

Report of the Secretariat to the Ministerial Council on implementation of Fuel Quality Directive 98/70/EC in the Energy Community

1. Introduction:

The consumption of fossil fuels affects the environment, causing pollution in a direct or indirect way. Humans are exposed to this pollution because their activities are related to the use of fossil fuels. Common fuel quality rules are an important element in reducing greenhouse gas emissions from transport and protecting our environment and human health.

The aim of Directive 98/70/EC¹ of the European Parliament and of the Council of 13 October 1998 relating to the quality of petrol and diesel fuels and amending Council Directive 93/12/EEC (as amended, in the following - Fuel Quality Directive or FQD)² is to:

- Establish EU-wide standards for petrol and diesel used in cars, trucks and other off-road vehicles to protect human health and the environment, including a ban on lead in petrol and a limit of sulphur content in diesel fuels.
- Set fuel suppliers' obligations to gradually reduce life cycle greenhouse gas emissions from fuel or energy supplied by 6% by 2020 compared to a 2010 fossil fuel baseline.
- Advance the benefits of alternative fuels of non-fossil origin in petrol and diesel blends used in road transport, as well as to gas oils used in non-road mobile machinery, agricultural and forestry tractors, inland waterborne and recreational crafts when not at sea.

The requirements of the FQD have evolved over time with the introduction of new fuel specifications and reporting requirements. The fuel specifications set minimal and maximal limits for certain fuel constituents, which are relevant to limit emissions of pollutants, and to ensure the compatibility of fuels with engines. Given the fact that petrol and diesel fuels covered by the scope of the FQD are significant contributors to emissions into the air and therefore there are strong links between related regulation and the environmental objective enshrined in Article 2 of the Treaty, the Ministerial Council adopted Recommendation 2018/2/MC-EnC on preparing for the implementation of Directive 98/70/EC on 3 January 2018³.

The FQD was amended eight times in total. Pieces of EU law that are introduced in the Energy Community *acquis communautaire* are incorporated in their form on the day of the adoption of the respective measure (Decision or Recommendation) of the Ministerial Council, provided that it is not specified otherwise by the measure itself. In the case of the FQD, this means that the amendments to the Directive up to 3 January 2018 (the date of the adoption of the Recommendation) bear relevance also in an Energy Community context. The amendments introduced by Regulation (EU) 2018/1999 do not bear relevance for the Contracting Parties yet.

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:31998L0070>

² <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:01998L0070-20181224>

³ https://www.energy-community.org/dam/cr:889f8ccc-9bb1-41e7-83ff-18f7ced5b0c9/REC_2018_01_MC_FQD.pdf

2. Purpose

The purpose of this report is to comply with the Ministerial Council Recommendation (2018/2/MC-EnC) on preparing for the implementation of Directive 98/70/EC on 3 January 2018 and presenting the Contracting Parties' current findings on a number of specific Articles of the FQD and to provide our assessment on the transposition/implementation of the FQD in their respective national legislations.

According to this Recommendation, Contracting Parties should prepare the legal and institutional preconditions for the implementation of the core elements of Directive 98/70/EC in their jurisdictions. Furthermore, the Secretariat should assist the Contracting Parties' efforts in this respect and should report to the Ministerial Council on the progress annually. In addition, the Contracting Parties, the Secretariat and the European Commission should identify the provisions of Directive 98/70/EC suitable for incorporation in the Energy Community, the necessary adaptations as well as appropriate deadlines and subject to a proposal by the European Commission, the Ministerial Council will decide on the adoption of a decision incorporating suitable provisions of Directive 98/70/EC.

3. Implementation Status

The key documents that lay out the official requirements for the quality of fuel sold in the EU, as well as its monitoring and reporting, are the following:

- Directive 98/70/EC of 13 October 1998 relating to the quality of petrol and diesel fuels and amending Council Directive 93/12/EEC.
- Commission Decision 2002/159/EC of 18 February 2002 on a common format for the submission of summaries of national fuel quality data.
- European Standard EN 14274:2003 describing the Fuel Quality Monitoring System (FQMS) for assessing the quality of petrol and automotive diesel fuel marketed in any of the Member States within the European Union.
- Directive 2003/17/EC of 3 March 2003 amending Directive 98/70/EC relating to the quality of petrol and diesel fuels.
- Directive 2009/30/EC of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel and gas oil and introducing a mechanism to monitor and reduce greenhouse gas emissions from fuel use, in particular concerning biofuels blends.
- Council Directive (EU) 2015/652 of 20 April 2015 laying down calculation methods and reporting requirements pursuant to Directive 98/70/EC of the European Parliament and of the Council relating to the quality of petrol and diesel fuels.
- Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.

Albania:

The main provisions of Directive 98/70/EC were transposed into Albanian legislation through the Ministerial Council Decision no. 147, dated 21.03.2007 "On the quality of fuel, petrol and diesel". According to this Decision, starting from 1 January 2009, only the petrol and diesel fuels that meet the

requirements of the Albanian Standards S SH EN 228:2008 (petrol) and S SH EN 590:2009 (diesel) are permitted to be placed into the market and used in road vehicles.

In addition, all fuel sale points have to advertise clearly and visibly the buyers' compliance with environmental parameters as follows:

Petrol:

- Starting on 1 January 2009 the content of sulphur in petrol is decreased from 50 mg/kg to 10mg/kg.
- Lead content greater than 0,005 g/l is prohibited.

Diesel:

- From 1 January 2009 to 31 December 2010, the content of sulphur in diesel fuels decreased from 2000 mg/kg to 350 mg/kg.
- From 1 January 2011, the content of sulphur in diesel fuels decreased from 350 mg/kg to 10 mg/kg.

Sulphur content in gas oil for NMRR is not transposed and therefore not specified.

A system for control of the fuel quality from the environmental point of view is in place. Fuel quality is regularly monitored through Annual Monitoring Programmes. Quality control of hydrocarbons is carried out by the Customs Laboratory and the State Technical and Industrial Inspectorate (STII). According to Law No. 8450, dated 24.2.1999, "For the processing, transportation and marketing of oil, gas and their by-products", the STII has the right and is responsible for quality control of petroleum oil imported or produced domestically".

