Complete document with attachments to be found on https://www.sdir.no/en/shipping/legislation/horinger/proposed-implementation-of-zero-emissions-requirement-in-the-world-heritage-fjords-by-2026/

HEARING

- **DATE 7/4/2023**

- **HEARING DUE DATE: 10/3/2023**

Consultation - proposed implementation of zero emissions requirement in the World Heritage fjords by 2026

On assignment from the Ministry of Climate and Environment, as confirmed in a letter dated 29 June 2023, the Norwegian Maritime Authority (NMA) hereby circulates for review the proposed amendments to the Regulations on environmental safety for ships and mobile offshore units.

1. Introduction

The proposal includes a separate regulation of emissions of the greenhouse gases carbon dioxide and methane in the World Heritage fjords and the use of the best available technology to reduce nitrous oxide emissions.

The amendments will enter into force on 1 January 2026. To give regional authorities and other affected parties a realistic opportunity to adjust and adapt to the new requirements a transitional arrangement is introduced permitting the use of biogas under certain circumstances. This will help ensure that the World Heritage fjords will remain ports of call beyond 2026. The proposed measures will reduce the emissions in the World Heritage fjords and contribute to preserving the World Heritage fjords.

Comments to the proposal can be submitted to the Norwegian Maritime Authority by e-mail to **post@sdir.no** by 3 October 2018.

Please direct any questions regarding the consultation letter to Henrikke Roald, Head of Section for Legislation and Contracts at **hero@sdir.no**.

2. The background for the proposal

In 2005, the West Norwegian Fjords, i.e. the five fjords the Nærøyfjord, Aurlandsfjord, Geirangerfjord, Sunnylvsfjord and Tafjord, were added to the UNESCO World Heritage List. Norway has thus taken on a particular responsibility for conserving these areas.

In March 2022, the Ministry of Climate and Environment asked the Norwegian Maritime Authority (NMA) to take stock and present proposals on how to meet and implement the Storting's petition resolution regarding a requirement to reach zero emissions from cruise ships, tourist boats and ferries in the World Heritage fjords as soon as technically feasible, and by 2026 at the latest.

On 3 May 2018, the Norwegian Storting passed a petition resolution to impose a zero-emission requirement in the World Heritage fjords:

«*The Storting asks the Government to implement requirements and regulations for emissions and discharges from cruise ships and other vessels in tourist fjords and other suitable measures to ensure the phasing-in of low- and zero-emission solutions in the shipping industry until 2030, including a requirement for zero emissions from cruise ships, tourist boats and ferries in the World Heritage fjords as soon as feasible and no later than 2026 (resolution No. 672).*»

In February 2021, the Storting adopted two additional resolutions:

«*The Storting asks the Government to contribute to the implementation of measures initiated by local and regional authorities in order to reduce emissions and discharges in the World Heritage fjords (resolution No. 690).*»

«*The Storting asks the Government to propose measures to ensure that the World Heritage fjords will remain ports of call for cruise ships beyond 2026, partly by ensuring that the Norwegian State will secure the installation of shore power facilities in Flåm as planned by 2022* (Resolution No. 691).»

The work should be based on previous studies, and an assessment should be made of the need to update the knowledge base related to the state of technological development and other relevant aspects, such as local and commercial interests.

The NMA was asked to carry out an assessment of the administrative and economic consequences of the implementation of the requirements, as well as other societal effects.

As part of this assignment, the NMA was requested to prepare draft regulations under Chapter 5 of the Ship Safety and Security Act.

The NMA prepared an updated knowledge base for the technology development which is considered relevant to the assignment in the report «Zero emissions from ships in the World Heritage fjords by 2026 – Supplement for the knowledge base with regard to the state of technological development». Hereafter, the report will be referred to as the «technology report» from the NMA. The report is attached to this

consultation letter. The report is based on the DNV-GL report on «Zero emissions from ships in the World Heritage fjords by 2026» (DNV-GL-2020).

