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#### COMPANY PRESENTATION | ENVIRONMENTAL MANAGEMENT | RESULTS of YEAR 2021 | OBJECTIVES

# Management Message

It is with utmost pleasure that I preface 2021 edition of the Environmental Statement of MOTOR OIL, prepared in accordance with the European Regulations 1221/2009/EC, (EU) 1505/2017 and (EU) 2026/2018, for EMAS (Eco Management and Audit Scheme) Environmental Management System.

In MOTOR OIL we have included in our strategic plan, the harmonious coexistence with the environment, and the sustainable growth, benefitting not only the Company but also our society, as well as the active contribution towards protecting our planet and tackling climate change.

Within our strategic planning framework, we have implemented a substantial number of investments aiming to improve refinery's environmental and energy performance, and the results of this endeavor are reflected on quite a few diagrams presented in this Environmental Statement where significant improvement has been recorded.

MOTOR OIL applies certified Environmental and Energy Management System according to ISO 14001:2015 and ISO 50001:2018 requirements and within this framework:

- · Complies fully with the requirements of Greek and European legislation
- Invests substantial amounts for the protection of the environment and pollution prevention; moreover, implements environmentally best business practices
- · Has integrated methods, procedures and strict modern international standards and technologies (Best Available Techniques) to protect the environment

- Identifies, records, and evaluates environmental impacts throughout the production stages according to defined criteria including legislative requirements and stakeholders' point of view
- · Records and monitors continuously the environmental parameters linked with its operation

In the present Environmental Statement, you may find information regarding the Refinery production processes, our Environmental Management policy, the assessment of our Environmental performance for the previous years up to 2021, and the new objectives to which we commit ourselves.

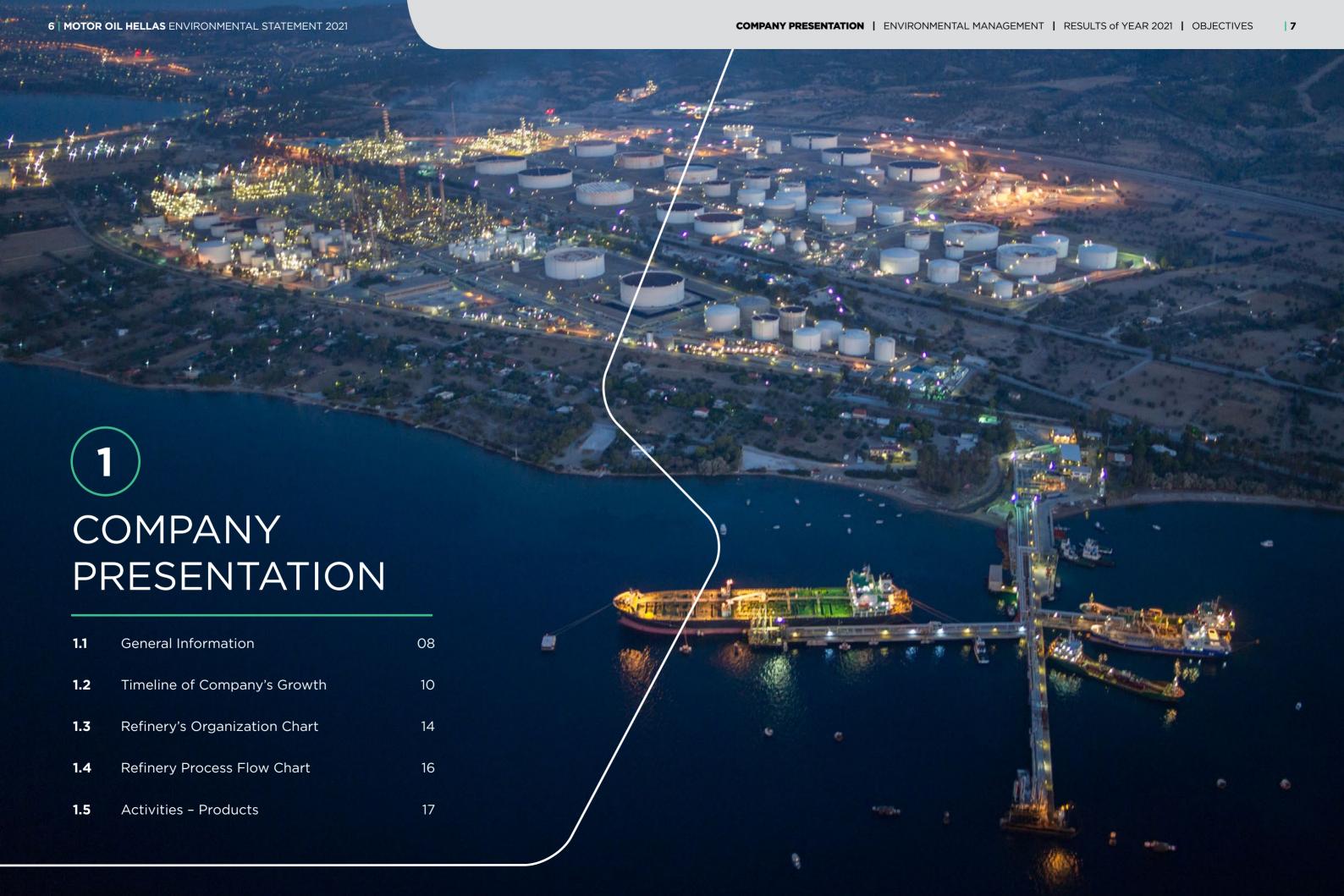
In any case, the ultimate responsibility for the effective implementation of the environmental protection measures and for the health and safety of Company personnel rests on me. Concurrently, in MOTOR OIL, we emphasize on maximizing the employee's direct engagement for the implementation and the continuous improvement of the Environmental Management System.

I hope that you will find this Statement not only informative but also interesting.

At this point, I would like to highlight that I consider the publication of the Environmental Statement as an opportunity to communicate with our associates and all interested parties with regard to the performance of MOTOR OIL on the aspect of environmental management and, within this framework, my colleagues and I remain at your disposal for any queries or comments you might have.

M. J. Stiakakis Refinery General Manager





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### 1.1 General Information

MOTOR OIL is a leading Company in the oil refining industry supplying its customers with a wide range of high quality products. The Company has evolved to one of the main pillars of the national economy, while, at the same time, it maintains and expands its key role in the wider area of South Eastern Europe.

MOTOR OIL started operating in 1972 as a company engaged in refining and trading of oil products and has been responsibly functioning ever since, aiming at sustainable profitability and socially responsible growth. The Company's Vision and Mission define the context which drives the planning and implementation of its dynamic growth. In addition, company operation is based on a set of strict Principles and Values, which comprise the constituent elements of its business practices.

# MOTOR OIL's Vision and Mission are based on three basic principles:

- Respect for our Employees
- Respect for the Environment
- Transparency

# Materializing the Corporate Vision and Mission is based on three corporate values:

- Integrity
- Effectiveness
- Social Accountability

The Company Refinery is located at Agioi Theodoroi, Corinth, approximately 70 km from the center of Athens and the area of the premises of the facility is 1,587 acres (Biodiversity Index). Along with its auxiliary premises and its fuel distribution premises, the Refinery constitutes the largest private industrial complex in Greece and is considered as one of the most modern and flexible refineries across Europe, with Nelson Complexity Index of 11.54.

It can process different types of crude oil, producing a wide spectrum of oil products that meet the strictest international standards, which

makes it able to serve the supply requirements of large customers both in Greece and abroad.

At the same time, it is the only Refinery in Greece that has a lubricants production complex. Apart from the basic units, (atmospheric distillation, catalytic reforming and hydrotreating) the refinery includes conversion units as well (thermal, catalytic cracking, and hydrocracking).

The industrial plant of the Company has an operating license which has been granted by Y.P.A.N (Hellenic Republic Ministry of Development / Department of Energy / Department of Oil Installations / section A: D.3/A/6841 - 16.08.2007, while for the Atmospheric Distillation unit U-7100 the operating license is granted by YPEKA - Ministry of Environment, Energy & Climate Change/Department of energy and climate change / Department of Oil Installations / section A: D.3/A./14094, date 12-11-2010).

The Environmental permit of the refinery according to the Approved Environmental Terms as described in the decision of Ministry of Environment and Energy/ DIPA/  $63069/3774/01-07-2020,\, A\Delta A:9\Omega6\Pi4653\Pi8-\Delta H\Lambda$  and amended by the decision of Ministry of Environment and Energy/ DIPA /36103/2502/14-04-2021 ,A $\Delta A:$   $\Psi3\Lambda\Pi4653\Pi8-037$  , fully complies with the European and Greek legislation and is governed by the integrated prevention and control of emissions to air, water ,soil, waste management, energy efficiency and accident prevention in normal and abnormal operation by the use of Best Available Techniques and modern operating methods.

Also, the Refinery has a Greenhouse Gases Emissions license (Ministry of Environment and Energy/ DKAPA/114882/2219 – 30/11/2020) for the period 2021-2030, which is accompanied with the approved emissions monitoring plan (Ministry of Environment and Energy /DKAPA/104307/1875 date 17-12-2020).

The following table summarizes the company data.

Statistical Codification of Economic Activity:	232
NACE Code	DF.19.20 - Manufacture of refined petroleum products
Premises:	Agioi Theodoroi, Corinth
Installed Power:	Main electric motors power 82.93 MW Back up electric motors power 49.39 MW
Postal Address :	71st km of Old National Road Athens - Corinth, position «Soussaki»
Contact Person for EMAS and Integrated Management System	S. J. Sofos
Telephone number :	(+30) 27410-48602
Fax:	(+30) 27410-48255
E-mail:	sofossp@moh.gr
Environment & Energy Optimization Section Head	Korkas Vasileios

Vardinoyannis Group is the major shareholder of MOTOR OIL. In 2001 the Company listed its shares on the Athens Exchange following a share capital increase by the means of an Initial Public Offering (IPO).

The following table shows the Company's shareholder structure (shareholders with a stake in excess of 5% and the Treasury Stock portfolio) as of 31.12.2021.

SHAREHOLDERS	%
Petroventure Holdings Limited	40.00
Doson Investments Company	5.47
MOTOR OIL HOLDINGS LTD	0.36
Treasury Stock	0.52
Free Float	53.65
Total	100.00

### 1.2 Timeline of Company's Growth

MOTOR OIL commenced its operations in 1972 and since then took significant steps regarding the improvement, expansion and upgrading of the Company Refinery. These steps are concisely presented in the following chronological table.

- 1972 Foundation and beginning of operation of the refinery comprised of a crude oil refining unit, a base lubricants production unit and port facilities.
- 1975 Construction of an Atmospheric Distillation Unit, with a capacity of 100,000 barrels/ day and tanks with a capacity of 1.5 million m<sup>3</sup>.
- 1978 Construction of a Catalytic Reforming Unit (further processing of naphtha for gasoline production).
- 1980 Installation of a Fuel Catalytic Cracking Unit (processing of fuel oil into high added value products).
- 1984 Construction of a Power Plant that uses flue gas as raw material. License to sell electric power to the national grid.
- 1993 Quality Management System certification according to ISO 9002 standard, concerning all the activities of the Company
- 1996 Purchase of 50% of the Company's shares by Aramco Overseas Company BV, 100% subsidiary of Saudi Arabian Oil Company (Saudi Aramco). Relocation of Company Headquarters to a modern building in Marousi, Attica.
- 2000 Manufacture of products according to European Union standards for the year 2000, by constructing new units and converting the naphtha reformer to a continuous 103 octane reformation unit (CCR).
  - New Central Control Room and installation of a Distributed Control System (DCS). Environmental Management System certification according to ISO 14001:1996 standard.

- 2001 Share capital increase by the means of an Initial Public Offering (IPO) and listing of Company shares on the Athens Exchange. Installation of the new gas turbine at the Power Plant. Upgrade of lubricants' vacuum unit.
- 2002 100% acquisition of AVIN OIL, a domestic retail marketing oil company
- 2003 Development of a Quality Management System according to ISO 9001:2000 standard, which was certified on January 2003
- 2004 Re-certification of the Environmental Management System according to ISO 14001:2004 for three more years. Beginning of operation of the Truck Loading Terminal at the Refinery.
- 2005 Beginning of operation of a Hydrocracker unit that enables the production of clean fuels according to 2005 and 2009 European Union specifications. Acquisition of the stake of Aramco Overseas Company B.V. in the Company by Motor Oil Holdings S.A.
- 2006 Re-certification according to ISO 9001:2000 for three more years (until 2009). Accreditation of the Refinery Laboratory according to ISO 17025:2005.
- 2007 Re-certification of the company Environmental Management System according to ISO 14001:2004, valid until 2010.
- 2008 Certification of the Occupational Health and Safety Management System according to OHSAS 18001:2007. Safe implementation of the largest in company history refinery shut down program for periodic maintenance work. Start of construction of the New Crude

Distillation Unit. The non-governmental organization "Ecocity" awards our company, for the second consecutive year, the "OIKOPOLIS 2008 - Environmental Investment" prize

2009 Re-certification of the Integrated Management System according to the new ISO 9001:2008 standard, valid until 2012.

At the same time some significant strategic initiatives were taken: Agreement with Shell International Petroleum Company for acquiring its downstream operations in Greece (except for Lubricants), start of the construction of the KORINTHOS POWER S.A. natural gas power plant, acquisition by MOTOR OIL Group of an additional 64.06% stake in OFC Aviation Fuel Services SA, with which the total Group share reached 92.06%.

2010 Beginning of operation of the new 60,000 barrels per day atmospheric distillation complex.

Beginning of the installation of a fifth gas turbine at the Power Plant (17 MW natural gas unit).

Re-accreditation of the Refinery Chemical Laboratory according to ISO 17025:2005, with validity until 2014.

Re-certification of the Environmental Management System according to ISO 14001:2004 with validity until 2013.

Successful completion of the acquisition of Shell downstream operations in Greece.

2011 Re-certification of the Occupational Health and Safety Management System according to OHSAS 18001:2007, valid until 2014.

Certification CE marking of Bitumen and bituminous binders in accordance with European Directive 89/106/EEC Construction Products, as amended by 93/68/EEC and in accordance with the requirements of the European Standard EN 12591:2009.

Completion of the construction of the fifth Gas Turbine unit (GT#5). With the addition of this Gas Turbine unit, the installed power of the Refinery Cogeneration Power Plant amounts to 85MW and ensures for the Refinery full energy self-sufficiency, due to the addition of CDU.

2012 Re-certification of the Integrated Management System according to ISO 9001:2008 standard, valid until 2015.

Extending the scope of accreditation of the Refinery Chemical Laboratory according to ISO / IEC 17025:2005.

- 2013 CE Marking certification of Bitumen and bituminous binders, in accordance with the European Construction Products Directive 305/2011/EEC and the requirements of European Standard EN 12591:2009, valid until the year 2017.
- Re-certification of the Integrated Management System according to ISO 9001:2008 standard, of the Environmental Management System according to ISO 14001:2004, and of the Occupational Health and Safety Management System according to OHSAS 18001:2007, with validity until 2017

Re-accreditation of the Refinery Chemical Laboratory according to ISO 17025:2005, with validity until 2018.

Completion of the acquisition of 100% of the share capital of the listed on the Athens Exchange company CYCLON HELLAS S.A. through a mandatory tender offer submitted by MOTOR OIL.

- Approval of the separation of activities of CYCLON HELLAS by the relevant Competent Authorities (Piraeus Chamber of Commerce & Industry). Transfer of the retail fuel business to AVIN OIL and of the lubricants & marketing business to the newly established L.P.C. S.A.
- By decision of the Annual Ordinary General Meeting of 8 June 2016, the participation of MOTOR OIL with a percentage of 65% in MOTOR OIL VEGAS UPSTREAM (MVU) LIMITED was approved. MVU engages in the exploration and production (E & P) of potential new oil resources (up steam).

MOTOR OIL has developed, implemented and maintains a Sustainability Management System of Biofuel that procures and markets in accordance with the 2BSvs standard.

- 2016 The System fully complies with the requirements of the standard and the applicable national legislation as established by the adoption of the European Directive 2009/28/EC (RED) as it was amended and is in force.
- 2017 During 2017, the MOTOR OIL Integrated Management System was re-certified according to the two revised standards, ISO 9001:2015 (Quality Management System) and ISO 14001:2015 (Environmental Management System).

At the same time, the Refinery was certified according to two new standards, ISO 50001:2011 (Energy Management System) and ISO 18788: 2015 (Refinery Plant Security Management System).

2018 MOTOR OIL has achieved record sales (14.4 million MT) for an eleventh year running.

Acquisition of 90% of the share capital of the electricity company NRG TRADING HOUSE ENERGY SA.

Within 2018, the refinery was audited, for the first time, by a certified Auditor in accordance with the requirements of the standard EI / JIG 1530, with successful results.

In addition, MOTOR OIL won the following awards:

INSTITUTION	CATEGORY	ТНЕМЕ	DISTINCTION
ENVIRONMEN- TAL AWARDS	Manage- ment of Hazardous and Medical waste	Contami- nated soil treat- ment plant	GOLD
GREEK BUSI- NESS AWARDS FOR THE ENVIRONMENT (ΠΑΣΕΠΠΕ)	Organiza- tion and Adminis- tration for medium and large companies	Energy Manage- ment System accord- ing to standard ISO 50001	1st PRIZE

2019 MOTOR OIL Group entered the market of renewable energy with the acquisition of three (3) new, under construction, wind power plants with total power generation of 10 MW. The operation phase of these wind power plants began in 2020 2020 Establishment of MOTOR OIL presence in the renewable power generation with the acquisition of a portfolio of operating and under construction Solar and Wind power plants. The total energy output of the new portfolio is approximately 115 MW.

Certification of MOTOR OIL in accordance with the SAFEGUARD standard of Bureau Veritas. The control criteria of this certification concern the compliance and the performance of the Company to cope with the management of COVID - 19 and pandemics in general, including the compliance of existing procedures and Business Continuity Plans. With this certification it is confirmed that the Company complies with all existing regulatory measures concerning hygiene, heath as well as establishing good and safe practices for the reduction of the SARS-Cov-2 spread. MOTOR OIL is adapting and applying protective measures according to the pandemic spread, the local authorities, and the internal evaluation of risk.

