CENTER FOR THE STUDY OF DEMOCRACY

ROMANIA:

NATIONAL ENERGY SECURITY INDICATORS AND POLICY CHALLENGES

Country factsheet

ROMANIA'S ENERGY SECURITY COMPONENTS:

- **Availability of resources**: Romania has a good mix of its own energy sources and is the largest producer of oil and gas in Central and Eastern Europe. It has significant oil and gas reserves and substantial coal deposits. Although Romania exports refined petroleum products, predominantly gasoline and diesel oil, it still is a net importer of oil and gas. However, Romania is one of the most energy-independent countries in Europe and is a net exporter of electricity. [Energy resources net imports statistics] According to the U.S. Energy Information Administration, Romania can rely on crude oil reserves estimated at 600 mln barrels and 63 bcm of natural gas reserves as of 2010, and 320.8 mln short tons of coal reserves as of 2008. In 2012, Austrian OMV Petrom and American Exxon Mobil discovered a deposit of natural gas in the Romanian Black Sea shelf that is estimated to contain between 42 and 84 bcm. There were high expectations for the production of shale gas but were disappointed when Shevron decided to withdraw from Romania earlier this year. However in 2012 domestic natural gas production was about 10.9 bcm and the final consumption 13.5 bcm (99% of the difference is imported from Russia, amounting to about 20% of current total gas consumption), while oil production was 4.1 mln tons and the consumption 8.8 mln tons. In 2013 the country produced 22.9 mln tons of lignite and 1.8 mln tons of hard coal. Since 2000 coal production had been stable until 2013 when it suddenly dropped. The aggregated depletion rate of hydrocarbon reserves is 10% per year; meaning that without supplementary sources, in the next five to ten years Romania's import dependence will double from current levels of less than 20%. In terms of installed capacities for electricity production, according to the Eurostat data, the country is quite well equipped with 23355 MW in 2013, of which is comprised of 11400 MW of thermal, 6700 MW of hydro, 3580 MW of wind, solar and biomass, and 1400 MW of nuclear production capacity. The final electricity consumption for the period 2010-2013 accounts to 41.761 GWh on an average annual base, and an average net export of 1485 GWh per year for the same period. Regardless of their own reserves and installed electricity generation capacities, according to the Eurostat data in 2013 the import of energy products (mainly gas and crude oil) in the country accounted for about 40% of the primary energy production and 46% of the final energy consumption. The country's energy strategy envisions installing two more nuclear reactors at the Cernavoda NPP in addition to

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the existing two, which account for about 20% of the electricity production, thus doubling the share of nuclear power in the electricity production. In addition the government intended also to invest in the construction of a 1GW hydro power plant in Tarnita, estimated at EUR 1 bln, which will most probably affect negatively the opportunities for growth of solar and wind power capacities, which boomed in 2011-2013. The scheduled development of new electricity generation capacities would not increase the country's reliability of supply as there is a surplus of production capacity both domestically and in the CEE region with no future expectations for higher demand.

