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Do current regulatory frameworks in the EU support innovation and security of supply in electricity and gas infrastructure?

Country Report - Romania

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The electricity NRF in Romania

The regulatory responsibility within the energy and electricity sector is divided between three government agencies the Romanian Energy Regulatory Authority ("ANRE"), the regulator for the electricity market; Transelectrica S.A. (the "TSO"), the owner and operator of the transmission network; the Ministry of Energy, the developer of the electricity market through legislative initiatives. The revenue cap regulatory system is the mechanism utilised in the electricity transmission sector. The Electricity and Natural Gas Law No. 123/2012 (the "**Law 123/2012**") Electricity Market Act and a nexus of pieces of secondary legislation, the primary backbones of legislation governing the NRF in the Romanian electricity transmission sector, do not explicitly assign duties for the TSO and NRA aiming at encouraging innovation. The NRA has the duty to grants licenses, as well as monitor compliance with the terms of the licences. Furthermore, the NRA is engaged in the regulation of reasonable returns for the TSO. The TSO is responsible for long term planning of transmission system development to provide adequate development of infrastructure and ensure reliability within Romania and towards neighbouring countries. The TSO independently prepares a 10-year transmission network development and investment plan (the latest being the "Development Plan for the National Transmission System for 2016 - 2025") which requires the approval from the NRA, along with an annual investment plan in which all financing resources for each project should be indicated.

The Romanian regulatory practice in the electricity sector

We have not received any feedback to our questionnaires and requests from the TSO and NRA of the electricity sector. Therefore, a description and analysis of the regulatory practice cannot be given.

Options for improvement

Given the lack of response from the invited parties, we could not identify any improvement options.

Assessment of the NRF and the regulatory practice of the Romanian gas sector

The Romanian gas NRF

The regulatory responsibility within the gas sector is divided between three government agencies: the Romanian National Energy Regulatory Authority[1] (the "**NRA**"), the regulator for the gas market; "TRANSGAZ S.A.", the owner and operator of the transmission network; Ministry of Energy, the developer of the electricity market through legislative initiatives.

The revenue-cap regulatory system is in place in the gas transmission sector. The Electricity and Natural Gas Law No.123/2012 (the "**Gas Law**") is the principal piece of primary legislation governing the gas sector in Romania and does not explicitly assign duties for the TSO and NRA aiming at encouraging innovation. Notwithstanding that, according to the "Transmission Tariff Methodology" whereby the TSO's revenue is regulated, the NRA may approve an increment of 1.4% from the regulated capital return rate for costs performed concerning tangible and intangible assets instilling innovation into the system, which aims at enhancing the efficiency in operation and maintenance of the transmission system. The NRA has the duty to grants licenses, monitor compliance with the terms of the licences and monitor the gas market. Furthermore, the NRA is engaged in the regulation of reasonable returns and approval of the

[1] The Romanian Energy Regulatory Authority was created by the Government Emergency Ordinance no. 33/2007, approved by Law no. 160/2012, as further amended and supplemented being a legal person, an autonomous administrative authority, under the control of the Romanian Parliament, independent in its decision-making, as well from the perspective of its organization and functioning, having as object the drafting, approval and monitoring of the application of the national regulations necessary for the functioning of the electricity, heating and natural gas sector and market in terms of efficiency, competition, transparency and consumer protection.

10-year development and investment plan proposed by the TSO. The TSO is responsible for long term planning of transmission system development to provide adequate development of infrastructure and ensure reliability within Romania and towards neighbouring countries.

The Romanian regulatory practice in the gas sector

We have not received any feedback to our questionnaires and requests from the TSO and NRA of the gas sector. Therefore, a description and analysis of the regulatory practice cannot be given.

Options for improvement

Due to the lack of response from the invited parties, we could not identify any improvement options.

1. INTRODUCTION

The present Country Report is a deliverable of the study "Do current regulatory frameworks in the EU support innovation and security of supply in electricity and gas infrastructure?".

The key objective of the study is to analyse how the existing national regulatory frameworks (NRFs) in the EU guide and incentivise the electricity and gas transmission project promoters to undertake investments. The focus of the study is both on investments in new innovative technologies and investments to increase security of supply. The main objective of the study is to map how the regulatory frameworks in the MSs support such investments and how do these frameworks ensure that the necessary investments are made.

This Country Report provides an overview of both the current legal frameworks and their implementation practice related to investments in gas and electricity transmission infrastructure. As part of this analysis, selected specific infrastructure projects in electricity and gas are discussed. Based on this research, options for improvement are formulated, both relating to the implementation practice and to legal changes.

The Country Report is based on previous study deliverables and analysis. It is divided into two main sections, Section 2 which relates to electricity, and Section 3 which relates to gas. Each of these sections examines the legal framework (Section 2.1 for electricity and Section 3.1 for gas), including specific rights and duties of relevant parties, such as TSOs and NRAs (hereafter also referred to as stakeholders), mechanisms for the financing of investment projects and the regulatory rules regarding innovation and security of supply in particular. Having studied the legal regulatory framework, Section 2.2 for electricity and Section 3.2 for gas examine the regulatory practice in Romania, drawing specifically on stakeholder interviews, and paying particular attention to the regulatory practice related to innovation and security of supply. The functioning of the legal framework and the regulatory practice are illustrated by selected specific projects in Romania. Lastly, options for improvement of the regulatory practice and the regulatory framework are discussed in Section 2.3 for electricity and Section 3.3 for gas.

These options for improvement are taken from a long list of best practises that the project team has compiled based on the analysis of regulatory frameworks in all Member States. We acknowledge that we have not carried out a full analysis of all the costs and benefits of the suggested options. Therefore, some of these options are conditional and there might be reasons that we did not take into consideration not to implement them.

The focus of this report is not primarily on R&D investments and projects, but rather on "innovative" transmission infrastructure related investments. In order to define what "innovative" is in the context of this report, we have introduced the notion of "typological investments" (see Annex I and II). The goal of selecting "typological investments", which, in our understanding, are categories of investments, was to make the discussion concrete and the investments comparable across countries. The term "typological investment" relates to technical solutions that TSOs can adopt to provide the transmission capacities needed to cover the transmission demand of grid users.

Thus, a typological investment is meant to be a type of solution that can be implemented, in principle, by any TSO in situations in which these solutions are appropriate to provide the desired benefit. Hence, typological investments are not specific to a concrete location or a particular TSO. Annex I provides a list of typological investments in the electricity sector, whereas Annex II provides the same for gas.

Ultimately, these technical solutions contribute to fulfilling the objective to improve or maintain the level of security of supply. It has to be noted that the degree of innovativeness of typological investments can be quite diverse, ranging from construction of conventional assets like AC overhead lines or pipelines with conventional materials and construction methods down to novel concepts of system automation and operation based on recent R&D achievements. Innovation aims at providing the desired level of transmission capacity – determined by the objectives of security of supply (see above) – in a way that is in some way superior to the conventional way, e.g.:

i. by immediately reducing overall cost as compared to a conventional solution;
ii. by prospectively reducing overall cost in the future, subject however to a "learning curve" as to the cost level of the innovative solution;

iii. by accelerating the process of transmission capacity expansion and thus reducing social welfare loss caused by temporarily insufficient transmission capacities; or
iv. by providing improvements with respect to other criteria that are often difficult to monetarise, like environmental or public acceptance aspects.

Innovative investments, especially those whose benefits fall into category ii., iii. and iv. named above, can face certain barriers and market failures. We have identified five categories of innovative projects, which might encounter potential regulatory barriers (see also Annex III for more explanation):

a. Capital intensive projects resulting in uncertain future OPEX gains (efficiency improvements / cost reductions) are not incentivised by the regulatory framework;
b. Projects with potential significant benefits, which would benefit primarily the wider society and where the concerned TSOs are not incentivised;
c. A roll out and investment in smart grids substituting planned physical investments may provide a reduction in the regulated asset base, but might not be realised due to an increase in tariffs or regulatory disincentives;
d. Projects with few or no commercial benefits to justify the investment, but with positive social impacts;
e. Projects, which result in a lower TSO TOTEX, but bring about a shift in the CAPEX/OPEX ratio, which is not incentivised by the regulatory framework.

Our understanding of innovative investments and typological investments, and the categorisation of investment projects in relation to possible regulatory barriers are the basis for the research done in the context of the analysis of the implementation practice in this report.

2. ELECTRICITY

2.1. Legal analysis of the NRF in Romania

2.1.1. Overview of the regulatory framework of Romania – legal rules

The principal piece of primary legislation governing the Legal Framework[2] for electricity sector in Romania is the Electricity and Natural Gas Law No. 123/2012 (the "Law 123/2012"). The transmission of electricity is defined as being performed through the interconnected electricity transmission network, which is represented by the electricity network of national and strategic interest with a nominal voltage higher than 110 kV[3].

In addition, the development and operation of the transmission network is governed by certain pieces of secondary legislation as follows:

- the Methodology for determining the tariffs for the electricity transmission service approved by the Romanian Energy Regulatory Authority ("ANRE") order No. 53/2013 (the "Tariffs Methodology");
- the General conditions associated to the license for providing the electricity transmission service, the system service and for administering the balancing market approved by ANRE order No. 104/2014 (the "License Conditions");
- the Performance Standard of the electricity transmission and system service approved by ANRE order No. 12/2016 (the "Performance Standards");
- the Regulation for the interconnection of users to the public electric networks, approved by ANRE order no. 59/2013 (the "Interconnection Regulation");
- the Methodology for evaluating investments in Projects of Common Interest relating to infrastructure for the transmission of electricity, including the risks related thereto, approved by ANRE Order no. 139/2015 ("PCI Methodology").