In addition, the NMA commissioned Menon Economics, hereafter referred to as Menon, to perform a socio-economic analysis of introducing a zero-emission requirement for cruise ships, tourist boats and ferries in the World Heritage fjords. The report “Samfunnsøkonomisk analyse av nullutslippskrav for turistskip og ferger i verdensarvfjordene” (“Socioeconomic analysis of environmental requirements for cruise ships, tourist boats and ferries in the World Heritage fjords”), Menon publication No. 102/2022” attached to this consultation letter. The Norwegian Coastal Administration provided traffic forecasts for the socio-economic analysis from Menon. Other national and local authorities, as well as several of the members of the reference group have served as key informants for Menon during the making of the socio-economic analysis.

The Ministry of Climate and Environment asked the NMA to carry out the assignment in dialogue with “affected parties”, including municipalities, port authorities and other affected agencies. Consequently, the NMA invited relevant parties to join a reference group. For practical reasons, the reference group were split into three subgroups, and the initial meetings took place online on 1 and 2 June 2022. The entire reference group was invited to a mutual meeting in Haugesund on 24 August 2022. The members of the reference group were given the opportunity to submit written comments to the Norwegian Maritime Authority with a deadline of 1 September 2022. We have received 13 comments from the reference group that are gathered in a separate matrix attached to this consultation letter. A final reference group meeting was held on 6 January 2023.

In addition, the NMA has met with other authorities, including the Norwegian Coastal Administration, Enova, Innovation Norway, the County Governor of Vestland, the County Governor of Møre og Romsdal, the Norwegian Agency for Public and Financial Management (DFØ), the Norwegian Public Roads Administration and the Norwegian Environment Agency. The NMA has worked particularly closely with the Norwegian Environment Agency.

In order to carry out the assignment, the NMA needed to define the term “zero emissions” at an early stage, in light of the Storting’s petition resolution and additional resolutions. The Storting has adopted a zero greenhouse gas emissions requirement for passenger ships in the World Heritage fjords applicable from 1 January 2026. It should, however, be made possible for the World Heritage fjords to remain ports of call for cruise ships beyond 1 January 2026.

Initially, the NMA used two different definitions of the term zero emissions in their work while working with the technology report and ordering the socio-economic analysis. In alternative 1, we used the following as a legal basis: «”Zero emissions" *means that by 2026, cruise ships, tourist boats and ferries in the World Heritage fjords must not produce emissions of the greenhouse gases carbon dioxide (CO_2), methane (CH_4) or laughing gas*

(N_2O). Examples of relevant technology are batteries and the use of fuel cells powered by hydrogen or ammonia.»

In alternative 2, the following definition was used as a legal basis: *«"Zero emissions" means that by 2026, the greenhouse gas emissions from cruise ships, tourist boats and ferries in the World Heritage fjords must be reduced by at least 95 per cent in comparison with the use of conventional technology. "Conventional technology" means the use of fossil fuels.*

A zero-emission ship will use a fuel producing at least 95% less CO_2 emissions than the combustion of fossil fuels with the same level of energy4. When an engine employs a pilot fuel to ignite a zero-emission fuel, it must be assumed that the CO_2 emissions from the combustion of the pilot fuel will not cause a zero-emission ship to no longer be considered a zero-emission ship. Examples of relevant technology include internal combustion engines using hydrogen or ammonia.

The use of biofuel could be a zero-emission solution under alternative 2. Therefore, the following must be investigated:

a. an option where biofuel (liquid and gas) is generally considered a zero-emission technology;
b. an option where biogas is considered a zero-emission technology;
c. an option where biofuel is not considered a zero-emission technology.

Special attention should be paid to the use of biogas. Last year, in the parliamentary resolution 1007 (2020-2021), in which the Norwegian Government was asked to amend the term "zero emissions" in every government goal and ambition to "zero emissions and biogas", it was decided to ask the Storting to repeal the petition resolution. Consequently, it is a political decision whether biogas should be considered equivalent to zero emissions in this case. The Ministry has asked the NMA to take a closer look at alternative scenarios both with and without biogas. The NMA assumes that biofuels do not meet the definition of zero emissions of Alternative 1.

