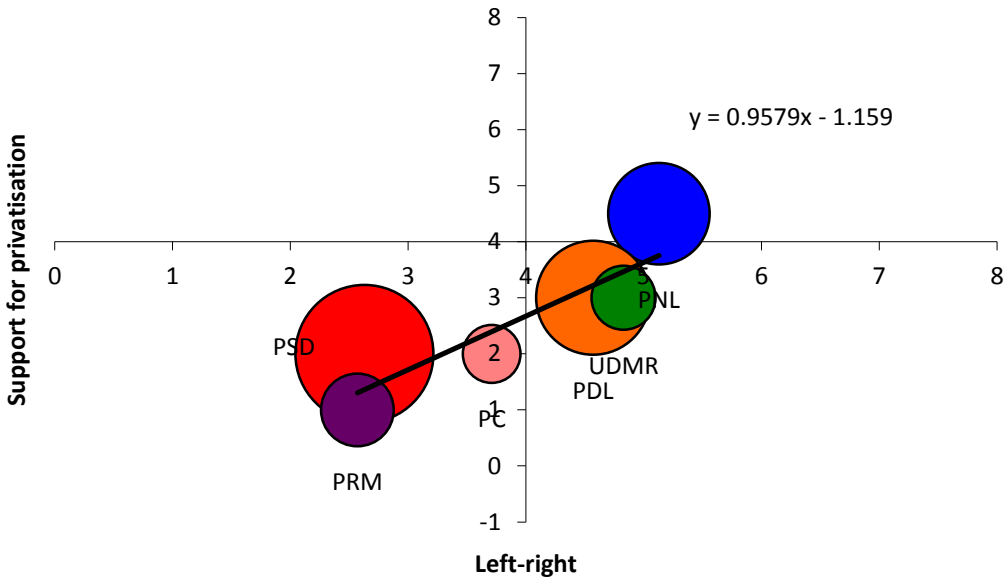


Figure 11: LR positions and level of support for privatization in gas

Source: CP interviews 2008, own calculations.

Parties oppose further privatisation because they fear gas prices would increase. For instance, they negatively evaluate the privatisation of Petrom, since the company ignored ANRE regulation about recommended price (see section 5.1.2 for details). In addition, politicians fear that privatisation of Romgaz will make Romania even more dependent on Russian oil. Gazprom has expressed interest in Romgaz recently, but was turned down by the government.

Any evaluation of privatisation (Table 7 in appendix) shows a clear division between leftist and rightist political parties. The major risks regarding privatisation therefore occur if PSD forms the next government (coalition scenario 2). Such a government will create the national champion and stop major privatisations for a longer period of time. A coalition government formed around PDL-PNL will resume privatisation in energy, if not in 2009 certainly from 2010.

4.7. Market opening and liberalisation

This section outlines the political and regulatory thinking affecting the opening of the market. We show how the desire of parties to control energy prices developed into concrete actions. We also evaluate the government’s stated intention to become a regional energy hub and the implementation of this plan. In addition we assess integration into the broader EU market, liquidity and developments on the wholesale electricity market.

4.7.1. Market opening

There are three major reasons why the energy market is still relatively closed. Political pressure to push prices down is crucial. The second is the desire of bureaucracy to increase its control over the market. The third is the ongoing direct contracts with politically connected traders.

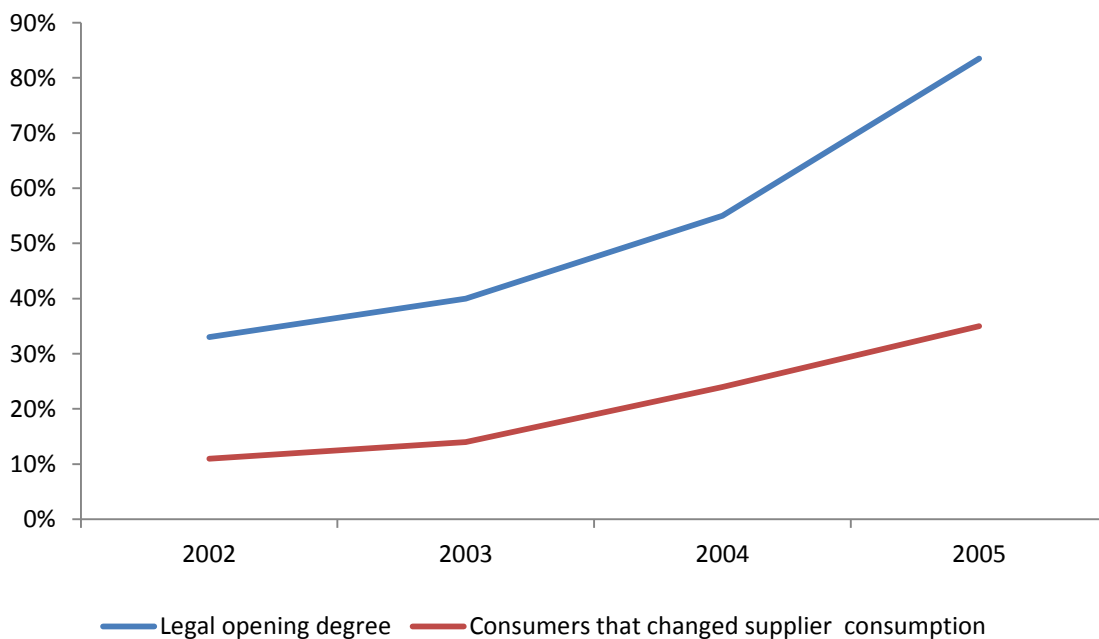
As explained in the chapters above, the political parties wish to keep prices low for electoral reasons. The MEF wishes to control prices, since swift prices increases would raise the risks for missing EU

convergence macroeconomic targets, particularly inflation. They pressure ANRE to regulate the energy market in such a way that prices will be kept down for households.²⁰

ANRE also prefers to maintain strict control over the energy market, in order to preserve its influence. On the electricity regulated market ANRE controls both the price of the energy and the quantity of energy the firms offer. ANRE asked CE Rovinari and CE Turceni to sell 30% of their total output on the regulated market in 2007. ANRE also asked Nuclearelectrica to sell 70% of their energy output in 2008. Hidroelectrica claims that ANRE asked it to sell about 25% of output on the regulated market in 2008.

The electricity and gas market have been gradually opened since 2000 and 2002 respectively. Legally, electricity and gas markets are fully open. However, considering the quantity sold on the market, the real market opening is 48-50% for electricity and between 50-60% for gas. Figure 12 below shows the trends of legal level of market opening and the percentages of consumers that have changed their supplier as a result.

Figure 12 Evolution of market opening and consumers switching



Source: ANRE’s Romania electricity market report 2005

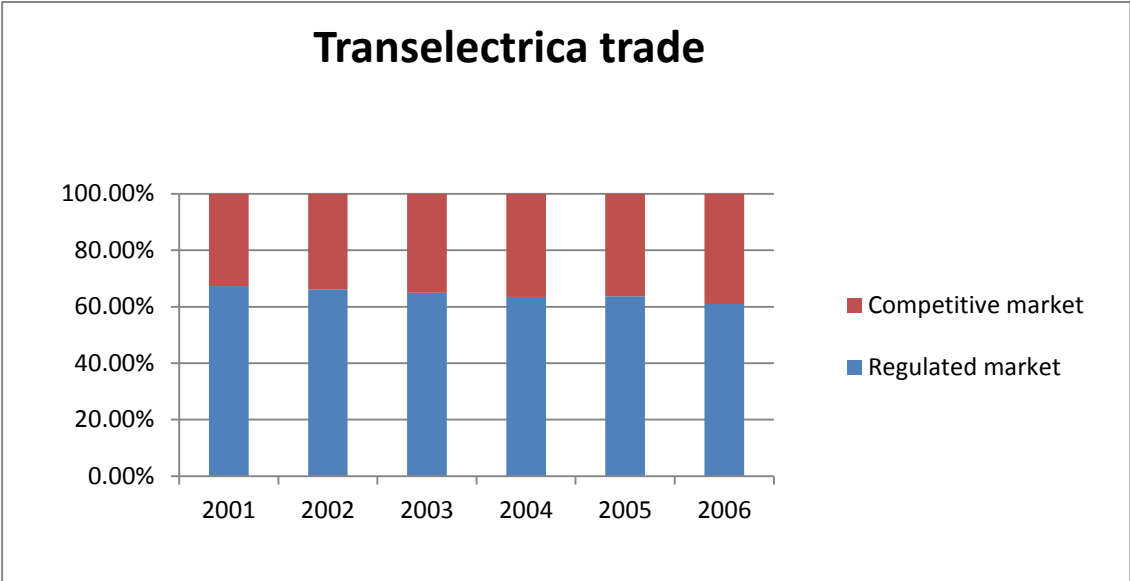
Because energy on the regulated market (around EUR 38-40/MWh) is cheaper than on the competitive markets operated by OPCOM (around EUR 48/ MWh), buyers still prefer to remain captives on the regulated market. Since ANRE claims it will continue regulating the price of energy for captives until at least 2011, the discrepancy between the real and legal level of market opening

²⁰ Interview with Al. Sandulescu, general director, energy policy department, MEF, 15.02.2008.

will remain intact. The number of consumers on the competitive market is unlikely to increase sharply, as long as there is a significant difference between the regulated and free market.

Figure 13 shows the discrepancy between the real and legal level of market opening. Despite government’s claims, Transselectrica transmitted roughly the same amount of energy on the regulated market in 2001 as in 2006.

Figure 13: Transselectrica transmitted energy by market's type



Source: Transselectrica annual report 2006

The government’s policy has allowed state-owned firms to sell through direct contracts over the past few years. For example Hidroelectrica trades about 6-7 TWh of its output in direct bilateral contracts with politically connected traders.²¹ As a result of the government’s policy, including obliging firms to sell on the regulated market, there are shortages of energy on the open markets. Auctions on MBC had to be cancelled in 2007 because the sellers could not guarantee that they had the necessary quantities of energy.

PSD and PRM are particularly interested in keeping the market closed (see Figure 14). The distribution of parties on supporting market opening shows that party positions on this market are positively associated with their general LR placement. The support for market opening of the centre-right parties should not be overstated: when in government, they are likely to be concerned with energy prices for households and with inflation targets.

If the next government will be formed around PSD, the pace of market opening will be slower for both welfare and rent-seeking reasons. If the PDL forms the next government, the market could be opened faster. In conclusion, both welfare concerns and business interests of politicians hinder narrowing of the gap between real and legal market opening.

²¹ Energy Holding, Buzmann, EuroP.E.C, Enol or Luxten. See details in the section 4.1.2.

