

# **The Contribution of the Oil & Gas Industry to the Romanian Economy**

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**Important remark:** *The term “oil & gas industry/sector” used in the context of this paper comprises the companies included in this analysis. These are those presented in Table 1.1. Although these companies together account for a very large share of the sector’s total, there are some other companies operating in the sector – for instance, in the gas distribution or downstream oil segments – which were not included in the analysis. As such, the results in this analysis underestimate to a certain extent the true impact of the Romanian oil and gas sector in the economy.*

### **Main Findings:**

- Within the energy sector, the oil & gas industry remains an important single contributor to Romania’s GDP growth. Oil & gas sector represents around 1.7% of GDP, almost half of the whole energy sector contribution. In comparative terms, the contribution of the oil & gas sector to GDP represents:
  - 67% of the Financial Intermediation & Insurance sector contribution to GDP, or
  - 49% of the contribution to GDP attributable to the Arts, Entertainment and Recreational Activities sector, or
  - 40% of the Agricultural sector contribution to GDP.
- The total impact on the oil & gas sector in the economy (i.e., including direct, indirect and induced effects) is significant, amounting to between 5.3% and 5.9% of GDP over the period 2017-2019.
- Total taxes and dividends paid to the state averaged RON 16 Bn. per year, the equivalent of 6% of current government revenues. Dividends alone averaged RON 2 Bn. per year amounting to 1.3% of government fiscal revenues.
- Companies operating in the oil & gas sector paid RON 10 Bn. in VAT and fuel excises in 2019. This is the equivalent to 10.3% of the budget revenues the government collected in VAT and excises. The oil & gas companies’ ability to collect both VAT and excises and then transfer them to the state budget is a strength given that Romania’s VAT gap rate currently stands at around 34%, the highest in the EU.
- Investments made by the oil & gas companies are substantial as the industry is highly capital intensive. In 2019, the oil & gas companies invested over RON 6.7 Bn., almost double the value recorded in 2017. They represented the equivalent of 16% of public sector investments.
- Oil & gas labour productivity is more than four times higher than the average economy labour productivity. This explains to some extent the relatively large indirect and induced impacts the oil & gas industry has in the economy.
- Over the 2017-2019 period the oil & gas sector employed, on average, over 24,800 employees. This represented 0.5% of the total economy employment or more than 25% of the cumulated employment in the energy sector.

## 1. Introduction

The oil & gas sector in Romania has been, for decades, a strong contributor to GDP growth. However, over the last years this contribution has started to diminish slowly and gradually, triggered by a combination of factors, including economics-related ones such as falling reserve replacement ratios, or regulatory measures and changes in policies, the latter occurring both at domestic and the European Union (EU) level. Over the last years, in particular, there has been a gradual shift from policies that supported oil and gas production to policies focused on disincentivising fossil fuels, encouraging the use of substitute technologies and fuels, especially renewable energy. This tendency has emerged at a time when lower oil and gas prices have put more pressure on the sector's performance, notably after the year 2014.

The current pandemic crisis has exposed the oil and gas sector even more disproportionately, when compared to other economic sectors, to future risks and uncertainties. First, a collapse in demand and transport activities, due to the introduction of lockdowns has had a serious impact on oil and gas sector finances. Second, the EU leaders have recently set a more ambitious climate target by pledging to cut greenhouse emissions by at least 55% by 2030 compared to 1990<sup>1</sup>. This would increase the short and medium-term pressure on oil & gas companies to adopt measures that would help them comply with the new target.

