Offshore natural gas upstream specific fiscal regime: benchmarking study for Europe

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The scope of the Study

The Covid-19 pandemic and the ambitious targets of the European Union's representatives to reduce greenhouse gas emissions by at least 55% by 2030, compared to 1990, expose the natural gas sector to a number of risks and uncertainties. Mostly when European policies on classifying natural gas investments as green investments seem to be ambiguous.

The fiscal regime of the offshore natural gas sector has an important role for both the host country, in terms of revenues and macro and socio-economic effects, and for economic operators from the perspective of the investment decision, especially in the current context of the energy transition.

The scope of this Study is to analyse the effective tax rates of the offshore natural gas production in European countries considered relevant, in order to identify the level of the tax "burden".

However, one must consider that the development of such a comparative study has a number of limitations due to differences between states in terms of economic development, the history of the natural gas industry and its importance at national level, offshore fields, volume of natural gas versus oil, the size and age of the fields, as well as the complexity of the fiscal regime.

Executive summary

- The Covid-19 pandemic and the European Union's targets for reducing greenhouse gas emissions by at least 55% by 2030 compared to 1990 expose the gas sector to a number of risks and uncertainties.
- Romania is the second largest producer of natural gas in the European Union, after the Netherlands. The upcoming closure of the Groningen field (2022) could mean that Romania will become the first natural gas producer in the EU, if the Black Sea reserves, estimated at 200 billion cubic meters, would be developed.
- Romania's natural gas import dependency can increase significantly, up to 53% in 2030, if the Black Sea reserves remain untapped. This will have a major impact on the country's energy security. The natural decline of onshore production coupled with the expected increase in consumption implies the development of natural gas reserves in the Black Sea, in order to keep a low import dependency rate.
- The main factors, which led to the postponement of investment decisions in the Black Sea's natural gas exploration and production are: (1) the lack of stability and predictability of the legislative framework, (2) the uncompetitive fiscal regime determined mainly by the introduction of the tax on additional offshore income, (3) the postponement of the natural gas market liberalization and repeated interventions on the market; and (4) the risks associated with investing in offshore projects.
- In 2020, Romania had the highest effective tax rate of the offshore natural gas sector (23%) among European countries relevant for offshore production, approximately 4.3 times higher than their average, estimated at 5.3% (average without RO). The high level of effective taxation in Romania highlights the need for amendments to the fiscal regime, in order to become attractive for investment, mostly in the context of the energy transition. Thus, in order to restore the balance and competitiveness of the fiscal regime, it is necessary to amend the Offshore Law (Law no. 256/2018).
- The opportunity to explore and develop natural gas reserves in the Black Sea must be tackled in the short/medium term. Otherwise, Romania's development potential from the perspective of owning natural gas resources, representing a major competitive advantage, will decrease as the energy transition deepens.

Background: the perspectives for natural gas and its importance in the short/medium term

Global

- Natural gas becomes a coal substitute in the context of accelerated coal phase out policies
- Projection of 30%[1] increase in global natural gas demand by 2040, mainly concentrated in Southeast Asia
- The use of natural gas in advanced economies is on a downward trend
- Increasing global demand for renewable energy sources: solar energy is at the heart of the transition

Regional – European Union and Black Sea

- Accelerating the energy transition - Green Deal
- Ambiguous approach on natural gas: transition fuel only for solutions that will involve long-term hydrogen use
- Coal phase out and strong support for renewable sources
- For some Member States, where there are no other useful options, natural gas will play a limited role in the energy transition
- Supporting the use of hydrogen
- Turkey has discovered major natural gas deposits in the Black Sea (e.g. Sakarya)

Romania

- Supporting natural gas as a transition fuel[2]
- Competitive advantage in natural gas production
- Romania could become the first natural gas producer in the European Union after the closure of the Groningen field in the Netherlands[3]
- Recent liberalization of the natural gas market
- Accelerating the process of connecting the population to the natural gas distribution network[4]
- Onshore natural gas production on a downward trend
- Offshore natural gas potential
- Domestic natural gas production can support the development of other industries (petrochemicals, CNG transport, LNG, etc.), and, in the medium and long term, the energy transition through the use of hydrogen.