The primary duties and competences with respect to the electricity sector in Romania are divided between:

- the ANRE which derives its primary duties, objectives and powers from Law 123/2012 (for more details please see below Section 3);
- the Ministry of Energy - as concerned ministry in the electricity field (please see paragraphs below for more details on the powers and duties of the Ministry of Energy in this regard).

Law 123/2012 sets forth the primary duties, objectives and powers of the Ministry of Energy and of ANRE[4], which are also further detailed in the organization regulations for each entity[5]. Such duties and responsibilities (as relevant to the transmission network development) include:

- The Ministry of Energy (i) elaborates the national energy strategy, defining the objectives of the electricity sector for the medium and long term, as well as the methods to implement them, in order to ensure among other things, the energy security of the country; moreover, the current energy strategy provides as a new development direction the implementation in the long term of smart transmission networks; (ii) elaborates the energy policy at a national level and ensures its implementation. The national energy policy comprises measures to encourage investments and research and development activities, among others. Furthermore, the Ministry of Energy ensures the

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2 Law 123/2012 and the secondary legislation issued in implementation have transposed the provisions of the Third Energy Packet, including Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC.

3 See Art. 3, point 66 and point 80 from Law 123/2012.

4 The Romanian Energy Regulatory Authority was created by the Government Emergency Ordinance no. 33/2007, approved by Law no. 160/2012, as further amended and supplemented being a legal person, an autonomous administrative authority, under the control of the Romanian Parliament, independent in its decision-making, as well from the perspective of its organization and functioning, having as object the drafting, approval and monitoring of the application of the national regulations necessary for the functioning of the electricity, heating and natural gas sector and market in terms of efficiency, competition, transparency and consumer protection.

5 ANRE's organization and attributions are detailed in the Government Emergency Ordinance no. 33/2007 regarding the organization and functioning of the National Regulatory Authority for Energy, providing, while the organization and functioning of the Ministry of Energy is regulated under Government Decision no. 980/2015.

drafting of studies on the basis of which strategic investments in the energy field are established. Any piece of legislation proposed by the Ministry of Energy is subject to approval by the Government or by the Parliament;
- ANRE issues secondary legislation within the limits provided by the Law 123/2012 and other pieces of main legislation, grants licences and authorization in the electricity field (including electricity transmission licences), monitors the electricity market, certifies the TSO etc. in view of complying with its role to safeguard the functioning of the electricity sector in an efficient, competitive, transparent and consumer-oriented manner. By means of issuing licences, authorizations and other regulations, ANRE ensures control over the operators in the market, being able to identify and request the improvement of any misconduct or deficiency in the performance of the TSO.

Further duties and competencies in relation to the transmission service and operation and development of the transmission network are set for:
- the Ministry of Economy as authority exercising the powers and duties of the Romanian state as owner of the transmission network and as main shareholder of the TSO;
- the TSO and entities entitled to use the transmission network.

The rather complex regime for regulating transmission activity in Romania results from the dual system of authorisation applicable to the performance of the transmission service/ system operator and the use of the transmission network.

Thus: (i) the national transmission system (NTS)[6] is qualified as public property[7] of the Romanian state and the right to use the transmission network is granted through a concession agreement based on which the Ministry of Economy (as concerned ministry) grants to the concessionaire the right to use the transmission network; while (ii) transmission service and system operation are performed by the TSO based on a licence[8] granted by ANRE.

The licensing system is primarily established in the Law 123/2012[9]. Further ANRE, in the exercise of its powers and duties as regulator, through enactment of specific regulations regarding the procedures for granting, suspension or withdrawal of licences/ authorisations[10] or through issuance of the licences/ authorizations[11] and establishing the terms and conditions to be complied with by the licensee. Licensable activities include production, transmission, providing system services, managing the balancing market, distribution or supply. Each activity has a separate licence and associated conditions to be observed. Restrictions are in place with respect to the same entity/ person holding one or more licences[12], depending on the object thereof, in compliance with the Third Package. However, we note that the TSO is the holder of the transmission licence, the licence for providing system services[13] and the licence for managing the balancing market[14].

As stated, ANRE certifies the TSO in accordance with Article 3 of Regulation 714/2009[15]. Under the provisions of Law 123/2012[16], the certification of the TSO is conditional upon (1) the existence of economic, technical, physical and human resources necessary in order to perform

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6 The NTS is defined as the strategic public electrical network with a nominal line voltage greater than 110 kV, comprising, inter alia, the power line supports and related protection devices, substations and other interconnected electrical equipment. The NTS ensures interconnection of electricity producers with distribution networks, large-size consumers and neighbouring electric power systems.
7 See Article 30 (3), (4) from the Law 123/2012.
8 See Article 10 (2), c) from the Law 123/2012.
9 See Article 10 from the Law 123/2012.
10 See Article 9 from the Law 123/2012.
11 See Article 5 from Government Emergency Ordinance no. 33/2007 regarding the organization and functioning of the National Regulatory Authority for Energy.
12 See Article 12 from the Romanian NRA Order 12/2015 approving the Regulation for issuing licenses and authorizations in the electricity sector.
13 The system service consists of the dispatcher management of the NPS, designed to maintain the safety in operation of the NPS and ensure good quality electricity.
14 The purpose of the balancing market is to balance generation to consumption of electricity and improve the accuracy of the forecasts made for that purpose by all market participants.
15 Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003.
16 See Article 31 - 34 from Law 123/2012.

the transmission activity, including the development of the transmission network and (2) the undertaking by the TSO of compliance with the 10 years investment and development plan of the transmission grid.

The development of the installations and systems in the electricity sector is strongly encouraged by the government in view of achieving a higher level of energy security, relevant objectives and principles for the development of the transmission network being included in the Government programme. The government, as well as the Parliament have the power to enact relevant regulations aimed at implementing the state policy in the sector, while ANRE has the duty to secure the application thereof by implementing adequate secondary regulations and supervision mechanisms.

2.1.2. Specific legal rights and duties

Role of the TSO

The main obligations of a TSO are set by the Law 123/2012[17], according to which a TSO must operate the transmission system and exploit, develop, and maintain the transmission network in such a way as to ensure its safety, reliability, and efficiency.

Various specific obligations arise from the aforementioned responsibilities, among which the following appear relevant to transmission network development:

- the TSO must ensure the long-term capacity of the network to comply with reasonable transmission requests and must exploit, maintain, refurbish and develop the transmission network in order to ensure its safety, reliability and efficiency[18];
- the TSO drafts studies, programs and papers regarding the development of the national transmission system[19];
- the TSO ensures the access to the national transmission system[20] and must perform works relating to the enforcement of the network or for the performance of interconnection installation[21]; enforcement works are included in the development plans[22] and must be performed by the TSO at its own expense. With respect to different possibilities of financing enforcement and interconnection works, please see below section 2.1.3;
- the TSO must plan for the development of the transmission network and interconnection capacities of the network with neighbouring systems[23].

Further, the owner of the transmission system has certain duties related to the development of the transmission network. Considering the current qualification of the transmission network as public property, such duties stay with the concessionaire, as follows[24]:

- financing and/or agreeing on the method for financing investments in the national transmission network, as such are established by the TSO and approved by ANRE;
- granting warranties in order to facilitate the financing of potential developments of the networks (with the exception of investments for which it agreed to be financed by any interested party, including by the TSO).

Currently, the electricity transmission service is performed by a single transmission system operator which also acts as network owner (Transelectrica S.A.[25]) being both the holder of the concession rights over the transmission network and of the license for performance of the transmission service and system operator. Consequently, the establishment of various duties for the network owner as opposed to the network operator are not reflected in the current situation of the market.

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17 See Article 36 from Law 123/2012.
18 See Article 37 (7), a) from Law 123/2012.
19 See Article 37 (7), p) from Law 123/2012.
20 See Article 25 (1) from Law 123/2012.
21 See Article 41 from the Interconnection Regulation.
22 See Article 42 (5) - (6) from the Interconnection Regulation.
23 See Article 35 (1) from the License Conditions.
24 See Article 37 from Law 123/2012.
25 The Romanian state acting through the Ministry of Economy is the majority shareholder of Transelectrica S.A.

The TSO is required to measure and document the quality of the electricity, namely the voltage and the continuity of supply, the latter being assessed, in particular, by the degree of unavailability, the quantity of electricity not supplied, the average duration and the probability of interruption[26].

Undertaking of investments

The TSO has the obligation to make investments and development plans[27] for the transmission network for ten years[28], in accordance with the current status and future evolution of the consumption of energy and resources, including imports, exports, as well on the basis of the TSOs internal procedure for planning and management of investments[29]. The development plans must include financing methods for investments relating to the transmission network and must be approved by ANRE. The current development plan is aimed at setting up investment projects for the period 2016 - 2025 (the "***Development Plan***").

Aside from the ten year development plan, the TSO must also prepare and present to ANRE an annual investment plan, mentioning the financing sources for each project[30]. At least 80% of the investment objectives from the annual investment plan must be set from the ones established in the ten year development plan. The annual plan itself must be drafted based on (among others) the necessity, opportunity and efficiency of each project, the 10 years development plan for the transmission network approved by ANRE; feasibility studies for specific projects and include the valuation of each project based on specific costs for each relevant network element.

