



EUROPEAN COMMISSION

Brussels, 15.7.2011
SEC(2011) 919 final

COMMISSION STAFF WORKING PAPER

SUMMARY OF THE IMPACT ASSESSMENT

Accompanying document to the

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

amending Directive 1999/32/EC as regards the sulphur content of marine fuels

{COM(2011) 439 final}
{SEC(2011) 918 final}

1. POLICY CONTEXT, PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

This impact assessment accompanies a proposal for an amendment to Directive 1999/32/EC on the sulphur content of certain liquid fuels. In preparation of this amendment the Commission conducted an online consultation open to all interested parties. The Commission also consulted regularly with representatives from Member States and with other stakeholders.

Air pollution causes damage to human health and to the environment where we live. The EU acts on various fronts to reduce air pollution. As a result of this action emissions of most air pollutants have been reduced over the previous years and decades, including emissions of sulphur dioxide (SO₂), nitrogen oxides (NO_x), volatile organic compounds, ammonia and particulate matter (PM). The greatest share of these reductions has been achieved by land-based emission sources such as industrial plants or road transport. Still, evidence shows that further reductions of such pollutants will deliver significant benefits to the health of EU citizens and to the environment, while being cost-effective.

Maritime sources have historically been addressed to a much more limited extent than land-based sources. However, as emissions of air pollutants can travel large distances many maritime emissions will have an impact on land, especially where they take place close to the shore. It has been projected that without further regulatory action the continued growth in emissions of SO₂ and NO_x from the maritime sector will surpass total emissions of these pollutants from all land-based sources by 2020.¹ Taking into account the historical lag in the regulation of pollution in this sector the cost-per-tonne of reducing pollution from ships is currently significantly lower than for land-based sources.

Directive 1999/32/EC (as amended by Directive 2005/33/EC) regulates the sulphur content of fuels used by maritime transport and incorporates certain international rules into EU law, as agreed under the International Maritime Organisation (IMO). In particular, the Directive in its current form incorporates the more stringent rules on the sulphur content of marine fuels to be used in areas in need of special environmental protection, the Sulphur Emission Control Areas² (SECAs). The sulphur content of a liquid fuel essentially determines the SO₂ emissions released in the combustion of that fuel, i.e. the combustion of low sulphur fuels leads to low levels of SO₂ emissions. Equally, a reduction of SO₂ emissions can be achieved by using higher sulphur fuels in combination with emission abatement methods.

Already at the time of the adoption of the 2005 amendment to the Directive the EU's co-legislators, foreseeing the need for further reduction of shipping emissions, called on the Commission to review the relevant legal requirements on the sulphur content of liquid fuels. With strong support from Member States, IMO rules on air pollution from ships, including for SO₂, have been revised in October 2008. These rules are contained in Annex VI of the Marine Pollution Convention 73/78 (MARPOL Annex VI).

¹ SEC (2005) 1133: Commissions Staff Working Paper accompanying the Communication on Thematic Strategy on Air Pollution (COM(2005)446 final) and the Directive on Ambient Air Quality and Cleaner Air for Europe (COM(2005)447 final).

² In the EU SECAs cover the Baltic and North Seas and the English Channel.

2. GENERAL PROBLEM CHARACTERIZATION AND OBJECTIVES

2.1. General problem characterization

The most significant changes to IMO MARPOL Annex VI in the 2008 revision addressed SO₂ pollution. In brief:

- (1) A reduction from 1.50% by weight of the sulphur content of all marine fuels used in SECAs
 - to 1.00% by 1 July 2010;
 - to 0.10% by 1 January 2015;
- (2) A reduction from 4.50% by weight of the sulphur content of all marine fuels used globally outside of SECAs (the 'global standard').
 - to 3.50% by 1 January 2012;
 - to 0.50% by 1 January 2020 subject to review in 2018, with a possible delay to 2025;
- (3) Allowing access to a broad range of emission abatement methods ('equivalents'), such as equipment, methods, procedures or alternative fuels.

The IMO MARPOL Annex VI 2008 revision offers an estimated €15 to €34 billion in benefits to the EU in improved health and reduced mortality. The costs of implementing the revision range from €2.6 to €1 billion. As such the revision offers benefits that are three to thirteen times greater than the costs.

MARPOL Annex VI also introduces provisions on NO_x emissions and allows for the creation of NO_x Emission Control Areas (NECAs).

The new MARPOL Annex VI rules on sulphur are now significantly different from the 1999/32/EC Directive:

- the Directive allows ships to use fuels with a sulphur content of up to 1.5% when operating in the SECAs, while the new MARPOL Annex VI allows a maximum sulphur content of 1.00% and as of January 2015 a maximum sulphur content of 0.1%;
- the Directive offers a strong operator compliance mechanism, while MARPOL Annex VI has no such enforcement mechanism;
- the Directive allows for a limited range of equivalent emission abatement methods when compared to the revised MARPOL Annex VI.