Throughout the work, the NMA has defined which greenhouse gases should be banned by 1 January 2026 and thus be included in the definition of "zero emissions". The NMA has chosen not to impose an absolute ban on the greenhouse gas nitrous oxide (N_2O). One reason for that is that the use of ammonia and hydrogen in internal combustion engines may lead to reduced nitrous oxide emissions. We do, however, require the use of the best available technology to reduce nitrous oxide (N_2O) emissions. Furthermore, we have allowed for the use of biogas for ships of 10,000 gross tonnage and upwards in a transitional period up until 31 December 2035. Read more about this in the comments to the provision. In addition, we have redefined the term "cruise ships, tourist boats and ferries" to apply to passenger ships, which is further defined in SOLAS Chapter I Part A Regulation 2(f) and the Regulations on surveys, construction and equipment passenger ships engaged on domestic voyages section 2p. A passenger ship is defined to be a vessel which can carry more than 12

passengers. Please note that high-speed passenger vessels are included in this definition.

The proposed legislation must be viewed in the context of the EU's climate package "Fit for 55", which aims to reduce emissions by at least 55% by 2030. Many of the proposed measures will also apply to the shipping industry, including the new FuelEU Maritime regulation to increase the demand for alternative fuels in the maritime industry, and the proposed amendments to the Renewable Energy Directive on sustainability criteria for biofuels. Read more about this in the comments to the proposed provision.

In 2018, the UN's International Maritime Organization (IMO) adopted a strategy on the reduction of greenhouse gas emissions from ships. The IMO will adopt a new climate strategy in 2023 and the member States must decide on the requirements and mechanisms to ensure that the emissions targets are met.

The ongoing EU and IMO work is expected to have an impact on the provisions that we propose in the regulatory amendments. Read more about this in the comments to the proposed provision.

3. Legal basis for the regulatory amendments

It is stipulated in the preamble of the Ship Safety and Security Act section 1 that the "Act shall safeguard life, health, property and the environment by facilitating a high level of ship safety and safety management, including preventing pollution from ships".

Chapter 5 of the Ship Safety and Security Act relating to environmental safety is the chapter under which the NMA has been asked by the Ministry to make regulatory provisions.

The Ship Safety and Security Act applies to both Norwegian and foreign ships pursuant to section 2 first paragraph. For Norwegian ships, the Act will apply regardless of where the ship sails. Subject to limitations following from international law, the Act shall apply to foreign ships in Norwegian territorial waters, in the Norwegian economic zone and on the Norwegian Continental Shelf, see section 3 first and second paragraphs.

It is suggested that the legal basis for the proposed regulations be chapter sections 31 to 33 of the Ship Safety and Security Act, with appurtenant Regulations of 30 May 2012 No. 488 on environmental safety for ships and mobile offshore units.

The NMA laid down special rules for the World Heritage fjords, entering into force on 1 March 2019, in the Regulations on environmental safety for ships and mobile offshore units. These rules introduced the ECA sulphur requirements, NOx requirements, a ban on the discharge of sewage and grey water, regulations on the use of exhaust gas cleaning systems and a ban on the incineration of waste on board ships. In addition, a requirement

for environmental instruction for ships of 10,000 gross tonnage and upwards sailing in the World Heritage fjords was introduced.

The proposed provisions are laid down in the Regulations on environmental safety for ships and mobile offshore units (Environmental Safety Regulations) in new section 12b. Thematically, we have proposed to place this provision together with the other provisions on emissions from ships. The World Heritage fjords are already defined in section 10a third paragraph of the Regulations.

The proposed requirements are aimed at the individual ship, but the company is responsible for ensuring that the requirements are complied with pursuant to section 4 of the Ship Safety and Security Act.

The NMA may supervise that the ship complies with the requirements of the provision and may, where necessary, take various administrative measures pursuant to the Ship Safety and Security Act chapter 8 or by means of violation fines pursuant to chapter 9.

4. Comments affecting other regulatory provisions pursuant to the Ship Safety and Security Act

We have received comments from the reference group regarding postponement of the introduction of the Tier III requirements. Furthermore, it was proposed that vessels may sail in a corridor with Tier II requirements if the purpose is to reach a port located outside the actual world heritage area.

More specifically, Stranda Port Authority holds that the zero-emission decision must be postponed until the required technology is in place and it is possible for the companies to convert or build new ships with zero emissions.

Alternatively, they request that vessels complying with the Tier II requirements be granted permission to sail through the world heritage area if the target is a port outside the world heritage area. Stranda Port Authority has proposed the following exemption clause to chapter 5:

“Exemption: Vessels satisfying the Tier II requirement may be granted permission to sail through the world heritage area if the target is a port outside the world heritage area.”