- **Reliability of supply**: Until recently the main energy projects intended to improve sizably the security of gas supply for Romania were Nabucco gas pipeline and the interconnectors with the neighboring states – mainly the interconnector with Bulgaria as a part of the Southern Gas Corridor (SGC), which will connect Romania to Greece after the Bulgaria-Greece interconnector is built. Both interconnectors are currently under construction but they could not start to supply gas before 2019, when Azerbaijan's gas field Shah Deniz is scheduled to be completed. In the very early development stage, other projects to ensure the oil and gas supply for the country are the Pan-European Oil Pipeline (PEOP) and the Azerbaijan-Georgia-Romania LNG transport project (AGRI). Without Nabucco and with unclear scenarios for the SGC, particularly the latter – the AGRI project, has been put again on the CEE and Romanian energy agenda, as it is the only alternative transportation project that will transport non-Shah Deniz gas. AGRI aims to bring Azerbaijani gas and, in the future, gas from Turkmenistan to Romania and Hungary by way of Georgia and across the Black Sea, thus circumventing both Russia and Turkey. To be realized it needs not only the construction of new pipelines, (South Caucasus Pipeline Expansion and inland in Romania) but also two new terminals to be built – for liquefaction and re-gasification respectively in Poti, Gerogia, and Midia, Romania. Preliminary estimates show that the cost of the project will vary from USD 2 bln to USD 5 bln, depending on the capacity of the terminals, which could equal 2, 5, or 8 bcm/year[1], but it could not start operation earlier than 2020. The interconnector between Romania and Bulgaria, which was started in 2009 and initially scheduled to be finished in 2014, offering a capacity of 1.5 bcm/year, is still not operating, regardless of the fact that about one third of the price is co-funded by the European Union. The Romania-Hungary interconnector was finished in 2010 (still operating in only one-direction –from Hungary to Romania) and cost about EUR 68 mln, half of which was covered by the EU. Initially operating at 1.5 bcm/year the capacity can increase to 3 bcm/year (according to Hungarian sources) or even to 4.5 bcm/year (according to Romanian sources) by adding compressor capacity.[2] Even designed for export only, the interconnector Romania-Moldova has to be mentioned as it is an integral part of the EU and Romanian energy security strategies for lowering the dependence from Russia. The interconnector was finalized in 2014 but is still not fully operational due to regulatory burdens in Moldova. It cost EUR 26.4 mln, most of which was covered by the EU and Romania, and is designed to transport up to 1.5 bcm/year from Romania to Moldova; thus being the first export route for Romanian gas before reverse flow is implemented on the Romania-Hungary interconnector, and before the construction of the Bulgaria-Romania interconnector is finished. There is also a project outline for the Romania-Serbia interconnector but it is still in the very early stages. Finally, the Pan-European Oil pipeline was initially scheduled to be operational in 2012 but its construction was delayed after the Croatian shareholder JANAF left the project in 2010, although the Romanian and Serbian companies decided to continue the project - building the pipeline from the

[1] Why Is AGRI Back on Europe's Energy Security Agenda? Eurasia Daily Monitor Volume: 12 Issue: 132, The Jamestown Fundation, http://www.jamestown.org/regions/europe/single/?tx_ttnews[tt_news]=44163&tx_ttnews[backPid]=673&cHash=b2030bc06740535d1939bb9328c0fc49#.VgqdSZfo7-U

[2] Hungary-Romania Gas Interconnector, Natural Gas Europe, http://www.naturalgaseurope.com/hungaryromania-gas-interconnector-step-regionwide-network

Black Sea to the Pancevo refinery. The expected cost is about EUR 3.5 bln and the capacity will be 1.2-1.8 mln barrels per day. Despite the efforts to boost its own production of oil and gas through modernization of the production process, Romania is still dependent on one single country for a sizable import of gas and oil, and current developments do not provide enough reasons that a significant change could occur in next five to ten years.