In addition to the alignment of the Directive with IMO rules, the review of the Directive has identified a number of other issues. In particular, it showed that certain weaknesses exist in the enforcement provisions of the Directive (on sampling and reporting) and that certain other provisions, such as the definition of 'port area', of 'passenger ships on a regular service' or what method is to be used for the statistical interpretation of the verification of the sulphur content of marine fuels, are unclear.

2.2. Objectives

The general objectives are to ensure that the health, environmental, and safety benefits associated with the IMO's agreement on reducing the negative impacts of air pollutant emissions from shipping are delivered in practice; and that the proper functioning of the internal market for maritime shipping, EU ports, and fuels and emission abatement technologies used in shipping is ensured.

To achieve the general objectives, three specific objectives must be met:

- (1) To ensure alignment of EU law with the latest international rules on maritime fuels and pollution, including the adaptation to advanced technical standards and technologies;
- (2) To identify additional and/or alternative measures for reducing the negative environmental impact of emissions from maritime shipping on human health and the environment;
- (3) To strengthen and enhance the implementation of the EU monitoring and enforcement regime, ensuring compliance with the Directive.

Chapters 3 to 5 of this executive summary present four main recommendations for the amendment of the Directive. Other issues related to the revision of the Directive are summarised in Chapter 6.

3. TRANSPOSITION OF THE REVISED IMO RULES INTO EU LAW

Specific problem definition

The Directive is no longer aligned with international (IMO) rules following the revision of MARPOL Annex VI in 2008.

Analysis of the options

Ten options have been considered in the impact assessment to address the misalignment of the Directive with MARPOL Annex VI, leading to the following recommendations:

- Incorporate the 2008 IMO amendment of MARPOL Annex VI relating to the sulphur content of marine fuels in the Directive.
- Align the Directive with the IMO provisions that allow a broader range of equivalent emission abatement methods. Complement these provisions with additional safeguard measures to ensure that equivalent abatement methods have no unacceptable adverse impact on the environment.
- Adopt IMO fuel verification procedure.

The combination of these options would align EU rules with the international rules on the sulphur content of marine fuels. Incorporating the international fuel standards and their verification procedure into EU law would strengthen the effectiveness of these standards as

they would be monitored and enforced under the EU compliance regime, which is more effective than the international system. Moreover, extending access to and promoting the use of innovative emission abatement methods as an equivalent compliance option would significantly lower the IMO compliance costs (by 50% to 88%) and promote innovative industry solutions, in line with the priorities of the Europe 2020 Strategy and Article 3 of the Treaty on the Functioning of the European Union. Therefore, the transposition of the revised IMO rules would ensure that the environmental and economic objectives motivating the IMO amendment are effectively delivered in a harmonized and cost-effective manner across the EU.

4. ENVIRONMENTAL STANDARDS FOR PASSENGER SHIPS ON REGULAR SERVICE

Specific problem definition

The current Directive requires passenger ships operating on a regular service outside SECA areas to comply with the same sulphur in fuel standards as ships operating in SECA areas, i.e. with the 1.5% standard which was applicable before the 2008 IMO MARPOL Annex VI revision. This standard is not part of MARPOL Annex VI and exists at EU level only. The provision was introduced into the Directive as passenger ships operate mostly in ports or close to coastal areas and, as such, generally have a greater negative human health and environmental impacts than other types of ships. At the time the 1.5% standard was introduced for passenger ships the same fuel quality standard was applicable in SECAs and, hence, fuel availability was ensured. However, with the introduction of 0.1% sulphur content requirements in SECAs from 2015, the costs and benefits of maintaining or changing the Directive's provisions on passenger ships operating on a regular service outside SECAs need to be reassessed, both on the basis of fuel availability and of the benefits and costs of sulphur in fuel standards for those ships.

Analysis of the options

Four options were assessed, leading to the following recommendation:

- Restore the link with the SECA sulphur content in fuel provisions for passenger ships operating outside SECA areas by introducing the new 0.1% limit in 2020 (rather than in 2015).

Aligning the requirements for passenger ships operating on a regular service outside SECA areas with the 0.1% standard in SECAs would deliver further human health and environmental benefits exceeding costs. However, the impact assessment recommends introducing a new SECA standard for passenger ships with a 5 year delay from 2015 in order to avoid potential problems with fuel availability. The benefit to cost ratios for the recommended option range from 1.5 to 6 (2020) and from 0.8 to 10 (2025).