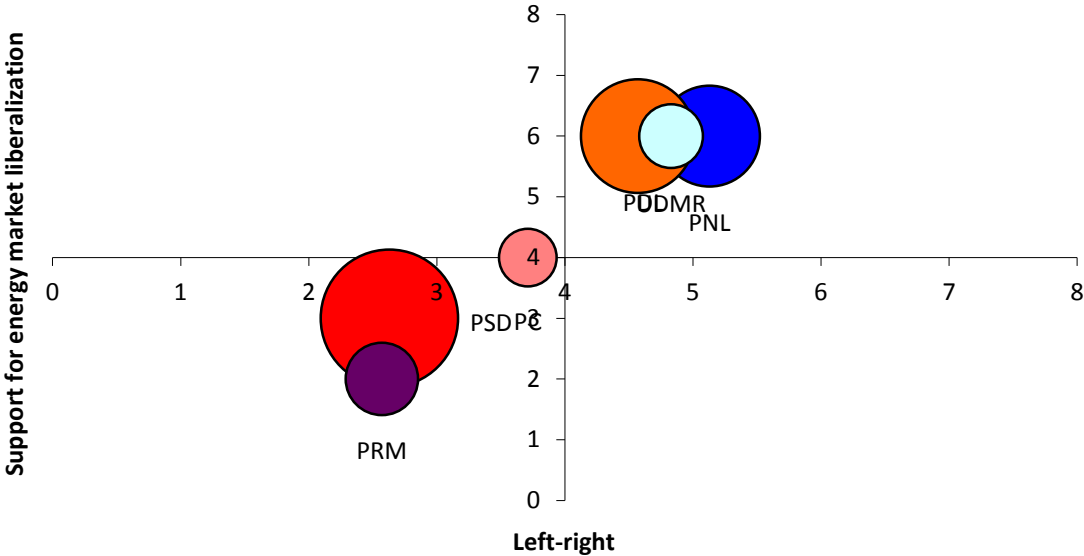


Figure 14: Support for market liberalisation

Source: CP interviews 2008, own calculations

4.7.2. Energy trading

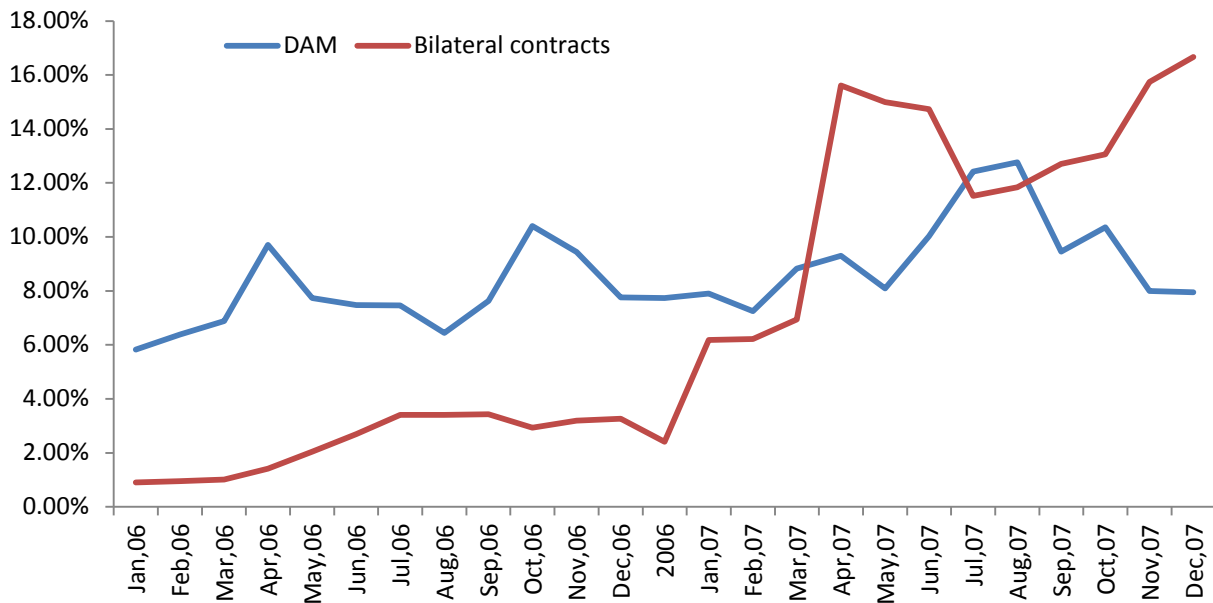
Energy trading on the competitive market is constrained by two main factors. The first factor is the desire of government and ANRE to maintain the regulated market. The second factor is that generators continue to deliver energy through direct contracts.

Electricity is traded at OPCOM, on the day-ahead market (DAM) and the market of bilateral contracts (MBC). There is a mandatory Equilibration Market (EM) on which firms buy/sell energy to equilibrate the network capacity. There is no plan to develop an energy spot-market. OPCOM will continue with the two existing energy markets, namely DAM and MBC.

DAM and MBC accounted for only 22% of the total net energy consumption in 2007. MBC is growing faster than DAM because it is more flexible for several reasons. First, on MBC periods of delivery are negotiated among participants, but they have to be more than one month. Secondly, MBC does not have standardised quantities, periods and delivery time. Finally, MBC allows a continuous negotiation among sellers and buyers. DAM is used more to cover the energy deficit of participants.

The rest is covered by the regulated market and contracts are negotiated directly between generators and buyers. However, the DAM and MBC have increased constantly in the last year. DAM increased from a 5.83% market share in January 2006 to around 11% in January 2008. MBC increased from 0.91% in January 2006 to around 16% in January 2008. We expect this trend will continue, since in the next two years almost all direct contracts signed by politically connected traders will end.

Figure 15: OPCOM market share



Source: OPCOM’s monthly reports, 2007

ANRE²² considers electricity market liquidity ‘reasonable,’ given the value of transactions and the number of participants (see Table 10). OPCOM put forward a proposal to ANRE to increase market liquidity. OPCOM will become a broker, buying all outputs from sellers and selling thereafter to buyers at the same price. OPCOM claims this will increase market liquidity by decreasing the payment settlement period to 3-5 days from 23-28 days as it currently stands.²³

Table 7: DAM and MBC in 2007

	DAM	MBC ²⁴
Average volume (MWh)	575,707	NA
Weighted price (EUR/MWh)	49.91	48.35
Market share (%)	9.4	12.3
Total transaction value	251,683,352.65	327,648,108.79

Source: OPCOM annual report, 2007.

4.7.3. Cross border trading

Cross border trading is not as politicised as domestic trading. There have not been complaints about non-transparency or political interference in cross border trading. Increasing cross border trading is hampered in two main ways. The first is the lack of interest from regional players (particularly

²² Interviews with V. Alicus, director, prices and tariffs department, ANRE, 06.02.2008 and Luminita Lupului, director, OPCOM, 22.02.2008.

²³ Interview with L. Lupului, director, OPCOM, 22.02.2008.

²⁴ Values for energy delivered in 2007.

Bulgaria) to modernise their infrastructure. The second is bureaucratic inactivity regarding the creation of a regional stock exchange in Bucharest.

Any firm licensed by ANRE to produce or trade electricity qualifies for an export/import license. The interconnection capacity is auctioned at Transelectrica (written bids). The auctions are organised annually and monthly (most common). Daily auctions will be organised for trade with Hungary in the next year. There are 10 auctioned intervals and the price of interconnection is the minimum price that wins the interconnection capacity. All the other 10 winners will pay this price. For exporting energy to Ukraine, the trader has to obtain a permit from the Ukrainian regulator, since the country is not in UCTE.

The tariff for interconnection capacity varies between regions. For instance the import tariff is lower in Northern Transylvania than in Muntenia (see Table 11), whereas for exports, the tariff is lower in Oltenia than in Northern Transylvania or Moldova (see Table 12).

Table 8: Import tariffs by geographical areas

Geographical area	Tariff for import (RON/MWh)
Muntenia:	
North	7.01 (both)
South	
Transylvania North	4.78
Transylvania Centre	7.70
Oltenia	8.95
Moldova	5.69
Dobrogea	6.64
Average tariff	7.64

Source: ANRE decision no. 64/2007.

Table 9: Export tariffs by geographical area

Geographical area	Tariff for export (RON/MWh)
Muntenia:	
North	8.64
South	7.00
Oltenia	6.30
Banat	6.11
Transylvania South	8.07
Transylvania North	10.13
Moldova	11.14
Dobrogea	7.12
Average tariff	7.69

Source: ANRE decision no. 64/2007.

Table 10: Transelectrica tariffs, 2008

<ul style="list-style-type: none"> • The tariff for the transmission of electricity: RON 15.33/MWh • The tariff for system service: RON 17.66/MWh • The tariff for OPCOM’s services: RON 0.23/MWh
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Source:
Interview with

Sorin Pispiris, director, commercial division, Transelectrica, 25.02.2008.

The government aims to increase cross border capacity. In 2004, Transelectrica opened a 400 kV connection with Hungary (through Arad) and increased the interconnection capacity with Bulgaria. Currently, there is a major investment underway to increase the interconnection capacity with Serbia through a 400kV line (OHL Porțile de Fier - Reșița-Timișoara - Arad and Timișoara – Vrsat). Transelectrica plans to invest EUR 1.1 billion during the period 2008-2015, of which EUR 419 million will come from its own resources and 684 million from loans, for the following connectivity lines:

- 400 kV Gadalin (RO) - Suceava (RO) - Bălți (Republic of Moldavia)
- 400 kV OHL Porțile de Fier - Reșița-Timișoara - Arad and Timișoara - Vrsat (Serbia)
- An undersea connection with Turkey.

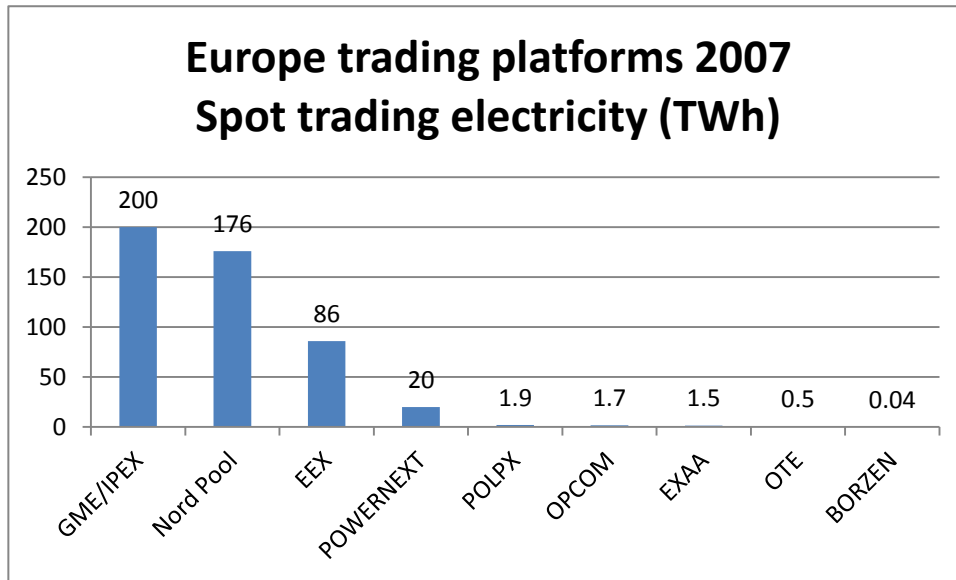
Transelectrica believes that the existing capacity (ongoing projects included) is sufficient for the current levels of energy output. The main problem for increasing cross border trading limited capacity of Bulgaria’s interconnectors. Trade with Greece is thus limited.