- **Environmental sustainability**: Romania is the sixth largest coal producer in Europe, producing mostly lignite, with almost all of it consumed domestically for power generation. The two major coal-based energy producers, Oltenia Energy Complex and Hunedoara Energy Complex, are state-owned and have been heavily subsidized by the government for years. However currently the country is under pressure from the International Monetary Fund to privatize them due to the need for sizable investments in environmentally-driven measures. In 2013 about 62.4% of generated electricity came from non-renewable sources, of which 27.3% coal, 19.6% nuclear and 14.4% natural gas, and 37.6% of renewables, of which 27.4% hydro and 8.9% wind.[3] Nevertheless the CO2 emissions per capita in Romania remain one of the lowest in the region, and about one third of the EU average for the period 2008-2012. [CO_2 emissions statistics] Still, the coal-mining industry and the obsolete generation plants, 55% of them 30 to 40 years old,[4] as well as the extensive use of wood and coal burning for heating households in small cities and rural areas are the main factors contributing to the continuing environmental issues.
- **Affordability**: As shown by the Eurostat data, in 2013 Romania saw one of the biggest increases in its history in household electricity and gas prices over the last decade on a year-to-year basis. Although the average household electricity price was one of the lowest in the EU at EUR 12.8/100kWh in 2013, the increase of 17% was the highest in the EU after Germany (22%) and Greece (20%). In terms of PPS the Romanian electricity prices as compared to the prices of other goods and services, are among the highest in the EU. Gas prices for households in Romania also increased by 10% on yearly basis in 2013, also the highest increase among EU countries and peak for the country in last decade. Nevertheless, the average Romanian's gas price of 3.1 EUR/100kWh was the lowest in the EU in absolute figures, but around the average in PPS. The average wholesale gas price in the country also went up from 26.3 EUR/MWh to 31,6 EUR/MWh in 2015Q1 as compared to 2014Q1-Q2[5]. [Wholesale gas prices statistics] As a result, about one third of the population in Romania is heavily exposed to the risk of being unable to cover the cost of adequate heating for their homes. High energy prices in terms of PPS as compared to other countries or to the prices of other goods and services on the domestic market, as well as the potential for facing public protests in case of restructuring the coal-based energy producers, are among the highest risks for political instability in the energy sector.

HISTORICAL TREND OF ROMANIA'S ENERGY SECURITY

The historical trend of Romania's energy security, as measured by the International Index of Energy Security Risk (IIESR)[6], ranks the country in 15th place among the top 75 energy consumers in the world, which is the best result for all CEE countries. [IIESR statistics] Compared to the variance from the OECD countries' average scores after 1990, Romania has a stable trend of improving its rank from its worst relative score in

[3] Electrica Furnizare SA, www.electricafurnizare.ro

[4] Romania needs 100 bln euros in energy investment by 2035 –ministry, Reuters, 5 December, 2014. http://www.reuters.com/article/2014/12/05/romania-energy-strategy-idUSL6N0TP3A320141205

[5] Quarterly reports on European gas markets. DG Energy, Market Observatory for Energy, https://ec.europa.eu/energy/en/statistics/market-analysis

[6] Institute for 21st Century Energy, U.S. Chamber of Commerce, http://www.energyxxi.org/international-energy-security-risk-index

1990 (53% higher than the OECD average) to its best relative score in 2009 (1% lower than the OECD average) with a slight negative peak in the next years. In terms of major metrics that compose the final index, Romania's highest energy security risks are related to its energy expenditure volatility, energy expenditure intensity, and energy intensity of the economy - particularly in the transport sector. The results are mainly due to the combined factors of import dependence for oil and gas and not restructured energy intensive economy, incl. the energy sector itself.

ROMANIA'S MAIN ENERGY SECURITY CHALLENGES:

- **Main governance challenge is major political parties to agree on a long-term energy strategy** with supporting financial instruments and institutional reforms, which will lower the ad-hoc based decision making, often linked to suspicions for being influenced by private, political, and economic interests. The last draft of the country's energy strategy was scheduled to be ready for discussion in late 2015 but will probably be postponed again. At the same time, part of the crucial decisions to be made are heavily dependent on other countries and EU decisions and efforts in the field of regional energy security policy, which makes the need for streamlined and pro-active national strategy even more important. The interconnectors with the neighboring countries and regional gas pipeline projects such as Eastring, the explorations for both conventional and shale gas, the development of RES, the liberalization of both electricity and gas retail markets, the retrofitting major coal-fired plants, and the structural reforms in the energy sector itself, are among the hottest topics. Both the improved independence of the national regulator for energy (ANRE) from political pressure with the adoption of new legislation in 2012 and the fight against corruption in the country have helped the energy sector reforms toward better and more transparent governance, including reducing the corruption and state capture within the energy sector. However, the government has delayed the introduction of the energy market liberalization process due to the predictions of higher energy prices.
- **The governance of large energy infrastructure projects** such as the planned two reactors at the Cernavoda NPP (ca EUR 6.5 bln) and the hydro PP at Tarnita (ca 1 EUR bln), and the gas interconnectors and inland transportation infrastructure, has been often an object of suspicions for high level political corruption, conflicts of interests, and being state captured by private, local, or foreign economic interests. The same accusations have been raised for the regulatory policy implementation regarding the boom of euro-multimillions RES projects and particularly the development of micro hydropower plants and large wind farms in Romania. In the case of RES, usually EU funds have been used during the project development and hence, the results often violate the EU environmental regulations, e.g. the regulations on the Natura-2000 regions.[7] In some cases the suspicions have been confirmed by official authorities and court cases have been filed by the National Anticorruption Directorate, investigating possible corruption, conflicts of interest, and tax frauds.[8]
- **High energy intensity of the economy and low energy efficiency of both the economy and the residential sector**. Since 2000 the trend of energy intensity in Romania has been declining and is closer to the levels of Central European countries (e.g. Poland and Hungary), and lower than in other Balkan countries like Serbia, FYR Macedonia, Bulgaria, and Montenegro. Yet still in 2013 the level in Romania is still more than two times higher than