Moreover, MOTOR OIL was certified in accordance with the ISO 45001:2018 for occupational health and safety to replace the corresponding certificate of OHSAS 18001 and also was certified according to the new upgraded standard ISO 50001: 2018 for the energy management.

2021 The Company in 2021 proceeded with two bond issuances of total 600 million € with particularly low interest rates con firming the shareholders' trust towards MOTOR OIL. Particularly in March 2021, through public offering the Company drew 200 million € by issuing a 7-year bond (till 2028) of 1.90% interest annually. The bonds entered the Athens Stock Exchange and have been traded since 24.03.2021. In July 2021 the Company issued a 400 million € face value Eurobond with a duration of 5 years (till 2026) and 2.125% interest annually. The bonds are traded in Global Exchange Market (GEM) of Euronext Dublin, the Irish Stock Exchange plc.

At Group level, in 2021 further expansion of business activity in liquid fuel retail was met with success with the takeover, through its subsidiary CORAL, of 75% equity capital of APIOS D.O.O. headquartered in Croatia and has 27 gas stations and market share of approximately 3%. APIOS D.O.O has been renamed to CORAL CROATIA D.O.O. whereas its gas stations will operate under the SHELL trademark based on the contract agreement with SHELL BRANDS INTERNATIONAL B.V.

Additionally, the Group, in 2021 through the subsidiary MOTOR OIL RENEWABLES ENERGY SINGLE MEMBER PC acquired 6 firms that possess a portfolio of eleven (11) operating wind parks with 220 MW capacity.

Thereby, MOTOR OIL Group of Companies established its presence in the Renewable Energy Sources sector by providing in 31.12.2021 a portfolio of 280 MW capacity instead of 124 MW in 31.12.2020

















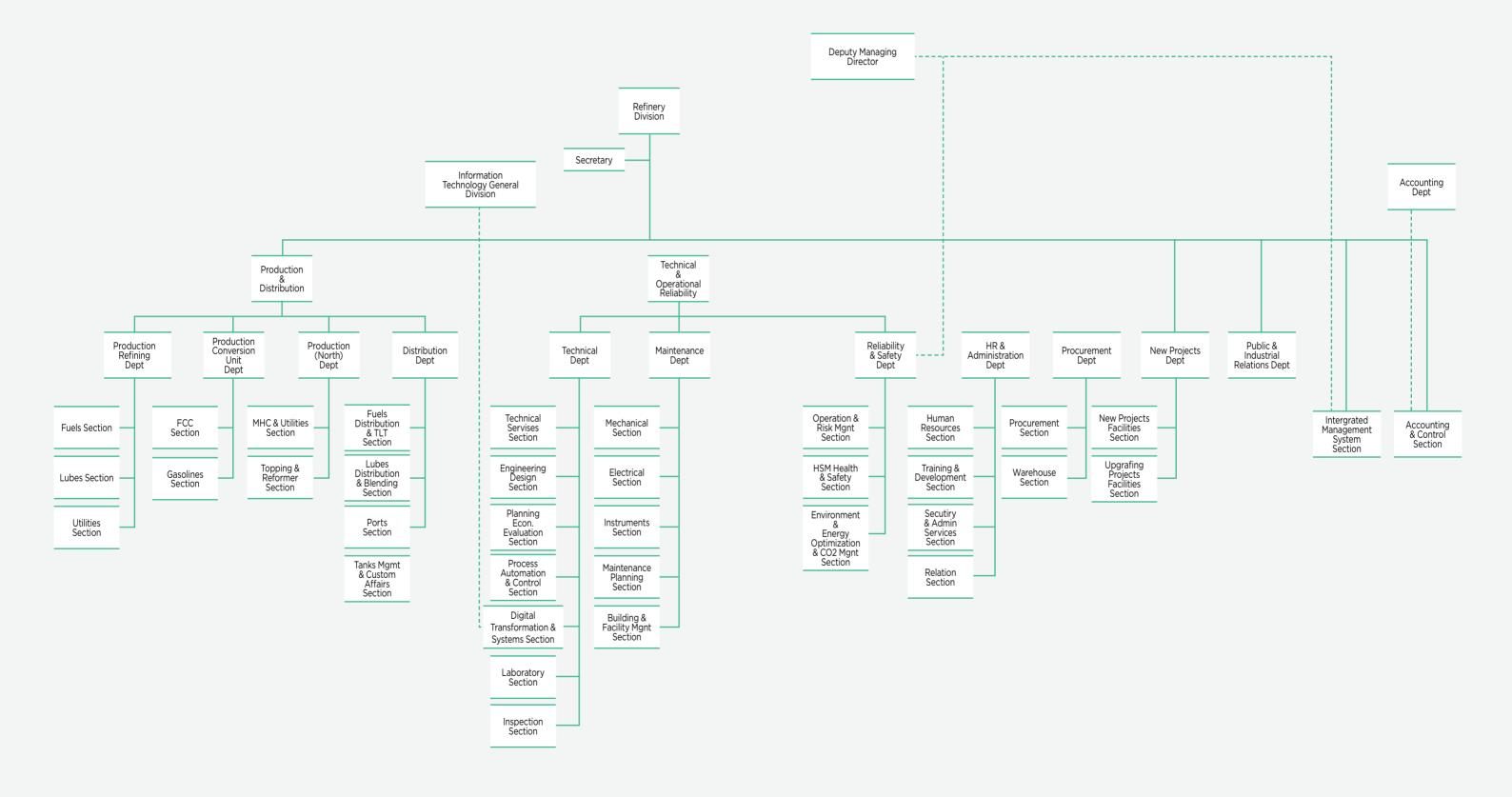






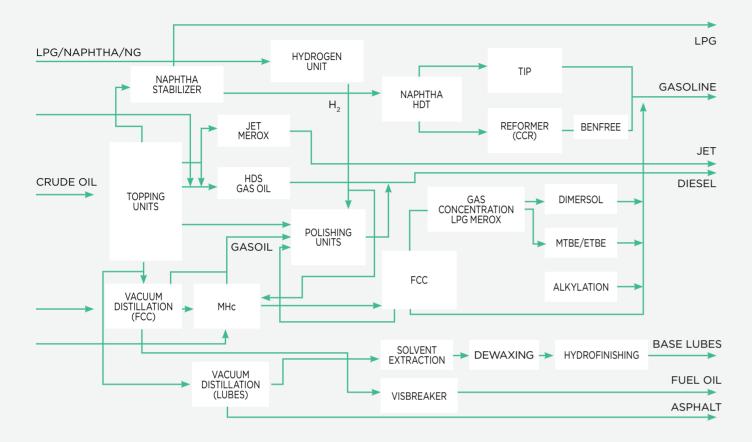


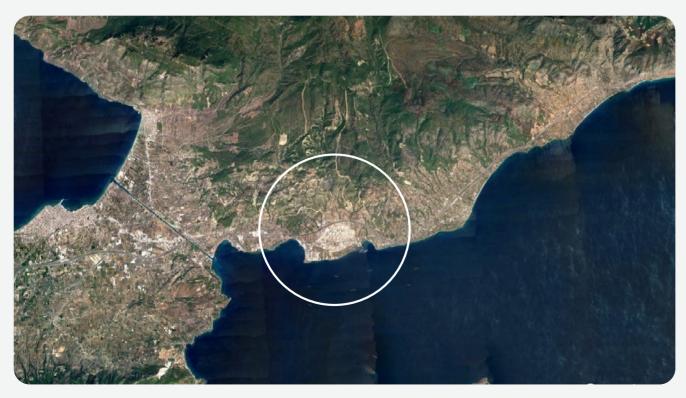
# 1.3 Refinery's Organization Chart



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### **1.4** Refinery Process Flow Chart





Aerial view of the wider area of the Refinery

### 1.5 Activities - Products

MOTOR OIL Refinery processes several types of crude oil, producing a wide range of oil products that fulfill the strictest international specifications, which makes it able to serve the supply requirements of large customers both in Greece and abroad.

Products produced in the Refinery include:

	Liquefied Petroleum Gas (LPG)		
	Naphtha		
EUEL C	Gasoline		
FUELS	Jet fuels		
	Diesel Oil		
	Fuel Oil		
	Base lubricants		
	Automotive lubricants		
LUBRICANTS	Gear Oils		
	Industrial lubricants		
	Marine lubricants		
	Asphalt		
OTHER PRODUCTS	Paraffin		
	Sulfur		

The annual production capacity of the main production units is as follows and is determined by the Approved Environmental Operating Terms – Nr. YPEN/DIPA/ 63069/3774/01-07-2020 (A $\Delta$ A:  $9\Omega6\Pi4653\Pi8-\Delta H\Lambda$ ):

Atmospheric Distillation Units	7,952,502 MT
Visbreaker	1,638,120 MT
Vacuum Distillation Unit/ Lubricants	1,511,100 MT
Heavy Hydrocarbons Desulphurization Unit	1,314,000 MT
Naphtha Desulphurization Unit	832,200 MT
Naphtha Catalytic Reforming Unit	569,000 MT
Benzene Hydrogenation Unit (Benfree unit)	444,815 MT
Vacuum Distillation Unit/ FCC	2,741,880 MT
Fluid Catalytic Cracking	1,533,600 MT
Mild Hydrocracker Unit	2,014,800 MT

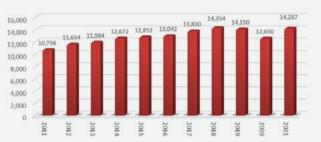
Storage and distribution premises include:

6 tanks for crude oil storage	720,000 m <sup>3</sup>
134 tanks for intermediate and final product storage	1,881,450 m³
Docks for tankers loading and unloading	
Pipelines for transferring raw materials and products	
Truck Loading Terminals	

The Company product sales volume followed a constantly upward trend over the last years, apart from the years 2019 and 2020.

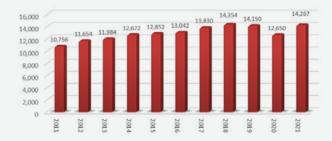
In the year 2020, the decline in sales volume by 12.2% is due to adverse conditions internationally due to the COVID-19 pandemic, whereas in 2021 the sales volume comes into focus that reverted to its ascending progress.

#### **Company Product Sales (Thousand MT)**



The total Refinery production volume for the years 2011 to 2021 is shown in the diagram below:

#### **Company Product Sales (Thousand MT)**



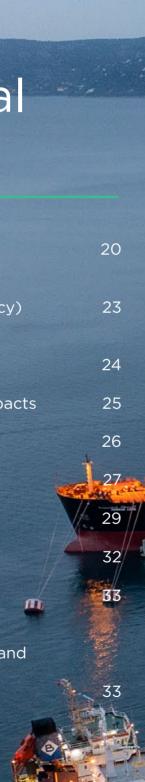
COMPANY PRESENTATION | ENVIRONMENTAL MANAGEMENT | RESULTS of YEAR 2021 | OBJECTIVES



# Environmental Management

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- 2.1 Environmental and Energy Management System
- 2.2 Health, Safety and Environmental Policy (HSE Policy)
- **2.3** Environmental Programs, Objectives and Improvements
- **2.4** Environmental Aspects and Impacts
- 2.4.1 Waste Gas
- 2.4.2 Waste Water
- 2.4.3 Solid Waste
- **2.4.4** Indirect Environmental Aspects
- **2.4.5** Environmental Incidents
- 2.5 Understanding the context, the stakeholders' expectations and the identification of threats and opportunities for improvement



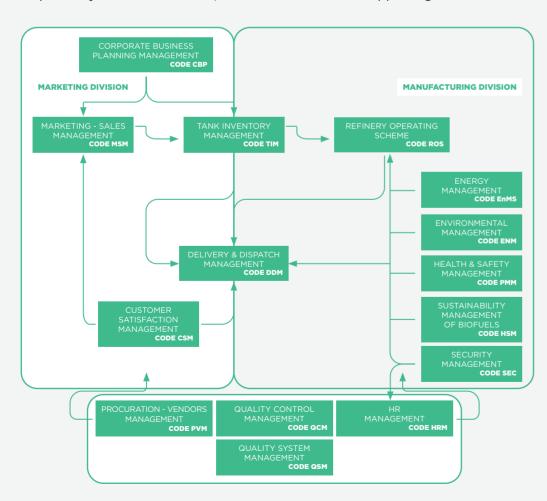
# **Environmental** and **Energy Management System**

MOTOR OIL has developed and implemented an Integrated Management System that includes:

- Quality (ISO 9001:2015 and ISO 17025:2017).
- Environment (ISO 14001:2015),
- Energy (ISO 50001:2018),
- Health and Safety (ISO 45001:2018)
- Security Management System for the Refinery (ISO 18788:2015)
- · CE mark certification for bitumen and bituminous binders according to the European Construction Products Directive 305/2011/ EC and in accordance to the requirements of the European Standard EN 12591:2009
- · Certification for biofuels production according to the 2BSvs standard
- Certification for aviation fuel production according to the revised standard EI/JIG 1530-(2nd edition- May 2019)

In regards with the pandemic of COVID-19 and the actions required by local authorities (NPHO - National Public Health Organization), MOTOR OIL (HELLAS) S.A. had developed and applied relevant instructions and for that MOTOR OIL has been certified by Bureau Veritas according to the SAFEGUARD standard. By this certification is confirmed that MOTOR OIL (HELLAS) S.A. complies with the regulatory requirements concerning hygiene and heath standards as well as with the best and safe practices, which help to mitigate the spread of the SARS- Cov-2 (the cause of the pandemic of COVID-19).

The scope of the management system concerns the manufacturing, trading and distribution of fuels, biofuels, lubricants, waxes, bitumens, sulphur and special mineral oil derivatives. The Management System consists of a series of mutually interacting processes as it is depicted in the Interrelation Process Diagram, including the production processes, the critical processes as well as the supporting ones.



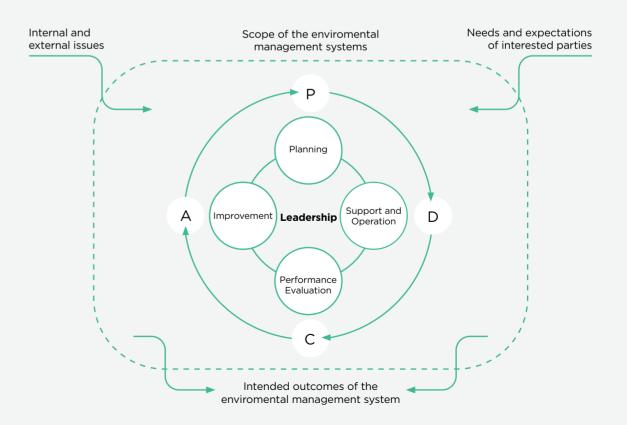
The explanation of the Integrated Management System acronym terms in the previous diagram of the Integrated Management System are given and categorized as follows:

Business Processes				
СВР	Corporate Business Planning			
MSM	Marketing Sales Management			
TIM	Tank Inventory Management			
ROS	Refinery Operating Scheme			
DDM	Delivery & Dispatch Management			
CSM	Customer Satisfaction Management			

Suppo	Supporting Processes				
ENM	Environmental Management				
HSM	Health & Safety Management				
PMM	Plant Maintenance Management				
PVM	Procurement Vendors Management				
QCM	Quality Control Management				
HRM	Human Resources Management				
QSM	Quality System Management				
EnMS	Energy Management				
SM	Sustainability Management of Biofuels				
SEC	Security Management				

The Environmental and Energy Management System aims to comply with the current Greek and European legislation and to achieve the energy optimization and environmental impact minimization from the Refinery's operation

The System structure follows the steps of a dynamic cyclical process, as depicted in the following diagram.



MOTOR OIL's Environmental and Energy Management System includes the following levels of documentation:

- · A Manual of the Integrated Management System, which constitutes a guide for the implementation, maintenance and improvement of the Environmental and Energy Management System.
- Procedures Guidelines, which describe the sequence of actions and the assignment of responsibilities.
- · Files Forms and Documents.

One of the main points in planning and implementing the Environmental Management System, is the identification of environmental aspects and the evaluation of the environmental impacts.

The identification of the environmental aspects and the relevant impacts, is accomplished according to the procedure "ENM-07 Identification and Evaluation of Environmental Impacts" by a wide group of company staff and executives, by the Refinery General Manager leadership. This wide group, also includes the Reliability and Safety Manager, the Environment and Energy Section Head, the Environmental Engineers as well as the Section Heads and the employee representatives. in order to ensure a multilateral approach to the identification and control of the environmental aspects.

The identification of the impacts is accomplished. based on the lifecycle approach of MOTOR OIL's products and services, through:

- Inspection of the Refinery process units and other premises
- · Investigation of the environmental documentation (manuals, procedures, forms and archives)
- The regular / scheduled or unscheduled (as required) internal audits

The investigation of the environmental impacts takes into account the following:

- · Current regulatory requirements and their modifications
- The opinion of stakeholders and related parties
- The operation of the Refinery under
  - normal conditions
  - irregular conditions
  - probable emergency conditions

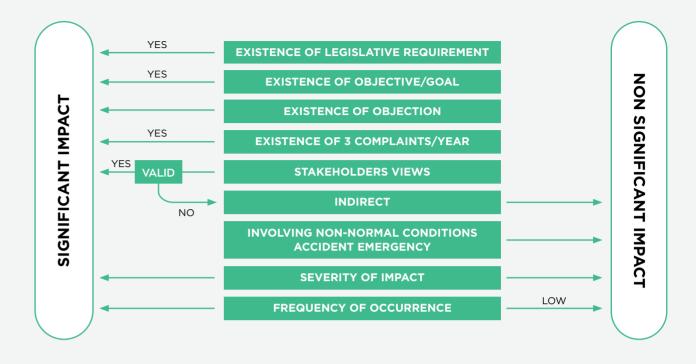
It is important to note that the team responsible for the identification of the environmental aspects, examines at regular intervals and in case of new activities or changes, the environmental records of the company in order to identify any new environmental aspects / impacts arising from:

- new activities / products / services or changes of the existing ones
- new compliance obligations due to changes in legislation
- stakeholders' views
- unusual / emergency operating conditions that had not taken into account

The environmental impacts are assessed according to a series of criteria; more specifically:

- · every legislatively regulated impact is considered important
- every impact related with the environmental policy and/or an already established target / objective of the company is considered important
- every impact for which an objection or a complaint has been raised, or is viewed as significant by relevant stakeholders, is considered important

The assessment method of the environmental impacts is shown on the following diagram, from which the most important environmental impacts are extracted.