Power exchanges on boarder, 2006 (gWh)		
Bulgaria	Inbound	710
	Outbound	1,138
Hungary	Inbound	29
	Outbound	1,437
Ukraine	Inbound	893
	Outbound	47
Serbia	Inbound	3
	Outbound	3,262

OPCOM intends to become the operator of the Balkans regional market. OPCOM competes with Borzen, the Slovenian energy market operator. In 2005 OPCOM signed a consultancy contract with Nord Pool, financed by The World Bank, to implement a new transaction platform for the regional market. The government declaratively supports OPCOM’s intention to become the administrator of

regional energy market but it hasn't taken any concrete actions. Unless Bulgaria is convinced to join the regional market, there is little chance that OPCOM will become the regional market operator. OPCOM's main argument in the competition with Borzen is that OPCOM ranks as the 6th biggest European trading platform by volume (see Figure 16 below).

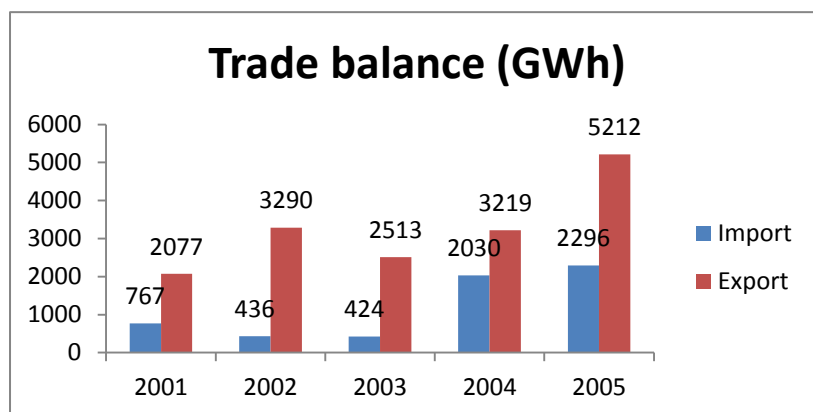
Figure 15: OPCOM's rank among European trading platforms



Source: E.ON Report: "The development of the German and Central European power market in the light of the new German Energy law"

Romania is a net exporter of electricity. In 2005, the country exported 5,212 GWh of electricity and imported less than 45% of that amount. For the evolution of Romania's trade balance, see Figure 17 below. Among EU member states, Romania exported the largest amount of electricity in 2005 to Hungary and Bulgaria (see Figure 18 below). Reliable data on cross-border electricity are scarce because of methodological differences between statistical offices. For Romania's imports, see section 4.1.4 above.

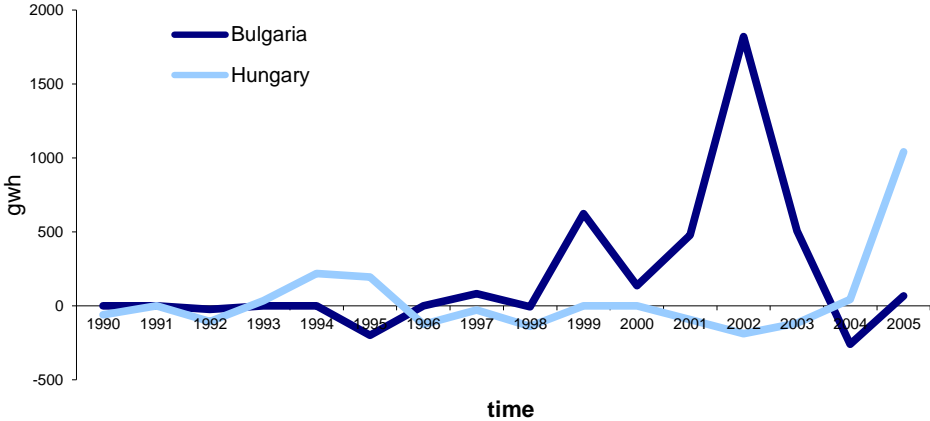
Figure 17: Electricity trading balance, 2001-2005



Source: Translectrica annual report 2006

168: Evolution of cross border trading with Hungary and Bulgaria

RO's electricity trade balance with BG and HU



Source: Eurosta, own calculations

4.7.4. Conclusions

We expect that the domestic energy market will open more slowly than international trade for two reasons. First, the government wishes to prevent price increases. Secondly, increasing international trade fulfils the government’s ambition of becoming a regional energy hub and may be a source of returns for politically connected firms.

The domestic market will open more gradually under a PSD government, than under a PDL government, since PSD is more concerned with welfare programmes. PSD would also raise risks concerning non-transparent contracts since most of the direct contracts were signed by state producers under the PSD’s tenure.

5. GENERATION

5.1. Fuel and electricity prices

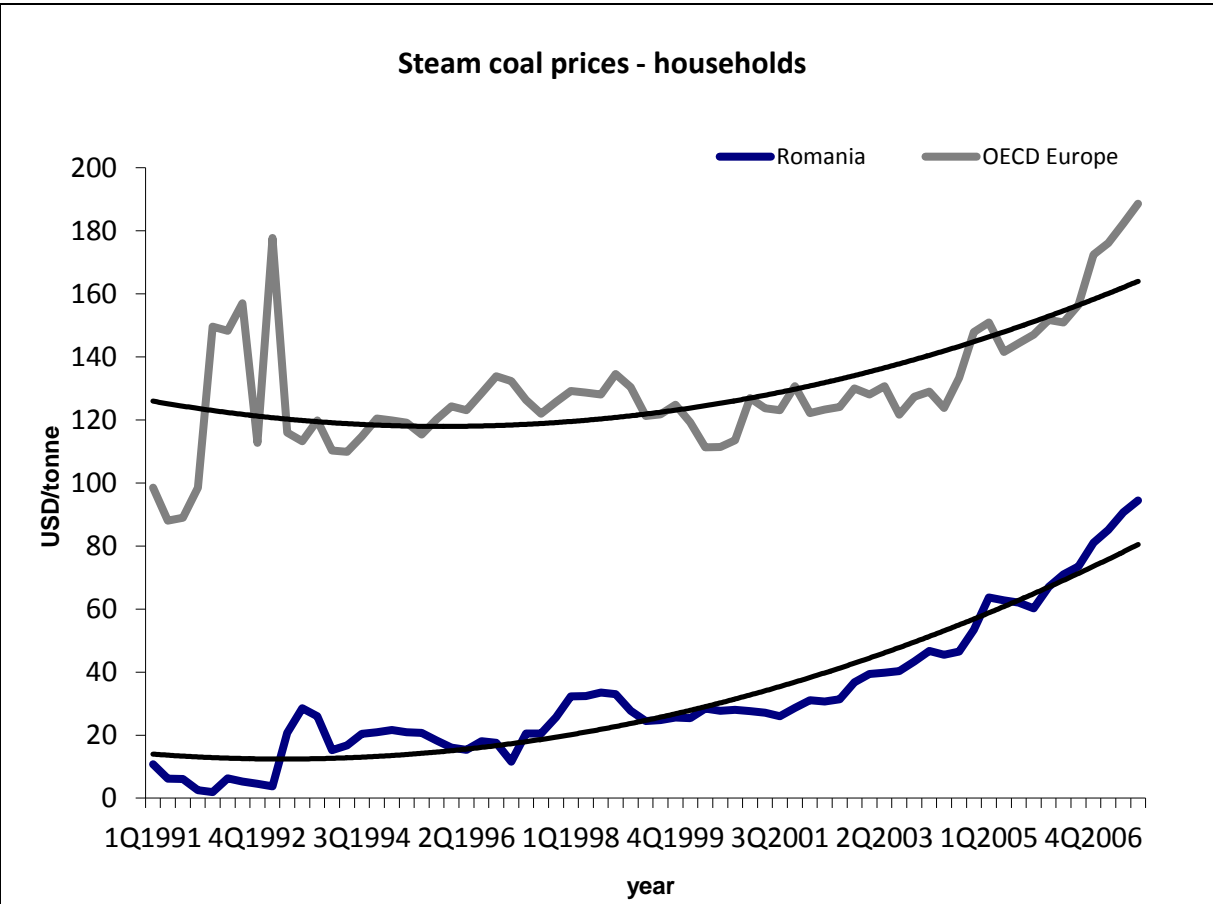
This section will examine developments of in fuel and electricity prices. First, we evaluate coal prices, then gas, and finally electricity prices.

5.1.1. Coal

Bilateral contracts regulate the price of coal in Romania. Currently, the average price for coal is about RON 30/Gcal, which includes the royalty and exploration tax.

Compared to average European prices, steam coal prices for Romanian households has grown annually by more than 30% annually on average since 1990, while OECD Europe prices increased at a much slower pace (5.1%).

A quadratic regression model is a more accurate in describing trends in Romania's steam coal price evolution than a linear model (difference in R squared is 10%). Figure 19 shows that quadratic regression is performing reasonably well, explaining 89.3% of variance in the Romanian price development. OECD prices are not accurately fitted by any simple regression model (R squared in quadratic equation of 43.9%, linear 31.3%). Therefore, we logarithmically transform both OECD and Romanian data to eliminate strong nonlinearities. Subsequently, we fit the linear model to the transformed data, which conveniently allows us to compare the pace of price increases. The comparison of parameters fitted by the linear model shows a significantly steeper slope in the case of Romanian prices (RO: $y = 1.943 + 0.0372x$, OECD $y = 4.7034 + 0.00446x$). Please see Figure 3 in appendix for details.



Source: IEA, own calculations

Romania			OECD Europe		
$y=1,316,903-1,321x3_1+0.3315x3_1^{**2}$	R-sq=89.3%	MAPE: 44.8%	$y=1,352,493-1,355x3_1+0.395x3_1^{**2}$	R-sq=43.9%	MAPE: 8.3%
CAGR=17.9614%	Avg. of 1 st diff=30.9323729%		CAGR=4.2639%	Avg. of 1 st diff=5.0946447%	

Figure 179: Evolution of steam coal prices, Romania and OECD Europe

Data on retail and wholesale price indices of coal also confirm a much more rapid growth of prices in Romania than in Germany (see Figures 4 and 5 in appendix). While retail price of coal in Germany grew at a very conservative rate (by 8.9% between 2001 and 2007), Romanian prices increased by 65.6% over the same period. The Romanian wholesale price index rose almost threefold between 2000 and 2007.