The TSO has to provide arguments in favour of each investment project and its value depending on the scope thereof, such as: (i) replacing worn fixed assets, with exceeded service life; (ii) reducing its own technological consumption; (iii) improving the quality of the transmission service; (iv) increasing the transmission capacity of the grid; (v) increasing the interconnection capacities, etc., as well as the prioritization of the projects depending on their estimated results. Also, the TSO has to establish for each project included in the investment plan the pursued specific benefits (improving transmission service performance indicators, reducing their own technological consumption in the network, reducing the OPEX, etc.).

Role of NRA regarding investment projects undertaken by the TSO

The main role and duties of ANRE (as relevant to transmission network development) are more generally described above in section 2.1.1. In addition, the following duties[31] of ANRE have an impact on the investment projects undertaken and activities performed by the TSO to develop the transmission network:

- to prepare the methodologies for determining tariffs and regulated prices (please see below section 3 (ii) for more details);
- to approve the regulated tariffs for transmission, interconnection, as well as for the system services based on applicable methodologies and justifying documentation prepared by the TSO;
- approves the technical and commercial regulations, including the performance standards for the transmission services as drafted by the TSO;
- approves the regulation regarding the interconnection of users to public networks;
- approves the development plans of the TSO and monitors the implementation thereof (for more details related to the supporting documentation provided by the TSO and which are taken into account by ANRE in the approval of the development plans please see above Section 2(ii));
- approves the method in which the costs for network enforcement will be incurred by the TSO, distribution operators and consumers.

26 Article 10 (2) of the Electricity Law.
27 See Article 3, point 57 from the Law 123/2012.
28 See Article 35 from the Law 123/2012.
29 See Article 40 (7) from the Tariffs Methodology.
30 See Article 40 (1) - (5) from the Tariffs Methodology.
31 See Article 9 (1), b), c), h), q), v), ad) and Article 9 (4), c) from EGO 33/2007.

2.1.3. Mechanism for financing of investment projects

One of the main roles of ANRE in the electricity transmission sector is represented by the drafting and approval of the methodologies for determining the tariffs and regulated prices, which represent the main funding source for development projects.

Through the applicable tariffs methodologies ANRE indirectly influences the level of investments based on internal funds (covered from transmission tariffs) and external funds (covered from interconnection tariffs).

Revenue cap economic framework

The Tariff Methodology sets the mechanisms for determination of the regulated income and the calculation of the transmission tariff, where the regulated income is determined using a revenue cap type method. This type of incentive methodology is meant to ensure, among others:

- an equitable allocation of gains resulting from efficiency increase in the transmission activity above the targets set by the competent authority, between the transmission system operator, and the transmission service customers;
- the framework for the efficient functioning of the transmission company;
- promoting efficient investment in the electricity transmission network;
- promoting efficient maintenance and operation practices;
- continuous quality improvement of the transmission service[32].

One of the objectives of the Methodology is to ensure adequate conditions for the efficient and safe functioning of the electricity networks, while ensuring the protection of the environment and of the final clients[33].

The Tariff Methodology takes into account a regulatory period of five years and a tariff period of one year. For the next regulatory period, starting in 2019, ANRE tested at the level of 2017 (01.01.2017 - 31.10.2017)[34] the possibilities to implement a binomial tariff for the transmission service by introducing a new network booking tariff (fixed component - for power) in addition to the tariff for the energy circulating through the network (variable component - for energy). The purpose of implementing binomial tariffs is to reflect better the costs with using the electricity transmission network (by applying the fixed tariff component), optimising the investments in the electricity transmission network and protecting the incomes of the TSO through the stability granted by the fixed tariff component. The conclusions of the testing period will be used in the revision of the principles regarding the binomial tariff and of the regulatory framework with the intention to apply such tariffs starting 2019.

According to the Tariff Methodology principles, the income for the transmission service for each tariff period of a regulatory period is determined prior to the commencement of this period and corrections of the linearized income for each tariff period are carried on within a regulatory period[35].

The regulated annual income (income cap) takes into account the evolution of the regulated asset base, which reflects the impact of implementation of the TSO's investment plans. In addition, the fixed assets used by the TSO for the performance of the transmission service are included in the regulated base of assets if they resulted from efficient investment projects[36].

In determining the regulated income of the electricity transmission activity, ANRE takes into account several factors among which[37]:

- the performance standard imposed to the transmission system operator (TSO) according to the laws in force in Romania;
- evolution of the quantity of electricity transmitted, projected and justified at the beginning of the regulatory period by the TSO;

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32 See Article 3 of Tariff Methodology.
33 See Article 4 (2) from the PCI Methodology.
34 ANRE President Decision no. 71/2017 for the approval of the implementation calendar of the binomial tariff for the electricity transmission and distribution service for simulating the binomial tariffs at the level of the network operators.
35 See Article 7 of the Tariff Methodology.
36 See Article 6 (4) from the PCI Methodology.
37 See Article 9 from the Tariffs Methodology.

- Investment and Development plan for the transmission network;
- regulated rate of return applied to the regulated assets base of the electricity transmission network;
- Determination of transmission tariff is based on regulated assets, which includes the net value of tangible and intangible assets held by the TSO, recognized by ANRE, which are used exclusively for electricity transmission.

The initial target revenue of the transmission activity related to one regulatory period includes the return of the regulated asset base and certain justified costs of the TSO recognized by ANRE[38]:

- operating and maintenance costs; the operation and maintenance costs represent fixed costs, differentiated in controllable costs and uncontrollable costs39. Amongst the controllable costs, the legal framework also lists the costs with studies and research40. Moreover, when calculating the regulated income for the first tariff period of a regulatory period, the competent authority will determine the amount of the efficiency gains over the targets set for the previous regulatory period and will allocate 50% of the surplus to the transmission service customers (earning sharing mechanism). Said amount will be subtracted from the initial target revenue for the first tariff period of the regulation period[41];
- regulated depreciation costs of existing assets and of assets put in / taken out of operation, recorded in the books in tariff period;
- costs of purchase of electricity for own technological consumption;
- costs of eliminating congestion by re-dispatching;
- costs of electricity transmission among TSOs.

The income of the TSO resulting from the allocation of the transmission capacity on the interconnection lines are to be used with priority in accordance with the provisions of art. 16, para. (6) from Regulation no. 714/2009. Said income represents a source for financing the investments for increasing the interconnection capacity with neighbouring systems, which are part of the investment and development plan approved by ANRE for the respective regulatory period[42].

In case of investments made in addition to those approved initially by the investment plan or the performance of such investments at a higher value than the approved one within the plan, as well as in case such investments were not duly realized, the TSO must present arguments in this sense and obtain a prior approval from ANRE[43].

PCI Projects

Special regulations are in place with respect to PCI Projects, with specific measures for stimulating the development of the electricity transmission network through investments representing PCI projects mentioned in annex II, point 1 from the Regulation 347/2013[44], pursuant to article 13 from the latter. To this end, the possibility to increase the regulated rate of return with up to 0.5% is provided in certain conditions[45].

Granting incentives to a PCI Project, pursuant to the provisions of art. 13 from Regulation 347/2013 and the PCI Methodology is approved by decision of the ANRE president, which will establish the amount of incentives, regulation methods and monetary framework for rewarding or applying penalties in relation to awarding the incentives[46].

38 See Article 21 from the Tariffs Methodology.
39 See Article 23 from the Tariffs Methodology.
40 See Article 24 from the Tariffs Methodology.
41 See Article 25 from the Tariffs Methodology.
42 See Article 22 (4) from the Tariffs Methodology.
43 See Article 45 (1) from the Tariffs Methodology.
44 Regulation (EU) No 347/2013 of the European Parliament and of the Council. of 17 April 2013. on guidelines for trans-European energy infrastructure and repealing Decision No 1364/2006/EC and amending Regulations (EC) No 713/2009, (EC) No 714/2009 and (EC) No 715/2009.
45 See Article 7 from the PCI Methodology.
46 See Article 18 from the PCI Methodology.

The procedure set out by the PCI Methodology requires the TSO to submit a request for incentives to ANRE, if it considers that the PCI Project it intends to promote presents increased risks with respect to the development, operation and maintenance of the project, as compared to the systemic risks that a similar infrastructure project usually presents[47].

The assessment of the PCI risks, presented by the TSO in view of awarding the incentives is based on the same premises and data used in the cost-benefit analysis, respectively at the assessment of the financial sustainability and the socio-economic net benefit of the project, in the project selection process, pursuant to the provisions of annex III, point 2.1 and, as the case may be, of art. 12, para. (3) from the Regulation. If the results of the aforementioned cost-benefit analysis and other evaluations present significant differences between the estimated costs and benefits of the project, the TSO must present detailed justification of such differences[48].

ANRE will not approve the granting of incentives to PCI projects, if any of the following circumstances exist[49]:

- TSO will not provide the necessary information pursuant to the PCI Methodology;
- TSO does not prove the existence of PCI specific risks[50] and does not provide the results of the cost-benefit analysis and the positive net impact of the project;
- the PCI specific risks are covered through the capital profitability and are/can be eliminated by adequate measures;
- TSO does not adopt the measures identified as reasonable for decreasing the risks;
- the PCI Project receives subsidies from non-refundable financing or from the allocation of cross-border costs, through which the specific risk is already compensated.

On the other hand, if the analysis which the TSO must submit to ANRE relating to the implementation of the PCI for a period up to 3 years, provides that in the development, operation and maintenance period of the PCI the specific risks for which the incentives were granted did not materialise or had a different impact than the estimated one, ANRE will decide on the justified amount of the incentive and will apply the appropriate corrections of the regulated revenue[51].