5. ISSUES RELATED TO COMPLIANCE MONITORING AND REPORTING

Specific problem definition

The current frequency of sampling is too low (typically once per one thousand ships) and there is evidence of significant levels of non-compliance with some of the sulphur in fuels

obligations of the Directive. As a result, and also due to the lack of harmonised rules on reporting, the reports submitted by Member States make the assessment of compliance difficult.

Analysis of the options

Four options were assessed. The impact assessment makes the following recommendation:

- Foresee developing a nonbinding guidance on sampling and reporting at a first stage and, should this approach fail, consider adopting binding rules.

This option would seek to improve compliance levels through a soft instrument. Failing that, binding provisions would be introduced regulating sampling frequencies, methods of analysis and the content and the format of Member States' reports.

6. OTHER RELEVANT ISSUES FOR THE REVISION OF THE DIRECTIVE

The impact assessment also considers a number of other issues for revision.

6.1. Adapting the Directive to technical progress

The impact assessment suggests aligning references and definitions in the Directive with the latest international technical standards (such as ISO).

6.2. Improving legal clarity and certainty

The impact assessment suggests clarifying the definitions of 'passenger ships on a regular service' and 'port area' by means of guidance to be issued by the Commission.

6.3. Supplementary measures to address disproportionate impacts on short sea shipping

An overview of the studies on the impact of the 0.1% sulphur requirement in SECAs on short sea shipping concludes that this provision could have some effects on shipping patterns. Such effects may justify certain mitigating measures.

The impact assessment recommends::

On a short term, to adapt the existing EU instruments to specifically target undesired impacts on modal backshift. This would allow for measures to support the short-sea shipping industry, with the objective of reducing undesirable modal shift from sea-based to land-based transport.

On the medium and longer term, specific measures could be considered provided additional assessment would be carried out.

6.4. Designation of new Emission Control Areas

Current evidence indicates that extending ECA coverage to other EU maritime areas is likely to offer positive net benefits. This would also address competitiveness concerns associated with differing environmental standards in EU sea areas. In addition, the 2008 MARPOL Annex VI revision introduced the possibility of establishing NO_x Emission Control Areas

(NECAs) and to set emission standards for NO_x and, in the future, PM. The creation of a new ECA would have to be compliant with specific criteria established by the IMO.

However, the Commission does not have the competence to propose Emission Control Areas to IMO. Moreover, the emission limit values for NO_x and PM are engine-related standards. Their introduction into EU law would require either an extension of the Directive's scope, as it currently regulates only sulphur fuel standards, or the adoption of a new instrument. This could be considered in the future, taking into account developments at IMO. At the moment the preferred option is that no new ECAs are introduced and the Commission will continue to support Member States in further developing proposals for additional ECAs and emission limit values for submission to IMO.

7. CONCLUSION

The new international limit values for the sulphur content of marine fuels are expected to significantly reduce emissions of sulphur dioxides from the maritime sector. This will greatly contribute to achieving the general environmental objectives stated in the 2005 Thematic Strategy on Air Pollution and is in line with the priorities of the Europe 2020 Strategy³. It will furthermore yield ancillary benefits in terms of reducing emissions of NO_x and particulate matter. The international rules will deliver human health benefits that are three to thirteen times greater than the costs, plus other significant benefits related to environmental improvements. Also, for the purpose of promoting compliance with existing ambient air quality limit values, a problem for several Member States currently facing infringement procedures, it is essential to ensure that these projected benefits materialise.

The impact assessment confirms the cost-effectiveness of a full alignment of the Directive with the IMO rules on fuel standards, including the standards applicable outside SECAs, and with the provisions on emission abatement methods. Incorporating the international fuel standards into EU law would strengthen the effectiveness of these standards as they would be monitored and enforced under the EU regime, which is more effective than the international system. The proposed extension of the use of innovative emission abatement methods as an equivalent compliance option addresses concerns about the cost implications resulting from the new IMO rules. The use of such methods significantly lowers IMO compliance cost and promotes innovative industry solutions, in line with the priorities of the Europe 2020 Strategy and Article 3 TFEU. Furthermore, the impact assessment recommends maintaining the link between the stricter fuel standards in SECAs and those applicable to passenger ships on a regular service outside SECAs. However, the introduction of a new SECA standard for passenger ships would be delayed by 5 years, in order to avoid potential issues with fuel availability.

Also, increasing the effectiveness of the EU's monitoring and enforcement regime is particularly important considering that the significantly stricter fuel standards, with associated higher compliance costs, may increase the incentives for non-compliance by economic agents.

³ Communication from the Commission, Europe 2020 A strategy for smart, sustainable and inclusive growth, COM(2010) 2020 final.

Finally, the impact assessment suggests that the European Commission and Member States use and, where possible or necessary, adapt existing public support instruments, to assist industry in the transition towards the new IMO standards.