ROEC
Romania Energy Center

Romania looking to increase its regional presence, but is it up for it?

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Athens

Main items

I. Background

II. Good luck in resource endowment

III. Energy sector mismanagement (despite reform progress)

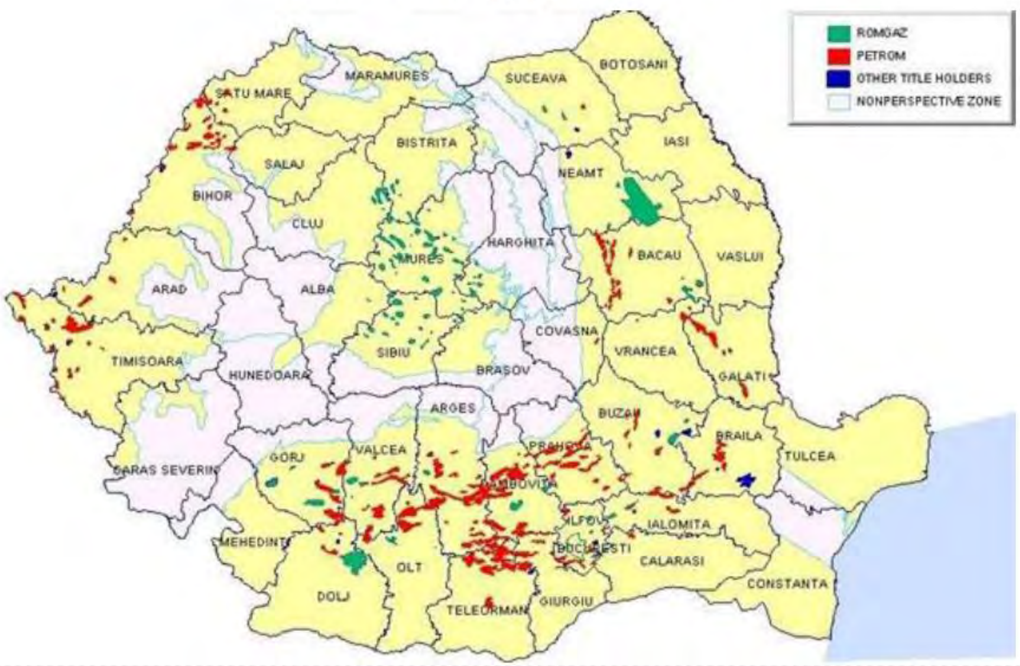
IV. Romania in regional energy market

Oil

ROMANIA: OIL PRODUCTION, IMPORT & CONSUMPTION (2010-2013)

Source: ROEC graph based on data from National Statistics Institute, Romanian Department of Energy, 2014

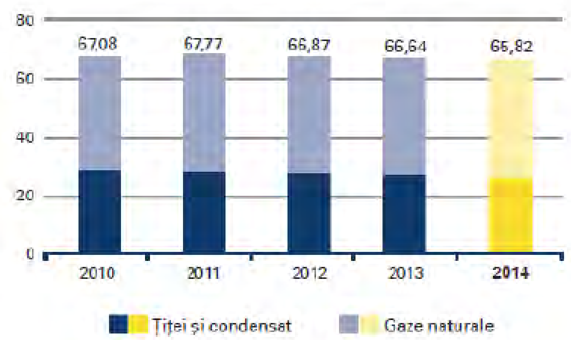
Romania: oil and gas production areas



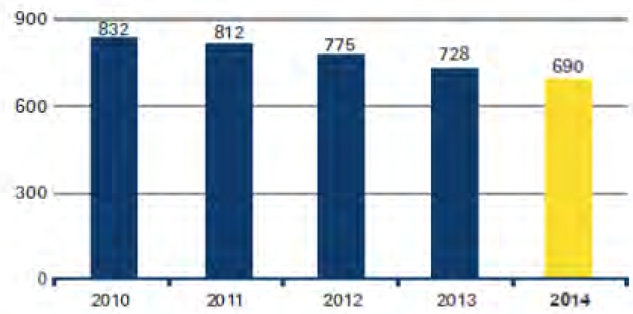
OMV PETROM

OMV Petrom Group
[Romania + Kazakhstan]