The Oil and Gas Control Laboratory is a structure within STII responsible for conducting laboratory analysis of STII's fuel samples from imported and domestic markets, by applying the methods and standards in force; issuing the quality certificate of fuel products; and conducting laboratory testing of fuel samples of various products brought for analysis by and for third parties. The activity of this laboratory is carried out in accordance with the requirements of the standard EN ISO/IEC17025, which makes it possible to increase accuracy and reliability of their performance.

Fuel sampling is carried out by STII in accordance with SSH EN ISO3170:2005. The Laboratory was re-accredited in June 2016. The laboratory is continuously supported by technical assistance from foreign experts for calibration, maintenance and services. Devices are monitored using certified standards to increase the accuracy of the reported result. In addition, STII enforces measures such as sanctions and confiscation in case of non-compliance after January 1, 2009. Non-compliance cases are related to - for petrol: vapour pressure, aromatics, benzene and sulphur and for diesel: cetane number and sulphur content.

A biofuels market to attain GHG emission reductions in the transport sector supported by a system to verify the sustainability of the biofuels and calculate the life cycle of the emissions is yet to be established.

There are detailed fine measures specified in Article 9 of the MC Decision No. 429, dated 26.6.2019. Despite many efforts by the Government of Albania, some challenges are still to be tackled, including the addition of contaminants that may occur during distribution, which are difficult to identify unless they are carefully monitored and analysed.

Bosnia and Herzegovina:

In September 2002, the Council of Ministers of Bosnia and Herzegovina approved the Decision on Liquid Petroleum Fuels (No. 27/02), which was amended several times following market developments. This Decision prescribes the quality requirements that must be met by liquid petroleum fuels used in internal combustion engines in Bosnia and Herzegovina, as well as liquid fuels intended for direct heat production's combustion, and prescribes standards that determine the physical and chemical properties of liquid petroleum fuels, limit values of basic characteristics of these fuels, the procedure or methods by which these characteristics are tested, the method of marking and proving that fuel quality complies with the requirements of this Decision, as well as monitoring and authorization of bodies that will check compliance and requirements for their competences.

The Decision was amended for the last time in 2010, only in the context of allowing the domestic Brod JSC Refinery to market liquid petroleum fuels below the quality set by current standards. Brod JSC refinery (which is currently shut down due to an explosion which occurred in one part of the production facility in October 2018) produces petrol BMB 95/BMB 98 (unleaded petrol with RON 95/98, with benzene content up to 5% v/v and aromatic carbohydrates up to 45% v/v) and diesel Euro IV and V using as standard BAS EN 590:2008. The EURO IV quality fuel with 50 mg/kg has not been allowed on the EU market since 31 December 2010.

The current standards for fuel quality allow high sulphur content up to 350 ppm for diesel and 150 ppm for petrol compared to the 10-ppm limit on sulphur content required by EU legislation. For all types of liquid fuels that are placed on the market, legal entities are obliged to ensure that the procedure for determining the conformity of quality is conducted. Conformity assessment of the quality of liquid petroleum fuels according to the provisions of this Decision shall be performed by inspection bodies using the services of testing laboratories. Inspection bodies are appointed by the Ministry of Foreign Trade and Economic Relations. The inspection bodies shall issue a Certificate of Conformity to the supplier no later than fifteen days from the day of sampling of liquid fuels. The procedure for determining the conformity of the quality of liquid fuels shall be carried out according to the conformity assessment programme which prescribes the scope of monitoring the quality of liquid fuels as well as the sampling procedure for liquid fuels. There are detailed fine measures specified in Article 35 of the Decision on Liquid Petroleum Fuels (No. 27/02) as amended.

A new Decision shall be adopted as the current Decision on the Quality of Liquid Petroleum Fuels is outdated with regard to the EU standards relating to fuel quality and environmental requirements and should become more stringent. In addition, there are many efforts to replace older vehicles with newer and cleaner ones. The new Decision on the Quality of Liquid Petroleum Fuels should also strictly enforce the mandatory monitoring and inspections programme and applicable penalties.

Georgia:

Pursuant to the Law of Georgia "On Licenses and Permits", the oil processing and oil transportation licenses are required for launching operations in the Georgian fuel market.

The Georgian transport fuel market consists of domestic and imported products. In Georgia, there are two oil refineries, which began functioning in 2015 by licenses granted by the State Agency of Oil and Gas. In 2019, they processed 36,000 tons of crude oil combined. But this is relatively a small figure in relation to the main oil products imported in Georgia - around 1,200,000 tons of imported oil products annually.

The importation of these products does not require licensing. On the other hand, under the Tax Code of Georgia, oil products are in the excise goods category, and the import of these goods is subject to an excise tax. All fuels imported in Georgia will be controlled for their quality at the moment they cross the customs border. The octane number of petrol products and concentration of benzene, lead and sulphur is checked. The major suppliers of imported petroleum products are Azerbaijan, Romania, Bulgaria and Greece and five companies dominate the retail and wholesale markets.

The state quality control mechanism for fuel supplied to wholesale and retail networks is divided into three directions:

- The State Agency of Oil and Gas - the legal entity under public Law within the Ministry of Economy and Sustainable Development of Georgia, is responsible for monitoring quality of oil products which are produced by license holders.
- The Revenue Service - the Legal Entity under Public Law within the Ministry of Finance of Georgia, is responsible for monitoring quality of oil products which are imported in the country.
- The State Sub-Agency Department of Environmental Supervision - within the Ministry of Environmental Protection and Agriculture of Georgia, is responsible for monitoring quality of oil products in retail networks.

The quality of fuel is regulated by Decree No. 124, dated 31 December 2004, of the Government of Georgia "On the qualitative norms of motor petrol" and No. 238, dated 28 December 2005, of the Government of Georgia "On Diesel fuel composition norms, analysis methods and their introduction".

From 2017, the allowed sulphur content in petrol has been reduced to maximum 10 ppm (mg/kg), in compliance with the EU standards. As to the standards for sulphur content in diesel fuel, it lags behind the EU standards and is set at 50 ppm from 2019. However, it will be decreased to 10 mg/kg from 1 January 2021.