Funding of interconnection works

In what concerns the development of the transmission network through new interconnections, aside from ANRE's role in establishing the regulatory framework for their execution, the different types of works potentially required present the following particularities relating to the funding thereof:

- Interconnection works: ANRE sets up the regulatory framework for performing such works pursuant to the Interconnection Regulation. Thus, the TSO will perform the works relating to the effective construction of the lines and/ or other technical equipment required, representing the interconnection installation, by charging an interconnection tariff. This tariff is established by concluding an interconnection agreement with the user, which is designed to apply only to the specific extension of the transmission network resulting from the interconnection. In order to determine the amount of such tariff, the TSO will prepare a solution study or a solution chart, pursuant to regulations enacted by ANRE, in which it will present the potential solutions for performing the interconnection with the transmission network and the user will be able to choose the more suitable one;
- Works relating to enforcing the network: ANRE may influence the conditions for performing the enforcement works by setting the applicable legal framework; depending on the type of interconnection, the costs with funding such works will be borne by the TSO, namely for works resulting from the requirement to ensure the technical conditions for the exclusive intake/ consumption of power for the production/ consumption place in question[52].

47 See Article 8 (1) from the PCI Methodology.
48 See Article 8 (3) - (4) from the PCI Methodology.
49 See Article 16 from the PCI Methodology.
50 The risks relating to the execution of a PCI Project, which exceed the systemic risk covered by the regulated tariff for the electricity transmission service and for which incentives can be awarded.
51 See Article 10 (5) from the PCI Methodology.
52 See Article 42 (1) and (5) from the Interconnection Regulation.

The enforcement works are included separately in the investment plan of the OTS and are approved by ANRE according to applicable Tariffs Methodology[53]. If the TSO does not have, the resources to execute the works mentioned above, it must notify the user through the technical interconnection endorsement, clearly stating the reasons for the delay in executing the works and the possible terms in which it could complete such works[54]. The user has however the option to finance the required works, in the situation in which such development of the transmission networks is not provided in the development plan of the TSO. The TSO is under the obligation to reimburse the user for the costs incurred, in the term and conditions agreed upon within the concluded interconnection agreement[55].

2.1.4. Regulatory rules with respect to innovation

Specific duties of the TSO aimed at encouraging innovation

The investments foreseen in the Development Plan for the National Transmission System for 2016 - 2025 also cover aspects meant to encourage innovation and/ or efficiency of the system, including for example: scenarios analysed by the TSO for investments meant to create electricity storage capacities and to enforce the network in order to support such capacities or to implement the concept of *smart grid*[56] to the national transmission network. Also, the TSO has duties to prioritise the production units using renewable energy sources and the high efficiency cogeneration units[57], which may also be construed as supportive of innovation.

However, no complex specific mechanism for supporting innovation is detailed under the current Legal Framework.

Specific duties of the NRA aimed at encouraging innovation

While, there are very limited specific duties of ANRE aimed directly at encouraging innovation under the current Legal Framework, ANRE has a series of duties, which indirectly may have such effect, for example:

- in determining the regulated income, ANRE has the attribution to recognize as part of determining the initial target income of the transmission activity the controllable operating and maintenance costs which include costs with studies and researches, moreover there are various components and mechanisms at the level of the Tariff Methodology which are meant to encourage efficiency which indirectly may result in an incentive to use innovative means to obtain such;
- duties related to the general objective to assist in ensuring certain incentives to the network operators in order to increase the functioning efficiency of the transmission systems[58].

It remains however in the responsibility of the TSO to include such costs and justifying support documentation in the process for setting the transmission tariff.

2.1.5. Regulatory rules with respect to security of supply

Specific duties of the TSO aiming at safeguarding security of supply

Duties, including those applicable to security of supply are described in more detail sections 2.1.1 above. In addition, pursuant to the Legal Framework, the TSO has duties related to:

- ensuring adequate transmission capacities and maintaining the reliability of said capacities[59], including by preparing the plan for defence against major disturbances of the national transmission system[60];

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53 See Article 42 (6) from the Interconnection Regulation.
54 See Article 43 (1) from the Interconnection Regulation.
55 See Article 43 (5) from the Interconnection Regulation.
56 The *smart grid* is defined as the high-performance telecommunication infrastructure, intelligent electricity metering systems, intelligent electrical devices and devices with dedicated computer applications that allow the transformation of networks into smart systems capable of detecting the changes in important status parameters and to change its own configuration and parameters to respond as best as possible to the new conditions.
57 See Article 36 (7), k) from Law 123/2012.
58 See Article 8, f) from the EGO 33/2007.
59 See Article 36 (7), c) from Law 123/2012.
60 See Article 36 (7), o) from Law 123/2012.

- compliance with the Performance Standards, which provide amongst others that the TSO has the obligation to monitor the continuity of the transmission service, thus ensuring the security of supply. To this end, the TSO prepares a specific procedure establishing the stations of the transmission network, the monitoring equipment used, the management of equipment and of monitoring system, monitoring method and monitoring points at the junction between the transmission and distribution network and between the transmission network and the user connected to the transmission network[61];
- managing the balancing market in order to achieve, by means of operative management, the safe functioning of the national power system, frequency and voltage stability, continuous supply to consumers and coordination of electricity exchanges with other power systems. Also, in view of its attributions as operator of the balancing market, the TSO settles on a commercial basis congestions of the system[62].

Specific duties of the NRA aiming at safeguarding security of supply

With regard to legal powers and duties available to ANRE in terms or security of supply, refer to section 2.1.1. Further, in determining the regulated income and the transmission tariffs ANRE takes into account certain factors such as the transmission network investment and development plan[63], incentives for the short and long term relating to increasing the energetic efficiency and security of supply, as well as supporting the research activities related to this sector[64].

2.2. Regulatory practice

2.2.1. Overview over regulatory practice in Romania

We have not received any feedback to our questionnaires and requests from the electricity sector. Therefore, a description and analysis of the regulatory practice cannot be given.

2.2.2. Regulatory practice related to innovation

(see above).

2.2.3. Regulatory practice related to security of supply

(see above).

2.2.4. Illustrative specific projects

The following projects all illustrate how the regulatory regime works in practice, when it comes to projects enhancing the security of supply.

Mid Continental East Corridor

Description and aim

The project consists of one double circuit 400 kV line between Serbia and Romania and reinforcement of the network along the western border in Romania: one new simple circuit 400 kV line from Portile de Fier to Resita and upgrade from 220 kV double circuit to 400 kV double circuit of the axis between Resita and Arad, including upgrade to 400 kV of three substations along this path.

The project aims at enhancing the transmission capacity along the East-West corridor in south-eastern and central Europe. It will provide access to the market for more than 1000 MW installed new wind generation in Banat area (Serbia and Romania).

The entire project amounts to approx. EUR 176 mil. and is currently in the development phase with works commissioned by the TSO for 2018.

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61 See Article 51 from the Performance Standards.
62 See Article 7.1.1 from the Commercial Code for the wholesale electricity market, approved by ANRE Order no. 25/2004.
63 See Article 9 (d) from the Tariffs Methodology.
64 See Article 79 (4), f) from Law 123/2012.

Black Sea Corridor

Description and aim

The project consists of one 400kV double circuit OHL Cernavoda-Stalpu and Gura Ialomitei, one 400 kV double circuit OHL Smardan-Gutinas and one 400 kV OHL single circuit Suceava – Gadalin, in Romania and also the new 400 kV OHL Dobrujda-Burgas in Bulgaria.

This project allows transfer of generation from the Western cost of the Black Sea towards consumption and storage centers in Central Europe and South-Eastern Europe.

The entire project amounts to approx. EUR 298 mil. and is currently in the development phase with works commissioned by the TSO for 2018.

(interconnection to Germany). In the first regulatory period, there was a SoS incentive (WACC incentive of 0.5%). The project costs were 10 million Euros.

Refurbishment and modernization of electrical stations

Description and aim

The project consists in the refurbishment and modernization for a number of electrical stations, with works being commissioned also for 2018.

Part of the works related to the 220/110/20 kV Câmpia Turzii și 400/220/110/20 kV Bradu electrical stations which were completed in 2017. Both stations present an important role in the national transmission system, whereby the Câmpia Turzii station ensures the connections and power transit from the areas with a surplus in electricity to the area where a deficit is registered from Transilvania and Maramureș.

The works commissioned on these two stations reportedly amounted to approx. EUR 16 mil.

2.3. Options for improvement

Due to the lack of response from the invited parties, we could not identify any improvement options.