Aurland Port Authority proposes a solution to ensure that cruise ships may visit Flåm beyond 2026 and achieve zero emissions in port by installing shore power facilities. At the same time, the Nærøyfjord can be kept completely free of emissions from cruise ships, tourist boats and ferries. It is a precondition that the Norwegian government make sufficient resources available to provide the capital necessary for the establishment of Elhub in Flåm and Gudvangen and the shift from commercial operations to a public ferry service between Gudvangen and Kaupanger (zero-emission tender).

If the Government will not establish shore power in Flåm, it is proposed that an exemption is made from the NO_x Tier III requirement up until 2028. Aurland Port Authority has submitted a proposal for a legal text for chapter 5 of the Ship Safety Act:

"Ships that, irrespective of the requirements in force in the year of construction of the ship, comply with:

a) the Tier II requirements, cf. MARPOL regulation VI/13 by 1 January 2022;,

b) the Tier III requirements, cf. MARPOL regulation VI/13 by 1 January 2028;

may, however sail in the world heritage area if the intention is to reach a port where shore power is available."

As mentioned before, the Regulations on environmental safety for ships and mobile offshore units were amended by gradually phasing in strict environmental requirements in the World Heritage fjords, including NO_x emissions requirements with the Tier II requirements, effective as of 1 January 2002, and the Tier III requirements, which will come into effective on 1 January 2025.

According to the Menon report[1], the Tier II requirements have affected the cruise traffic in the World Heritage fjords: the number of port calls has been reduced by 26% in the Geirangerfjord area and 28% in Flåm. Moreover, the introduction of the Tier III requirements from 2025 is assumed to reduce the number of port calls by 30%.

The NMA has established that the Tier requirements affect cruise calls in the World Heritage fjords and that the introduction of zero emissions requirements will have negative consequences for the affected parties, such as fewer port calls and loss of income. See item 6 on administrative and financial consequences.

The NMA has considered the comments and recognises that there is a need for transitional arrangements. We are proposing a transitional arrangement involving the use of biogas. We believe that this will both ensure that the zero emissions requirement will be met and that cruise ships will continue to arrive after 2026. If we had agreed to the proposal to allow, wholly or in part, vessels to satisfy the Tier II requirements in the World Heritage fjords until 2028, that would have forced changes to existing environmental requirements. To ensure predictability for the parties concerned, we do not want to amend requirements that are already implemented in the World Heritage fjords. This would be in conflict with the parliamentary resolutions No. 672 and 690, which require emissions reductions in the World Heritage fjords. We believe that the transitional arrangement using biogas will help ensure that resolution No. 672 is satisfied.

Another comment from the reference group concerns a proposal to make an exemption from a future requirement regarding zero emissions for

protected vessels. It is set out in section 14f of the Regulations that upon written application, the Norwegian Maritime Authority may grant exemption from the requirements of sections 10a, 14b and 14c for ships which are protected or given status as historical by the Directorate for Cultural Heritage. The NMA proposes that this exemption should also apply to the proposed provision. We also refer the comments to the amendment of section 14f.

5. Details of the proposal

5.1 General

As mentioned in item 2, the Storting has decided to introduce a requirement for zero emissions from cruise ships, tourist boats and ferries in the World Heritage fjords from 1 January 2026. At the same time measures should be considered to ensure that the World Heritage fjords will remain ports of call for cruise ships beyond 2026.

The NMA's proposed regulations takes as a starting point that there will be zero emissions in the World Heritage fjords by 2026, however that in a transitional period, future cruise port calls must be ensured.

The provision is technology-neutral, leaving it to the operators in the World Heritage fjords to use sources of energy that do not directly emit carbon dioxide and methane. New technologies mature as they develop, and the technology report provides an overview of the NMA’s assessment of the technological maturity.

The introduction of requirements preventing direct emissions of carbon dioxide and methane in the World Heritage fjords could accelerate technology development. According to Menon, the introduction of zero emissions requirements will lead to changes in sailing patterns rather than increased investments in new technology. Moreover, Menon points out that it is difficult to determine the zero emissions requirements’ effects on economic growth and increased export income in the green maritime industry[2].