# 2.2 Health, Safety and Environmental Policy (HSE Policy)

Motor Oil operates with respect to Health, Safety and the Environment. To achieve that, Motor Oil is committed to:

- Upgrade continuously its process safety through the detailed consideration of its weaknesses and the implementation of whatever is needed to convert them to a permanent advantage of its future operation.
- Set objectives and realistic HSE targets, support them by reorganizing its operating procedures and accomplish a continuous improvement of its safety performance, in practice.
- Implement any initiative to remove the causes that can compromise the safety and health of employees and other people in its operational
- Follow refining industry trends and adopt new technology for the optimization of its daily
- Meet or exceed legal and other requirements in respect to its assets and society needs.
- Manufacture quality products using raw materials, energy and technology efficiently.
- · Make all efforts to minimize its environmental impact improving the quality and the treatment of waste, discharges and emissions.

- · Report its performance, good or bad, as a responsible corporate citizen.
- Maintain and test emergency preparedness and response systems keeping all involved personnel completely aware and active.
- · Integrate Health, Safety and Environmental considerations into all business decisions, plans and operations in the framework of the Integrated Management System.
- Provide consultation, information and training to employees, contractors and other staff working on its behalf in order to ensure their commitment to safety and awareness.
- Cooperate with all stakeholders in order to develop balanced Health, Safety and Environmental programs, that are reviewed whenever they are becoming inefficient.

At Motor Oil whatever we conceive, plan or do, we do it in safe, environmentally friendly and cost-effective manner.

"Sparing no resources we strive for excellence and HSE leadership to achieve an incident free workplace".

AIR

# 2.3 Environmental Programs, Objectives and Improvements

During the years 2017 - 2021 the company has implemented numerous programs aiming at the minimization of the environmental impacts of its operations, while reducing losses, recovering raw material residues and reducing production cost. The programs implemented and their time of completion is shown in the following table:

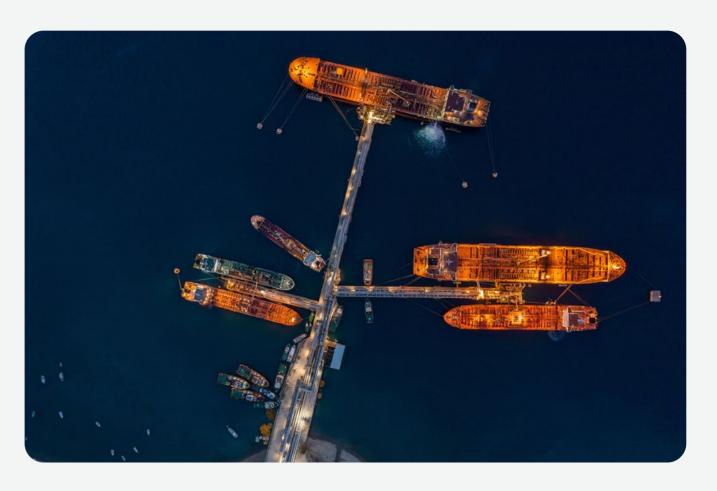
2018

2019

2020

2021

Installation of Continuous measuring devices of $SO_2$ , $NOx$ , suspended solid, CO and production parameters ( $O_2$ , $H_2O$ , pressure, temperature and gas flow) at the stacks of all electricity production units with nominal thermal capacity > 100 MW.	•				
Reduction of CO <sub>2</sub> emissions / MT of feedings by 20% due to furnaces renovation / refurbishment of vacuum distillation unit U200.				•	
Air pollutants emissions reduction/MT of feeding, by modernizing unit M-200					•
SOIL	2017	2018	2019	2020	2021
Soil study of the new tanks T790/T792 installation area in order to certify the soil for land use change	•				
Search / determination of at least one additional way of safely handling and disposing of solid waste (catalysts, resins, bleaching earth) in the cement industry. (In cooperation with a licensed management body)		•			
Search / determination of at least one additional way to manage the sludge from the bottom of the tanks after the proper treatment in the decanter and from the wastewater treatment units.				•	
Construction of new bed at the contaminated soil treatment plant by the method of bioremediation, aiming in increase the unit capacity by 5%			•		
ENERGY	2017	2018	2019	2020	2021
Improving of energy efficiency of the U-200 furnaces				•	
Improving the energy efficiency of the water desalination plant				•	
Overhaul of the Catalytic Cracking Unit, thus improving its energy efficiency			•		
Overhauls of the Hydrogen Production Unit, thus improving its carbon footprint				•	
Overhaul of Furnace H-351N, thus improving its efficiency				•	
Installation of advanced process control systems (APC) with analyzers in the vacuum distillation unit (U-200) and in alkylation unit (U-3700) as well as the installation of a Diesel Optimizer for productions with minimum energy consumption configurating the individual units.			•	•	
Improvement of the energy efficiency of unit U-7830 by modifying the turbine for HPS/MPS operation mode, thus				•	•



## 2.4 Environmental Aspects and Impacts

The environmental impacts are classified as follows:

- Direct or indirect: This depends on whether the company has or has not the responsibility of their direct handling, taking into account the existing legal context, contracts with clients or suppliers, as well as the feasibility for the company to control the impacts.
- Major or minor depending on whether handling these impacts is controlled by the Environmental Management System.

All the environmental impacts related to the operation of the Refinery have been evaluated according to their significance and among them the following are characterized as important:

- Air emissions from point and diffuse sources from refinery production processes
- · Industrial and Sanitary waste water
- Solid waste, hazardous or not
- · Energy and water consumption
- Noise

All the above environmental impacts are monitored and recorded on a regular basis, in order the Company to act appropriately and to optimize its environmental performance. A similar evaluation of impacts is also carried out during the construction of new projects. In addition, threats / risks connected to the environmental impacts or arising from them are identified and evaluated.

At the same time, the Company has evaluated the indirect environmental impacts resulting from the interaction with third parties, products and services over which the Company does not have any administrative control.

The main environmental aspects associated with air emissions, liquid and solid waste, and the indirect environmental impacts are described in the following sections.

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### **2.4.1** Waste Gas

Air emissions due to the operation of the Refinery units, as well as their sources are shown at the following diagram.

- **Furnaces**
- **Boilers and Burners**
- Stripping gas units
- Sulfur recovery units (Catalytic conversion of H<sub>a</sub>S into sulfur and then incineration of fuel gases)

H<sub>2</sub>S emissions are minimal because of their complete conversion into solid sulfur

CO<sub>2</sub>, NO<sub>2</sub>, SO<sub>2</sub>, CO, Suspended Solids

Emissions from stationary combustion sources

- Fuel storage
- API Oil Separators
- Loading and unloading of raw materials and products
- **Leakages from the distribution network**

VOC's emissions

Volatile Organic Compounds emissions are coming from fuel storage tanks. API Oil Separators, from leakages that may occur during transportation of fuels within the refinery, as well as from loading and unloading of products / raw materials from vehicles and ships.

In order to reduce emissions of air pollutants into the atmosphere, the following Best Available Techniques are applied in accordance with Decision 2014/738/EU, which include minimization measures either during the design of new projects or during the production process. The main Best Available Techniques for minimizing of the air pollutants applied to the refinery, are:

- · Treatment of sour and liquid gases before their storage, or their use as a self-consumption fuel, aiming at removing hydrogen sulfide.
- · Operation of sulfur recovery units aiming to convert the produced hydrogen sulfide into solid sulfur, which is environmentally friendly.
- · Operation of electrostatic filter (ESP) at Catalytic Cracker Unit stack in order to reduce the suspended solid emissions
- Gradual replacement of burners by equivalent with low-NOx emissions.

- Maximising natural gas usage, in the refinery fuel mixture
- Reduction and control of hydrocarbon emissions by taking several measures, such as the installation of closed circuits in gas processing operations, the routing of gases from safety valves to flares, secondary seals in floating roof tanks, floating covers in oil separators and a Vapor Recovery Unit (VRU) in the Truck Loading Terminal. Additionally, the new Vapor Recovery Unit for loading and unloading of tanker ships is at the implementation phase.
- · Performance control of burners and boilers.
- Monitoring of air emissions through continuous and periodic measurements.

### 2.4.2 Waste Water

Wastewater produced in the refinery is distinguished in two categories:

- Industrial wastewater
- · Sanitary wastewater

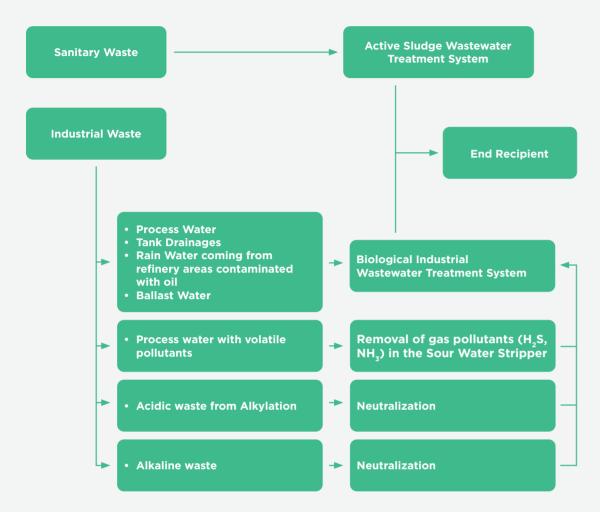
Industrial wastewater, which includes process water, tank drainage, ballast water, rainwater coming from refinery areas potentially contaminated with oil is directed either directly. or after some pre-treatment process, to the Industrial Wastewater Treatment plant (primary and secondary treatment), where the pollutant load is reduced, and the water is discharged. according to the environmental provisions and terms.

Sanitary wastewater coming from personnel catering and hygiene areas is treated in the sanitary wastewater treatment plant. The qualitative characteristics of the treated wastewater are within the defined legislative limits.

The Best Available Techniques applied to minimize liquid waste to the ecosystem in accordance with Decision 2014/738/EU, mainly concern the reduction of the volume of wastewater and its treatment before being disposed to the waste water treatment plant. Briefly presented below:

- To reduce water consumption or reduce the volume of liquid waste, the following are observed:
  - Part of the stripped acid water is taken to the desalination of the crude oil distillation plants
  - · The complex of mild hydrocracking units (M-7500) operates with a closed cooling circuit (cooling tower)
- In the refinery the water management is carried out in the best possible way, where each flow is subjected to the appropriate treatment:
  - the acidic water of all production units (sour water) are stripped in sour water stripping unit and then the maximum possible amount of stripped water is led to the desalinators of crude oil.
- · The wastewater of the alkylation unit after its treatment within the refinery's unit is led to the refinery's wastewater treatment plant.

- Alkaline solutions are neutralized at waste water neutralization unit before being driven to Refinery's Waste Water Treatment
- Ballast water is driven through closed pipelines to a suitable tank where part of the hydrocarbons are separated by gravity. The separated liquid phase is heading to the wastewater treatment plant, while the separated oil phase is driven to the crude oil tanks for re-refining
- In case the wastewater to be treated exceeds the capacity of the plant, the excess volume is led to containment basins, so that the exceeded wastewater can be treated in a control manner.
- The facility operates two independent collection networks for different quality of liquid wastes (oily aqueous waste, non-oily aqueous waste). The separation of non-polluted water flows is achieved as follows:
  - Urban wastewater is treated in an independent plant with a total capacity of 60 m<sup>3</sup>/h
  - the remaining wastewater of the seawater desalination plants are, together with the return of the cooling water led to a common pipeline and then through the main pipeline to the end recipient.



### Wastewater Treatment

The whole/sum of the Refinery's oily water waster is processed in the Industrial Wastewater Treatment Plant, which includes primary and secondary treatment stages.

In this facility result the:

- Acidic wastewater from all production units that has been stripped in the steam stripping unit. The maximum feasible quantity of stripped water is guided to the crude oil desalination facility, whereas the remaining quantity results in the Industrial Wastewater Treatment Plant.
- Acidic wastewater produced by the alkylation unit after its neutralization in dedicated tanks within the facility.
- Alkaline solutions from production units following oxidization / neutralization in the

neutralization unit. In case of malfunction in the neutralization unit, the alkaline wastewater is temporarily stored into a tank, until the malfunction is restored. Consequently, the alkaline solutions are either led for treatment in the above-mentioned neutralization unit, or. if the latter is not feasible (e.g., accumulation and storage of great volumes) the alkaline solutions are at the disposal of licensed waste management companies

- The remaining wastewater of the production units that are not included in the abovementioned categories
- Tank drainage
- The polluted rainwater, rinsing water, occasional leakages, and the water from the safety basins of the firefighting tanks

- · The oil products and the ballast water of the serviced tanker ships are guided through closed pipelines to a tank, where a part of the hydrocarbons is separated by gravity. The separated liquid phase results in the Industrial Wastewater Treatment Plant, while the separated oil phase results in the crude oil tanks for re-refining.
- The rainwater from the Refinery's oil contaminated areas. In case the rainwater for treatment exceeds the capacity of the plant, the redundant volume deviates into containment tanks, so that the capability of controlled treatment is given.
- The leachates and any weighted rainwater that are not re-used by the treatment / polluted soil and sludge biodegradation facilities and by the sludge stabilization unit.
- The rainwater of the port facility, following their collection into a local, complete and independent collection system.

The recovered hydrocarbons from the Industrial Wastewater Treatment Plant are led for re-refining.

The urban wastewater (sewage) undergoes a multistage processing in an independent Urban Wastewater Treatment Unit.

The oil and urban wastewater after their treatment. the effluent cooling water (saltwater) and the remaining wastewater from seawater desalination facilities by reverse osmosis are led into a central shared undersea pipeline towards the end recipient (Saronic Gulf)

The aforementioned wastewater currents undergo. contextually, monitoring and testing according to the environmental terms of the Refinery.

The non-polluted rainwater that comes from areas apart the production and from areas without industrial activity result with free stream outside the facilities

The aforementioned, regarding wastewater treatment, are mentioned analytically in the following procedures of the Environmental Management System:

- COP (Communication Procedure) ENM-02 Wastewater - Wastewater Treatment
- COP (Communication Procedure) ROS-30 Acidic Water Draw-off Treatment towards U-4950
- OPP (Operations Procedure) 80009651-Biological Wastewater Treatment Operation (M-4000)
- OPP (Operations Procedure) 80009652-Biological Sanitary Wastewater Treatment Operation
- OPP (Operations Procedure) 80009653- Oil Separators Operation (API Separators)
- OPP (Operations Procedure) 94006301-Caustic Neutralization Unit (M-6300)
- OPP (Operations Procedure) 96004902- Water Purification Unit Operation U-4950 (Sour Water Stripper)

### 2.4.3 Solid Waste

Solid waste generated in the Refinery consists of domestic waste resulting from human activities (consisting of household solid waste) and of industrial solid waste (such as scrap materials, spent catalysts, etc.) which is produced during the different stages of the production process.

In order to ensure safe environmental management of solid waste and to prevent or reduce the negative consequences on the environment and the human health and safety risk, the Company implements an environmental integrated plan including the waste collection, transportation and

temporary storage or treatment, until the final management. The final management is performed by licensed companies, depending on the nature of the materials, while the ultimate goal is waste recovery.

The company annually submits the type and quantity of solid waste resulting from the activities of the facilities as well as the way of their management (disposal or recovery) to the Electronic Waste Register (EWR) of the Ministry of Environment and Energy.

In the table below, the main types of solid waste produced by the company facilities are presented.

## Solid Waste Management

At the table below, there is a description of the solid waste / recyclable materials as well as the corresponding EWC Code and the management method. The table includes all solid wastes / recyclable materials that have been produced, delivered and managed by the refinery the last 10 years.