The state has provided the sector with both direct and indirect subsidies in the past. Although the exact data is scarce, economic estimations suggest that the direct subsidies for the mining sector have been about USD 7.5 billions in the period between 1990 and 2005. Of these, around USD 4 billions has been direct subsidies (see Figure 6 in appendix) and around USD 1.5 billion has been granted to cover exploitation losses. Although most of these sums went to the mining sector, the state also offered direct subsidies to gas and electricity as well. In addition, the state sustained the energy sector through hidden subsidies. Energy firms have not regularly paid regularly taxes to state

budgets, particularly to the social security budget. Energy firms have in turn subsidised agriculture and heavy industry by passing on those subsidies in the form of prices below real production costs.

The government directly subsidises the mining (hard coal) and heating sectors.²⁵ Lignite mining was directly subsidised until 2007. SNC Ploiesti was receiving subsidies until 2007, while SNL Oltenia has not received any since 1997. Lignite mining is now subsidised indirectly through a system of state aid, called capital allocation, which has been approved by the EC. Capital allowances are cash payments linked to the CAPEX plan for modernisation of fixed assets. After 2008, this state aid will become illegal under EU law.

Hard coal will be subsidised until 2010, but extension is possible if Germany asks the EC to amend the timetable of removing the state subsidies for hard coal until 2018.

The present subsidy for hard coal covers the difference between the production costs and the selling price for the quantity sold on the market. It is paid monthly. This year, it is expected that the CNH Petrosani will receive state subsidies of around EUR 94 millions.

5.1.2. Gas

The government is keen to control the prices of gas for two reasons. First, it is a form of social policy without need for spending from the already over-stretched budget. Secondly, it is a form of state aid (subsidy) to energy intensive heavy industry (in particular chemical). Keeping prices of gas low should ensure the continued competitiveness of the heavy industry and prevent lay-offs in case of bankruptcies.

For gas, prices are set using a weighted average of the price of imports and the domestic price. ANRE regulates the domestic price through a procedure referred to as 'recommendation', although in fact it is binding.²⁶ The price of domestic gas in February 2008 was around USD 180/1000 cubic metres. The price of gas from imports is about USD 350/1000 cubic metres. There is no direct subsidy for gas.

The discrepancy between domestic and import prices led Petrom to ignore the recommended price (around EUR 92/ 1,000 cubic metre) in 2006. The company refused to sell to distribution companies at this price and requested a 20% increase. After protracted negotiations Petrom finally settled with ANRE for an 8% increase.

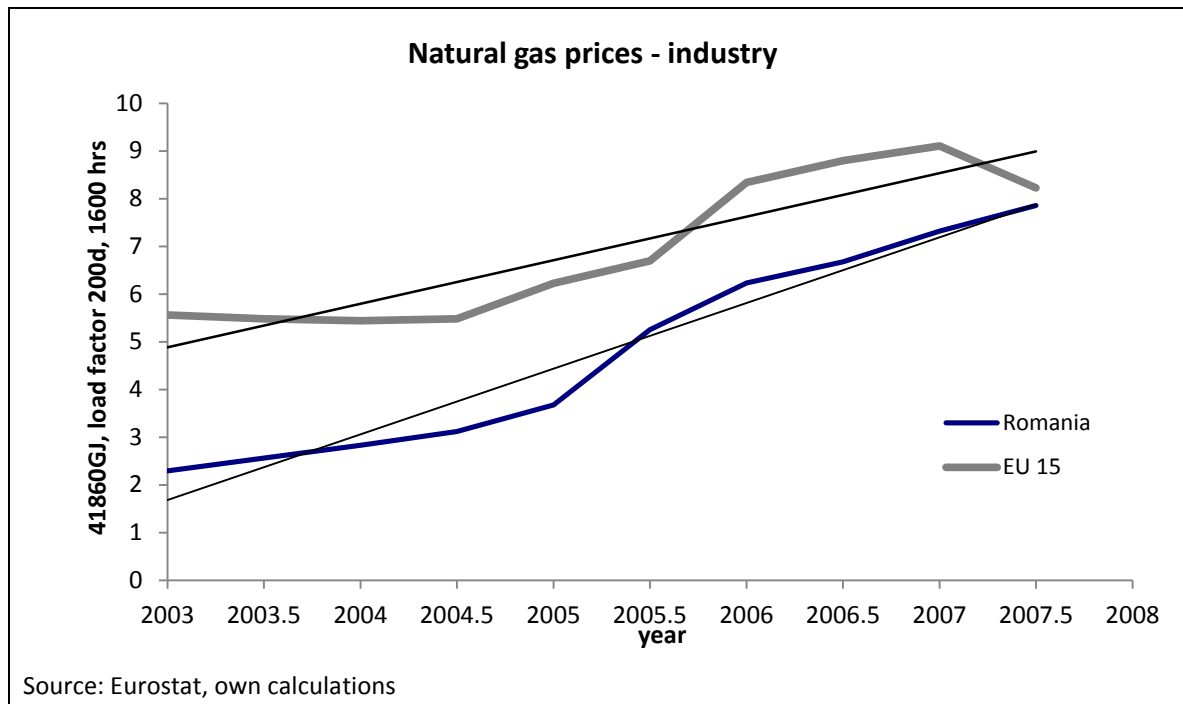
According to Eurostat data, the price of natural gas for households (annual consumption of 83.70 GJ in average household, second half of 2007) is 37% higher in the EU-15 than in Romania (8.24 EUR/GJ in RO, 11.32 EUR/GJ in EU-15), while industry price (annual consumption of 41,860GJ) is 4.5% lower in Romania (7.86 EUR/GJ in RO, 8.23 EUR/GJ in EU-15). See Figure 20 for the comparison of EU-15 and RO price developments. Natural gas prices for industrial consumers (Figure 20) in Romania also grew by a significantly higher rate (15.1%) than in the EU-15 (4.8%) since 2003. The linear model

²⁵ For heating subsidy system, see below the Chapter 6 below.

²⁶ ANRE recommends a price for captive consumers. Producers ignore this price though when they sell to distributors. However, distributors have to respect the recommended price when they sell to consumers. Thus, they can not buy gas at higher prices than the recommended one.

fitted the following equations RO: $y=-2.755+1.376x$ and EU 15: $y=-1823+0.9126x$ respectively. The linear trend model performs reasonably well with a mean percentage error of 9.7%.

Figure 2018: Evolution of industry prices, Romania and EU-15



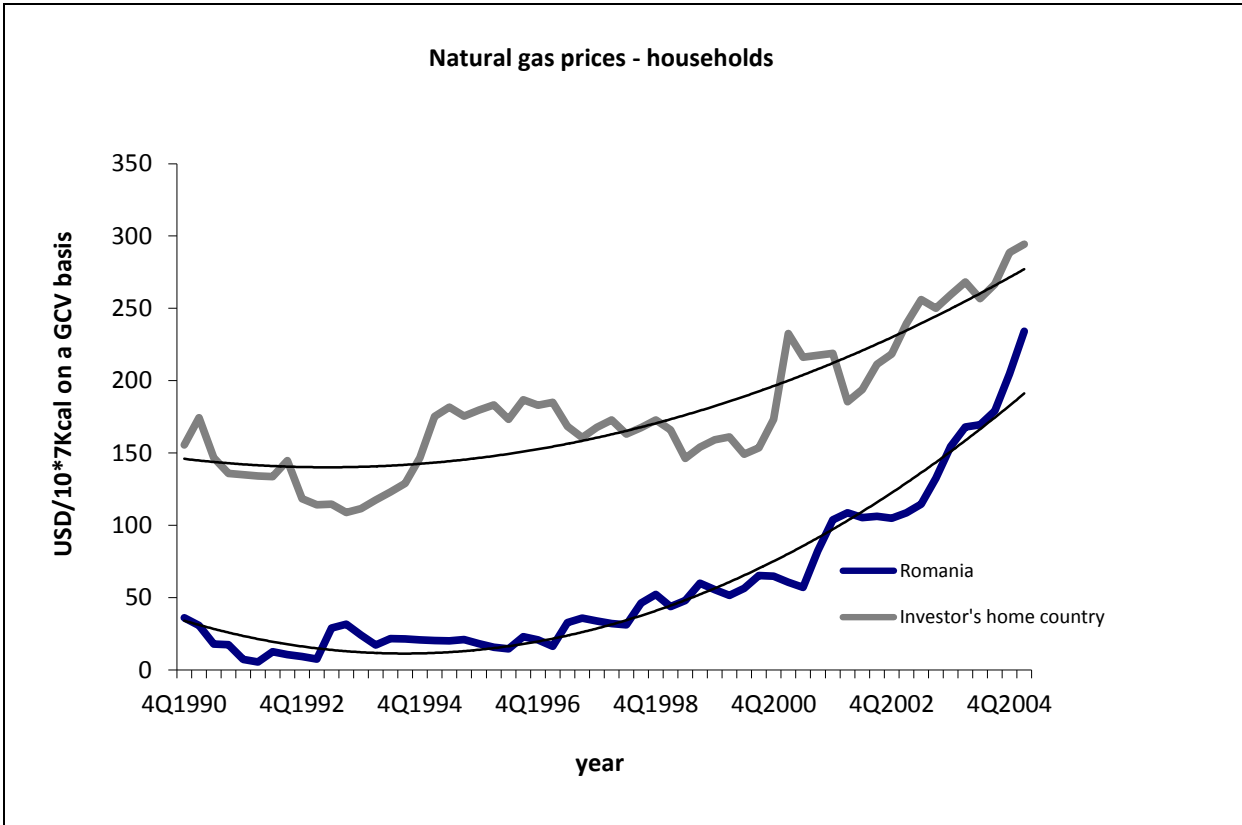
Source: Eurostat, own calculations

Romania			EU-15		
$y=-2,755+1.376x$	R-sq=95.9%	CAGR=36.067%	$y=-1,823+0.9126x$	R-sq=82.7%	CAGR=10.3015%
MAPE: 9.66%	Avg. of 1 st diff=15.1035%		MAPE: 8.24%	Avg. of 1 st diff=4.8503%	

The evolution of the natural gas retail price index in Romania and Germany attests to the fact that energy prices are increasing faster in Romania than in Western Europe (see Figure 7 in appendix). While German prices, for instance, increased by 29% between 2001 and 2007, Romanian prices increased from 28.5% (of the 2005 price) in 2001 to 129.6% in 2007. Figure 8 in appendix illustrates that the wholesale price of natural gas in Romania grew by more than 700% from 2000 to 2007.

