



PREPARED BY THE BUCHAREST
UNIVERSITY OF ECONOMIC STUDIES

KMG International

Economic Impact Assessment

2016



KazMunayGas
International



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Căruia
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 Creați performanță
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 CARBURANTUL CARE PROTEJEAZĂ MOTORUL

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A photograph of a Rompetrol gas station at night, with the station's canopy and pumps visible. The scene is overlaid with a semi-transparent blue and green graphic containing the text 'Executive Summary'.

Executive Summary

NC “KazMunayGas” JSC (KMG) is the national operator for exploration, production, refining and transportation of hydrocarbons in Kazakhstan, with operations in Europe and Central Asia.

KMG entered the Romanian market in 2007, through the acquisition of Rompetrol Group N.V, later renamed into KMG International N.V.

As of December 2015, KMG International (KMGI) comprises 55 entities, headquartered in 16 countries (i.e. Romania, The Netherlands, Kazakhstan, Switzerland, Bulgaria, Republic of Moldova, Georgia, Turkey, Ukraine, France, Spain, Singapore, Libya, Iraq, Oman, Gibraltar).

KMGI's activities include trading of crude oil, oil refining, retail and marketing of oil products in Romania and countries in the Black Sea Region.

Given the ownership structure, KMGI is acting as an integrated company enjoying direct access to crude from Kazakhstan, as well as funding for strategic investments and working capital.

Throughout 2007-2014, KMGI implemented successive modernization programs of its refining assets, logistic infrastructure, as well as for the extension of its distribution network accounting more than USD 1.6 billion.

As a result of the investment efforts, currently KMGI owns one of the most complex and productive refineries in the South East Europe - the Petromidia Refinery, next to the Vega Refinery, the only Romanian producer of polymer – modified road-use bitumen, n-hexane, as well as niche products (solvents, environmental – friendly heating fuels).

KMGI's distribution network includes over 1,100 distribution points in Romania, Moldova, Georgia, Bulgaria, France and Spain.

Contribution to Energy Security

The European Union's energy policies seek to ensure reliable provision of energy whenever and wherever needed, a competitive environment that ensures affordable prices for homes, businesses, and industries, as well as to make energy consumption sustainable.

According to the European Energy Security Strategy, currently Europe has sufficient refining capacity to meet overall demand for petroleum product. However,

the Strategy acknowledges a high dependency of EU's refining industry of Russian crude oil, as well as increased challenges of the EU refining sector to remain competitive, a fact which is evidenced by the reduction in refining capacity and foreign investment.

Competitiveness and sustainability of the refining industry and reducing dependency of crude suppliers by diversification of crude sources become of outmost importance to ensure secured and sustainable supply, as well as affordable market prices for fuel products.

In Romania, the oil & gas industry has known an explosive growth between 1960 and 1980, when five major refineries were built. These resulted in a processing capacity which exceeded the national consumption and production of crude oil. As such, the industry was heavily dependent on the import of crude, from OPEC members and Russia, and on the export of refined products on external markets, which were however dominated by integrated international players.

The refining sector has declined during 1980-1990, as a result of Romania's intention to pay its foreign debts and subsequent interdiction of foreign exchanges.

In order to revive the sector, in 1997 the National Society for Petroleum (SNP) was set up as state owned integrated company, taking over the exploration activities, as well as two refineries and an extended distribution and storage network. SNP became the single most integrated oil & gas company of Romania.

On the other hand, the remaining stand-alone refineries were opened for privatization. The privatization of SNP followed later on, being called for in the context of Romania's accession to the EU.

The privatization process of Romanian refineries took place between 1999 and 2004, with investors receiving various benefits such as exemption for payment of fiscal debts and environmental liabilities, and in the case of SNP stability of exploration taxes and royalties.

However, due to international evolutions in the oil&gas sector affecting the price of crude oil, as well as due to lack of integration and access to funding for retechnologisation investments, only four of the Romanian Refineries are currently still being operated by three major oil companies.

KMGI's refining capacity, through Petromidia and Vega, represents 44.6% of the total operational processing capacity of Romania. Moreover, KMGI is able to cover 70% of the current internal demand for diesel and gasoline, by sourcing crude from Kazakhstan to its highly versatile refinery in Petromidia.

According to the draft version of the National Energy

Strategy (February 2016), it is estimated that the national oil reserves can cover internal demand for the following 20 years. In order to preserve the national resources, imports of crude carry a vital weight in Romania's energy strategy as well as diversification of sources, suppliers and routes.

Unlike neighboring countries such as Hungary or Bulgaria, who are heavily relying on a single source of crude, in addition to its own national resources, Romania has access to crude from Russia, as well as Kazakhstan.

KMGI's imports from Kazakhstan cover approximately 40% of Romania's refinery intake.

KMGI has a significant contribution to secure Romania's diversity of crude oil supplies and thus, to reduce vulnerability in case of an energy disruption. Crude oil reserves in Tengiz and Kashagan which stand as Kazakhstan's biggest oil producing fields can further expand sources available for Romania.

In addition to the direct access to crude, **KMGI is making its contribution to ensuring regulated safety stocks. As one of the biggest oil companies in Romania, KMGI ensures the second largest stock reserves of crude oil and petroleum products.**

One of KMGI main objective is full compliance with the European Union and international environmental legislation. **Between 2013 and 2015, KMGI allocated approximately USD 90 million to address European fuel standards, legal aspects and environmental protection.**

Economic Impact

Given the nature and extent of its operations and activities, KMGI plays an important contribution to the economic growth of Romania.

KMGI is the third largest taxpayer in Romania, its contribution to the national budget ranging from 2.5% to 3% of the total Government revenues between 2013 and 2015. KMGI's contribution to Government revenues, in the same period, may have accounted for the construction of 16,466 kindergartens, 10,466 schools or 48 hospitals.

Furthermore, KMGI is authorized by Romanian authorities to operate production tax warehouses. This has an overall positive impact on administrative cost for tax collection, as the tax warehouse represents a single and controllable point generating a predictable value of due excises.

KMGI's activities and investments in Romania

accounted for 1% to 1.2% of the national Gross Domestic Product (GDP) in the period 2013-2015.

KMGI's contribution to GDP includes direct, indirect and induced Gross Value Added (GVA) as well as indirect taxation of production.

The total foreign direct investment of KMGI amounts to USD 1.6 billion of equity participation and loans placed in its Romanian entities during 2007-2011. This proved to be of critical importance for maintaining and further developing the activities of two of the four main refining units in Romania, in a period marked by the financial crises and reduced inflows of FDIs in Romania.

In addition, KMGI contributes to the import-export balance of Romania, by importing crude and exporting secondary, high value refined products accounting for more than 4% of the value of exports of the overall manufacturing industry in Romania.

KMGI is one of the biggest employers in Romania supporting directly 4,772 jobs. For each workplace created within KMGI, an additional 2.25 workplaces are created within the economy.

KMGI generates high quality employment, by fostering competences of its employees, as well as focusing on their health and safety. The Group is growing a talent pool of experts and leaders who benefit of customized support to develop their careers and to be exposed to international activities and projects.

KMGI employs a group of highly specialized workforce with reduced options for comparable professional reconversion, especially in the SE region which presents unemployment level exceeding national averages. The Group is also keen on supporting young talent (aged below 35 years), which is one of the categories most affected by unemployment in Romania. All employees are included in performance and career programs.

Not the least, KMGI fosters multicultural diversity through various employees' events, such as Sports Academy, Kazakh Film Festival or Asian New Year.

Support to Communities

KMGI implemented in Romania a number of initiatives aimed at raising the standards in the areas of environment, health and safety, culture, education and leadership. **KMGI annual programs such as "Together for each and everyone", partnership and sponsorship programs and initiatives driven by employees amounted to more than USD 1.5 million/year.**



Hard hat and safety glasses

ZONA 2
EXIBIT3

ABUR

CONDENS

city bike

city bike



About KMGI

Integrated State-Owned Company

NC "KazMunayGas" JSC (herein after referred to as KMG) is the national company of Kazakhstan for hydrocarbon exploration, production, refining and transport, which represents the state's interests in the oil and gas industry.

90% of KMG shares are owned by Samruk Kazyna, the National Welfare Fund, and the remaining 10% of shares are owned by the National Bank of the Republic of Kazakhstan.

KMG is a vertically integrated oil & gas company, which produces 28% of the total volume of oil and gas condensate production in Kazakhstan and 16% of the natural and associated gas, ensures 65% of oil transportation via 2 oil pipelines, 77% of oil transportation by tankers from Aktau port, and 95% of natural gas transportation via main gas pipelines, refines 82% of Kazakhstan oil with a 17% share of the retail oil products market.

International Operations

KMG operates in Europe and Central Asia.

In Romania, KMG acquired 100% of the Rompetrol Group N.V. shares. The Group was renamed into "KMG International" (KMGI) in 2014.

KMG's decision to invest in Romania was mainly related to the strategic position of Petromidia Refinery having direct access to Black Sea, which facilitates the import and export of crude and respectively, refined products.