However, Romania, along with a few other several countries, managed to negotiate a so-called "technology neutrality"<sup>2</sup>, which could give gas investments more scope over the next decade. As the European Council text reads, Romania would be able to decide on its own energy mix to achieve the 2030 climate target:

*"The target will be delivered collectively by the EU in the most cost-effective manner possible. [...] The European Council acknowledges the need to ensure interconnections, energy security for all Member States, energy at a price that is affordable for households and companies, and to respect the right of the Member States to decide on their energy mix and to choose the most appropriate technologies to achieve collectively the 2030 climate target, including transitional technologies such as gas."*<sup>3</sup>

Domestically, the main hurdle to overcome for a potential expansion of the oil & gas sector is legislative. With sizable potential gas reserves in the Black Sea being documented since

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<sup>1</sup> The initial 2030 target set for the EU members was 40%. Despite the sizable increase in the target, the European Parliament advocates an even more daring figure, suggesting the EU countries should cut their greenhouse gas emissions by at least 60% by 2030 (vs 1990).

<sup>2</sup> Poland, Hungary, the Czech Republic, Slovakia, Bulgaria and Romania called for "technology neutrality" to achieve the higher 2030 target., i.e., allowing for investments into gas and nuclear energy to be classified as "green".

<sup>3</sup> European Council, EUCO 22/20, 11 December 2020, Section 14.

2012<sup>4</sup>, the authorities' delay in passing deep-water legislation that would make gas extraction economically viable has led to several deferrals of projects associated to those activities.

### *Aim of the report*

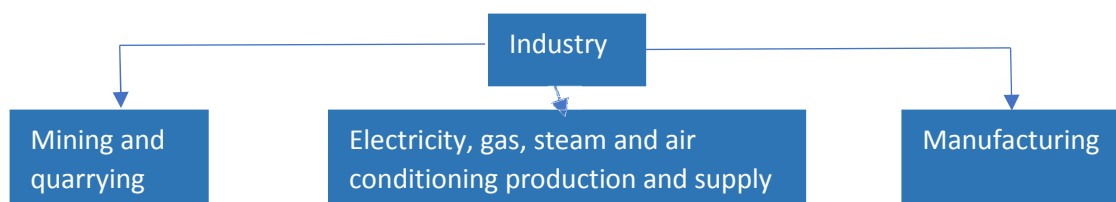
The purpose of this analysis is to quantify the impact of the oil & gas industry on the Romanian economy (in terms of its contribution to GDP, employment, investments and taxes paid). Given the “technology neutrality” option Romania has in meeting the 2030 climate targets, the results of the study could subsequently be used to aid policy design in the domestic oil and gas sector over the next decade. They can also be used as a base to engage policymakers in a dialogue grounded on impact analyses with the aim of enacting legislative changes that would support future activities in the oil and gas sector. And, to promote a dialogue grounded on technical analysis with the public authorities as well as other relevant entities.

### *Methodology*

Individual company annual data on turnover, taxes & dividends paid to the state, investments and employment, covering the period 2017-2019, was obtained through a survey<sup>5</sup>. The purpose was to have a bottom-up approach, using first-hand information, in building a reliable consolidated data set which would quantify more accurately the impact of the oil & gas industry in the economy. For the GDP impact analysis more complementary data was needed. This was obtained from publicly available sources such as annual company or financial reports.

The sample is deemed to be representative as it comprises most of the upstream and transport activities in both oil and gas sectors. The distribution sector does not have a representative coverage in the sample as both gas distribution and retail fuel companies are underrepresented. Regarding economic activities classification of the surveyed companies, most of these would come under the “Industry” sector (see Figure 1.1 below) from the A\*10 Industry breakdowns – which comprise all NACE economic activities.

*Figure 1.1 Sub-sectors of the NACE Industry sector*



<sup>4</sup> In 2012 the first deep-water discovery was made in the Black Sea, with an estimated 42-84 billion cubic meters (bcm) of potentially recoverable gas.

<sup>5</sup> The project proposal was put forward to the main associations/federations with activities related to the energy sector, i.e., ACUE, ARPETROL, FPPG, GASPECO, RBSTA and ROPEPCA. Only some of these responded positively, partly due to the fact that the analysis focused specifically on the oil & gas sector alone.

Oil & gas activities come largely under the “Mining and quarrying” and “Electricity, gas, steam and air conditioning production and supply” sub-sectors.