[7] Rivers run dry as claims of illegality surround Romania's hydropower boom, the Guardian, 4 February 2014, http://www.theguardian.com/environment/2014/feb/04/romania-hydropower-illegality-claims-green-tariffs

[8] Ibid. See also: Romania's anti-corruption prosecutors order seizure of PM's assets, Independent Balkan News Agency, 13 July 2015, http://www.balkaneu.com/romanias-anti-corruption-prosecutors-order-seizure-pms-assets/

the EU average (334.7 against 141.6 kg of oil equivalent per 1 000 EUR[9]). [Energy intensity statistics] The high energy intensity is due to the insufficient modernization of the inherited infrastructure from the socialist time, rendered obsolete on a technological basis. Combined with the structure of the economy, subsidized prices of energy over the years have created a lack of incentives for decreasing energy intensity. While implementing the EU Directive on energy efficiency, Romania set national targets for reducing primary energy consumption by 19% by 2020, the main challenges remain as follows:

- the need for improving the efficiency of district heating supply systems;
- renovation of residential and public buildings, including the implementation of policy measures for introduction of systematic energy audits;
- introducing effective energy management in the industrial sector and implementing incentive measures for introducing energy efficient equipment in both the SMEs and heavy industry.

The energy poverty in Romania affected about one third of the population in 2012. Ranked by the average of the three fuel poverty indicators (inability of people to keep their home adequately warm, to pay their utility bills, and to live in a dwelling without defects - leakages, damp walls, etc.)[10] Romania was placed 21st among 28 European countries regarding the share of people at risk of poverty who are affected by fuel poverty.

GOVERNANCE AND FINANCIAL PERFORMANCE OF THE STATE-OWNED ENERGY ENTERPRISES

The threat of sharp increases in the retail prices have brought delays and postponements in the liberalization of energy markets for households in Romania, but the process is well ahead when compared with the situation in Bulgaria for example, which joined the EU together with Romania. In order to accommodate price increases, the national energy regulator (ANRE) put into force a pre-market mechanism that targets estimated price increases according to the timetable for phasing out the regulated tariffs to households. It results in an estimated increase of the price of natural gas for domestic customers of about 11% since July 2015 and an estimated decrease of the prices of electricity for households up to 1%, mainly due to reduction of the contribution of high efficiency co-generation in the final mix. However, the longer the period of keeping regulated gas and electricity retail prices lower than the market value, the higher the increase in the vulnerability of the energy sector, which is still performing better in financial terms and has attracted more foreign investors than those of neighboring countries. The biggest electricity supplier and distributor to Romania, Electrica SA, raised about EUR 444 mln in its initial public offering (IPO), selling a 51% stake on the Bucharest Stock Exchange and London Stock Exchange in June-July 2014, attracting both individual and institutional investors, incl. the European Bank for Reconstruction and Development, which invested about EUR 75 mln for an 8.6% stake in Electrica.[11] The key financial indicators of the Romanian SOEEs demonstrate that they have better short-term liquidity and their current assets (cash, inventory, receivables) are not depreciating. However their long-term financial situation is

