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NATIONAL AVIATION UNIVERSITY
Faculty of Transport, Management and Logistics
Logistics Department

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BACHELOR THESIS

(EXPLANATORY NOTES)

OF GRADUATE OF ACADEMIC DEGREE

«BACHELOR»

THEME: **«Organization of LPG transportation to Ukraine»**

Speciality 073 «Management»

Educational and Professional Program «Logistics»

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МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
НАЦІОНАЛЬНИЙ АВІАЦІЙНИЙ УНІВЕРСИТЕТ
Факультет транспорту, менеджменту і логістики
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ДИПЛОМНА РОБОТА

(ПОЯСНЮВАЛЬНА ЗАПИСКА)

ВИПУСКНИКА ОСВІТНЬОГО СТУПЕНЯ

«БАКАЛАВР»

ТЕМА: «***Організація перевезень скрапленого газу в Україну»***

зі спеціальності 073 «Менеджмент»
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Київ 2020

NATIONAL AVIATION UNIVERSITY
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APPROVED
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«25» May 2020

TASK

FOR COMPLETION THE BACHELOR THESIS OF STUDENT

Oleksandra R. Dubrovska
(surname and name)

1. Theme of the master thesis: «Organization of LPG transportation to Ukraine»was approved by the Rector Directive №553/ст.ofMay04, 2020.
2. Term performance of thesis: from May 25, 2020 to June 21, 2020.
3. Date of submission work to graduation department: June 05, 2020.
4. Initial data required for writing the thesis: general information about automation of business processes in transport logistics, information of the company «Matoni », production and financial indicators of the company «Matoni», literary sources on logistics and customer service process, Internet source.
5. Content of the explanatory notes: introduction, the essence of the transport logistics; ways to automate logistics processes; analysis the activity of the company «Matoni»; analysis the financial indicators of the company «Matoni»; identification of deficiencies in the company «Matoni»; ways to enhancement identified deficiencies; calculation of the economic effect of the proposed measures; conclusions and appendix.
6. List of obligatory graphic matters: pictures, tables, graphs, diagrams illustrating the current state of problems and methods of their solution.

7. Calendar schedule:

№	Assignment	Deadline for completion	Mark on completion
1	2	3	4
1.	Study and analysis of scientific articles, literary sources, normative legal documents, preparation of the first version of the introduction and the theoretical chapter	25.05.20-27.05.20	Done
2.	Collection of statistical data, timing, detection of weaknesses, preparation of the first version of the analytical chapter	28.05.20-29.05.20	Done
3.	Development of project proposals and their organizational and economic substantiation, preparation of the first version of the project chapter and conclusions	30.05.20-01.06.20	Done
4.	Editing the first versions and preparing the final version of the master thesis, checking by standards inspector	02.06.20-03.06.20	Done
5.	Approval for a work with supervisor, getting of the report of the supervisor, getting internal and external reviews, transcript of academic record	04.06.20	Done
6.	Submission work to Logistics Department	05.06.20	Done

Student_____
(signature)

Supervisor of the master thesis _____
(signature)

8. Consultants of difference chapters of work:

Chapter	Consultant (position, surname and name)	Date, signature	
		The task was given	The task was accepted
Chapter 1	Associate Professor, Karpun O.V.	25.05.20	25.05.20
Chapter 2	Associate Professor, Karpun O.V.	28.05.20	28.05.20
Chapter 3	Associate Professor, Karpun O.V.	30.05.20	30.05.20

9. Given date of the task May 25, 2020.

Supervisor of the master thesis: _____ Karpun O.V.
(signature of supervisor) (surname and name)

Task accepted for completion: _____ Dubrovska O.R.
(signature of graduate) (surname and name)

ABSTRACT

The explanatory notes to the bachelor thesis «Organization of LPG transportation to Ukraine» comprises of 75 pages, 35 figures, 15 tables, 50 references, 1 appendix.

TRANSPORT COMPANY, LPG MARKET CONCEPT, LPG TRANSPORTATION, LPG SUPPLY PROBLEMS.

In the theoretical section of the thesis the essence of the concept of LPG market in Ukraine was investigated, the specifics of logistics of LPG supply to Ukraine and analysis of the Ukrainian LPG market were considered.

In the analytical section of the thesis was analyzed the activities of the transport company "Matoni", its production and financial performance and services that the company provides to its customers.

In the project section of the thesis were identified shortcomings in the process of delivery of LPG and possible ways to eliminate the identified shortcomings. Recommendations for improving the process of LPG supply to the Ukrainian market have been developed. Calculations of economic efficiency of project proposals were also performed.

Methodsofresearcharescientificinquiry, empirical, analysisandsynthesis, modeling, expertassessments, extrapolationoftimeseries.

Materials of the thesis are recommended for use during scientific research, in the educational process and in the practical work of specialists of different departments of the company.

CONTENTS

NOTATION

ADR– European Agreement on Transport of Dangerous Goods on Road;

AGZS – Automobile gas station;

ATP – Motor transport company;

DSTU – State standards of Ukraine;

GNS – Gas filling stations;

ILAC – International Laboratory Accreditation Cooperation;

LPG – Liquefied petroleum gases;

LPPS– LP Service Project;

NAAU – National Accreditation Agency of Ukraine;

PJSC– public joint stock companies;

STS– Space Transportation System;

UEB – The Ukrainian Energy Exchange;

UGV-223 – Flexible Manufacturing Module;

UPC– Universal Product Code.

INTRODUCTION

At present, in order to succeed in entrepreneurial activity, it is not enough to use marketing approaches, the use of modern highly effective methods and methods for managing stream processes, such as logistics, is required. Logistics as a practical activity has steadily occupied its niche in the management of modern enterprises. Logistics is of great importance for customers, suppliers of the enterprise, its owners and shareholders. Logistics coordinates all the structures of the enterprise (direction, ordering and distribution of products from the manufacturer to the final consumer, taking into account profitability, efficiency, productivity).

The main task of production logistics is to create and ensure the effective functioning of an integrated material management system at an enterprise. The role of logistics in a modern company is optimistic and integral. Optimization of all processes in the enterprise provides logistics. The solution to the problem of optimizing all processes in an enterprise is impossible without the application of principles, methods, and logistics functions.

The use of logistic concepts and systems allows firms to reduce all types of product stocks in production, supply and marketing, accelerate working capital turnover, reduce production costs, and ensure full satisfaction of consumers with the quality of goods and services. The potential of logistics improves the organizational and economic stability of the enterprise in the market. A mandatory component of the organizational structure of a successful enterprise is the logistics department. The logistics functions of the enterprise include the following functions: operational-calendar planning of finished products; operational management of production processes; material supply planning; product quality control; maintaining product and service quality standards.

Liquefied petroleum gas (LPG), also liquefied petroleum gas (LPG) is a purified and prepared petroleum gas converted to a liquid state under the influence of high pressure and butane to facilitate storage and transportation.

Transportation of LPG is very important and very difficult. That’s why we need to use logistics approach to LPG transportation.

The purpose of the research is to study theoretical approaches, as well as to develop practical recommendations for improving the process of supplying LPG to the Ukrainian market.

The object of the research is the process of organization of LPG transportation to Ukraine by company "Matoni".

The subject of the research is optimization of LPG transportation to Ukraine.

To achieve this purpose, the following tasks were set:

– the main essence of transport and logistics activities;
– analyze the existing methods of supplying LPG to the Ukrainian market;
– analyze the current activities of Matoni;
– identify weaknesses in the activities of the company "Matoni";
– give recommendations for improving the supply of LPG;
– calculate the economic effect of the proposed measures.

Methodsofresearcharescientificinquiry, empirical, analysisandsynthesis, modeling, expertassessments, extrapolationoftimeseries.

Materials of the thesis are recommended for use during scientific research, in the educational process and in the practical work of specialists of different departments of the company.

CHAPTER 1
THEORETICAL FUNDAMENTALS OF ORGANIZATION OF LIQUEFIED PETROLEUM GAS TRANSPORTATION

1.1 The essence of the concept of LPG market and its features

It consists mainly of heavy gases of propane and butane and a small amount (about 1%) of unsaturated hydrocarbons. In this form, gases are stored at oil and gas refineries; used in the home for heating, water heating and cooking; and on motor transport – as fuel.

Liquefied gas (LPG) is an environmentally friendly and efficient source of energy that is available to consumers around the world. LPG is a by-product of natural gas production and oil production; its unique properties make it a universal source of energy that can be used in more than 1,000 different ways [7].

LPG has two sources: about 60% is recovered from the extraction of natural gas and oil from the ground, and the remaining 40% is formed during the processing of crude oil. Liquefied petroleum gas is thus a natural by-product. In the past, liquefied petroleum gas was destroyed by ventilation or flaring (ie burning unwanted gas), thus losing all the potential of this unique energy source.

The main raw materials for liquefied hydrocarbon gases are artificial and natural petroleum gases:

– associated petroleum gas at gasoline plants;

– gas of thermal and thermocatalytic processing of oil and oil products on installations of thermal catalytic cracking, pyrolysis and coking, alkylation and other processes;

– artificial gases at synthetic motor fuel plants (plants of destructive and hydrogenation processing of coal and heavy oil products, synthesis of motor fuel from carbon monoxide and hydrogen, etc.);

– natural gases, which contain in addition to methane, a number of heavier hydrocarbons. Since the content of heavier hydrocarbons (propane and butane) in natural gases is small, liquefied gas is rarely obtained from them;

– gas condensate fields of industrial significance.

Associated petroleum gases are of the greatest value for the production of liquid hydrocarbon gases. Oil at the outlet of the separators, depending on the mode of separation, also contains a significant amount of dissolved heavy hydrocarbon gases. The gases emitted from the oil after the separators contain about 30% propane, 30-35% butane and about 30% gasoline. These gases obtained as a result of oil stabilization are valuable for the production of liquefied gases, which are usually extracted at gas stations [12].

Artificial, factory petroleum gases, ie gases obtained by destructive, thermal and thermocatalytic refining of oil, differ sharply in their composition from natural gases, both from associated and from natural in clusters (gas fields).

This difference is that artificial petroleum gases contain a significant amount of unsaturated olefinic hydrocarbons, which is a very valuable raw material for a number of organic synthesis reactions [9].

The average yield of hydrocarbon gases obtained during the destructive processing of petroleum products is: with thermal cracking 8-14%, with catalytic cracking 16-28%, with pyrolysis 40-47%.

Hydrocarbon gases of destructive hydrogenation of coal and heavy oil residues, in contrast to gases of destructive processing of petroleum products, are characterized by a practical absence of unsaturated hydrocarbons in their composition. This is due to the fact that this process takes place in conditions of high concentrations of hydrogen, which in the presence of catalysts causes complete saturation of the boundless bonds of hydrocarbons that are formed. Destructive hydrogenation gases of coal after extraction of ammonia, hydrogen sulfide and leaching of carbon dioxide are very rich raw materials for liquefied gases. In addition to aromatization gases, these gas mixtures contain a very small amount of unlimited hydrocarbons [23].

Therefore, the main sources for the production of fuel liquid hydrocarbon gases (propane, butane) should be associated gases, gases of gas condensate fields, artificial oil gases and gases of destructive hydrogenation of solid and liquid fuels. However, it should be noted that the gases of thermal and thermocatalytic processing of oil and petroleum products, which contain a significant amount of reactive unlimited hydrocarbons, must first be subjected to appropriate processing for their fractionation, followed by use in various syntheses.

One of the most important processes of processing associated and similar gases is the process of extracting from them the components of gasoline and components of liquid combustible gases. This process is called oil gasification. It consists of two successive operations: obtaining crude unstable gasoline and extracting from crude gasoline stable, free from light components of gaseous gasoline [16].

The first operation, ie obtaining crude unstable gasoline, is carried out by compression or adsorption. The second operation, ie obtaining a stable gasoline, completely free of propane and lighter hydrocarbons with butane in limited quantities, is carried out by the method of clear rectification.

For uninterrupted and reliable operation of oil gasification plants, it is necessary that the raw gas does not contain mechanical impurities and water. Therefore, the production of liquid gases begins with the purification of the original product from mechanical impurities and water [30].

The stages of obtaining LPG are shown in table 1.1.

Gas processing

When a gas is extracted from the earth, it is a mixture of several gases and liquids. Commercial natural gas consists mainly of methane. However, it also contains ethane, propane and butane, the proportions of which are determined in accordance with the technical conditions for natural gas in each individual country. Therefore, premature natural gas enters the market, it is a gas condensate, including liquefied petroleum gas (propane and butane) is separated out depending on the "dampness" of the obtained gas: gas condensate provides from 1 to 10% of the

untreated gas stream. Throughout the world, gas is a source of about 60% of liquefied natural gas.

Table 1.1 – The stages of obtaining LPG

№	The stages	Characteristics
1	2	3
1	Production	Production is the result of gas condensate. This process should produce: a) oil that is suitable for transportation to refineries and b) natural gases that meet commercial specifications.
2	Transportation	At that time, as crude oil is transported from production sites to refineries by tankers or pipelines, liquefied petroleum gas is transported to storage terminals by large carriers of LPG, pipelines or trains.
3	Processing and storage	Butane and propane may also be the result of an oil refining process. LPG storages accommodate products purchased in large quantities.
4	Transportation	The LPG is then shipped by rail, road, tankers, or pipelines to the cylinder of gas stations and storage areas.
5	Bottling and storage	Cylinders are filled with butane and propane in bottling plants. LPG is usually stored in sealed containers (vessels or spheres) in intermediary storage centers.
6	Distribution	LPG can be transported almost anywhere in special containers. Freight transportation of butane and propane cylinders from the factory to retail outlets, as well as private and professional customers.
7	End users	LPG is easily accessible to end consumers through the sale of gas cylinders in stores or at service stations close to their location. Customers requiring large volumes can purchase liquefied gas in large volumes.

Oil refining

At a refinery, gases are produced at various stages: atmospheric distillation, reforming, cracking, etc. Refined oil products from 1 to 4% of liquefied petroleum gas. This output will depend on the type of crude oil, the degree of complexity of the refinery and the market value of propane and butane compared to other petroleum products. Worldwide, processing is a source of about 40% of LPG [18].

Although liquefied petroleum gas is tied to the extraction of natural gas and crude oil, it has certain advantages and can fulfill almost any fuel function of the

primary fuel from which it was obtained. The fact that it can be easily liquefied makes this fuel a versatile alternative source of energy. And thanks to the use of a wide range of packaging and storage options, liquefied petroleum gas has many refueling options.

1.2 Specifics of LPG supply logistics in Ukraine

Areas of application of propane-butane in Ukraine:

1. Boiler rooms: private, industrial, municipal, standard, modular.

2. Industrial facilities:

– distilleries, sugar factories, elevators;

– glass production, chemical industry;

– greenhouses, metallurgical industry.

3. Communal and private sector:

– gas supply to cities and villages;

– cottage townships;

– communal heat and energy generating enterprises.

Advantages of propane-butane:

– efficiency: gas is 1.5 times cheaper than diesel;

– environmental friendliness: minimal combustion emissions;

– energy independence: independence from natural gas;

– efficiency: use of certified construction equipment according to European standards;

– speed: uninterrupted operation of the enterprise;

– protection against theft: propane-butane cannot be stolen.

The following types of vehicles are used for LPG transportation:

– within Ukraine (railway, river, road);

– outside Ukraine, to Ukraine (railway, river, sea, road).