Based on the conclusions of the Menon report and the technology report from the NMA, we believe that the technology is not sufficiently mature for large passenger ships to be able to operate with zero emissions in the World Heritage fjords by 2026. To ensure port calls beyond 2026, the NMA proposes that passenger ships of 10,000 gross tonnage and upwards may, in a transitional period, use biogas. We consider burning of biogas as climate-neutral and there is currently sufficient infrastructure to support the distribution of natural gas which can make the introduction of biogas easier. Collected data from Clarkson “World Fleet Register” shows that there are currently 15 cruise ships that are able to use biogas and that 27 more have been ordered, including Havila Voyages’ two new ships.

5.2 Comments on the provision

Section 12b first paragraph

We have made a provision in line with the Storting’s decision concerning zero emissions and where the introduction of strict emission requirements must be considered in light of the special dedication by Norway to protect the World Heritage fjords.

We are proposing that in the World Heritage fjords, passenger ships must use sources of energy that do not directly emit carbon dioxide or methane. Moreover, we are proposing that if the ship uses hydrogen or ammonia, it must meet the technical screening criteria for greenhouse gas reduction for the production of hydrogen and hydrogen-based fuels set out in Section 3.10 of the Commission Delegated Regulation (EU) 2021/2139 Annex I. The requirements have been included in Annex 2 to the Environmental Safety Regulations.

The World Heritage fjords have already been defined in the Environmental Safety Regulations section 10a third paragraph.

The ban will apply to all passenger ships operating in the World Heritage fjords, either daily or occasionally. Ships covered by the ban include cruise ships, ferries, high-speed craft and other tourist boats. As mentioned above, passenger ships are vessels certified to carry more than 12 passengers. Please note that high-speed passenger vessels are included in this definition.

Examples of relevant technology meeting the requirement of the first paragraph are batteries and the use of fuel cells powered by hydrogen or ammonia. Direct emissions are the ship’s emissions of carbon dioxide and methane when using energy sources on board, and not those that result from the production of energy sources.

As mentioned, we have proposed a requirement that hydrogen and ammonia shall meet the technical screening criteria for greenhouse gas reduction for manufacture of hydrogen and hydrogen-based fuels according to the current wording of the Commission Delegated Regulation (EU) 2021/2139 Annex I, 3.10. This Regulation entered into force on 1 January 2022 and is currently being considered for incorporation into the EEA Agreement. Since it is not clear how or when the Regulation will be implemented in Norwegian legislation, we have chosen to include the requirements in Annex 2 of the Regulations in the wording of Section 3.10 of the Commission Delegated Regulation (EU) 2021/2139 Annex 1. We are also proposing that the ship must have documents on board verifying compliance with the requirements. Moreover, we may specify the requirements in the environmental instruction, see section 14d of the Environmental Safety Regulations.

We have chosen to exclude nitrous oxide from the prohibition pursuant to the first paragraph, which is described in more detail in the comments to the third paragraph.

Section 12b second paragraph

The second paragraph permits the use of fuels necessary to ignite sources of energy referred to in the first paragraph. The reason for this permission

is that the use of for example ammonia in internal combustion engines requires the use of smaller amounts of fuel, such as diesel, to ignite the ammonia. This means that we do not exclude the use of hydrogen and ammonia in internal combustion engines, which we consider a relevant technology to promote the change towards sustainable shipping.

Section 12b third paragraph

The third paragraph permits minor emissions of nitrous oxide (N_2O) when using sources of energy as referred to in the first paragraph.

Ammonia and hydrogen might be future fuels for the maritime shipping, but when used in internal combustion engines they may form small amounts of nitrous oxide. A requirement is therefore set which states that nitrous oxide emissions must be reduced using the best available technology. The NMA expects that parallel to the development of internal combustion engines for ammonia, catalysts will be developed for maritime applications to reduce the nitrous oxide emissions. We also expect that in the future, international legislation will be developed for acceptable emissions of nitrous oxide from combustion machinery and the third paragraph may then be updated to regulate the specific emissions more precisely.