Romanian gas prices for households (Figure 21) have grown annually on average by 26.6% since 1990, while Finnish gas prices, for instance, have increased on average by 6.3% each year in the same time period. Quadratic regression explains 95.1% of variance in the Romanian price development (see section 5.1.2. in appendix for detail).

In order to compare the slopes in both cases, we logarithmically transform the data and apply the linear model, which exhibits a relatively low mean percentage error for Romania (8.8) and even lower for [The investor’s home country] (2.4). The comparison of the two models confirms that prices of gas for households have been increasing almost four times faster in Romania than in [The investor’s home country] (RO: $y = 2,207 + 0,0495x$, FI: $y = 4,7876 + 0,0124x$).



Source: IEA, own calculations

Romania			[The investor's home country]		
$y=6,474,075-6,492x_2+1.627x_2^2$	R-sq=95.1%	CAGR=19.94 98%	$y=3,898,369-3,912x_2+0.9812x_2^2$	R-sq=79%	CAGR=5.037 8%
MAPE: 32.7%	Avg. of 1 st diff=26.6518776%		MAPE: 11%	Avg. of 1 st diff=6.25%	

Figure 191: Evolution of household prices, Romania and [The investor's home country]

Around one third of the domestic consumption comes from imports from Russia through intermediary firms, which inflates the price of imports. These intermediary firms are Wintershall (70% of imports), Conef Gaz and Imex Oil. There is no special agreement between Romania and Russia on gas imports. PSD, PRM, PC and PNL claim that Romania pays relatively high price (USD 350) for Russian imports because of the president's pro-NATO and pro-US policy. They envisage a policy of reconciliation with Russia with an objective of getting a special deal on gas imports.

Compared to the electricity sector, rent-seeking behaviour is not that common, since distribution and production have been largely privatised. The government nevertheless retains an important price-setting mechanism. There is currently an issue regarding government influence on Romgaz prices. Romgaz will increase the discount given to the large industrial consumers, to USD 40 per 1,000 cubic metres – from a current base price of some USD 180 per 1,000 cubic metres. Increasing the discount would cost Romgaz some EUR 36 million. The main recipients of the discounts will be the fertilizer

companies, which need some 2.5-2.8 billion cubic metres per year. These companies are captive consumers²⁷ of Romgaz and buy gas at the recommended price.

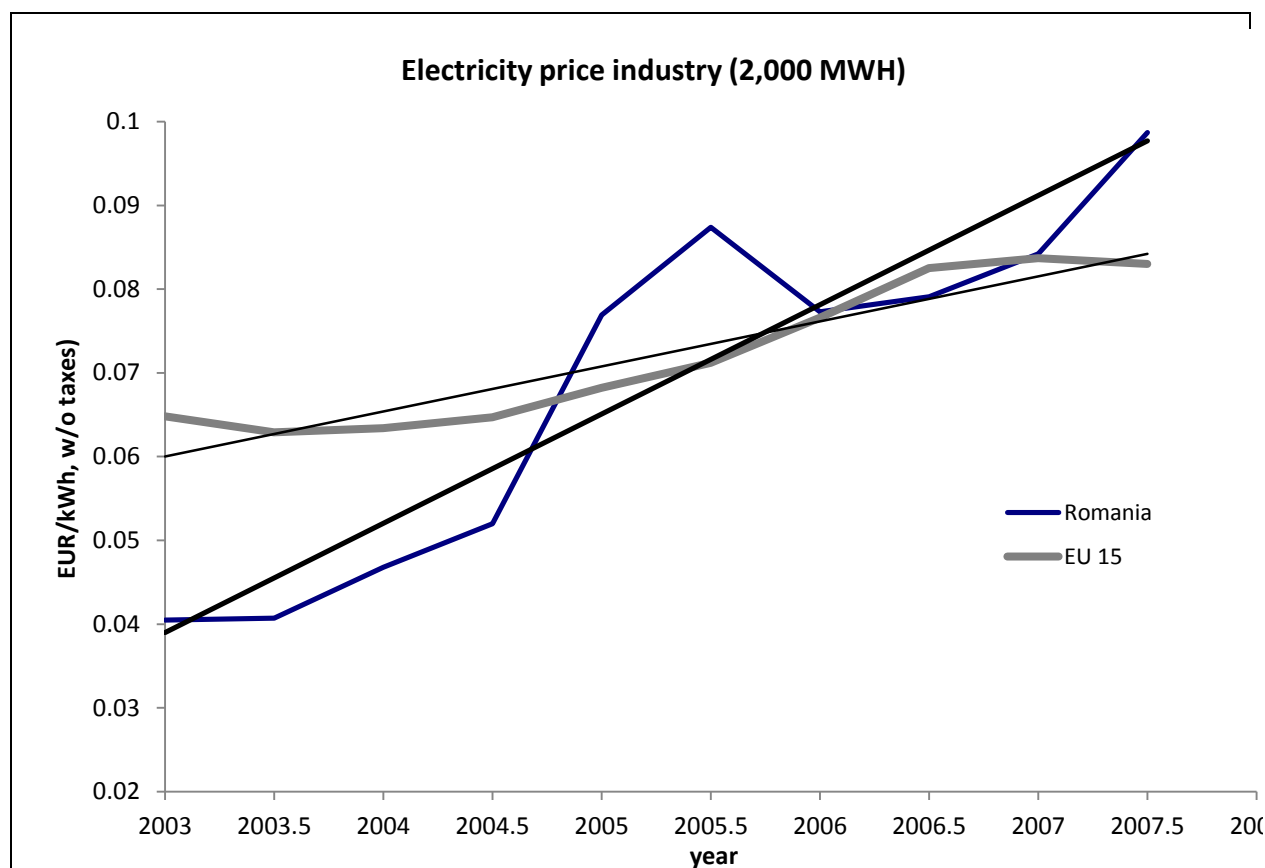
The government is likely to continue manipulating gas prices irrespective of the coalition formation scenario. However, under coalition scenario 2 (PSD-PNL-UDMR) the risk of price control is higher because PSD is more in favour of artificially low gas prices than PDL. Moreover, PSD is more in favour of subsidising industries than PDL.

5.1.3. Electricity

The current electricity price level (second half of 2007) for households (annual consumption 3,500 kWh) is at EUR 0.0962 per kWh in Romania and 0.1205 kWh in the EU-15. Romanian industrial users (2,000 MWh) pay EUR 0.0987 per kWh of electricity, while the EU-15 average price level is 15% lower (0.0830 EUR/kWh). There is no subsidy for electricity.

Electricity prices have grown more rapidly in Romania than in the EU-15 for both household (annual consumption of 3,500 kWh) and industrial consumers (annual consumption of 2,000 MWh). Romania's industrial customer prices have grown annually on average by 11.6% since 2003 and for households by 8.3% since 2005. EU-15 prices have grown for 6.4% and 3.7% respectively. This is confirmed by linear analysis of data, which fits the following equations: RO: $y = -26.09 + 0.01304x$, EU-15: $y = -10.71 + 0.005377x$ (mean percentage error of 9%). Romania's industry electricity prices increase at a pace 2.43 higher than the EU-15 average (see Figure 22 below).

²⁷ A captive consumer is a person/firm who can not choose the supplier for economic, technological or regulatory reasons, or a consumer who does not choose to change the supplier.



Source: Eurostat, own calculations

Romania			EU-15		
y=- 26.09+0.0134x	R- sq=86.1%	CAGR=24.944%	y=- 10.71+0,005377x	R- sq=89.5%	CAGR=6.3839%
MAPE: 9.03%	Avg. of 1 st diff=11.3969%		MAPE: 3.21%	Avg. of 1 st diff=3.5698%	

Figure 202: Evolution of electricity prices, Romania and EU-15

Table 11: Electricity prices, households

Electricity prices – households (3,500 kWh) 2005-2007	
Romania Avg. price: EUR 0.08115/kwh CAGR: 21.19 % AVG of 1 st diff: 8.2743 %	EU-15 Avg. price: EUR 0.11062/kwh CAGR: 7.5374 % AVG of 1 st diff: 3.7148 %
Source: Eurostat, own calculations	

Figures 10 and 11 in appendix present the evolution of electricity retail and wholesale price indices. The most rapid increase in Romania's electricity retail prices occurred between 2001 and 2004. Retail

prices in both Germany and Romania grew at a similar pace after 2004. The Romanian wholesale electricity price index, on the other hand, increased from 81% in 2000 to 353.7% in 2007.

Figure 23 below presents the evolution of electricity prices traded on the day-ahead market and market for bilateral contracts since mid-2005. Linear analysis of the data indicates that prices on the market for bilateral contracts rose more rapidly in the period between 2006 and 2008 than electricity prices on the day-ahead market (DAM: $y=40.60+0.4744x$, MBC: $y=32.46+0.8932x$). However, the data also show that the prices on DAM have been more volatile than on MBC (DAM: $R\text{-sq}=14.2\%$, MBC: $R\text{-sq}=77.6\%$). However this evidence is inconclusive, since the other two measures of growth (CAGR and average of first differences) indicate that DAM has grown at a faster pace than MBC. This is caused by the fact that DAM price per MW in January 2008 was 21% above the average price between January 2006 and January 2008, whereas MBC was only 9% above its long-term average price per MW in the same period.