The standards contained in the Georgian fuel quality legislation deviate from the FQD in several aspects. For petrol, octane number, limits of lead, sulphur benzene and aromatics comply with the FQD. However, other specifications that would be required to comply with the FQD (e.g. relating to oxygen, vapour pressure, distillation and oxygenates) are not reflected in the Georgian legislation. For diesel, starting from the 1 January 2021, the cetane number will not be less than 51; sulphur content - not more than 10 mg / kg (ppm); density 15 °C - not more than 845 kg/m³; but the mass fraction of polycyclic aromatic hydrocarbons will remain the same - not more than 11% compared to 8% in the FQD. There are no specifications relating to Fatty Acid Methyl Esters (limited to 7% in the FQD) and gas oil specifications used for NRMM.

There is no information about the policy on the set up of the national fuel quality monitoring systems that includes sampling and analyses of fuels as regards their compliance with the fuel specifications set out under the FQD.

According to Article 91³ of the Administrative Offenses Code of Georgia, if the quality of domestic production or imported fuels does not fit Georgian Decrees, then penalties will apply. Starting from 20 August 2020, these penalties are almost tripled and additionally fine of 10 times amount of cost price of the produced/imported substandard fuel in liters.

Kosovo*⁴:

According to the Administrative Instruction (AI) (1/2017) on the quality of petroleum-derived liquid fuels, Kosovo* has transposed the main requirements of the FQD and its Annexes I & II.

This Administrative Instruction sets out the permissible values of components and indicators of quality of petroleum-derived liquid fuels, method of testing, method of surveillance and monitoring of the quality of petroleum-derived liquid fuels at customs points and in the domestic market, the procedure of conformity assessment, reporting obligations of the conformity assessment bodies and economic operators of petroleum-derived liquid fuels, and preparation of overall quality assessment through the development of quality statistics.

This Administrative Instruction applies to petroleum-derived liquid fuels, intended for internal combustion engines of road vehicles (petrol in accordance with SK EN 228 and diesel with SK EN 590). The components of petroleum-derived liquid fuels for which the permissible values are determined are: lead, sulphur, manganese, ashes, resins, olefins, aromatic polycyclic hydrocarbons, overall pollution, water, fatty acid methyl esters (FAME), hydrogen sulphide, etc.

The minimum research octane number of petrol should be 95 (permissible values of components and indicators of quality of petrol 98 are the same as those of petrol 95 with the exception of the research octane number (RON) which needs to be at least 98); Percentage of ethanol in v/v is up to 10% (E10), sulphur content 10 ppm and oxygen content (O₂) 3.7% m/m. The summer period for petrol is from May 1 to September 30, and the winter period is from 16 November to 15 March. Diesel fuel should have a minimum cetane number of 51, sulphur content up to 10 ppm and the content of fatty acid methyl esters up to 7% v/v (in accordance with EN 14078). The sulphur content of gas oil for NMRR is not specified and leaves room for misinterpretation.

The determination of the quality of petroleum-derived liquid fuels in the domestic market is carried out through accredited laboratories. The Market Inspectorate, through authorized inspection bodies, obtains samples and conducts testing on the quality of petroleum fuels at authorized accredited laboratories. Petroleum-derived liquid fuels, placed on the market must be accompanied by a declaration of conformity issued by the producer/processor and it must be specified that petroleum-derived liquid fuels meet the quality requirements for components established by the Instruction.

The suppliers are obliged to guarantee the quality of petroleum-derived liquid fuels placed on the market. Ensuring the quality of petroleum-derived liquid fuels placed on the market is made via laboratory tests set out in the annual quality monitoring programme. The Market Inspectorate drafts the programme and is responsible for its implementation.

A sampling of petroleum-derived liquid fuel products in tanks is prescribed in accordance with EN ISO 3170 standard, whereas sampling in petrol stations is prescribed in accordance with EN ISO 14275 standard. The Kosovo* Customs Authority allows the entry of fuel oil in the territory of Kosovo* only if the test report is issued by an accredited laboratory and contains the parameters prescribed by the Instruction. The Kosovo Customs Authority, following a programme, determines the frequency or percentage of sampling for verification of the quality of shipments with petroleum-derived liquid fuels which enter into the customs territory of Kosovo*, through testing in customs laboratories or in authorized accredited laboratories.

⁴ This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence

There are detailed fine measures specified in the Law 03/L-138 on 'Amendment and supplementation of Law No. 2004/5 on trade of petroleum and petroleum products in Kosovo, whereas in the AI (1/2017) is foreseen that in case the fuels do not meet the technical requirements after testing, they must be withdrawn from the market.

Moldova:

Moldova has transposed partially the provisions of Directive 98/70/EC as last amended by Directive (EU) 2015/1513 of the European Parliament and of the Council of 9 September 2015. The Government Decision No. 72 of 11.02.2019 regulates the requirements for the quality of petrol and diesel, for the purpose of the functioning of the domestic market.

According to the Association Agreement between the European Union and the European Atomic Energy Community and their Member States, on the one part, and Moldova signed in 2014, the following provisions of the FQD 98/70/EC shall be implemented within 5 years (by 2019):

- Adoption of national legislation and designation of a competent authority/authorities.
- Carrying out an assessment of national fuel consumption.
- Establishment of a system for monitoring fuel quality (Article 8).
- Prohibition of marketing of leaded petrol (Article 3(1)).
- Permitting the marketing of unleaded petrol, diesel fuel and gas oils intended for non-road mobile machinery and agricultural and forestry tractors only if these meet relevant requirements (Articles 3 and 4).
- Establishment of a regulatory system to cover exceptional circumstances and a system to collect national fuel quality data (Articles 7 and 8).

The Government Decision No. 72 of 11.02.2019 is in alignment with the Association Agreement's obligations and in concrete terms includes the following elements:

- Introduction of definitions of petrol and diesel as defined in Directive 98/70/EC.
- Establishing the technical specifications for petrol and diesel placed on the market, by transcription of requirements of Annexes I and II of Directive 98/70/EC.
- Establishing compliance of the parameters of imported petrol and diesel to the requirements of SM EN 228 "Automotive fuels, unleaded petrol. Requirements and test methods" and SM EN 590 "Automotive fuels, diesel. Requirements and test methods".
- Elaboration of the national sampling plan according to the standard SM EN 14274.
- Preparation of the annual report with national data on monitoring the quality of petrol and diesel, its publication and transmission to the European Commission.
- Recognition of inspection bodies.