Section 12b fourth paragraph

We are proposing that up until 31 December 2035, passenger ships of 10,000 gross tonnage and upwards may use biogas as a source of energy as an alternative to the requirement of the first paragraph. Moreover, we are proposing that the biogas must be made of raw materials as referred to in the Regulations relating to restrictions on the manufacture, import, export, sale and the use of chemicals and other products hazardous to health and the environment (Product Regulations) chapter 3 Annex V Part A. Furthermore, we are proposing that the biogas must comply with the applicable requirements regarding sustainability, greenhouse gas emissions reductions and documents as set out in Directive (EU) 2018/2001 (Renewable Energy Directive Recast, RED II). This is explained in more detail below.

The proposal is in line with several of the comments we have received from the reference group.

The measurement of 10,000 gross tonnage and upwards is being proposed since we regard zero-emission solutions for small ships more mature than those for large ships. There is much more uncertainty as to the maturity of technology for more energy-intensive passenger ships. Please refer to the attached technology report. Biogas may be used in already existing LNG-fuelled vessels. Collected data from Clarkson’s World Fleet Register show that 15 cruise ships of 10,000 gross tonnes and upwards are currently capable of using biogas, and that 27 more have been ordered, including Havila Voyages’ two new ships. We consider the burning of biogas on board ships to be climate-neutral and believe that biogas can help ensure future cruise port calls in the World Heritage fjords in a transitional period.

The infrastructure for the distribution of natural gas is already satisfactory, which we believe will make the introduction of biogas easier.

The proposed transitional arrangement aims to maintain a balance between the protection of the environment and the development of zero-emission solutions for passenger ships, and at the same time facilitate cruise port calls in the World Heritage fjords. This is challenging, and technology develops over time.

Even though biogas will be permitted for large ships in a transitional period, the Menon report shows that the number of cruise passengers will be considerably reduced from 1 January 2026 and that this will lead to a significant drop in turnover, economic growth and employment in the travel industry in Geiranger and Flåm.

We are proposing a transitional period of ten years since both the technology report and the Menon report show that the traffic in the World Heritage fjords will be significantly reduced. Menon estimates that large cruise ships will not be capable of being operated with no emissions in the World Heritage fjords until 2040. We therefore believe that a transitional period of ten years is necessary to ensure predictability for the affected parties.

As mentioned, we are proposing a requirement for the biogas to be made of raw materials as referred to in the Regulations relating to restrictions on the manufacture, import, export, sale and the use of chemicals and other products hazardous to health and the environment (Product Regulations) chapter 3 Annex V Part A. This means that the biogas mainly must be generated from residues and waste from forestry and agricultural production and food industry. These raw materials do not interfere with the production of food for humans or animals. This type of fuel is often referred to as advanced biofuel. Biogas is not included in the turnover requirement and may therefore be used to establish a transitional arrangement for ships of 10,000 gross tonnage and upwards in the World Heritage fjords.

Furthermore, we are proposing that the biogas must comply with the applicable requirements regarding sustainability, greenhouse gas emissions reductions and documents as set out in Directive (EU) 2018/2001 (Renewable Energy Directive Recast, RED II). Whether or not these requirements should be part of the Environmental Safety Regulations depends on how the recast Renewable Energy Directive will be implemented in Norwegian legislation and whether it will apply to bunkering outside the European Economic Area (EEA) and to foreign ships during their stay in the EEA. The Norwegian Ministry of Petroleum and Energy is the responsible authority which has received an EEA Notice on a proposed recast Renewable Energy Directive. Therefore, we have chosen to include these requirements in brackets to illustrate the uncertainty as to how they will be implemented in Norwegian legislation.

We have proposed that the documentation requirements be linked to the ships, and we believe that certification through a volunteer arrangement

pursuant to the revised Renewable Energy Directive, Directive (EU) 2018/2001, may enable the ships to require documentation that the sustainability criteria are met through the whole or parts of the supply chain.

Section 12b fifth paragraph

We have reached the conclusion that it is not appropriate to require ships to only use clean biogas fuel when sailing in the World Heritage fjords. Therefore, we do not require bunkering of biogas in a dedicated tank.

We are proposing that the biogas must be bunkered within a month of entering the World Heritage fjords and be stored separately from fossil fuels until the biogas is bunkered. The use of biogas with mass balance certification taken from the gas pipeline system is therefore not permitted.