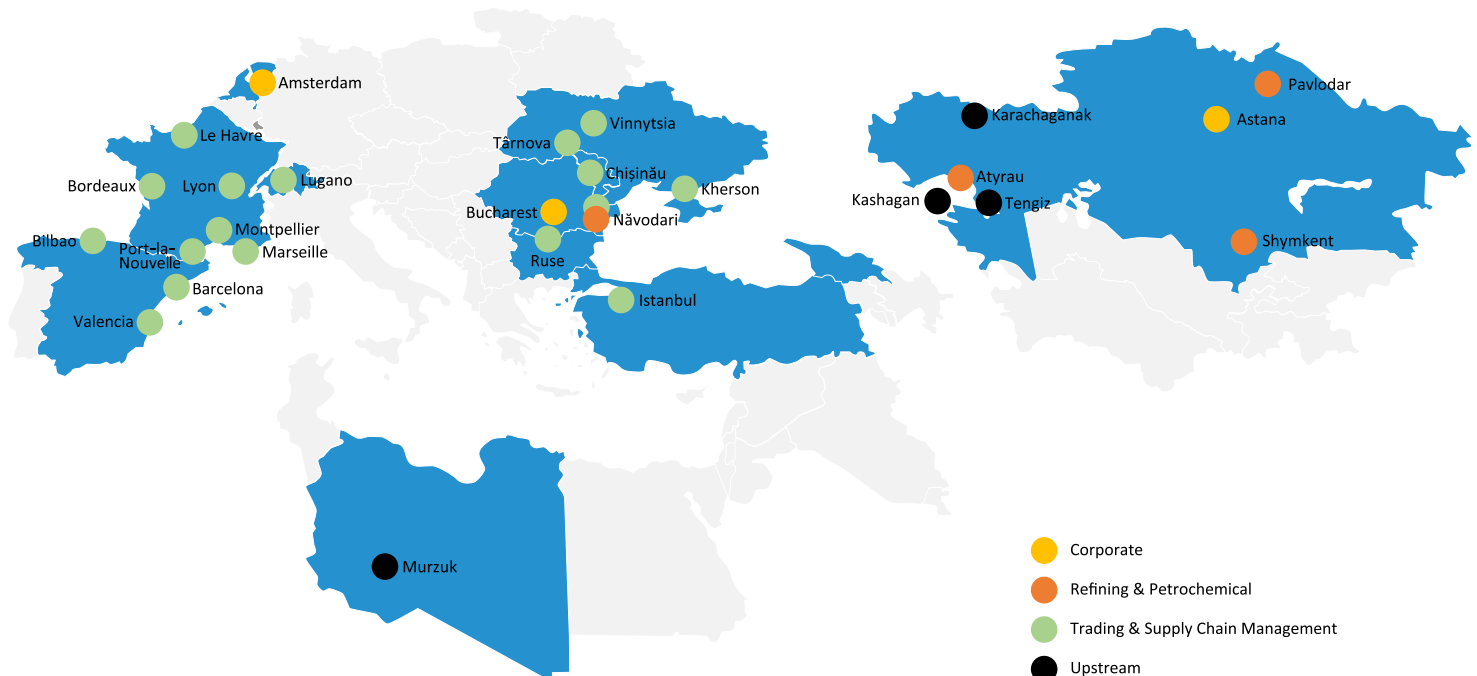
Most of KMGI assets and operations are based in Romania; however, KMGI also operates in Switzerland (trading operations), South- Eastern Europe, France and Spain (Dyneff group, 51% of shares being sold at the end of 2015 to CEFC).

Refining, Trading and Retail

KMGI activities include trading of crude oil from Kazakhstan (being the sole trader for some of KMG crude reserves), oil refining, retail and market of oil products.

Fig. 1 Map of KMGI Operations

Source: KMGI Sustainability Report, 2014



KMGI's **vision** is to be a competitive, profitable, sustainable, diversified and integrated oil company in the Black Sea region, focused on the development of international business.

KMGI's **mission** is to maximize profits from refining, petrochemicals, marketing of crude oil and oil products on foreign markets and to deliver competitive and quality products and services to clients.

Refining and Petrochemicals

KMG I owns one of the most modern refineries in South-Eastern Europe and the largest refinery in Romania – Petromidia Năvodari, located in the South East Region of Romania (Constanta County), on the Black Sea shore.

Petromidia Refinery attracted KMG investment in 2007, for several reasons:

- Firstly, Petromidia stood as sophisticated refinery, (currently with a high Nelson Complexity Index of 10.3), which could process a large array of crude oils, with various sulfur content and API gravity (density relative to water).
- Secondly, the Refinery had at the time, one of the highest white product yields in the region and a large installed processing capacity of 3.7 million tons/year. Its capacity, however, was not fully used at the time.

- Thirdly, Petromidia had a unique location on the Black Sea shore in Navodari, 20 km North of Port of Constanta. Its position facilitates direct access to raw materials transported via the Black Sea.
- Moreover, Petromidia operated its own logistics: railway, access to the Danube-Black Sea Channel, Port of Midia.

In order to increase effective utilization of the refining capacity and efficiency and safety of operations, **KMG I invested between 2007 and 2015 approximately USD 1.4 billion in the modernization of Petromidia Refinery.** Among others, the investment program included 9 major projects:

Fluid Catalytic Cracking Unit revamping; Claus Unit revamping; Amine Unit revamping; Upgrade from VGO to DHDS Unit; New Air Separation Unit (ASU); New Flare system; New Mild Hydrocracking Unit (MHC); New Hydrogen Unit; and New Sulfur Recover Unit.

Fig. 2 KMG in Romania
Source: KMG I Sustainability Report, 2014

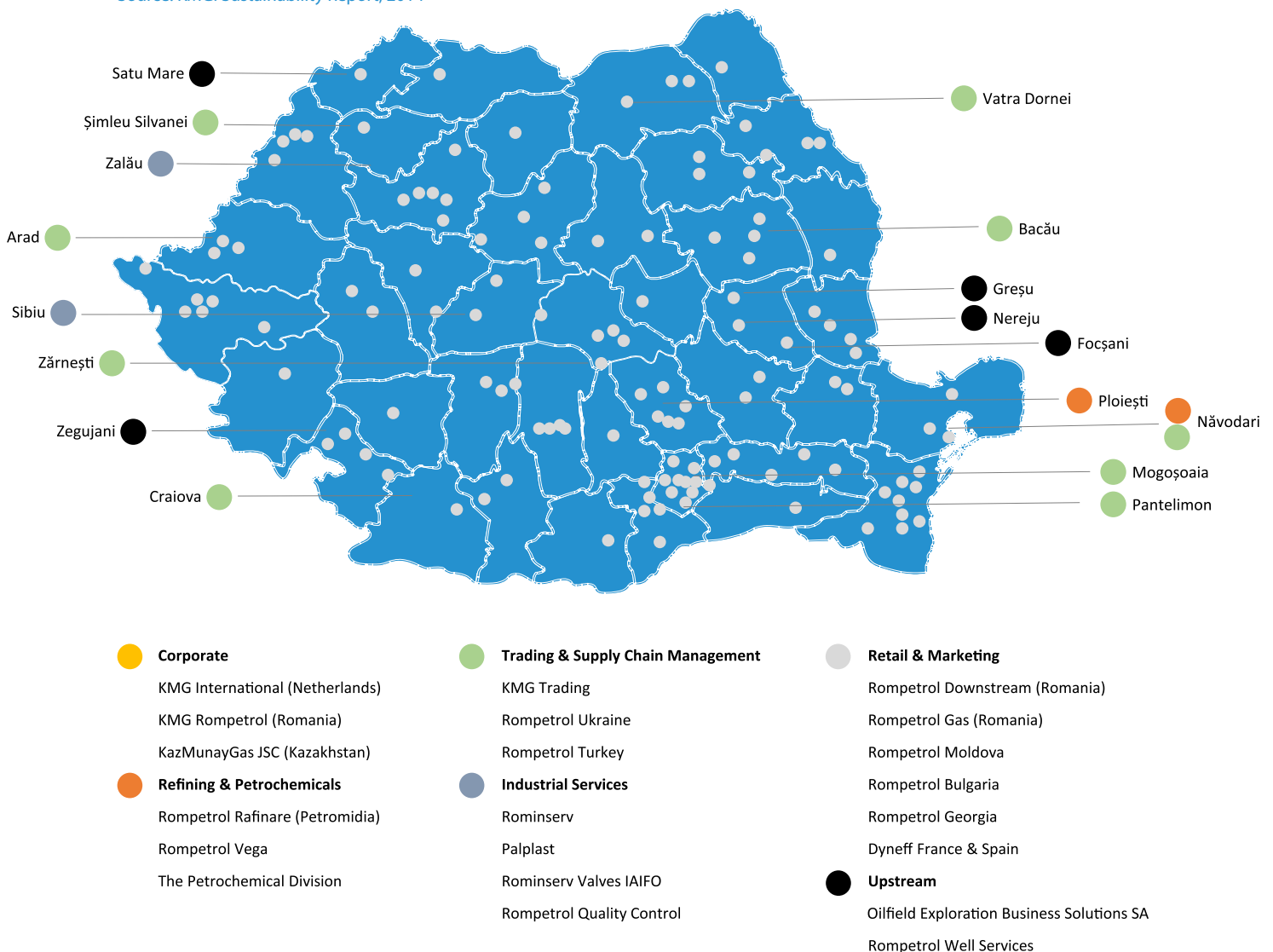


Table 1: Upgrade of Petromidia's Refining Indicators

	Unit of measure	Prior to upgrade	After upgrade
Capacity	mn t/yr	3.7	5
Nelson Index	%	8.3	10.3
Diesel yield	%	37.2	50
White products yield	%	83	85.7
Unit viability	%	94	97
Energy Efficiency	points	120	90.8
Operational Costs	USD/t	28	14
Sulphur Content Limit	PPM	50	10

Source: Company data

The investment programs had several specific objectives:

- **To increase the operating capacity** to 5 million tons/year. Notably, in 2014 the refinery recorded the highest value of processed feedstock: 5.053 million tons. In 2015, the refinery worked at full capacity of 15,150 tons of raw material per day. Moreover, the improvement of the Refinery's mechanical and operational availability (93.46% in 2014) led to highest Energy Efficiency Index of 90.8 points (Q2 2016).
- **To increase Diesel fuel production** from 1.4 to 2.47 million tons/year by investing into the construction of mild hydro-cracking plant, which ensured a 76% increase of Diesel fuel production. In 2015, fuel yields (Gasoline, Diesel, Jet fuel, automotive GPL) amounted 75.5%, while, out of those, Diesel alone was 50% (record values for the refinery).
- **To ensure high-quality petroleum products** that comply with EU environmental standards. The building of hydrogen and hydro-cracking plants and transformation of the vacuum distillate desulphurization plant into a Diesel oil desulphurization unit ensured the transition and exclusive production from Euro 4 to Euro 5, with a Sulphur content of 10 PPM, in accord to the European Commission Directive 2003/17.

KMGI also operates Vega Refinery, a 110 year-old refinery located in the South-Muntenia Region of Romania (in Ploiesti), which evolved from a classical oil refining unit to a producer and provider of special products, obtained from semi-finished materials delivered by Petromidia Refinery.

The Vega Refinery is the only Romanian producer of Extraction Gasolines used in different industries, such as: varnishes and dyes, rubber processing, extraction of food oil, production of solvents and degreasing substances. In the same time, it is also the only producer of n-hexane in Central and Eastern Europe.

At the end of Q2 2016, Vega processed a total quantity of raw materials amounting to 171.5 thousand tons, a 9% increase compared to Q2 2015. Furthermore, in the same period, Vega reached 104% use rate, 9% increase



compared to Q2 2015.

Both refineries work in full synergy, manufacturing high-added-value products.