According to the provisions of the Regulation "On the storage and wholesale trade, by an automated system, of identified oil products", approved by Government Decision No. 1116 of 22.08.2002, the Ministry of Economy and Infrastructure (MEI) approved Order no. 328 of 10.12.2019 regarding the approval of the National Sample Plan for petrol and diesel samples.

The competent authority for the execution of this Plan is the Agency for Consumer Protection and Market Surveillance. The National Sample Plan provides for the sampling of petrol and diesel samples twice a year, as follows:

- During the summer: 1 May – 30 September (2020).

- During the winter: 16 November – 15 March (2020-2021).

The sampling activity is performed by the inspection bodies recognized by MEI. The recognized inspection bodies shall submit MEI the inspection reports carried out on the samples taken according to the national sampling plan, as well as copies of the sampling reports within seven days from the end of the sampling campaign, established in the national plan.

In May 2019, MEI established a working group which will ensure the preparation and publication of the Annual Report with national data on monitoring the quality of petrol and diesel in accordance with the Government Decision no. 1116/2002. The first Annual Report is expected to be elaborated at the end of August 2021.

Regarding the penalties applied in Moldova in case of fuel quality non-compliance with the Government Decision No. 1116 of 22.08.2002, these are defined in the provisions of the Contention Code adopted by the Parliament in December 2008 (No. 218). The Agency for Consumer Protection and Market Surveillance is established as the agent in power to ascertain such non-compliances.

Gas oil used for NRMM is not included in the Government Decision No. 72 of 11.02.2019, which amended the Government Decision No. 1116 of 22.08.2002.

Montenegro:

Standards contained in the fuel quality legislation of Montenegro fully comply with the specifications set out in Annexes I and II of the FQD. The Regulation of 17 March 2017 on limited values of contents of pollutant materials in liquid oil fuels lays down the types of liquid fuels of petroleum origin, limit values of the content of pollutants, the content of metal-based additives and other characteristics of the fuel, which in terms of environmental protection should be met by the fuels being placed on the market, the use of fuels on vessels in ports, territorial waters and exclusive economic and sulphur oxide emission control zones, mode determination and monitoring of fuel characteristics, methods for reducing air pollutant emissions and reporting compliance with pollutant content limit values.

This Regulation applies to petrol (in accordance with MEST EN 228), diesel fuel (in accordance with MEST EN 590) and gas oil used as fuel for construction and other machinery, agricultural tractors, river vessels and vessels used for sports, recreation and leisure (the sulphur content does not exceed 10mg/kg (10ppm)).

Petrol containing lead-based additives cannot be marketed. The minimum research octane number should be 95, the percentage of ethanol in v/v is 10% (E10), sulphur content 10 ppm and oxygen content (O₂) 3.7% m/m. The summer period is from 1 May to 30 September and the winter period is from 1 October to 30 April. On the other hand, diesel fuel should have a minimum cetane number of 51, sulphur content 10 ppm and the content of fatty acid methyl esters should be 7% v/v (in accordance with MEST EN 14214).

Fuel quality monitoring, which includes sampling and laboratory fuel analysis, can be performed by accredited laboratories in accordance with MEST EN ISO / IEC 17025. Sampling of fuel to monitor quality from storage and tanks is carried out in accordance with MEST EN ISO 3170, and at gas stations according to MEST EN 14275.

Montenegro also publishes the annual programme for fuel quality monitoring. The Programme contains the programme development methodology; method of sampling, number and frequency of fuel sampling at gas stations; method of sampling, number and frequency of sampling of diesel fuel in

warehouses; and laboratory analysis of fuel samples. It is published in the beginning of May, since it functions in accordance with the standard, in two seasons.

There is a punitive provision in the Law on Air Protection for placing on the market of the fuel incompliant with prescribed standards. However, Montenegro is planning some amendments to the Law on Air Protection, in order to introduce more precise provisions on fines.

North Macedonia:

North Macedonia has transposed the main articles of the FQD. In order to comply with European standards on quality of liquid fuels, on 13 June 2007, a new Rulebook on quality of liquid fuels was adopted, which was amended on 27.12.2007, but failed to ensure conformity with the FQD with respect to gas oil for NRMM.

The Rulebook enacted the limit values for the content of sulphur, lead, olefin, aromatics, benzene, oxygenate and other qualitative characteristics of liquid fuels, which can be marketed on the domestic market.

In May 2007, new diesel fuels were introduced on the market:

- D-E IV (Eurodiesel) with sulphur content max to 50 ppm.
- D-E V (Eurodiesel BS) with sulphur content not exceeding 10 ppm.

From 1 January 2009, the marginal value of the sulphur quantity in petrol was 10 mg/kg. The same for diesel from 1 January 2010. The environmental specifications were in conformity with MKS EN 228:2007 and MKS EN 590:2007. In addition, the current legislation allows the use of biofuels but there is no obligation for mandatory use. The presence of biofuels will be made mandatory by the upcoming Law on biofuels that it is not yet finalised. On the other hand, the sulphur content of the gas oil used for NRMM is not specified.

The Ministries in charge for energy and environment are responsible for the transposition of the FQD into national legislation, approving plans and giving general guidance. The quality of the oil fuels placed on the market is monitored by the supplier pursuant to the Annual Plan for Monitoring of the quality of the liquid fuels, prepared and delivered by the Ministry in charge for energy. The Annual Plan describes the manner of taking samples for examination of the liquid oil's quality. The supervision/inspection of the execution of the Rulebook is done by the State Market Inspectorate. In case of any suspicion of non-compliance of the quality of the distributed liquid fuel on the market with the standards given in the Rulebook, the State Market Inspectorate may order another quality analysis to be done by an accredited laboratory that fulfils EN ISO/IEC17025 standards or a licensed laboratory. The data on the quantities of the liquid fuels that are placed on the domestic market should be published on the website of the Ministry in charge for energy. All penalty provisions for non-compliance of fuel quality are regulated according to the Session 5 of the Law "On Product Safety" No. 07-1133/1, dated 14.3.2006 (as amended).

In accordance with the current Law on Energy, the Government of North Macedonia should adopt a new Rulebook on the Quality of Liquid Fuels within 18 months from the date of entry into force of the Energy Law, which was adopted on 5 June 2018. This Act is not yet adopted by the Government.