Type of Waste	EWC Code	Management Method
Bitumen	05 01 17	Disposal / Recovery
Alumina	05 01 99	Recovery (Recycling - Reclamation)
Used activated carbon	05 01 99	Recovery (Use as a fuel)
Inactive pellets	05 01 99	Recovery (Recycling - Reclamation)
Waste printing toner containing hazardous substances	08 03 17*	Recovery (Recycling)
Waste blasting material, other than those mentioned in 120116	12 01 17	Recovery (Recycling)
Other hydraulic oils	13 01 13*	Recovery (Reprocessing)
Other engine, gear and lubricating oils	13 02 08*	Recovery (Reprocessing)
Paper and cardboard packaging	15 01 01	Recovery (Recycling)
Plastic packaging	15 01 02	Recovery (Recycling)
Wooden packaging	15 01 03	Recovery (Recycling)
Metallic packaging	15 01 04	Recovery (Recycling)
Mixed Packaging	15 01 06	Recovery (Recycling)
Glass packaging	15 01 07	Recovery (Recycling)
Packaging containing residues of or contaminated by dangerous substances	15 01 10*	Recovery
Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	15 02 02*	Disposal / Recovery
Discarded equipment containing hazardous components	16 02 13*	Disposal / Recovery
Organic wastes containing hazardous substances	16 03 05*	Disposal / Recovery
Gases in pressure containers (including halons) containing hazardous substances	16 05 04*	Disposal / Recovery
Laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals	16 05 06*	Disposal
Lead batteries	16 06 01*	Recovery (Recycling)
Ni-Cd batteries	16 06 02*	Recovery (Recycling)
Wastes containing oil	16 07 08*	Recovery
Spent catalysts	16 08 03 / 16 08 02*	Recovery
Spent fluid catalytic cracking catalysts	16 08 04	Recovery (Recycling)
Spent catalysts contaminated with hazardous substances	16 08 07*	Disposal / Recovery
linings and refractories from non-metallurgical processes containing hazardous substances	16 11 05*	Recovery (Recycling)
Linings and refractories from non-metallurgical processes, other than those mentioned in 161105	16 11 06	Recovery / Disposal

Type of Waste	EWC Code	Management Method
Glass, plastic and wood containing or contaminated with dangerous substances	17 02 04*	Recovery
Aluminium	17 04 02	Recovery (Recycling)
Iron and Steel	17 04 05	Recovery (Recycling)
Mixed Metals	17 04 07	Recovery (Recycling)
Metal Wastes, contaminated with dangerous substances	17 04 09*	Recovery (Recycling)
Cables other than those mentioned in 17 04 10	17 04 11	Recovery (Recycling)
Soil and stones containing dangerous substances	17 05 03*	Bioremediation and disposal / Recovery
Soil and stones other than those mentioned in 17 05 03	17 05 04	Recovery / Disposal
Construction materials containing asbestos	17 06 05*	Disposal
Wastes whose collection and disposal is subject to special requirements in order to prevent infection	18 01 03*	Disposal
Sludges from physico/chemical treatment containing dangerous substances	19 02 05*	Recovery
Stabilised wastes other than those mentioned in 190304	19 03 05	Recovery / Disposal
Solid wastes from soil remediation other than those mentioned in 19 13 01	19 13 02	Recovery / Disposal
Paper and Cardboard	20 01 01	Recovery (Recycling)
Fluorescent tubes and other mercury-containing waste	20 01 21*	Recovery (Recycling)
Batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries	20 01 33*	Recovery / Disposal
Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and		
20 01 23 containing hazardous components	20 01 35*	Recovery (Recycling)
Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	20 01 36	Recovery (Recycling)
Plastics	20 01 39	Recovery (Recycling)
Metals	20 01 40	Recovery (Recycling)
Mixed municipal waste	20 03 01	Collection, Recycling, and disposal
Bulky waste	20 03 07	Recovery (Recycling)

Solid waste management in the Refinery is conducted according to the current legislation requirements. All waste is delivered, with respective contract agreements, to appropriate collectors / carriers responsible for the transfer to licensed end recipient prioritizing material retrieval.

It undergoes a synergy with the cement industry, so that a significant quantity of the Refinery's nonhazardous waste is channeled to this specific industrial sector for utilization / retrieval (industrial symbiosis):

- Used sandblast and specific type exhausted catalysts are absorbed as alternative raw
- Used activated carbon utilized as alternative fuel

Packaging waste, mixed packaging, and wood are guided for recycling. Following the same approach, produced scrap, paper / carton, and specific quantities of bitumen are processed likewise.

The remediated soil produced by the remediation / biodegradation unit of polluted soils from the Refinery, undergoes a documented characterization against its hazardous properties, and afterwards is delivered to a local utilization facility. Stabilized waste is forwarded to an appropriate disposal site within the country.

All hazardous waste is promptly delivered by licensed collection - transfer handlers towards the licensed end recipients, by completing in parallel the Electronic Waste Registry (EWR), according to procedure ENM-04 Solid Waste - Solid Waste

Treatment. When storing is required, pending collection / transfer, then this takes place in appropriate areas for hazardous waste storage. Waste treatment that is subject to specific treatment protocols is implemented by approved alternative management systems (AMS) or appropriate licensed carriers that collaborate with

- · Oil waste results in a collection center for regeneration by a licensed collector that collaborates with the relevant AMS and through usage of appropriate transfer vehicles
- End-of-life vehicles are led to appropriate collection and process centers that collaborates with the Hellenic alternative management system for vehicles (HAMV)
- · Waste batteries are recycled by a local facility through the collective system COMBATT S.A.
- · Waste of electrical and electronic equipment (WEE) is transferred to certified collection centers by the approved Collective System for the alternative management of WEE APPLIANCES RECYCLING S.A.

Polluted soils undergo biodegradation in the Refinery's treatment / bioremediation facility using the biopiling method. Furthermore, clothing and textiles that have been contaminated with hazardous substances are collected into special big bags inside specific metal bins located in specified points throughout the Refinery, and then they are removed by a licensed hazardous solid waste treatment handler.

Hazardous contaminating waste from the Refinery's medical treatment services is led for sterilization.

Various hazardous waste (packaging with hazardous substances, sludge, organic waste, waste, absorbing materials) oil-containing is processed according to specific contract agreements.

Transporder transportations are accomplished according to the current national and communal legislation, taking into consideration the Basel Convention:

The exhausted catalysts are directly led to processing facilities abroad for usable metals retrieval

The execution of works for removing asbestos traces is implemented by companies that comply with specific requirements against the legislation and by ensuring all the necessary measures are taken. Asbestos waste is placed in appropriate packaging and then transferred for disposal abroad.

The aforementioned, regarding solid waste treatment, are mentioned analytically in the following procedures of the Environmental Management System:

- COP (Communication Procedure) ENM-04 Solid Waste - Solid Waste Treatment
- COP (Communication Procedure) ENM-04 SYN. 1 Solid Waste HWC Codes & Management
- COP (Communication Procedure) ENM-11 Catalysts - Inactive Solid Waste Management
- OPP (Operations Procedure) 8000009-Polluted Soils Bioremediation Unit Operation
- OPP (Operations Procedure) 8000009 SYN.1 Rule of Operations for the Polluted Soils Bioremediation Unit
- OPP (Operations Procedure) 8000011 Sludge Biodegradation Unit Operation
- OPP (Operations Procedure) 8000011 SYN. 1 Rule of Operations for the Sludge Biodegradation Unit
- OPP (Operations Procedure) 80009501-Sludge Treatment Unit Operation (LIFE-SORU)

# 2.4.4 Indirect Environmental Aspects

The indirect environmental impacts are mainly related to the air pollution caused by vehicles, the nuisance coming from tank truck traffic and vessel stopover in anchorages, as well as the side impacts in case of an accident during the transport of products to and from the refinery either from suppliers or to customers.

Within the framework of the Integrated Management System, the Company evaluates its envi-

ronmental performance and trains its suppliers, contractors and subcontractors, on several environmental issues and continuously gives information to its customers regarding the usage and distribution of the products.

At the same time, it investigates new, environmentally mild solutions to its transportation needs and attends to the effective organization of its raw material and product transport.

### 2.4.5 Environmental Incidents

Having set as main priorities the prevention of the undesirable effects of the operation of the units and the minimization of hazards during operations, the Company aims at the elimination of environmental incidents / accidents.

#### For that purpose:

- Emergency response plans, fully compliant to local and national plans are compiled in order to provide the necessary directions for the appropriate decisions and actions taken.
- Has submitted to the competent authorities an Environmental Risk Assessment (nr Ministry

of Environment and Energy/DIPA/99511/6234/31-10-2019) in cases of major accident and natural disasters according to JMD 1915/2018. The study has identified and evaluated the environmental impacts in case of major accidents and natural disasters, while the measures to avoid and mitigate them are analyzed.

• Systematically conducts preparedness drills and organizes employee trainings to ensure the correct response in case of emergency

The effectiveness of the above activities is attested by a record of no environmental incidents / accidents during 2021, as well as in previous years.

# Understanding the context, the stakeholders' expectations and the identification of threats and opportunities for improvement

During the phase of understanding of refinery's operating context and the stakeholders' expectations, the team responsible for the identification of risks and opportunities defines the external and internal issues related to the purpose of the company, which can affect company's ability to achieve the desired results of the Environmental Management System.

The team responsible takes into account company's strategic priorities and identify:

- The interested parties
  - related to the Environmental Management
- · their relative needs and expectations and which of these needs and expectations are becoming compliance obligations. In order to address these issues a mechanism has been created so as to handle complaints and grievance of interested parties / neighborhoods, in order to ensure that the grievances / complaints has been identified and resolved in time. During the last three years, 11, 13 and 25 complaints from the local community have been issued and resolved timely for 2019, 2020 and 2021 respectively.

• the external business environment (e.g. availability of resources, land use, technological environment, competition, market, economic environment, social and political environment, existing environmental status, air quality in the region of operation) and internal issues (e.g. culture, knowhow, resources).

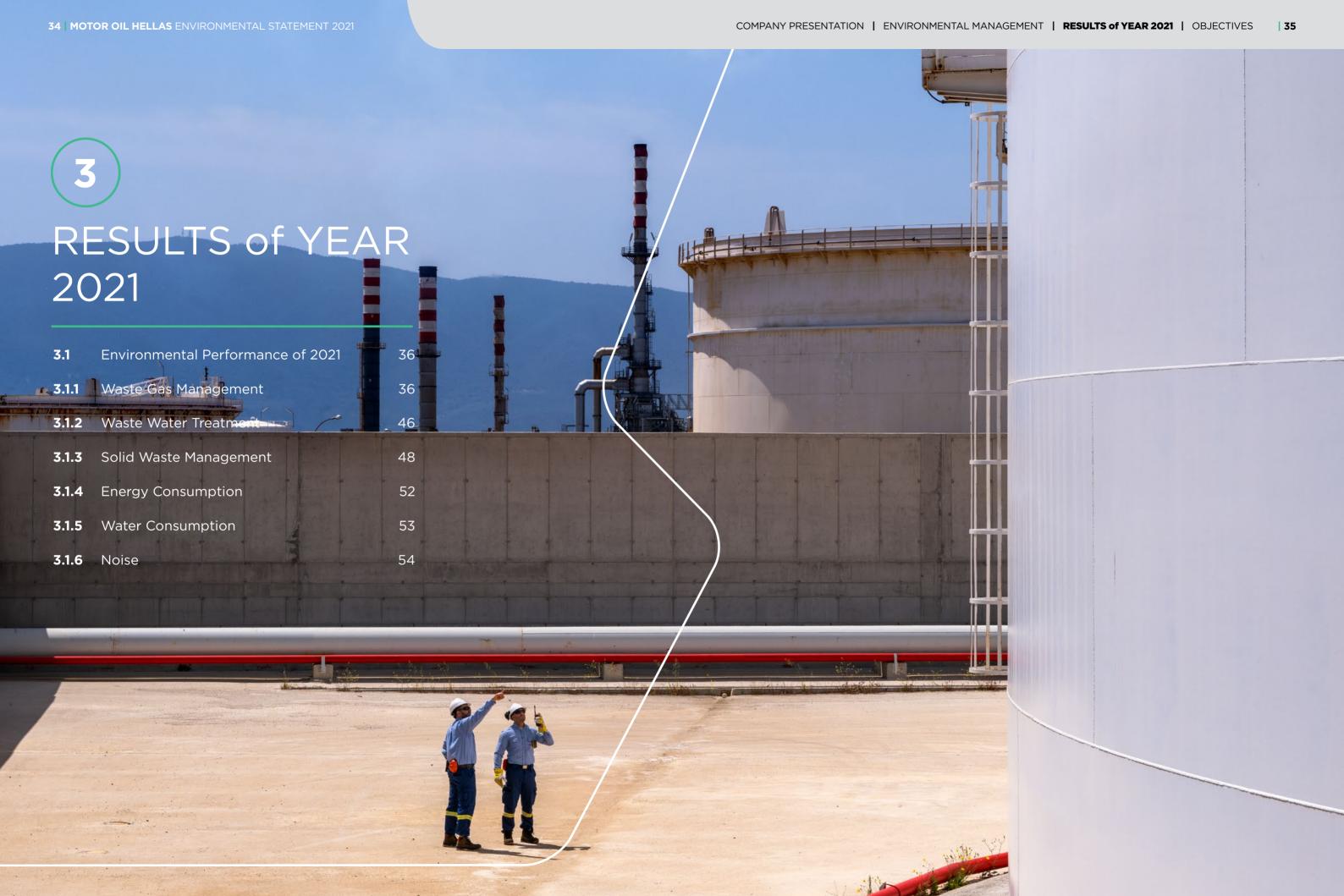
Based on the above, threats and opportunities are identified, related to:

- the expectations of interested parties
- the internal and external operating environment of the Company
- the environmental aspects and
- the compliance obligations.

After identifying the threat and opportunities, according to the above phases, improvement actions are identified.

In any case, the Refinery plans:

- · to take actions on issues related to:
- o significant environmental issues
- o Compliance obligations
- o risks and opportunities



### Environmental Performance of 2021

### **3.1.1** Waste Gas Management

Aiming at the minimizing of air emissions (point and diffuse) and within the frame of the in force Environmental Terms and Decision 2014/738/EU. there is fully and constantly monitoring of the air emissions through continuous and periodic measurements within the Refinery and also the air quality in the wider area.

The industrial premises of MOTOR OIL utilize modern equipment for monitoring air quality at the wider area and point emissions coming from the production process.

The Monitoring network of Air Quality consists of a mobile station (A) which has the capability to measure and record continuously pollutants such as hydrogen sulfide (H2S), sulfur dioxide (SO2), suspended solids (PM<sub>10</sub> and PM<sub>25</sub>) nitrogen oxides (NO, NO, NO), methane (CH<sub>4</sub>), non-methane hydrocarbons (NMHC), total hydrocarbons (THC), benzene (C<sub>c</sub>H<sub>c</sub>), carbon monoxide (CO), as well as, meteorological parameters (wind speed and direction, temperature and relative humidity of air). In addition there are three permanent stations for measuring hydrogen sulfide (H<sub>2</sub>S) and sulfur dioxide (SO<sub>2</sub>). Two out of three permanent stations are located within the refinery premises (B, C), and the third one at the area of Agioi Theodoroi (see map).

Air emissions are controlled by a network of Continuous measuring devices, which are connected to the Refinery Control System (DCS) as well as periodic measurements by an Independent accredited third party.

Continuous measurements are performed to:

- Oxygen in all combustion plants in order to control combustion,
- Sulfur dioxide (SO<sub>2</sub>), suspended solids, nitrogen oxides (NOx), carbon monoxide (CO) and operational parameters (flow, oxygen, pressure and temperature of flue gases) at the Large Combustion Plants of fuels, lubricants and MHC units and the power generation plants S7001/2 and S7003/4 (stacks with rated thermal input >50MW).

Noteworthy that is at the installation phase the following:

Measuring devices of CO/H2O in LCP of Fuel,

Lubricants and MHC stacks

 Measuring devices of SO2, NOx, CO, suspended particles and operational parameters in \$7003 Power Generation plant stack

Within the control and the measurements quality assurance program, the emission measuring devices (SO<sub>st</sub> NO<sub>st</sub> suspended solids) of the Large Combustion plants are calibrated using parallel measurements in accordance with the EN 14181 Standard.

- Sulfur dioxide (SO<sub>2</sub>), suspended solids, nitrogen oxides (NO<sub>v</sub>), carbon monoxide (CO) and operating parameters (flow, oxygen, pressure, humidity and temperature of flue gases) at the Catalytic Cracker Unit (FCC).
- Sulfur dioxide (SO<sub>2</sub>), oxygen and temperature at Sulfur production Claus Units outlet.

The emissions monitoring of the remaining stacks is carried out every six months.

The results of the above measurements are compared with the pollutants' limit values, as set in the Approval of the Environmental Terms and in the following laws:

JMD 14122/549/E103/11 (Government Gazette 488B)

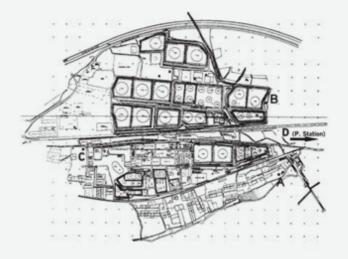
JMD 22306/1075/E103/07 (Government Gazette 920/08.06.07)

JMD 36060/1155/E103/2013 (Government Gazette 1450/B/14.06.2013)

A list of Environmental Legislation items that concern the company is offered in Annex I of this Environmental Statement.

Company compliance with the requirements of the Legislation is audited on both a regular and an ad hoc basis. The regular audits are made via the Internal Audits of the Environmental Management System (relevant procedure QSM-02 «Management Evaluations») at least once a year.

The ad hoc audits are made after a decision of the Refinery General Manager, or the Reliability and Safety Manager, or the Integrated Management System Section Head, depending on the factual elements contained in the information that is continuously provided to them.



Map depicting the locations of air quality monitoring stations

YEAR

#### Air Quality:

In 2021 there were no exceedances in the statutory limit values due to the operation of the refinery.

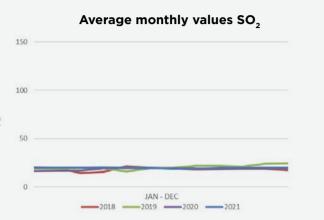
#### Port mobile air quality metering station:

At the following table the average monthly values are presented and at the corresponding diagrams, the average hourly, daily and monthly values of pollutants, measured by the mobile station, which is located near the port facilities, for the year 2021, are presented.