Trading and Supply Chain

Trading ensures the supply with raw materials for the Petromidia and Vega Refineries and for the petrochemical division.

Approximately 80% of the crude is imported from Kazakhstan, ranked 12th in the world proven reserves of oil and gas condensate, 22nd in natural gas reserves and 17th in oil and gas production.

It also ensures the transfer of petroleum products to its subsidiaries in Romania, Bulgaria, Moldova, Georgia, Turkey and Ukraine, and to its partners in the Black Sea and Mediterranean Sea regions.

In 2009, KMGI finalized Petromidia's logistic infrastructure project amounting to USD 100 million investment to put into operation Midia Marine Terminal, in the Black Sea offshore. This led to increased efficiency and safety of the supply with crude to Petromidia Refinery. Between 2009 and 2016, the volume of crude oil unloaded reached 25.5 million tons.

Additionally, the capacity extension of Berth No.9 (9A, B, C) increased the transfer capacity of petroleum products by threefold, over 35,000 tons/month.

Retail and Marketing

After an investment program amounting to USD 59 million for the expansion of the distribution network and rebranding of filling stations, currently KMGI operates in Romania 716 distribution points, 10 warehouses, 230 LPG supply stations and 9,000 distribution points for gas tanks.

The distribution network includes own filling stations, Partner stations, Express mobile stations and Fill & Go Fixed Units, internal and external distribution channels.

The Partner network was established over the years, with a series of independent filling stations.



The Express mobile station appeared as a need to cover rural areas and continued with the development of Fill & Go Fixed Unit concept, tanks of 9 cm and 20 cm installed on the premises of car-fleet owning companies.

KMGI coordinates the activity of 10 warehouses located strategically in Arad, Bacău, Craiova, Ilfov, Mogoșoia, Năvodari, Șimleu Silvaniei, Vatra Dornei and Zărnești, ensuring the fuel distribution flow countrywide.

Due to the modernization of Petromidia Refinery, which significantly increased its capacity, the retail network will continue to be expanded during the following years. In 2016, KMGI opened through Rompetrol Downstream two new stations and plans to open an additional nine by the end of the year.

At the same time, in 2016, KMGI continued the modernization programs for the existing stations and the program for optimizing and improving the financial and operational performance.

Industrial services and upstream

Part of KMGI, Rominserv Valves Iaifo (Zalău) is one of the biggest producer of cast iron and steel valves and safety valve springs in Romania. The company's products are destined for the oil & gas industry; transportation and storage; refinery and petrochemicals; energy industry; and water, steam and heat industries.

KMGI owns also Palplast Sibiu, one of the top producers of HDPE pipes and fittings for water, natural gas, irrigation, sewerage and telecommunications networks in Romania.

The Laboratory Division of KMGI, Rompetrol Quality Control - RQC, is one of the top laboratory analysis companies on the national market. Since its establishment in 2004, RQC granted ongoing support to its customers in their efforts to identify and implement the safest and most effective ways to protect the environment and provide high quality products.

Non-core activities

The Non-core activities include support functions such

as advisory, strategic management, reporting, finance and accounting, human resources, procurement and health, safety and environment.

Since 2013, KMGI has been implementing a Business Transformation Program with a view to direct its resources on areas which have the highest potential of value creation in order to improve overall performance.

Overall, by transforming itself, KMGI has improved its financial and operating indicators and equaled performance levels of its Western European peers.

The first stage of the Business Transformation Program "Change for Good" started in August 2013 and revolved around a reshuffling of the strategic direction, while the next actions brought a redesign of the operating model.

The second major milestone of the Transformation Program consisted in the "operationalization" of the strategy and of the structure that has been set forth: at the level of each Business Unit several improvement initiatives were defined and put in force. The "transformation projects" were designed in such a way that they would specifically tackle the improvement potential at the level of each business function.

In early 2015, KMG International decided to approach business transformation in a centralized manner, and to improve capitalization on business projects' benefits. The major improvement factor brought by the Program in KMGI is the institutionalization of the transformation efforts: until 2015 projects ran independently, being driven at the level of each Business Unit; under the revised Program, a new business structure is being responsible for the full-time coordination of all transformation related aspects (revalidation of the performance gaps, approval of transformation projects and overview of their implementation). The new Governance Framework brings a centralized overview and additional clarity towards progress in achieving objectives set forth for transformation.

Thus, KMGI Transformation Program serves as a leading practice example for KMG and other Oil & Gas companies, contributing towards alignment of businesses on the long-term journey towards a more competitive Business Model.





Contribution
to energy
security

European Energy Security Strategy

Europe is currently tackling a series of energy challenges, such as its high dependence on energy imports (highest dependence being for crude oil - more than 90%), rising global demand and scarcity of fuels like crude oil or continued use of fossil fuels leading to global warming and pollution.

In order to address them, the **European Union's energy policies seek to ensure reliable provision of energy whenever and wherever needed, a competitive environment that ensures affordable prices for homes, businesses, and industries, as well as to make energy consumption sustainable**, through the lowering of greenhouse gas emissions, pollution, and fossil fuel dependence.

The European Energy Security Strategy (European Commission, 2014) and the subsequent Energy Union package (European Commission, 2015) sets the basis for increased energy security, competitiveness and sustainability of European countries. The European directions have been embedded also in the Romanian strategic framework (Ministry of Energy, 2016).

First, **energy security is reached by diversifying external energy sources, suppliers and routes**, lower energy consumption and increased energy efficiency. Such an objective comes as a counter measure for external energy shocks (shortages or disruptions).

Second, **competition is ensured by an increased transparency in the composition of energy costs and prices**. The EU strives for a reduction of diesel tax incentive, equilibrium between refinery capacity and oil product consumption and favorable taxation for alternative fuels (i.e. renewables).

Third, **energy sustainability is achieved by low carbon economy investments**. This includes a series of measures to reduce greenhouse gas emissions and consumption of transport fuels.

European Oil Market

According to the European Energy Security Strategy, Europe currently has sufficient refining capacity to meet overall demand for petroleum products, being a net exporter of gasoline and a net importer of diesel, mainly from Russia and the USA.

Due to the interdependence between the EU, the US, and Russia in relation to oil, the availability of oil stocks, and the ability to trade and transport oil globally, it is believed that there are no immediate threats for the EU in relation to its oil supplies.

However, amongst issues requiring close monitoring and strategic coordination at EU level, the Strategy identifies:

- **High dependency of EU's refinery industry of Russian crude oil;**
- **Increased concentration in the Russian oil industry, and increased ownership of EU refinery capacity by Russian oil companies.**

The Strategy acknowledges also the increased challenges of the EU refining sector to remain competitive, a fact which is evidenced by the reduction in refining capacity and foreign investment, which add to the increased dependence on Russian crude oil.

As such, competitiveness and sustainability of the refining industry as well as reducing dependency of crude suppliers by diversification of crude sources become of outmost importance to ensure secure and sustainable supply, as well as affordable market prices for fuel products.

Romanian Oil Sector

The outlook of Romanian oil sector follows broadly the European tendencies.

In 1960, Romania processed 10 million tons of crude oil per year. All crude oil came from national reserves to meet the domestic consumption of a population of 14-million people. At that time, only small refineries with a processing capacity of less than 2 million tons of crude oil per year were active.

In the late 1960s and early 1970s, a plan was developed to build new refineries to process imported crude oil, although Romania had no competitive advantage to do so, other than expertise. (Bechtel; Chem System, 1994)

Five new refineries were built, each with a capacity of 5 million tons/year. **The actual processing capacity amounted to 32 million tons/year**, exceeding by far the internal demand for domestic and industrial purposes, as well as the internal crude production (22 million tons of crude was imported from Iran and Iraq and 10 million tons from national resources).

In 1980, President Ceaușescu decided that Romania should pay its foreign debt and for three consecutive years, no foreign exchanges were possible. As a consequence, refineries could not buy essential parts and catalysts and **by 1990, the plants were in a dilapidated state.** (Bechtel; Chem System, 1994)

Throughout the 1990s, the total processed crude oil decreased significantly. The refineries had no working capital and could not afford to buy enough crude. Any foreign exchange generated was used to repair the plants and replace catalysts. **Debt between suppliers**

and customers increasingly mounted, reaching unacceptable levels. (Bechtel; Chem System, 1994)

In 1993, the Government of Romania decided to impose greater financial discipline into the sector by controlling imports and exports. Previous import arrangements established by individual companies were discontinued (e.g. imports from Iran).

In 1994, the need for restructuring the oil industry was urgent, in particular to ensure the transit towards the market economy, to address the overcapacity in refining and the need for modernization investments, and finally to make the sector more economically and financially viable.

As a first step, the Government Emergency Ordinance No. 49 / 1997 established the National Petroleum Company "Petrom", an integrated company, having in its structure the national exploration and production capacities, two refineries in Pitești (Petrobrazi and Arpechim), all PECO distribution gas stations, as well as the transport and depot network.

The remaining stand-alone refineries were put up for privatization, which was successfully carried out only for three of them:

- **Petrotel Refinery:** The Russian company OAO LUKoil acquired 51% share in Petrotel Refinery in 1999, for approximately USD 300 million (SeeNews, 2011). The privatization was facilitated by the Emergency Ordinance No. 92 /2002, which exempted LUKoil from payment of fiscal debts totaling RON 93 billion (i.e. USD 27 billion).
- **Petromedia Refinery:** After two failed attempts to privatize Petromedia Refinery (in 1997 and 1998), the Dutch-based company Rompetrol Group BV acquired 70% shares in Petromedia Refinery in 2000, for USD 50.5 million in cash and another USD 205 million in pledged investments over a period of five years (SeeNews, 2011). Subsequently, the refinery was bought by KMGI, along with its historical fiscal debts. The Governmental Order 118 /2003, approved through Law 89 /2005, allowed for the conversion of fiscal debts into interest bearing bonds for a period of 7 years.
- **Vega Refinery:** Rompetrol Group BV acquired 51% shares in Vega Refinery in 1999, for USD 330 million in cash and commitment to invest in refinery's installations over the following four years (SeeNews, 2011). The refinery is currently owned by KMGI.

Finally, as a prerequisite for its accession to European Union, the Romanian Government had to continue the privatization process of state-owned companies (negotiation sub-criterion "Privatization of state-owned companies").

As part of this process, the National Society of Petroleum "Petrom" along with the two refineries Petrobrazi and Arpechim (the second is currently closed) were put up for privatization.