Serbia:

In Serbia, the quality of liquid fuels of petroleum origin is regulated by Rulebooks on Technical and other Requirements for Liquid Fuels of Petroleum Origin based on the Law on Technical Requirements for Products and Conformity Assessment (Official Gazette - no. 36/09) which it is the basic legal framework for the adjustment of product compliance with technical requirements.

Pursuant to Article 337 of the Energy Law, petroleum products and biofuels placed on the market have to fulfil the conditions set by the regulations for quality of liquid petroleum fuels and biofuels, by the regulations for protection of the environment and other regulations related to the market of petroleum products and biofuels. The Energy Law also prescribes that in case of extraordinary circumstances (like a security risk of supplying customers because of insufficient supply on the market of energy and fuels), the Government can approve via an amendment modification to the limits for some quality characteristics of petroleum products that could be put on the market of Serbia for a maximum period of six months.

Since the entry into effect of the Rulebook on Technical and other Requirements for Liquid Fuels of Petroleum Origin in 2012, significant progress in conformity of the quality of fuels with European requirements has been achieved. Trade of leaded petrol is forbidden on the market. The quality of unleaded motor petrol must fulfil all requirements of SRPS EN 228 standard (EN 228:2012 + A1:2017), which is applicable to unleaded petrol for use in petrol engine vehicles designed to run on unleaded petrol. This European standard specifies two types of unleaded petrol; one type with a maximum oxygen content of 3,7 % (m/m) and a maximum ethanol content of 10,0 % (v/v), and one type intended for older vehicles that are not warranted to use unleaded petrol with a maximum oxygen content of 2,7 % (m/m) and a maximum ethanol content of 5,0 % (v/v). The quality of diesel fuel must fulfil all requirements of SRPS EN 590 standard (EN 590:2013 +A1:2017). It is applicable to automotive diesel fuel for use in diesel engine vehicles designed to run on automotive diesel fuel containing up to 7,0% (v/v) Fatty Acid Methyl Ester.

Gas oil used for non-road mobile machinery (NRMM) contains sulphur of maximum 1000 mg/kg. Since January 2011, EU Member States are required to ensure that gas oils intended for use by NRMM are placed on the market within their territory only if the sulphur content does not exceed 10 mg/kg. In the framework of the EU's IPA 2014 (2016 – 2017), an implementation plan for Directive 98/70/EC will be prepared, and based on the assessment provided by this document, the deadline for achieving full compliance will be determined.

The quality of petroleum products is monitored through the Monitoring Programme of petroleum products and the legal base is determined by the Energy Law from 2014, which is in accordance with SRPS EN 14274 standard. "National part" of fuel quality Monitoring Programme includes determination of sulphur content in gas oil for heating purposes and fuel oils in order to meet the requirements of Article 6 (maximum sulphur content of marine fuels) of the Directive 2016/802/EC⁵. Since 1 December 2015, the Regulation on Monitoring of Petroleum Products and Biofuels Quality as amended (the last amendment in 2018) is being applied. In accordance with this Regulation, monitoring programmes for the current calendar year are adopted regularly. This programme determines the subject and place of implementation of the monitoring, the number of samples to be tested, the quality parameters to be tested, planning, sampling, method of collecting and labelling samples, the method of handling the samples, the method of reporting on the monitoring, the period of implementation of monitoring and other elements important for monitoring the quality of

⁵ <https://eur-lex.europa.eu/eli/dir/2016/802/oj>

petroleum products and biofuels. Since 2015, more than 3000 samples of petrol and diesel fuel were tested annually.

The inspection of the petroleum products' quality is conducted by the Department of Market Inspection in the Ministry of Trade, Tourism and Telecommunications.

For liquid fuels that are placed on the market from domestic production, the producer shall issue a declaration of conformity of products. The declaration shall be issued on the basis of test reports carried out by the conformity assessment body which is notified by the minister responsible for energy affairs. Sampling of liquid fuel for the purpose of preparation of a testing report in order to issue a declaration or certificate shall be performed from a tank in the storage of oil and petroleum products. Sampling of liquid fuel is carried out in accordance with the requirements of the standards EN ISO 3170 and EN ISO 3171. All penalty provisions are specified in Articles 35 to 40 of the Law on Technical Requirements for Products and Conformity Assessments.

Ukraine:

According to the Resolution of the Cabinet of Ministers of Ukraine of 1 August 2013 on approval of the Technical Regulation on requirements for motor petrol, diesel, marine and boiler fuel, the Euro 5 standard (10 ppm sulphur in petrol and diesel) is obligatory for fuels marketed in Ukraine since the beginning of 2018. The Technical Regulation establishes requirements for motor petrol, diesel, marine and boiler fuels produced, put into circulation and sold on the territory of Ukraine, in order to protect human and animal life, health, animals, plants, national security, environmental protection and natural resources. The technical regulation has been developed in the light of Directive 98/70/EC and Directive 2005/33 /EC.

According to the Ukraine – European Union Association Agreement obligatory in Ukraine from 2017 on, Directive 98/70/EC and amending Directive 93/12/EEC as amended by Directives 2000/71/EC, 2003/17/EC and 2009/30/EC and Regulation (EC) 1882/2003 should be implemented by fulfilling the following obligations (within three years of the entry into force of the Association Agreement):

- Adoption of national legislation and designation of competent authority/ies.
- Carrying out an assessment of national fuel consumption.
- Establishment of a system for monitoring fuel quality (art. 8).
- Prohibition of marketing of leaded petrol (art. 3.1).
- Permitting the marketing of unleaded petrol, diesel fuel and gas oils intended for non-road mobile machinery and agricultural and forestry tractors only if these meet relevant requirements (art. 3 and 4).
- Establishment of a regulatory system to cover exceptional circumstances and of a system to collect national fuel quality data (art. 7 and 8).

These obligations are partially fulfilled and the amendment of the existing Resolution (of 1 August 2013) planned in 2020 should be in alignment with these obligations.

Today, the fuel market in Ukraine is characterized by a strong dependence on fuel imports – both refined and crude. Out of six refineries, only Kremenchuck and Shebelinskiy refineries are currently in operation.