Depending on the strategy and objectives, customers choose vehicles based on technical and economic characteristics [17].

Rail transport – is characterized by high capacity, regular transportation regardless of climatic conditions, seasons and days, not high cost over long distances, and has an acceptable speed of delivery (fig. 1.1).

Figure 1.1 – Rail transport for LPG

Maritime transport – provides intercontinental transportation, has a low cost of transportation, high capacity, and is not the fastest mode of transport for delivery (fig. 1.2) [20].

River transport – is characterized by high capacity, also has a low cost, but is faster than sea transport (fig. 1.3).

Road transport – has great mobility and maneuverability, high delivery speed, especially at short and medium distances. Any transportation is possible by road, but the scale is less than in other transport (fig. 1.4).

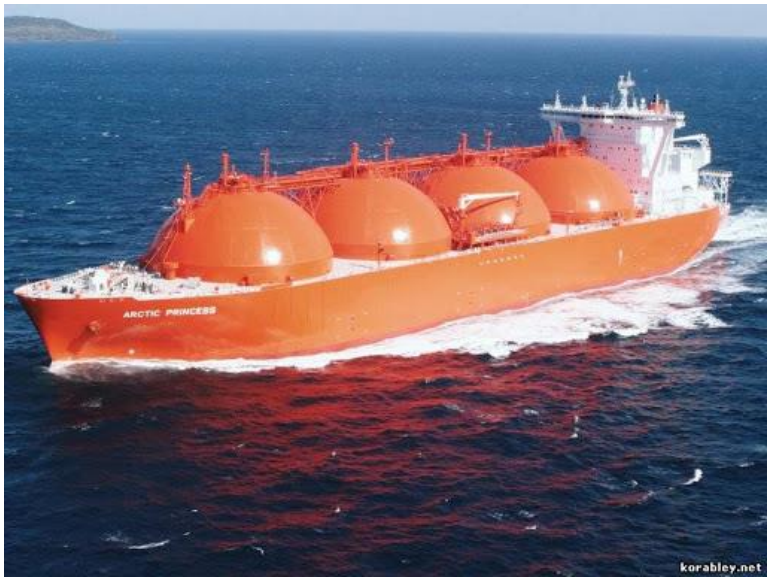


Figure 1.2– Maritime transport for LPG

Figure 1.3– River transport for LPG

Figure 1.4– Road transport for LPG

From practice: Rail transport for LPG transportation is used almost all over Ukraine and abroad without restrictions.

Maritime transport is used in the south of Ukraine (Kherson, Nikolaev, Odessa).

River transport is used in single projects on the Dnieper, the direction from Belarus to Ukraine.

Road transport for LPG is used in two categories:

– for those who have a license to operate only in Ukraine;

– for those who have a license in Ukraine and international traffic for the transport of dangerous goods.

Road transport is used with certain restrictions and rules for the transport of dangerous goods.

The sphere of activity of transport is connected with rendering of services in transportation of dangerous freights for the enterprises and the organizations of the trade and industrial companies, firms and other.

In the sphere of circulation, the activity of transport is connected with the delivery of liquefied gas to the address of specific consumers.

Transport operations are usually considered in inseparable connection with trade operations as means for their realization, while transport operations, being an independent kind of business activity, have the specific features [39].

For several years, the Ukrainian LPG market has been one of the ten largest in the world. Moreover, in terms of volume, it came close to the top five and could break into it in the next year or two. At the same time, Ukrainian sellers of propane-butane until 2018 used the Soviet and morally obsolete standard for gas, introduced in 1987. The situation had to be corrected, on which the Ukrainian Association of Liquefied Natural Gas worked for several years, lobbying for the approval of the new DSTU. Finally, on February 1 of this year, a new standard for automotive propane-butane (DSTU EN 589: 2017), which harmonizes Ukrainian legislation in this area with the laws of the European Union, began to operate in Ukraine [22].

Despite the lengthy preparations for the approval of the new DSTU, there was a little turmoil among traders due to the transition to it, noted Valentina Kravchuk,

deputy head of oil product quality control at the WOG gas station network, during the UPM 2018 conference. At the same time, Ukrainian manufacturers announced that they were ready for release product on time, and many import suppliers also had the opportunity to sell gas to Ukraine that meets EU standards. Nevertheless, now there are two other propane-butane standards in parallel: Soviet GOST 27578-87 for gas, which is valid until the end of this year, as well as DSTU 4047 for household LPG [31].

Quality control of oil products and LPG:

– during 2016-2019, more than UAH 70 million was invested in equipping and modernizing the laboratory;

– 2017 – Laboratory for Quality Control of Petroleum Products of Shebelinsky VPGKN received a certificate of accreditation from the National Accreditation Agency of Ukraine (NAAU) and ILAC MRA;

– the laboratory can perform tests of oil products in accordance with national standards, harmonized with international and European standards;

– 2018 – full transition to the production of light petroleum products of Euro 5 standard, production facilities of liquefied gas standard DSTU EN 589: 2017, harmonized with European standards [40].

The mobile laboratory for quality control of petroleum products has the ability to determine the indicators of LPG:

– on-site sampling followed by analysis in an accredited UPGGC laboratory in accordance with EN589;

– LPG dose calibration at gas station columns using a reference flow meter.

LPG production development projects:

1. Increasing the efficiency of existing production facilities for LPG production:

– replacement of morally and physically obsolete equipment;

– reduction of technological losses;

– optimization of production and operational processes;

Implementation period 2020-2022.

Expected result + 20 thousand tons / year.

Construction of three new LPG plants:

– Mashiv LPG production plant with a capacity of 30 thousand tons / year;

– Solokhiv LPG plant with a capacity of 80 thousand tons / year;

– Baptismal plant for the production of LPG with a capacity of 115 thousand tons / year.

Technology – Low temperature condensation using a turboexpansion unit.

Implementation period: 2021-2024 [42].

Expected result: +225 thousand tons / year.

The Ukrainian liquefied gas market will continue to feel the lack of storage capacities, which is why a number of companies are currently under construction or designing new terminals. In April 2020, Concern Galnaftogaz commissioned the largest gas station in western Ukraine at Zolochev station with a volume of about 1 thousand tons. Now, two gas stations at the station are at the final stage. Pereyaslavskaya (LPGProgress) with a total volume of 3 thousand tons and at the station Baryshevka (UPKGroup together with InterGlobal) – 1tys.t. These stations are located on the same railway line, which leads to Kiev [50].

According to market participants, construction work is underway by Marshalв. Eskhar, near Chuguev (Kharkov region) with a total volume of about 1 thousand tons. Also, near Chuguev, the company already has its own STS.

UEB launches a trading platform for daily balancing of the natural gas market. The Ukrainian Energy Exchange (UEB) has developed the Energy Trading Platform trading platform for daily balancing of the natural gas market.

Prior to the introduction of the daily balancing market, the Energy Trading Platform will operate as an Exchange Information Platform for transactions in over-the-counter trading [47].

The implementation of the daily balancing of the natural gas market is provided for by the Code of the gas transmission system from August 1, 2018.

After the launch of a new model of the natural gas market, the Energy Trading Platform software product will be supported by all the necessary exchange tools to

operate as a Trading Platform with standardized products with a time interval on the intraday market or on the day-ahead market [44].

The balancing of a gas system is the establishment and elimination of the difference between the volumes of gas that enter it through the entry points and are taken from it through the exit points. Balancing is carried out targetedly taking into account the consumption data of all suppliers and consumers of gas [46].

With the introduction of the daily balancing mechanism on the natural gas market, natural gas market entities, including the gas transmission system operator, will have to carry out balancing actions by buying and selling natural gas on the trading platform (commodity exchange) during the day seven days a week.

During July 01–08, Ukrainian companies imported 28 thousand tons of gasoline, 87.8 thousand tons of diesel fuel, 7.8 thousand tons of jet fuel, 18.5 thousand tons of bitumen and 0.6 thousand tons of isopentane [42].

The results of the electronic auction for the sale of petroleum products manufactured by PJSC "Ukrgasdobycha" No. UGV-223, July 10, 2018 are presented in table. 1.2.

Table 1.2 – the Results of the electronic auction for the sale of petroleum products

№	Product	Average selling price, UAH / t	Volume of goods sold, t
1	2	3	4
1	Gasoline A-95 Euro 5 (by road)	33750	15
2	Reformat (railway standards)	29500	120
3	Fuel Diesel DT-L Euro 5 V0 (by road)	28401	525
4	Fuel Diesel DT-L Euro 5 V0 (railway standards)	28400	60
5	Bitumen BND 130/200 (by road)	12244	40
6	Bitumen Roofing BNP 40/180 (by road)	12100	100
7	Fuel Diesel DT-L Euro-5-B0 (by road)	28400	45

More than 40% of gasoline was supplied by BNK-Ukraine: A-92 – 3.5 thousand tons, A-95 – 8.1 thousand tons. Also, the first position in the top of DT suppliers was 15.7 thousand tons.

It should be noted that the largest gasoline deliveries were made by WOG – 5 thousand tons (A-92–1 thousand tons, A-95 – 4 thousand tons), and "BRSM-Nafta" – 4.5 thousand tons of gasoline A– 92.

During the reporting period, 25 thousand tons of Rosneft diesel fuel were pumped to the terminals of the LPDS Novograd-Volynsky, Smyga, Dubrinichi oil product terminals. Another 6.5 thousand tons of pipe diesel fuel arrived in rail transit through the territory of Russia and Belarus. The volumes of registered sea posts were at the level of 7.8 thousand tons, of which 4.2 thousand tons of the production resource of the Tukrmenbashinsky oil refinery.

Following BNK, the largest railway deliveries were made by WOG – 5.6 thousand tons (Orlen– 3.8 thousand tons, Mozyr Oil Refinery – 1.8 thousand), ZNGK – 5 thousand tons of Mozyr's resource. Among the three largest recipients of the Avitrade pipe resource – 8.5 thousand tons, OKKO – 4 thousand tons, WOG – 4 thousand tons. In turn, more than 1 thousand tons of marine supplies were issued by the Alliance Energy Trade – 2.5 thousand tons, Eurostandard– 1.8 thousand tons Transalliance– 1.3 thousand tons, WOG – 1 thousand tons.

1.3 Chapter1 summary

In this chapter, the theoretical features of the organization of technical transportation of gas have been considered.

This study allowed us to draw a number of conclusions.

In the first part, we examined everything about liquefied gas.

Liquefied natural gas (LPG) is an environmentally friendly and efficient energy source that is available to consumers around the world. LPG is a by-product of

natural gas production and oil production; Its unique properties make it a universal source of energy that can be used in more than 1000 different ways.

We also examined all the stages of obtaining LPG.

In the second part, we learned everything about the specifics of LPG delivery to Ukraine, types of transport for transporting LPG, as well as controlling the quality of oil products.

The following types of vehicles are used to transport LPG:

– within Ukraine (railway, river, road);

– outside Ukraine, to Ukraine (rail, river, sea, road).

Depending on the strategy and objectives, customers choose vehicles based on technical and economic characteristics.

Road transport for LPG transportation is used in two categories:

1. For those who have a license to operate only in Ukraine;

2. For those who have a license in Ukraine and international traffic for the transport of dangerous goods.

Road transport is used with certain restrictions and rules for the transport of dangerous goods.

The sphere of activity of transport is connected with rendering of services in transportation of dangerous freights for the enterprises and the organizations of the trade and industrial companies, firms and other.

CHAPRER 2
ANALYSIS OF MATONY'S ACTIVITY IN THE LPG UKRAINE MARKET

2.1 Analysis of the Ukrainian LPG market

The Ukrainian liquefied natural gas market continues to show steady growth.In 2018, the Ukrainian LPG market grew by 32.2% to 1.47 million tons.In the 1st quarter of 2019, the market showed an increase of 15% to 356 thousand tons (fig. 2.1).

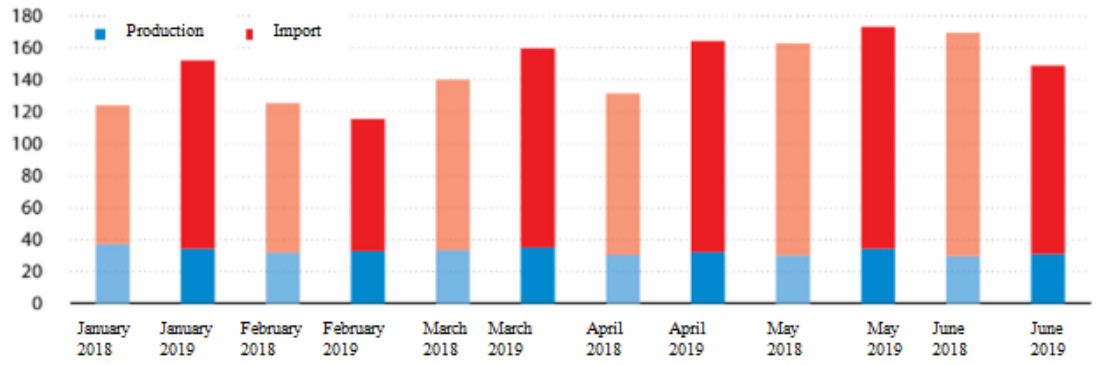


Figure 2.1 – LPGmarket balance 2018-2019

A high dependence (70%) on the imported gas is preserved (fig. 2.2).

LPG consumption market in Ukraine.The Avtogaz sector occupies more than 85% of liquefied natural gas consumption in Ukraine in 2018-2019 (fig. 2.3).

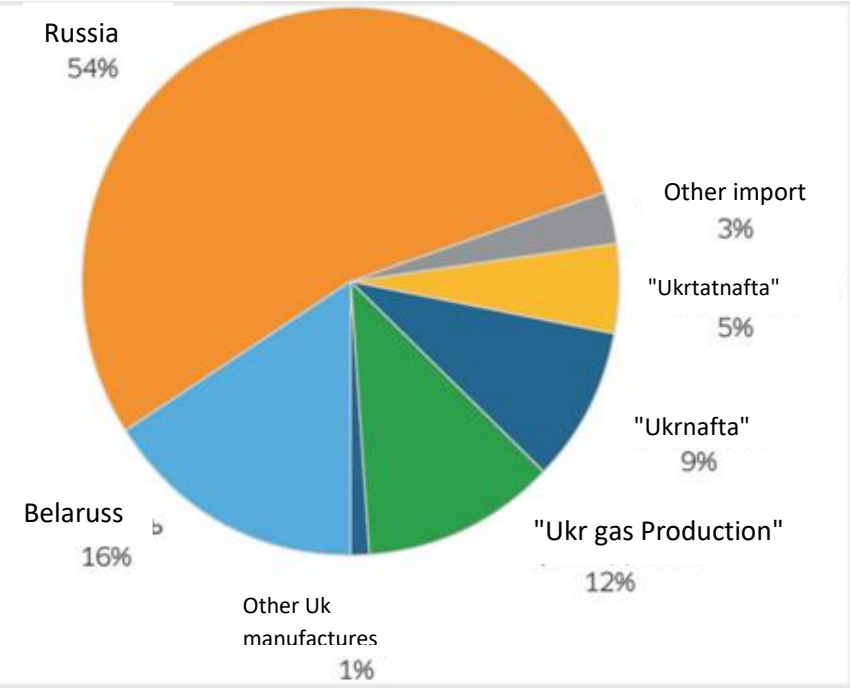


Figure 2.2 – The structure of imports at the end of 2019.

