# NORWEGIAN WORLD HERITAGE FJORDS (WHF) ENVIRONMENTAL REQUIREMENTS

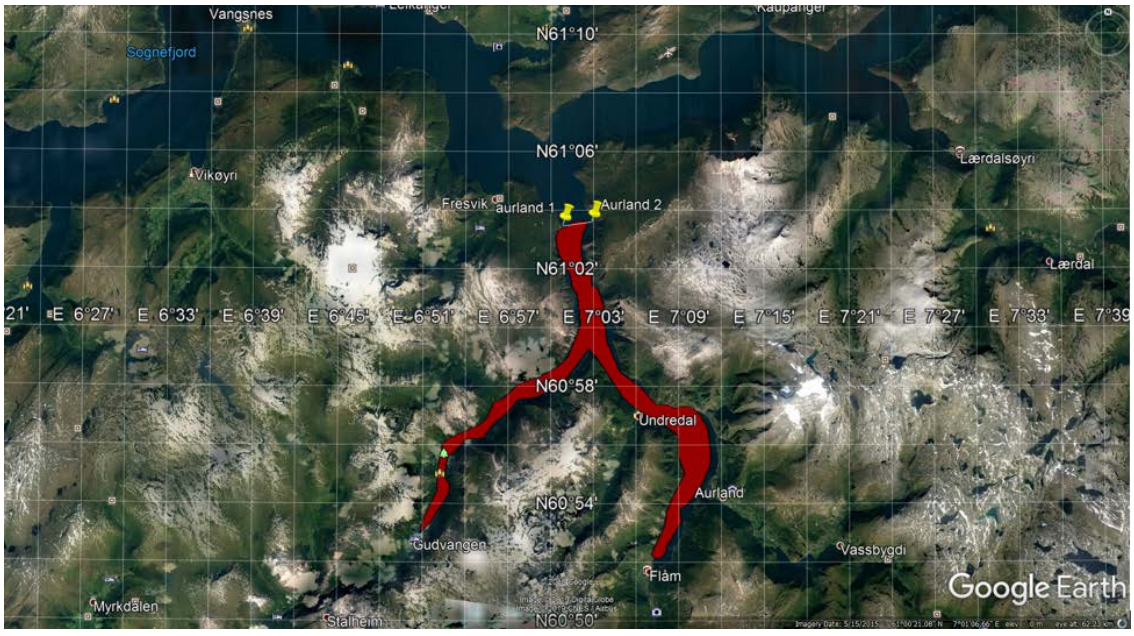
## Background:

**The following areas in Norway are designated as World Heritage Fjords (WHF) sites:**

1) **The Geirangerfjord area:** The Geirangerfjord/Sunnylvsfjord south of the line between N 62° 13' 42" E 7° 2' 30" and N 62° 13' 48" E 7° 0' 30" with the exception of Hellesylt west of the line between N 62° 5' 42" E 6° 54' 18" and N 62° 6' 30" E 6° 54' 42" and with the addition of the Tafjord east of the line between N 62° 17' 12" E 7° 19' 48" and N 62° 17' 36" E 7° 20' 12"


*This affects calls at Geiranger, Tafjord and Hellesylt*

2) **The Nærøyfjord area:** The Nærøyfjord/Aurlandsfjord south of the line between N 61° 3' 36" E 7° 2' 54" and N 61° 3' 24" E 7° 0' 54".




*This affects calls at Flam and Gudvangen*

# ENVIRONMENTAL INSTRUCTION
# ON NORWEGIAN WORLD HERITAGE FJORDS REGULATIONS

The Norwegian Maritime Authority (NMA) has introduced environmental compliance requirements and the need of an **Environmental Instruction for ships operating in their World Heritage Fjords (WHF)** that must:

1) be specially adapted to the ship and operation in these areas
2) ensurethat the ship is operated as environmentally friendly as possible through technical and operational measures and crew training
3) include operational and technical measures for reducing particle matter (PM) emissions and visible smoke
4) include speed as a measure for reducing emissions and discharges

References:

1) Norwegian Regulations of 30 May 2012 No. 488 on "Environmental safety for ships and mobile offshore units", as amended on 01 March 2019, at: http://bit.ly/norway-env-regs

2) VMS:
   Fleet Ops > 4.0 Marine Operations > 4.1 Navigational Operations > 4.1.20 Voyage Planning
   EMM > 7.0 Wastewater Management
   EMM > 1.0 Air Pollution
   Fleet Ops > 5.0 Technical Procedures > 5.6 Bunkering Procedures
   Fleet Ops > 5.0 Technical Procedures > 5.8 Fuel Change Over