The environmental specifications are in conformity with standard EN 228:2012. The minimum research octane number should be 95; percentage of ethanol in v/v is 7% provided that the mass fraction of oxygen does not exceed 2.7 percent and 10% (E10) with oxygen content (O₂) up to 3.7%

m/m. The summer period is from 16 April to 15 October, and the winter period is from 16 November to 15 March. The diesel fuel should have a minimum cetane number of 51 and the content of fatty acid methyl esters should be 7% v/v. The requirements of the Technical Regulation do not apply to motor petrol with a volume fraction of bioethanol of more than 10 percent and diesel fuels with a volume fraction of methyl/ethyl esters of fatty acids more than 7 percent. Gas oil used in NRMM is not specified and should be included when the Regulation will be amended. Sulphur content of gas oil used in NRMM should be 10 mg/kg.

The Ministry of Energy and Environmental Protection is responsible for the application of the Technical Regulation and the appointment of conformity assessment bodies to the central executive body for conformity assessment. The conformity assessment applies the conformity assessment procedure established by the Technical Regulations of Conformity Assessment Modules. During the wholesale supply of fuel, the supplier must provide the buyer with a copy of the declaration of conformity at his request. During the retail supply of fuel, the designation of fuels must be placed in places accessible to the consumer.

The fuel testing should be carried out by accredited testing laboratories determined in accordance with the procedure established by the Energy and Environmental Protection and the State Ecological Inspection of Ukraine. There is no evidence whether the Annual Monitoring Programme of petroleum products is in place even though it is part of the Plan of Measures set by the Regulation. The amount of penalties for non-compliance of fuel quality is regulated according to the Article 44 of the Law "On The State Market Supervision and Control of Non-food Products".

The Cabinet of Ministers has adopted a National Transportation Strategy in May of 2018, outlining the strategic development of the relevant industries till 2030. This Strategy also sets the foundation for the use of energy efficient and environmental vehicles, the use of alternative fuels, "green" transport, priority for the needs of environmental protection, and conservation of valuable protected areas during the development of transport infrastructure.

4. Next Steps

The Fuel Quality Directive aims to ensure a high level of environmental and health protection in relation to fuel used in road transport, as well as non-road mobile machinery, by reducing pollution from the transport sector, and enhancing air quality. In addition, the Fuel Quality Directive requires a reduction of the greenhouse gas intensity of transport fuels by a minimum of 6% by 2020.

According to the MC Recommendation (2018/2/MC-EnC): "On preparing for the implementation of Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Council Directive 93/12/EEC", the Contracting Parties, the Secretariat and the European Commission should identify the core elements and respective provisions of Directive 98/70/EC suitable for incorporation in the Energy Community, the necessary adaptations as well as appropriate deadlines. The suggested core elements for the implementation of the FQD are presented as follows:

Given that the decarbonisation of transport fuels after 2020 will be addressed by the Renewable Energy Directive and the vast majority of transport fuels are placed on the Contracting Parties' markets is in line with the FQD fuel specifications, the Secretariat would suggest that Directive 98/70/EC (as amended) only applies to:

- Petrol (including bioethanol used in road transport) within CN codes 2710 11 41, 2710 11 45, 2710 11 49, 2710 11 51 and 2710 11 59⁶ and intended for the operation of internal combustion positive-ignition engines for the propulsion of vehicles.
- Diesel (including Fatty Acid Methyl Ester used in road transport) falling within CN code 2710 19 41⁷ and used for self-propelling vehicles as referred to in Directive 70/220/EEC and Directive 88/ 77/EEC.
- Gas oils intended for use by non-road mobile machinery (including inland waterway vessels), agricultural and forestry tractors, and recreational craft means any petroleum-derived liquid, falling within CN codes 2710 19 41 and 2710 19 45⁸.

In addition, the Contracting Parties should:

- Prohibit the marketing of leaded petrol within their territories (art. 3.1)⁹.
- Permit the marketing of unleaded petrol¹⁰, diesel fuel¹¹ and gas oils¹² intended for use by non-road mobile machinery (including inland waterway vessels), agricultural and forestry tractors, and recreational craft only if these meet relevant requirements (art. 3 and 4)¹³.
- Establish a regulatory system to cover exceptional circumstances and a system to collect national fuel quality data (art. 7 and 8).
- Establish a system for monitoring fuel quality (art. 8),
- Lay down the rules on penalties - effective, proportionate and dissuasive¹⁴.

Petrol: The core parameters suggested for petrol are: Research Octane Number (RON); Motor Octane Number; Lead content; Sulphur content; Manganese content; Hydrocarbon type content (olefins and aromatics); Benzene content; Oxygen content (3.7% m/m and 2.7% m/m); and Oxygenates content (methanol and ethanol).

The suggested requirements and test methods are assembled in the following table:

Property - Petrol	Units	Limits		Test Method
		Min	Max	
Research Octane Number (RON)	-	95,0		EN ISO 5164
Motor Octane Number (MON)	-	85,0		EN ISO 5163
Lead content	mg/l	--	5,0	EN 237
Sulphur content	mg/kg	--	10,0	EN ISO 13032/20846/20884
Manganese content	mg/l	--	2,0	EN 16135/16136
Olefins			18,0	EN 15553
Aromatics	% v/v		35,0	EN ISO 22854
Benzene	% v/v		1.0	EN 238; EN12177; EN ISO 22854
Oxygen content	% m/m		3.7 2.7	EN 1601; EN 13132; EN ISO 22854
Methanol	% v/v		3.0	EN 1601
Ethanol	% v/v		10.0	EN 13132 EN ISO 22854

⁶ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003L0017&from=EN>

⁷ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003L0017&from=EN>

⁸ Intended for use in compression ignition engines referred to in Directives 94/25/EC, 97/68/EC and 2000/25/EC;

⁹ FQD 98/75/EC

¹⁰ FQD 98/75/EC

¹¹ FQD 98/75/EC

¹² FQD 2009/30/EC

¹³ FQD 98/75/EC; FQD 2009/30/EC

¹⁴ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015L0652>

The suggested requirements and test methods regulated by the FQD in petrol in the Contracting Parties are presented in Table 1 (oxygen content 3.7%) and Table 2 (oxygen content 2.7%):

The suggested standard is EN 228:2012, which specifies requirements and test methods for marketed and delivered unleaded petrol. It is applicable to unleaded petrol used in petrol engine vehicles designed to run on unleaded petrol.