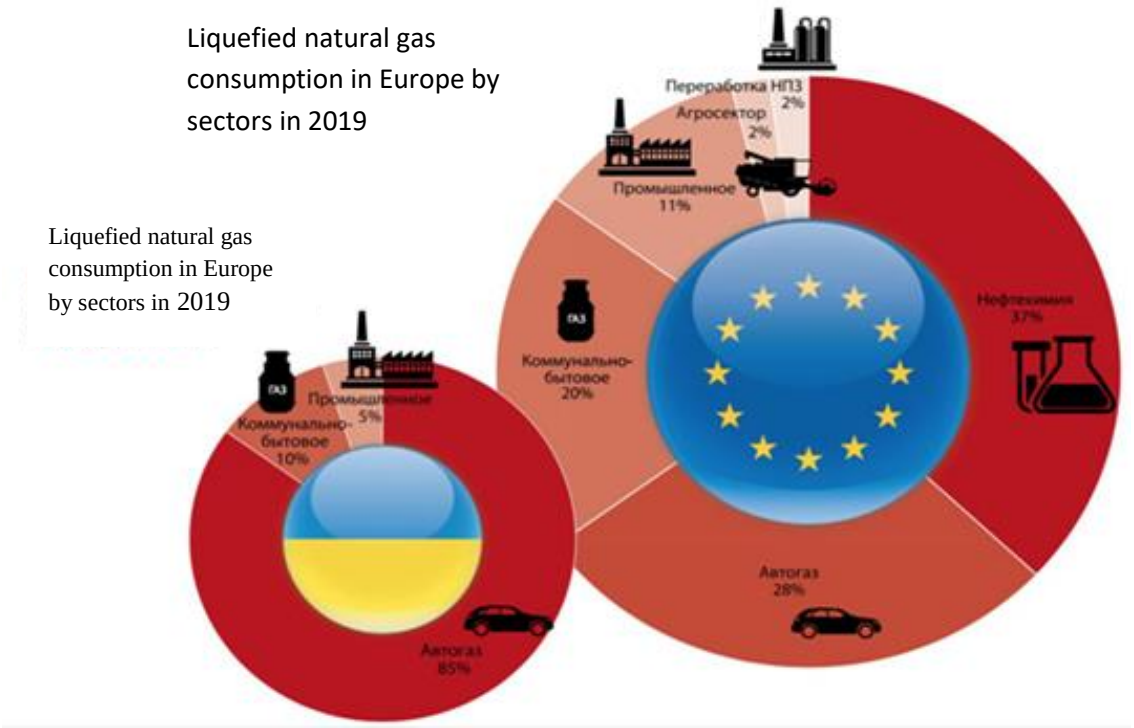
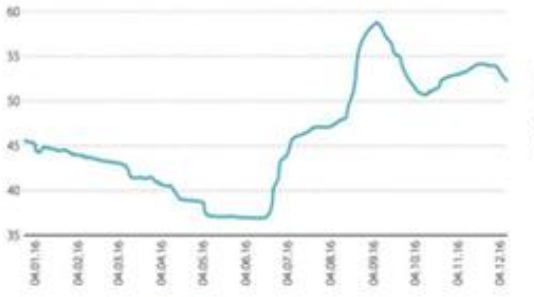


Figure 2.3 – Consumption of liquefied gas

The main growth factor in Ukraine is the price, in contrast to the EU countries, where the transition to liquefied gas is more due to the diversification of available fuels (fig. 2.4) [24].



In 2018, the cost of LPG in retail amounted to 46.2% of the price of A-95 gasoline

Retail sales in 2018. billion liters

Every third liter of fuel sold at a gas station in Ukraine is propane-butane.

Figure 2.4 – Why Ukrainian drivers chose gas

The largest gas station networks in 2018 continued to expand their gas infrastructure (fig. 2.5) [25].

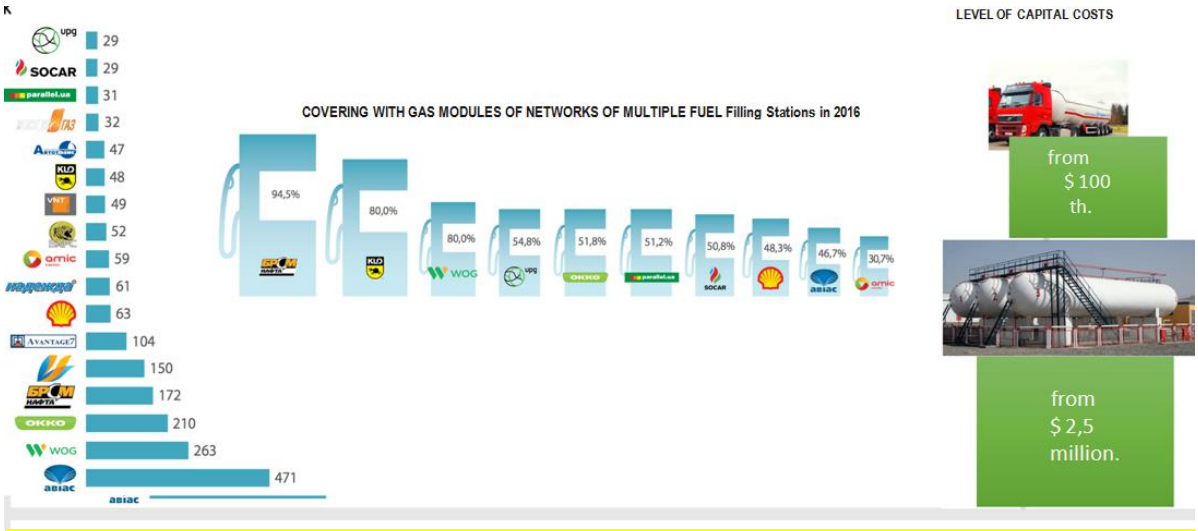


Figure 2.5 – Large networks of gas stations

In 2018-2019, major players came close to increasing storage volumes. Equipping the logistics infrastructure is a long and capital-intensive process [26].

Ukrainian liquefied gas market. The domestic market is not able to meet the growing demand for LPG (fig. 2.6).

The decline in production and the shortage of gas filling stations (GFS) makes the market work “off the wheels”.

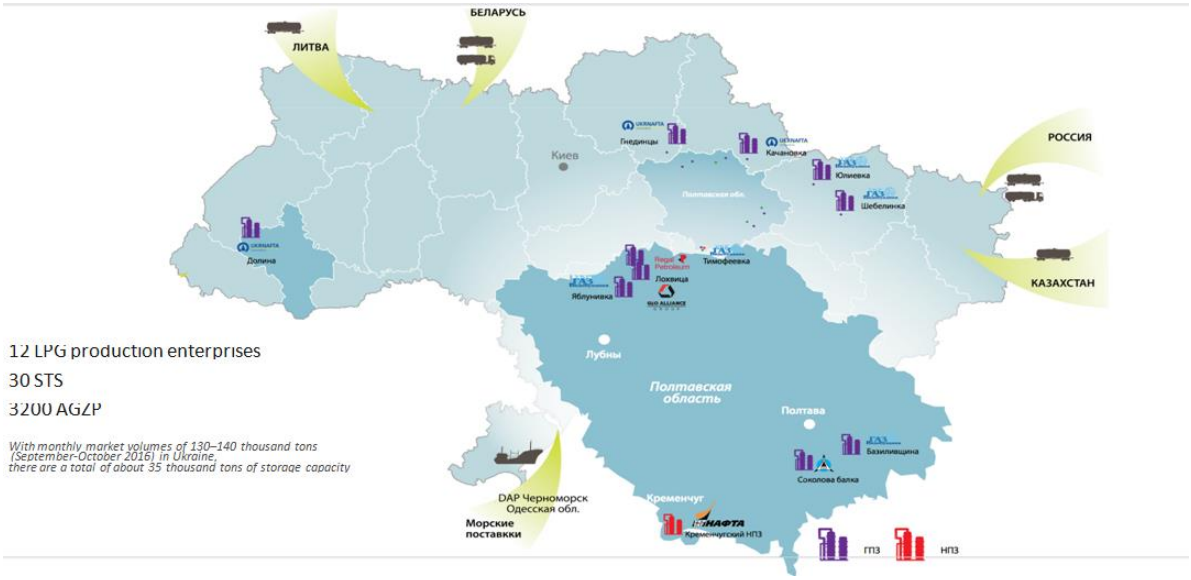


Figure 2.6 – Import of LPG to Ukraine.

Import of LPG to Ukraine by mode of transport, 2018-2019.

The share of LPG imports to Ukraine by road continues to grow

The volumes of LPG delivered by gas carriers to Ukraine in 2019 increased by 87%, from 85.5 thousand tons to 160 thousand tons (fig. 2.7).

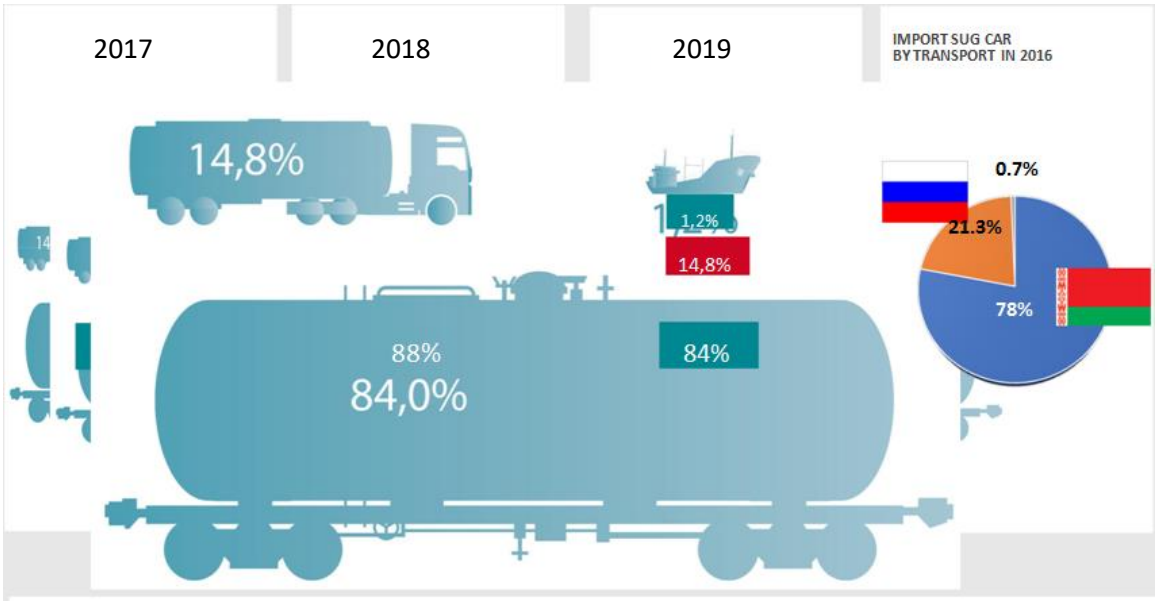


Figure 2.7 – Percentage of LPG imports to Ukraine

About 78% of LPG for cars came from Belarus, the rest from Russia [27].

Reasons for growth of transportation.

In case of railway delivery from Belarus, the trader additionally pays the "shoulder" from the shipment station to the border crossing ($ 30–35 / t), payment for cargo delivery in Ukraine and the return of empty tanks. Storage and discharge-loading services if the gas trader does not have its own GNS [28].

Forecast of LPG consumption in Ukraine (fig. 2.8).

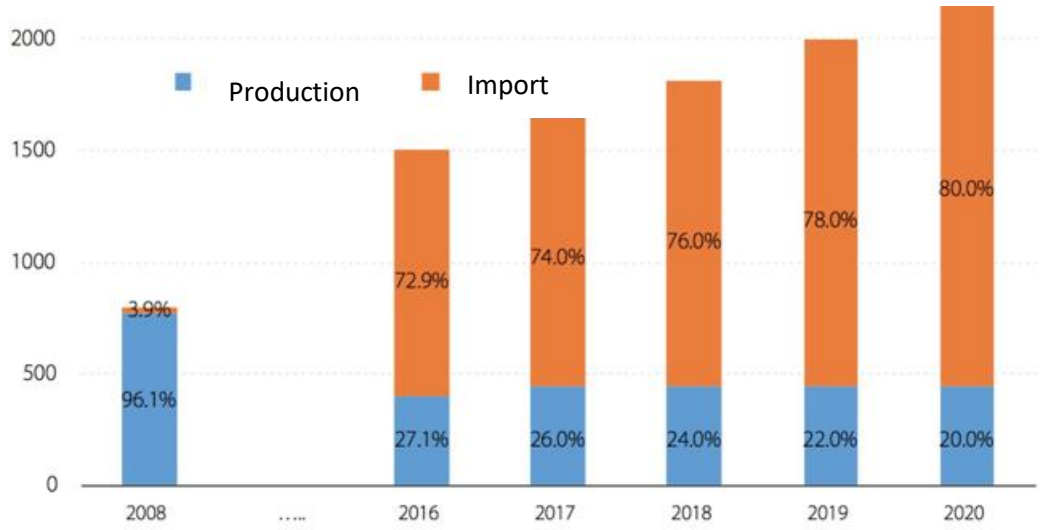


Figure 2.8 – Forecast of LPG consumption in Ukraine.

In the coming years, the import of LPG by road will remain the most profitable type of delivery service:

– the Ukrainian liquefied gas market continues to show steady growth;

– the crisis triggered the development of the LPG market as a social fuel;

– a key market objective, in addition to finding reliable suppliers of LPG resources, is the development of infrastructure – the construction of gas filling stations (GFS);

– in 2017, the consumption of liquefied natural gas in Ukraine will continue to grow and, in a positive scenario, will reach 1.7 million tons.

According to expert estimates, market growth will continue in the coming years [29].

2.2 Main characteristic of company"Matoni"

Matoni Limited Liability Company (fig. 2.9).The company was founded in 2011.Main activity: 49.41 Freight transport by road.Director: Chaika IV

Figure 2.9– Company’s logo

The car fleet includes: 30 units of equipment, including 15 truck tractors (Euro 3-5) and 15 tank semi-trailers for LPG transportation. (Car fleet of 2005-2012).

Number of employees according to the staff schedule: 41 employees.

1. Director;
2. CFO;
3. Chief Accountant;
4. Chief mechanic;
5. Engineer for transport safety in road transport;
6. Lawyer;
7. Sales manager of motor transport services (logistician);
8. Accountant, specialist in monitoring and reporting (dispatcher);
9. Engineer for labor protection and fire safety;
10. Mechanic on release of T3 in flight / and inspection after flight;
11. Paramedic for pre-trip / post-trip inspections.
12. 30 truck drivers.

Our main area is specialized transportation of hazardous materials ADR (namely LPG) [15].

Matoni is a private company founded in 2011. Since the beginning of 2011, the main range of our activities is the provision of road transport services for LPG transportation in the domestic market of Ukraine, proving itself as a reliable and responsible carrier. In 2014, it received an international License for the transportation of dangerous goods, in the profile – liquefied gas (propane, butane) outside Ukraine. We work with our customers on long-term contracts and one-time orders. The company can communicate in three languages: Ukrainian, English and Russian. As a result, the company provides professional services at the highest level. At Maton, the car fleet travels an average of 150,000 km each month, transporting thousands of tons of cargo. We are aware that investments in modern technology affect not only safety during transportation, but also during loading, reloading and unloading of fuel. Our goal is the constant optimization of transport costs.