Total production (Crude + natural gas) in Mboe (2010-2014)



Proven O&G reserves (Mboe) (2010-2014)



Source: *Company Annual Report 2014*

OMV Petrom production in 2014

	Crude and condensate		Natural gas		Total
	Mil. tons	Mil bbl	BcmMtoe		Mtoe
Romania	**3.89**	**27.98**	**5.29**	**34.58**	**62.57**
Kazakhstan	0.38	2.96	0.05	0.30	3.25
OMV Petrom Group	4.27	30.94	5.34	34.88	65.82

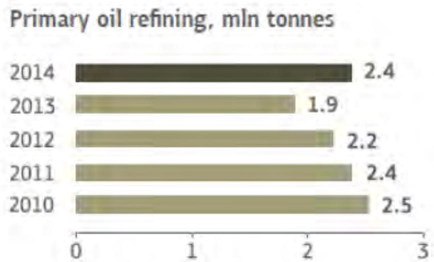
Refining

Refineries:

Refinery	Location	Installed capacity	Operational capacity (2014)	Utilization degree (Q1, 2014)
Petrobrazi	Ploiesti	7.5 Mt/y	4.2 Mt/y	68%
Arpechim	Pitesti	7 Mt/y	-	-
Petrotel Lukoil	Ploiesti	5 Mt/y	2.5 Mt/y	85-90%
Petromidia	Midia	5 Mt/y	5.0 Mt/y	91%
Rafo		5.2 Mt/y	-	-
Darmanesti	Darmanesti	1.15 Mt/y	-	-
Astra	Ploiesti	1 Mt/y	-	-
Vega	Ploiesti	0.8 Mt/y	0.33 Mt/y	98%
SteauaRomana	Campina	0.6 Mt/y	-	-
Petrolsub	Suplacu de Barcau	0.45 Mt/y	-	-

Source: Romanian Department of Energy, Draft Energy Strategy, 2014

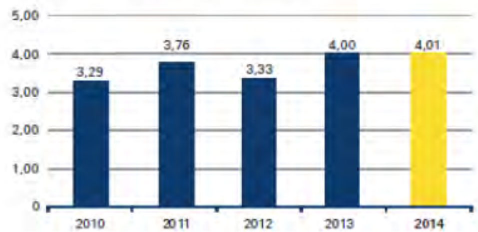
PETROTEL



Source: Lukoil Factsheet, 2014

PETROBRAZI

crude input (Mt)/y



Source: Petrom Report 2014

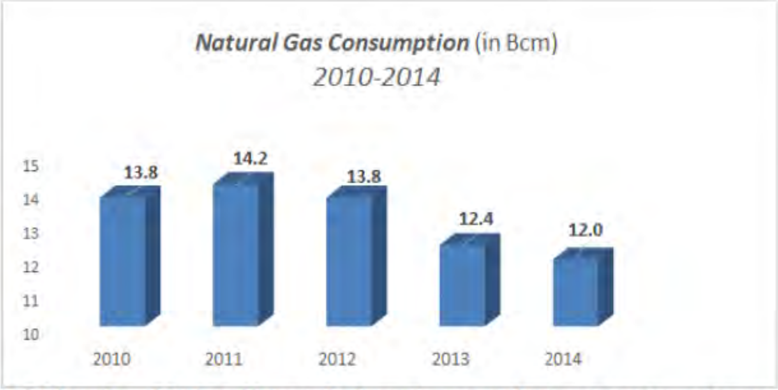
PETROMIDIA

(Mt in 2014)