## Environmental Instruction – All ships procedures

The procedures below represents the Environmental Instruction required for operation in the Norwegian WHF, that are common for all ships

**Bridge and Engine Teams follow the below Instructions for the Norwegian WHFs:**

Voyage Planning, Recording and Crew Training

1) Observe the requirements for each waste stream below during all the voyage phases in the Norwegian WHF: appraisal, planning, execution and monitoring of the implementation
2) Record actions in relevant forms and logbooks to evidence compliance
3) Include this Environmental Instruction during the voyage appraisal and planning phases of the Bridge and Engine Teams as means of Crew training

Wastewaters management

4) Keep grey and black (sewage) waters onboard in holding tanks

***Do not discharge sewage/black water and grey water, even if treated, in the WHF***

Note: The VMS procedure (*EMM >7.0 Wastewater Management*) does not allow anyway discharges less than 4nm from "nearest land"

5) Plan voyage speeds (incl. arrival and departure times) as a measure for reducing wastewaters discharges

## Air emissions management

6) Use only fuel with sulphur content not exceeding 0.10% by weight

Note: Switch over in advance to ensure the engines operate on max 0.10% S before entry in the WHF and record accordingly, as per the VMS Procedure: *Fleet Ops* > *5.0 Technical Procedures* > *5.8 Fuel Change Over*

7) Keep the incinerator's waste combustion chamber closed / without feeding waste in it

***Do not incinerate waste onboard in the WHF***

8) Operate only Engines (main and/or auxiliary) that are NOx Tier certified (as per Marpol Annex VI, reg. 13 – check your IAPPC and EIAPPC) as follows:
   a) After 01 Jan 2020 – NOx Tier I engines only allowed
   b) After 01 Jan 2022 – for NOx Tier II engines only allowed
   c) After 01 Jan 2025 – for NOx Tier III engines only allowed

Note: Consult also VMS EMM > 1.0 Air Pollution – 1.3 Nitrogen Oxide (NOx) emissions

9) Record in the engine logbook the engines (main and/or auxiliary) in operation in the WHF as per their NOx Tier timelines above

Note: Tender boats if operated in the WHF do not need to have NOx Tier-ed engines

10) Reduce Particulate Matter (PM) and smoke emissions in the WHF:
   a) Plan voyage speeds in advance for the number of engines needed as a measure for reducing emissions

Note: Lower speeds result in lower power demand, which in turn contributes to lower fuel consumption. On the other hand, the specific fuel consumption for the engines will increase at low loads and the specific emissions of $NO_x$, PM and soot. The net environmental benefit where possible should be assessed with detailed data for the specific ship and her engines.

   b) Use engines at their best load for correct combustion, plan whenever possible for 70-80% load
   c) Avoid load shifts between engines/generators

d) Avoid exhaust stack blowing
e) Avoid emergency testing of generators
f) If possible, monitor and record via CCTV the stack exhaust
g) Ships with installed opacity/exhaust monitors - keep these calibrated and in operation

Note: Refer to VMS EMM > 1.0 Air Pollution - 1.6 Other emissions – smoke, soot, high opacity

h) Avoid overdue engines checks and maintenance
i) Keep warm or preheat engines before startup- see next procedure

■■ Completed ■■

## Environmental Instruction – Ship specific procedures

The procedures below represents the Environmental Instruction required for operation in the Norwegian WHF that are ship specific

**The Chief Engineer does the following procedure:**

1) List below ship specific technical and operational measures for warming-up engines within the WHFs, considering:
   a) keeping stand-by main and auxiliary engines warm and ready within correct temperature and pressure circulation for:
      - lube oil
      - cooling water
      - fuel oil
   b) if an extra ship generator is needed, running it without load for some time to allow additional warming up of the system
   c) keeping stand-by auxiliary boilers under steam pressure
   d) using distillate fuel (MGO)

| **Ship name:** | |
|---|---|
| Ship specific technical and operational measures for warming-up of engines | |

2) List below ship specific technical and operational measures for reducing visible emissions (particle matter (PM) emissions and visible smoke) when operating engines, considering:
   a) reducing speed
   b) optimal loads distribution

| **Ship name:** | |
|---|---|
| Ship specific technical and operational measures for reducing visible emissions when operating engines | |

3) Ensure relevant documented information is available onboard to support all above

■■ Completed ■■