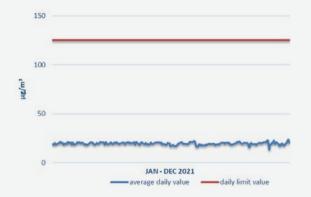
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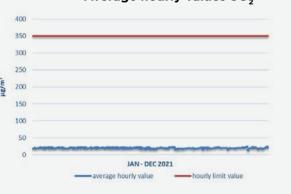
2020	H <sub>2</sub> S	SO <sub>2</sub>	NO <sub>2</sub>	NO <sub>x</sub>	CH₄	NMHC	THC	со	PM <sub>10</sub>	PM <sub>2.5</sub>	Benzene
2020	μg/m³	μg/m³	μg/m³	μg/m³	μg/m³	μg/m³	μg/m³	mg/m³	µg/m³	μg/m³	μg/m³
JANUARY	8.9	19.7	15.4	16.8	1.9	1.0	3.0	0.4	18.8	10.9	2.2
FEBRUARY	9.0	19.6	17.9	19.7	2.6	1.5	4.0	0.4	22.2	11.0	1.9
MARCH	9.2	19.8	15.4	16.9	2.6	1.1	3.7	0.3	20.6	10.0	1.8
APRIL	9.0	20.0	19.3	21.1	2.1	0.6	2.7	0.3	23.4	10.9	2.2
MAY	9.7	19.6	20.4	22.0	2.1	1.1	3.2	0.4	26.7	11.0	2.6
JUNE	9.3	19.8	26.0	27.8	2.0	1.1	3.1	0.4	23.0	10.9	2.2
JULY	10.7	18.9	24.9	26.5	2.5	1.0	3.5	0.3	24.3	10.9	2.2
AUGUST	10.7	19.0	21.8	23.1	2.5	1.0	3.5	0.4	21.8	10.0	2.4
SEPTEMBER	9.9	19.5	20.8	22.0	2.7	1.0	3.7	0.4	21.9	10.5	2.2
OCTOBER	9.7	19.5	20.8	22.2	3.0	1.0	4.0	0.4	17.5	10.2	2.2
NOVEMBER	9.4	19.8	23.8	25.2	2.8	1.0	3.8	0.5	21.4	10.0	2.8
DECEMBER	9.4	19.7	18.3	19.6	2.7	1.0	3.7	0.4	20.0	10.1	2.8
YEAR AVERAGE	9.6	19.6	20.4	21.9	2.5	1.1	3.5	0.39	21.8	10.5	2.3
Limit Values											
				Pe	riod of a	/erage					
1 hour		350	200								
8 hours								10			
1 day									50		



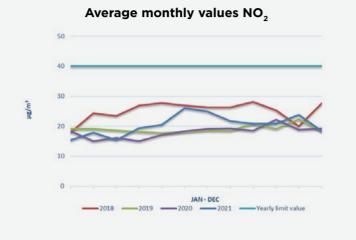




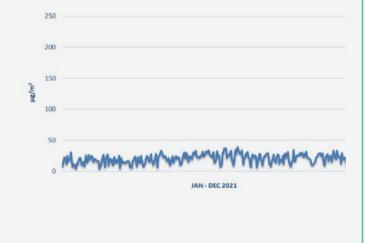
#### Average hourly values SO<sub>2</sub>



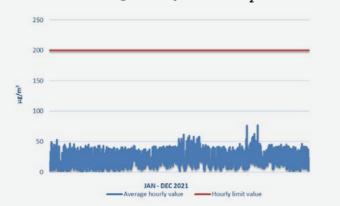
Nitrogen Oxides



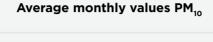
#### Average daily values NO,

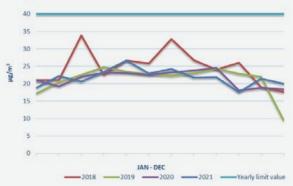


#### Average hourly values NO<sub>2</sub>



### PM<sub>10</sub> Suspended Solids

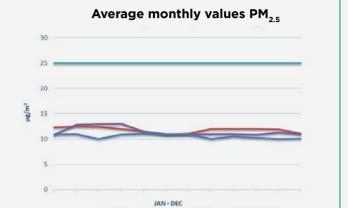


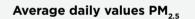


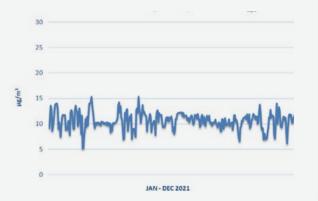
#### Average daily values PM<sub>10</sub>



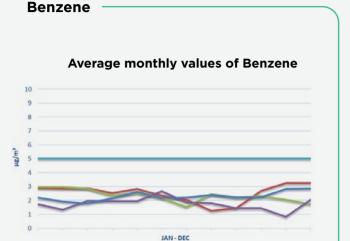
### PM<sub>2.5</sub> Suspended Solids



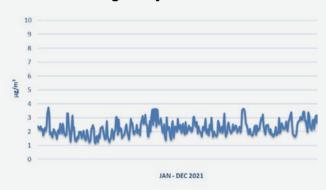




#### In the diagrams below the concentrations of methane (CH4), non-methane hydrocarbons (NMHC), total hydrocarbons and carbon monoxide are shown.



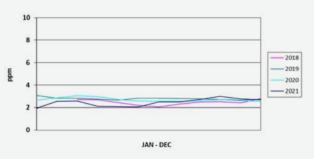




It must be noted that the Refinery is not the only source of air pollutants in the wider area of the installations. Other sources of air pollutants are the road traffic (National road Athens - Corinth), the presence of various Industrial Plants and the railway network.



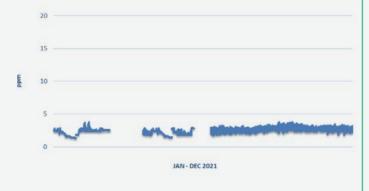
#### Average monthly values CH<sub>4</sub>



#### Average daily values CH<sub>4</sub>

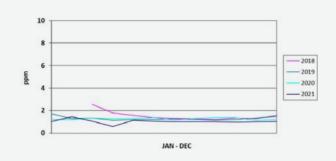


#### Average hourly values CH,

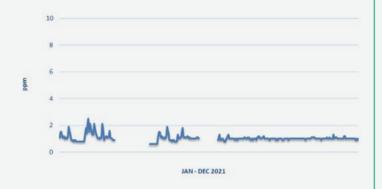


#### **Non-Methane Hydrocarbons**

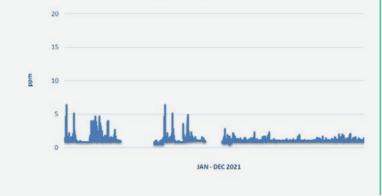
#### Average monthly values NMHC



#### Average daily values NMHC

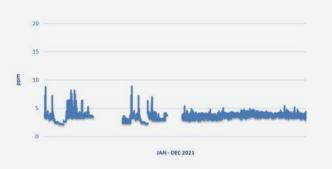


#### Average hourly values NMHC



#### **Total Hydrocarbons**

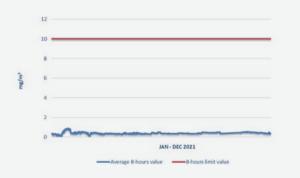
#### **Average monthly values Total Hydrocarbons**



The values were not recorded due to malfunctions or maintenance of the measurement devices. It is noted that the competent authorities are informed for any case of malfunction or equipment maintenance, as well as for restoring its operation, within the timeframe of 60 days, as required by the Approved Environmental Terms.

#### **Carbon Monoxide**

#### **Average 8-hours values Carbon Monoxide**



#### Air Quality: H<sub>a</sub>S

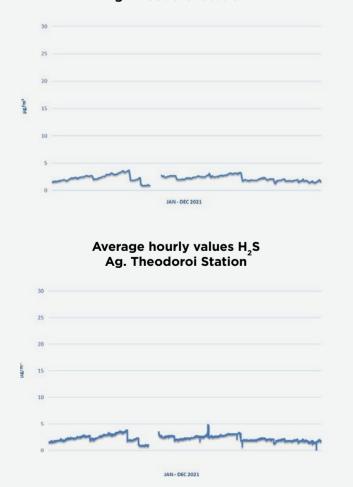
The refinery has achieved minimization of hydrogen sulfide emissions by upgrading the sour gas processing units as well as the sulfur recovery

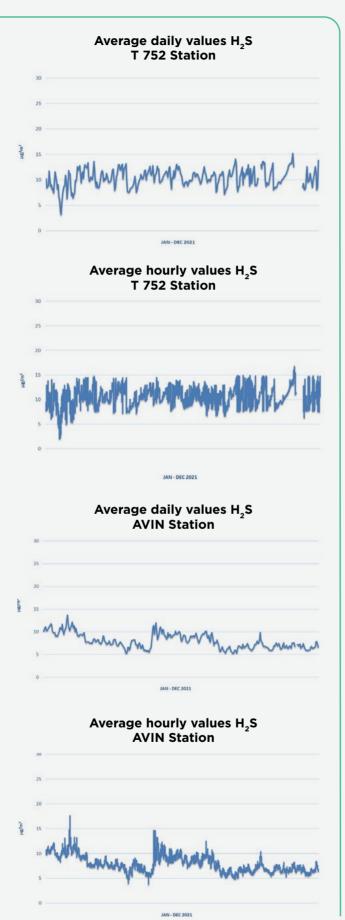
H<sub>2</sub>S concentration is monitored continuously in all of the four stations of the Air Quality Monitoring Network.

Based on the results of the measurement of air quality station in the nearest residential area (Ag. Theodoroi) and the regional stations of refinery (near the port facilities, east of 752 tank and at the parking area of AVIN OIL) is concluded that H<sub>2</sub>S concentration in the wider refinery area is remarkably low.

The following diagrams reflect the average daily and average hourly concentration H<sub>2</sub>S for the stations located in Ag. Theodoroi, the tank 752 and the parking area of AVIN OIL.





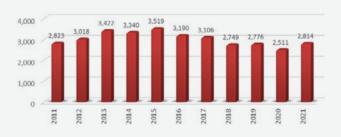


#### Sulfur dioxide and Nitrogen oxides emissions

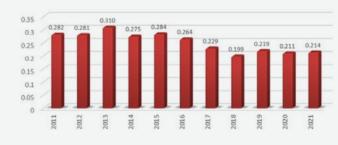
As depicted in the following diagrams, the sulfur dioxide emissions are fluctuating within the same magnitude during the last few years, despite the expansion of the production facilities and the production increase. This is caused mainly from the reduced amount of sulfur in the self-consumed fuels and the increased amount of gas fuel in the blend of burnt fuels, as well as the continuously improved emission control technology used by the refinery (sour gas treatment units and sulfur recovery units).

The below diagrams present the Sulfur dioxide emissions and the specific indexes of sulfur dioxide emissions per quantity of raw material and produced products.

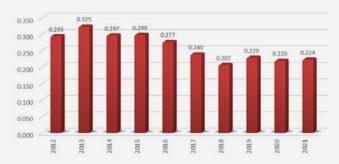
#### Sulfur Dioxide Emissions (MT/Year)



#### **Sulfur Dioxide Emissions/Raw Materials** (MT/thousand MT)

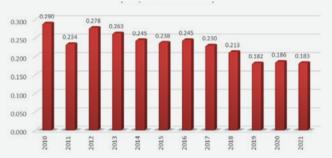


#### Sulfur Dioxide Emissions/Quantity of Produced Products (MT/thousand MT)

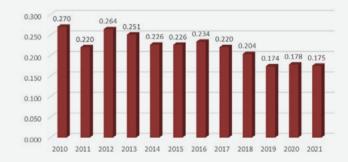


The emissions of Nitrogen Oxides (NOx) for year 2021 are 2,304 MT. The adjusted indices per products produced and per raw materials reflect consistent improvement, as depicted in the following diagrams (mostly due to the replacement of the burners in low NOx type and the increase of gaseous fuel in the blend of burnt fuel.

#### Emissions of NO<sub>v</sub> / Quantity of Produced Products (MT/Thousand MT)



#### Emissions of NO, / Quantity of raw materials (MT/Thousand MT)



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#### Carbon dioxide emissions

In regards with the emission of gases that contribute to the greenhouse effect, MOTOR OIL participates to the ETS: Emissions Trading System, according to Directive EU 2003/87. This European Scheme for greenhouse gas emission trading (EU ETS) is the cornerstone of the EU policy against climate change and is the key tool for reducing greenhouse gas emissions in a cost-effective way. According to these legal provisions, Refinery reports the annual CO<sub>2</sub> emissions according to an approved Monitoring plan, by the competent authorities. The monitoring plan establishes the framework for the calculation of CO<sub>2</sub> emissions for each process, targeting to an accurate calculation of emissions as possible.

In the ETS context the refinery:

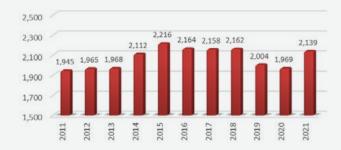
- reports the emissions annually, after verification by an accredited certification body,
- uses calculation methodology based on either European standards or in the analytical results as created by the accredited refinery laboratory according to ISO 17025: 2017.

In addition to reporting its emissions, the refinery has faced the challenge of planning its strategy for the next decade, where the European Union has submitted a plan to further reduce emissions by at least 55% by 2030, compared to 1990. In order to achieve this goal, the legislative framework has been adapted to the following two pillars:

- Reduction of free greenhouse gas emission allowances
- Financing of innovative low carbon technologies

Based on the above the total Carbon dioxide emissions (according to the European Directive 2003/87/EC) for 2021 were 2,193,025 tones. The annual emissions of carbon dioxide over the last years are shown at the diagram below.

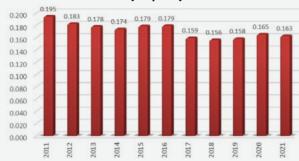
Emissions of CO<sub>2</sub> (Thousand MT)



The increased quantities of  ${\rm CO_2}$  emissions in 2021 regarding the two previous years is justified by the increased quantities produced from the Refinery in 2021.

The specific carbon dioxide emissions (MT  ${\rm CO_2}$  / MT of raw materials) for the last years are shown at the following diagram.

Emissions of CO<sub>2</sub> / Raw Materials (MT/MT)



The specific carbon dioxide emissions (MT  $\rm CO_2$  / MT of produced products) for the last years are shown at the following diagram.

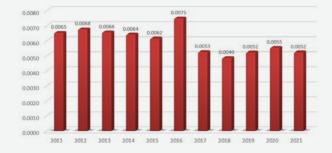
Emissions of CO<sub>2</sub> / Produced Products (MT/MT)



Regarding the  $\mathrm{CO}_2$  emissions, there is a stabilization of the specific index of  $\mathrm{CO}_2$ / quantities of raw materials and final products, and this is due to the operation of the environmental protection projects and investments, which has been completed, as well as to the improved control and monitoring of emissions from the various sources.

It should also be noted that the quantities of greenhouse gas emissions except  $CO_2$  (concerning emissions of  $CH_4$ ,  $HCFC_s$ ,  $SF_6$ ,  $HFC_s$  and  $N_2O$ ) for 2021 were 65.96 MT and the specific index per quantity of produced products are shown at the table below.

Other Greenhouse Gases (except CO<sub>2</sub>) / Quantity of Produced Products (MT/Thousand MT)



In particular, the emissions of greenhouse gases other than CO2 during the last years, are shown in the table below

	2015	2016	2017	2018	2019	2020	2021
CH <sub>4</sub> (kg)	48,315	66,943	47,213	46,356	45,471	45,689	47,348
HFC <sub>s</sub> (kg)	0	0	0	0	0	0	0
N <sub>2</sub> O (kg)	24,287	19,372	18,969	18,133	17,876	17,630	18,612
SF <sub>6</sub> (kg)	0	0	0	0	0	0	0
HCFC <sub>s</sub> (kg)	0	0	0	0	0	0	0
Dioxins and Furans (kg)			2.49*10-8	2.42*10-8	2.20*10-8	2.17*10-8	2.14*10-8
Total kg	72,602	86,316	66,182	64,489	63,346	63,319	65,960
Total MT	72.60	86.32	66.18	64.49	63.35	63.32	65.96

#### **Emissions of Volatile Organic Compounds (VOCs)**

With the target of reduction and control of Volatile Organic Compounds, the Company has implemented amongst other a series of actions that include the reduction of diffused emissions coming from different sources.

Diffused emissions of Volatile Organic Compounds, is a chemical and oil industry characteristic that is not only a source of pollution but also a cause of forgone profits and loss of products for the industry. Thus, the goal of reducing such emissions is dual. The anti-pollutant measures taken in order to reduce the emissions coming from oil product storage and distribution units, include the best available techniques in the design phase of equipment for product handling and storage, as well as regular inspections and maintenance of all units, which is very crucial in emissions control. In order to reduce the emissions arising from the loading of tank trucks, a vapour recovery unit has been installed, in conformity with current legislation, which is the most effective and globally accepted measure for minimizing such emissions. Moreover, within the framework of continuous improvement, a new Vapor Recovery Unit (VRU) at the docking area, is at the construction phase.

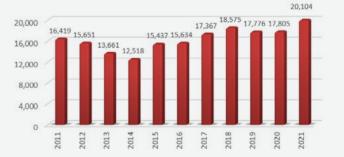
In accordance with the requirements of Decision 2014/738/EU, a Leak Detection And Repair (LDAR) program is implemented for the monitoring of diffuse emissions in order to limit them. Within the framework of the program, a significant number of points of equipment in which there is a possibility of leakage (e.g. valves, flanges, etc.) is periodically checked according to the EPA 21 standard with portable equipment.

Additionally, the leakage detection has been enhanced with the new method of optical gas imaging (OGI). In case a leakage is detected then it is restored promptly. For the year 2021 no leakage of volatile organic compounds (VOCs) has been discovered, as set out in EPA 21 standard and the current Approved Environmental Terms.

In addition to this, new equipment for the detection of leaks by the method of optical gas imaging (OGI) has been installed.

The number of inspections, within the LDAR program, for the year 2021 is 20,104. The following diagram shows the annual number of inspections for the last years.

#### **Annual number of VOC inspection**



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The monthly distribution of the above inspections, per refinery unit are shown in the following table.

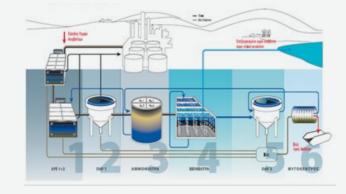
	Jan-21	Feb-21	Mar-21	Apr-21	May-21	June-21	July-21	Aug-21	Sept-21	Oct-21	Nov-21	Dec-21	TOTAL
FUELS	407	227	228	228	407	317	407	317	407	407	407	407	4,166
GASOLINES	396	424	429	509	396	424	429	773	396	894	471	336	5,877
FCC	104	104	104	104	104	104	104	104	104	104	104	104	1,248
LUBES	35	35	36	34	34	35	34	36	34	35	35	34	417
OFFSITES	90	69	77	69	84	65	78	84	76	105	70	81	948
JETTY	35	46	25	34	14	24	35	25	46	34	14	24	356
MHC/7100	0	0	1,560	0	1,560	0	1,560	0	1,560	0	0	0	6,240
TRUCK LOADING	0	0	0	0	284	0	0	0	0	284	284	0	852
TOTAL	1,067	905	2,459	978	2,883	969	2,647	1,339	2,623	1,863	1,385	986	
Grand Total 20											20,104		

### 3.1.2 Waste Water Treatment

Industrial wastewater produced by the Refinery's production units is routed, into the industrial wastewater treatment plant, where it is subjected to a sequence of treatment steps that are depicted on the diagram that follows (API Oil Separators, Dissolved Air Floatation (DAF) units, sand filters, biofilters, sludge treatment). At the same time, sanitary wastewater is treated in the sanitary wastewater treatment plant.