We offer transportation of LPG (propane, butane) from terminals located in Ukraine and foreign refineries and terminals: Russia, Belarus, Poland, Lithuania, Serbia, Romania, Slovenia.

Matoni's mission is to provide high quality services in the field of logistics and transportation of dangerous goods and to create efficient transport solutions that deliver complete satisfaction to our customers.

We achieve the set goals thanks to professionalism, purposefulness and constant improvement. In the forms of cooperation we use knowledge and experience, we strive to provide well-thought-out solutions that are highly valued by our customers and business partners.

Matoni's partners are: OKKO, VOG, Sokar, UPG, Amik, Transcontinental, Rick-Oil, Sun-Oil, Geos, JV Gas "," Prometheus "," Crocus C "," Olium "," Optimus "," Gaztron "," Gazovik "," Yukan "," Fribbas "," Star-nafta "," Sky-town "," Resource -gas service "," H-status "," Im Gas "and others.

In cooperation, we bet on good relations and mutual respect, and that is why we will continue to act in accordance with the principle of "fair play". We want every customer to feel that by choosing the services of "Matoni" he made the right choice.

Matoni has repeatedly participated in international LPG forums and shared its practical achievements and informative information.

Market pricing:

– the flight, in standard cargo transportation, is calculated by mileage from ATP-loading-to unloading and at this distance the price per flight is formed;

– ADR for transportation of dangerous goods, flight by mileage is calculated from ATP-loading-unloading-before returning to ATP. And at this distance the price for the flight is formed.

– in the standard market transportation of dangerous goods, is pricing by mileage (from ATP-go to loading, then go to unloading from return to ATP) and at this distance the price per flight is formed, the average tonnage of cargo reaches 18-18.5 tons (possible agreements also to pay for the amount of loaded cargo);

Transportation of dangerous goods is significantly different from standard flights, where standard (tilt trailer, refrigerator, thermal trailer, etc.) can be paid in two directions by transporting 2 different loads, in the transportation of dangerous goods (tanks) payment is traditionally made in two directions but with one download [32].

Matoni has chosen a strategy in business, it is a priority in international transportation.

Reasons for priority:

1. The price of transportation is higher than in domestic traffic, and also has its gradation in the CIS and Europe.

2. Zero rate on taxes in international traffic (transportation according to the DEM).

3. A small number of competitors in international traffic.

4. Roads are 90% serviceable and intact.

5. The price of fuel at the gas station in Belarus and Russia is lower than in Ukraine (there are almost no gas stations in Ukraine).

6. Flight time. In 80% there are flights of loading of the terminal and unloading of the terminal, or loading of the terminal and unloading in the motor transport tank of the second carrier which in the future will make distribution on AGZP (automobile gas gas stations). And 20% of flights are distributed by AGZP.

7. The price of fuel when refueling in Belarus, Russia is lower than in Ukraine (economic effect bonus affecting the financial result).

8. Stability and fast efficiency of transport use. In 80% there are flights of loading at the terminal and unloading in the terminal, or loading in the terminal and reloading in the tanker of the second carrier which in the future will make distribution on AGZP (automobile gas filling stations). And 20% of flights are distributed by AGZP.

Competition:

1. Insignificant, 2-3 real competitors in the market, not including such giants as OKKO, WOG, UPG, KLO, Avantage and others. Which do not conduct commercial activities and carry only the LPG resource.

2. In most companies, carriers do not have experience working abroad, issuing permits if necessary in some countries;

3. Non-compliance of the technical condition of the car fleet with Euro standards and the complete set of ADRs, and the conditions of transportation in 65% of Ukrainian enterprises do not meet the standards of "ADR" for travel abroad and transportation of dangerous goods.

4. Lack of permits for the carriage of dangerous goods, such as obtaining an international license, possibly after 3 years of experience in the profile of the company on domestic flights in Ukraine;

5. Large investments in starting a business, the market price for LPG tank semi-trailers (the price of a new one is 90,000 euros, the used one depends on the year of manufacture and configuration, the price is 40,000 euros) [1].

The main international destinations in Ukraine in terms of 2017-2019:

– Rechitsa (Belarus);

– Mozyr (Belarus);

– Vitebsk (Belarus) together in Belarus form the basis of transportation 78%;

– Klintsy (Russia);

– Bryansk (Russia) from 2018 together on the Russian Federation make 15%;

– Vilnius (Lithuania);

– Riga (Latvia) together in the Baltics account for 2% of traffic;

– Mokrany (Poland) in total 2% of traffic;

– Satu Mare / Galati (Romania) account for 2% of international traffic;

– Debrecen (Hungary) 0.5% of traffic;

– Subotica (Serbia) 0.5% of international traffic to Ukraine.

Information on domestic transportation in Ukraine:

– the price is lower than on international transportations;

– the price is formed across Ukraine for transportation with the VAT of 20% (transportation according to TTN);

– the road infrastructure does not correspond to GOST, and at some distances the road is absent;

– flight time is unregulated, in terms of distribution of delivery on AGZP;

– flights are up to 100 km;

– no stability in the order, great competition;

– the price of fuel does not compete with the price of refueling in Belarus and Russia.

The structure of the company "Matoni" is presented in fig. 2.10.

The structure of the enterprise (functional responsibilities):

Director – Manages in accordance with applicable law production and economic and financial and economic activities of the transport company, is fully responsible for the consequences of decisions, preservation and effective use of property of the transport company, as well as for financial and economic results of its activities. Organizes work and effective interaction of all structural divisions and production

units, provides performance by the motor transport enterprise of all obligations to the local budget, the state social funds, suppliers, customers, to bank establishments and others [2].

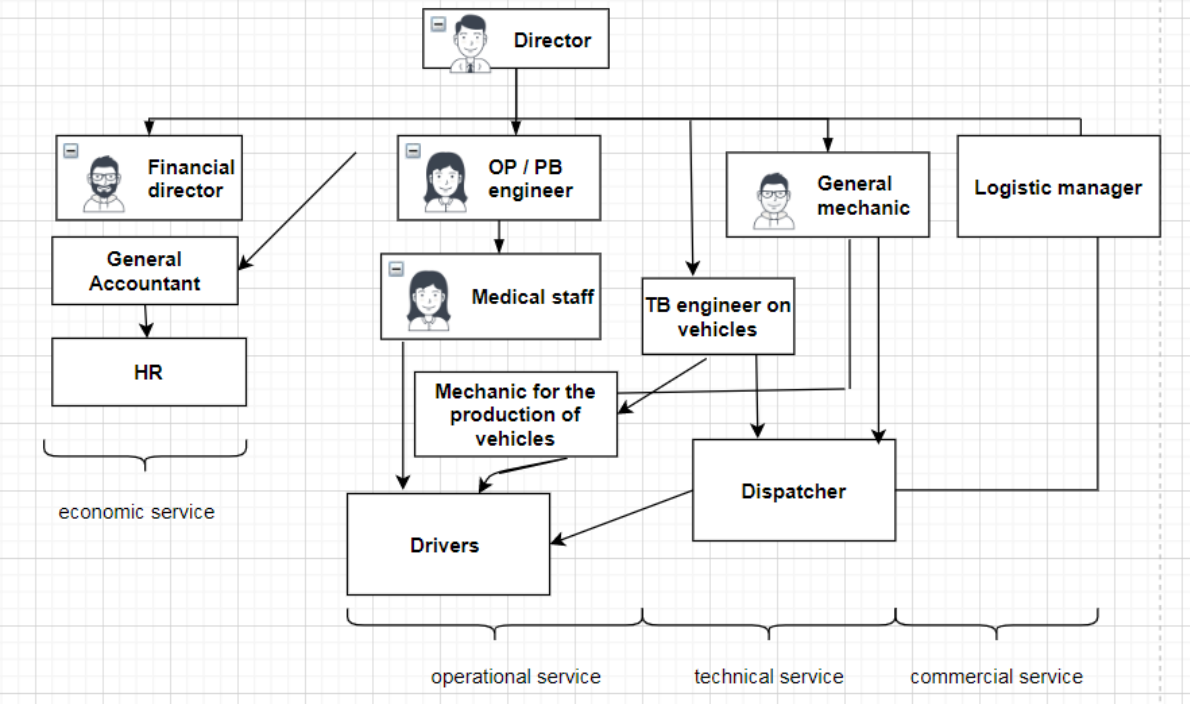


Figure 2.10– The structure of the company "Matoni"

Organizational production and economic activities, takes measures to provide the company with qualified personnel, provides the right combination of economic and administrative methods of management. Together with the labor collective provides development of the conclusion and execution of the collective agreement, observance of labor discipline, promotes development of labor motivation and other. The director also solves issues related to the financial and economic activities of the enterprise, ensures compliance with the law in the activities of the enterprise [3].

Economic service

Financial Director: Organizes management accounting of the results of economic and financial activities of the enterprise, as well as financial, settlement and credit operations, controls the economical use of material, labor and financial resources, preservation of property of the enterprise. Provides rational organization of

internal accounting and reporting, conducts economic analysis of economic activity, forms the budget of the enterprise [43].

Chief Accountant: Carries out the organization of accounting of economic and financial activities. Forms in accordance with the legislation on accounting accounting policy based on the structure and features of the enterprise, organizes the accounting of property, monitors the primary accounting documents, accounts, payment obligations, the establishment of salaries, as well as keeps records of the company [4] .

Operational service

Engineer for labor protection and fire safety: Organizes and coordinates work on labor protection at the enterprise, monitors compliance with laws and regulations on labor protection, briefings, controls the staffing and timing of fire trucks on vehicles according to "ADR" -ADR (agreement on the international transport of dangerous goods), conducts training in case of negative consequences, controls the working hours and rest of drivers according to the EUTR (European agreement on the work of crews of vehicles that are responsible for international road transport) [21].

Road safety engineer: Carries out systematic control over the observance by all employees of the motor transport enterprise of the rules of road traffic and technical operation of cars, participates in the development of documents for the transport of dangerous goods, conducts lectures, seminars on traffic rules for the transport of dangerous goods inland and international traffic [5].

Medical worker (pre-trip and post-trip examinations):

Monitors the health of drivers, conducts inspections, maintains certain documentation [45].

Mechanic for the release of vehicles in flight: Controls the technical condition of the vehicle (vehicle), the quality of technical repairs, maintains certain documentation [35].

Dispatcher: carries out operative regulation of the transportation process, conducts primary document flow (travel, TTN / DEM, letters for business trips, letters of rest of drivers, according to the regulation 561/2006 (EU), controls the

movement of vehicles online, monitors compliance with fuel consumption (fuel and lubricants)) in flight, etc. [8].

Truck drivers: Manages specialized transport for the transport of dangerous goods, meets the requirements of traffic regulations, PB, OP, BDR and others.

Technical service

Chief Mechanic: Provides uninterrupted and technically correct operation of vehicles, organizes and keeps records of repairs of vehicles, maintenance and operating costs of fuel (lubricants), maintains certain documentation, monitors repairs and maintenance, purchases spare parts, conducts inventory primary documents [36].

Commercial service

Logistician (sales specialist manager): Carries out operative regulation of the liquefied gas (LPG) supply process of the customer's AGZP network, according to production plans according to the contract, in other cases controls the movement of liquefied gas at terminals (gas storages) according to the delivery schedule. Carries out search of new clients, bears full responsibility for process of rendering of services. It must also have a clear idea of the engineering process for LPG during loading and unloading at terminals and AGZP, as well as the complete set of tank specifications by means of LPG dispensers, follow the rules of transportation according to 281 instructions and ADR [10].

2.3 The main production and financial performance of the company "Matoni"

Demand for the services of the company "Matoni".

According to UPECO, in 2017, the consumption of liquefied natural gas in Ukraine will continue to grow and, in a positive scenario, will reach 1.7 million tons.

Ukrainian LPG market demonstrates growth (fig. 2.11).

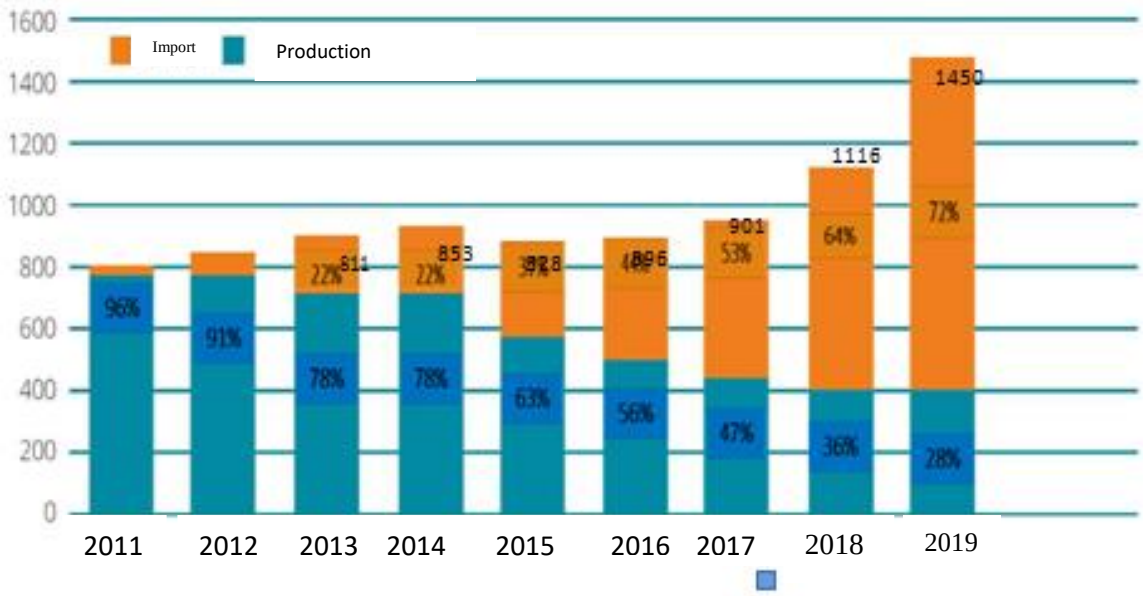


Figure 2.11– LPG market balance in 2011-2019, thousand tons

Factors in the formation of demand for Matoni services.

The main suppliers of LPG to the Ukrainian market are Russia (54%), Belarus (16%), which control 70% of the market. About 27% of the market falls on Ukrainian enterprises [48].

The Ukrainian LPG market is import dependent (fig. 2.12).

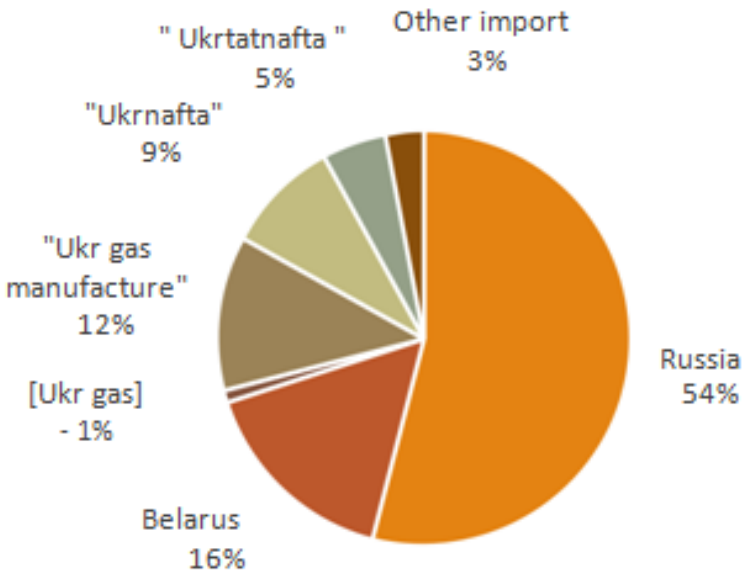


Figure 2.2.3 – Ukrainian LPG market

The filling structure of the Ukrainian gas market in 2019 (fig. 2.13).