The companies surveyed are those presented in Table 1.1 below:

*Table 1.1 – Oil & Gas Companies Included in the Analysis*

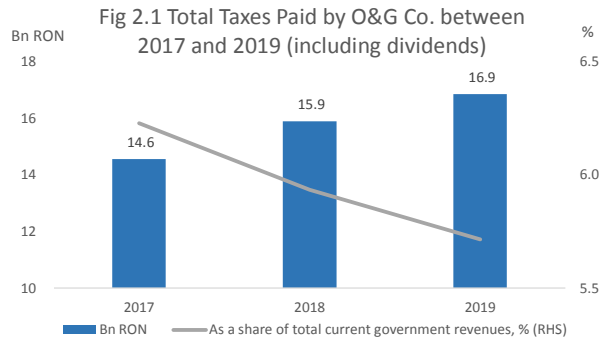
	Exploration*		Transport	Distribution	Storage
	Oil	Gas	Oil/Gas	Gas	Gas
<b>OMV Petrom SA (consolidated, includes OMV Petrom SA, OMV Petrom Marketing SRL, OMV Petrom Gas SRL, Petromed, OMV Petrom Aviation, OMV Petrom Global Solutions)</b>	x	x	x	x	
<b>SNGN Romgaz SA</b>		x	x	x	x
<b>Transgaz SA<sup>a</sup></b>			x		
<b>Conpet SA</b>			x		
<b>ExxonMobil Exploration and Production Romania Ltd - Bucharest Branch</b>	x	x			
<b>Amromco Energy SRL</b>	x	x			
<b>Expert Petroleum SRL<sup>b</sup></b>	x	x			
<b>Mazarine Energy Romania SRL<sup>b,c</sup></b>	x	x			
<b>Hunt Oil Company of Romania SRL<sup>b</sup></b>	x	x			
<b>NIS Petrol SRL<sup>b</sup></b>	x	x			
<b>Panfora Oil and Gas SRL<sup>b,d</sup></b>	x	x			
<b>Sand Hill Petroleum Romania SRL<sup>b</sup></b>	x				
<b>Stratum Energy Romania LLC Wilmington Sc Bucharest<sup>b</sup></b>	x	x			
<b>Fora Oil and Gas SRL<sup>b, e</sup></b>	x	x			
<b>Serinus Energy SRL<sup>b, f</sup></b>	x	x			

\* - includes companies providing ancillary services to the oil and gas sector; a – data compiled from company’s reports; b - data for these companies came consolidated from ROPEPCA; c – since 2019; d – data for years 2017 & 2019; e – data for years 2017 & 2018; f - data for 2017 alone.

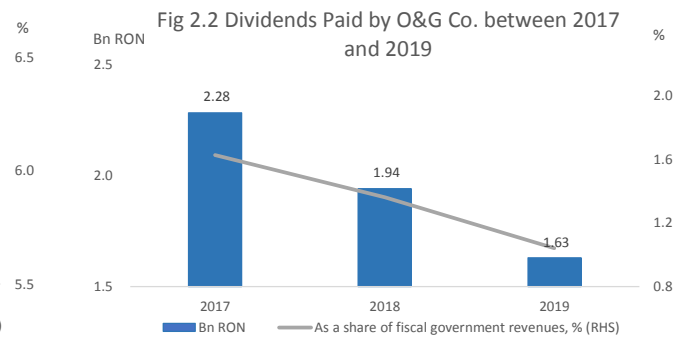
The following sections of the analysis quantify the impact of the oil & gas sector on: state budget and its various revenue components, investments, GDP and employment. The analysis also briefly touches upon labour productivity in the oil & gas sector.

## 2. Contributions of Oil & Gas Companies to the State Budget

**Total taxes<sup>6</sup> and dividends** paid to the state averaged RON 16 Bn. per year over the 2017-2019 period, the equivalent of 6% of current government revenues<sup>7</sup> (Fig 2.1). Dividends alone averaged RON 2 Bn. per year amounting to 1.3% of government fiscal revenues (Fig 2.2).