The goal of industrial and sanitary wastewater treatment systems is the full treatment of wastewater so that the treated effluent is in compliance with the requirements of current legislation. Wastewater effluents are monitored on a daily basis, within the framework of Approved Environmental Terms, whereas a number of programs are implemented aiming at efficiently dealing with the effects of malfunctioning of the treatment units, the automation of their functioning and the optimization of their performance. The quality characteristics of the effluents are shown in the table that follows, where the measured values are much lower than the limit values defined by the legislation.

The results of the measurements are in conformance with the corresponding threshold limits of the parameters, as they are set in the Approved Environmental Terms of the Refinery



Concentration of polluting parameters at the outlet of the industrial wastewater treatment plant:

As far as the results of Industrial Waste of the Waste Water Treatment Plant, are shown below:

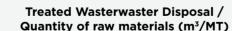
A/A	Parameter	Yearly Average Values 2021	Limit Values (Environmental terms 2020)
1	pH Indicator	7.1	6-9
2	Temperature (oC)	31	35
3	BOD5 (mg/l) - Biochemical Oxygen Demand	23	40
4	COD (mg/l) - Chemical Oxygen Demand	113	125
5	Total NH3 (mg/l)	13.5	15
6	Sulfides (mg/l)	1.3	2
7	Suspended solids (mg/l)	20	25

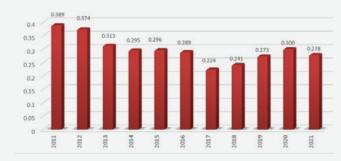
Hydraulic and polluting load of the industrial wastewater treatment plant is as follows:

A/A	Parameter	Average values 2014	Average values 2015	Average values 2016	Average values 2017	Average values 2018	Average values 2019	Average values 2020	Average values 2021
1	Discharge (m³/day)	9,817	10,070	9,592	8,323	9,133	9,479	9,752	10,009
2	BOD <sub>5</sub> (kg/day)	241	239	236	203	224	237	242	234
3	Suspended solids (kg/day)	174	192	188	167	193	209	209	199

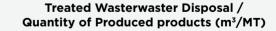
Since 01.07.2020, the BODs measurements have been carried out on a weekly basis according to the renewed / revised Approved Environmental Terms of the Refinery.

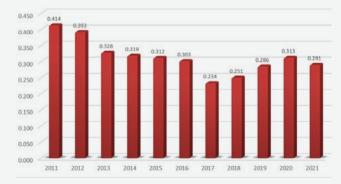
In the following diagram, is shown the specific volume of treated wastewater ( $m^3/MT$  of raw materials) for the last years.





Furthermore, the specific volume of treated wastewater per quantity of finished products for the last years, is as follows:





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At the following table the results of BTEX in the output of	of industrial wastewater tre	eatment plant for the
year 2021, are presented.		

Parameter	Threshold Limits	2021 Average Values
	mg /l	mg/l
Benzene	0.05	<0.005
Toluene	-	<0.01
Xylene	-	<0.01
Ethyl benzene	-	<0.01

#### **Sanitary Wastewater Treatment Plant Outlet**

A/A	Parameter	Average 2016 values	Average 2017 values	Average 2018 values	Average 2019 values	Average 2020 values	Average 2021 values	Threshold
1	рН	7.6	7.5	7.5	7.6	7.5	7.5	6-9
2	BOD5 (mg/l)	20	18	20	21	22	18	40
3	COD (mg/l)	48	43	48	60	56	52	150
4	Suspended solids (mg/l)	14.5	14	13.6	13.7	12.1	10.8	40.0

# **3.1.3** Solid Waste Management

Solid waste produced during the refinery's operation is collected and processed according to the relevant legislation:

- Non-hazardous solid waste is managed according to the Ministerial Decision 50910/2727/03 (O.G.G. No. 1909/B), as applicable.
- Hazardous waste is managed according to the Ministerial Decision 13588/725/06 (O.G.G. 383/B), Ministerial Decision 24944/1159/2006 (O.G.G. B/791), Ministerial Decision 62952/5384/2016 (O.G.G. B/4326) and Law 4819/2021 (O.G.G. A/129), as applicable
- Waste that falls under the alternative management category comply with Law 2939/2001 (O.G.G. 179A) its regulatory requirements and with Law 4819/2021 (O.G.G. A1/29)

The Refinery is aiming at the increase of recycling and re-usage of the produced waste. The amount of solid waste that was disposed and managed outside the refinery premises, over the last years, is shown in the following table.

#### Solid waste Management (MT / year)

Code	Description	2015	2016	2017	2018	2019	2020	2021
050117	Bitumen			3.03		10.49	7.32	31.43
050199	Waste not otherwise specified	448.116	579.87	422.736	347.365	402.347	331.659	334.17

Code	Description	2015	2016	2017	2018	2019	2020	2021
080317*	Waste printing toner containing hazardous substances					0.37		
120117	Waste blasting material other than those mentioned in 120116	514.92	215.13	791.71	700.68	1,315.57	318.03	536.76
130208*	Other engine, gear and lubricating oils	1.42	82.783	201.078	33.00	4.72	29.51	9.31
150101	Paper and cardboard packaging	84.33	82.32	14.84	15.09	26.56	19.96	27.4
150102	Plastic packaging	123.20	121.68					
150103	Wooden packaging	83.32	82.95	35.98	169.30	203.78	191.79	402.67
150104	Metallic Packaging	4.54	4.48		2.805			
150105	Composite packaging	176.24	174.08					
150106	Mixed Packaging	393.2	219.89	919.49	824.30	1,073.98	1,021.29	834.96
150107	Glass Packaging	5.13	5.06					
150110*	Packaging containing residues of or contaminated by dangerous substances	8.69	16.66	27.05	6.94	5.26	5.09	7.82
150202*	Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protecting cloths contaminated by dangerous substances			84.2	40.73	250.259	10.39	18.9
160104*	End-of-life vehicles						4.24	
160213*	Discarded equipment containing hazardous components					0.763		0.883
160305*	Organic wastes containing hazardous substances					8.24	7.1	

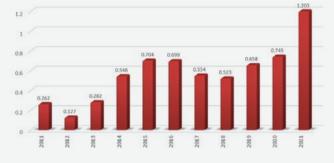
Code	Description	2015	2016	2017	2018	2019	2020	2021
160504*	Gases in pressure containers (including halons) containing hazardous substances						0.796	
160506*	Laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals	0.14			O.15	0.07		0.07
160601*	Lead batteries		3.98	5.56		14.92	25.37	6.87
160602*	Batteries Ni, Cd					4.28		0.61
160708*	wastes containing oil						6.12	
160802*	Spent catalysts					52.57	7.7	878.66
160804	Spent fluid catalytic cracking catalysts (except 160807)	2,277.33	2,085.98	2,344.79	1,962.636	2,679.74	3,173.67	2,773.81
160807*	spent catalysts contaminated with hazardous substances						278.93	2.51
161105*	linings and refractories from non- metallurgical processes containing hazardous substances		34.69	67.16	90.77			
170402	Aluminium			4.01	1.15	0.47	0.6	
170405	Iron and Steel			1,710.38	1,374.32	1,296.12	1,062.81	1,726.95
170407	Mixed metals	1,649.05	1,544.54					
170411	Cables other than those mentioned in 17 04 10			4.86	86.89	3.22	15.1	40.16
170504	Soil and stones other than those mentioned in 17 05 03	2,404	2,551.16					

Code	Description	2015	2016	2017	2018	2019	2020	2021
170605*	Construction materials containing asbestos	12.675	17.78		7.76	7.95	5.28	14.12
180103*	Waste whose collection and disposal is subject to special requirements in relation to prevent infection	0.0645	0.066	0.095	0.083	0.01	0.04	0.057
190205*	Sludges from physico/ chemical treatment containing dangerous substances	2.75	8.53	474.96	1,069.38	187.35	386.6	182.53
190305	Stabilised wastes other than those mentioned in 19 03 04	18.13				455.05	109.62	8,640.98
191302	Solid wastes from soil remediation other than those mentioned in 19 13 01	387.71	476.99	371.51	451.22	379.03	982.61	150.32
200101	Paper and Cardboard	48.46	47.58	13.59				
200121*	Fluorescent tubes and other mercury- containing waste	0.79	0.3437	0.62	0.37	0.87	0.3	0.28
200133*	Batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries					0.37		0.12
200135*	Discarded electrical and electronic equipment			6.79	3.405	1.116		4.907
200136	Discarded electrical and electronic waste			0.64		0.007	0.02	0.15
200139	Plastics	74.47	73.55					65.01
200140	Metals	8.45	8.34					
200307	Bulky wastes					0.49		

The total quantity of solid waste handled by MOTOR OIL via appropriately licensed companies in 2021 is 15.813.76 tons.

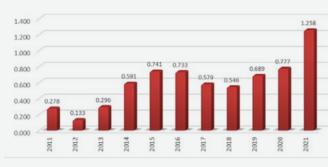
The specific quantity of solid waste per quantity of raw materials for the last years is as follows:

#### Quantity of Solid Waste / Quantity of Raw Materials (MT/Thousand MT)



The specific quantity of solid waste in relation to the production (MT / thousand MT of produced products), is shown below:

#### Quantity of Solid Waste / Quantity of Produced Products (MT/Thousand MT)



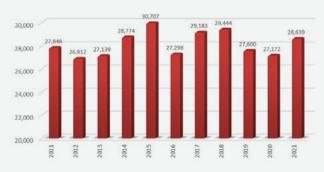
The index's significant increase as depicted in the diagrams above is exclusively justified by the conclusive solid waste management accumulated from earlier periods.

## **3.1.4** Energy Consumption

The energy consumption of the refinery includes the fuel used in combustion processes and the electric power for the operation of mechanical equipment, which is almost exclusively produced by the Power and Steam co-Generation Plant. The refinery fuel mixture includes liquid (fuel oil) and gaseous fuels mixture that consists of self-produced gas fuel, natural gas and liquified gas.

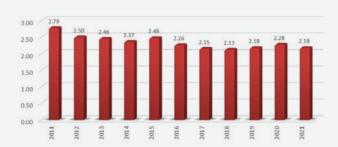
The projects that were completed in the previous years, (mainly the introduction of natural gas in the refinery fuel mixture in 2008, the extensive maintenance of gas turbines, the upgrade of the preheating furnaces, the increase of the recovery level of condensates, the installation of an Advanced Control System, the use of hot streams to preheat cold streams, the maximization of refinery gas usage etc), combined with the systematic monitoring of energy efficiency and the preventive maintenance schedules, contributed to the significant reduction of the refinery energy consumption over the last years, confirming the optimal energy management. Thus, the energy consumption by the refinery's processes in 2021 is 28,638.96 TJ.

#### **Energy Consumption (TJ)**



In following diagram, it is shown the specific index of Energy consumption per quantity of raw materials, which is relatively stable in the recent years.

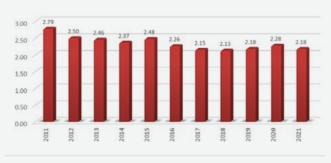
#### **Energy Consumption / Quantity of Raw Materials** (TJ/Thousand MT)



It must be noted that the usage of raw material volume (instead of end product volume) as a comparison basis is justified since this measure is commonly and internationally acceptable as benchmark for the assessment of the impact on the environment from crude refining premises (bref: IPPC reference document on best available techniques for mineral oil and gas refineries) and at the same time allows the correct interpretation and timeliness evaluation of the environmental efficiency of the refinery.

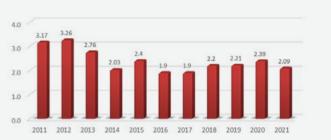
The specific index of Energy / thousand MT of produced products is shown below:

#### **Energy Consumption / Quantity of** Produced Products (TJ/Thousand MT)



Also, in 2021 the energy losses were kept at a relatively low level as shown in the bellow diagram.

#### **% Losses / Quantity of Raw Materials**

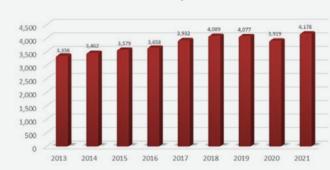


## **3.1.5** Water Consumption

The water used for the Refinery's various operations is obtained from the treatment of seawater at the desalination plants.

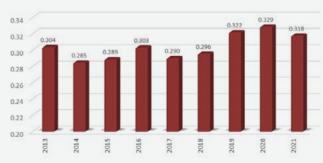
The quantity of water consumed during the last years, is shown at below diagram.

#### Annual Water Consumption (Thousand m³)



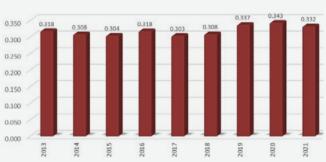
The specific index of water consumption per quantity of raw materials for the last years is shown at the diagram below and is an indicator of efficient use of materials.

Annual Water Consumption / Quantity of Raw Materials (m<sup>3</sup>/Thousand MT)



The specific index of water consumption per unit of produced products (m<sup>3</sup>/thousand M.T), is shown at the following diagram

#### Annual Water Consumption / Quantity of Produced products (m³/Thousand MT)



It should be emphasized that the water being used in the manufacturing process comes exclusively from the processing of sea water, and consequently, there is no negative impact on the natural resources of the area whatsoever.

It is also pointed out that, in the context of the company's social contribution, amounts of water covering the water supply needs of nearly two hundred neighboring residences are granted free of charge.

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### **3.1.6** Noise

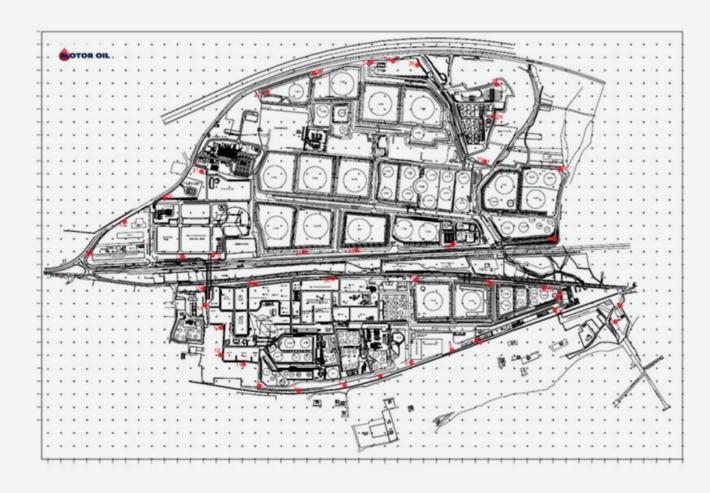
Having set as a goal the reduction of environmental noise levels at refinery boundaries and in compliance with the current Environmental Terms, the following Best Available Techniques are applied in accordance with Decision 2014/738/EU:

- Noise levels are monitored on a regular basis by conducting measurements at multiple locations around the Refinery.
- The use of equipment that produces excessive noise is limited to separate structures / units either in the design phase of new units, or in

case of noise detection that exceeds the legislative limits on the perimeter of the installation.

 Use of sound barriers after evaluation of noise levels during the installation. It is noted that in the context of reducing noise emissions, sound barriers have been installed in the ventilation units of the wastewater treatment plant, in the blowers of M7700 and in the gas turbine GT5.

The positions of the noise monitoring program are presented in the following map:



The results of the noise monitoring program for the year 2021 are presented in the following table and it is proven that they do not exceed the legal limit of 65 dB (A), at the boundaries of the site, except on the south side, where the limit is 55 dB (A), in accordance with the requirements of the Decision for the Approval of Environmental Terms and the relevant legislation (PD1180 / 81 (Government Gazette 293/A/81) and document no. 2393/2675/00/31.05.2000 of the competent Directorate of Prefecture of Corinth).

Locations	Average Measurements January 2021 (dBA)	Average Measurements June 2021 (dBA)	Average Measurements September 2021 (dBA)	Threshold Limits (dBA)
Perimeter of the refinery	54.8	55.0	55.1	65.0
South perimeter (points 1 to 10)	52.6	52.3	52.4	55.0



# 4.1 New objectives and programs

MOTOR OIL constantly implements new programs and actions aiming at improving its environmental performance, while setting new objectives for the future. The objectives and programs that are planned for the following years are presented in the following table.

OBJECTIVES AND PROGRAMS	2022	2023	2024
AIR			
Reduction of air emissions (SO <sub>2</sub> , NOx, suspended solids, CO) per MT of feeding raw materials by 25% following the modernization of the furnaces of the vacuum distillation unit U200	•		
Reduction of air emissions ( $\mathrm{SO_2}$ by 10% and NOx by 19%) through upgrade of F1501	•	•	
${\rm CO_2}$ emissions reduction (1,260 MT/y) from electricity production through photovoltaic panels installation (2.19 MW)	•	•	
Reduction of $\rm CO_2$ emissions from the operation of the new M-8600 isomerism unit following its design without clave. Deflection of 7.500 MT $\rm CO_2$ /year in comparison with the current unit M-2500.		•	•
SOLID WASTE			
Development of a network for the collection of recyclable materials	•	•	
ENERGY			
Improvement of the energy efficiency of the atmospheric distillation unit by rearranging the heat exchangers and replacing the clave's fan with an improved energy efficiency class one.		•	
Continuous monitoring and replacement program for the stream traps	•	•	•
Gradual replacement of motors with energy class IE4 and higher	•	•	•
Condensate routing for the building heating thus saving $\geq$ 300MW per year, i.e., 60 MT of $CO_2$ per year	•		
Installation of the Energy Optimizer by a globally renowned third party for the optimal energy operation of the Refinery's equipment.	•		
Conducting Energy Project with energy improvement proposal for the whole Refinery	•		
Provision of new inverters for superheated high pressure steam production from hot fumes of 11 TJ approximately, decreasing to this effect the usage of fuel in hot-water tanks for steam production.	•		
New GT6 machine of increased energy efficiency up to approximately 90% with natural gas and a total of 57 MW power generation			•

# REGISTRATION INFORMATION / NEXT ENVIRONMENTAL STATEMENT

The present Environmental Statement concerns the year 2021. The next Environmental Statement for the year 2022 will be edited, verified and issued in May 2023.