The amount of biogas must correspond to the quantity of energy required in the World Heritage fjords. We are proposing that the ship must have documents on board verifying the bunkering of biogas corresponding to the amount of energy required in the World Heritage fjords. Moreover, we may specify the requirements in the environmental instruction, see section 14d of the Environmental Safety Regulations.

It is important for the NMA to supervise the compliance of the requirements. If non-compliance with the documentation requirements is identified, this will lead to administrative sanctions pursuant to the Ship Safety and Security Act chapter 8 or violation fines pursuant to chapter 9.

Section 12b sixth paragraph

We are proposing that in the World Heritage fjords, the passenger ships must use shore power where available. Facilitating the delivery of shore power might be a key measure to ensure zero emissions in the World Heritage fjords. Electrification of ships at berth/in port using shore power will, in our opinion, be an efficient measure to reduce emissions from passenger ships. The Menon report[3] estimates that by 2026, the emissions in Flåm will decrease by 3,300 tonnes of CO_2 by investing in shore power facilities. Several of the reference group comments have also stressed the importance of establishing shore power facilities in the World Heritage fjords. Still, the Menon report demonstrates that it could be challenging to provide shore power facilities capable of meeting the demands of large cruise ships. To ensure that shore power facilities that are established will be used and contribute to the reduction of emissions from ships, we are proposing a requirement to use shore power in the World Heritage fjords where such facilities are available to the ships. This means that the shore power connections of the ships and port will need to be compatible and that the port can supply the ship with the necessary shore power. The requirement does not mean that shore power facilities must be set up in the World Heritage fjords. It will however mean that the shore power connections of the ships and port will need to be compatible and that the port can supply the ship with the necessary shore power.

Amendments to section 14f first sentence

We are proposing a possibility to apply for exemption from the requirements of the proposed provision, as well as an amendment of section 14f by including a reference to the new provision of section 12b. This provision only applies to ships which are protected or given status as historical by the Norwegian Directorate for Cultural Heritage. According to the website of the Directorate for Cultural Heritage, Norway's fleet of protected vessels consists of around 260 protected and 14 historical vessels. The provision states that in considering whether an exemption should be granted, emphasis should be on whether the requirements may interfere with the historical importance of the ship, whether the ship has a historical affiliation with the World Heritage fjords and the purpose of the special regulation of the World Heritage fjords. The provision is intended as a limited exemption provision and a safety valve to make sure that protected and historical vessels which traditionally belong in the World Heritage fjords will be able to continue to sail in the World Heritage fjords. In this way, an important historical dimension is preserved.

6. Administrative and financial consequences

In their assessment of the socio-economic analysis of the zero emissions requirement, Menon has accounted for changes in greenhouse gas emissions, financial consequences, and other effects such as changes in settlement and living patterns, infrastructure investments, activities in the maritime industry, etc.

According to Menon, the greenhouse gas emissions in the World Heritage fjords will be reduced, but at the same time, regional economic growth will decrease. Due to the report, the main reason for this is that a lot of cruise traffic will be moved away from the World Heritage fjords towards other Norwegian fjords. This could have a negative impact on the economic growth, employment and population in Flåm and Geiranger. We expect that these effects will be compensated by increased emissions and economic growth in other fjords on the west coast of Norway, that the costs will, to a great extent, offset the beneficial effects, and that the overall net value of the country is limited, both related to CO_2 emissions and economic growth.

6.1 Changes in greenhouse gas emissions

As mentioned in item 2, the NMA has used two different definitions of the term zero emissions in their work while working with the technology report and ordering the socio-economic analysis from Menon.

Menon believes that the greenhouse gas emissions will have a relatively limited effect, both nationally and globally. The zero emissions requirement will result in relocation of greenhouse gas emissions within Norway rather than net emissions effects.

According to Menon[4], an absolute zero emissions requirement will cause higher emissions than the zero alternative if a pessimistic scenario is applied. In the optimistic estimate the emissions are lower than in the zero

alternative with an estimated difference of around 750 tonnes of CO_2 in 2026. In both scenarios, the effects decline over time since the introduction of low and zero-emission solutions has been included in the zero alternative too.

With a requirement to reduce emissions by 95 per cent compared to when using fossil fuels and a permission of pilot fuels, liquid biofuels and biogas, this design will result in somewhat lower emissions than the absolute zero emissions requirement both in an optimistic and a pessimistic scenario. The emissions are amounted to between 600 and 1,000 tonnes CO_2 in 2026 for the alternatives, depending on the scenario.