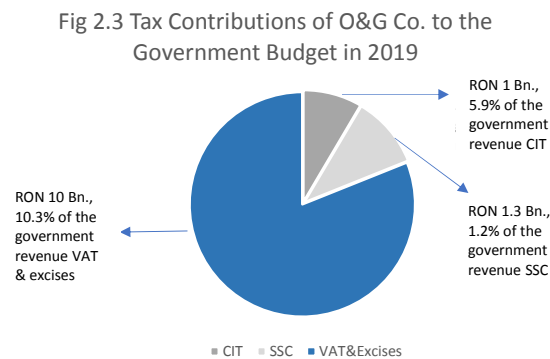
Source: Survey data and Ministry of Finance



Source: Survey data and Ministry of Finance

Although the total tax amount paid to the state by the oil & gas sector grew in nominal terms by almost 16%, quite a remarkable amount, over the 2017-2019 period, its share in government current revenues declined from 6.2% in 2017 to 5.7% in 2019. This occurred largely due to both economic factors (i.e., the changing structure of the economy) as well as increased regulatory uncertainty, notably the infamous government Emergency Ordinance (EO) 114/2018, which increased taxes further for the oil & gas sector. One of the consequences of the latter has been the fall in the total dividends paid, which dropped by almost 29% over the period.

**Tax contributions on CIT, SSC and VAT & Excises** categories are presented in Fig 2.3.



Source: Survey data and Ministry of Finance

<sup>6</sup> Total taxes include profit tax, all employee/employer-related taxes and contributions, sector-specific taxes and fees, VAT, excises, other local taxes.

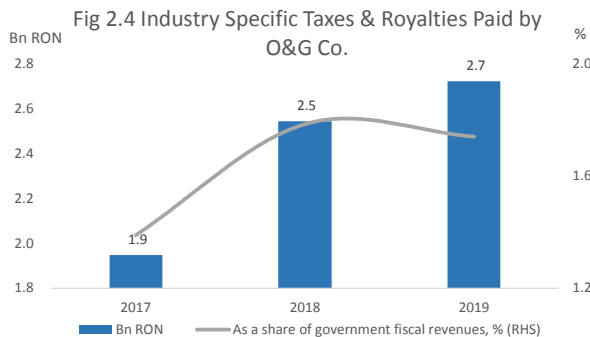
<sup>7</sup> Tax contributions are benchmarked either against government current or fiscal revenues. For the purpose of this analysis these are considered to be more appropriate than the total government revenues figure, which includes other non-fiscal components.

Thus, in 2019 the oil & gas sector contributed more than RON 1 Bn. in companies' corporate income tax (CIT) to the state budget – the equivalent of 5.9% of total government's CIT revenues. In 2018 this share was even larger, it stood at 6.8%, as CIT revenues are notoriously volatile with respect to the state of the economy.

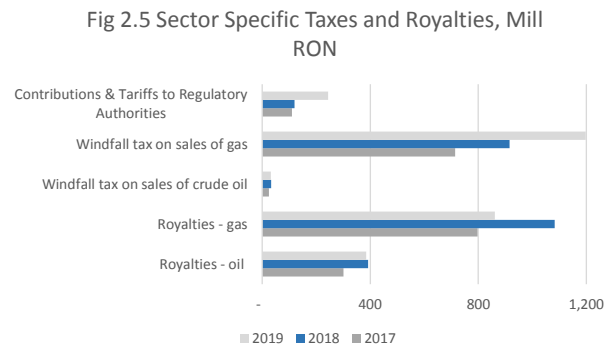
The oil & gas sector paid RON 10 Bn. in Value Added Tax (VAT) and Excises in 2019. This is the equivalent to 10.3% of the budget revenues the government collected in VAT and excises, a percentage which has remained stable over the 2017-2019 period. The oil & gas companies' ability to collect both VAT and excises and then transfer them to the state budget is a strength given that Romania's VAT gap rate currently stands at around 34%, the highest in the EU.