Table 1 – Requirements and test methods for unleaded petrol with a maximum oxygen content of 3.7% (m/m).

Property	Units	Limits		Test Method
		Min	Max	
Petrol				
Research Octane Number (RON)	-	95,0		EN ISO 5164
Motor Octane Number (MON)	-	85,0		EN ISO 5163
Lead content	mg/l	--	5,0	EN 237
Density @ 15 °C	kg/m ³	720,0	775,0	EN ISO 3675/12185
Sulphur content	mg/kg	--	10,0	EN ISO 13032/20846/20884
Manganese content	mg/l	--	2,0	EN 16135/16136
Oxidation stability	minutes	360	--	EN ISO 7536
Existent gum content (solved washed)	mg/100ml	--	5	EN ISO 6246
Copper strip corrosion (3h at 50 °C)	rating	class 1		EN ISO 2160
Appearance		clear and bright		Visual inspection
Hydrocarbon type content				
Olefins			18,0	EN 15553
Aromatics	% v/v		35,0	EN ISO 22854
Benzene	% v/v		1.0	EN 238; EN12177; EN ISO 22854
Oxygen content	% m/m		3.7	EN 1601; EN 13132; EN ISO 22854
Oxygenates				
Methanol	% v/v		3.0	EN 1601 EN 13132 EN ISO 22854
Ethanol	% v/v		10.0	
Iso-propyl alcohol	% v/v		12.0	
Tert-butyl alcohol	% v/v		15.0	
Iso-butyl alcohol	% v/v		15.0	
Ethers (5 or more carbon atoms per molecule)	% v/v		22.0	
Other oxygenates	% v/v		15.0	

Table 2 – Requirements and test methods for unleaded petrol with a maximum oxygen content of 2.7% (m/m).

Property	Units	Limits		Test Method
		Min	Max	
Petrol				
Research Octane Number (RON)	-	95,0		EN ISO 5164
Motor Octane Number (MON)	-	85,0		EN ISO 5163
Lead content	mg/l	--	5,0	EN 237
Density @ 15 °C	kg/m ³	720,0	775,0	EN ISO 3675/12185

Sulphur content	mg/kg	--	10,0	EN ISO 13032/20846/20884
Manganese content	mg/l	--	2,0	EN 16135/16136
Oxidation stability	minutes	360	--	EN ISO 7536
Existent gum content (solved washed)	mg/100ml	--	5	EN ISO 6246
Copper strip corrosion (3h at 50 °C)	rating	class 1		EN ISO 2160
Appearance		clear and bright		Visual inspection
Hydrocarbon type content				
Olefins		--	18,0	EN 15553 EN ISO 22854
Aromatics	% v/v	--	35,0	
Benzene	% v/v	--	1.0	EN 238; EN12177; EN ISO 22854
Oxygen content	% m/m	--	2.7	EN 1601; EN 13132; EN ISO 22854
Oxygenates content				
Methanol	% v/v	--	3.0	EN 1601 EN 13132 EN ISO 22854
Ethanol	% v/v	--	5,0	
Iso-propyl alcohol		}	Volume blending restricted to 2,7% (m/m) maximum oxygen content	
Tert-butyl alcohol				
Iso-butyl alcohol				
Ethers (5 or more carbon atoms per molecule)				
Other oxygenates				

The Contracting Parties may adopt the analytical methods specified in replacement EN 228:2012 standard if it can be shown to give at least the same accuracy and at least the same level of precision as the analytical method it replaces.

Diesel: The core parameters suggested for diesel are: Cetane number; Density at 15 °C; Distillation — 95% point; Polycyclic aromatic hydrocarbons; Sulphur content; and Fatty acid methyl ester (FAME) content.

These elements are assembled in the following table:

Diesel				
Cetane number	-	51.0		EN ISO 5165; EN 15195/16144
Density at 15 °C	kg/m ³	820	845	EN ISO 3675/12185
Distillation — 95 % (v/v) recovered at	°C		360	EN ISO 3405/3924
Polycyclic aromatic hydrocarbons	% m/m		8.0	EN 12916
Sulphur content	mg/kg		10	EN ISO 20846/20884/13032
Fatty acid methyl ester (FAME) content	% v/v		7	EN 14078

The suggested requirements and test methods regulated by the FQD in automotive diesel in the Contracting Parties are presented in Table 3:

The suggested standard EN 590:2013+A1:2017 specifies requirements and test methods for marketed and delivered automotive diesel fuel. It is applicable to automotive diesel fuel for use in diesel engine vehicles designed to run on automotive diesel fuel containing up to 7% (v/v) Fatty Acid Methyl Ester.

Table 3 – Requirements and test methods for diesel

Property - Diesel	Unit	Limits		Test method
		minimum	maximum	
Cetane number		51,0	–	EN ISO 5165 EN 15195 EN 16144 EN 16715
Cetane index		46,0	–	EN ISO 4264
Density at 15 °C	kg/m ³	820,0	845,0	EN ISO 3675 EN ISO 12185
Polycyclic aromatic hydrocarbons	% (m/m)	–	8,0	EN 12916
Sulphur content	mg/kg	–	10,0	EN ISO 20846 EN ISO 20884 EN ISO 13032
Manganese content	mg/l		2,0	EN 16576
Flash point	°C	Above 55,0	–	EN ISO 2719
Carbon residue (on 10 % distillation residue)	% (m/m)	–	0,30	EN ISO 10370
Ash content	% (m/m)	–	0,010	EN ISO 6245
Water content	% (m/m)	–	0,020	EN ISO 12937
Total contamination	mg/kg	–	24	EN 12662 ^h
Copper strip corrosion (3 h at 50 °C)	rating	Class 1		EN ISO 2160
Fatty acid methyl ester (FAME) content	% (V/V)	-	7,0	EN 14078
Oxidation stability	g/m ³ h	– 2 0	25 -	EN ISO 12205 EN 15751
Lubricity, wear scar diameter (WSD) at 60°C	µm	–	460	EN ISO 12156-1
Viscosity at 40 °C	mm ² /s	2,000	4,500	EN ISO 3104
Distillation				EN ISO 3405 EN ISO 3924
% (V/V) recovered at 250 °C	% (V/V)	85	< 65	
% (V/V) recovered at 350 °C	% (V/V)			
95 % (V/V) recovered at	°C			

The Contracting Parties may adopt the analytical methods specified in replacement EN 590:2013+A1:2017 standard if it can be shown to give at least the same accuracy and at least the same level of precision as the analytical method it replaces.