- **Petrobrazi Refinery:** The Austrian company OMV AG acquired 51% shares in Petrobrazi Refinery in 2004 (SeeNews, 2011). The privatization was facilitated by the favorable contractual conditions: exemption of historical fiscal debts and environmental liabilities, as well as stability of exploration taxes and royalties (Romanian Ministry of Economy and Commerce, 2004).

Table 2: Outlook of Refining Capacity in Romania, 2016	Status	Capacity (mn t/yr)
Petromidia	operational	5.0
Petrobrazi	operational	4.3
Onești	closed	3.8
Arpechim	closed	3.5
Petrotel	operational	2.4
Dărmănești	closed	1.8
Vega Ploiești	operational	0.4
Steaua Română	closed	0.4
TOTAL		21.6

Source: Wood MacKenzie

Contribution to Covering Domestic Demand for Fuel Products

Through Petromidia and Vega, KMGI accounts for 44.6% of the total available processing capacity in Romania, being able to cover approximately 70% of the internal demand for diesel and gasoline.

Table 3: KMGI production of Diesel and Gasoline in the overall internal demand	U.M.	2013	2014	2015
Internal demand for fuel	mn t	5.0	5.7	6.0
KMGI Diesel and gasoline	mn t	4.3	3.9	4.1
Coverage of internal demand	%	73	68	68

Source: National Institute of Statistics, Company data

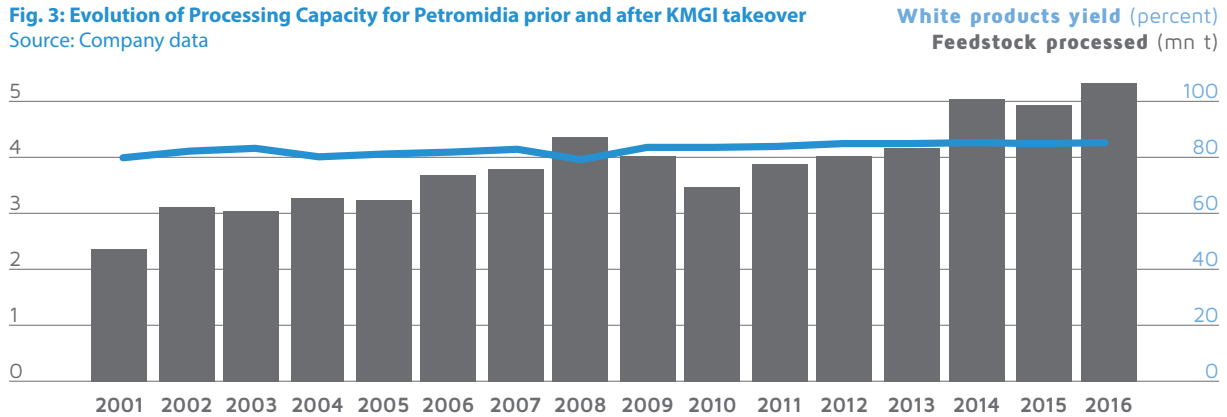
Petromidia Refinery's preeminent role in covering the national consumption of refined products has been established and is continuously supported by KMGI's investments.

KMGI can ensure continuous supply of refined products to the national market by sourcing high Sulphur crude oil from Kazakhstan to the Petromidia refinery.

In 2015, Petromidia Refinery recorded historical maximum values of productivity: 96.9% mechanical availability, over 15,000 tons/day of processed raw materials, with 50% Diesel fuel yield.

Fig. 3: Evolution of Processing Capacity for Petromidia prior and after KMGI takeover

Source: Company data



Diversification of Oil Supply

According to the draft version of the National Energy Strategy (Ministry of Energy, 2016), it is estimated that the national oil reserves can cover national demand for the following 20 years.

In order to preserve the national oil reserves, imports of crude carry a vital weight in Romania's energy strategy. Furthermore, in order to counter situation of tight energy supply, the EU aims for a wider range of sources, suppliers and routes.

Thus, KMGI contributes significantly to securing Romania's diversity of crude oil supplies.

Unlike neighboring countries such as Bulgaria and Hungary which heavily rely on a single major crude oil supplier, Romania has a solid market standing. In addition to its national reserves, Romania relies on crude oil imports from Russia by Lukoil and Kazakhstan by KMGI.

Overall, KMGI's imports have covered approximately 40% of Romania's refinery intake and aided the preservation of national primary energy sources. Crude oil reserves discovered in Kazakhstan will further expand crude oil volumes available for Romania. Most notably, Tengiz (onshore) and Kashagan (offshore) stand as Kazakhstan's biggest oil producing fields.

Under the 1993 joint venture company Tengizchevroil (TCO) in which KMG holds 20% share, Tengiz field (Northwestern Kazakhstan) was developed as one of world's deepest supergiant oil reservoir, with an estimated 3.1 billion tons. With a current 27 million tons/year output that covers over 1/3 of total crude oil in Kazakhstan, Tengiz 2016 expansion seeks to reach 39 million tons/year output in 2022.

Under the North Caspian Sea Production Sharing Agreement in which KMG holds a 16.88% share, the 2000 finding of the giant Kashagan oil field in the Northern part of the Caspian Sea marked the world's

largest oil discoveries of an estimated 4.5 billion tons of oil. After a 2013 suspension due to a technical issue, Kashagan will resume an expected output of 42,000 tons/day in 2017.

Emergency Stocks

Another means through which KMGI contributes to ensuring energy security is the compulsory oil stockholding. In line with the EU priority to reduce risks of supply disruptions and moderate resulting price fluctuations, **KMGI is among the top contributors of minimum oil and petroleum products reserves in Romania.**

Based on the European Council Directive 2009/119, member states have the obligation to build and maintain minimum stocks of crude oil and/or petroleum products as a measure to improve resilience to a sudden energy crisis.

At the national level, Law 360/2013 sets the minimum stocks of crude oil and/or petroleum products requirement for all economic agents that introduce inland annual quantities over 1000 tons. The compulsory stocks are set yearly based on the higher value between the average of net imports for 90 days or the average internal consumption for 61 days.

	Crude (toe)	Petroleum Products (toe)	Emergency Stocks (toe)
2014	937,455	373,242	1,310,687
2015	807,546	397,747	1,205,293

Source: Government Order 478/2014, Appendix 1
Government Order 662/2015, Appendix 2

As one of the major oil companies in Romania, KMGI ensured the second largest stock reserves of crude oil and petroleum products in 2015. Such stocks are additional to KMGI commercial stocks that amount to 63,280 tons, ensuring the company's pivotal role in national security.

Table 5: Oil Companies' Emergency Stocks, 2015

	Minimum Reserves (toe)	Share of Stocks
OMV Petrom	459,043	38.09%
Rompertol Rafinare	375,081	31.12%
Petrotel-Lukoil	198,644	16.48%
Oscar Downstream	76,485	6.35%
MOL Romania	88,348	7.33%
Socar Petroleum	2,362	0.20%
Mayaro Carbs	3,703	0.31%
AIR BP Sales Romania	1,627	13.00%

Source: Government Order 662/2015, Appendix 2

Sustainable Energy Production

Increasingly Cleaner Results

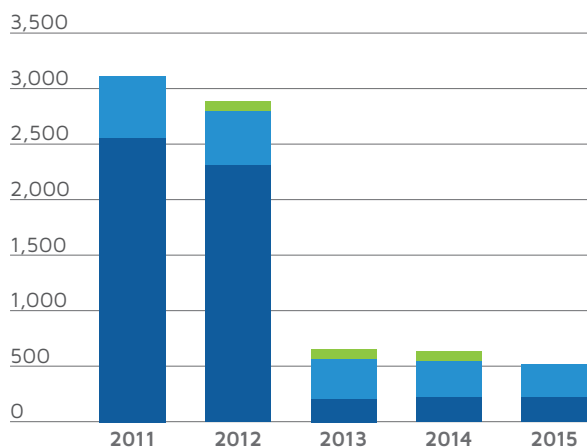
One of KMGI's main objectives is to fully comply with the EU and international legislation.

Globally, the EU applies the most strict on-road diesel and gasoline Sulphur limits: 10-15 ppm and 10 ppm, respectively. In particular, for diesel cars, Euro 5 standard (Sulphur content under 10 ppm) aims to significantly reduce noxious emissions such as particulate matter (PM) and nitrogen oxides (Nox) and from Diesel cars by 80% and 32%, respectively, compared to Euro 4 standard (sulphur content under 50 ppm).

Aligned to the EU specifications, in 2009 KMGI launched Super Diesel Euro 5, with low Sulphur content (concentration under 10 ppm). The shift to Euro 5 standard reaffirms Petromidia's performance in refining products that significantly reduce noxious emissions, notably decrease the greenhouse emissions (GHG) and improve the air quality.

Fig. 4: KMGI Emission Reduction, 2011-2015

Source: Company data



Furthermore, KMGI is moving towards adopting Euro 6 standard, free of Sulphur content. Aligned to the EU specifications, in 2009 KMGI launched Super Diesel Euro 5, with low Sulphur content (concentration under 10 ppm). The Group's shift to Euro 5 standard reaffirms Petromidia's performance in refining products that significantly reduce noxious emissions such as particulate matter (PM) and nitrogen oxides (NOx) and from Diesel cars by 80% and 32%, respectively, compared to Euro 4 standard (Sulphur content under 50 ppm) notably decrease the greenhouse emissions (GHG) and improve the air quality.

Furthermore, KMGI is moving towards adopting Euro 6 standard, free of Sulphur content.

Specific Environmental Steps

Exclusively for environmental concerns, KMGI allocated an additional USD 90 million, between 2013 and 2015, addressing European fuel standards, legal aspects and environmental protection.

The renewal of the GHG permits for Petromidia in 2014 represents an additional accomplishment in terms of increased energy sustainability.