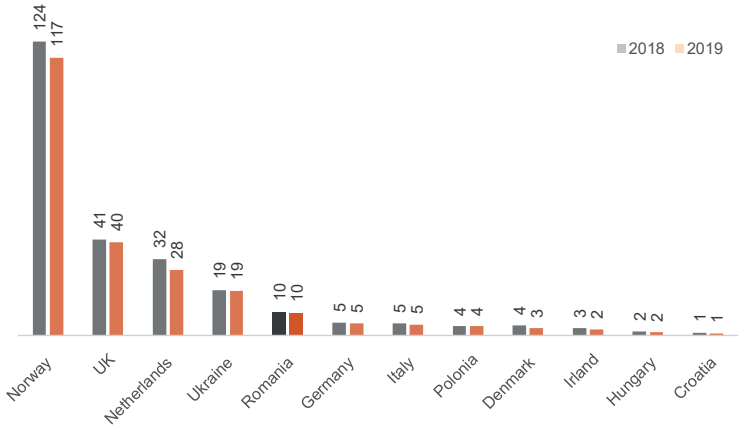
1. World Energy Outlook 2020, STEPS Scenario;
2. Poland, Romania, Hungary, the Czech Republic, Bulgaria and Slovakia requested the European Commission to classify investments in natural gas and nuclear energy as “green investments” - Reuters;
3. In 2019, the Dutch government announced that it will stop gas production in Groningen from 2022, earlier than the initial date: 2030 (Source: EBN 2020 Annual Report);
4. Amendment of Law no. 123/2012 through Law no. 155/2020 and Law no. 290/2020. Proposal from the National Resilience and Recovery Fund on financing the development of natural gas distribution network that will accommodate H2 integration.

Romania is the second largest producer of natural gas in the European Union after the Netherlands and has the potential to become the first based on the development of the Black Sea reserves and the closure of the Groningen field*

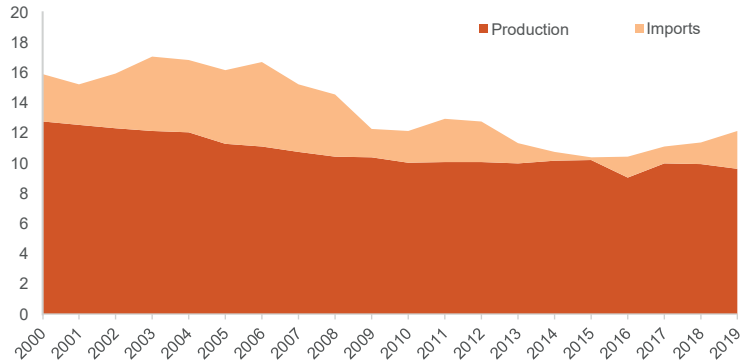
*EBN Report 2020: trend of reducing natural gas production amid the closure of the Groningen field from 2022 and the transition to other energy sources

Source: PwC Analysis based on Eurostat

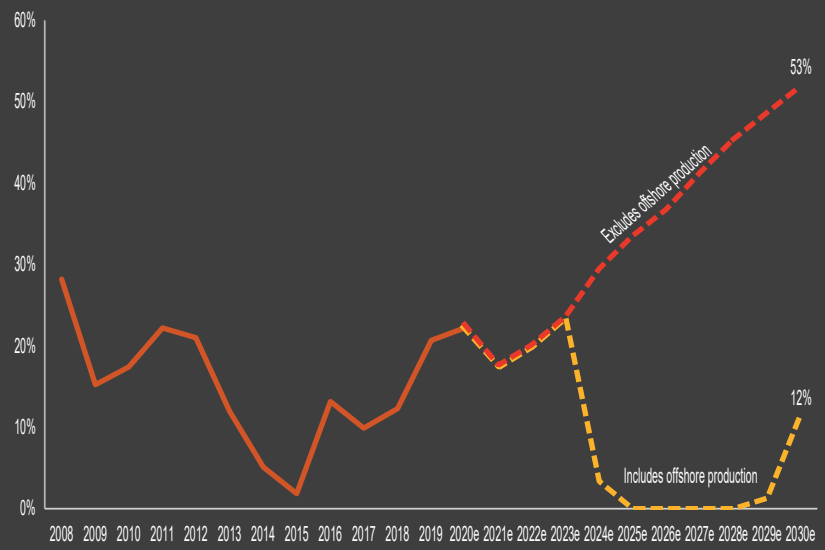
Natural gas production in Europa (bcm)



Natural gas production and imports in Romania (bcm)