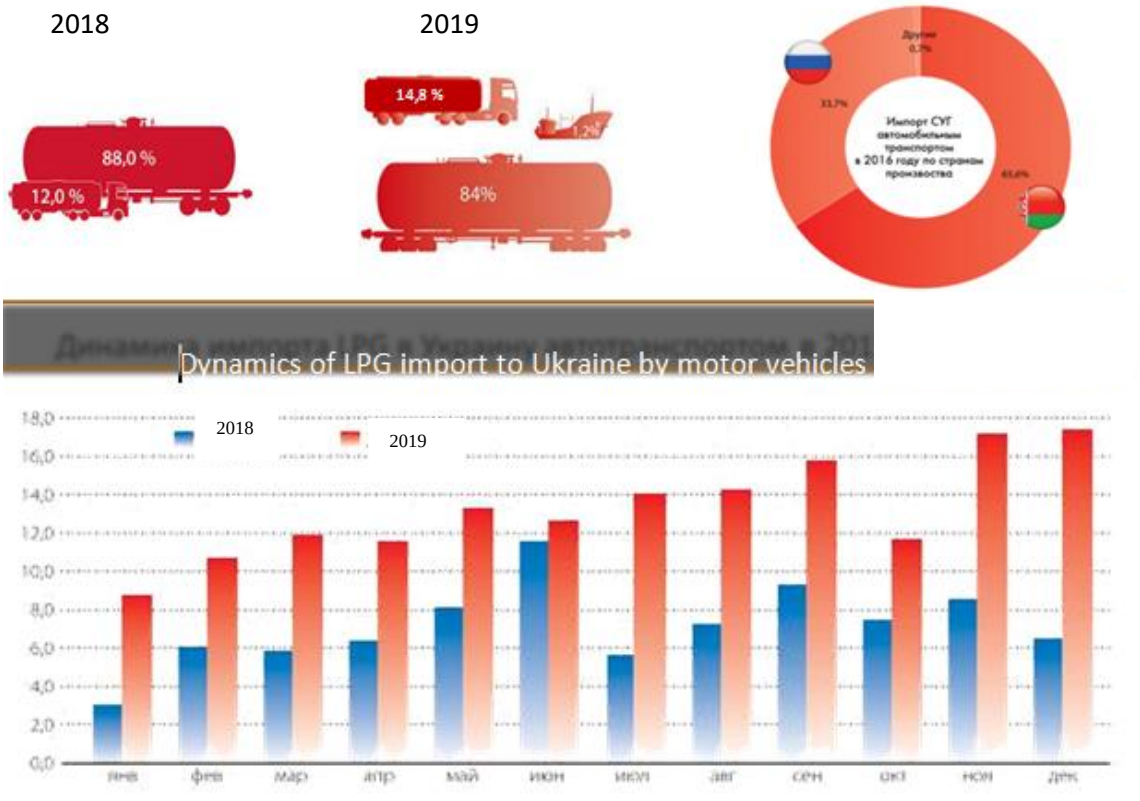


Figure 2.13– Structure of LPG imports to Ukraine by road in 2018-2019,%

Compared to 2018, the volumes of LPG delivered by gas carriers to Ukraine in 2019 increased by 87% from 85.5 thousand tons to 160 thousand tons.

The main reasons for the growth:

1. Reducing the cost of imports due to the delivery of the resource by road (saving on logistics about $ 50 per ton).

2. The lack of free capacity in Ukraine for gas storage [38].

LPG gas shipments are logistically advantageous in the border regions – Kiev and Zhytomyr (Belarus), Chernihiv (Russia and Belarus), Kharkov and Sumy (Russia) (fig.2.14) [11].85% of Matoni flights in 2018-2019 fall to Belarus and Russia.

Lower cost for transportation of LPG according to the scheme "from the factory to the gas station" from the territory of Belarus and the Russian Federation [17].

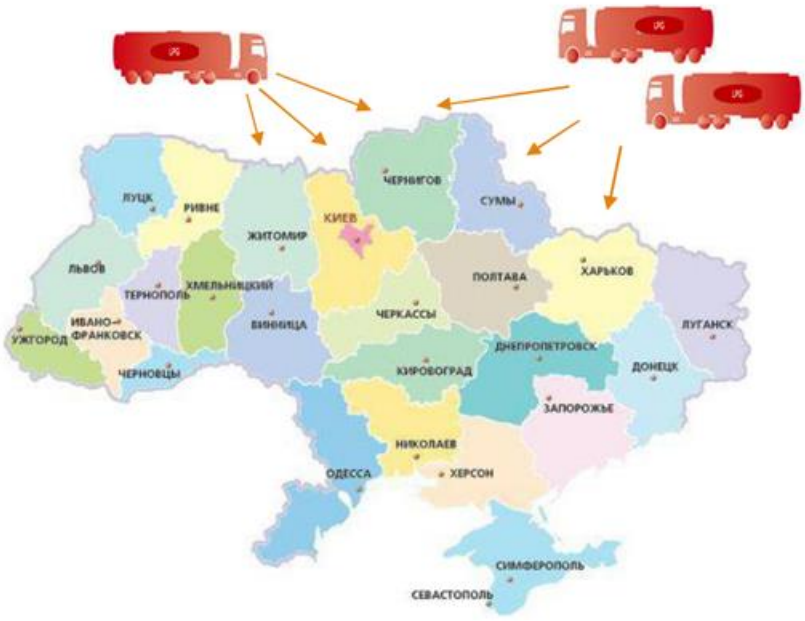


Figure 2.14– Flights of the company "Matoni".

The cost of freight forwarding services is differentiated depending on the intensity of use of rolling stock and the number of shipments (table 2.1).

Table 2.1 – The cost of trans-forwarding services

№	Trans-forwarding services	2017year	2018 year	2019year
1	2	3	4	5
1	International transportation (Russia, Belarus)	23UAH / km (excluding VAT)	24 UAH / km (excluding VAT)	26 UAH / km (excluding VAT)
2	International transport (EU)	27 UAH / km (excluding VAT)	29UAH / km (excluding VAT)	31UAH / km (excluding VAT)
3	Domestic transportation (Ukraine)	19UAH / km (including VAT)	21UAH / km (including VAT)	23UAH / km (including VAT)
4	Domestic flights (Ukraine) up to 300 km	21UAH / km (including VAT)	23UAH / km (including VAT)	25UAH / km (including VAT)

The Matoni company operates international and domestic flights and provides corners for transporting LPG to the main players.

The market share of Matoni LLC in 2019 was 9.8% (fig. 2.15).

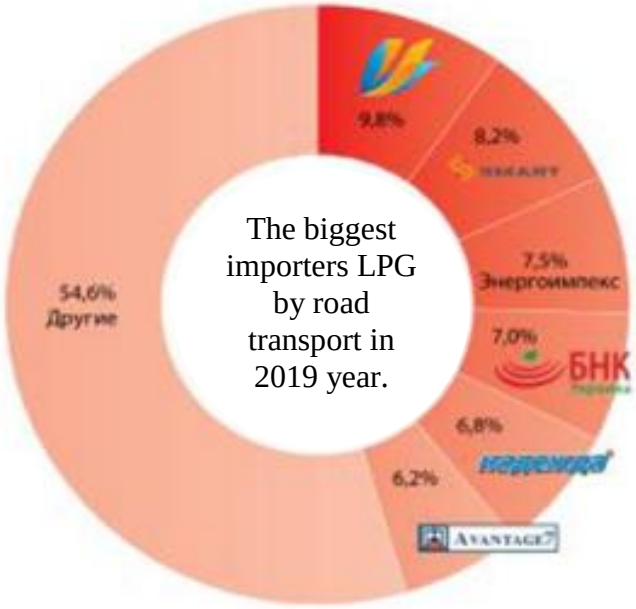


Figure 2.15.–The largest importers of LPG

Given the upward trend in the Ukrainian LPG market in the coming years, high-quality transport services for the delivery of LPG by auto-rates will continue to be in demand among traders and cross-border retail [19].

According to analysts, in 2019, auto-import volumes may increase to 200 thousand tons.

Key customers of the company "Matoni" 2019 (fig. 2.16).

Figure 2.16 – The main customers of the company "Matoni" 2019.

The car fleet includes: 30 units of equipment, including 15 truck tractors (Euro 3-5) and 15 tank semi-trailers for LPG transportation. (Carfleetof 2005-2012).

Cargo truck tractor-E. Model: "DAF-XF 480" euro 3, 2005 release. Number of 8 units.

Cargo truck tractor-E. Model: "Scaniar 420" euro 4, 2007 release. Complete set of ADR. Quantity – 2 units.

Cargo truck tractor-E. Model: "MANTGS 480" euro 5,2012 of release. Number -3 units. Complete set of ADR + 2 units, without complete set of ADR = 5 units.

Specialized tank semi-trailer-E. Model: "DROMECHCNG-47" of 2006 of release, (a complete set with the pump of issue "Coriolis". Quantity – 2 units).

Specialized tank semi-trailer-E. Model: "LDSNG-A1" of 2004 of release, (a complete set with the pump of issue "MA-7"). Quantity – 13 units.

The factory equipment of the car ADR is a wiring of the car, made in safer insulation, also equipped with two fuses for emergency shutdown of the battery in the cab and behind the cab, also supplemented with reinforced corrugation and covers with thermal protection, exhaust systems, supplemented protection each car with ADR equipment has a plate that confirms the factory standards according to "ADR" [49].

Analysis of Matoni's performance in Ukraine Let's start with an analysis of the number of shipments. In general, the number of shipments each month can vary greatly. Thus, we analyze the data on the average number of shipments over the past few years.Average annual number of traffic performed by Matoni in 2017-2019 are presented in appendixe A.

Dynamic of traffic performed by Matoni in 2019 (fig. 2.17).

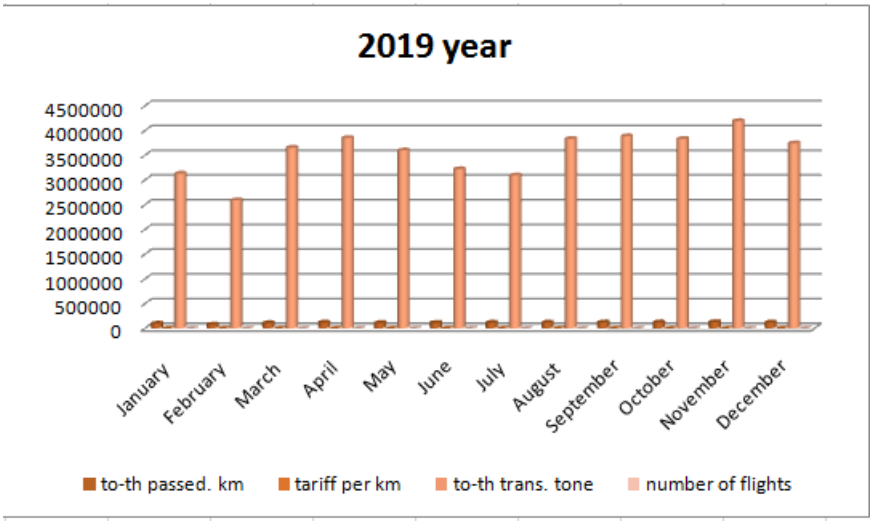


Figure 2.17– Dynamic of traffic performed by Matoni in 2019

Dynamic of traffic performed by Matoni in 2018 (fig. 2.18).

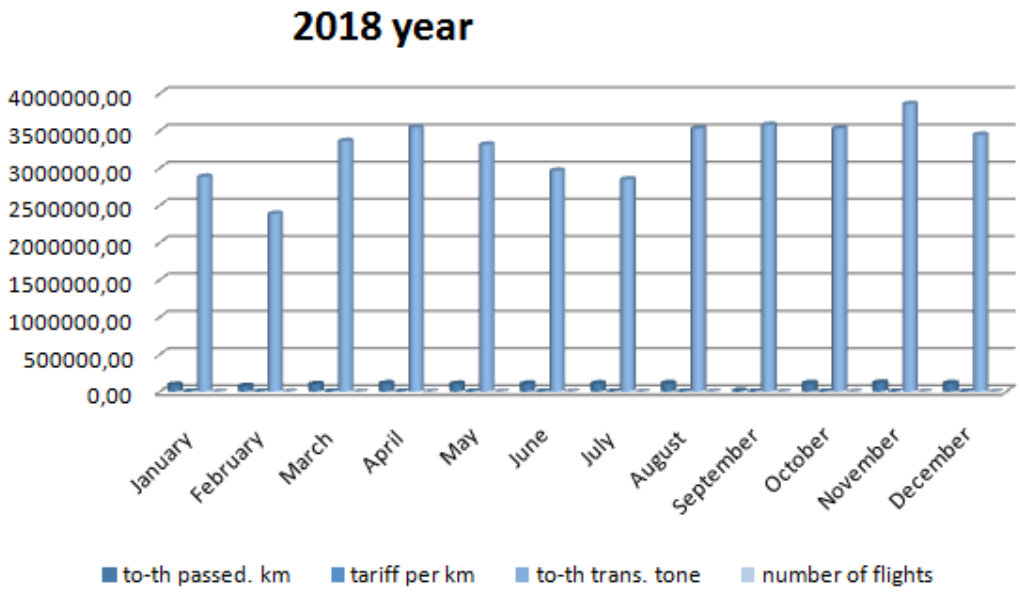


Figure 2.18– Dynamic of traffic performed by Matoni in 2018

Dynamic of traffic performed by Matoni in 2017 (fig. 2.19).

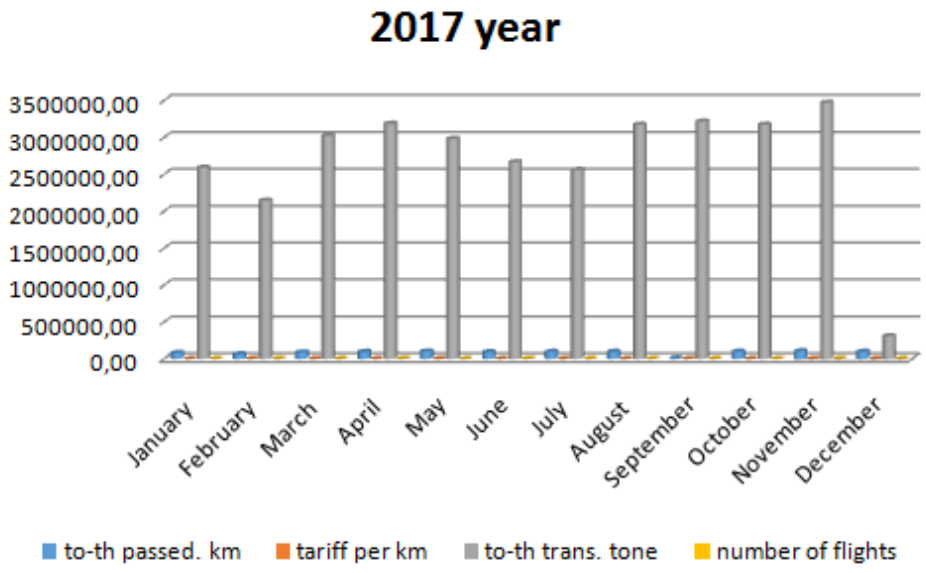


Figure 2.19– Dynamic of traffic performed by Matoni in 2017

The dynamics of traffic is shown in fig. 2.20. We see that Matoni has increased the number of its shipments in 2017-2019. But today the company is developing successfully.