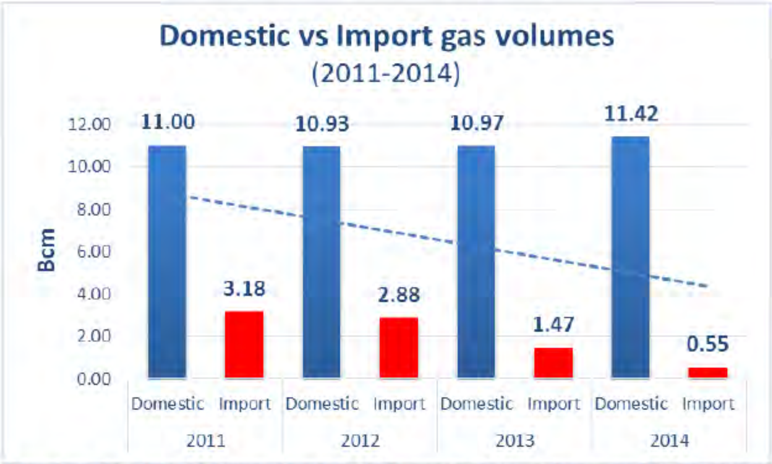
Total processed: of which	5.053
Crude	4.426
Other raw material	0.627

Source: Rompetrol Annual Report 2014

Natural gas



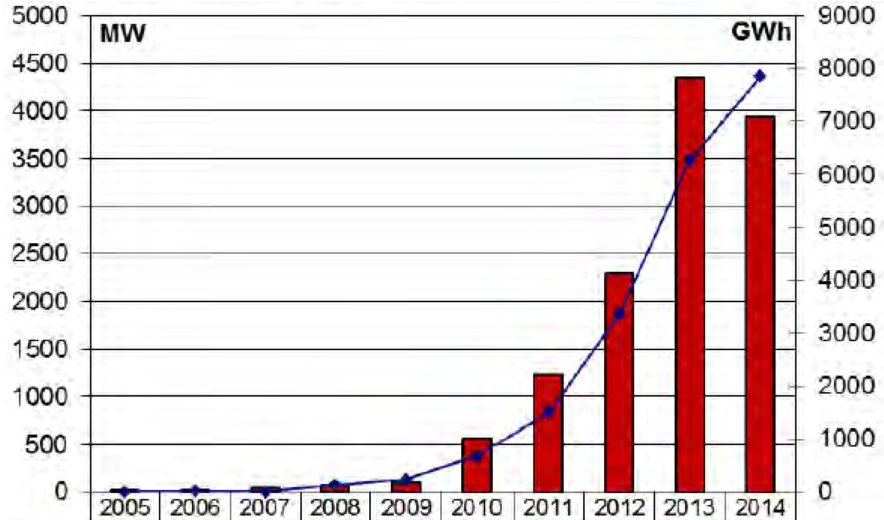
Source: ROEC based on INS data. Note: only domestic gas production + gas imports were taken into consideration. Gas in storage, its variation and industry's own consumption and losses were left out.



Source: ROEC based on INS data. Volumes do not include gas in storage, losses and industry's own consumption

Renewables

Development of installed capacities through the RES-E support scheme (2005-2014)



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Capacități instalate in centrale electrice care au beneficiat de sistemul de promovare a E-SRE [MW]*	20,6	21,2	52,4	75,3	98,6	561,2	1226	2298	4349	3935
Producția de E-SRE care a beneficiat de sistemul de promovare a E-SRE [GWh]	8	23	4	132	242	677	1510	3365	6279	7859

Note: red (left axis) = MW installed; blue line (right axis) = GWh produced by these units