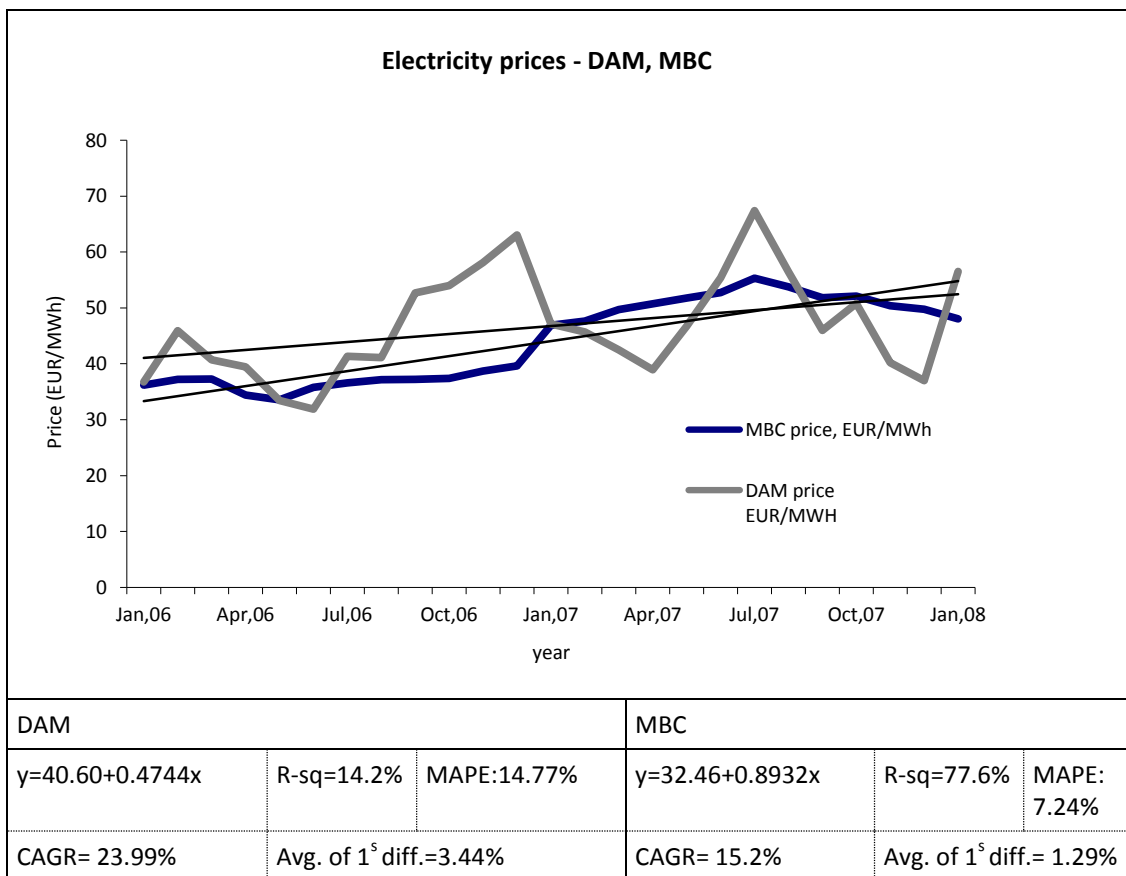


Figure 213: Price of electricity, DAM and MBC, EUR/MWh

	MBC (EUR/MW)	DAM (EUR/MW)
Average prices (Jan 06-Jan 08)	44.07	46.77
End prices (Jan 08)	48.03	56.51

5.1.4. Section conclusion

The energy market has been under constant political pressure. Welfare and rent-seeking behaviour of parties raise significant regulatory and commercial risks on the market. Notable is the political

consensus on desirability of price controls as a means of social policy and state aid (incentives). Given the broad political consensus, we do not expect significant changes following the 2008 elections.

Prices of fuel and electricity in Romania have grown at a more rapid pace than energy prices in Western Europe, but still remain below the average of Western European countries (except for electricity prices for industrial consumers). Further convergence is expected based on the forecasting models applied to the datasets.

5.2. Supporting mechanism for RES and CHP

The objective of this section is to explain existing mechanisms for supporting RES and CHP. In addition, we assess party positions on renewable energy and forecast likely developments based on the coalition scenarios outlined in section 3.2.

5.2.1. Renewable energy

The objective of this section is to offer a general overview of the market structure regarding the renewable energy sources (RES), including the relevant legislative aspects. In addition, we will explain party positions on RES support schemes.

Romania has a significant hydro potential. As Figure 4 from section 4.1.2 shows, hydro sources represent around one third of the total energy output. The state-company Hidroelectrica owns 326 plants, the most important being Portile de Fier 2. Table 15 presents the total potential of energy from the exploration of renewable resources estimated by the Romanian energy strategy. Hydro power plants with installed capacity of over 10 MW are not treated as renewable energy. Therefore, they are not eligible for green certificates and priority grid access.

Table 12: Romanian energy potential from exploitation of RES

Source	Annual potential	For
Solar	60 PJ	Heating
	1.2 TWh	Electricity
Wind	23 TWh	Electricity
Hydro of which below 10 MW	36 TWh	Electricity
	3.6 TWh	
Biomass and gas	318 PJ	Heating, Electricity
Thermal	7 PJ	Heating

Source: Romanian energy strategy, 2007-2020.

According to European decisions, Romania implemented two mechanisms to encourage production of energy from RES. The first mechanism is the priority grid access obligation. The second mechanism, introduced in 2005, is the GC system. The GCs can be traded at OPCOM, the operator of the GC market. For the period 2005-2012 the floor and cap values are EUR 24 /certificate and EUR 42

/certificate respectively. The typical price has been RON 142.72/GC (about EUR 39/GC). Figure 24 below presents the mandatory quotas of energy produced from RES for the 2005-2012 period.

The GC market is illiquid. The typical numbers of sellers during 2007 was 3 per month for the first half of the year and 7 per month for the second half of the year. In December 2007, the number of sellers on the GC market peaked at 10. The typical number of buyers was between 17 and 24 per month for most of 2007. Given the illiquidity, ANRE had to decrease the mandatory quota of GC for electricity producers by 2.62% from 2007 quotas (see the chart below for RES quota obligations).

The GC system is in place until 2012, but no decision has yet been taken regarding what supporting mechanism will be in place after 2012. However, given the draft legislation we discussed below, it is very likely that the GC system will continue after 2012.

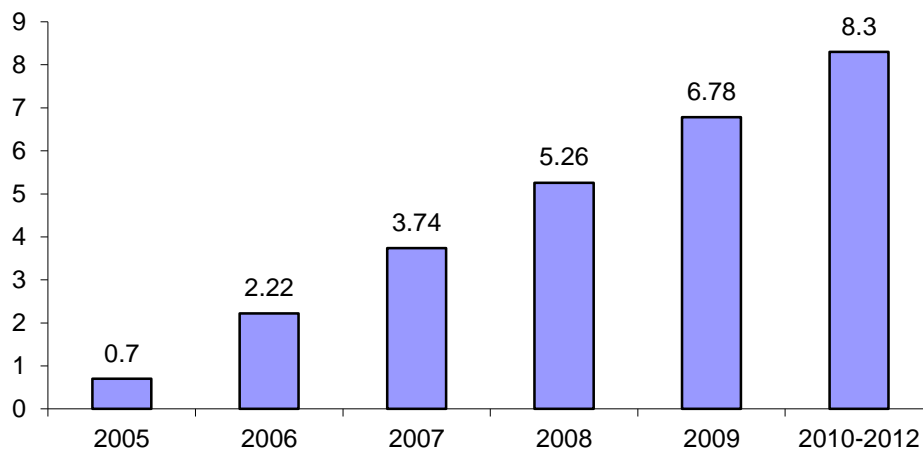


Figure 24: Mandatory quotas for electricity produced from RES/total output in percent

Source: Government decision, no. 958/2005

Parliament is currently discussing two proposals on RES support schemes, one submitted by PSD, the other by ANRE.

The Senate is currently discussing a PSD proposal which is likely to be passed within four weeks. According to the proposal, each firm receives 1 GC for each 1 MWh delivered from a new or refurbished RES plant. 2 GCs will be given for each 1MWh produced in wind farms and 3 GCs for 1 MWh produced from solar energy. Hydro plants of a maximum 10MW that are not new²⁸ or refurbished²⁹ receive 1 GC for each 2 MWh sold to suppliers. The value of the GCs will be between EUR 30 and 60. The penalty for not buying the necessary GCs by the end of the year is equal two

²⁸ Plant was installed after 2004 (Government decision no 958/2005).

²⁹ Plant is considered refurbished if it was refurbished after 2004 and the cost of refurbishment represents at least 30% of the plan replacement value (Government decision no 958/2005).

twice the value of the transaction price for a GC. The new system will run for 20 years for companies that invest in refurbishing or green field developments before 2012.

Supporting mechanisms (PSD project)³⁰

- Excise duty exemption for energy produced from RES
- Decreasing tariffs for projects using RES up to 50%
- Bonuses to compensate interest for loans
- Guarantee of up to 80% the medium and long term loans
- Subsidies of up to 50% for asset acquisition
- Tax exemptions or reduced taxes for reinvested profit, for 3 years after starting the new plant
- Financial contributions from state budget for new work places
- State aids conditioned by the existing legislation
- The right to use land for free

Source: PSD bill, 2008.

The government opposes this draft. The most relevant aspect for [the client] is that the government argued against awarding two GCs for each 1 MWh produced in wind farms. It argues that the price of energy produced in wind farms will increase up to EUR 160/MWh, which will be unbearable for consumers. The government also rejected the proposal because it increases budgetary spending and allegedly can be interpreted as state aid distorting competition.

Second proposal was submitted by ANRE. The draft differentiates between refurbished and new plants using RES, on the one hand, and the non-refurbished plants, on the other hand. New and refurbished plants benefit from the supporting mechanism for 12 years, while old plants only benefit for 5 years. The support scheme awards one certificate for each 1 MWh produced from sources other than solar and 3 certificates for 1 MWh produced from solar. The GCs will be sold on European markets if the national quota is reached after 2012. Imports of GCs will be possible after 2010. The fee for not reaching the required quota will be EUR 80/GC. Both proposals ask ANRE to reduce the mandatory quota if the number of GCs is insufficient.

In conclusion, we think that PSD's proposal is more likely to be adopted. The draft is likely to be voted in the Senate by the end of April. It will be sent to the Lower House, where we expect it will be voted by the end of June. The law will be valid after being signed by the president and published in the official gazette, which will take about 3 weeks. By the end of July, the new law is likely to be enacted.

Yet the current (PNL) or the PDL government are likely to block or amend the law after it will be published in the official gazette due to the fact that it burdens public budget. The government will either challenge constitutionality of the law because it does not earmark financing for the proposed scheme, which is a constitutional requirement in Romanian. Or the government may amend the law

³⁰ The document contains no other specific mentions regarding financial resources or specific figures. The next government will draft secondary legislation to specify information regarding concrete supporting mechanisms, including financial information.

by issuing an emergency decision (a peculiarity of Romanian system which allows government to pass legislation without consent of the parliament) to modify articles which may be particularly burdensome for public finances, such as tax exemptions and subsidies for asset acquisition.

5.2.2. Wind energy

Geographical areas with potential for wind energy are: Dobrogea, Tulcea county, Eastern Moldavia and the area around Cluj-Napoca. In 2007, there have been 22 wind turbines operating in Romania generating 4,947 MWh of wind power, less than 1% of electrify consumption nationwide. The installed wind power is 7 MW.

However, the sector is greatly expanding and new investors have asked the transmission operator for an extra capacity of 4,000 MW (see the enclosed presentation for description of potential investments). Transelectrica argues that the grid system cannot currently take in this amount of wind energy due to technical limitations. Transelectrica believes that the technical limit of the grid system is 1,000-1,500 MW now. Transelectrica has connected capacities of around 900 MW so far, which is already approaching the limits of the system.