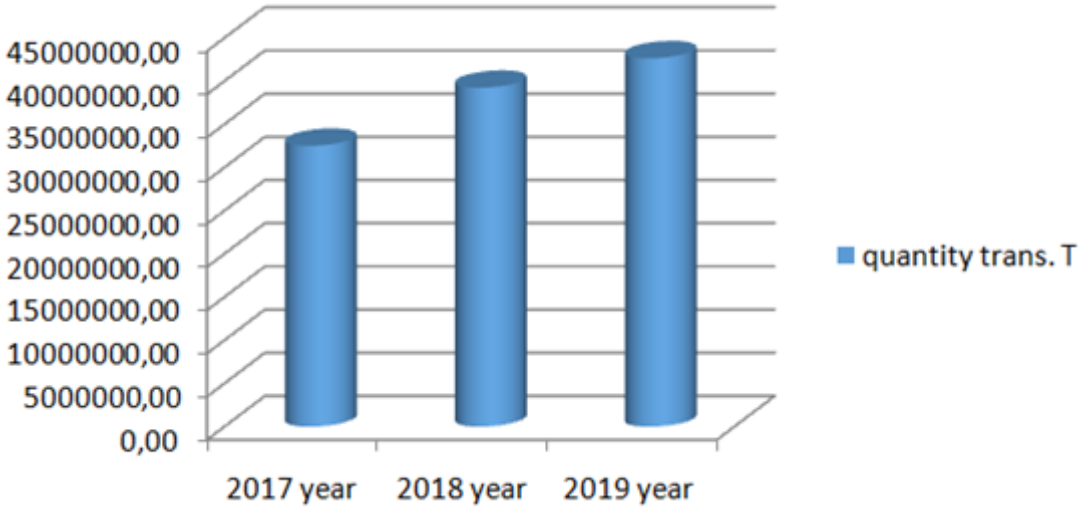


Figure 2.20– Dynamics of the number of traffic per year

In these tables and graphs, we saw the number of flights, transportation, fares, etc. I took the data for the last three years (2017, 2018, 2019). Based on the tables, we can notice that, compared with each year, the indicators increased. Tariffs increase and the number of shipments increases. Also, every year the profit grew.

Matoni's assets include fixed and current assets. The sources of property formation are the incomes received from the rendered services.

Statistics on revenues, expenses and profits of Matoni are presented in table. 2.2.

Table 2.2– The main financial results of Matoni

№	Indicators	2017 year	2018 year	2019 year
1	2	3	4	5
1	Total income	29354169	32615751	35439656
2	Total costs	23017080	25574536	27798414
3	Net profit	6326930	7029930	7641236

The dynamics of the main financial results of the companyMatoni are presented in fig. 2.21. As you can see, Matoni's revenues are constantly growing from year to year, despite the fact that in the period from 2017 to 2018 there was a decrease in the number of performed shipments. In our opinion, this is the result of inflation that occurred in the country during this period and the fall of the UAH.

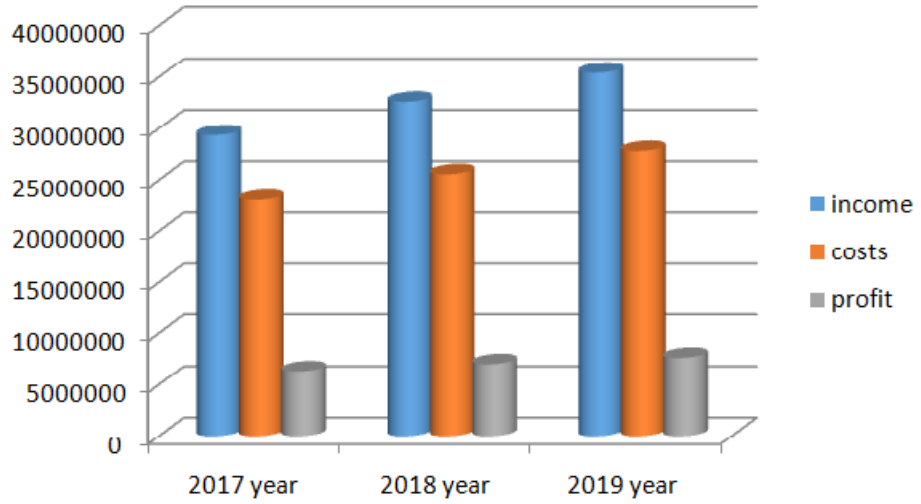


Figure 2.21– Dynamics of the main financial results of Matoni

In the dynamics of the main financial results of Matoni, we see only positive changes. Every year the company brought more income.

2.4 Chapter 2 summary

This section analyzes the activities of Matoni, which is now an international private company. The company was established in 2011, with headquarters in Kyiv, Ukraine. The main activity of the company is the provision of motor transport services for the transportation of LPG in the domestic market of Ukraine.

Own fleet consists of 30 vehicles. At Maton, the car fleet travels an average of 150,000 km each month, transporting thousands of tons of cargo.

Matoni's partners are: OKKO, VOG, Sokar, UPG, Amik, Transcontinental, Rick-Oil, Sun-Oil, Geos, JV Gas "," Prometheus "," Crocus C "," Olium "," Optimus "," Gaztron "," Gazovik "," Yukan "," Fribbas "," Star-nafta "," Sky-town "," Resource -gas service "," H-status "," Im Gas "and others.

Analysis of traffic dynamics showed that Matoni has increased the number of its shipments in 2017-2019. But today the company is developing successfully.

CHAPTER 3
PROPOSALS FOR THE IMPROVING ORGANIZATION OF LPG TRANSPORTATION TO UKRAINE

3.1 Detection of shortcomings in the process of LPG delivery and possible ways to eliminate the identified shortcomings

Identified shortcomings in the process of LPG delivery and possible ways to eliminate the identified shortcomings:

There are inaccuracies during unloading, through the mechanical meter "MA-7" and the measuring instrument of temperature and density "thermodensimeter", some drivers have the opportunity to manipulate, namely not correctly measure the density, temperature on the "thermodensimeter", and there are cases that time of metrology calibration works (happens 2 times a year, spring / autumn) ask service employees to increase an error in delivery of LPG, through the MA-7 mechanical counter (norm to 5 l on 1000 l.) (fig. 3.1, 3.2).

Mechanical gas meter type MA-7 and any other types provide many possibilities with manipulations in the volume of LPG (liquefied petroleum gas). The accuracy class of measurement of such meters does not meet the requirements of management accounting.

Currently, most customers are already setting conditions for the gas carrier to come with an electronic high-precision gas meter that measures the temperature, density, volume and weight of propane-butane. This is initially prescribed in the tender documentation of companies as one of the main conditions when considering commercial offers of liquefied gas suppliers [33].

Coprim LPG thermometer (densitometer) is designed to determine the quality of liquefied petroleum gas, namely to determine the ratio of its main constituents of propane and butane [34].

Figure 3.1 –Mechanical gas meter type MA-7

Figure 3.2 – Mechanical gas meter type MA-7

As you know, high-quality gas has a ratio of propane and butane at best 50% to 50%. Most LPG equipment is designed to use equal propane-butane gas in it, namely 50% butane 50% propane. In the event that the gas is dirty and there is more butane,

the gas does not have the required calorific value and, accordingly, its calorific value is lower, and the gas consumption increases accordingly. In turn, low-quality (dirty) gas destroys equipment, destroys regulatory groups, clogs the filter, and settles on the membranes.

To determine the quality of the liquefied hydrocarbon gas, the SUG or (Densimeter) temperature densimeter is used(fig. 3.3). Portable device for determining vapor pressure and weight of LPG. Using a thermo-densimeter, it is possible to simultaneously determine the vapor pressure and the weight of the liquid, immediately taking the thermal, manometric and densimetric readings.

Figure 3.3 – SUG thermdensimeter (densitometer) Coprim

Given the inaccuracy when unloading liquefied gas at the gas station (car gas station) on tanks where there is a mechanical meter (MA-7) and a means of measuring density and temperature "thermodensimeter" I propose to make commission control unloading in the presence of driver, customer representative and customer representative carrier and customer, also increase the number of checks in

metrology service centers on the number of checks in the unloading of the product. The most ideal option for unloading control is to replace the mechanical meter MA-7 with a thermodensimeter with a modern electronic "Coriolis" where it clearly determines the density, temperature and quantity of unloaded product in kilograms and liters. (but the price of such a Coriolis meter with installation is around 18,000 euros) [41].

ELMETRO-Flomac Coriolis (fig. 3.4) flowmeters are designed for direct measurement of mass flow, density, temperature of liquids, gases, pulps, oil-water emulsions, oil, oils, suspensions, gas condensate, solutions, liquefied gases, compressed gases, food liquids, etc. Moreover, viscosity and the density of the medium being measured does not affect the measurement results.

Figure 3.4 – ELMETRO-Flomac Coriolis

Most of the manipulations are gas stations, where there is one "professor" is a driver who can tell and show in most cases to an inexperienced gas station employee, at unloadings where there is unloading through scales (GNS terminals, oil depots) there is almost impossible to manipulate the amount of cargo.

This is a very interesting topic of "fraudulent manipulation of drivers" of many schemes, for example, in 2017-2108 drivers (without specifying companies) in

collusion with the staff of the oil refinery "Rechitsa" RB used a scheme of theft of liquefied gas, namely, "freight truck tractor »Equipped with two fuel tanks, such as 500 and 900 liters, made by drivers in collusion with refinery staff, the car came with two filled tanks in a small diesel fuel in the second large water, passed security control, then weighing, water was drained on a specially equipped site where were specially made highways for collecting rainwater into underground reservoirs. Thus, drivers removed from the refinery excess liquefied gas (the price of the question was from 10-20 dollars per 100 kg), also passing the international customs crossing which was not equipped with "weight control" clearance was carried out on the DEM quantity of cargo, well, then in Ukraine already waiting the gas carrier of accomplices which accepted surpluses on quantity and the price any more in kilograms and in liters, further our gas carrier went with the correct cargo to the customer.

Why this happened, the plant also did not have electronic meters and everything was due to the weight method of loading, plus the human factor.

Therefore, in this case, the security service of the carrier and the customer more closely monitor the cargo during transportation and the number of loading and unloading. All Matoni cars are equipped with a GPS system (but there were also cases when drivers on certain sections of the route included "silencers").

My suggestion: to change the number of drivers from male to female, thus in theory it is possible to reduce the risks of certain losses of liquefied gas during transportation and unloading. There are many female drivers abroad who practice honestly and honestly.

When transporting liquefied LPG gas from Lithuania and Latvia to Ukraine via the Republic of Belarus, it is necessary to hire “a border convoy from border to border, for which the carrier pays for the service provided by the convoy service.

It is recommended to make a "customs passport for the tank under seals" (fig. 3.5, 3.6), thus under the number seals that are specified in the CMR transit without convoy to pass through the transit territory, this applies not only to Belarus but also Moldova when transporting from Romania to Ukraine.

One accompaniment is priced from 300-400 euros.

Figure 3.5 – Example of sealing

Figure 3.6 – Example of sealing

70% of the fleet should be stored in a warehouse with a new tank without unloading 13500 kg, and in a warehouse with a new tank without a heating and burning 7800 kg.

It is recommended to extend respect to the new models of filling tanks with new mass without unloading 11800 kg and towing trucks with new mass without unloading 6900 kg as a result of a new warehouse; the benefit (bonus) and expenses will not be paid.

Change of 15, total of 8 single-tractor units of euro -3, no factory rules and specific ADRs for transportation of non-residential services, for any transport and transportation, Ukraine is free of charge. , Moldova.

It is recommended to re-proinformuvati vlasnikiv biznesu scho transport is not competitive in the market analysis i zgidno rules transported nebezpechnih vantazhiv pidpadaє pid zaboronu transported nebezpechnih vantazhiv, potribno zrobiti grafik on do updates in the park vibrato model finansuvannya sidlovih tyagachiv of ADRs: through Relief od vlasnikiv biznesu, lizing, credit, rent, more.

On pre-contractual contracts, warehouse-warehouse (present vagovy control), but do not need to pick up a lot of vehicles when equipped with a clerk, are equipped with a clerk and a hydraulic crate for 1,500-2,000 kg of transport.

Recommendations: economical options for the most part installed in tanks, and for the very same:

– hydraulic installation in a set (technically yak vikachu gas);

– lichilnik MA-7;

– gas pump;

– hoses and more;

– also spare wheels (in Europe, water has been blocked up, but repair the car tire, so special service is required).

In this version we can change the weight of the wag for 1800 kg.

The most expensive option is to remember the old important tank for the new “transport version”; in this order, the old tank should be important 13500 kg and the new tank is “transport” 10 000 kg, warehouse warehouse 3500 kg.

High costs for maintenance and service of vehicles.

It is recommended to upgrade those vehicles that have a significant negative impact on the financial result.

3.2 Recommendations for improving the process of LPG supply to the Ukrainian market

1. It is recommended to increase the efficiency of the vehicle due to the double crew (2 drivers) for a period of 15 days, which will be able to work a total of 21 hours, of which 18 hours of driving per shift, currently one driver with a total working time of 13 hours of which he can manage 9 hours per shift. Work and rest of drivers is carried out according to the regulation 561/2006 ES (ESTR).

90% of terminals, refineries and filling stations are open 24 hours a day.

Double crew per month 30 calendar days, can drive 345 hours and cover a distance of 1 hour 60 km and it will be 20,730 km per month.

A single crew per month 30 calendar days, can drive 216 hours and cover a distance of 1 hour 60 km, which will be 12960 km per month.

Therefore, approximately due to the double crew, we will be able to raise the efficiency of the vehicle by an average of 65-70%

2. It is recommended to carry out unscheduled inspections as a part of the commission together with the representative of the customer at unloading and metrological checks. Customers to train with staff involved in the reception of LPG. According to the material contract, the driver is fully responsible for the amount of cargo.

According to statistics, the driver does not unload from 50 to 200 kg of LPG, an average of 15 flights per month of 100 kg = 1500 kg, lost customer benefits.

Also, some LPG terminals in Russia, Belarus, Ukraine give incorrect information on the price of manipulation of the density and temperature of liquefied gas, which gives an error in the exact amount, when receiving the product, the customer's representative or carrier scales.

3. Recommended in the direction of the Baltics-Belarus-Ukraine. Transit of liquefied gas through Belarus and the use of escort escorts, the price of which per flight is on average 250-300 USD ($), is possible through the issuance of individual

"customs passports" for tank trailers, which will clearly indicate the sealing points of technological places and then the escort / convoy through the transit territory will automatically disappear, according to the rules of transportation in the Republic of Belarus. For a month 10 flights on the average expenses make 2500 USD;

4. The average statistics of cargo transportation per flight is 18000-18500 kg LPG, according to the rules of transportation road train is a full weight with a load of 40 000 kg. (Tractor-7500kg, Semi-trailer tank 13500kg (with meter and hydraulics) and fuel DP in tanks -500 kg.) It is recommended to pay attention to the new generation tanks (fig. 3.7 and 3.8) produced since 2015 and make a total weight of 11900kg thus increasing the amount of cargo by 1600kg per flight , in proportion to the month and year.