3. GAS

3.1. Legal analysis of the NRF in Romania

3.1.1. Overview of the regulatory framework of Romania – legal rules

The Romanian Legal Framework encompasses primary legislation (*i.e.* laws adopted by the Parliament) and secondary legislation (*i.e.* normative acts adopted with a view to implementing the primary legislation).[65]

The Electricity and Natural Gas Law No.123/2012 (the "**Gas Law**") is the principal piece of primary legislation governing the gas sector in Romania, including the expenditure on network development. Secondary legislation is issued/endorsed by the Romanian Government, usually at the initiative of the Ministry of Energy (as concerned ministry in the gas field) and by the Romanian National Energy Regulatory Authority[66] (the "**NRA**"), whose powers and duties derive from the Gas Law. Certain influence is also granted by the Gas Law to the owner of the transmission system and to the operator of the transmission system. The duties and responsibilities (as relevant to transmission network development) include[67]:

- Ministry of Energy elaborates policy in the field of natural gas and ensures its implementation and is the competent authority for the application of Regulation of the European Parliament and of the Council of 20 October 2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC. Any piece of legislation proposed by the Ministry of Energy is subject to approval by the Government (in which case qualifies as secondary legislation) or by the Parliament (in which case qualifies as primary legislation);
- NRA main role is to issue orders and decisions whereby it regulates the gas sector (e.g. grants licences and authorizations in the gas field (including the gas transmission licence), sets up the rights and obligations of the licensed operators, monitors the gas market, certifies the TSO, approves the 10 year investments and development plans of the transmission system, approves the methodologies for determining the tariffs that may be obtained by the TSO and the value of such tariffs and other increments and incentives, approves the minimum quantity of natural gas that shall be annually stored by TSO for the safety of the transmission system etc.). By means of issuing licences, authorizations and other regulations, ANRE ensures the control over the operators in the market, being able to identify and request the improvement of any misconduct or deficiency in the performance of the TSO. NRA also exercises a direct influence on the level of investments through the applicable tariffs methodologies;
- The owner of the transmission system (i.e. the Romanian State) is consulted and finances the investments decided by the TSO and approved by NRA or grants its approval for such to be financed by any interested party, including the TSO, offers guarantees in order to facilitate the financing of potential expansions of the transmission system, other than those investments for which it agreed to be financed by any interested party, etc.;[68]
- The operator of the transmission system: although the Gas Law grants the possibility for the transmission service to be owned and operated by several entities, at this time there is a sole operator of the sole transmission system, namely the National Gas Transmission Company "TRANSGAZ S.A." (the "TSO"), a company having as majority shareholder the Ministry of Economy. The performance of the transmission system

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65 The Gas Law, Law 185/2016 and the secondary legislation issued in implementation have transposed the provisions of the Third Energy Packet, including Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in gas and repealing Directive 2003/55/EC and have implemented the TEN-E Regulation.

66 The Romanian Energy Regulatory Authority was created by the Government Emergency Ordinance no. 33/2007, approved by Law no. 160/2012, as further amended and supplemented being a legal person, an autonomous administrative authority, under the control of the Romanian Parliament, independent in its decision-making, as well from the perspective of its organization and functioning, having as object the drafting, approval and monitoring of the application of the national regulations necessary for the functioning of the electricity, heating and natural gas sector and market in terms of efficiency, competition, transparency and consumer protection.

67 NRA's organization and attributions are detailed in the Government Emergency Ordinance no. 33/2007 regarding the organization and functioning of the National Regulatory Authority for Energy, providing, while the organization and functioning of the Ministry of Energy is regulated under Government Decision no. 980/2015.

68 Article 131 of the Gas Law.

services by the TSO is conditioned upon (1) a concession awarded by the Ministry of Energy over the transmission system and the transmission service,69 valid until 2032 and (2) a transmission license issued by NRA. Gas transmission activity is qualified by the Gas Law as public service of national interest.

The rather complex regime of transmission activity in Romania results from the dual system of authorisation applicable to the performance of the transmission service/ system operator and the use of the transmission network.

Specifically for the development of projects of national interest in the field of natural gas, the Parliament adopted Law No.185/2016 on certain necessary measures for the implementation of projects of national interest in the field of natural gas (the "**Law 185/2016**"). Under Law 185/2016, the following qualify as projects of national interest in the field of natural gas (1) projects qualified as being of national interest by means of Government decisions and (2) projects of common interest within the meaning of Regulation 347/2013 on guidelines for trans-European energy infrastructure and repealing Decision No 1364/2006**/EC and amending Regulations (EC) No 713/2009 (the "TEN-E Regulation").**

The development of the installations and systems in the gas sector is strongly encouraged by the government in view of achieving a higher level of energy security, relevant objectives and principles for the development of the transmission network being included in the Government programme. The government, as well as the Parliament have the power to enact relevant regulations aimed at implementing state policy in the sector, while NRA has the duty to secure the application thereof by implementing adequate secondary regulations and supervision mechanisms.

3.1.2. Specific legal rights and duties

Role of TSO

The TSO's main role (including the main legal rights and duties) regarding the development of the national transmission system provided under the Legal Framework is summarized below:

- The obligation "to maintain, rehabilitate, upgrade and develop the national gas transmission system in conditions of safety, efficiency and environmental protection";70
- "The obligation to prepare 10 years investment and development plans for the national transmission system"71 (the "Development Plan"). The Development Plan in force at the date of this document is the Plan for the development of the national transmission system for the period 2017 – 2026 endorsed by means of NRA Decision No. 910/2017.72 According to such decision, TSO has the obligation to prepare and submit to NRA a new development plan by 1st May 2018. The Development Plan shall be prepared in accordance with the current stage and future evolution of gas consumption and sources, including gas exports and imports and must provide the method for financing and performing the investments included in the Development Plan, by also taking into consideration the urban and systematization plans of the territory and by observing the environment protection legislation;[73]
- The obligation to prepare and justify the annual income and expenses budget (which shall include all expenses for the development of the transmission system to be planned for that year), to submit it for prior consultation by trade unions and to obtain the approval of such budget by a general meeting of shareholders;[74]
- The obligation "to plan, to build directly or through operators authorized by ANRE75, and to commission new infrastructure"[76] (i.e. objectives in the gas field are defined as a transmission system or any of its components);

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70 Article 103 of the Gas Law.
71 Article 125 (6) of the Gas Law.
72 The Development Plan is available at the following link: *http://www.anre.ro/ro/gaze-naturale/legislatie/plan-dezvoltare-snt*.
73 Article 126 (7) of the Gas Law.
74 Article 6 (1^1) of Government Ordinance No. 26/2013 on strengthening the financial discipline at the level of economic operators in which the state or territorial administrative units are sole or majority shareholders or are direct or indirect holders of a majority interest.
75 Means the NRA.
76 Article 126 (9) of the Gas Law.

- The obligation to ensure the connection of users to the transmission system, in accordance with the specific applicable regulations, even if investments for the expansion of the transmission system are necessary to be made and such are not included in the Development Plan, provided such are economically justified;[77] This obligation is not applicable for infrastructures for which a derogation was obtained;
- The obligation "to elaborate studies, schedules and works regarding the development of the gas transmission system";[78]
- The right to receive Transmission Tariff from transmission system users, which shall cover the costs related to the development of the transmission system. TSO shall justify the costs taken into consideration when determining the Transmission Tariff to NRA;
- The right to request the initiation of the expropriation procedure over third parties immovable assets that need to be crossed in order to perform the development, upgrade and rehabilitation works of the national transmission system;[79]
- The right "to use, free of charge, public property lands on which the infrastructure of the transmission system are located, as well as the public property lands used for performing the execution, exploitation, maintenance and repair woks, including the lands that are part of the national forest found";[80]
- The following rights over the third parties lands and assets (1) right of use for performing the works necessary in order to build, rehabilitate or upgrade the transmission system, (2) right of use for ensuring the normal functioning of the capacities by performing the necessary revisions, repairs and interventions, (3) legal right of way for installing grids, pipelines, lines or other equipment related to national transmission system and for access to the place where such are located, (4) access right to public utilities.[81]

In addition to those listed above, Law 185/2016 provides for certain rights of the TSO whenever the investment is made with a view to implementing projects of national interest:

- Exemption from the necessity to obtain certain permits, endorsements or authorizations related to the construction of the projects of national interest or shorter / simplified procedure for obtaining such permits, endorsements or authorizations;[82]
- Land access rights to public or private forestry lands to be crossed by the pipelines in conditions derogatory from the Forestry Code;[83]
- Better conditions for exercising the rights of use and the rights of way over third parties immovable assets described above.[84]

Finally, certain rights and obligations regarding the development of the transmission system are provided in the concession agreement concluded between the TSO and the Romanian State; however, we are not aware of such rights and obligations since the concession agreement is not a publicly available document (as such is classified). However, reasonably, the investments undertaken within the concession agreement should be included in the Development Plan.

Undertaking of investments

TSO is required to carry out any investment projects to deliver on their legal / regulatory duties described above in section above. More specifically:

- TSO's role regarding the investments mentioned in the Development Plan; the main method in which TSO undertakes to perform investments is by including such in the Development Plan;
- TSO's role regarding the undertaking of the investments that are necessary for connecting users to the transmission system, other than the investments included in the Development Plan[85].

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77 Article 130 (1) d), e) and 151 of the Gas Law.
78 Article 103 (1) p) of the Gas Law.
79 Article 2 (3) d^1) and d^2) of the Law No. 255/2010 on the expropriation for public utility cause necessary for the performance of certain objectives of national, county or local interest.
80 Article 130 (2) h) of the Gas Law.
81 Article 109 of the Gas Law.
82 For example, Articles 3 (9), 4 (1), 22, 24 of Law 185/2016.
83 Article 3 of Law 185/2016.
84 Articles 5 – 8 of Law 185/2016.
85 In case the investment that is necessary to be performed for granting access to users is included in the Development Plan, an incremental capacity procedure will be initiated and if successfully, the investment will be incurred by the TSO within the deadlines provided in the Development Plan.

The TSO cannot refuse the connection and is under the obligation to finance the works for the expansion and/or resizing of the transmission pipeline if the investment is economically justified, or to co-finance such works, together with the concerned user, in case the investment is not economically justified.[86] In the latter case, the user requesting access and TSO will conclude a financing agreement, which will also provide that the resulting assets will be operated by TSO.

Recently, an amendment to the provisions of the Gas Law regulating the aspects mentioned herein was registered with the Romanian Parliament. Such amendment aims at forcing the TSO to finance the connection costs even if such are not economically justified. The draft law also proposes the inclusion of an express sanction in case of failure by the TSO to comply with this obligation ranging from to RON 8,000 to RON 200,000, which may amount to 1% to 5% of the annual turnover in case of repeated breaches of such obligation. However, considering the early stage of the legislative process, we may not estimate the outcome of this proposal.