Table 6: CO2 certificates position (emissions) 2008-2014, thousands

	2008	2009	2010	2011	2012	2013	2014
Total emissions	885	779	751	810	904	910	0
Petromidia refinery	765	668	632	660	782	747	884
Petrochemical Division	81	69	81	110	76	45	42
Vega refinery	39	42	38	40	46	41	43
UT Midia	-	-	-	-	-	77	79

Source: KMG International Sustainability Report 2014

Table 7: CO2 certificates position (allocations) 2008-2014, thousands

	2008	2009	2010	2011	2012	2013	2014
Total emissions	955	955	966	956	966	844	880
Petromidia refinery	802	802	813	813	813	649	637
Petrochemical Division	99	99	99	99	99	71	70
Vega refinery	54	54	54	54	54	54	33

Source: KMG International Sustainability Report 2014

Table 8: Purchased biofuels, 2015

	Unit	Total	Internal Market	EU	Energy Content
Biodiesel	mn tons	53	12	41	37 MJ/kg 1,953
Bioethanol	mn tons	18	1	17	27 MJ/kg 496
Bio-ETBE	mn tons	1		1	36 MJ/kg 42

Source: Communication of Rompetrol Rafinare S.A. to the Ministry of Economy - Jan 1, 2016

	Consumed quantity (mn t)	Source
Biodiesel	53	other
	41	EU
	12	Romania
Bioethanol	18	other
	17	EU
	1	Romania
Bio-ETBE	1	other
	1	EU

Source: Company data

The reduction of various pollutants emissions was achieved also through the installation of a particulate reduction system, an electrostatic precipitator, at Catalytic Cracking Unit, in order to reduce the content of dust in the flue gas leaving the CO-Boiler - 138F-H4.

KMGI does not only provide low sulphur fuels, but also uses low sulphur fuels for its own energy consumption, in the process of production.

In terms of sustainability, KMGI complies with EU Legislation also in what concerns all biofuels volumes purchased sourced from EU producers using mainly European feedstock.

Other actions undertaken in order to ensure the energy sustainability are related to waste water treatment, total generated waste and environmental permits.

In 2006, Petromidia waste water treatment plan was upgraded. As a result, the process efficiency increased by 96%, benefiting both the refinery and Navodari.

2014 should also be considered a significant year in terms of wastewater management as both treated wastewater volumes used and reused at Petromidia decreased.

	2013	2014
Wastewater treated & reused	2.173	1.479
Wastewater treated & discharged	5.515	4.141

Source: KMG International Sustainability Report 2014

The values within the table below confirm an improved management of water and wastewater starting with 2013.

	2011	2012	2013
Wastewater discharged (th. m ³)	7,490	8,469	6,755
Total waste (tons)	27,530	41,655	18,367
Total water input (th. m ³)	5,801	7,022	7,296

Source: KMG International Annual Report 2013

The aim of KMGI to minimize waste as much as possible was achieved in 2014 compared to the previous year for both retail & trading and upstream & non-core areas.

	2013	2014
Retail & Trading	6,476	5,189
Upstream & Non-Core	8,346	4,851

Source: KMG International Sustainability Report 2014

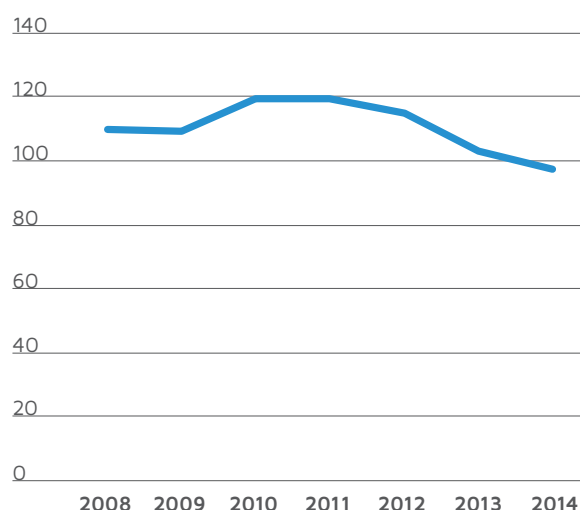
The Company's focus on environmental sustainability is reinforced by its membership since 2008, to the CONCAWE (Conservation of Clean Air and Water in Europe), an organization that seeks environmental protection in the oil sector. Aligned to the European Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), CONCAWE assists KMGI to register and authorize all the chemical substances used by the Group.

Moreover, in 2010 Petromidia Refinery introduced the ARIS software as a data collector for the air quality at the refinery and nearby areas.

The implementation of the investment package determined a reduction of the Energy Intensity Index of Rompetrol Rafinare – Petromidia, 2012 being a starting point of this trend and 2014 the year when the best value was reached.

Fig. 5: Petromidia Energy Intensity Index (GJ/GDP)

Source: KMG International Sustainability Report, 2014







MENTORI



Economic Impact

Contribution to Government Revenues

KMGI is the third largest taxpayer in Romania, with contribution to the national and local budgets amounting to RON 5.9 billion (i.e. USD 1.5 billion) in 2015, including VAT, Excises Tax, Corporate Income Tax (CIT), Personal Income Tax (PIT), Social Tax, Property Tax and other taxes.

Table 13: KMGI Contribution to Government Revenues in Romania, 2013-2015, mn RON

	2013	2014	2015
VAT Total	2,157	2,446	1,997
Excise Tax	2,952	3,793	3,648
CIT	9	6	13
PIT	41	43	43
Social Tax	121	124	114
Property Tax	13	39	27
Other Taxes	55	44	27
KMGI Total Contribution	5,348	6,495	5,869
National Budget	205,414	218,402	233,554
% KMGI Contribution of NB	2.6%	3.0%	2.5%

Source: Company data and National Consolidated Budget, published by the Ministry of Finance

In particular, KMGI has a positive impact on collection of excises. In monetary terms, the value of excises paid by KMGI to the General State Budget, varies from 13% in 2013 to 16% in 2015. In addition, KMGI's positive contribution extends to the level of administrative cost for collection and actual tax gap.

Table 14: KMGI Contribution to the Excise Tax Collected in Romania, 2013-2015

	2013	2014	2015
Excise Tax (mn RON)	22,363	24,095	26,018
KMGI Contribution	13%	16%	14%

Source: Company data and National Consolidated Budget, published by the Ministry of Finance

KMGI was authorized by Romanian authorities to operate four production tax warehouses. Such authorization is provided upon proof of compliance with a set of regulated conditions including ensuring safety and security of premises against illegal transfer or smuggling of products for tax avoidance purposes. Operating a production tax warehouse implies that final products are transferred from production site to the market only after proof of payment of due excises is being made.

This has an overall positive impact on administrative cost for tax collection, as the tax warehouse represents a single and controllable point generating a predictable value of excises to be collected.

Alternatively, in a market dominated by retailers of imported oil products, the administrative cost for tax collection and even the risk of tax evasion would be significantly higher due to number of verification points and unpredictability of imported volumes and types of products.

Fig. 6: Conversion of KMGI Contribution to Government Revenues into Investments in Public Facilities

Overall KMGI contribution to Government Revenues during 2013-2015 could have been used for the construction of:

16,466 kindergartens
10,466 schools
48 Hospitals

Source: Company data and Decision no. 363/2010 on the approval of cost standards for investment objectives financed from public funds

Contribution to National GDP

In 2015, KMGI generated direct, indirect and induced GVA at factor prices of approximately RON 2 bn (i.e. USD 0.6 bn).

The direct GVA at factors prices reflects the difference between the total value of KMGI production in Romania and the costs of goods and services purchased by KMGI in the course of its activity. The GVA at market prices includes also the indirect taxes (i.e. Excises and VAT).

The indirect GVA is generated by KMGI's supply chain to cover for KMGI intermediate consumption.

The induced GVA is generated by KMGI's employees and its' suppliers employees, through household consumption.

By adding also the indirect taxes, the GVA at market prices generated by KMGI account for approximately 1.1% of the national GDP in 2015.

Fig. 7: KMGI direct, indirect and induced GVA, at factor prices, 2015

Source: ASE estimation, based on Rompetrol Rafinare consolidated financial statements and on the Input-Output tables published on the INSSE website

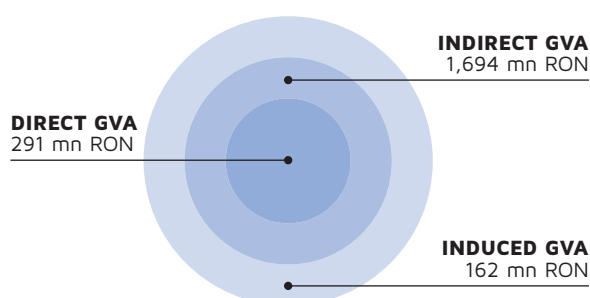


Table 15: Estimated GVA generated by KMGI activity in Romania, 2013-2015, mn RON

	2013	2014	2015
Direct GVA	291	489	657
Indirect GVA	751	1,260	1,694
Induced GVA	72	120	162
Total GVA at Factor Prices	1,114	1,869	2,513
Excises (RON)	2,952	3,793	3,648
VAT	2,157	2,446	1,997
Total GVA at Market Prices	6,223	8,108	8,158
Contribution to GDP	1.0%	1.2%	1.1%

Source: ASE estimation, based on Rompetrol Rafinare SA consolidated financial statements and on the Input-Output tables published on the INSSE website

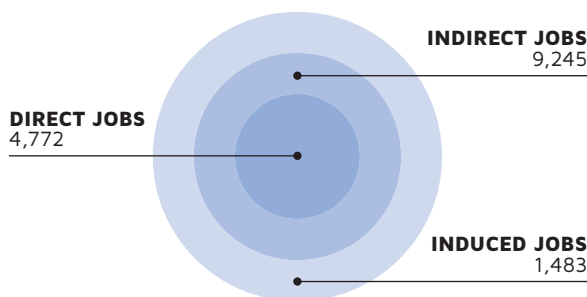
Contribution to Employment

Stimulating Job Creation

KMGI is one of the biggest employers in Romania supporting in a direct, indirect and induced manner an estimated 15,500 jobs.

Figure 8: Estimated number of jobs supported by KMGI activity in Romania, 2015

Source: ASE estimation, based on company data and on the Input-Output tables published on the INSSE website



In 2015, out of the 4,722 employees directly employed by the Romanian entities of KMGI, more than 1,500 were working on highly specialized jobs (i.e. manufacturing of petroleum and petrochemicals products).

Considering little availability of comparable options for job reconversion for this type of jobs, as well as unemployment levels in SE and S regions of Romania, which exceed national unemployment level, KMGI's presence in Constanța and Ploiești can be considered of outmost importance.

Based on KMGI's relation with suppliers (for transport services, logistics, equipment, consumer goods, etc.) for each workplace created within the Group, an additional 2 workplaces are estimated to be created within the economy (i.e. indirect effect).

The household consumption of own employees is also stimulating job creation with an additional 0.25 workplaces (i.e. induced effect).

