REPUBLIC OF CYPRUS
MINISTRY OF
COMMUNICATIONS AND WORKS

DEPARTMENT
OF MERCHANT SHIPPING
LEMESOS

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30 December 2010

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To all Owners, Managers
and Representatives of Ships under the Cyprus flag
and of Ships of all flags within the territory of Cyprus

Subject: **EU COMMISSION DECISION 2010/769/EU of 13.12.2010 on the establishment of criteria for the use by liquefied natural gas carriers of technological methods as an alternative to using low sulphur marine fuels meeting the requirements of Article 4b of Directive 1999/32/EC**[1]

This is to inform you of the adoption of European Union Commission Decision 2010/769/EU of 13.12.2010 ("the Decision") which is applicable to Liquefied Natural Gas Carriers (LNG Carriers) calling at EU ports, which are using an alternative technological abatement method to reduce sulphur fuel emissions by using as fuel a mixture of marine fuel oil and boil-off gas to produce emissions equal to or lower than 0.1% sulphur fuel emissions. LNG carriers shall use and comply with the calculation criteria set out in the Annex of the Decision.

In accordance with the provisions of Article 4 of the Decision, Member States shall require LNG Carriers which use the above alternative technological abatement method and call at ports under their jurisdiction, to provide detailed records in the ship's logbook, containing the type and quantity of fuels used on board. For this purpose, these ships shall be equipped for continuous monitoring and metering of the boil-off gas and marine fuel consumption.

It is recalled that in accordance with Article 4b of EU Council Directive 1999/32/EC of 26 April 1999 as amended by Directive 2005/33/EC[2], of the European Parliament and

[1] of 26 April 1999 relating to a reduction in the sulphur content of certain liquid fuels as amended by Directive 2005/33/EC of the European Parliament and of the Council of 6 July 2005 on the sulphur content of marine fuels (notified under document C(2010) 8753).

[2] It is recalled that Directive 2005/35/EC was transposed by the Republic of Cyprus by virtue of the Sulphur Content of Marine Fuels Order of 2007, **Order P.I.199/2007**, issued under section 16(1) of The Requirements on Petroleum Products and Fuels Laws (Law 148(I)/2003 as amended).

of the Council of 6 July 2005, ships at berth in Community ports should not use, as from 1 January 2010, marine fuels with sulphur content exceeding 0.1% by mass. This requirement, however, does not apply to fuels used onboard vessels employing approved emission abatement technologies in accordance with Article 4c.

The full text of Commission Decision 2010/769/EU is hereby attached for easy reference.

The Masters, Owners, Managers and Representatives of ships flying the Cyprus flag and of Ships of all flags sailing within the territory of Cyprus are advised to strictly abide by the provisions of Commission Decision 2010/769/EU, of Directive 1999/32/EC as amended, as well of the relevant transposition Order P.I.199/2007.

Serghios.S .Serghiou
Director
Department of Merchant Shipping

Attachment: **EU COMMISSION DECISION** 2010/769/EU of 13.12.2010

CC: - Permanent Secretary, Ministry of Communications and Works
- Permanent Secretary, Ministry of Foreign Affairs
- Permanent Secretary, Ministry of Commerce, Industry and Tourism
- Maritime Offices of the Department of Merchant Shipping abroad
- Diplomatic Missions and Honorary Consular Officers of the Republic
- General Manager, Cyprus Ports Authority
- Cyprus Shipping Chamber
- Cyprus Union of Shipowners
- Cyprus Shipping Association
- Recognized Organisations

DECISIONS

COMMISSION DECISION

of 13 December 2010

on the establishment of criteria for the use by liquefied natural gas carriers of technological methods as an alternative to using low sulphur marine fuels meeting the requirements of Article 4b of Council Directive 1999/32/EC relating to a reduction in the sulphur content of certain liquid fuels as amended by Directive 2005/33/EC of the European Parliament and of the Council on the sulphur content of marine fuels

(notified under document C(2010) 8753)

(Text with EEA relevance)

(2010/769/EU)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to the Council Directive 1999/32/EC of 26 April 1999 relating to a reduction in the sulphur content of certain liquid fuels [1] as amended by Directive 2005/33/EC of the European Parliament and of the Council [2], and in particular Article 4c thereof,

Whereas:

(1) Article 4b of the Directive requires that ships at berth in Community ports do not use, from 1 January 2010, marine fuels with a sulphur content exceeding 0,1 % by mass. This requirement does not apply, however, to fuels used on board vessels employing approved emission abatement technologies in accordance with Article 4c.

(2) Article 4c(4) provides that Member States may allow ships to use an approved emission abatement technology as an alternative to using sulphur marine fuels meeting the requirements of Article 4b, provided that these ships continuously achieve emission reductions which are at least equivalent to those which should be achieved through the limits on sulphur in fuel specified in the Directive.

(3) Article 4c(3) provides for the establishment of criteria for the use of technological methods by ships of all flags in enclosed ports, harbours and estuaries in the Community in accordance with the procedure referred to in Article 9(2) of the Directive. These criteria are to be communicated to the IMO.

(4) Liquefied natural gas (LNG) Carriers are frequently fitted with dual fuel boilers, using boil-off gas and heavy fuel oil for propulsion and cargo-related operations. In order to meet the requirements of the Directive most LNG Carriers calling at EU ports could use emission abatement technology employing a mixture of marine fuels and boil-off gas to produce sulphur emissions equal to or lower than 0,1 % sulphur fuel emissions.