Role of NRA regarding investment projects undertaken by the TSO

NRA's role regarding the investment projects undertaken by TSO is more generally described in section above above and such relate to:

- the approval of the Development Plan and the monitoring of its implementation - no information is publicly available as regards the factors taken into consideration by NRA while approving the Development Plan or the level of detail it goes into. However, among the general objectives that need to be observed by NRA while performing its duties and competencies include guaranteeing the efficient and safe functioning of the gas networks considering long term objectives, developing a safe, efficient and reliable energy system etc.; [87]
- monitors and evaluates the Development Plan from the perspective of its compliance with the Community-wide ten-year network development plan provided in Article 8 (3) b) from the Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005. Such evaluation activity could also consist in recommending amendments to the Development Plan;[88]
- recognizing in the Transmission Tariff the development investments during the approval procedure;
- the certification of the TSO (a process during which NRA must determine that TSO has the means to perform its activities and that it undertakes to follow the Development Plan);
- the right to investigate the actions of the TSO and to apply sanctions and corrective measures in case of any breaches and to perform other activities regarding the overall supervision of TSO's activity;
- the right to issue derogations for new infrastructures from the provisions of the Gas Law regarding TSO's obligation to grant access to third parties to such infrastructure and from the tariff methodologies, provided the following conditions are met: (1) the investment is aimed at encouraging competition in supply and at enhancing the security of supply, (2) the risks level are of such manner that the investment may not be performed without a derogation, (3) the infrastructure is owned by a separate person than the TSO, (4) tariffs for the users of such infrastructure are applied and (5) the derogation does not negatively impact the competition, efficient functioning of the domestic market or of the regulated system to which the infrastructure is connected. Should a derogation be granted, NRA may decide the rules and mechanism for capacity management and allocation, provided long term agreement are not hindered. In case the investment concerns an interconnection pipeline, the derogation decision may be granted only after consultations with ACER and / or the other member states and shall be followed by a notification to the European Commission. NRA shall comply with the decision of the European Commission on the amendment or withdrawal of the derogation decision.

86 Article 151 of the Gas Law.
87 Article 8 from the Government Emergency Ordinance No. 33/2007 on the organization and functioning of the National Regulatory Authority for Energy.
88 Article 125 (14) of the Gas Law.

3.1.3. Mechanism for financing of investment projects

In consideration of NRA's role to issue secondary legislation in the gas field, the following financing mechanism for investments in the transmission system were implemented:

Tariff for the natural gas transmission activity (the "transmission tariff")

Approval procedure; covered services[89]

The Transmission Tariff is approved by NRA for each holder of a transmission licence and for each transmission system based on the justification provided by such operators in accordance with the Methodology for determining the regulated revenue, the total revenue and the regulated tariffs for the natural gas transmission activity approved by means of NRA Order No. 32/2014 (the "**Transmission Tariff Methodology**") for a regulated period of 5 years and may be subject to an annual adjustment. By way of exception, the third regulated period shall start on 1st July 2012 and shall end on 30 September 2019.

The Transmission Tariff is comprised of the capacity booking tariff and the volumetric tariff and is approved for each of the following categories of services:

- long term natural gas transmission services: (1) firm transmission services contracted for 1 or more gas years and (2) interruptible transmission services contracted for 1 gas year; and
- short term natural gas transmission services: (1) firm / interruptible services contracted for 1 or more trimesters, within the gas year, (2) firm / interruptible services contracted for 1 or more months, within a trimester, (3) firm / interruptible services contracted for 1 or more gas days within a month. Interruptible services include backhaul services.[90]

The TSO invoices the Transmission Tariffs to the beneficiaries of the transmission services mentioned above at the level approved by NRA. By way of exemption, the Transmission Tariff for firm / interruptible capacity booking at interconnection points with the transmission systems of other states can be supplemented with the auction bonus.[91]

Calculation rules and incentives

The Transmission Tariff Methodology was implemented as a revenue cap methodology. With a view to approving the Transmission Tariff mentioned above, the TSO must justify and the NRA must approve the total revenue that shall be recognized and allowed to the TSO for covering the recognized costs necessary for the performance of transmission activity during one year of the regulated period. With respect to investments in transmission infrastructure, the following costs are recognized by NRA as being part of the total revenue:

- operational costs related to maintenance and repairs of the transmission system;
- capital costs related to commissioned (and not ongoing) physical or intangible assets or to interest, bank commissions and exchange rate differences in connection with loans granted for financing such physical or intangible assets, provided such were not included in the initial value of the investment. The capital costs do not include the value of the investments that were financed by means of non-refundable grants. By way of exemption, NRA may also take into consideration while determining the revenue the costs related to investments that are estimated to be commissioned throughout the year, based on the Development Plan.[92]

For determining the Transmission Tariff, the total revenue is divided between a fixed component (which includes the elements that are not dependent on the quantity of transmitted natural gas, such as depreciation of tangible and intangible assets, costs for the exploitation, functioning and maintenance of operation safety and efficiency) and a volume component. Starting with 1st October 2017, the fixed component of the total revenue recognized by NRA will increase annually with 5%, until it reaches 85% of the total revenue (before 1st October 2017 such component was equal to 60% of the total revenue).[93]

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89 The rules mention herein are not applicable to the transmission tariffs calculated and applied for the transmission of gas through Isaccea - Negru Voda pipelines, since such were not integrated yet in the national transmission system.

90 Article 44 of the Transmission Tariff Methodology.

91 Article 51 of the Transmission Tariff Methodology.

92 Article 10 of the Transmission Tariff Methodology.

93 Article 32 and 34 of the Transmission Tariff Methodology.

The following incentives may be approved by the NRA:

- efficiency increment: which is awarded if the TSO exceeds its annual rate for the increase in the efficiency of the gas transmission activity (the annual rate for the increase in efficiency of the gas transmission activity reflects NRA's estimates regarding potential operation costs (OPEX) savings that may be achieved within a year by TSO).94 The efficiency increment is equal with the positive difference between the operational costs under the control of the TSO allowed by NRA in a certain year and the level of operational costs actually incurred within that year.95 The efficiency increment will be kept by the TSO for a period of 5 years and after the lapse of such period, it will be transferred to the transmission system users;[96]
- increment of 1.4% from the regulated capital return rate for costs performed in a prudent manner regarding tangible and intangible assets97 made for the following purposes:
  - development and / or innovation with a view to increase the efficiency in operation and maintenance of the transmission system;
  - development of new interconnections with neighbouring countries for diversification of import sources and of transmission routes;
  - implementation of technologies and equipment that allow bidirectional physical flows of gas through cross border interconnections;
  - implementation of technologies that allow the storage of natural gas within the transmission pipelines;
  - SCADA implementation.

Increment for higher risks projects of common interest

According to the Methodology on the evaluation of investment in projects of common interest in the gas infrastructure, including the related risks, approved by NRA Order No. 57/2015 (the "**Evaluation Methodology**"), projects of common interest in the meaning of TEN-E Regulation in relation to which TSO undertakes higher risks regarding the preparation, construction, exploitation or maintenance as compared to the risks usually undertaken in case of similar infrastructure projects may benefit of an increment awarded by NRA and which will be considered in the total revenue.

The principles governing such increment are the following:

- The increment is awarded only for projects of common interest that are eligible in accordance with Article 13 of TEN-E Regulation;
- The increment is proportionate to the level of the related risks of the project;
- The value of the increment is lower than the value of the net benefits of the project;
- The value of the increment is determined in accordance with a mechanism of sharing the revenue related to the implementation of the project with the transmission system's users.

Under the Evaluation Methodology, TSO is under the obligation to deliver to NRA an ex-post analysis prepared for a period of no more than 3 years as of the finalization of the project. Should the analysis show that during the preparation, construction, exploitation or maintenance period the specific risks for which incentives were granted did not occur or their impact was significantly lower than the predicted impact, NRA will be entitled to apply the necessary corrections of the regulated revenue (which is part of the total revenue).

Conditions for costs recognition; unpredictable costs; adjustments

As regards investments, the TSO must prove that such are strategic and will substantially contribute to the increase of transmission system safety or to the development of the domestic market or of the European single market.

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94 The rate was approved by means of NRA Order No. 74/2017 on the approval of the regulated revenue, total revenue and the tariffs for the natural gas transmission activity thought the national gas transmission system tis equal to 3.5%.

95 Article 29 of the Transmission Tariff Methodology.

96 Article 30 (1) of the Transmission Tariff Methodology.

97 The regulated capital return rate for the third regulated period if of 7.72%, as approved by means of NRA Order No. 21/2012 on setting the regulated rate of the capital's return in the third period of the regulation.

Only costs performed in a prudent manner may be recognized in the Transmission Tariff. According to the Transmission Tariff Methodology, the following conditions shall be cumulatively met in order for a cost to be considered prudent:[98]

- the cost is necessary – objectively necessary in order to ensure the exploitation, development or safe use of the transmission system;
- the cost is opportune – by postponing such costs, damages will be incurred by TSO and/or the users;
- the cost is efficient – is capable of bringing future benefits to the TSO and the user;
- the cost reflects the market conditions – the cost incurred by TSO reflects the best market conditions.

The conditions mentioned above are applicable irrespective of whether the related investments are innovative or not. Consequently, although the TSO must ensure that its capital costs (CAPEX) are performed in a manner that will lead to a reduction of the operational costs (OPEX) in order to meet the rate for the increase in the efficiency of the gas transmission activity, the related investments shall be made for one of the purposes mentioned above and shall observe the prudency conditions.