Engaging Young Employees

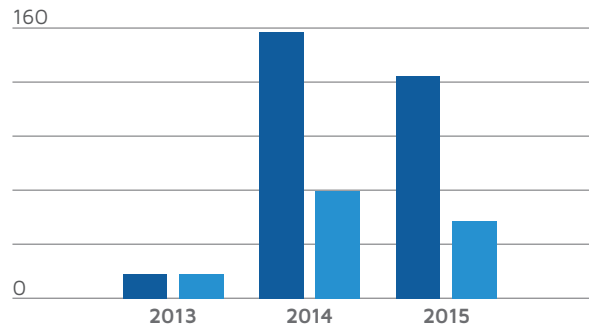
KMGI is keen on attracting, retaining and developing young talents.

As such, between 2013 and 2015, KMGI opened its doors for approx. 300 interns, out of which more than 100 were offered permanent jobs. For this purpose, KMGI developed long-term partnerships with technical and economic Universities in Constanța and Bucharest.

Fig. 9: Internships at KMGI, 2013-2015

Source: Company data

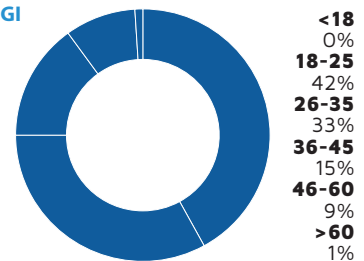
Interns Hired



KMGI's efforts to attract young workforce is evidenced also in the structure of new hires, by age groups: approximately 75% of the new hired employees in 2014 were under 35 years.

Fig. 10: New hires at KMGI by age group, 2014

Source: Company data



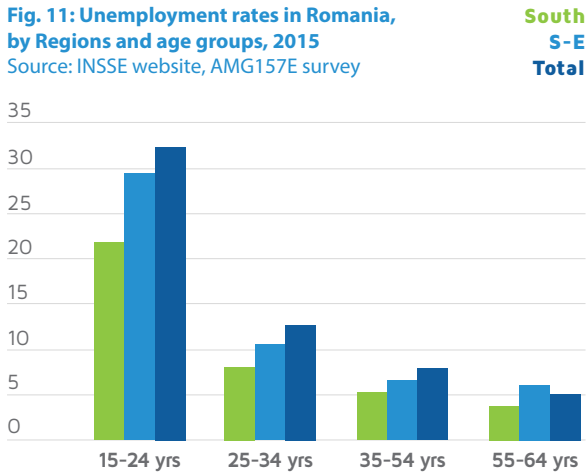
By attracting and introducing recent graduates and young employees to all areas of the business through internships, mentoring and rotation programs, KMGI is ensuring sustainability of its operations.



Furthermore, this has a direct positive impact on the overall structure of employment, considering that Romania is facing high unemployment rates for the “below 34 years” group, both at national level and especially in the SE and S regions.

Fig. 11: Unemployment rates in Romania, by Regions and age groups, 2015

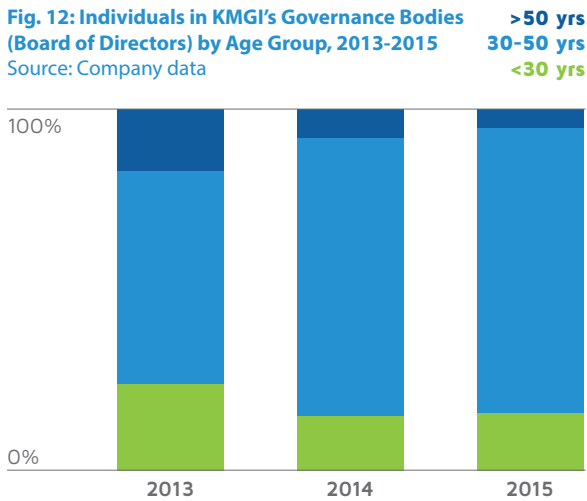
Source: INSSE website, AMG157E survey



Despite its aging employee groups in the technical areas, KMG I has one of the youngest management team in the manufacturing industry.

Fig. 12: Individuals in KMG I’s Governance Bodies (Board of Directors) by Age Group, 2013-2015

Source: Company data



Developing Competencies

The average number of training hours per employee was 6.1 in 2014 and reached 11.7 in 2015, thus exceeding 55,000 hours of training per year for employees of the KMG I entities operating in Romania.

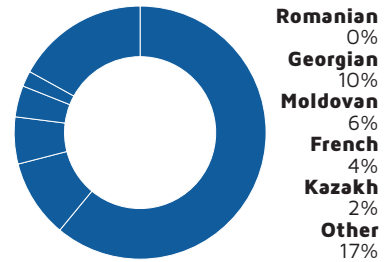
However, employee development is not supported only through training. Since 2013, KMG I has started a formal process of **identification and development of its talent pool of specialists, managers and leaders** through a process of annual evaluation of performance, individual development planning and support actions.

Fostering Mobility and Multicultural Diversity

Having its operational headquarter in Bucharest, KMG I offers to its employees opportunities to work on **international assignments**; to interact with colleagues from other countries, such as Georgia, Moldova, France, Kazakhstan, Switzerland and Spain; to **import and export know-how of various practices** – Asian and European, and to develop competencies in a multicultural environment.

Fig. 13: Nationalities of KMG I employees in 2015

Source: Company data



Multiculturalism is celebrated at KMG I through corporate events, aimed at bringing people together and creating strong teams.

In particular, the Sports Academy, organized on an annual basis in Bucharest is a case of best practice based on continuity (7 successful editions), number of participants (over 600 employees and family members from 6 countries) and organizing effort (1,230 planning hours).

Table 16: International projects implemented by KMG I (Rominserv)

	Objective	Specialists Involved
Kazakhstan Petrochemicals Industry (2013-2014)	Project management consultancy for the construction of a propane gas dehydrogenation and polypropylene production plant	16
PetroKazakhstan Oil Products (2013-2015)	Technical supervision services for the upgrade of Shymkent Refinery	17
HSE Consultancy services (2015 - ongoing)	Know-how transfer of HSE model applied in KMG International	20
Kazakhstan Petrochemicals Industry (2015 - ongoing)	Know-how transfer and coaching for the personnel working in the petrochemical plant	15
Rompertol Georgia (2016 - ongoing)	Consultancy services for bringing Tbilisi Depot in compliance with Georgian Legislation and Georgian Railway safety Standards	5

Source: Company data

Table 17: Sports Academy in Numbers

	2013	2014	2015
Participants	500	600	640
Sports	8	9	9
Competitions	12	13	13
Countries	6	9	6
Continents	2	3	2
Planning Hours	924	1,224	1,230
Organizers	70	120	124
Winners	117	150	150
Referees	35	54	54

Source: Company data



Contribution to Commercial Balance

KMGI contributes to the Romanian commercial balance by exporting finite goods (refined petroleum and petrochemical products), mostly in the Black Sea countries. The value of exports accounts for more than 4% of the value of exports generated by the overall manufacturing industry in Romania.

Table 18: KMGI Import-Export Balance, 2013-2015, mn RON

	2013	2014
KMGI Exports	5,519	7,162
Manufacturing Industry Exports	157,611	167,215
KMGI Exports out of Manufacturing Industry Exports	3.5%	4.3%

Source: Company data and statistics retrieved from INSSE, Tempo Series

Contribution to Foreign Direct Investments

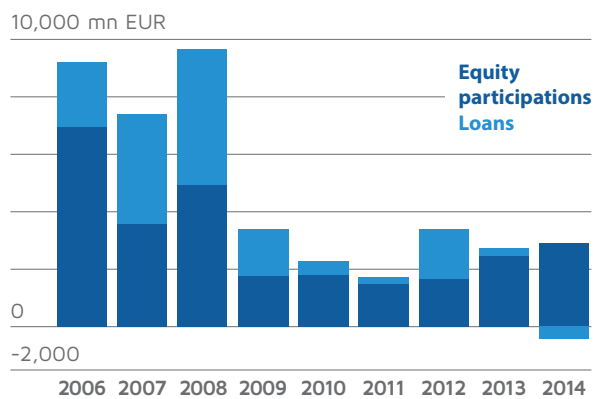
KMG through KMGI has been an active investor into the Romanian economy since its entry into the national market.

The total foreign direct investment (FDI) of KMGI amounts to USD 1.6 billion of equity participation and loans placed in its Romanian entities during 2007-2011.

KMGI's direct investment was carried out in a period marked by the overall global economic downturn and reduced access to financing. According to an annual publication carried forward by the National Bank of Romania, the inflows of foreign direct investments in the period have known a sharp fall starting with 2008 which continued until 2012, as a result of the global economic recession and Romania's investment attractiveness at the time.

During the same period, the European and national oil & gas sector was tackling a series of specific challenges requiring access to funding.

Fig. 14: Inflow of Foreign Direct Investments in Romania
Source: National Bank of Romania, Foreign Direct Investments in Romania - Annual Reports for 2011 and 2015

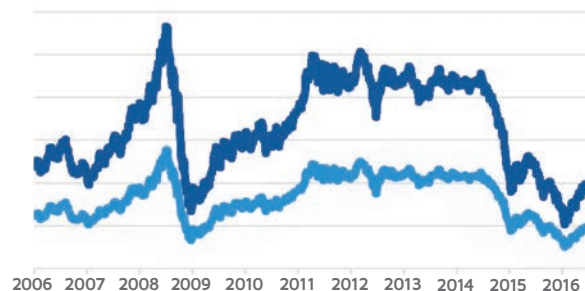


The European emission standard Euro 5 was issued in 2009 requiring significant investments to ensure compliance of marketed products. Furthermore, the price of crude oil had a sharp increase in 2009, which continued until 2012, raising the need of working capital for refining assets and affecting in turn, their operational efficiency.

In such conditions, investments for further integration in the supply chain, as well as expansion of distribution network were deemed necessary for the continuation of the refining operations.

KMGI's direct investment proved to be of critical importance for maintaining and further developing the activities of two of the four main refining units in Romania, which in turn contribute to the energy security of Romania and national economy.

Fig. 15: Price Fluctuation, 2006-2016, USD/bbl
Source: Company data





ROMPETROL



Support to Communities

National Programs, Sponsorship Projects and Employee-Driven Initiatives

KMGI implemented in Romania a number of initiatives aimed at raising the standards in the areas of business success, environment, health and safety, culture, education and leadership, through national programs, partnership and sponsorship programs and initiatives driven by employees.