Menon assumes that both alternatives will generate a great deal of uncertainty.

6.2 Economic effects

Menon[5] has estimated that an absolute requirement for zero emissions would result in a total turnover decrease of approximately NOK 234 million for Geiranger and Flom. This means that the economic growth will decrease by around NOK 109 million and 184 jobs will be lost compared to the zero emissions alternative. These are assumed to be distributional impacts and the reduced activity will be compensated by increased activity at other destinations on the west coast. Since other destinations are not as well developed as Geiranger and Flåm, the consumption will be somewhat lower. It is also likely that some voyages in Norway will not be realised. This suggests that parts of the estimated local-economic effects are net effects for Norway, which means a net socio-economic loss.

In a scenario where there is a requirement to reduce emissions by 95 per cent compared to when using fossil fuels and where it is permitted to use fossil pilot fuels, liquid biofuel and biogas, this alternative will also lead to a major decrease in sales, growth and employment in the travel industry related to Geiranger and Flåm. It is estimated that by 2026, the economic growth will decrease by NOK 78 to 101 million and between 131 and 171 jobs will be lost. These are assumed to be distributional impacts and the reduced activity will be compensated by increased activity at other destinations on the west coast. Since other destinations are not as well developed as Geiranger and Flåm, the consumption will be somewhat lower. It is also likely that some voyages in Norway will not be realised. This suggests that parts of the estimated local-economic effects are net effects for Norway, which means a net socio-economic loss.

6.3 Reputation effects

Menon believes that the zero emissions requirements will improve the reputation of the World Heritage fjords as sustainable travel destinations, which might contribute to increased travel to the area and to Norway and provide a better experience for tourists. Menon estimates that the reputation impact will be quite limited, and they are not in the position to estimate the size of the effect.

6.4 Other consequences

6.4.1 Settling and living patterns

According to Menon[6], reduced local economic activity will lead to a reduced number of jobs, which may affect the settlement in the communities in question. The number of inhabitants in Aurland and Strand would be particularly affected by an absolute zero emissions requirement.

Moreover, reduced cruise ship tourism would increase the number of services offered and thereby make it less attractive to live in small communities around the World Heritage fjords. In turn, this may lead to a lower will to invest in the travel industry in Geiranger and Flåm, which leads to reduced activity and services in the local communities.

6.4.2 Infrastructure investments

A relocation of the cruise tourism is likely to increase the need for infrastructure investments in ports experiencing increased tourism. This most likely means infrastructure investments in the ports the ships choose to sail to instead of Geiranger and Flåm. These are additional socio-economic costs.

6.4.3 Changed economic activity for maritime industry

According to Menon, a zero emissions requirement will be a step towards a more sustainable fleet. The effect will, however, probably be limited and it is unclear to what extent this will contribute to increased economic growth and export earnings in the maritime industry.

[1] Menon publication No. 102/2022 page 32

[2] Menon publication No. 102/2022 page 54

[3] Menon publication No. 102/2022 page 5

[4] Menon publication No. 102/2022 page 48-49

[5] Menon publication No. 102/2022 page 41

[6] Menon publication No. 102/2022 page 52

Attachments:

Proposed Regulation concerning amendments to the Regulations on environmental safety for ships and mobile offshore units (English translation)

Proposed Regulation concerning amendments to the Regulations on environmental safety for ships and mobile offshore units (Norwegian version)

Annex 2 to the Environmental Safety Regulations section 12b

“Samfunnsøkonomisk analyse av nullutslippskrav for turistskip og ferger i verdensarvfjordene” (socioeconomic analysis of environmental requirements for cruise ships, tourist boats and ferries in the World Heritage fjords) (in Norwegian only)

«"Nullutslipp i 2026 for skip i verdensarvfjordene – Supplement til kunnskapsgrunnlaget ut fra Status i teknologiutviklingen - Sjøfartsdirektoratet" (zero emissions from ships in the World Heritage fjords by 2026 – Supplement for the knowledge base with regard to the state of technological development) (in Norwegian only)

Matrix - comments from the reference group (in Norwegian only)

List of consultative bodies