Source: Romania RES Progress Report 2013-2014, p. 37

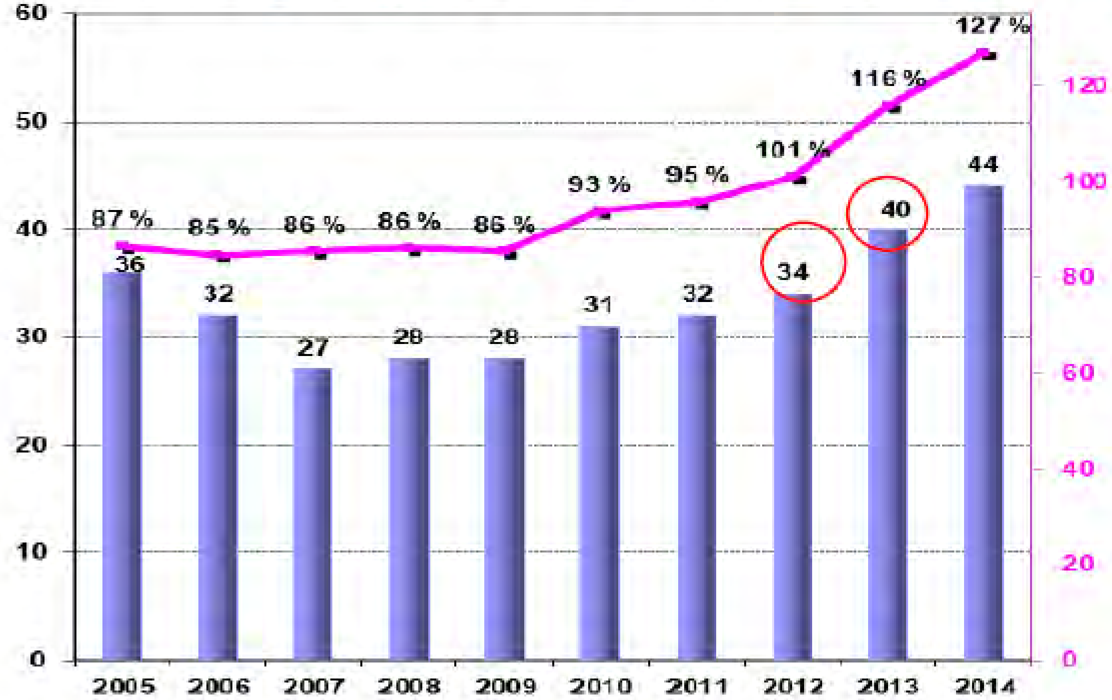
Number of accredited RES producers by year end

Year	Wind	Hydro	Biomass	PV	Total
2011	42	32	4	4	**82**
2012	56	47	7	41	**151**
2013	73	77	14	395	**559**
2014	73	81	19	456	**629**

Source: ANRE

Renewables

Progress towards achieving compliance with national target for RES-E(2005-2014)



Source: Romania RES Progress Report 2013-2014, p. 47

NOTE: left axis = % share of RES-E in final gross electricity consumption;
right axis = degree of compliance with national target of %share electricity from RES

Domestically: huge personnel issue

- Appointment of inexperienced people to top energy decision-making roles;
- Excessive use of short-term mandates (2017);
- management deterioration;
- Worrisome: governmental sector has become a magnet for low skilled people → serious consequences for **Ro's** ability to design and implement policy