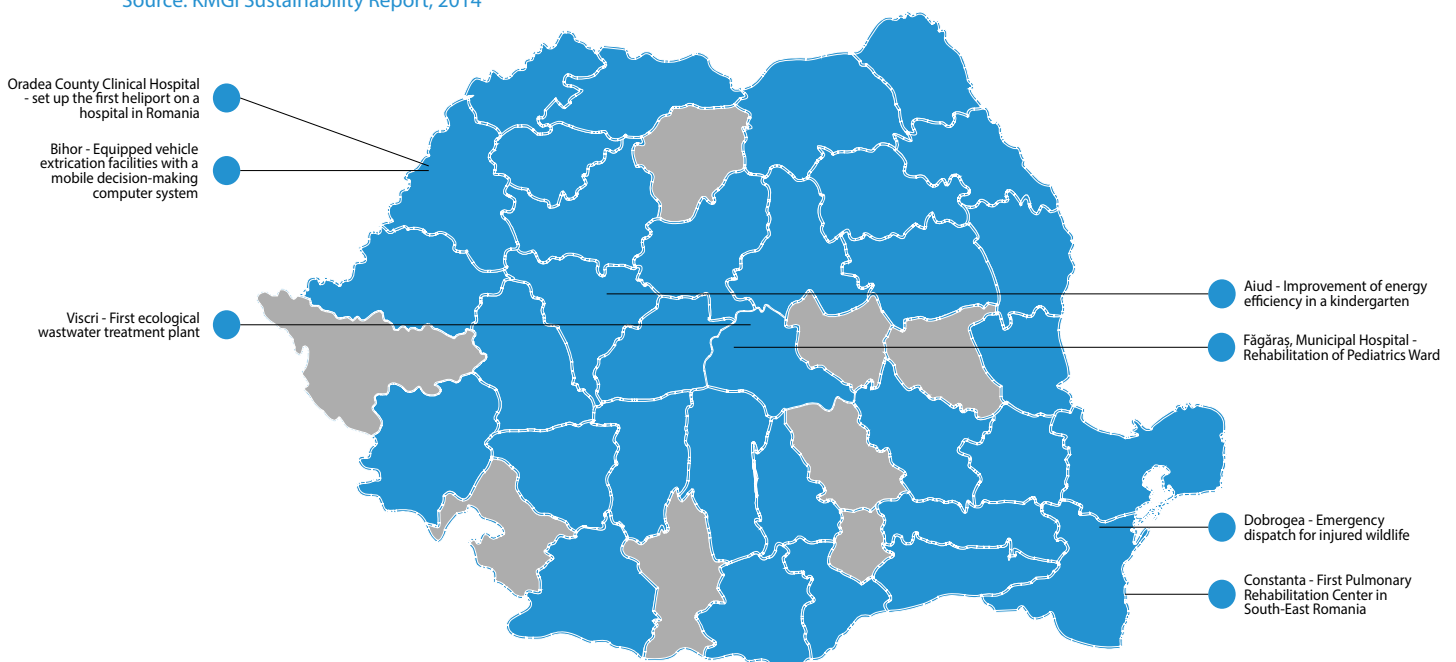
National Programs

In 2009, KMGI initiated a national social responsibility program – “Together for Each and Everyone” aimed at supporting local communities to promote projects mainly in the field of environment and health-care.

The program provided NGOs, local authorities and civic minded people with the possibility to submit projects designed to improve the quality of life and environment in their local communities.

In order to obtain the financial support, project proposals must be submitted on the dedicated online platform, to be assessed by a jury comprised of KMGI representatives and NGO experts and by public vote on the website and dedicated Facebook app.

Fig. 16: Counties Covered by the CSR Program “Together for Each and Everyone”
Source: KMGI Sustainability Report, 2014



The next step in the selection includes interviews with organizers and partners aiming for a better understanding of local issues and needs.

Selected projects were implemented in partnership with local authorities and NGOs/schools/hospitals. The main objective of the program is to develop local infrastructure (hospital renovation, economical heating systems etc.) in a sustainable manner so that the community can further develop other beneficial initiatives.

All implemented social initiatives have had a positive impact on the beneficiaries. Actions such as the rehabilitation and endowment of units that provide medical services or maintaining/ improving environmental conditions in local communities have significantly increased the quality of life, as it was noted by beneficiaries in the final narrative reports.

Since the launch of the program, between 2009 and 2014, KMGI allocated over USD 1,500,000 for the implementation of 101 projects which resulted in direct and indirect benefits for 300,000 people (KMGI, 2014).

**USD 1.5 mn grants provided
Environmental and healthcare projects
300,000 beneficiaries**

Partnerships and Sponsorships

Partnerships and sponsorship initiatives are also part of the KMGI annual social responsibility actions. These amounts to USD 2 mn each year, most of this sum being allocated to projects developed in Romania.

To name a few:

- **6 years of partnership with SMURD and the General Inspectorate of Aviation** to support air emergency interventions, the transportation of both medical personnel and patients. The value of KMGI investment exceeds 750.000 USD.
- **6 years of sponsorship for the prestigious George Enescu International Festival and Competition**, held in several cities, every September.
- As of 2003, KMGI is a **partner and main sponsor for "Gala Societății Civile"** (Civil Society Gala) – the annual competition which awards the best projects of the year initiated by NGOs, unions, individuals etc (since its beginning in 2002, 1,703 projects have been submitted into the competition).
- **Partnership with HOSPICE Casa Speranței** established in 2010, through which various projects were implemented with the support of KMGI, both in terms of financial contribution and volunteer actions, including KMGI Run for Hospice, a charitable half marathon for KMGI employees, in the benefit of Hospice palliative care center in Bucharest.
- **Dacia Romanian Cultural Association** benefits from KMGI's support in preserving and developing the Romanian community in Kazakhstan through annual dedicated actions and events.

USD 2 mn per year
Healthcare projects
Cultural projects

Employee-Driven Initiatives

Small Gestures that Count is an internal CSR campaign carried out by KMGI for its employees across the country.

The program was launched in 2010 and aims to increase the involvement of employees in social responsibility projects and to encourage them to propose and manage environmental, health and charity initiatives. The initiative stemmed from internal studies (Employee Opinion Survey) which revealed that 93% of employees wanted to support the community, to devote time and even their own resources for its development.

Approximately 2,000 employees have donated money, goods and vouchers, coordinated projects and volunteered in the program since its initiation.



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Report, 2014



Examples of Healthcare Projects

Bihor - Equipping vehicle extrication facilities with a mobile decision making computer system (2011)

The project consisted in equipping the SMURD Bihor extrication teams with a mobile decision-making computer system composed of a program (database) that contains all the models and structures of existing vehicles in civilian use (20,000 models) and a laptop.

Oradea County Clinical Hospital - Setting up the first heliport on a hospital in Romania (2012)

Through the project, transfer time of patients in critical conditions from the hospital to regional centers was reduced to up to 30 minutes. At the same time, the project eliminated the risk of unavailability of C1 intensive care ambulances for transfers of patients from the hospital to the airport

Făgăraș Municipal Hospital - Rehabilitation of child health care department (2013)

The project aimed to facilitate access to medical services to families with children suffering from special medical conditions, by equipping Fagaras

Municipal Hospital child health care facility with specialized medical equipment and providing the necessary amenities, for the benefit of the children.

The main characteristics of hospitalized children in the pediatric section of Fagaras Municipal Hospital are insufficient or unhealthy diet, illnesses caused by cold, diseases due to unhygienic living conditions, inability to follow an appropriate treatment in cases of illness.

Constanța - First Pulmonary Rehabilitation Center in South-East Romania (2014)

The aim of the project was the organization of the first breathing rehabilitation center in S-E Romania, within the Pulmonology Hospital Constanta, in order to provide patients with medical services previously not available in the region.

Example of Environmental Projects

Viscri - The first ecological wastewater treatment plant (2011)

KMGI contributed to the creation of a centralized sewage system and the construction of an ecologic wastewater treatment plant that would serve 225 households through three artificial lakes and some aquatic plants (macrophytes).

Aiud - Improvement of energy efficiency in a kindergarten (2012)

The project aimed to support the use of solar energy efficiency in a kindergarten in Aiud. The kindergarten was equipped with a complete solar system consisting of 4 solar panels that have provided hot water and contributed to the efficiency of the heating system in view of ensuring the optimum thermic conform to children and saving energy costs.

60 KMGI volunteers collected 6 tons of waste on the Corbu beach (2013)

60 KMGI employees at the Petromidia platform celebrated World Environment Day through a large ecologization on the Corbu beach. The 6 tons of

waste were collected on a 4 km surface beach area. This action, developed in partnership with Corbu authorities, supported biodiversity and ecosystem of the coastal beach in Corbu, protected area of the Danube Delta Biosphere Reservation.

KMGI commitment to protect the environment is evidenced at the Petromidia platform, the main asset of the Group, where the priority is to increase the protection of the Black Sea and Siutghiol Lake, the Danube Delta biosphere and the ecosystem of Midia Channel and the towns of Navodari, Corbu and Constanta.

Dobrogea - KMGI System for emergency takeover of wild animals (2014)

KMGI supported the creation of 112 type alert and intervention system for birds and wild animals in danger.

Birds and animals are taken over by specialized staff and volunteers and transported for medical care in the Natural Science Museum Complex. Over 50 protected species were saved in due to the project.

In addition, KMGI supported the equipment of Medical Veterinary Center within the Museum of Natural Sciences, Constanta with 2 solar panels.





