



Council of the  
European Union

Brussels, 16 July 2021  
(OR. en)

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**Interinstitutional File:**  
**2021/0210(COD)**

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10327/21  
ADD 3

TRANS 466  
MAR 140  
ENV 501  
ENER 319  
IND 191  
COMPET 546  
ECO 77  
RECH 347  
CODEC 1068

#### COVER NOTE

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From: Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director

To: Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union

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No. Cion doc.: SWD(2021) 636 final

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Subject: COMMISSION STAFF WORKING DOCUMENT EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT Accompanying the Proposal for a Regulation of the European Parliament and of the Council on the use of renewable and low-carbon fuels in maritime transport

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Delegations will find attached document SWD(2021) 636 final.

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Encl.: SWD(2021) 636 final



Brussels, 14.7.2021  
SWD(2021) 636 final

**COMMISSION STAFF WORKING DOCUMENT**  
**EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT**

*Accompanying the*

**Proposal for a Regulation of the European Parliament and of the Council  
on the use of renewable and low-carbon fuels in maritime transport**

{COM(2021) 562 final} - {SEC(2021) 562 final} - {SWD(2021) 635 final}

## Executive Summary Sheet

Impact assessment on FuelEU Maritime

### A. Need for action

#### Why? What is the problem being addressed?

The current maritime fuel mix relies almost entirely on liquid fossil fuels or liquefied natural gas. Ramping up the use of renewable and low-carbon fuels (RLF, including liquid biofuels, e-liquids, decarbonised gas (incl. bio-LNG and e-gas), decarbonised hydrogen, decarbonised hydrogen-derived fuels (including methanol, and ammonia) and electricity) will be essential for maritime transport to contribute to the EU climate goals. Under the modelling undertaken in support of the 2030 Climate Target Plan (CTP), RLF should provide 6-9% of the maritime fuel mix in 2030 and 86-88% by 2050 to contribute to the climate neutrality objectives by 2050. Several drivers underpin this problem: (1) lack of predictability in the regulatory environment and resulting in high investments risks, (2) low maturity of alternative technologies with high investment risks for first movers, (3) higher costs of alternatives compared to fossil fuels, (4) interdependency between demand, supply and distribution aspects, and (5) possibility of bunkering outside the EU, which implies a risk of carbon leakage.

#### What is this initiative expected to achieve?

The general objective of this proposal is to provide a clear regulatory framework to facilitate planning and long-term investments in the maritime sector and complement existing legislation (Alternative Fuel Infrastructure Directive - AFID, Renewable Energy Directive - RED) by providing a clear signal for market demand on RLF while reducing the risk of carbon leakage. The proposal is therefore expected to improve the use of RLF, facilitate the production and use of mature options and stimulate technology development. In doing so, it will complement other initiatives of the 'Fit for 55' package to address maritime emissions (e.g. inclusion of maritime transport in the EU Emission Trading System, revision of Energy Tax Directive, AFID and RED).

#### What is the value added of action at the EU level?

The cross-border dimension of the sector requires coordinated action at EU level. Without action at EU level, a patchwork of incoherent regional or national requirements might develop. The identified problems and the underlying drivers do not fundamentally differ from one Member State to another, so it is preferable to address these issues at EU level. This proposal would contribute to achieving EU-wide economies of scale by using RLF, while avoiding carbon leakage. At the same time, it would ensure a level playing field between operators calling in EU ports and between the EU ports.

### B. Solutions

#### What legislative and non-legislative policy options have been considered? Is there a preferred choice or not? Why?

Three policy options have been considered. They share two main characteristics: (i) providing legal certainty and focusing on demand-side aspects to stimulate production and (ii) using RLF while addressing the chicken-and-egg situation to avoid carbon leakage. The options differ on their approach to technology choice and the way the required performance is achieved.

Option 1 is a prescriptive approach, requiring *shares of specific fuels* to be used. It implies a technology choice by the regulator. Both options 2 and 3 are goal-based, setting *maximum greenhouse gas intensity limits* for the energy used on-board. This leaves the technology choice to market operators. Option 3 also contains mechanisms to reward over-achievers (pooling and multipliers for zero-emission technologies). All options require the most polluting ships in ports (containerships and passenger ships) to use on-shore power supply (or an equivalent zero-emission technology).