Social security contributions (SSC) paid to the budget amounted to RON 1.3 Bn. in 2019, marginally up compared to the values recorded in the previous two years. Overall, they represent 1.2% of total SSC raised at the economy wide level. Despite the higher level of gross wages in the oil & gas sector, the percentage of SSC is smaller compared to those of either CIT or VAT & excises. This is explained by the relatively low share of oil & gas sector employment in total employment (see the *Employment* section).

Sector-specific taxes such as contribution and tariffs to regulatory authorities, windfall taxes on sales of oil & gas and royalties are presented in Fig 2.4 & 2.5 below:



Source: Survey data and Ministry of Finance



Source: Survey data and Ministry of Finance

These represent sizable amounts, in 2019 for instance, sector-specific taxes, contributions and tariffs amounted to RON 2.7 Bn., the equivalent to almost 1.8% of government fiscal revenues. Natural gas bears, by far, the largest share of this fiscal burden. This share increased further in 2019 after the passing of EO 114/2018, despite the fact that higher taxation for the gas sector led to lower production and thus, lower royalties.



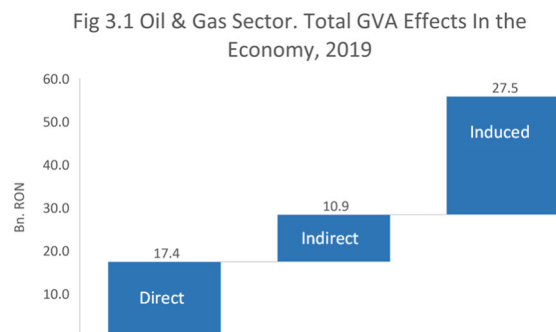
### 3. The Economic Impact

#### 3.1 The impact on GDP

The economic impact of the oil and natural gas industry comprises of both operational impact – due to acquisitions of intermediate inputs, payments of labour compensation, dividends and a string of other sector specific taxes – as well as its capital investment impact. This requires the estimation of three types of effects, which cumulated yield the total impact of the oil & gas sector in the economy. The three types of effects are related to the:

- Direct impact, which is measured as value added *within* the oil & gas industry. This impact relates to the work undertaken by the oil & gas companies across Romania, the profits generated by that work, the taxes paid and its employees as a direct result of this activity.
- Indirect impact which is measured as value added occurring *throughout the supply chain* of the oil & gas industry, as a result of the companies' procurement of inputs of goods and services from other businesses.
- Induced effect is measured as value added resulting from *household spending* of labour and proprietor's income earned either directly or indirectly from the oil & gas industry's spending. It comprises the wider economic benefits that arise from the payment of wages by the oil & gas companies and the firms in their supply chain to their employees, who spend their earnings in retail, leisure and other outlets.

The estimated figures for the 2019 economic impact of the oil & gas sector are presented in Fig. 3, below.



Source: Own calculations

The direct impact alone amounted to an estimated RON 17.4 Bn. in 2019, around 1.6% of Romania's GDP<sup>8</sup>, lower than 1.8%, the direct impact the industry had in both 2017 and 2018. Partially this was due to declining reserve replacement ratios, a low oil price environment and

<sup>8</sup> This is the equivalent to 1.8% of total Gross Value Added (GVA). The difference between GDP and GVA is given by net taxes, which is a sizable amount. In 2019 net taxes represented almost 10% of GDP.

adverse regulatory measures. Considering the last three years the oil & gas sector contribution to GDP rises above 1.7%. This represents around half of the contribution of the energy sector to the economy<sup>9</sup>.