(5) In the long-term, boil-off gas could be used as a primary fuel at berth, producing lower sulphur emissions than those which would be achieved through the limits on sulphur in fuel specified in the Directive.

(6) The measures provided for in this Decision are in accordance with the opinion of the Regulatory Committee established in accordance with Article 9(2) of the Directive,

HAS ADOPTED THIS DECISION:

Article 1

A Liquefied Natural Gas Carrier (LNG Carrier) is a cargo ship constructed or adapted and used for the carriage in bulk of liquefied natural gas as defined under the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC) Code.

Article 2

To meet the objective on reducing emissions from ships through an alternative technological abatement method by a mixture of marine fuel and boil-off gas the LNG Carriers shall use and comply with the calculation criteria set out in Annex.

[1] OJ L 121, 11.5.1999, p. 13.
[2] OJ L 191, 22.7.2005, p. 59.

The LNG Carriers may use the alternative technological abatement method while at berth in Community ports, allowing sufficient time for the crew to accomplish any necessary measures to employ a mixture of marine fuel and boil-off gas as soon as possible after arrival at berth and as late as possible before departure.

Article 3

The achieved emission reductions in sulphur emissions due to the application of the method referred to in Article 2 must be at least equivalent to the reduction that would be achieved through the limits of the sulphur in fuel specified in the Directive.

Article 4

Member States shall require LNG Carriers which use the alternative technological abatement method and call at ports under their jurisdiction to provide detailed record in the ship's logbook, containing the type and quantity of fuels used on board. For this purpose, these ships shall be equipped for continuous monitoring and metering of the boil-off gas and marine fuel consumption.

Article 5

Member States shall take appropriate measures to monitor and verify the use of the alternative technological abatement method while at berth based on the achieved emissions reductions provided by LNG Carriers.

Article 6

This Decision is addressed to the Member States.

Done at Brussels, 13 December 2010.

For the Commission
Siim KALLAS
Vice-President

ANNEX

1. **The formula**

For the purpose of establishing equivalence within the meaning of Article 3, the following formula shall be used:

$$S_F\ (\%) \cdot M_F \leq 0{,}1\ \% \cdot M_{F0{,}1\ \%}$$

Where:

— $S_F\ (\%)$: percentage of sulphur content per unit of mass of the marine fuel used,

— M_F: mass of the marine fuel consumed while the ship is at berth in kg,

— $M_{F0{,}1\ \%}$: equivalent mass in kg of a fuel with a sulphur content ≤ 0,1 %. This factor shall be calculated according to the following formula:

$$M_{F0{,}1\ \%} = (M_{BOG} \cdot E_{BOG} + M_F \cdot E_F)/E_{F0{,}1\ \%}$$

Where:

— M_{BOG}: mass of the boil-off gas consumed at berth in kg,

— E_{BOG}: energy value of the boil-off gas used in MJ/kg,

— M_F: mass of the marine fuel consumed at berth in kg,

— E_F: energy value of the marine fuel used in MJ/kg.

— $E_{F0{,}1\ \%}$: energy value of a marine fuel with a sulphur content ≤ 0,1 % in MJ/kg

Development 1 of the formula

The two formulas referred to above can be combined as follows:

$$S_F\ (\%) \cdot M_F/(M_{BOG} \cdot E_{BOG} + M_F \cdot E_F) \leq 0{,}1\ \%/E_{F0{,}1\ \%}$$

Development 2 of the formula

The formula can be further developed as follows:

$$S_F\ (\%)/(R_{G/F} \cdot E_{BOG} + E_F) \leq 0{,}1\ \%/E_{F0{,}1\ \%}$$

Where:

— $R_{G/F}$: the ratio between the mass of boil-off gas and marine fuel consumed at berth (M_{BOG}/M_F)

This second development can also be expressed in the following way:

$$R_{G/F} \geq (S_F\ (\%) \cdot E_{F0{,}1\ \%} - 0{,}1\ \% \cdot E_F)/\ 0{,}1\ \% \cdot E_{BOG}$$

2. **Application of the formula**

Since the energy values of the different marine fuels involved in the formula are largely similar, it is justified to use standard values for $E_{F0{,}1\ \%}$, E_F and E_{BOG} in order to simplify the application of the formula in practice. More particularly, the following standard energy values may be presumed to apply:

$E_{F0{,}1\ \%}$ = 43,0 MJ/kg (source: DNV Petroleum Services)

E_F = 40,8 MJ/kg (source: DNV Petroleum Services)

E_{BOG} = 50,0 MJ/kg (ISO energy figure for methane)

The formula would accordingly be simplified as follows:

$$R_{G/F} \geq 8{,}6 \cdot S_F\ (\%) - 0{,}816$$

On this basis, the only value that needs to be introduced to the formula to arrive at the required ratio between the mass of boil-off gas and marine fuel consumed ($R_{G/F}$ or M_{BOG}/M_F) is the sulphur content of the marine fuel used while at berth. By means of examples, the table below indicates the minimum ratio required to meet the equivalence criteria for marine fuels with different sulphur contents.

Sulphur content (%)	1,0	1,5	2,0	2,5	3,0	3,5
M_{BOG}/M_F	7,8	12,1	16,4	20,7	25,0	29,3