Figure 3.7 – New generation tanks

5. It is recommended to replace Euro-3 tractors with a minimum of Euro-5 with the factory standard technical specification of ADR and a gross weight of not more than 6900 kg. This will increase the geography of flights and the amount of cargo when transported from the Republic of Belarus to the EU and back from the EU to Ukraine, and will not pay fines in Russia that the vehicle is not equipped with ADR.

Figure 3.8– New generation tanks

Euro-3 truck tractor (fig. 3.9) and Euro-5 truck tractor (fig. 3.10).

Figure 3.9– Euro-3 truck tractor

Figure 3.10– Euro-5 truck tractor

If we look at these two models of the Evro-3 and Evro-5 seat tractor, the price difference is 4,000 Euro. Euro 3 costs about 8,000 Euros, and Euro 5 costs about 12,000 Euros. But by paying more for the tractor, we can carry out more flights and increase the amount of cargo.

6. It is recommended for long-term contracts of 1 year (where the warehouse-warehouse or refinery-terminal) according to the technical conditions is suitable transport tank without meter and hydraulics, dismantle the equipment and transfer to the warehouse. This will increase the amount of cargo from 18,500 kg to 20,000 kg. Thus, the amount of cargo will increase for transportation in proportion to the price will rise for the service. And in combination with the replacement of the tractor with a lighter 6.9 tons, the effect can reach 2200 kg plus per flight, conditionally 20500 kg is quite real. In the market, the customer is looking for a carrier monitor that can load the maximum amount of goods and make a reasonable price.

7. It is recommended to replace the vehicle with service and maintenance of cars that have traveled more than 1,500,000 km. Leasing / loan or financial assistance to upgrade the vehicle owners' fleet.

3.3 Calculation of the economic effect of project proposals

1. The efficiency of the vehicle ("vehicle" in our case, tractor and semi-trailer tank) is average and therefore possible to increase due to "labor", thus we will increase the total mileage of the vehicle per month and reduce the time for delivery of LPG per flight;

I proposed to increase the number of drivers in the crew for a period of 15 days to fix two drivers per shift in this case, one works, thus we increased the driving time from 9 hours to 18 and the total working time from 13 hours to 21 hours (according to the rules of rest) and controls for truck drivers). In this case, we increase the operating time and control, thereby improving the efficiency of the vehicle (calculations are given in the table).

The actual work schedule of the driver of Matoni LLC (fig. 3.11).

Work 1 waters / crew.	1	2	3	4	5	6	wkn	1	2	3	4	5	6	wkn	wkn	1	2	3	4	5	6	wkn	1	2	3	4	5	6	wkn	wkn	
Days / month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Hours of driving .hour	9	9	9	9	9	9		9	9	9	6	9	9			9	9	9	9	9	9		9	9	9	6	9	9			
Resp. between changes	11	11	11	9	9	9	24	11	11	11	9	9	9	24	21	9	9	9	11	11	11	24	11	11	11	9	9	9	24	21	
General time of work for ch	13	13	13	15	15	15		13	13	13	15	15	15			15	15	15	13	13	13		13	13	13	15	15	15			
Cadence of drivers	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

Figure 3.11– The actual work schedule of the driver of Matoni LLC

The result of the work of 1 driver per shift during the 1st cadence. 69 hours.

The result of the work of 2 drivers per shift during the 2nd cadence. 69 hours.

The total driving time per month is 138 hours.

The average speed of a car carrying dangerous goods is 55 km / h;

138,5hX55km=7607 km.

Conclusion: it was found that in 50% of flights, one driver in the crew did not fit the schedule of work and rest per flight, namely:

total working time exceeded 15 hours:

Table 3.1 –Calculation of total working time

№	Indicators	Number	Units of measurement
1	2	3	4
1	Management	9	h
2	Loading	2	h
3	Passing MAPP	2	h
4	Time for customs clearance	4	h
5	Unloading	2	h
6	Day rest	0.45	h
7	Actual time =	20	h

Therefore, it was recommended to fix the car with 4 drivers with 24 hour schedule, 2 drivers 15 days of the first cadence and 2 drivers 15 days of the second cadence (fig. 3.12).

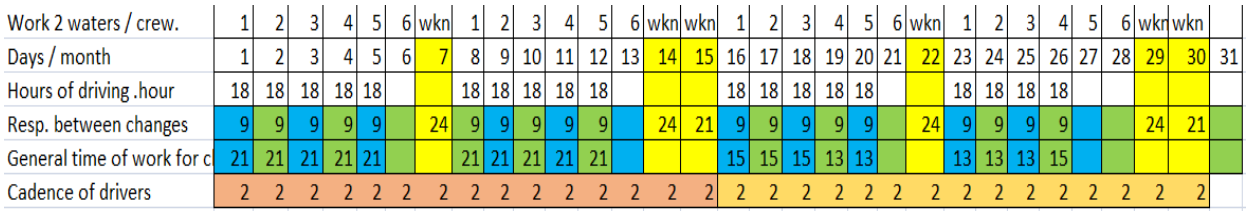


Figure 3.12– The recomended work schedule of the driver of Matoni LLC

The result of 2 drivers per shift during the 1st cadence. 123.5 hours.

The result of the work of 2 drivers per shift during the 2nd cadence. 123.5 hours.

The total driving time per month is 247 hours.

The average speed of a car carrying dangerous goods is 55 km / h; 247X55 = 13585 km, this is the minimum 750km per shift.

2. In long-term contracts warehouse-warehouse (there is a weight control), but not required means of measurement at unloading used tanks complete with meter and hydraulics that have a difference in weight of 1500-2000 kg more than compared with transport tanks.

There are two recommendations: an economical option is to remove the attachments from the tanks, namely:

– hydraulic installation in a set (technically yak vikachu gas);

– lichilnik MA-7;

– gas pump;

– hoses and more;

– also spare wheels (in Europe, water has been blocked up, but repair the car tire, so special service is required).

In this version, we have the opportunity to reduce our own weight by 1800 kg.

Matoni Cost Table is presented in table 3.2.

Table 3.2– Matoni Cost Table (for August 2019)

№	Indicators	sub-article	Matoni
1	2	3	4
1.	Income		5,034,000
2.	Administrative		89108,52
3.	Rent	Total rental of premises	7752
		Total rental server	3826,4
4.	Banking services	Total banking services	3538,82
5.	Office expenses	Total chance. \ Forms	1000
		Total Chancell. \ Paper	1000
		Total Stationery	2000
6.	Communal expenses	Total Utility / Water Supply	1700
		Total Commun / Heating	1039,84
		Total Utilities / Electricity / Electrical Measurement	2739,84
7.	Taxes	Total military duty	2801,98
		Total personal income tax	23286,61
		Total ERUs 8.41%	1467
		Итого ЕСВ 22%	29693,87
8.		Total VAT	0
9.	Search and staff training	Total search and training of personnel	1500
10.	Other administrative	Total other administrative	1000
11.	Connection	Total landline connection	0
		Total connection / Internet	800
		Total / Mobile	5500
		Total Communication / Postage	835
12.	Services from	Total Audit services	
		Total Information Services	2367
		Total Other Services	500
		Total Legal Services	0

The end of table 3.2

1	2	3	4
13.	Salary		799357
14.	Salary	administration	206437
		drivers	241920
		drivers UAH / km 1,8 UAH / km	351 000
15.	Production		2377673
16.	SPARE PARTS	Total consumables	9853
17.	REPAIRS	Total repairs	430000
18.		Dismantle / installation of attachments for 12 months. 1 unit = 18000 UAH demon and installation of 18000	0
		Total Damage / Fight	
19.	Fuels and lubricants	Total Fuel / Gas Sales	1439100
20.	Business Sales	Total travel per flight	480000
21.	Other services	Total other car wash services, licenses, permits	18720
22.	Others		120330,88
23.	Dividends	Total dividends – loan ПУМБ	44274,17
24.	Dividends	Total dividends– loan PORSCHE leasing	68365,22
25.	Dividends	Repair Audi Porsche Inter auto	7691,49
26.	Total		3386469
27.	Profit		1647531

Table 3.2 shows the costs of the company "Matoni". The income is 1647531 UAH.

Economic table of financial indicators is presented in table 3.3. It provides details of the distance traveled, kilometers traveled, price per km, and tonnage transported.

Costs of spare parts / repairs, fuel DP, flight costs for checkpoints

Table 3.4 provides the costs of flights for repairs, spare parts and fuel.

Table 3.3 – Economictable of financial indicators

№	List of cars	Mileage, km	to the flight	price / km	sum	tonnage per flight	km flight
1	2	3	4	5	6	7	8
1	AA8729EK	13000	18	26 UAH / km	338 000	18000	722,22
2	AA7718EK	13000	18	26 UAH / km	330 800	18000	722,22
3	AA9279EK	13000	18	26 UAH / km	338 000	18000	722,22
4	AA1926MT	13000	18	26 UAH / km	338 000	18000	722,22
5	AA5144CO	13000	18	26 UAH / km	330 800	18000	722,22
6	AA5733CO	13000	18	26 UAH / km	338 000	18000	722,22
7	AA7170OM	13000	18	26 UAH / km	330 800	18000	722,22
8	AA2465ET	13000	18	26 UAH / km	338 000	18000	722,22
9	AA2469ET	13000	18	26 UAH / km	338 000	18000	722,22
10	AA3348BO	13000	18	26 UAH / km	330 800	18000	722,22
11	AA8164OM	13000	18	26 UAH / km	338 000	18000	722,22
12	AA7949BM	13000	18	26 UAH / km	330 800	18000	722,22
13	AA7948BM	13000	18	26 UAH / km	338 000	18000	722,22
14	AA7945BM	13000	18	26 UAH / km	338 000	18000	722,22
15	AA5405CO	13000	18	26 UAH / km	338 000,00	18000	722,22
16	–	195 000	270	–	5 034 000	270000	10833,3

Table 3.4– Technical Cost Table

№	List of cars	Spare parts	Fuel l 36lon 100km	Checkpoints 1p/1800 UAH	number of tons, Trans t	Mileage, km	to the flight
1	2	3	4	5	6	7	8
1	AA8729EK	28600	4680	32000	356 400	13000	18
2	AA7718EK	14000	4680	32000	356 400	13000	18
3	AA9279EK	37540	4680	32000	356 400	13000	18
4	AA1926MT	13290	4680	32000	356 400	13000	18
5	AA5144CO	19556	4680	32000	356 400	13000	18
6	AA5733CO	44799	4680	32000	324 000	13000	18
7	AA7170OM	35932	4680	32000	324 000	13000	18
8	AA2465ET	48560	4680	32000	324 000	13000	18
9	AA2469ET	16206	4680	32000	324 000	13000	18
10	AA3348BO	23798	4680	32000	324 000	13000	18
11	AA8164OM	12004	4680	32000	324 000	13000	18
12	AA7949BM	4560	4680	32000	324 000	13000	18
13	AA7948BM	9206	4680	32000	324 000	13000	18
14	AA7945BM	21798	4680	32000	324 000	13000	18
15	AA5405CO	10004	4680	32000	324 000	13000	18
16	plus 15,000	354 853	70 200	480000	5 022 000	195 000	270
17	hinged stable	–	1439100 uah	–	–	–	–

The costly option is to replace the old heavy tanks with new "transport version" where in this case the old tank weighs 13,500 kg and the new tank "transport" 10,000 kg, the difference is 3500 kg. Assembly / disassembly is also taken into account. Dismantling 18000 UAH / installation 18000 UAH.

Proposed Cost Option (where from 5 tanks we remove the hinged equipment) (table 3.5).

Table 3.5– Proposed Matoni Cost Table (for August 2019)

№	Indicators	sub-article	Matoni
1	2	3	4
1.	Income		5 217 393
2.	Administrative		89108,52
3.	Rent	Total rental of premises	7752
		Total rental server	3826,4
4.	Banking services	Total banking services	3538,82
5.	Office expenses	Total chance. \ Forms	1000
		Total Chancell. \ Paper	1000
		Total Stationery	2000
6.	Communal expenses	Total Utility / Water Supply	0
		Total Commun / Heating	0
		Total Utilities / Electricity / Electrical Measurement	2739,84
7.	Taxes	Total military duty	2801,98
		Total personal income tax	23286,61
		Total ERUs 8.41%	1467
		Total ERUs 22%	29693,87
8.		Total VAT	0
9.	Search and staff training	Total search and training of personnel	1500
10.	Representative	Total representative	
11.	Other administrative	Total other administrative	1000
12.	Connection	Total landline connection	0
		Total connection / Internet	800
		Total / Mobile	5500
		Total Communication / Postage	835
13.	Services from	Total Audit services	0
		Total Information Services	2367
		Total Other Services	0
		Total Legal Services	0

The end of table 3.5

1	2	3	4
14.	Salary		799357
15.	Salary	administration	206437
		drivers	241920
		drivers UAH / km 1,8 UAH / km	351 000
16.	Production		2392673
17.	SPARE PARTS	Total consumables	0
18.	REPAIRS	Total repairs	439853
19.		Dismantle / installation of attachments for 12 months. 1 unit = 18000 UAH dismantling and installation of 18000	15 000
		Total Damage / Fight	
20.	Fuels and lubricants	Total Fuel / Gas Sales	1439100
21.	Business Sales	Total travel per flight	480000
22.	Other services	Total other car wash services, licenses, permits	18720
23.	Others		120330,88
24.	Dividends	Total dividends -ПУМБ loan	44274,17
25.	Dividends	Total dividends– loan PORSCHE leasing	68365,22
26.	Dividends	Repair Audi Porsche Inter auto	7691,49
27.	Other non-operating expenses		0
28.	Total:		3401469,4
29.	Profit		1 815 924

Table 3.5 shows the costs of Matoni. The income is 1815924 UAH.

Table 3.6 provides details of the distance traveled, kilometers traveled, cost per ki and transported tonnage.

Table 3.6– Economic table of financial indicators

№	List of cars	Mileage, km	to the flight	price / km	sum	tonnper flight	km flight
1	2	3	4	5	6	7	8
1	AA8729EK	13000	18	26uah-km	371 798,60	19800	722,22
2	AA7718EK	13000	18	26uah/km	371 798,60	19800	722,22
3	AA9279EK	13000	18	26uah/km	371 798,60	19800	722,22
4	AA1926MT	13000	18	26uah/km	371 798,60	19800	722,22
5	AA5144CO	13000	18	26uah/km	371 798,60	19800	722,22

The end of table 3.6

1	2	3	4	5	6	7	8
6	AA5733CO	13000	18	26uah/km	338 000	18000	722,22
7	AA7170OM	13000	18	26uah/km	330 800	18000	722,22
8	AA2465ET	13000	18	26uah/km	338 000	18000	722,22
9	AA2469ET	13000	18	26uah/km	338 000	18000	722,22
10	AA3348BO	13000	18	26uah/km	330 800	18000	722,22
11	AA8164OM	13000	18	26uah/km	338 000	18000	722,22
12	AA7949BM	13000	18	26uah/km	330 800	18000	722,22
13	AA7948BM	13000	18	26uah/km	338 000	18000	722,22
14	AA7945BM	13000	18	26uah/km	338 000	18000	722,22
15	AA5405CO	13000	18	26uah/km	338 000,00	18000	722,22
16		195 000	270	26uah/km	5 217 393	279000	10833,3

Table 3.7 provides the costs of flights, repairs, spare parts and fuel.