However, total impact on the oil & gas sector in the economy, which cumulates direct, indirect and induced effects, is much more significant, amounting to between 5.3% and 5.9% of GDP over the period 2017-2019 (Table 3.1 below):

Table 3.1 – The GVA Effects of Oil & Gas Sector, % of Economy GVA

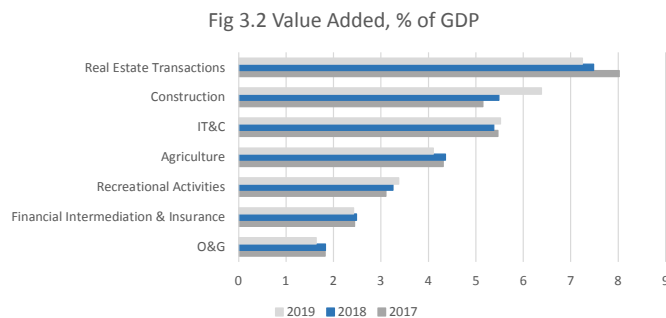
	2017	2018	2019
<b>Direct</b>	2.0	2.0	1.8
<b>Indirect</b>	1.3	1.3	1.1
<b>Induced</b>	3.2	3.2	2.9
<b>Total (% of GVA)</b>	6.5	6.5	5.8
<b>Total (% of GDP)</b>	5.9	5.9	5.3

Source: Survey data and own calculations

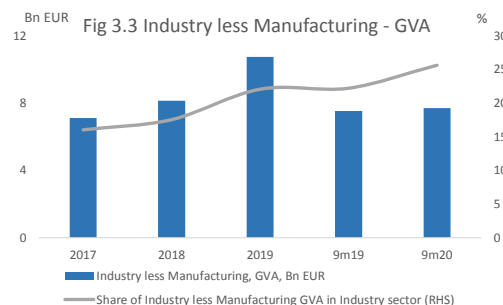
In relative terms, compared to other sectors in the economy the oil & gas sector has a sizable impact on GDP (Fig 3.2). For instance, its contribution to GDP represents:

- 67% of the Financial Intermediation & Insurance sector contribution to GDP, or
- 49% of the contribution to GDP attributable to the Arts, Entertainment and Recreational Activities sector, or
- 40% of the Agricultural sector contribution to GDP.

When interpreting these figures, it has to be borne in mind that all the sectors listed in Fig 3.2 (less the oil & gas sector) represent very large economic sectors – corresponding to the A\*10 industry breakdown, NACE.



Source: Own calculations and INSSE



Source: Eurostat

During 2019 the cumulative share of the subsectors which relate to the energy sector, i.e., 'mining and quarrying' and 'electricity, gas, steam and air conditioning production and supply'

<sup>9</sup> The energy sector contribution to GDP fell from around 4.9% in 2012 to an estimated 3.5% in 2018.

into the Industry sector (denoted in Fig 3.3 Industry less Manufacturing) rose from 16% to 22%. However, the tendency appears to have been reversed slightly in the first nine months of this year and it can be explained, partially, by the falling share of manufacturing and the increased impetus towards power generation.

### 3.2 The Employment Effect

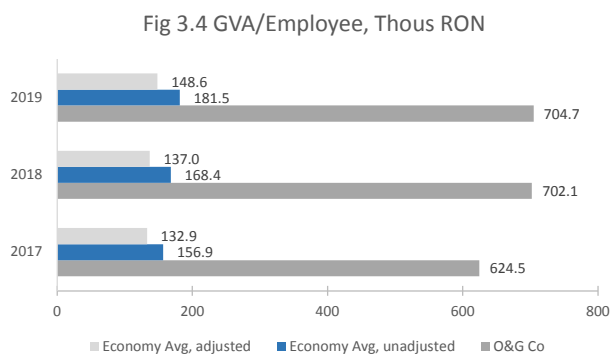
At the end of 2019 the oil & gas sector employed a little over 24,600 people (Table 3.2). This represents around 25% of the employment in the energy sector or 0.5% of the whole economy employment.