Transelectrica claims that it is unable to cover connection costs from the current transmission tariff. It has asked the government for permission to introduce a special tariff relating to RES, in a study drafted in March 2008, now pending to ANRE and MEF. If the special tariff is not approved Transelectrica would like to make wind farm owners bear the connection cost. Transelectrica has not yet issued any information about the costs required for connecting new wind capacities,³¹ but ANRE is reluctant to accept Transelectrica's conclusions.³² The next government will decide on the imposition of additional costs for access to the grid. We do not expect any substantial additional costs given that political parties identified wind as a priority.

5.2.3. Party position on RES

Contrary to other party systems in Western Europe, there is not any relevant green party in Romania and ecology has not been salient issue in politics. Environmental issues are unlikely to be divisive in the party system. However, if any relationship occurs, the LC party positions and the parties' support for subsidising RES should be positively associated. This means that the more liberal a party, the more likely it is to vote for a supporting mechanism.

Figure 25 below confirms our intuition that no relationship exists between the two variables. All parties claim support for subsidizing RES. Most of MPs argue that they would vote for subsidies for hydro, biomass and wind, while only a few support solar and biogas energy. PSD support for wind farms is higher than any from the governmental party. Given the broad consensus neither coalition scenario raises significant risks for [the client]'s interests in RES.

³¹ Transelectrica has published the document on 14.03.2008.

³² Interviews with ANRE, 2008.

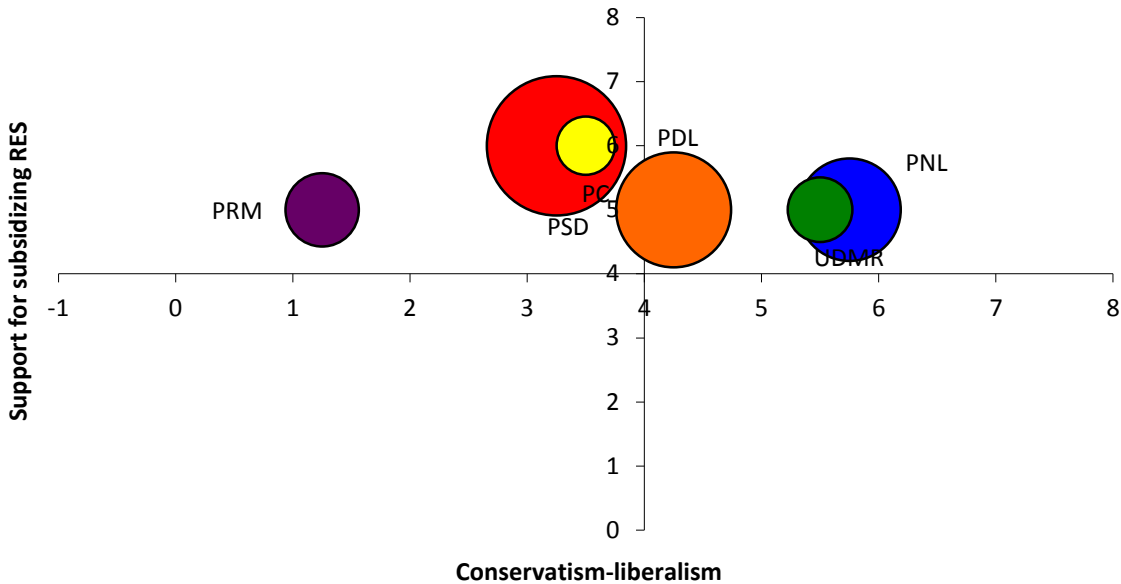


Figure 25: Party support on subsidizing RES

Source: Candole interviews 2008, own calculations.

5.2.4. CHP

The objective of this section is to explain the developments regarding the CHP supporting mechanism.

Romania used to lack support mechanisms for CHP due to bureaucratic disagreement over appropriate support schemes, the fact that heating is considered less a priority than electricity and the absence of pressure from environmentalists.

The government decision to create a framework encouraging CHP was passed in 2007. The only concrete measure is the priority access to the grid network. According to the decision the government will draft a more specific support mechanism by June 2008.

Both MEF and ANRE have drafted their proposals on a specific supporting mechanism and, as a result, the work has slowed due to disagreements.

ANRE proposes that the main supporting mechanism will be a fixed bonus for each MWt produced in cogeneration, but decreasing over time (see Figure 26 below). Transelectrica will pay the bonus at the end of each month. According to ANRE, this scheme will apply for 11 years, starting from 2009. The maximum installed capacity for which the supporting mechanism applies is 4,000 MW.

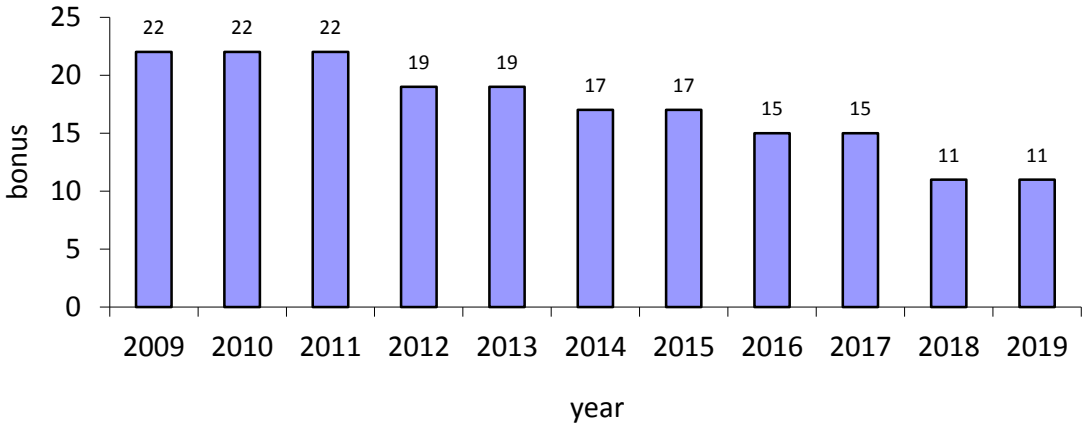


Figure 26: Value of bonus for cogeneration (EUR/MW)

Source: ANRE bill, 2008.

Costs of this scheme will be passed onto consumers. ANRE estimates that the scheme will increase the household price of electricity by 5% in 2009 and by 10% if increased CAPEX linked to refurbishing the existing CHP assets is factored in.

MEF does not support the ANRE project for two reasons.³³ First, MEF believes that the bonus should be higher than EUR 22/MW. The bonus should increase when the prices of fuels increase. Alternatively, MEF proposes that better technologies should be awarded higher bonuses, but MEF has not defined the value of these bonuses yet. We expect that the next government will set up the value of bonuses for CHP.

Secondly, MEF argues that 11 years starting from 2009 will prevent firms from entering the market in the future. For instance, the ANRE support scheme will be in place until 2020. A firm entering the market in 2015 will benefit from this supporting scheme for only five years. To correct this the MEF would like a supporting scheme for 11 years from the time of investment.

MEF and ANRE also disagree about how ANRE allocates costs for cogeneration. MEF believes that ANRE’s methodology of calculating the costs for cogeneration distributes the majority of costs on heating. MEF accuses ANRE of favouring electricity over heating because ANRE is under the influence of energy traders who are interested in keeping down the prices of the electricity they buy.

It is very likely that MEF will amend ANRE proposal for two reasons. The first reason is that the MEF will prepare the final version that will be approved by the government. The second reason is that the MEF has a vested interest in designing efficient supporting mechanisms for CHP, since MEF owns most of CHP plants through Termoelectrica.

The next government will design the detailed supporting mechanisms for CHP. We expect the period of the supporting scheme will be around 11 years from the time of investment. The bonus will not be

³³ Interview with XXX, energy policy department, MEF, 2008.

increased significantly given the growing budget constrains. Since CHP has not been a political issue thus far, we do not expect any significant political risks in this sector. The draft is currently discussed within MEF but it needs the opinion of other ministers. We estimate that the draft will be ready by June 2008 but it has to be formally approved by the government. By end of July, the document should be published in the official gazette.

6. BUCHAREST DISTRICT HEATING

The main objective of this section is to explain the likelihood of privatisation of Bucharest district heating assets. We predict that support for privatisation in heating is positively associated with LR party positions. Furthermore, we explain the relationship between stakeholders and how the political and regulatory conflict at Bucharest level may affect [the client]’s interests.

Bucharest DH raises important regulatory and political risks for [the client] for three reasons. The first reason is the lack of any municipal strategy for district heating. The second is the blurred institutional responsibilities. Finally, it is the desire to keep heat prices low.

The municipality has no clear energy strategy for Bucharest. Indeed, it only recently announced a tender for selecting the consultancy firm that should draft this strategy.³⁴ The report should be delivered by the end of the year. Given that in 2008 there are local elections, it is unlikely the report will be delivered before the end of 2009.

Blurred institutional responsibilities raise important political and regulatory risks too. The municipality controls only RADET, not CHPs, which are owned by Termoelectrica through ELCEN and therefore controlled therefore by MEF (see Table 11 in appendix for CHP plants in Bucharest). The municipality blocks privatisation that MEF and Termoelectrica would like to undertake and claims that all the CHP plants should be transferred to its ownership since they provide a municipal service.³⁵ Although officially the government has said it would eventually transfer the plants to the Bucharest municipality, this has been delayed several times. It is very unlikely it will happen soon, since ELCEN (a Termoelectrica subsidiary, owning the CHPs in Bucharest) is very important for energy sector, covering 12% of the total electricity output in Romania and about 40% of the heat energy. Secondly, MEF thinks that municipalities do not have sufficient know-how to run the CHP plants efficiently and are only interested in controlling CHP plants to keep the price of heating down.³⁶

Although selling the assets is unlikely, there are a few PPP opportunities with the municipality. For example, the municipality claims it would be interested in developing a green field project in the north of Bucharest. In addition, officials of the municipality claim that Bucharest needs additional energy of about 2,000-2,500 Gcal, produced in cogeneration that is currently covered by hot water boilers.³⁷ This extra energy should be produced in around 300 micro CHP plants. There is no timetable for these business opportunities yet and we expect the implementation plan is subject to recommendations of the consultancy firm they hired. It seems that only moderate refurbishment of

³⁴ Interview with Dorel Geana, deputy director, public utilities department, Bucharest municipality, 20.02.2008.

³⁵ Interview with Tudor Popescu, director, Bucharest energy committee, 20.02.2008.

³⁶ Interview with Al. Sandulescu, general director, energy policy department, MEF, 15.02.2008 and Sorin Gaman, general director, mineral resources department, MEF, 13.02.2008.

³⁷ Interview with T. Popescu, director, Bucharest energy committee, 20.02.2008.

the existing CHP plants in not a viable option for municipality because they are obsolete.³⁸ MEF, through ELCEN, also intended to create PPPs with private investors in the previous years, but there have not been any concrete developments.