Operational unpredictable costs may be recognized in the total revenue of the year following the one in which such occurred, provided such are due to force majeure, fortuitous case or the issuance of new legislation and in case such entail a significant increase of the total revenue, NRA is entitled to divide their recovery within several years. Capital costs will be recognized within the Transmission Tariff following the general rules, in the year following the year in which such was incurred.

Any adjustment in respect of the total revenue for the previous year will be granted / recovered by means of the Transmission Tariff approved for the following year. In case the adjustment triggers a significant increase / decrease of the total revenue, NRA may decide for the correction to be performed over several years.[99] Although the annual adjustment within the regulated period is not mandatory, the Transmission Tariff Methodology requires that TSO will request such adjustment in case there are elements that could trigger the reduction of the total / regulated revenue. In practice, the Transmission System was adjusted annually during the third regulation period.

Co-financing of the national transmission system extension

The TSO has the obligation to ensure the connection of users even if investments are necessary in this respect, provided the investment is economically justified or the user agrees to pay the financing deficit rate.

In order to determine whether the investments are economically justified and, if negative, the financing deficit rate that shall be borne by the requesting user, the TSO must prepare within a 30 day term a study in accordance with a procedure approved by the NRA.[100] The said, procedure regulates the formula for determining whether the investment is economically justified, as well as the formula for determining the financing deficit rate, should the investment not be economically justified.

3.1.4. Regulatory rules with respect to innovation

Specific duties of the NRA aimed at encouraging innovation

For specific duties aimed at encouraging innovation, please see our response to section 3.1.3. Other aspects that may be considered as an indirect duty to encourage innovation, is NRA's role to recognize as operational costs the TSO's costs with mandatory studies and researches, as well as those for which the technical feasibility and commercial viability may be proven.

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98 Article 55 (1) of the Transmission Tariff Methodology.
99 Article 28 of the Transmission Tariff Methodology.
100 Procedure on the elaboration of the technical-economic study with a view to perform objectives from the natural gas field approved by means of Romanian NRA Order No. 104/2015.

Specific duties of the TSO aimed at encouraging innovation

Under the Legal Framework, there is no specific duties aimed at encouraging innovation. Consequently, the duties mentioned in the sections above regarding the undertaking of investments and safeguarding the security of supply are also applicable regarding innovation expenses (innovative investments shall be subject to NRA's approval under the Development Plan, TSO shall prove that the related costs meet all conditions in order to be considered performed in a prudent manner, otherwise these expenses will not be recognized in the Transmission Tariff.

3.1.5. Regulatory rules with respect to security of supply

Specific duties of the NRA aiming at safeguarding security of supply

See section 3.1.1, above, with regard to the legal powers and duties available to the NRA in terms of security of supply, which include the supervision of the application of the Network Code, possibility to refuse to recognize investment's costs that are not aimed at the security of supply when determining the Transmission Tariff, to approve the minimum stock of natural gas to be stored etc.

Specific duties of the TSO aiming at safeguarding security of supply

According to the Gas Law, holders of transmission licences are under the general obligation to perform their activities with the observance of obligations provided in their licences regarding safety (a term, which includes the security of supply and technical security of installations)101, quality and continuity of supply.102

Within the Legal Framework, we have identified the following main specific duties of TSO, which should lead to security of supply:

- The obligation "to operate the national transmission system and to ensure its physical residual balance, respectively programming, dispatching and functioning of the national transmission system in conditions of safety";[103] In performing its duties, TSO drafted and submitted for approval to NRA the Network Code of the National Natural Gas Transmission System[104] whereby the TSO's duties regarding the physical balancing of the transmission system in order to ensure the gas transmission in safety conditions are regulated. Such main duties imply TSO's obligation to monitor and control the flow, pressure and higher calorific power parameters in the entry and exit points and in technological hub of the transmission system;
- The obligation "to hold in underground storages or to ensure the acquisition of natural gas, including from import, of the quantities required for the operation and for ensuring the physical balance of the national transmission system, according to specific regulations approved by NRA".[105] The minimum quantity of natural gas that must be stored by the TSO for such purpose is determined by the NRA annually and should be equal to the maximum value of the daily deficit at the level of the transmission system, registered during a 30 consecutive day period.[106] The minimum quantity to be stored during 2017 amounts to 317,825.213 MWh;[107]
- The obligation to ensure "the programming, dispatch and functioning of the NTS[108] in safety conditions";[109]

[101] Article 100, 81 of the Gas Law.
[102] Article 173 of the Gas Law.
[103] Article 130 (1) a) of the Gas Law.
[104] Approved by means of Romanian NRA Order No. 16/2013.
[105] Article 130 (1) j) of the Gas Law.
[106] Article 3 of NRA Order No. 36/2016 on determining the method for setting up the annual minimum level of natural gas that shall be stored by the holders of licenses for the operation of the natural gas transmission system.
[107] According to NRA Decision No. 1549/2017. The minimum quantity applicable for 2018 will be available after 10 April 2018.
[108] Meaning the national transmission system.
[109] Article 22 (1) of the Validity conditions of the license for the natural gas transmission approved by the National Authority for Regulation in the Gas Field (this authority no longer exist and its attributions of such authority were taken over by the NRA) by means of the Decision No. 1362/2006.

- The obligation to "develop interconnectors with the national transmission systems of the neighbouring countries, in order to create the technical and technological conditions for ensuring security of supply of natural gas".[110]

3.2. Regulatory practice

3.2.1. Overview over regulatory practice in Romania

We have not received any feedback to our questionnaires and requests from the gas sector. Therefore, a description and analysis of the regulatory practice cannot be given.

3.2.2. Regulatory practice related to innovation

(see above).

3.2.3. Regulatory practice related to security of supply

(see above).

3.2.4. Illustrative specific projects

The following projects all illustrate how the regulatory regime works in practice, when it comes to projects enhancing the security of supply.

Bulgaria-Romania-Hungary-Austria interconnector ("BRUA")[111]

BRUA is an example of a project that enhances security of supply. The project intends to bring greater energy security across Europe by allowing for the diversification of Europe`s gas supply sources by the transmission of Caspian gas to Central Europe. The BRUA interconnector is divided into different development phases, part of which will be located in Romania.

Development of BRUA on the Romanian territory - 1st Stage

The development of the transmission capacities in the system between the connections existing between the Romanian and the Bulgarian gas transmission systems and the Romanian and the Hungarian gas transmission systems, and consists of building a new transmission pipeline that would connect the Podișor Technological Node to the Horia GMS. The project will also ensure the transmission capacities for the use of Black Sea gas on the Central European markets.

The Project is on the second List of Projects of Common Interest adopted by the European Commission in November 2015 at the position 6.24.2 and at the same time, it is included in the third List of Projects of Common Interest adopted by the European Commission in November 2017 at the position 6.24.1.

The project is currently in the development phase with the main authorizations being issued (the building permit was issued in May 2017). Moreover, we note that a draft proposal for a Government Decision regarding the expropriation of certain lands required for the project was posted recently for public consultations by the Ministry of Energy.

The project is partially financed by a non-refundable grant of EUR 179.3 mil (40% of the total estimated cost) awarded under the Connecting Europe Facility.

Black Sea Shore- Podisor transmission pipeline

It is another project that is a part of the Southern Corridor and will be connected to the BRUA interconnector project. The project is designed to feed the Black Sea gas into the BRUA transmission pipeline at the Podisor technological node. This project will create the necessary infrastructure for taking over and transmitting Black Sea gas to the Romanian market and other markets in the region.

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[110] Article15 (1) of Law 346/2007 regarding measures for safety insurance in the gas supply However, although this law was not repealed, it seems that its provisions are no longer applied by the authorities.

[111] Reference number in European Union PCI List: 6.24.

The Project is on the second List of Projects of Common Interest adopted by the European Commission in November 2015 at the position 6.24.8 and at the same time, it is included in the third List of Projects of Common Interest adopted by the European Commission in November 2017 at the position 6.24.

Currently the project is in the permitting phase, whereby the required endorsements from the public authorities are requested (the procedure for obtaining an environmental approval is currently pending).

Estimated investment value rises to EUR 278.3 million and the TSO intends to apply for financing under the Connecting Europe Facility.

Enhancement of the Romanian transmission system between Onesti-Isaccea and reverse flow Isaccea[112]

It is a project designed to create a new transmission route between the markets in Greece, Romania, Bulgaria and Ukraine, provided that the new interconnection between Greece and Bulgaria is achieved as well. Phase 1 of the project includes the interconnection of the national gas transmission system with the T1 international gas transit pipeline.

By implementing the Project, gas supply to Bulgaria may be ensured from the NTS on the NTS - Onesti - Şendreni - Isaccea - Transit 1 - Negru Voda route. At the same time, in case of taking over gas from the Black Sea continental shelf in the Transit 1 pipeline, gas supply to Bulgaria, the supply to the deficient areas of the NTS, and a quantity of gas to be directed to Podişor - Mosu, or a quantity of natural gas to be exported to the Republic of Moldova may be ensured at the same time.

The Project is on the second List of Projects of Common Interest adopted by the European Commission in November 2015 at the position 6.15 and at the same time, it is included in the third List of Projects of Common Interest adopted by the European Commission in November 2017 at the position 6.24.10 (position 1).

Currently the feasibility study for the project was completed and the Environmental Impact assessment is to be performed and the activity related to the identification of land owners affected by the project execution works is ongoing, as well as the procedure for the permitting of the construction works, namely the granting of the Town Planning Certificates and permits whereby all the Town Planning Certificates were obtained.