Appendices



Timeline

1974	Rompetrol is created as a vehicle for the transfer of local know-how in the petroleum industry to international markets, playing a significant role in the development of several major projects in the Middle East. During almost four decades of activity, the company services clients in more than 25 countries, across four continents. In Iraq alone, the drilling division of Rompetrol builds over 500 wells after 1974. More than 100 additional projects are finalized in North Africa and Europe, ranging from drilling to well services and workover.
1979	Petromidia is launched into operation.
1993	First attempt of privatization by Management and Employee Buyout (MEBO); Petromidia's turnover decreased significantly.
1998	Control stake is purchased by a local investor group, increasing the working capital of the company and contributing to turnover growth.
1999	The Rompetrol Group N.V. ('TRG') is established as a holding company headquartered in the Netherlands. The first major acquisition: Vega refinery – located in Ploiești.
2000	Rompetrol Group takes over Petros – Romania's main oilfield operator at that time. The company was renamed Rompetrol Well Services. The Group purchases Petromidia S.A., Romania's youngest and most modern oil refinery. Rompetrol commits to a modernization process to transform Petromidia into a state-of-the-art facility in Eastern and Central Europe.
2001	Rompetrol establishes Rominserv, the first Engineering Procurement Construction and Maintenance (EPCM) provider in Romania. The company inherits the know-how and technical capabilities of the former Construction, General Supervision and Contracting Department of the state-owned company Rompetrol.
2002	A petrochemical division is created as part of Petromidia platform - Rompetrol Petrochemicals. Rompetrol opens its first retail subsidiaries abroad: Rompetrol Moldova and Rompetrol Bulgaria.
2003	Rompetrol Group started to rebrand and develop its distribution network in Romania under a single standard of quality. For a better logistic the company added to the retail network, fuel depots in various regions of the country (Arad, Craiova, Mogosoaia, Zarnesti, Vatra-Dornei, Constanta)
2004	Rompetrol Rafinare is listed on the Bucharest Stock Exchange (BVB). The Group establishes the trading division of oil and petroleum products named Vector Energy AG (currently KazMunayGas Trading AG).
2005	The company expands its fuel distribution network to Georgia – Rompetrol Georgia.

2006	The first major acquisition of the Rompetrol Group on the European markets: Dyneff, the largest independent fuel distributor in the French market. The company expands its distribution network to Ukraine - Rompetrol Ukraine.
2007	KazMunayGas JSC, the National Oil and Gas Company of Kazakhstan acquires 75% of the Rompetrol Group N.V. shares.
2008	The company commissions its own offshore terminal for crude oil in Midia Port at the Black Sea. An ambitious investment plan of modernization and upgrade starts at Petromidia refinery, despite the harsh economic climate, especially for the refining industry.
2009	KazMunayGas JSC takes over the remaining 25% stake in Rompetrol Group N.V.
2010	TRG Petrol TICARET A.S., the Group's subsidiary in Turkey is established with a view to expand operations and enter new highly prospective markets.
2012	Petromidia refinery modernization and upgrade program is finalized following an investment of USD 380 million. Petromidia becomes the largest refinery in Romania with a processing capacity of over 5 million tons. It ranks as one of the most modern refineries in South-Eastern Europe.
2013	The new concept of filling station was launched, aiming at rebranding the entire distribution network of the Group. The new concept sets a new quality standard for the Rompetrol network, combining a premium design with the best technical solutions. Transformation Program (Change for Good) started to be implemented within the Group until 2018. The program targets to improve the overall efficiency of the Group in Romania and in the countries of the Black Sea region.
2014	Rompetrol Group N.V. was renamed into KMG International N.V. (KMGI). Changing the name was part of the integration process of all activities and transactions within KazMunayGas JSC (KMG), the Group's sole shareholder.
2015	Focus on the retail activity: the extensive rebranding program was on going in Romania and in other distribution networks in the Black Sea region (Moldova, Georgia and Bulgaria). Also, the Group developed a new operational model (CoDo) for the entire distribution network in Romania. KMG International N.V. and China Energy Company Limited (CEFC) established a business partnership, after the takeover of 51% shares in the Dyneff group of companies. KMGI continues to hold a 49% equity share in the company.

Source: (KMGI, n.d.)

Economic Impact Assessment (EIA) – Detailed Methodology for the Estimation of Impact in GDP and Employment

The Economic Impact Assessment (EIA) is generally used to estimate the economic benefits that a particular industry, company or project brings to the economies and to the surrounding communities where its specific activities are located. In our case, the current study is aimed at identifying the economic impact of KMG activities in Romania, by estimating impact on:

- Gross Domestic Product through creation of Gross Value Added and indirect taxes on production;
- Employment.

The above have been estimated using the **Input-Output** model developed by Wassily Leontief (1936) (1941) (1970) (n.b. 1973 Nobel Laureate and the founding father of a new field for empirical research at the border between microeconomics and macroeconomics), which describes the inter-industry relationships and allows the quantification of **direct, indirect and induced effects** of one company, through the computation of industry-specific multipliers. Despite of its “age” this approach is still intensive used within academia and not only (Koopman, Wang, & Wei, 2014) (Hong & Li, 2015) (Chen, 2016).

The impact was estimated for the years 2013, 2014 and 2015.

Direct Impact

KMG's direct contribution to the Romanian Gross Domestic Products is the Gross Value Added it generates in the course of its productive activity. Gross Value Added (GVA) (ESA 2010, 9.31) is defined as output value at basic prices less intermediate consumption valued at purchasers' prices; i.e., the sum of sales and the year-on-year difference in work-in-progress. When compared to the Gross Domestic Products, the indirect taxes on production have been added to the company's GVA (n.b. thus obtaining the company's GVA at market prices).

The data for the computation of KMG's GVA has been obtained from the Rompetrol Rafinare SA Consolidated Financial Statements for the years 2013-2015, which include the following entities:

GVA (n.b. thus obtaining the company's GVA at market prices).

The data for the computation of KMG's GVA has been obtained from the Rompetrol Rafinare SA Consolidated Financial Statements for the years

2013-2015, which include the following entities:

- Rompetrol Rafinare SA – refining and petrochemicals
- Rompetrol Downstream SRL – retail trade of fuels and lubricants
- Rom Oil SA – wholesale of fuels; fuel storage
- Rompetrol Logistics SRL – fuels transportation
- Rompetrol Petrochemicals SRL – petrochemicals
- Rompetrol Quality Control SRL – quality control services
- Rompetrol Gas SRL – LPG sales

Data regarding the national GDP has been retrieved from National Institute of Statistics (i.e. Tempo Series, production method).

KMG's direct contribution to Government Revenue through indirect taxes on production has been provided by KMG's Tax department.

KMG's direct employment has been measured by headcount as reported by the Human Resources department. Data regarding national employment has been retrieved from the National Institute of Statistics (i.e. Tempo Series, employed civilian population by NACE codes).

Indirect Impact

KMG's activity generates additional demand for the factors of production at the national level through the commissions it grants to its contractors and suppliers. These businesses in turn generate additional Gross Value Added and employment; and in turn generate additional demand for goods and services along their supply chain.

The indirect effects on employment and GDP have been computed based on Type I Leontief multipliers (explained below), through the application of GVA/Output and GVA/employee ratios.

Induced Effect

As household disposable income increases due to the increased provision of labor services, so does their spending. Household spending in turn generates economic activity within the economy to satisfy the additional demand for goods and services.

The induced effect on GDP and employment has been computed based on Type II Leontief multipliers (explained below), adjusted with household consumption and compensation of employees.

The following steps have been followed in order

to compute industry-specific multipliers – Leontief Type I and II:

Step 1: Retrieval of input-output table - The basis of Input-Output model is the Input-Output table, published by the National Institutes of Statistics and Eurostat for each EU country. It describes the flow of goods and services between all sectors of an economy over a period of time. At the same time, it provides the required information on all inputs which are used in production: intermediates, labor, capital, and land. Input-Output analysis is a method of systematically quantifying the mutual interrelationships among the various sector of the economy.

For the purpose of our study, we have retrieved the Input-Output table published by the Romanian Institute of Statistics for the year (2012).

Table 19: Simplified Input-Output Table, for illustration purposes	Economic Sectors	Primary Inputs
Economic Sectors	Intermediate deliveries	Primary inputs
Final Demand	Demand	Primary inputs of final demand
Total	Value of total production	

Step 2: Computation of inverse matrices - The Leontief inverse matrices are derived from the Input-Output table and show how much of each industry's output is needed, in terms of direct, indirect and, in type II matrices, induced requirements, to produce one unit of a given industry's output. So, the Leontief inverse matrix determines the total production of each sector for a specific final demand under the assumption that technology remains the same.

In particular, we have computed the inputs needed to produces one output unit for Manufacture of coke and refined petroleum products (NACE code 19).

Step 3: Computation of multipliers - Starting from the inverse matrices, the following multipliers were computed: GVA multiplier, showing the increase of GVA throughout the Romanian economy that results from the change of 1 RON of GVA in each industry (i.e. 3.83 for manufacture of coke and refined petroleum products, NACE code 19); and Employment

multiplier, showing the total increases of employment throughout the Romanian economy which results from an increase in the final demand (i.e. 3.25 for the analyzed sector).

The resulting multipliers for the Manufacture of coke and refined petroleum products were used to estimate the indirect effects (i.e. based on Type I Leontief Multipliers) and induced effects (i.e. based on Type II Leontief Multiplier) of KMGI activities in Romania.

Methodological Limitations

Input-Output models and economic impact analysis in general, are useful tools to estimate the effects generated by an industry, company or project within a geographical area. However, input-output models are based on a set of assumptions that need to hold for the results to be valid.

One key assumption in Input-Output model is that the new spending patterns are the same as the spending patterns made in the past. For example, if X tons of crude were used in 2012 to generate 1 ton of refined products, the input-output model assumes that in 2016 the company will also require X tons of crude to produce each new 1 ton of refined products. For oil & gas industry, the past relationship assumption is reasonable, as production methods generally do not change significantly from one year to the next. This is in line with classical schemes and outcomes on testing stability of Leontief inverse multipliers over time (Leontief, 1951) (Carter, 1970) (Kanemitsu & Ohnishi, 1989).

The second key assumption of the Input-output model is that there are infinite amounts of inputs that are available without prices having to change. For example, if manufacturing companies were employing 100 persons with Y RON in 2012, it assumes that in 2016 the company will also be able to support 100 employees with Y RON.

Nevertheless, the Input-Output model allows local communities, businesses and governments to estimate the effects of various economic changes on communities. In particular, it provides a good general picture of inter-links between various industries, respectively businesses.

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Contact Details

Costinela Drăgan, Ph.D.

Sustainability Manager
KMG International
costinela.dragan@rompetrol.com



Bogdan Negrea, Ph.D.

Full professor and researcher
Bucharest University of Economic Studies
bc.negrea@gmail.com

Claudiu Herteliu, Ph.D.

Full professor and researcher
Bucharest University of Economic Studies
hertz@csie.ase.ro



Bogdan Ileanu, Ph.D.

Full professor and researcher
Bucharest University of Economic Studies
bogdan.ileanu@csie.ase.ro

Virgil Damian, Ph.D.

Full professor and researcher
Bucharest University of Economic Studies
virgil.damian@csie.ase.ro