Natural gas production in Romania has decreased in recent years, and the trend will continue. In the absence of developing the Black Sea reserves, the import dependency ratio can increase significantly, up to 53% in 2030



The assumptions for the projection are based on data from Transgaz's Development Plan 2020-2029:

- Increased natural gas consumption according to the National Commission for Strategy and Prognosis, the estimates for 2020, 2025 and 2030. For 2020-2025 and 2025-2030 was used a linear growth trend.
- The scenario which includes the offshore production: estimated annual production based on forecasts of major producers;
- The scenario which excludes the offshore production: estimated annual production based on the forecasts of main producers, excluding the estimated production of ExxonMobil (Neptun Deep).

The projection might be influenced, in the following years, by a number of variables such as: changes of the European and national legal framework on the use of natural gas, changes of the consumer behaviour, investor's decisions, etc.

Source: PwC Analysis based on Eurostat, Transgaz (Development Plan 2020-2029), Romanian Energy Regulatory Authority Reports

In the current context, investments in the natural gas reserves from the Black Sea are essential for Romania, especially as they generate a number of opportunities

Energy security

- Black Sea investments represent the trigger for energy independence. They can position Romania as a net exporter of natural gas
- Diversity/independence of long-term supply generated by new infrastructure and two-way interconnections
- Increasing competition based on the free mechanism of supply and demand; otherwise, by 2030 Romania can reach an import dependency rate of 53% on natural gas
- The contribution to the security of energy supply in the region will strengthen Romania's importance in the EU and within the strategic partnership with the United States of America

Significant economic impact

- Contributing to local and regional economic growth and strengthening cooperation between states in the region
- Attracting new investments
- Increasing revenues to the state budget
- Contributing to reducing the trade deficit
- Diversifying export markets
- Long-term sustainable economic development

Employment

- Attracting skilled labour, with significantly higher wages than the national average, in the oil and gas industry and along the supply chain
- Romania's quality as a regional player on the energy market will lead to investments in structural reforms (e.g. education, technology, infrastructure, health, etc.)

Competitive advantage through technology and know-how

- Romania could become a pioneer in the Black Sea region and could benefit from the newest and most efficient technologies, with a multiplier effect in other industries
- Romania could acquire, before other countries, the technical know-how, which would allow the development of a industrial base that will also serve the countries in the region

Contribution to the energy transition

- Natural gas is the cleanest fossil fuel
- Increasing the contribution of natural gas in the power mix, during the process of replacing coal, while also increasing the contribution of renewable energy sources
- Increasing the use of natural gas in transport (CNG, LNG)
- Hydrogen production based on methane while capturing and storing the carbon (CCS) within the process

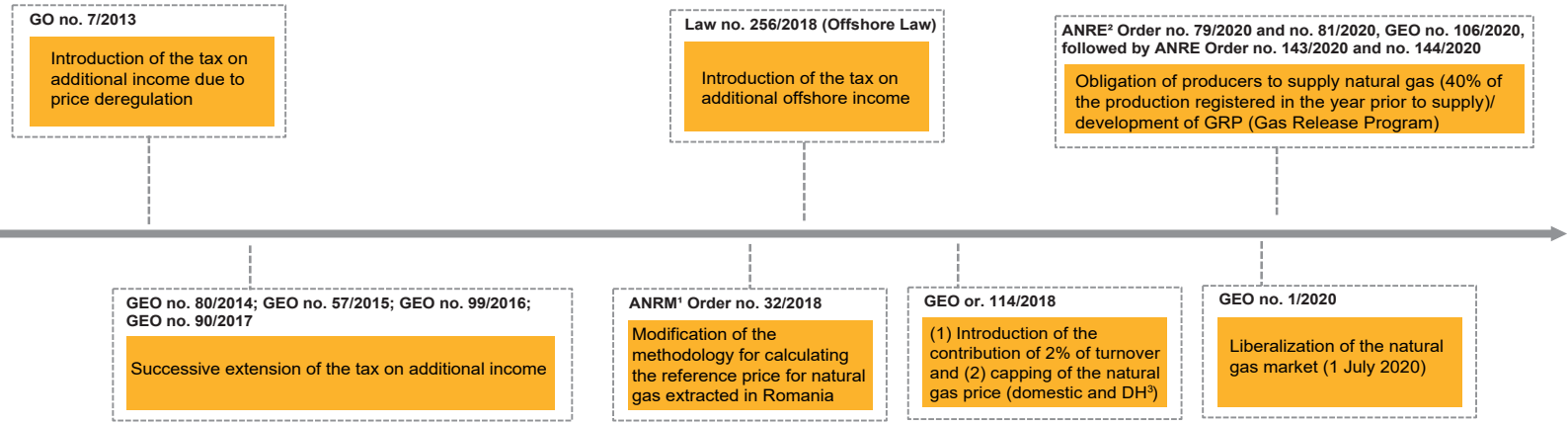
Achieving the objectives assumed by the Draft Energy Strategy 2020 - 2030 with a 2050 perspective