Table 3.7– Technical Cost Table (price for 1 liter of DP 20.5)

№	List of cars	Spare parts	Fuel l 36lon 100km	Checkpoints 1p/1800 UAH	number of tons, Trans t	Mileage, km	to the flight
1	2	3	4	5	6	7	8
1	AA8729EK	28600	4680	32000	356 400	13000	18
2	AA7718EK	14000	4680	32000	356 400	13000	18
3	AA9279EK	37540	4680	32000	356 400	13000	18
4	AA1926MT	13290	4680	32000	356 400	13000	18
5	AA5144CO	19556	4680	32000	356 400	13000	18
6	AA5733CO	44799	4680	32000	324 000	13000	18
7	AA7170OM	35932	4680	32000	324 000	13000	18
8	AA2465ET	48560	4680	32000	324 000	13000	18
9	AA2469ET	16206	4680	32000	324 000	13000	18
10	AA3348BO	23798	4680	32000	324 000	13000	18
11	AA8164OM	12004	4680	32000	324 000	13000	18
12	AA7949BM	4560	4680	32000	324 000	13000	18
13	AA7948BM	9206	4680	32000	324 000	13000	18
14	AA7945BM	21798	4680	32000	324 000	13000	18
15	AA5405CO	10004	4680	32000	324 000	13000	18
16	plus 15,000	354 853	70 200	480000	5 022 000	195 000	270
17	hinged stable		1439100 uah				

Table 3.8 provides the actual volume of cargo and recommended, with an increase in volume.

Table 3.8– Table of the amount of transported cargo

№	Indicators	Month	
		total actual tonnage 4,860,000 tons	total tonnage with changes in 5 tunks 5022000 tons
1	2	3	4
1	to-th passed. km	195000	195000
2	tariff per km	26	26
3	to-th trans. tone	4860000	5022000
4	number of flights	270	270
5	income	5034000	5217393
6	costs	3386469	3401469
7	profit	1647531	1815924
8	Difference + (months)		168 393UAH

The result is 168,393 UAH of profit, if you dismantle the attachments and spare tires, change the total weight of the tank -1800 kg at which we get this result.

Assembly / disassembly is also taken into account. Dismantling 18000 UAH / installation 18000 UAH.

Attention, this is for the transport version, where the flights are the Terminal of loading – the terminal of unloading at which the standard equipment for unloading is not required.

3. High costs for maintenance and service of vehicles.

It is recommended to upgrade those vehicles that have a significant negative impact on the financial result.

Leasing table (fig. 3.13).

		January	February	March	April	May	June	July	August	September	October	November	December	note	Total
Fact of costs / repair of spare parts	2019	307853	339850	339550	283843	322638	267352	339853	303807	409843	409853	264954	264954	Advance payment, commission, other expenses	3856369
Leasing amount 15 Aug (2015)		182564	182564	182564	182564	182564	182564	182564	182564	182564	182564	182564	182564	107522,32	2298290,3
Repairs		15000	15000	15000	15000	15000	225000	15000	15000	15000	15000	15000	225000	regular maintenance	600000
Leasing for 5 years *															2898290,3
Leasing amount 15 Aug (2020)		326819,8	326819,8	326819,8	326819,8	326819,8	326819,8	326819,8	326819,8	326819,8	326819,8	326819,8	326819,8	138113,01	4059950,6
Repairs		0	0	0	0	0	240000	0	0	0	0	0	240000	regular maintenance	480000
Leasing for 6 years *															4539950

Figure 3.13 – Leasingtable

Leasing in general for a year is presendet in table 3.9.

Table 3.9– Leasing in general for a year

№	Indicators	Costs	Special offer
1	2	3	4
1	Actual repair costs	3 856 369 UAH	–
2	Leasing on a used car	2 898 290 UAH	leasing for 5 years, special offer of villas "Avanti Ukraine"
3	Leasing for new cars	4 539 950 UAH	leasing for 6 years, special offer of villas "Avanti Ukraine"

Leasing offer

Option new car from the dealer "Man Avanti Group"

Leasing company "Porsche Leasing"

Variant 1 of leasingis presendet in table 3.10.

Table 3.10– Variant 1 of leasing

№	Indicators	Calculatons	Results
1	2	3	4
1	Car brand, model	MAN TGS 18.440 4X2 BLS	
2	Cost (including VAT)	78468,75	
3	Year of manufacture	2019	
4	Duration of months	72	
5	Currency	USD	UAH/26,80
6	Interest rate	9%	
7	Advance payment -30%	23540,63	630 888,88
8	One-time commission – 1.5%	1177,03	31544,4
9	Registration costs	19	509,2
10	Monthly payment	817,96	21921,32
11	Insurance payment	131,36	3520,44
12	Leasing payment	686,6	18400,88

Variant 2 of leasingis presendet in table 3.11.

We offer option 2, the car of 2015.

Table 3.11– Variant 2 of leasing

№	Indicators	Calculatons	Results
1	2	3	4
1	Car brand, model	MAN TGS 18.440 4X2 BLS	
2	Cost (including VAT)	38633,33	
3	Year of manufacture	2015	
4	Duration of months	60	
5	Currency	USD	UAH/26,80
6	Interest rate	10%	
7	Advance payment -40%	15453,34	414 149,51
8	One-time commission – 1.5%	579,5	15430,6
9	Registration costs	19	509,2
10	Monthly payment	454,14	12170,95
11	Insurance payment / month	67,81	1817,3
12	Leasing payment / month	386,33	10353,64

We make replacement of cars of 2005 Daf XF-95, market cost of 14000-16500 USD. The amount can be used for advance payment.

3.4 Chapter 3 summary

In this section, I identified shortcomings in the process of LPG delivery and possible ways to eliminate the identified shortcomings. Options for solving these problems were calculated. We paid more attention to three problems.

1. Coefficient of efficiency of use of the vehicle. Calculations were made, recommendations were written and it was proposed to increase the number of workers.

2. On long-term contracts warehouse-warehouse (there is a weight control), where no measuring instruments are required at unloading, tanks equipped with a meter and hydraulics are used which have a difference in weight of 1500-2000 kg more compared to transport tanks. I calculated an economical and more expensive, but profitable option.

3. And in point 3, I proposed to update the vehicles that negatively affect the financial results of the company.

Calculations were made for 2015 and 2020. We compared the leasing calculation for 5 and 6 years.

After calculations, I offer option 2, the car of 2015.

We make replacement of cars of 2005 Daf XF-95, market cost of 14000-16500 USD.

CONCLUSIONS AND RECOMMENDATIONS

In the first section of this thesis was considered the essence of the concept of the LPG market and its features. Liquefied natural gas (LPG) is an environmentally friendly and efficient energy source that is available to consumers around the world. LPG is a by-product of natural gas production and oil production; Its unique properties make it a universal source of energy that can be used in more than 1000 different ways.

We also considered the specifics of LPG supply logistics in Ukraine.

The following types of vehicles are used for LPG transportation:

– within Ukraine (railway, river, road);

– outside Ukraine, to Ukraine (railway, river, sea, road).

Depending on the strategy and objectives, customers choose vehicles based on technical and economic characteristics.

Road transport for LPG transportation is used in two categories:

1. For those who have a license to operate only in Ukraine;

2. For those who have a license in Ukraine and international traffic for the transport of dangerous goods.

Road transport is used with certain restrictions and rules for the transport of dangerous goods.

The sphere of activity of transport is connected with rendering of services in transportation of dangerous freights for the enterprises and the organizations of the trade and industrial companies, firms and other.

In the field of circulation, transport activities are associated with the delivery of liquefied gas to specific consumers.

Transport operations are usually considered in inseparable connection with trade operations as means for their realization, while transport operations, being an independent kind of business activity, have the specific features.

The second section analyzed the activities of Matoni, which is now an international private company. The company was established in 2011, with headquarters in Kyiv, Ukraine. The main activity of the company is the provision of motor transport services for the transportation of LPG in the domestic market of Ukraine.

Own fleet consists of 30 vehicles. At Maton, the car fleet travels an average of 150,000 km each month, transporting thousands of tons of cargo.

Matoni's partners are: OKKO, VOG, Sokar, UPG, Amik, Transcontinental, Rick-Oil, Sun-Oil, Geos, JV Gas "," Prometheus "," Crocus C "," Olium "," Optimus "," Gaztron "," Gazovik "," Yukan "," Fribbas "," Star-nafta "," Sky-town "," Resource -gas service "," H-status "," Im Gas "and others.

Analysis of the dynamics of traffic showed that "Matoni" has increased the number of its traffic in 2017-2019. But today the company is developing successfully.

In the third section, I identified shortcomings in the process of LPG delivery and possible ways to eliminate the identified shortcomings. Options for solving these problems were calculated. We paid more attention to three problems.

1. Coefficient of efficiency of use of the vehicle. The efficiency of the vehicle ("vehicle" in our case, a tractor and a tanker semi-trailer) is average and therefore possible to increase due to "labor", thus we will increase the total mileage of the vehicle per month and reduce the time for delivery of LPG per flight;

I proposed to increase the number of drivers in the crew for a period of 15 days to fix two drivers per shift in this case, one works, thus we increased the driving time from 9 hours to 18 and the total working time from 13 hours to 21 hours (according to the rules recreation and management for truck drivers). In this case, we increase the operating and driving time, thereby improving the efficiency of the vehicle.

Calculations were made, recommendations were written and it was proposed to increase the number of workers.

2. On long-term contracts warehouse-warehouse (there is a weight control), where no measuring instruments are required at unloading, tanks equipped with a

meter and hydraulics are used which have a difference in weight of 1500-2000 kg more compared to transport tanks. I calculated an economical and more expensive, but profitable option.

There are two recommendations: an economical option is to remove the attachments from the tanks, namely:

– hydraulics included (technically pumping gas);

– MA-7 meter;

– gas pump;

– hoses and more;

– also spare wheels (in Europe it is forbidden for a driver to change or repair a tire on the road, this is done by a special service).

In this version, we have the opportunity to reduce our own weight by 1800 kg.

The costly option is to replace the old heavy tanks with new "transport version" where in this case the old tank weighs 13,500 kg and the new tank "transport" 10,000 kg, the difference is 3500 kg. Assembly / disassembly is also taken into account. Dismantling 18000 UAH / installation 18000 UAH.

3. And in point 3, I proposed to update the vehicles that negatively affect the company's financial results.

Calculations were made for 2015 and 2020. We compared the leasing calculation for 5 and 6 years.

After calculations, I offer option 2, the car of 2015.

We make replacement of cars of 2005 Daf XF-95, market cost of 14000-16500 USD.

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The average annual number of shipments performed by Matoni

2017

2017	January	February	March	April	May	June	July	August	September	October	November	December	Total
to-th passed. km	81927,00	66808	90372,6	98335	103899	94843	97824	99405	10247	102013	106871	99936	1052480,60
tariff per km	23	23	23	23	23	23	23	23	23	23	23	23	
to-th trans. tone	2593296,00	2146176	3025512	3189456	2982952	2667816	2563488	3174552	3219264	3174552	3472632	310032	32519728,00
number of flights	127	97	156	165	153	132	125	166	169	166	186	161	1803,00
income	1981069	1734876	2349529	2465687	2465687	2507708	2582244	2584543	2649600	2652356	2778661	2602209	29354169,00
costs	1781610	1611896	1980328	1935915	1952990	1973685	1952755	1840985	2002752	2068021	2028106	1888037	23017079,50
profit	199458	122979	369199	529771	478252	534021	653787,9	743556	646848	584334	750554	714170	6326929,90

annual km	1052480,60	
average km of the vehicle per flight	1052480,6/15/12	5847km
the amount of control time	138 hours	
average number of tons per flight	18036,4548	

	January	February	March	April	May	June	July	August	September	October	November	December
to-th passed. km	81927,00	66808	90372,6	98335	103899	94843	97824	99405	10247	102013	106871	99936
absolute change compared to the previous month, km	-	-15119	23564,6	7962,4	5564	-9056	2981	1581	-89158	91766	4858	-6935
relative change compared to the previous month,%	-	-18,45	35,27	8,81	5,66	-8,72	3,14	1,62	-89,69	895,54	4,76	-6,49

2018

2018	January	February	March	April	May	June	July	August	September	October	November	December	Total
to-th passed. km	91030,00	74232,04	100414	109262	103899	105382	108694	110450	11386	113348	118746	111040	1157883,04
tariff per km	24	24	24	24	24	24	24	24	24	24	24	24	
to-th trans. tone	2881440,00	2384640	3361680	3543840	3314392	2964240	2848320	3527280	3576960	3527280	3858480	3444480	39233032,00
number of flights	150	120	179	188	176	155	148	189	192	189	209	184	2079,00
income	2201188	1927641	2610588	2739653	2739653	2786343	2869160	2871715	2944001	2947063	3087402	2891344	32615751,00
costs	1979566,68	1790995	2200365	2151017	2169989	2192984	2169728	2045539	2225280	2297802	2253451	2097819	25574535,68
profit	221621	136644	410222	588635	531392	593357	726431	826174	718721	649261	833949	793523	7029930,00

annual km	1157883,04	
average km of the vehicle per flight	1157883,04/15/12	6432km
the amount of control time	138 hours	
average number of tons per flight	18871,10726	

	January	February	March	April	May	June	July	August	September	October	November	December
to-th passed. km	91030,00	74232,04	100414	109262	103899	105382	108694	110450	11386	113348	118746	111040
absolute change compared to the previous month, km	-	-16798	26181,96	8848	-5363	1483	3312	1756	-99064	101962	5398	-7706
relative change compared to the previous month,%	-	-18,45	35,27	8,81	-4,91	1,43	3,14	1,62	-89,69	895,50	4,76	-6,49

2019

Table of results for 2019

	Month January	February	March	April	May	June	July	August	September	October	November	December	Total
to-th passed. km	98946	80687	109146	118764	112934	114546	118146	120055	123077	123205	129072	120696	1369274
tariff per km	26	26	26	26	26	26,44	26,2	26	26	26	26	26	
to-th trans. tone	3132000	2592000	3654000	3852000	3602600	3222000	3096000	3834000	3888000	3834000	4194000	3744000	42644600
number of flights	174	144	203	214	200	179	172	213	216	213	233	208	2369
income	2392596	2095262	2837596	2977884	2936284	3028634	3148000	3121430	3200002	3203330	3355872	3142766	35439656
costs	2151702,91	1946734	2391702	2338062	2358684	2383679	2358401	2223412	2418782,5	2497610,9	2449404	2280239	27798414,36
profit	240893	148527	445894	639821	577600	644954	789599	898016,6	781219	705719	906467	862526	7641235,6

annual km	1369274	
average km of the vehicle per flight	1369274/15/12	7607km
the amount of control time	138 hours	
average number of tons per flight	42644600/2369	the average tonnage transported per flight is 18,000 t.

	January	February	March	April	May	June	July	August	September	October	November	December
to-th passed. km	98946	80687	109146	118764	112934	114546	118146	120055	123077	123205	129072	120696
absolute change compared to the previous month, km	-	-18259	28459	9618	-5830	1612	3600	1909	3022	128	5867	-8376
relative change compared to the previous month,%	-	-18,45	35,27	8,81	-4,91	1,43	3,14	1,62	2,52	0,10	4,76	-6,49