Mr. Spyros J. Sofos, Integrated Management System Section Head is responsible for issuing the Environmental Statements.

1. ORGANIZATION	
Company name	MOTOR OIL
Address	Agioi Theodoroi, P.O BOX 23, 20100
City	Corinth
Postal Code	20100
Country	GREECE
Contact Person	S. J. Sofos
Telephone	+30 27410 - 41800
Fax	+30 27410 - 48255
e-mail address	sofossp@moh.gr
Company website	www.moh.gr
Public access to the environmental statement or the updated	l environmental statement
a) printed form	YES
b) electronic form	YES
Registration number	
Registration date	
Suspension date	
Deletion date	
Date of the next verification of environmental statement	May 2023
Date of the next updating of environmental statement	May 2023
Application for deviation according to article 7	NO
Code of activities NACE	DF.19.20
Personnel headcount	1,050
Turnover or Total Assets	7,153,968,000 €

#### 2. LOCATION OF ACTIVITIES MOTOR OIL Company name Address Agioi Theodoroi, P.O BOX 23 City Corinth 20100 Postal code Country Greece Contact Person S. J. Sofos +30 27410 - 41800 Telephone Fax +30 27410 - 48255 e-mail address sofossp@moh.gr www.moh.gt Company website Public access to the environmental statement or the updated environmental statement YES a) printed form YES b) electronic form Registration number Registration date Suspension date Deletion date Date of the next verification of environmental statement May 2023 Date of the next updating of environmental statement May 2023 Application for deviation according to article 7 NO Code of activities NACE DF.19.20 Personnel headcount 1,050 Turnover or Total Assets 7,153,968,000 € 3. ENVIRONMENTAL CERTIFICATOR BUREAU VERITAS HELLAS S.A Name Address Aitolikou 23, Pireas City Pireas Postal Code 185 45 Country Greece Telephone +30 210 - 4063000 Fax +30 210 - 4063118 e-mail address grc\_scscer@gr.bureauveritas.com EL-V-0007 (246-10) Number of registration or accreditation NACE 19 NACE codes Accreditation or Certification institution Ε.ΣΥ.Δ Athens, 04/07/2022 Organization Representative Signature

Corinth 01 July 2022

Spyros J. Sofos Integrated Management System Section Head

### **ANNEX I - REFINERY PHOTOS**









### **ANNEX II LEGISLATION LIST**

SUBJECT	GREEK AND EUROPEAN COMMUNITY LEGISLATION
	Law 1650/86 (Gazette No-160 A') - For the protection of the environment.
	• Ministerial Decree 69269/5387/90 (Gazette No 678/B 25.10.90) - Categorization of activities and projects. Content of study for the Environmental Impacts, determination of content for special environmental studies and other relevant provisions according to the law 1650/86.
	• MD 1661/1994 (Gazette No786B/94) - Amendment and supplement the provisions of JMD 69269/5387 - Joint Decision of Ministers of Environment, Public Works and Tourism.
	• MD 30557/1996 (Gazette No 136B/96) - Amendment and supplement the provisions of the JMD 69269/5387/90 (678 / B).
	• MD 84230/1996 (Gazette No 906B/96) - Amendment and supplement the provisions of the JMD 69269/5387/90 (678 / B).
	Directive 96/61/EC - Of the European Council of 24 September 1996 concerning integrated pollution, prevention and control, as amended by Directive 2008/1/EC and replaced by Directive 2010/75/EC.
	• Law 3010/02 (Gazette No 91A / 25.04.2002) - Conformity with the law 1650/86, with the Directives 97/11 EC and 96/61 EC, Procedure of delimitation and regulations of issues related to the water streams and other provisions.
	• Ministerial Decree 11014/703/Ф104/2003 (Gazette No 332/20.03.2003) - Procedure of Preliminary Environmental Assessment and evaluation and approval of the environmental terms according to the article 4 of the Law 1650/1986 as it was replaced from the article 2 of the Law 3010/2002 «Conformity of the Law 1650/86 with the Directives 97/11/EC and 96/61/EC and other provisions».
	• Law 3325/2005 (Gazette No 68A/2005) Foundation and operation of industrial - manufacture installations in the frame of a sustainable growth and other provisions.
Environmental Permissions	Directive 85/337/EEC For the assessment of the environmental impacts.
i cimissions	Directive 97/11/EEC which modifies the Directive 85/337/EEC.
	Law 3982/2011 (Gazette No 143/A/17.6.2011) - Simplify of licensing professional technical and manufacturing activities, business parks and other provisions.
	Law 4014/2011 (Gazette 209/A/21.09.2011) - Environmental permission of projects and activities, regulation of illegal constructions in accordance with environmental balance and other provisions of Environmental Ministry.
	Ministerial Decree 1958/2012 (Gazette No 209/A/2011) - Categorization of public and private projects and activities according to the article 1 of law 4014/21.09.2011.
	• MD 20741/2012 (Gazette No 1565 / B `/ 8.5.2012) - Amendment of 1958/13.12012 decision of the Minister of Environment, Energy & Climate Change, about " Classification of public and private projects and activities into categories and subcategories according to Article 1, paragraph 4 of Law 4014/21.9.11 (209 / A) "(21 / B)
	• MD 21697/2012 (Gazette No 224/YODD//3.5.2012) - Establishing of a Central Council environmental permitting (KESPA) in accordance with paragraph 1 for article 13 of Law 4014/2011 (209 / A).
	• MD 48963/2012 (Gazette No 2703 / B `/ 5.10.2012) - Specifications of content of environmental permits for projects and activities under the Category A No. 1598/13.1.12 Minister's decision environment, Energy and Climate Change (21 / B), as applicable in accordance with Article 2 § 7 of Law 4014/11 (209 / A).
	• MD 166476/2013 (Gazette No 595 / B 03.14.2013) - Amendments of 1958/13.1.2012 (Gazette 21 / B) of the Minister of Environment, Energy & Climate Change about "Classification of public and private projects and activities into categories and subcategories under Article 1 § 4 of the Law 4014/21.9.11 (GG 209 / A) ", as amended by Decision No. 20741/8.5.2012 (Gazette No 1565 / B).

#### **SUBJECT GREEK AND EUROPEAN COMMUNITY LEGISLATION** • MD 65150/1780/2013 (Gazette 3089 / B / 04.12.2013) - Replacement of Annex VII of MD 1958/2012 'Classification of public and private projects and activities into categories and subcategories in accordance with Article 1, paragraph 4 of Law 4014/21.09.2011 (Gazette 209/A/2011) »(21 / B), as applicable. MD 170225 (Gazette 135V/27-01-2014) - Specialized of File contents for environmental permitting projects and activities of the Class A. of the Minister Decision of Environment, Energy and Climate Change No. 1958/2012 (B 21) as applicable, in accordance with Article 11 of Law 4014/2011 (A 209), as well as any other relevant detail. JMD 1649/45 / Gazette 45B / 15-01-2014 - Specialization of processes about receiving opinions and information ways and participation of the public concerned to the public consultation during the environmental licensing of projects and activities of Class A Decision of the Minister of Environment, Energy and Climate Change no. 1958/2012 (Government Gazette A 21), as defined in Article 19, paragraph 9 of law. 4014/2011 (Government Gazette A 209), and any other relevant detail. MD Environmental Licensing Directorate/37674/2016 (10.08.2016) - Modification and codification Of Ministerial Decision 1958/2012 - Ranking of public and private Projects and activities in categories and subcategories according to Article 1 (4) of Law 4014 / 21.9.2011 **Environmental** (Government Gazette 209 / A / 2011) as it has been amended and is in force **Permissions** . M.D. 1915 (No 304B, of 2 February 2018) - Amendment of the Joint Ministerial Decisions No 48963/2012 (B 2703). No 167563/2013 (B 964), and No 170225/2014 (B 135), issued pursuant to Law 4014/2011 (A 209), in compliance with the Directive 2014/52/EU "on the assessment of the impacts of certain public and private projects on the environment" of the European Parliament and of the Council of 16 April 2014. Law 4685/2020 (Gazette 92/A 7/5/2020) - Modernization of environmental legislation. incorporation into Greek legislation of Directives 2018/844 and 2019/692 of the European Parliament and of the Council and other provisions Joint Ministerial Decision 3122.3-15/71164/2021 (O.G.G. 4790/B/18.10.2021 - Amendment of the Greek legislation to the Directive (EU) 2019/883 of the European Parliament and of the Council of 17 April 2019 on port reception facilities for the delivery of waste from ships, amending Directive 2010/65/EU and repealing Directive 2000/59/EC Ministerial Decision, Ministry of the Environment and Energy/Inspectorate Body/13582/2021 (O.G.G 689/B/22.02.2021) - Methodology for planning regular environmental inspections - Risk assessment and classification in degrees of risk of economic activities that fall under Categories A and B of Article 1, Law 4014/2011, as applicable • Presidential Decree 1180/81 (Gazette No 293 A) - «About regulation of issues related to the foundation and operation of industries, manufactures, all nature of mechanical installations and storages for the insurance of the environment». Directive 92/42/EEC Of the Council at 21.05.1992 on efficiency requirements for new hot-water boilers fired with liquid or gaseous fuels. Ministerial Decree 11294/93 (Gazette No 264/B) Terms of operation and approved limits of gas waste emissions from the industrial boilers. Ministerial Decree 11641/1942/2002 (Gazette No 832/B/ 02.07.2002) - Measurements and terms for the reduction of the Volatile Organic Compounds (VOC) Emissions which are resulted from the use of organic solvents in some activities and installations (Gazette No 832B/02.07.2002). **Air Pollution** M.D. 10245/713/1997 - Measures and conditions for the control of volatile organic compounds emissions (VOCs) arising from the petrol storage and its disposal from the terminal installations to the fuel distribution stations • MD 22306/1075/E103/2007 (Gazette No 920B/07) - Establishment of Objectives and limits assessment of concentrations of arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air, in compliance with the provisions of Directive 2004/107/EC about "Relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air "of the Council of 15 December 2004".

that deplete the ozone layer».

 Ministerial Decree 37411/1829/E103 (Gazette No B 1827/11 September 2007) - «Determination of the appropriate values, meters and procedures for the application of the Regulation 2037/2000 of the European Parliament and of the Council of 29 June 2000 «on substances

accordance with the provisions of Article 42 of Law 4042/2012 (A' 24), as in force

# SUBJECT GREEK AND EUROPEAN COMMUNITY LEGISLATION

**Air Pollution** 

- MD 14122/549/E. 103/2011 (Gazette No 488B/11) Measures to improve air quality in compliance with the provisions of Directive 2008/50/EC about "the ambient air quality and cleaner air for Europe" of the European Parliament and of the Council of the European Union on 21 May 2008".
- MD 10735/651/2012 (Gazette No 2656/B/28.9.12) Installation, Operation and Control of Steam Boilers
- JMD 36060/115/E.103 (Gazette 1450/V/14.6.2013) Definition guidelines, measures and procedures for the prevention and control of pollution from industrial activities, in conformity with the provisions of Directive 2010/75/EE "about industrial emissions (integrated pollution prevention and control)" of the European Parliament and of the Council of 24 November 2010.
- **Directive 2010/75/EU** and Executive Committee's decision of 09.10.2014 about determination of the conclusions on best available techniques under Directive 2010/75 / EU of the European Parliament and the Council on the oil and gas refining
- Regulation (EU) 517/2014 of the European Parliament and of the Council of 16 April 2014 on fluorinated greenhouse gases and repealing Regulation (EC) No 842/2006
- **Directive 2009/28/EC** of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC
- **Directive (EU) 2015/1513** of the European Parliament and of the Council of 9 September 2015 amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources
- Law 4062/2012 Exploitation of former Greek Airport SUN Project Promoting the use of energy from renewable sources (Integration Directive 2009/28/EC) Sustainability Criteria for Biofuels and bioliquids (Incorporation Directive 2009/30/EC)
- JMD 175700/2016 Biofuel sustainability system and bioliquids.
- Law 3054/2002 Organization of the oil market and other provisions
- M.D 11535/1993 Permitted types of fuel in the industrial and related installations, in the hospital incinerators and measures for the open combustion hotspots
- IMPLEMENTING DECISION 2014/738 / EU definition of the conclusions on best available techniques (BAT), based on Directive 2010/75 / EU of the European Parliament and of the Council about oil and gas refining
- JMD 284/2006/2007 (Gazette 1736B) Harmonization of the Greek legislation with the Directive 1999/32/EC on the reduction of the content of sulfur in certain fuels and about the amendment of the Directive 93/12 / EEC and the Directive 2005/33 / EC of the European Parliament and of the Council amending Directive 1999/32 / EC about the sulfur content of marine fuels.
- M.D 11294/1993 Operating conditions and permissible emission limits of air emissions from industrial boilers, steam generators, oil heaters and air heaters operating with fuel oil, diesel, or gas fuel.
- IMPLEMENTING DECISION (EU) 2018/1135 definition of the type, format, and frequency of information to be made available by Member States for reporting on the implementation of Directive 2010/75 / EU of the European Parliament and of the Council on Industrial air Emissions.
- Regulation (EU) 1005/2009 on substances that destroy the ozone layer
- **Directive (EU) 2018/410** of the European Parliament and of the Council of 14 March 2018 amending Directive 2003/87 / EC targeting to enhancing cost-effective emissions reductions and promoting low-carbon investments and the Decision (EU) 2015/1814.
- M.D. Ministry of energy /  $\Delta$ KA $\Pi$ A / 105040/2297 Amendment of the joint ministerial decision 181478/965/2017 (B´3763), as in force, in compliance with the Directive (EU) 2018/410 "on the amendment of the directive 2003/87 / EC with a view to enhancing cost-effective emissions reductions and promoting low-carbon investments and Decision (EU) 2015/1814 "of the European Parliament and of the Council of 14 March 2018.
- Implementing Regulation (EU) 2018/2066 About the monitoring and reporting of green-house gas emissions in accordance to Directive 2003/87 / EC of the European Parliament and of the Council amending Regulation (EC) No 601/2012.

SUBJECT	GREEK AND EUROPEAN COMMUNITY LEGISLATION
Hazardous Waste	<ul> <li>MD 26303/1483/2017 - (GG 2037/B`/13.6.2017) - Amendment of the Joint Ministerial Decision 43942/4026/2016 - Organization and operation of Electronic Waste Register in accordance with the provisions of Article 42 of Law 4042/2012 (A' 24), as in force</li> <li>M.D. 175216/2018 (Government Gazette 1892 / B / 24.5.2018) - Amendment of the Ministerial Decision No. 181504/2016 on "the establishment, content and management system of the National Producers Registry (EMPA) - Establishment of a registration procedure for producers in the context of alternative management of packaging and other products in accordance with Articles 7 and 17 (EC) of the Law 2939/2001 (A 179) as applicable" (B 2454), as amended by Ministerial Decision No. 892/2017 (B538).</li> <li>Decision 62952/5384 Approval of the National Hazardous Waste Management Plan (ES-</li> </ul>
	<ul> <li>DEA), in accordance with article 31 of law 4342/2015.</li> <li>Decision 2014/955 / EC of 12.18.2014 amending Decision 2000/532 / EC as regards the list of wastes</li> </ul>
	Directive 91/156 EEC of 18.03.91 which modifies the Directive 75/442 for waste.
	<ul> <li>Directive 94/62/EC of 20.12.1994 of packaging and packaging waste.</li> <li>Ministerial Decree 114218/97 (Gazette No B 1016) - «Creation of a frame with the specifications and general programs for managing the solid waste».</li> </ul>
	Law 2939/2001 - «Packaging and alternative management of packaging and other products. Foundation of National Organization of Alternative Management of Packaging and other products.
	Directive 2006/12/EC of the European Parliament and of the Council of 5 April 2006 on waste.
	• Ministerial Decree 9268/469/2007 (B 286/B/2.3.2007) - Modification of the quantitative objectives for the recuperation and recycling of the waste packaging according to the article

#### **General Waste**

- .
- generated on ships and cargo residues."
   Explanatory Circular 24040/2590/2013 Implement legislation on cross-border transportation of non hazardous waste.
  - L. 4496/2017 (GG 170/A`/8.11.2017) Amendment of Law 2939/2001 on alternative management of packaging and Oher products, adaptation to Directive 2015/720/EU, regulation of
  - issues of Hellenic Recycling Organization and other provisions
  - M.D. Act 39 of 31.8.2020 Approval of the National Waste Management Plan (ESDA).
  - **REGULATION (EC) No 1013/2006** OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 June 2006 on waste transportation.
- Electrical and

**Electronic** 

equipment

• Presidential Decree 117 of 5.04.2004 - «Measurements, terms and programs for alternative management of the waste which result from the electric and electronic equipments, in conformity with the provisions of the Directive 2002/95 «on the restriction of the use of certain hazardous substances in electrical and electronic equipment».

10 (paragraph A1, last section) of the law 2939/2001 (A' 179), as well as other provisions of this

law, in conformity with provisions of the Directive 2004/12/EC «amending Directive 94/62/EC

L. 3854/2010 (Gazette No 94/A/10) - Amendment of legislation for alternative management of packaging and other products, and the National Organization of Alternative Packag-

• JMD 8111.1/41/09 - Measures and conditions for port reception facilities for ship generated waste and cargo in compliance with the provisions of Directive 2007/71/EC. Replacement of

JMD 3418/07/02 (GG 712 B) "Measures and conditions for port reception facilities for waste

on packaging and packaging waste» of the Council of 11 February 2004.

ing Management and Other Products and other provisions.