- Natural gas represents the transition fuel to green energy
- The use of natural gas for heating to the detriment of wood or coal
- The opportunity to achieve the greenhouse gas emission reduction targets

Main factors that led to the postponement of investment decisions in the development of natural gas reserves in the Black Sea

Lack of stability and predictability of the legislative framework | **(non-competitive) Fiscal regime** | **Slow pace of the liberalization of the natural gas market** | **Risks associated with offshore projects**

The legislation with impact on the offshore natural gas sector in Romania has been amended more than 15 times between 2013 and 2020, among which we mention:



Lack of stability and predictability of the legislative framework | **(non-competitive) Fiscal regime** | **Slow pace of the liberalization of the natural gas market** | **Risks associated with offshore projects**

Measures	Description
1. Royalties (Law no. 238/2004)	• The law in force does not provide for differentiated royalty regimes applicable to onshore and offshore production; • Royalties are calculated on the basis of reference prices set by the competent authorities; • Currently applicable royalty rates range from 3.5% to 13% depending on the gross production per quarter. A share of 13%[4] is applicable for most offshore natural gas production.
2. Tax on additional offshore income and cap of investment deductibility (Law no. 256/2018)	• The Offshore Law provides several tax thresholds for additional revenues based on the selling price of offshore natural gas; • The additional income is determined as the difference between: (1) the weighted average price of natural gas sold from the offshore domestic production, but not less than the reference price of natural gas set by the National Agency for Mineral Resources (ANRM) and (2) the purchase price of natural gas from domestic production for domestic and non-domestic customers from 2012 (RON 45.71/ MWh) multiplied by the volumes of gas sold from offshore production; • As of January 1st, 2019, the price thresholds used for the calculation of the tax shall be adjusted on a yearly basis with the annual consumer price index; • Depreciation of investments considered for the determination of additional income tax is not deductible when calculating the income tax.
3. Reference price of Natural gas (ANRM Order no. 32/2018)	• The reference price of natural gas used to calculate royalties and the tax on additional offshore income is determined on the basis of the Day Ahead price of the CEGH hub in Austria.
4. Contribution paid by licence owners (GEO no. 114/2018)	• 2% of turnover achieved from the activities subject to the Romanian Energy Regulatory Authority (ANRE) licenses. This contribution was eliminated at the beginning of 2020.

1. ANRM - National Agency for Mineral Resources;
2. ANRE - Romanian Energy Regulatory Authority;
3. DH - District Heating;
4. Source: FPPG.

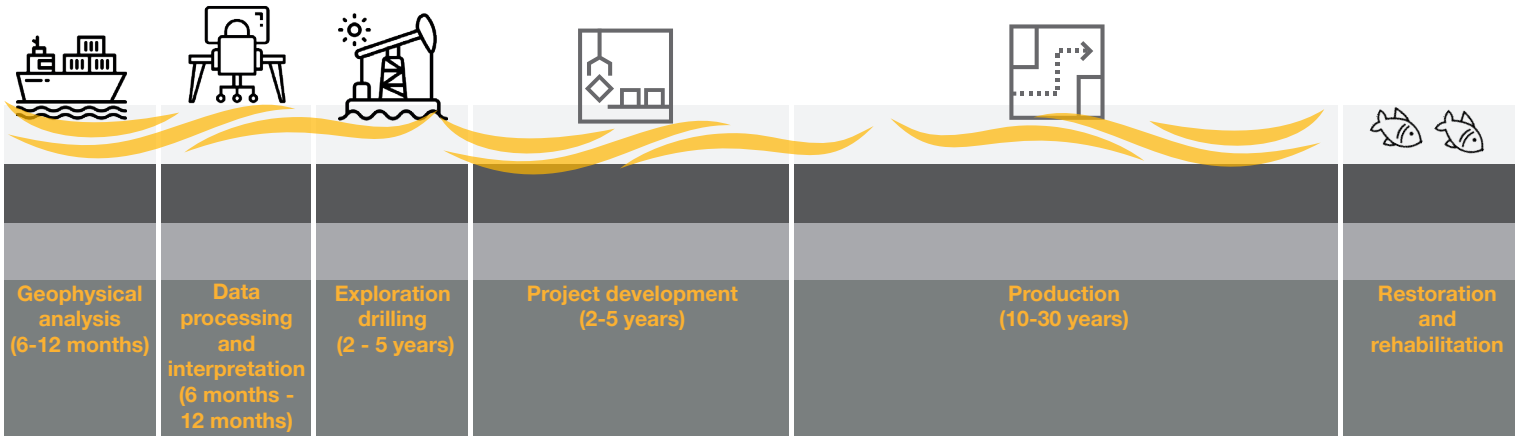
Lack of stability and predictability of the legislative framework | **(non-competitive) Fiscal regime** | **Slow pace of the liberalization of the natural gas market** | **Risks associated with offshore projects**