Table 3.2. Average number of employees, thousands

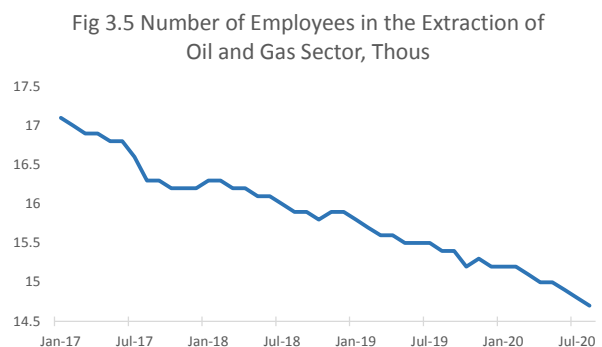
	2017	2018	2019
<b>Total Economy</b>	4,842.7	4,929.5	4,979.4
<b>Industry Sector</b>	1,382.2	1,384.6	1,362.5
<b>Mining and quarrying</b>	51.0	48.9	48.6
<b>Extraction of crude petroleum and natural gas</b>	16.6	16.1	15.5
<b>Electricity, gas, steam and air conditioning production and supply</b>	52.6	52.9	52.6
<b>Oil &amp; gas sector</b>	25.0	24.8	24.6

Source: Survey data and INSSE

At around 700 thousand RON/employee, the productivity of employees in the oil & gas sector is more than four times higher than the average economy labour productivity (Fig. 3.4). The latter was calculated in two ways, depending on the assumptions made on the total number of employees in the economy.



Source: Survey data and INSSE



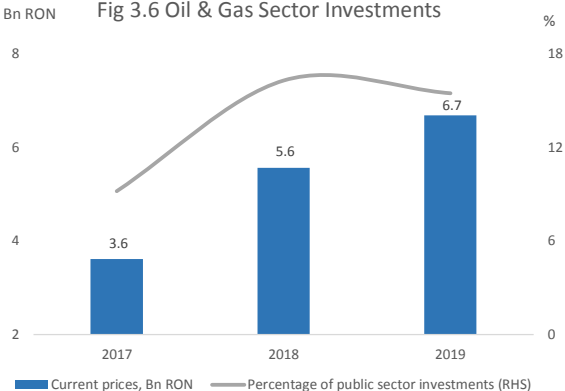
Source: INSSE

According to official statistics, the total number of employees was close to 5 million in 2019. The labour productivity calculated using this figure corresponds to the “Economy Avg. unadjusted” data in Fig. 3.4. However, there are a significant number of employees – most of them working in the various departments of the public sector, i.e., defence, secret service, etc. or registered sole traders – which are not included in the official statistics. In addition, some employees have more labour contracts registered on their name. Thus, adjusting the employment figure for these, it yields an even lower productivity figure for the whole economy – corresponding to the “Economy Avg. adjusted” data in Fig 3.4.

A small part of the increase in labour productivity in the oil & gas sector can be attributed to the falling number of employees. Over the last three years this dropped by 1.6%. The fall was much larger in the upstream segment, with employment in the oil & gas extraction going down by more than 11% (Fig 3.5). From an economic policy point of view, given the existence of large proven gas reserves, the recent fall in the sector’s skilled labour force is a worrying sign.

3.3 The Oil & Gas Sector Effects on Investments

The oil & gas industry is notoriously capital intensive. Investments are made on a long-term basis and face a high degree of risk, derived from changes in both economic conditions and legislation. Decisions about the future deployment of capital to position the oil & gas sector to prosper as the energy transition accelerates are in themselves difficult, without the added increased regulatory uncertainty. Despite all this, however, investments made by the oil & gas sector almost doubled in nominal terms over the last three years, reaching RON 6.7 Bn in 2019 (Fig 3.6).