Low internationalization of Romanian companies

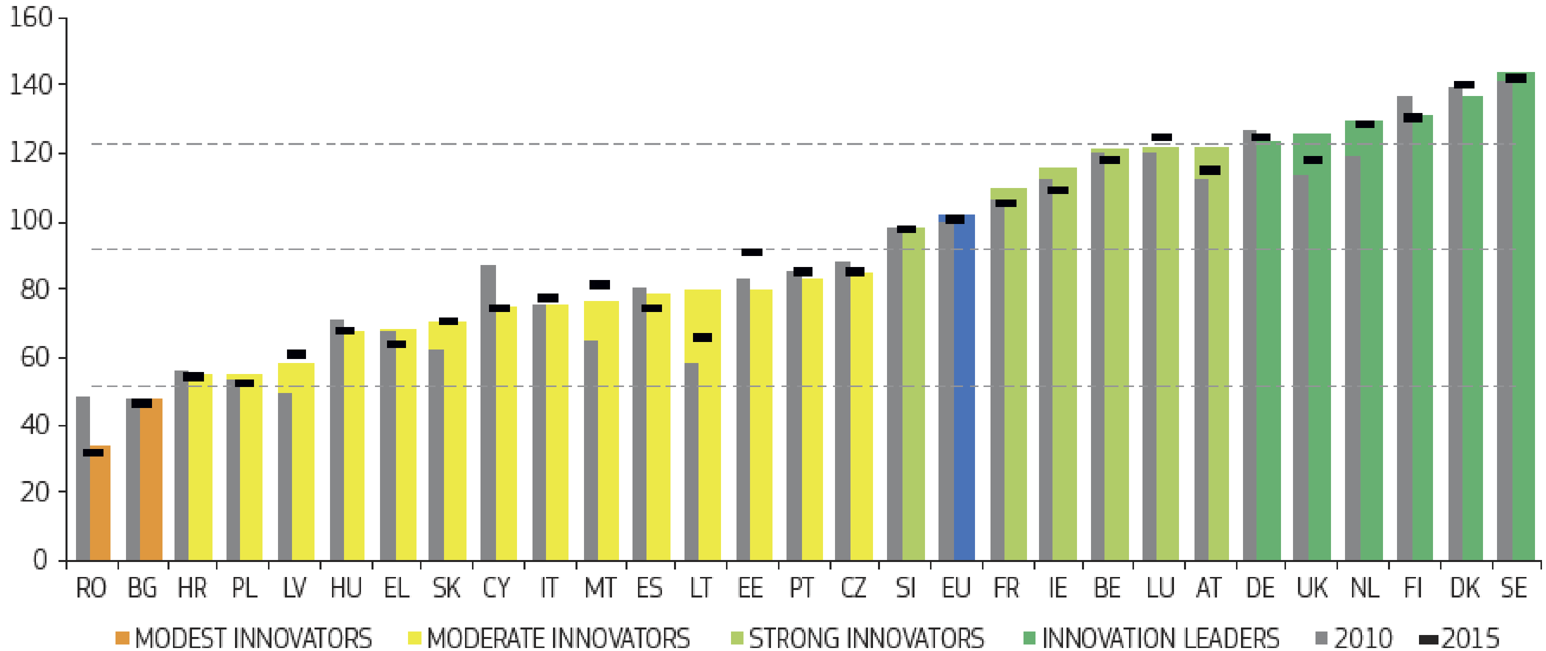
- weak presence outside Romania
- Romania focused
- low motivation to go beyond own borders for business development (exceptions: Romgaz (PL), Transgaz (recent bid in GR))
- But how adequate/realistic are the regional development strategies if domestic backlogs in investment (Transgaz)?

Domestically: decapitalization issue

- SOEs forced to distribute dividends, left w/o cash for investment plans;
- Companies will have to borrow for investment projects;
- Transelectrica already affected
(system issues→ non-execution of investment and O&M plans → brownouts/blackouts (this fall)
- Romania's desire to take on a more active regional role: +
- BUT mismanagement + bad personnel policy by current government = slower regional integration process & main obstacle going forward

Romania –
perfect example of country affected by the resource course

Figure 4: Performance of EU Member States' innovation systems



Source: European Innovation Scoreboard 2017

Thank you.

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Transelectrica’s interest: smart grid & storage

- RE-SERVE - Renewables in a Stable Electric Grid (Transelectrica and Politehnica Bucharest). The project, lead by Germany, aims to “stabilize energy systems with up to 100% RES to generate “RESERVEs” so that society can relax in the knowledge that it has a stable and sustainable energy supply” and features research into new energy system concepts. Romania is one of the two trial sites (focus on lab based frequency control for a 100% RES scenario);

- CROSSBOW (together with Transelectrica) will research cross-border management of RES and storage. Project just started (November 2017) and will run until October 2021.

- However: lack of proper understanding of what R&D is. (Ex: Transelectrica 2016 annual report lists under R&D activities - realization of market /commercial/policy analysis, technical performance optimization, or support services) → mislabeling as “R&D” activities that are not.