The Romanian natural gas market has undergone a slow process of liberalization, which has been postponed several times by:

- The obligation for natural gas producers and suppliers to trade on centralized markets, a measure imposed on 15 July 2014.
- The obligation for producers to sell a part of domestic production at a capped price for household customers and district heating plants. Measure implemented through GEO no. 114/2018. It was eliminated in 2020, following the liberalization of the market.
- **Despite the liberalization of the natural gas market as of July 2020,** natural gas producers are obliged to offer natural gas (40% of the previous year's production) at a set price, until 2022.

Lack of stability and predictability of the legislative framework | **(non-competitive) Fiscal regime** | **Slow pace of the liberalization of the natural gas market** | **Risks associated with offshore projects**

- High initial costs for investors: the development of an offshore Deepwater project may involve expenditures of over 150 million euros[1];
- The high volatility of the natural gas price on which depends the recovery of investments;
- Long return on investment: **more than 15 years can pass from operation to first production. Process involving investments in advance;**
- Additional safety and environmental standards.



(1) FPPG, 2018: Risks, fiscal regime, investment decisions in offshore projects - "Riscuri, fiscalitate, decizii de investiții în sectorul offshore de țiței și gaze naturale. Marea Neagră și România".

Effective Tax Rates

The fiscal regime of the offshore natural gas sector has an important role for both the host country, in terms of revenues and macro and socio-economic effects, and for economic operators from the perspective of the investment decision, especially in the current context of the energy transition.

Methodology

- The comparative study used public information available by May 31st, 2021, unless is stated otherwise.
- The effective tax rate for each state was calculated by dividing the amount of royalties and specific taxes paid by major industry players to their revenues from the production and sale of natural gas (and oil where the regime is similar), based on existing public information.

$$ti = \frac{\sum_{k=1}^{n} x_k}{y}, \textbf{where:}$$

t = effective tax rate

i = country

$\sum_{k=1}^{n} x_k$ = the sum of revenues collected at the state budget from specific taxes and duties (x_k) paid by operators (e. g. royalties, specific taxes, others)

y = operators revenues from production and sale of offshore natural gas and oil (and onshore, where there is a similar fiscal regime for oil and gas)

Analysed data by type of production and type of resources

#	State	*Production*		*Resource*		Source
		Offshore	Onshore	Natural gas	Oil	
1	RO	✓		✓		Annual Report OMV Petrom 2019/2020
2	NO	✓		✓	✓	Annual Report Equinor 2019/2020 Norwegian Petroleum Directorate
3	TR	✓		✓		Turkish Petroleum Law
4	IT	✓	✓	✓	✓	Annual Report ENI 2019/2020
5	HR	✓		✓		Reg. on royalty for exploration and exploitation of hydrocarbons
6	BG	✓		✓		FPPG, Biriș Goran, 2019 – *Starea sistemului de impozitare*
7	UK	✓	✓	✓	✓	Oil & Gas Business Outlook 2020; Government revenues UK
8	NL*	✓	✓	✓	✓	Annual Report EBN 2019/2020
9	DK	✓		✓	✓	Danish Energy Agency, 2019 Nordsoefonden, 2019/2020 Danish Ministry of Taxation
10	IR	✓		✓		Annual Report Vermillion 2019/2020; SEAI Energy
11	PL	✓	✓	✓		Annual Report PGNiG: 2019/2020