Following the assessment, policy option 3 is identified as the preferred option. It strikes the best balance between the objectives to be achieved and the overall implementation costs. The goal-based and technology-neutral approach answers the need for flexibility, which have been stressed by stakeholders during the consultation process (in particular operators and ports). The mechanism for rewarding over-compliance reduces the risk of technology lock-in.

#### Who supports which option?

The consultation results show that all stakeholder groups favour a goal-based approach over a prescriptive one both for ships in navigation and at berth. Another preference among most stakeholders is technology neutrality. Multiple stakeholders, including in particular NGOs and technology suppliers explicitly indicate that prescriptive measures for a certain technology would be suboptimal, because of the high risk of technology lock-in and stranded assets. Option 3 has therefore been recognised as the stakeholders' preferred option.

<b>C. Impacts of the preferred option</b>
<b>What are the benefits of the preferred option?</b>
<p>All costs and benefits are expressed in relation to the baseline scenario, as present value over the 2021-2050 period (in constant prices of the year 2015). The increased penetration of RLF in the maritime fuel mix will translate into a significant reduction in GHG emissions and, to a lower extent, of air pollution emissions. Monetized benefits have been estimated at €10bn for air pollution and €138.6bn for climate change. Savings of €2.3bn are expected to be achieved by ship operators due to reduced operating costs (maintenance, crew, etc.). These projections also factor in a small decline in maritime transport activity.</p> <p>An additional noticeable impact concerns the use of advanced fuels and propulsion technologies and their indirect impact on innovation. The proposal is expected to boost the penetration of fuel cell-powered vessels (18.9%) in the fleet as well as electric propulsion (5.4%) by 2050 (compared to no penetration of these technologies in the baseline scenario). Additional environmental benefits may derive for instance by the increasing use of electricity in ports and during navigation, such as the reduction of underwater noise or water pollution from deposition of exhaust gases in the sea, but these have not been assessed.</p>
<b>What are the costs of the preferred option?</b>
<p>Ship operators will bear the main cost under the proposal, which amounts to €89.7bn. It results from increased capital costs (€25.8bn) and fuel costs (€63.9bn). Indirect costs for ports will be linked to the necessary bunkering infrastructure, which are estimated at €5.7bn.</p> <p>Administrative costs for ship operators are estimated at €521.7m resulting from data collection, submission and verification of the compliance plans and the annual energy report, cooperation during audits and inspections as well as crew training. An additional €1.8m have been identified to develop guidelines for ports to guarantee the safe handling of RLF. Specific costs for fuel certification could not be quantified.</p> <p>Enforcement costs for public authorities are expected to be limited (€1.5m) and the focus will be on providing the necessary IT reporting tools.</p> <p>The preferred option provides net benefits amounting to €58.4bn over the time horizon of the proposal.</p>
<b>How will businesses, SMEs and micro-enterprises be affected?</b>
<p>To increase flexibility and recognise the different operating conditions, businesses, including SMEs, will have a flexibility in the choice of RFL. When considering options to allow for pooled compliance, the fleet approach was rejected to not discriminate against SMEs. Instead, averaging by voluntary transfer allowing compensation of balances between operators was preferred.</p>
<b>Will there be significant impacts on national budgets and administrations?</b>
<p>As compliance will be assessed by third-party verifiers and will mostly rely on existing IT tools provided at EU level, the impact on national budgets and national administrations is limited. Since verification is a pre-condition for issuing the document of compliance, the need for increased port state control inspections is considered minimal.</p>
<b>Will there be other significant impacts?</b>
<p>Competitiveness of the EU maritime sector is likely to improve through a better position of R&amp;I institutes and technology providers. The impact of increases in fuel costs on freight rates costs is expected to be relatively modest. The increase in diesel-blend costs could result in a 0.8% to 15.1% increase of the freight rate by 2050 (0.1% to 2.5% by 2030).</p>
<b>D. Follow up</b>
<b>When will the policy be reviewed?</b>
<p>Based on data collected under Regulation (EU) 2015/757 and additional information obligations under this proposal to demonstrate compliance, the RFL penetration rate will be closely monitored on a yearly basis. The policy will be evaluated five years after its implementation date.</p>