Gas oil: “Gas oils intended for use by non-road mobile machinery (including inland waterway vessels), agricultural and forestry tractors, and recreational craft” means any petroleum-derived liquid, falling within CN codes 2710 19 41 and 2710 19 45, intended for use in compression ignition engines referred to in Directives 94/25/EC, 97/68/EC and 2000/25/EC;

Annex II of the FQD sets out environmental specifications for fuels to be used for road vehicles equipped with diesel engines, as presented in Table 3 above. However, these requirements do not apply to gas oils used in NRMM. The only requirement under the Directive for fuels used in these applications relate to the maximum permissible sulphur content.

Regarding the sulphur content in gas oil, the Secretariat suggests a sulphur content up to 10 mg/kg for all Contracting Parties. A maximum sulphur content of 20 mg/kg is suggested for gas oil intended

for use by non-road mobile machinery, inland waterway vessels when not at sea, agricultural and forestry tractors, and recreational craft, when not at sea at the final point of distribution to end-users to accommodate minor contamination in the supply chain. If any gas oils intended for use by non-road mobile machinery contain biofuels components, the Secretariat suggests that the suppliers provide appropriate information to consumers. This is necessary because gas oil with bio-content may oxidise, if stored for periods longer than six months.

5. Public Consultation on improving fuel quality in the Energy Community

In response to the Energy Community Ministerial Council Recommendations 2018/2/MC-EnC, the Secretariat published on 8 July 2020 an overview of the status quo of the fuel quality in the Contracting Parties, including an assessment of the gaps between applicable national legislation and the Fuel Quality Directive. To insure that all views are considered in the design of future legislation, the Secretariat opened a public consultation to give all interested stakeholders the opportunity to share their views and experiences in the field of fuel quality.

The total number of questionnaire submissions was 20 and they were from ministries and state agencies dealing with fuel quality, refineries, oil companies, market operators and independent energy consultants. All participants agreed (60%) and strongly agreed (40%) that this document provides a true and fair overview of the status quo in the Contracting Parties as regards implementation of the FQD and actual fuel quality on the market. In addition, 90% agreed that the core elements suggested by the Secretariat should be part of a future FQD at the level of the Energy Community. 85% of participants agreed that the FQD should be made legally binding in the Energy Community and 15% neither agree nor disagree. Despite that the majority of participants were in favour of a blending quota from certain types of biofuels like E5, E10 and B7, there were some participants not in favour of this suggested quota blending considering it too costly to be implemented and monitored correctly by small countries like some of the Energy Community Contracting Parties. The majority of participants considered appropriate the restrictions on the use of metallic additives whereas some others preferred to be banned completely. The existing requirements for reporting and monitoring were considered adequate by 80% of participants and the rests suggesting of having stricter reporting requirements regarding market surveillance and import surveillance. 80 % of participants considered that the strengthening of the penalty system would improve compliance with the FQD.

The majority of participants, in their final comments, were in strong favour (60%) and in favour (20%) of this document and its suggested core elements for the implementation of the FQD in the Energy Community.

6. Conclusions

Bigger portion of provisions of the Fuel Quality Directive 98/70/EC (as amended) are transposed by all Contracting Parties of the Energy Community. The major missing set of provisions is related to gasoil usage in non-road mobile machinery. Implementation of transposed provisions cannot be verified at this stage. To transpose and implement all suitable provisions of Directive 98/70/EC, the Contracting Parties need to update their legislation.

In concrete terms, the Secretariat suggests as follows:

In Albania - Sulphur content in gas oil for NMRR should be less than 10 mg/kg. Either the latest MC Decision No. 429, dated 26.6.2019 or the MC Decision no. 147, dated 21.03.2007, should be amended.

In Bosnia and Herzegovina - A New Decision of the Council of Ministers should be adopted to update the suggested fuel quality and environmental requirements because the current Decision on the Quality of Liquid Petroleum Fuels is outdated. In particular, sulphur content in petrol, diesel and gas oil for NRMM should be up to 10 mg/kg.

In Georgia - An update of the current Decrees on the qualitative norms of motor petrol, diesel and gas oil should be drafted in order to include the new parameters of the suggested standards for petrol, diesel and gas oil for NRMM.

In Kosovo* - The manganese maximum limit is not included in the diesel table (as required by EN 590:2013+A1:2017 and by the Directive). For a few other diesel parameters (cetane number, oxidation stability and distillation), the new standard EN 590:2013+A1:2017 has additional approved testing methods but these are not included in table 7 of the Administrative Instruction (AI) 01/2017. Sulphur content in gas oil for NMRR should also be specified.

In Moldova - The Government Decision No. 72/2019 amended the GD No. 1116/2002. Should gas oil used for NRMM be present on the domestic market, an additional Governmental Decision(s), amending GD No. 1116/2002, should follow.

In Montenegro - The Regulation No.17/017 of 17 March 2017 complies with the FQD and there is no need for any further amendments.

In North Macedonia - In accordance with the current Law on Energy, the Government of North Macedonia should adopt a new Rulebook on the Quality of Liquid Fuels within 18 months from the date of entry into force of the Energy Law. The maximum sulphur content in the gas oil used for NRMM should be part of the new Rulebook.

In Serbia - Gas oil used for NRMM should contain sulphur up to 10 mg/kg. The Rulebook on Technical and other Requirements for Liquid Fuels of Petroleum Origin of 2012 should be amended.

In Ukraine - Gas oil used in NRMM is not specified and should be included when the new Resolution on Amendments to the Resolution of the Cabinet of Ministers of Ukraine No. 927 dated 1 August 2013 will be amended. Sulphur content of gas oil used in NRMM should be 10 mg/kg.

Having regards to the current state of play on the implementation of the FQD, the Secretariat proposes to the Ministerial Council to invite the European Commission to prepare a proposal for incorporation of the identified core elements of the Fuel Quality Directive from this Report into the Energy Community acquis in a binding manner in 2021.