* *Small fields*

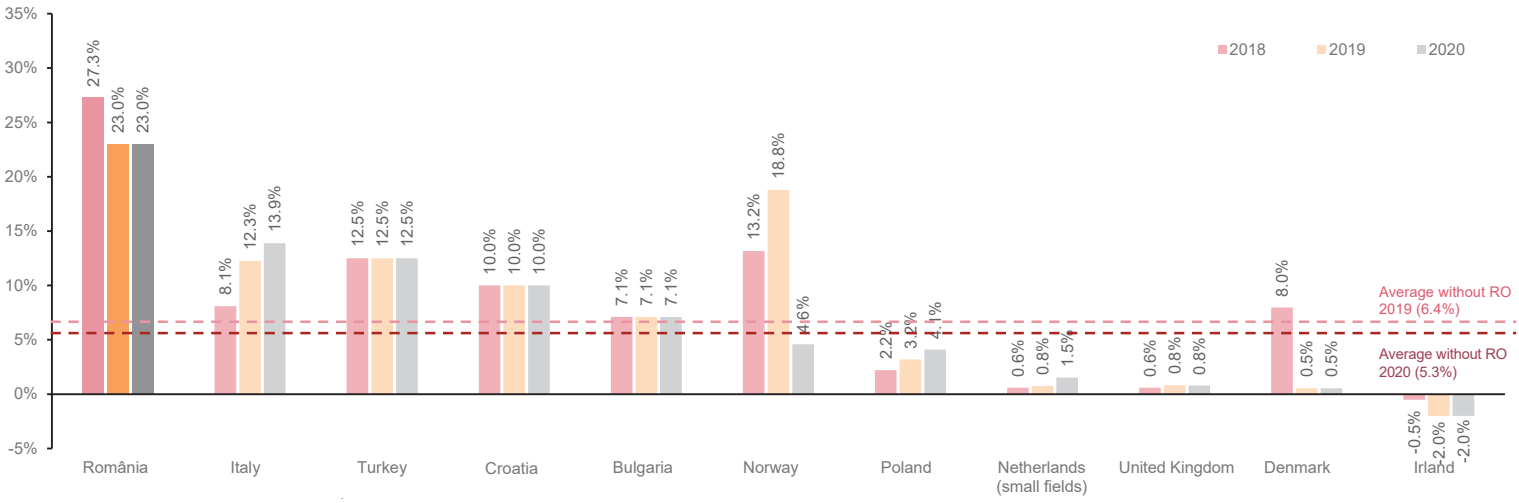
The countries analyzed (Romania, Norway, Turkey, Italy, Croatia, Bulgaria, the United Kingdom, the Netherlands, Denmark, Ireland and Poland) were considered representative for offshore natural gas production in Europe.

For some of them, the operators present the relevant data in an aggregated manner (amounts that include: (1) both natural gas and oil and (2) both onshore and offshore), however royalties and taxes are similar.

Conversion factors

1 bcm	=	10,79 TWh	1 bcm	=	0,860 mtoe
1 sm	=	6,2898 bbl	1 boe	=	5310 cf of gas
1 bcf	=	0,167 mboe	1 GWh	=	3,6 TJ
1 mbtu	=	0,172 boe	1 TWh	=	0,09 bcm

Romania has the highest effective tax rate for the offshore natural gas production (23%) among the analysed European countries, approximately 4.3 times more than their average (5.3%)