The lack of any implementation plans represents an opportunity for [the client]. An effective lobby of MEF and the Bucharest municipality is likely to shape their actions regarding privatisation or PPPs. To increase the chances of success [the client] should develop relevant contacts by the time MEF and municipality will decide on the CHP policy in Bucharest.

Two reasons explain municipality’s position against privatisation of CHP plants. The first reason is that they fear privatisation will bring higher prices.³⁹ The second reason is that officials from the municipality would like to use CHPs as sources of rent, as they do with Radet.⁴⁰

The third source of risk for [the client] is the municipality argument with ANRE about prices. Bucharest officials accuse ANRE of unjustifiably increasing costs of heating produced in cogeneration in order to keep down the price of electricity. Tudor Popescu, director, Bucharest energy committee, claimed that if regulated correctly, the price of heating should not be more than 80% of the gas price. According to Mr Popescu, the ratio of the heat price/gas price is currently 265%. The municipality does not have any formal power over prices however. Its informal influence on ANRE is also low because local politicians are not considered important nationally. The municipality can only give an opinion about the local price regulated by ANRE. However, municipality complains that it has been ignored repeatedly by ANRE.⁴¹

Table 16: Heating prices in Bucharest

Price of heating, Bucharest	Paid by
RON 120/Gcal	End consumers (population)
RON 70/Gcal	Local subsidy
RON 60/Gcal	Government’ subsidy
Total price: RON 250/Gcal	

³⁸ Interviews with Messrs D. Geana, deputy director, public utilities department, Bucharest municipality, 20.02.2008 and T. Popescu, director, Bucharest energy committee, 20.02.2008.

³⁹ Geana claimed that new investors in heating have to be aware that they can enter the market only if provide lower prices than ELCEN. Otherwise, as he put it, nobody will assume the political risks to buy energy from these private firms. Also T. Popescu claimed that privatization is not suitable because the price at heating should contain no profits.

⁴⁰ D. Geana, deputy director of public utilities department in municipality who is also member of RADET’s board. He gets paid for participating in board’s meetings.

⁴¹ Interviews with Messrs D. Geana, deputy director, public utilities department, Bucharest municipality, 20.02.2008 and T. Popescu, director, Bucharest energy committee, 20.02.2008.

Source: Interview with V. Geana, deputy director, public utilities department, Bucharest municipality, 20.02.2008.

Heat prices are the biggest political issue in Bucharest. It is estimated that 600,000 apartments (from a total of 2,283,110) in Romania were disconnected between 2000-2005 because of high prices caused by inefficiencies. Heating losses because of obsolete piping have been around 40% in RADET’s infrastructure. The reason for such high losses is of the fact that RADET and ELCEN’s assets are obsolete, due to chronic under-investment. Roughly two thirds of assets are older than 20 years. However, according to municipality, Bucharest’s priority is investing in the insulation of buildings and not in RADET’s assets.

Figures 27 and 28 confirm the argument that the price of heating represents a major political issue. All political parties are unwilling to pursue privatisation in DH and favour subsidies for end consumers. These two issues are related, since privatisation is often associated with increase of energy prices, as we have shown above.

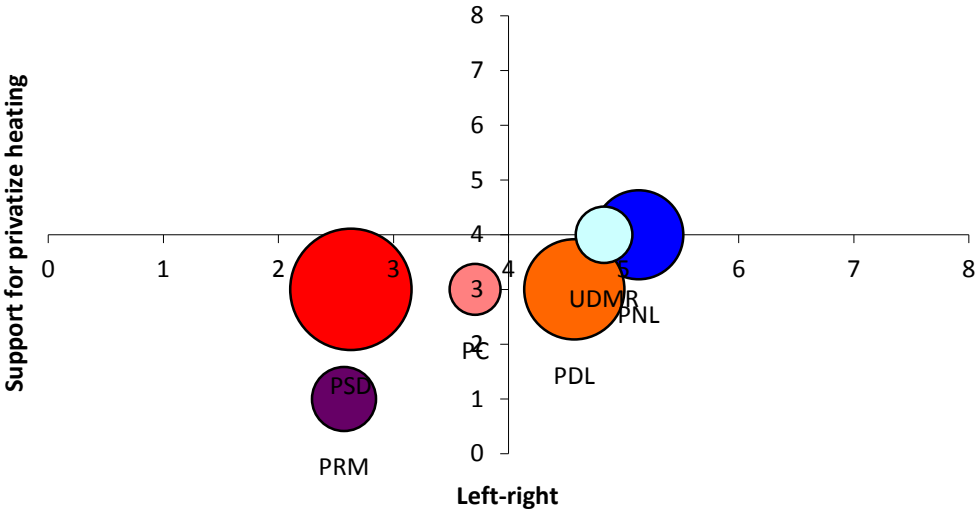


Figure 227: Party position on privatisation of district heating

Source: CP interviews 2008, own calculations.

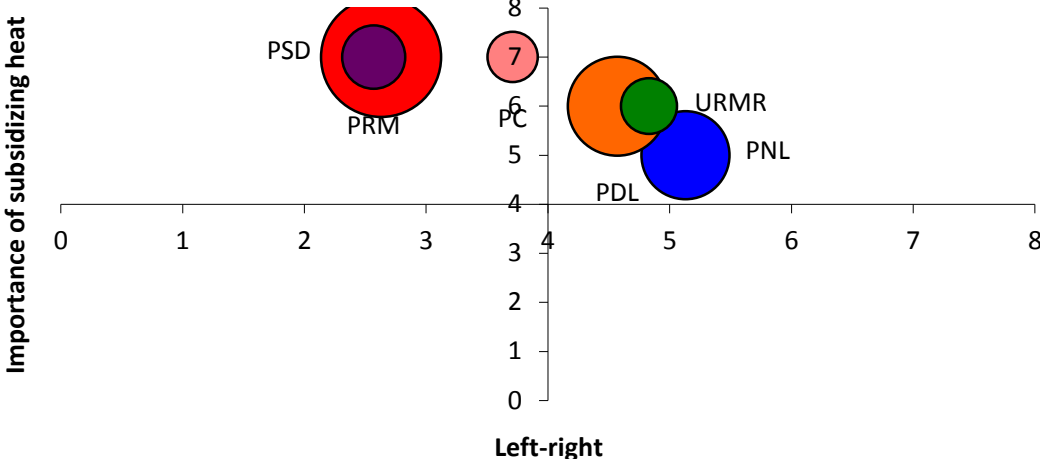


Figure 28: Party positions on importance of subsidies for district heating

Source: CP interviews 2008, own calculations.

Given that 2008 and 2009 are electoral years, we do not expect to see major changes regarding Bucharest DH. Parties will not take on electoral risks to increase prices of heating or to pursue accelerated privatisation of DH. MEF is unwilling to transfer DH generation assets to municipalities⁴², since it is concerned that municipalities would neglect CAPEX investment.

⁴² Interview with Al. Sandulescu, general director, energy policy department, MEF, 15.02.2008.

7. CONCLUSIONS

The study analyses the public policy and regulatory risks in the Romanian energy sector. We identify key stakeholders and evaluate their roles and agendas.

The study finds that the most important political risks are associated with a possible PSD- led government after 2008. PSD raises political risks for [the client] because of its policy preferences. A PDL led government that excludes PSD from power minimises such risks. The main political threat for [the client], however, comes from party attitudes regarding the prices of energy for end consumers. Political parties see prices as being high and they prefer policies that keep them down for electoral reasons.

Regulators (ANRE particularly) are highly politicised. They are implementers of political decisions and do not have their own policies. They respond to political interests by hindering price convergence. In any coalition scenario, this will not change substantially after the forthcoming elections. ANRE, for instance, does not recognise certain justifiable costs and undervalues certain assets of the energy firms in responding to this political demand.

Generation of energy is under the strict control of the state, apart from the gas sector. Domestic gas production has been steadily decreasing since 1990. The evolution of natural gas imports has been rather volatile because governments wanted to limit energy dependency on Russia. Evolution of domestic coal production has also been very irregular with a significant drop in the production of coal occurring in the period between 1996 and 1999 occurring due to the reform of the sector.

The stakeholders regard the energy strategy as ineffective. PSD and PRM oppose the strategy because of their anti-privatisation policy. PDL believes it to be inefficient. Until now, the strategy has only been a bureaucratic view of the energy sector, lacking any real implementation plan.

The Romanian tax system is dense because government needs extra funds to boost the stretched budget. It is unlikely that taxation will be cut any time soon as the government have begun numerous welfare programmes in view of the approaching elections. Environmental concerns have gained in prominence only after Romania joined the EU with several proposals to support RES and environmentally-friendly behaviour now in the pipeline.

The government's intention to create the national champion delayed major privatisations. PSD and PNL both support this policy, whereas PDL is rather against the vertically integrated firm. Furthermore, welfare arguments, national security and the possibility of getting rents from state energy firms further delay privatisation.

Political pressure and ANRE policies both make the energy market a relatively closed one despite the government's claim that it has been fully opened. The regulated market is larger than the liberalised market by volume of total output traded. In addition, domestic trade is hindered by direct contracts between state firms and politically connected energy traders. Since ANRE wants to keep control by regulating prices and quantities on the regulated market, the domestic market will open slowly.

Fuel and electricity prices have grown at a more rapid pace in Romania than in Western Europe, but still remain below the average of Western European countries. Coal prices have grown around six times faster in Romania than in European OECD countries. Natural gas prices for industrial consumers

have also grown around four times faster in Romania than in the EU 15, but remain below the EU 15 average. Household gas prices are 37% higher in the EU 15 than in Romania. According to data, electricity for industrial consumers is the only commodity more expensive in Romania than in Western Europe (15% lower in the EU 15). Based on our models, we expect further convergence of energy and fuel prices between Romania and Western Europe.

Supporting mechanisms for CHP and RES are not yet efficient. The only functional system is the GC system for RES. At the time of writing, there is no effective supporting mechanism for CHP. There are two bills in the pipeline designing new supporting mechanisms for RES and CHP, which we expect to be discussed before July 2008. Concerning wind energy, Transelectrica claims it has incurred high costs with the connection of new capacities to the grid system and would like to pass these costs on to the owners of wind plants.

The Bucharest district heating system is in political and regulatory deadlock because of blurred institutional responsibilities, the lack of a coherent energy strategy and the conflicts between the principle stakeholders. The welfare and rent seeking behaviour shape the Bucharest energy policy. Under such conditions, neither the selling of assets, nor the transfer of plants to the municipality are likely outcomes.

However, ambiguous regulation and a lack of agreement on specific policies present opportunities to drive forward developments in Romania. Big market participants such as CEZ or ENEL often shape government energy policy and create opportunities for themselves.