The estimated value of project amount to EUR 65 million.

Further enhancement of the Bulgaria-Romania-Hungary-Austria bidirectional transmission corridor (BRUA Phase 3)

It is a proposed project consisting of a transmission pipeline between Bacia and Nadlac and 2 gas compressor stations in order to ensure reverse flow on the Romania - Hungary interconnection and double the cross border transmission capacity between the Romanian and the Hungarian gas transmission systems, as well as the development of the Romanian national gas transmission system between Onesti and Bacia.

The Project is on the second List of Projects of Common Interest adopted by the European Commission in November 2015 at the position 6.25.3.

The performance of this project depends on the evolution of the capacity booking requests, as well as the outcome of the exploration/ exploitation works relating to offshore blocks from the Black Sea, or other on-shore blocks, with a final investment decision being possible only when the request for additional capacities is confirmed by understandings and booking agreements.

The estimated value of the project amounts to EUR 530 million.

[112] Reference number in European Union PCIs List: 6.24.15.

Project for the developments of the national transmission system in North East Romania for enhancing gas supply to the area and for ensuring transmission capacities to the Republic of Moldova

It is a project, which is intended to ensure a transmission capacity of 1.5 bcm / year between the transmissions systems of Romanian and the Republic of Moldova. The project is partially financed through a EUR 55 million grant awarded under the Operational Programme for Large Infrastructure.

The project is estimated to be finalized in 2019, with construction works being planned for 2018.

The estimated value of the project amounts to EUR 131.7 million.

Project regarding new developments of the national transmission system in order to take over gas from the Black Sea Shore

It consists of a 25 km transmission pipeline from the Black Sea Shore to the International Transit Pipeline T1. The project is expected to be completed in 2019.

The project is currently in the development phase with an estimate of late 2019 for completion of works. The estimated value of the project amount to EUR 9 million.

Interconnection of the Romanian national gas transmission system with the Serbian national gas transmission system

The project consists of a pipeline with a length of 80 km and a gas measuring station. The project will be developed after the completion of the BRUA project with the first stage of the project, represented by the drafting of a feasibility study, estimated for 2019.

The estimated value of the project amounts to EUR 43 million.

Retrofitting and modernization of the Gas Measuring Station 1 and 2 Isaccea

Retrofitting and modernization of the Gas Measuring Station 1 and 2 Isaccea through developing two new gas measuring stations on the location of the existing gas measuring stations. The estimated completion date is 2019 and the estimated value of the project amounts to EUR 13,9 million.

3.3. Options for improvement

Due to the lack of response from the invited parties, we could not identify any improvement options.

ANNEX I: TYPOLOGICAL INVESTMENTS – ELECTRICITY

Generally, the term typological investment relates to technical solutions that TSOs can adopt to provide the transmission capacities needed to cover the transmission demand of grid users. Thus, a typological investment is meant to be a type of solution that can be implemented, in principle, by any TSO in situations in which these solutions are appropriate to provide the desired benefit. Hence, typological investments are not specific to a concrete location or a particular TSO. In the following, we have listed a selection of typological investments for the electricity transmission sector, that are differentiated in 7 categories that can be considered innovative as compared to conventional solutions. For each of these categories we have provided a number of examples of solutions, based on our existing knowledge, a literature review and interviews. The list might not be completely comprehensive, but should give an idea of our understanding of the different types of typological investments, we are interested in.

Category	Examples of solutions
New transmission lines based on innovative technology or change of technology of existing lines	• New HVDC lines (→allow to control the power flow; less expansive for long distance transport; undergrounding less complex); • Replacement of HVAC by HVDC lines (→less complex and less expensive; more compact design); • Underground cables or GIL (→ more expensive than OHL but can help improving public acceptance and accelerate the authorisation process); • Design of overhead line poles (→can help improving public acceptance and accelerate the authorisation process); • Replacement of conventional overhead line conductors by high-temperature conductors (→more expensive than conventional ones but can allow to provide additional capacity at a lower cost level and more quickly than by building completely new lines).
Introduction of dynamic capacity rating with the aim of utilising existing transmission lines or transformers at higher levels	Spectrum of technological options ranging from a differentiation of rating levels according to fixed time intervals (e.g. seasonal or time-of-day) down to online monitoring of equipment temperature and adaptation of capacity rating in real-time operation.
Installation of power flow control components in order to better adapt power flow patterns to capacities and topology of the existing grid.	• Phase-shifting transformers; • Semiconductor-based FACTS elements (including HVDC converters).
Investment into components contributing to ancillary services provision (reactive power / voltage control, short-circuit power, momentary power reserves and black-start capability)	• Purely phase-shifting generators (→offer operational flexibility and can serve to improve cost efficiency); • FACTS elements (→ see above).
New or extended power system control and automation technology with the aim to lower the risk of disturbances threatening security of supply	• Improvements in observability and controllability based on conventional sensor and actor devices; • Wide-area measurement systems (aiming at synchronously measuring power phasor angles at the grid nodes to improve observability); • Real-time dynamic security assessment tools (aiming at observing stability phenomena beyond static voltage/current measurements).

Category	Examples of solutions
Partial automation of system operation processes aiming at better utilisation of existing grid capacities	Automatic switching of network devices (in connection with adaptive protection schemes) or of generation-side or demand-side flexibilities in case of grid component outages in order to reduce the demand for (n-1) capacity reserves.
Improvement of approaches to curative congestion management providing the possibility to operate systems closer to their technical limits and/or to improve security of supply	• Generation-side flexibilities (especially renewables); • Demand-side flexibilities (DSM/DR); • Storage components; and • Technologies coupling the electricity sector with other sectors (gas, heat, traffic).

ANNEX II: TYPOLOGICAL INVESTMENTS – GAS

Typological investments are meant to be those type of investments whose aim is to promote innovation in the gas transmission systems while ensuring or enhancing the level of security of supply of a region. Hence, by definition, they can be implemented independent of a specific TSO and location.

In the following table, we offer a resume of the typological investments for the gas transmission system we have deemed as innovative compared to "conventional" solutions.

The investments are broken down into four categories each accompanied by examples that emphasise their importance and impact on the gas system.

Category	Examples of solutions
Increased need for flexibility for market development and security of supply.	• (Power-to-gas) Usage of excess pipeline capacity as "energy" storage of excess wind or solar energy by utilizing electrolysis (an efficient utilization of the excess of electricity produced by non-programmable sources of energy); • Increase withdrawal and injection capacity in storages by incentivising investments supporting flexibility (support of gas market liquidity and security of supply level); • Allowance of higher pressure in selected pipeline/routes (increase of flexibility of the supply side).
Incentivise and facilitate upgrade of biogas to the transmission system.	• Investments in upgrade of biogas to transmission system (support of gas market liquidity and security of supply).
Digitalisation of operations, through e.g. drone inspections and artificial intelligence (AI), resulting in a safer and cost-efficient operation.	• Drone inspections and AI in combination with modern SCADA systems can serve as input to reliability based operation and maintenance (lower maintenance cost and reduction of unforeseen/unplanned shutdowns).
In order to support security of supply and add liquidity to the gas market, there is a need to build interconnectors in Europe.	• More reverse flow systems could be considered to increase flexibility in the supply routes (reduction of dependency and power of trading of the large gas suppliers); • Enhancement of available gas supply in situation of supply crisis; • possibility of arbitrage a price convergence between markets to support the development of the internal market.

ANNEX III: POTENTIAL REGULATORY BARRIERS FOR PROJECTS

Regardless of the character of a project (e.g. projects enhancing security of supply or applying innovative technologies, which this questionnaire is focussing on) there might be potential regulatory barriers for implementing projects in general but maybe also barriers for special kind of projects. To give you an impression what kind of barriers we have in mind, we have listed some examples of such barriers in the following. It should be noted that there might be different or even more or less barriers in the regulatory framework of your country.

Type	Description/Explanation
Higher TSO CAPEX but lower expected OPEX within the TSO	the investment upfront is more costly, but has a potential of lowering the operational costs in the future. However, because of its innovative and more risky character the lower OPEX is not guaranteed. If not allowed to put the costs in case of a failure in the tariffs, TSO would not invest in innovative solution.
Higher TSO CAPEX, but benefits go to the wider society, instead of the TSO	This is a situation where higher investment, including in new technologies, is needed on the part of a TSO but benefits in terms of RES integration, RES curtailment or CO2 avoidance benefit other players in the society, while the TSO is only faced with the cost increase. Projects in regulatory frameworks, which do not distribute adequately the benefits to the TSO that bears the costs and takes the risk, are less likely to happen. This could also apply to cross-border investments involving several TSOs.
Investments in smart grid elements /technology aimed at replacing planned grid investments	Investments in smart grids and other smart elements that actually reduce the need of physical construction of lines for example due to a better interactive/intelligent grid management of balancing tools (battery storage) may provide a reduction in the regulated asset base, however with a slight increase of tariffs, might not be realised.
Investments in security of supply – projects without commercial benefits	Projects that ensure security of supply will in some cases never bring enough commercial benefits such as a pipeline would be going to be used only in case of emergency. If the security of supply (e.g. diversification of the sources for gas) is not put into tariffs, a TSO is most likely not willing to invest.
Lower TSO TOTEX but shift in the CAPEX/OPEX ratio	In some member states CAPEX and OPEX are treated differently in the regulatory regimes. Depending on the incentives set by doing so, technical solutions/projects with higher CAPEX might be preferred by the TSOs even if they result in higher total costs.

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