Source: PwC Analysis based on available public data

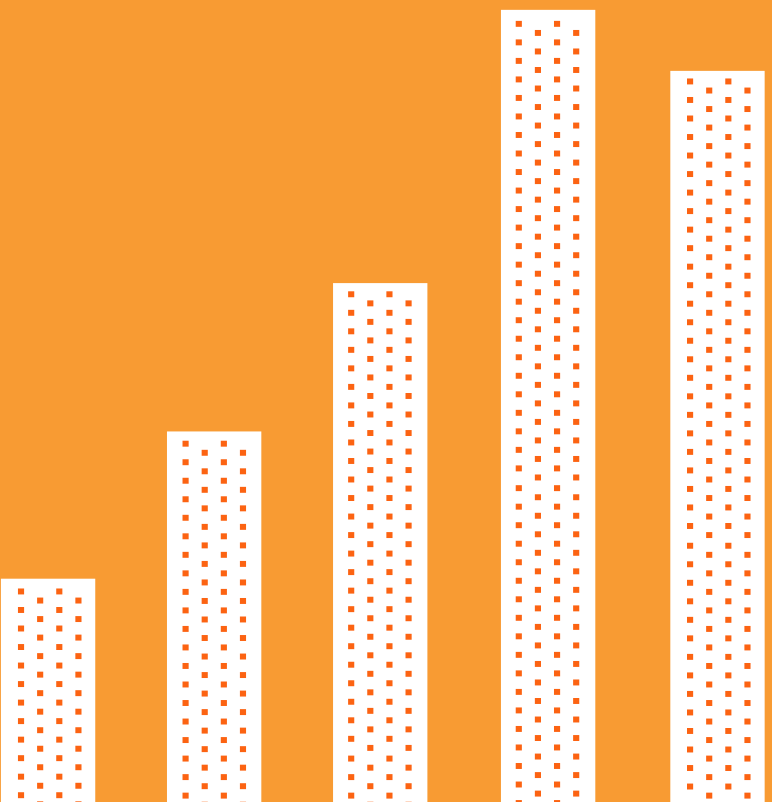
*Bulgaria - the latest available data are for 2014. Source: FPPG, Biriș Goran, 2019;
UK, Denmark and Ireland - for 2020 the effective tax rates are those calculated for 2019, as at the time of the Study's development, no public data were available for 2020;
Turkey and Croatia – the fixed rates of hydrocarbon production royalties / taxes established through the Legislation were taken into consideration. Thus, for the two states, the actual tax rate could vary, for example, depending on allowances;
Romania – the decrease of the effective tax rate was due to the downward trend of the natural gas price in recent years;
Norway - the taxation of upstream companies was reduce in 2020 in order to stimulate investments (PwC Norway's Tax Blog).

Conclusions and recommendations

Conclusions

- The results of the comparative analysis show significant differences between the effective tax rates of offshore gas production. In 2019, the maximum level is in Romania (23%), and the minimum in Ireland (-2%). Also, in 2020, Romania maintains its position, with the highest rate at 23%.
- Despite the high nominal tax rates in the Nordic countries such as Norway, Denmark, the Netherlands and Ireland, we note that the effective tax rates (payments to the state as share of total revenues) are very low, even negative (e.g. Ireland) compared to other countries. This is generated by the level of allowances, amid pressure on the sector in recent years and to support an industry that has a major contribution to the economy.
- In recent years there has been a major decrease in the oil and gas operators' revenues. This trend is due to the high pressure from the falling prices of natural gas and oil.
- The development of offshore production has a significant contribution to meeting future natural gas demand. The costs and risks associated with such projects, especially the Deepwater ones, are high and the investments are characterised by long payback periods. Globally, very few companies have the know-how, technology and financial resources needed for such projects.

(1) Public data were not available for all states analyzed for 2020, in which case we used the data available for 2019.



Recommendations

- The predictability and stability of the legislative and regulatory framework is a major precondition for investment decisions that require high initial outlay and a long payback period, such as for offshore gas production.
- The tax regime must be stable and competitive in order to retain and attract investors. Therefore, in order to restore the balance and competitiveness of the fiscal regime applicable to natural gas projects in the Black Sea, it is necessary to amend the Offshore Law.
- The natural gas sector is an essential contributor to the development of the Romanian economy, thus, the fiscal regime should be tweaked in order to generate attractiveness for investors, as investments generate a multiplier effect in the economy by driving the development of other sectors.
- The dialogue between policy makers and representatives of the sector is essential in order to develop an optimal framework for investments in offshore natural gas production, on the background of which both the state / citizens and investors should benefit.
- The opportunity of the moment to develop the Black Sea natural gas reserves must be used as soon as possible, as natural gas has the chance to represent the transition fuel. Otherwise, Romania's development potential from the perspective of owning this resource / this competitive advantage will decrease.

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Important notification

It is recommended to read this notification

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The study was conducted both on the basis of relevant official information made available to the public by national and international public institutions, associations, organizations and relevant governmental authorities, and on the basis of official documents or public communications of companies or institutions operating in the natural gas sector; based on the applicable legislative and regulatory framework.
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