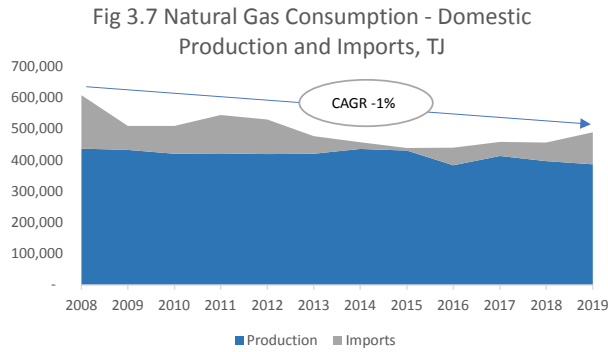


Source: Survey data and Ministry of Finance

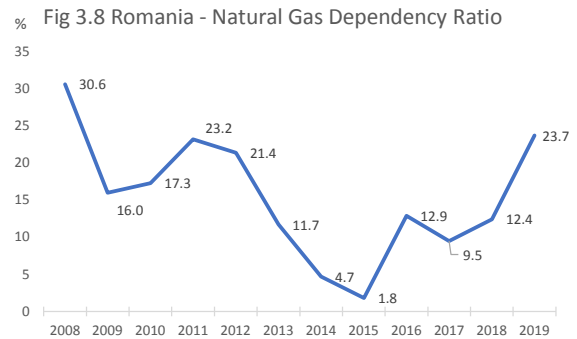
This largely reflects investments made by the upstream and gas distribution sectors. But, the true investments by the sector are certainly higher as the distribution sector is being under-represented in the current surveyed sample. Overall, the investments made by the oil & gas sector represented the equivalent of 16% of public sector investments in 2019.

### 3.4 The Romanian Gas Sector Diminishing Production

Since 2008 natural gas consumption has been falling at an annual rate of close to 1% (Fig 3.7). This reflects a mix of factors, from increased energy efficiency to the changing structure of the economy and legislative uncertainty.



Source: Eurostat



Source: Eurostat

However, falling domestic gas production and the increase in demand has led to a rise in the gas dependency ratio from almost 2% in 2015 to over 12% in 2018. Subsequently, following the disproportionate change in taxation of the gas sector, the increase in tax burden imposed by the EO 114/2018 acted as a disincentive for the domestic natural gas production. This led to increased imports, pushing up the gas dependency ratio to almost 24% in 2019.

Given the recently acquired benefits of “technology neutrality”, natural gas seems to have a large potential for further development in Romania, at least for the next decade<sup>10</sup>. The authorities’ investment plans envisage an expansion of the gas distribution & transport infrastructure over the next 6 years. It aims at increasing the share of households which are connected to natural gas from the current 35%. Additional demand could come from planned investments in the gas fired power plants. All these projects should be subject to economic evaluations.

The projected raise in demand for natural gas together with potential enhanced inter-country gas pipelines connectivity<sup>11</sup> would create an immediate scope for increasing the domestic gas production opportunities. As such, one of the energy policy objectives should be to overcome the legislative hurdles, which could make the natural gas investments in the Black Sea economically viable, thus promoting energy development and enhancing energy security.

<sup>10</sup> This will depend on several other factors including, ultimately, the development of cost-effective CO2 capture and storage technologies.

<sup>11</sup> In November 2020 a relatively large section of the BRUA pipeline was completed.

#### **4. Concluding Remarks**

The results in this analysis show that, despite the gradual decreasing importance of the oil & gas industry in the economy over the last years, the sector still remains an important contributor to Romania's GDP growth. Oil & gas sector represents around 1.7% of GDP, almost half of the whole energy sector. And, the total impact on the oil & gas sector in the economy (i.e., including direct, indirect and induced effects) is large, averaging 5.5% of GDP over the last three years.

The oil & gas sector remains a large contributor to the state budget paying the equivalent of 6% of current government revenues. Investments made by the oil & gas sector are also significant, amounting to a sixth of public sector investments.

The future development of the domestic oil & gas industry, and in particular of natural gas, will largely depend on the authorities passing the necessary legislation so that investments in the sector – especially those related to the deep-water gas projects – become economically viable. The EU's Green Deal action plan implies that there is a relatively limited window of opportunity in which these investments could still be profitable made. However, if the oil & gas sector was still to play a role in the energy transition process – which is a reasonable assumption – investments in the sector would positively impact GDP growth and sector's fiscal contributions to the budget for years to come.