• Presidential Decree 15/2006 (Gazette No 12/ A' /3.02.2006) - Modification of the presidential decree 117/04 (82/A), in conformity with the provisions of the Directive 2003/108/EC of the European Council of 8 December 2003 amending Directive 2002/96/EC on waste electrical and electronic equipment (WEEE).

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SUBJECT	GREEK AND EUROPEAN COMMUNITY LEGISLATION
	• MD 482/98/1998 (Gazette No 1316/B/98) - Amendment of MD 378/94 (705 / B) in compliance with Directive 96/56/EC (EEL 236 of 18.09.1996) of the European Community about "amending Directive 67/548/EEC on approach of laws, regulations and administrative provisions relating to the classification, packaging and labeling of hazardous substances'.
	• MD 511/98/1999 (Gazette No 168/B/99) - Amendment of MD 378/94 (705 / B) in compliance with Directive 96/54/EC (EEL 343 of 12.13.1997) of the European Community about "adapting to technical progress for the twenty-third time of Directive 67/548/EEC on the approach of laws, regulations and administrative provisions relating to the classification, packaging and labeling of hazardous substances'.
	• MD 690/99/2000 (Gazette No 294/B/00) - Amendment of Art. 32 of MD 378/94 (705 / B) about "hazardous substances, classification, packaging and labeling of these in compliance with Council Directive 67/548/EEC of the European Communities".
	• M.D G1/20655/2897/2015/16.07.2015- Harmonization of the Hellenic legislation to the provisions of the Instruction 2014/103/EE of the Council of the 21st of November about the third adaptation to the scientific and technical progress of the annexes of the Directive 2008/68/EC of the European Parliament and of the Council regarding the internal transports of hazardous goods and codification of J.M.D 35043/2524 (GG 1385/B²/2010), 52280/4720 (GG 2640/B²/2011), 52167/4683 (GG 37/B²/2012) and 40955/4862 (GG 2514/B²/2013).
	• MD 677/99/2000 (Gazette No 294/B/00) - Amendment of MD 378/94 (705 / B) in compliance with Directive 98/73/EC (EEL 305 of 11.16.1998), of Commission of the European Community about "adapting to technical progress for the twenty-fourth time of Directive 67 / 548/EEC on the approach of laws, regulations and administrative provisions relating to the classification, packaging and labeling of hazardous substances' in compliance with Directive 98/73/EC, (EEL 285 of 11.08.1999).
Chemical Substances	• MD 652/2000/2001 (Gazette No 363/B/01) - Amendment of MD 378/94 (705 / B) in compliance with the Directive 98/98/E.K. (EEL 355 of 12.30.1998) of the European Community about "adapting to technical progress for the twenty-fifth time of Directive 67/548/EEC on the approach of laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances' in compliance with the Remedial Directive 98/98/E.K. (EEL 293 of 15.11.1999 and EEL 136 of 06.08.2000).
Chemical Substances	• MD 388/2001/2002 (Gazette No 170/B/02) - Harmonization of national legislation with the regulation 2000/21/E.K, 2000/32/EC, 2000/33/EC of Commission of the European Communities.
	• MD 41/2002/2002 (Gazette No 755/B/02) - Amendment of MD 378/94 (705 / B) in compliance with Directive 2001/59/EC (EEL 225 of 21.08.2001) of the European Community about "the adaptation technical progress for the twenty-eighth time of Directive 67/548/EEC on the approach of laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances.
	• MD 558/2004/2005 (Gazette No 605/B/05) - Amendment of MD 378/94 (705/V/20-9-94) in compliance with Directive 2004/73/EC (EEL 152 of 04.30.2004) of Commission of the European Community about "adapting to technical progress for the twenty-ninth time of Council Directive 67/548/EEC on the approach of laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances', amending Directive 2004/73/EC (EEL 216 of 16.06.2004) and Directive 2004/73/EC (EEL 236 of 07.07.2004.
	• MD 270/2006 (Gazette No 100/B/06) - Completion of Decision 265/2002 (1214/V/19-9-02) about "the classification, packaging and labeling of dangerous preparations" in compliance with Directive 1999/45/EC of the European Parliament and of and Directive 2001/60/EC.
	• MD 73/2006 (Gazette No 832/B/06) - Amendment to the Decision 265/2002 on harmonization of national legislation with Directive 2006/8/EC of Commission about "amending for the purpose of adaptation to technical progress, Annexes II, III and V of the Directive 1999 / 45/EC of the European Parliament and of the Council on the approach of laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labeling of hazardous goods.
	• COMMISSION REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency and the amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Regulation (EC) No 1488/94 and Council Directive 76/769/EEC and Directives Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended and in force.

SUBJECT	GREEK AND EUROPEAN COMMUNITY LEGISLATION
Chemical Substances	REVER AND EUROPEAN COMMUNITY LEGISLATION  MD 87/2007/2007 (Gazette No 872/B/07) - Amendment of MD 378/1994, (Gov 705/V/20.91994) in compliance with EU Directive 2006/12/EC (L 396, 30.12.2006) of the European Parliament and the Council about "amending Directive 67/548 / EEC on the approach of laws, regulations and administrative provisions relating to the classification, packaging and labeling of hazardous substances in order to adapt it to Regulation (EC) No. 1907/2006 acon cerning the Registration, evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European chemicals Agency».  COMMISSION REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, as amended and is in force.  MD 52167/4683/2012 (Gazette No 37/B/12) - Adaptation of Greek legislation to the provisions of Directive 80/2016/EE of 2 September 2010 adapting to scientific and technical progress of the Annexes of Directive 2008/68/EC of the European Parliament and of the Council on the internal transport of hazardous goods.  PD 52/2015 (17.07.2015) Harmonization with Directive 2014/27 / EU For the Amendment of the Council Directives 1992/58 / EEC, 1992/58 / EEC, 1994/33 / EC, 1998/24 / EC and Directive 2004/37 / EC of the European Parliament and of the Council in order to be aligned with the Regulation (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures - Amendment of Presidential Decrees 105/1995, 176/1997, 62/1998, 338/2001 and 1993/1994  COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as regardi-methyl-2-pyrrolidone  JMD No. 1111/2017 Amendment - Supplement to No. 301581/2663 (Government Gazette 124 / BD /
Solid Waste	<ul> <li>Ministerial Decree 9268/469/2007 (B 287/2007) - Modification of the quantitative objectives for the recuperation and recycling of the waste packaging according to the article 10 (paragraph A1, last section) of the law 2939/2001 (A' 179), as well as other provisions of this law in conformity with provisions of the Directive 2004/12/EC «amending Directive 94/62/EC or packaging and packaging waste» of the Council of 11 February 2004.</li> <li>M.D. 54461/1779 / E.103 / 2013 (Government Gazette 2500 / B / 4.10.2013) "Replacement of Annex I of article 4 of the joint ministerial decision no. 9268/469/2007 (286 / B), ir accordance with provisions of Directive 2013/2 / EU "amending Annex I to Directive 94/62 / EC of the European Parliament and of the Council on packaging and packaging waste" of the European Commission of 7 February 2013.</li> <li>Law 4819/2021 (O.G.G. 129/A/23.07.2021) - Integrated framework for waste management - Transposition of the Directive 2018/851 and 2018/852 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste and Directive 94/62/EC or 20 December 1994 on packaging and packaging waste, organization framework of the Hellenic Recycling Agency, provisions for plastic products and the natural environment protection, urban planning - city planning, energy and pertinent exigent provisions</li> </ul>

SUBJECT	GREEK AND EUROPEAN COMMUNITY LEGISLATION
	Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings.
	Law 3661/2008 (Gazette No 89A / 2008) - Measurements for the reduction of the energy consumption into the buildings and other provisions.
	• Law 3855/10 (Gazette No 95 A / 23.06.2010) - Measurements for the improvement of the energy efficiency during the final use, energy services and other provisions.
	Ministerial Decree D6/B/5825 (Gazette No 407/09-09-2010) - Regulation of Energy Efficiency of Buildings.
	• Law 4342 Pension arrangements and incorporation into Greek law of Directive 2012/27 / EU of the European Parliament and of the Council of 25 October 2012 'about energy efficiency, amendments of Directives 2009/125 / EC and 2010/30 / EU and abolishment of Directives 2004/8 / EC and 2006/32 / EC.
	Law 3468/2006 - Production of Electricity from Renewable Energy Sources and Cogeneration of Heat and Power High Performance and other provisions
	MD 188343 Qualification and Certification Systems for Energy Auditors. Register of Energy Auditors and Archive of Energy Audits.
	JMD 178679/2017 (GG 2337 / 10.07.2017) Qualification and Certification Systems for Energy Auditors. Register of Energy Auditors and Energy Audit Archive
	M.D. 175275/2018 (Government Gazette 1927 / B '/ 30.5.2018) - Qualification and Certification Systems for Energy Auditors. Energy Auditors Register and Energy Audit Archive
Energy	• Law 4843/2021 (O.G.G. 193/A/20.10.2021) - Transposition of the Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2019 amending Directive 2012/27/EC on energy efficiency, amendment to the Regulation 2019/1999/EU of the European Parliament and of the Council of 11 December 2019 on the on the governance of the energy union and climate action and Commission Delegated Regulation (EU) 2019/826 of 4 March 2019 amending Annexes VIII and IX to Directive 2012/27/EU of the European Parliament and of the Council on the contents of comprehensive assessments of the potential for efficient heating and cooling, pertinent regulations on energy efficiency in the building sector, as well as on strengthening renewable energy sources and competition in the electricity market network, and other exigent provisions.
	• Ministerial Decision 4/2019 (O.G.G. 4893/B/31.12.2019) - «National Energy and Climate Plan (NECP)»
	• Ministerial Decision, Directorate of Energy Policies and Energy Efficiency/Our Ref. 170472/2018 (O.G.G. 181/B/26.1.2018) - Amendment of Directorate of Energy Policies and Energy Efficiency/Our Ref. 178581/30.06.2017 Joint Ministerial Decision «Approval of Energy Performance in Buildings Regulation»
	Law 4643/2019 (O.G.G. 193/A/3.12.2019) - «Liberalization of the energy market, modernization of. PPC, privatization of DEPA and support of R.E.S. and other provisions.»
	<ul> <li>Law 3054/2002 (O.G.G. 230/A/02.10.2002) «Organization of the petroleum market and other provisions.»</li> </ul>
	• Ministerial Decision, Ministry of the Environment and Energy/Mnstr/56257/7231/2019 (O.G.G. 2646/B/01.07.2019) – «Amendment of the No. 36060/1155/E.103/13.6.2013 decision of Development, Competitiveness, Infrastructure, Transport and Networks Minister and Environment, Energy and Climate Change Minister - «Defining a framework of regulations, measures and procedures for the integrated prevention and control of environmental pollution from industry emissions, in compliance with the provisions of the Directive 2010/75/EU « on industrial emissions (integrated pollution prevention and control)» of the European Parliament and the Council 24 November 2010», as applicable
	• Joint Ministerial Decision 34062/957/E103/2015 (O.G.G. 1793/B/20.8.2015) - «Approval of the Transitional National plan on Emissions Reduction, according to Article 28 of the No. 36060/1155/2013 Joint Ministerial Decision (1450/B) «Defining a framework of regulations, measures and procedures for the integrated prevention and control of environmental pollution from industry emissions, in compliance with the provisions of the Directive 2010/75/EU « on industrial emissions (integrated pollution prevention and control)» of the European Parliament and the Council 24 November 2010», as applicable.

SUBJECT	GREEK AND EUROPEAN COMMUNITY LEGISLATION
Energy	• Joint Ministerial Decision 44105/1398/E.103/2013 (O.G.G. 1890/B/01.08.2013) – «Amendment of the No. 29459/1510/2005 Joint Ministerial Decision «Defining National emission ceilings for certain atmospheric pollutants» (992/B) and (1131/B), as amended by the No.14849/853/2008 Joint Ministerial Decision (645/B) and the No.33318/3028/1998 Joint Ministerial Decision «Defining measures and procedures for the conservation of natural habitats μέτρων as well as wild fauna and flora» (Β΄1289), as amended by the No.14849/853/2008 Joint Ministerial Decision (645/B), in compliancy with the provisions of the Directive 2013/17/EU of the Council of 13 May 2013 of the European Union and other provisions»
	• Sanitary Provision E1b. 221/65 (Gazette No 138B/24.02.65) - Disposal of waste and industrial waste.
	Prefecture Decision 17823/79 (Gazette No 1132/B/79)
	Prefecture Decision A3/6533/81 (Gazette No 477/B/81)
Treatment of waste -	• Law 1739/87 (Gazette No 201 A / 20.11.87) - Management of water sources and other provisions.
water sources	• Law 3199/2003 (Gazette No 280 A / 09-12-2003) - Protection and management of water – conformity with Directive 2000/60/EC.
	• Ministerial Decree D. YG2 / G.P. 133551/2008 (Gazette No 2089/B²/09.10.2008) - Modification of case ( $\gamma$ ) of paragraph 1, article 8, E1b/221/65 Sanitary provision.
	• MD 191002/2013 (Gazette 2220/B/09.09.2013) - Amendment of JMD 145116/2011 "Specifying measures, conditions and procedures for the reuse of treated wastewater (354/B) and related provisions".
	• Presidential Decree 71/1988 (Gazette No 32A/17-2-1988) - Regulation of fire protections of buildings.
	• <b>Presidential Decree 374/1988 (Gazette No 168A/12.08.1988)</b> -Modification and completeness of P.D. 71/88 «regulation of fire protection of buildings» (Gazette No 32/A/28-3-88).
	• MD 34458/1990 (Gazette No 846/B/90) - Establishment of technical specifications, configuration, design, construction, safe operation of refineries and other oil industries.
	• <b>Ministerial Decree 58185/2474/1991 (Gazette No 360/B²/28.05.1991)</b> - About modification and completeness of P.D. 71/88 «regulation of fire protection for buildings).
	• Ministerial Decree 81813/5428/1993 (Gazette No 647/B'/ 30.08.1993) - Modification and completeness of $\pi.\delta$ 71/88.
	• MD 54229/2498/1994 (Gazette No 312/B/94) - Modification and completion of presidential Decision 71/88 about "fire regulations in buildings".
	• MD 33940/7590/1998 (Gazette No 1316/B/98) - Modification and supplement of PD 71/88 "fire regulations in buildings".
Fire Protection	• Fire Department Provision 12/2007 (Gazette No 545/2007) – Establishment of a book with the controls of preservation and good operation of the meters for active fire protection of the enterprises.
	• Ministerial Decree 50292/3549/08/2009 (Gazette No 272/B³/16-2-2009) - Supply the vehicles with portable fire extinguisher.
	• <b>Fire Department provision 13a/2010</b> - Modification of the 13/2008 Fire Department provision about «determination of the procedure for giving certificate of fire protection in enterprises which are in buildings.
	• <b>No. 15/2014</b> Fire-fighting Provision on: "Specifications of studying, designing and installing portable, permanent and other preventive and repressive measures and ways of the existing fire protection legislation.
	• <b>Decision 12/2012 (Gazette No 1794/B/98)</b> - Introduction of the maintenance book for control and proper operation of the means of active fire protection of facilities.
	• MD 2014 (Government Gazette 2434/B/09.12.2014) – Organize, training and staff informing on fire protection issues
	• M.D 3275 F.700.17/2016 (GG 388/B' /19.2.2016) - (No of Fire Fighting Provision 17/2016) Measures and ways of Fire Protection of offices

SUBJECT	GREEK AND EUROPEAN COMMUNITY LEGISLATION
Fire Protection	• MD 24738Φ.701.2/2017 (GG 2089/B`/19.6.2017) - Amendment of no. 3/2015, 14/2014 and 15/2015 of firefighting devices and repeal of no. 2/1979 and no. 5/1991 of fire-fighting devices
	• <b>Presidential Provision 148 (Gazette No 190/29-09-2009)</b> - Environmental Responsibility for prevention and repairing the damages to the environment - Conformity with the Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004.
Environmental Responsibility	• MD 48416/2037/E.103/2011 (Gazette No 2516/B/98) - Measures and conditions for storage of carbon dioxide in geological formations - Amendment of JMD 29457/1511/2005 (992 / B), of PD 51/2007 (54 / A) and PD 148/2009 (190 / A), in compliance with the provisions of Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 about "the storage of carbon dioxide in geological formations and amending Council Directive 85/337/EEC, Directives of the European Parliament and Council Directives 2000/60/EC, 2004/35/EC, 2008/1/EC and Regulation (EC) No. 1013 / 2006.
	• Law 4042/2012 (Gazette 24/A/13.02.2012) - Criminal law environmental protection - Harmonization with the directive 2008/99/EEC - Framework for the production and management of waste- Regulation of provisions of Environmental Ministry.
	Joint Ministerial Decision 51354/2641/E103 (O.G.G. 1909/B/08.12.2010) – Defining Environmental Quality Standards for the concentration of certain pollutants and priority substances in surface waters, in compliance with the provisions of the Directive 2008/105/EU of the European Parliament and the Council of 16 December 2008 «on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC and 86/280/EEC amending Directive 2000/60/EC of the European Parliament and of the Council», as well as the concentrations of specific pollutants in inland surface waters and other provisions.
Usage of Water	• MD 182314/1241/2016 (Government Gazette 2888 / B '/ 12.9.2016) - Amendment of Annex II of Article 8 of No 39626/2208/2009 Joint Ministerial decision (B'2075), in compliance with the provisions of Directive 2014/80 / EU "amending Annex II of Directive 2006/118 / EC of the European Parliament and of the Council on the protection of groundwater against pollution and Degradation" of the European Commission on 20 June 2014
	• MD 170766/2016 (Government Gazette 69 / B '/ 22.1.2016) - Amendment of Joint Ministerial Decision No 51354/2641 / E103 / 2010 (B 1909) in Compliance with the provisions of Directive 2013/39 / EU "for the Amendment of Directives 2000/60 / EC and 2008/105 / EC about the Priority substances in the field of water policy ' European Parliament and the Council of 12 August 2013 and other relevant provisions

