

Industry Overview

INDUSTRY

The global shipping industry is looking to reduce carbon intensity through alternative fuels. However, before clean alternatives can be adopted on a large scale, alternatives, such as Liquefied Natural Gas (LNG), are needed. The maritime industry is looking at LNG as a transition fuel to decrease their GHG emissions and other pollutants, mitigating climate change.

After 2011, the sector has seen a shift towards ships powered by alternative fuels. In Europe, it is expected that by 2030 almost 1/4 of the EU fleet will be fuelled by LNG, compared to just 6% today. LNG emits around 20% less GHG, no sulphur oxides (SO_x) and 90% less nitrogen oxides (NO_x) emissions, compared to heavy fuel oil, improving air and water quality while contributing to climate action.

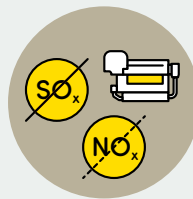
While the emissions profile of LNG is better than oil-based alternatives, the benefits of its use are threatened by methane slip: the escape of unburned methane as exhaust. With a warming potential 28 times higher than CO_2 , methane slip represents a significant hurdle for short- and medium-term decarbonisation efforts.



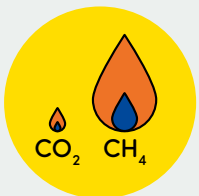
FACTS



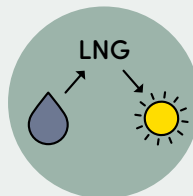
The global shipping industry is responsible for 3% of GHG emissions



LNG engines emit no SO_x and 90% less NO_x than conventional fuels



Methane has 28 times more warming potential than CO_2



LNG has been identified as a bridging fuel in the decarbonization of the sector

RESOURCES

- [Mind the methane gap](#)
- [Fourth Greenhouse Gas Study 2020](#)
- [Maritime Forecast to 2050](#)
- [Pathways to Sustainable Shipping Report](#)

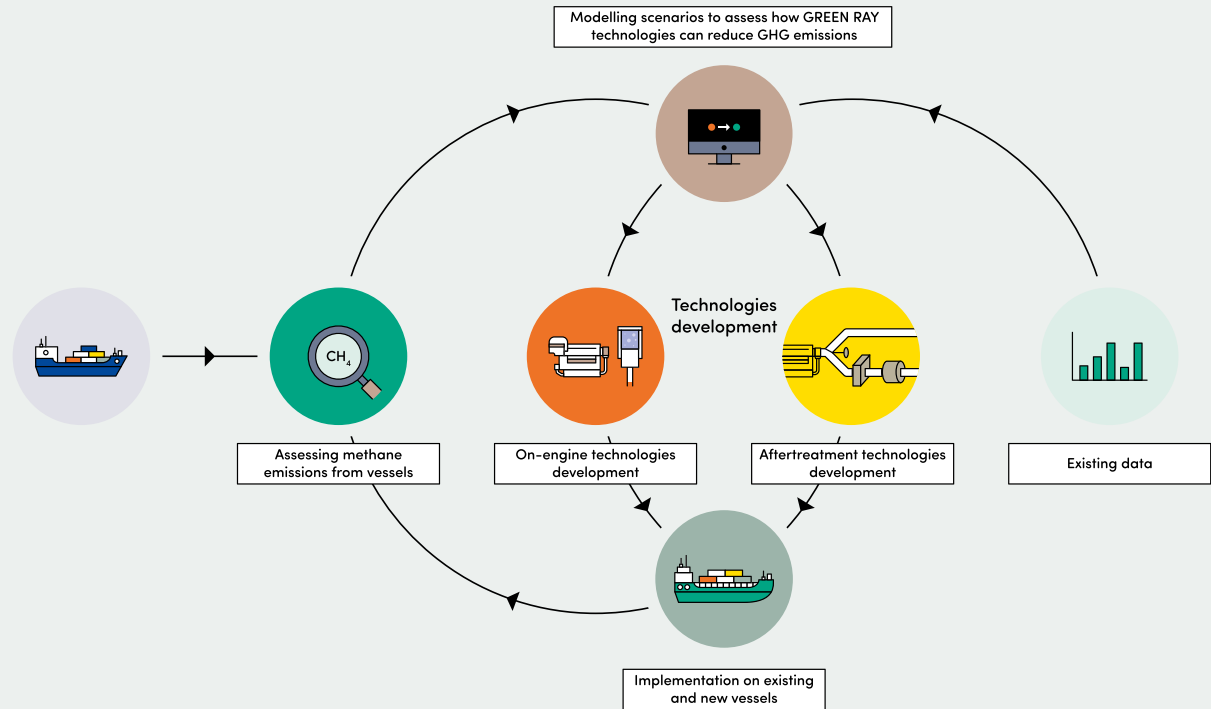
Project Overview



ABOUT

GREEN RAY is an Horizon Europe project that aims at minimising methane slip from Liquefied Natural Gas (LNG) vessels to enable clean waterborne transport. By developing three innovative technologies for LNG engines that can be installed on new and existing ships, GREEN RAY is working to reduce the negative impact of waterborne transport and protect human and environmental health.

GREEN RAY targets the low-pressure dual-fuel concept, as this is the most popular LNG engine technology. To address the issue from multiple angles, the project will provide solutions to reduce methane slip in two- and four-stroke engines as well as tackle the remaining methane slip through the development of an aftertreatment technology to convert the escaping methane into a less potent greenhouse gas (GHG).



PARTNERS



KEYWORDS

- Methane slip
- LNG engine
- Waterborne transport
- Maritime transport
- GHG emissions
- Methane abatement

BUDGET

Total budget: € 6.793.122,50

For more details about Partners and Budget, visit [CORDIS](#).



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