[9] EUROSTAT 2014, Energy intensity of the economy is measured as gross inland consumption of energy divided by GDP (kg of oil equivalent per 1 000 EUR)

[10] BPIE (2014). Alleviating fuel poverty in the EU, published by BPIE, p. 25 http://bpie.eu/uploads/lib/document/attachment/60/BPIE_Fuel_Poverty_May2014.pdf

[11] Romania's Electrica starts trading in Bucharest and London, EBRD, 4 July 2014

worse; and for some of them that also have worse short-term prospects (e.g. Rompetrol) – this could be critical. In the case of OPCOM, which has administrator's functions on the electricity and natural gas markets, operates the only power exchange in Romania, and is fully owned by the Romanian TSO Transelectrica S.A., the financial indicators of the subsidiary reveal that it is in a worse financial situation than its parent company. Among the SOEEs, Transgaz SA – the operator of the national natural gas transmission and transportation system – has the best financial performance indicators as compared to the other enterprises, working primarily on the electricity market. [Key financial Ratios of Romanian SOEEs] Transgaz - controlled by the state, which holds 58.5% stake in the company, reported a net profit of EUR 72.4 mln for the first half of 2015, which is a 9% increase on a yearly basis.[12] This came as a result of the trend of positive increases in its key financial indicators like current ratio, quick ratio, and liquidity ratio, during the period 2009 – 2014. However, despite the positive financial development, Transgas SA was put in the center of the EU-Russia dispute regarding the rules for good governance, transparency, and accountability of SOEs, as it was questioned officially by the Energy Community Secretariat for its non-compliance with transparency requirements outlined in the Third Energy Package; in particular, not publishing Russian transit gas flow data at critical entry and exit points with Ukraine and Bulgaria for the Trans-Balkan pipeline, which carries Russian gas via Ukraine, Republic of Moldova, Romania, Bulgaria, to Turkey. Admitting its non-compliance, Transgaz SA pointed out that in connection with its contracts with Gazprom, they were prevented from aligning their transparency policies with European requirements. Transgaz further argued that any breach of its commercial terms with Gazprom could prompt the latter to instigate litigation, claim compensation, or jeopardize the energy security of the region.[13] Although referring to Gazprom non-compliance with the EU regulations, the case reveals one of the weaknesses in the governance of the SOEEs not only in Romania, but across the CEE countries, especially those of them that are heavily dependent on Russian import of energy resources; that is the use of economic power of Russian energy enterprises as a means for achieving certain geo-political aims. The existence of bad governance practices of SOEEs is influenced by diverse reasons and are part of the hidden nexus between policy, economy, and private interests, fed by political corruption and conflicts of interest. The availability and public access to basic information and data on financial performance and management of SOEEs in Romania is ensured and provides a stable basis for further analysis of weaknesses in this area, while opening the window of opportunity for proposal recommendations on how the governance of the system could be improved. The application of internationally recognized guidelines for corporate governance (e.g. the OECD ones)[14] could be one of the measures applicable not only in Romania, but also in other CEE countries.

[12] Romania: Transgaz profit up 9% year-on-year, 14.08.2015, http://www.energyworldmag.com/14/08/2015/romania-transgaz-profit-up-9-year-on-year/

[13] European officials quiz Romania's Transgaz over non-compliance, ICIS, 9 April 2015, http://www.icis.com/resources/news/2015/04/09/9874102/european-officials-quiz-romania-s-transgaz-over-non-compliance/

[14] OECD Guidelines on Corporate Governance of State-Owned Enterprises, http://www.oecd.org/corporate/ca/corporategovernanceofstate-ownedenterprises/oecdguidelinesoncorporategovernanceofstate-ownedenterprises.htm