D6.2 Identification of major trends in future biofuel demand

Short Overview

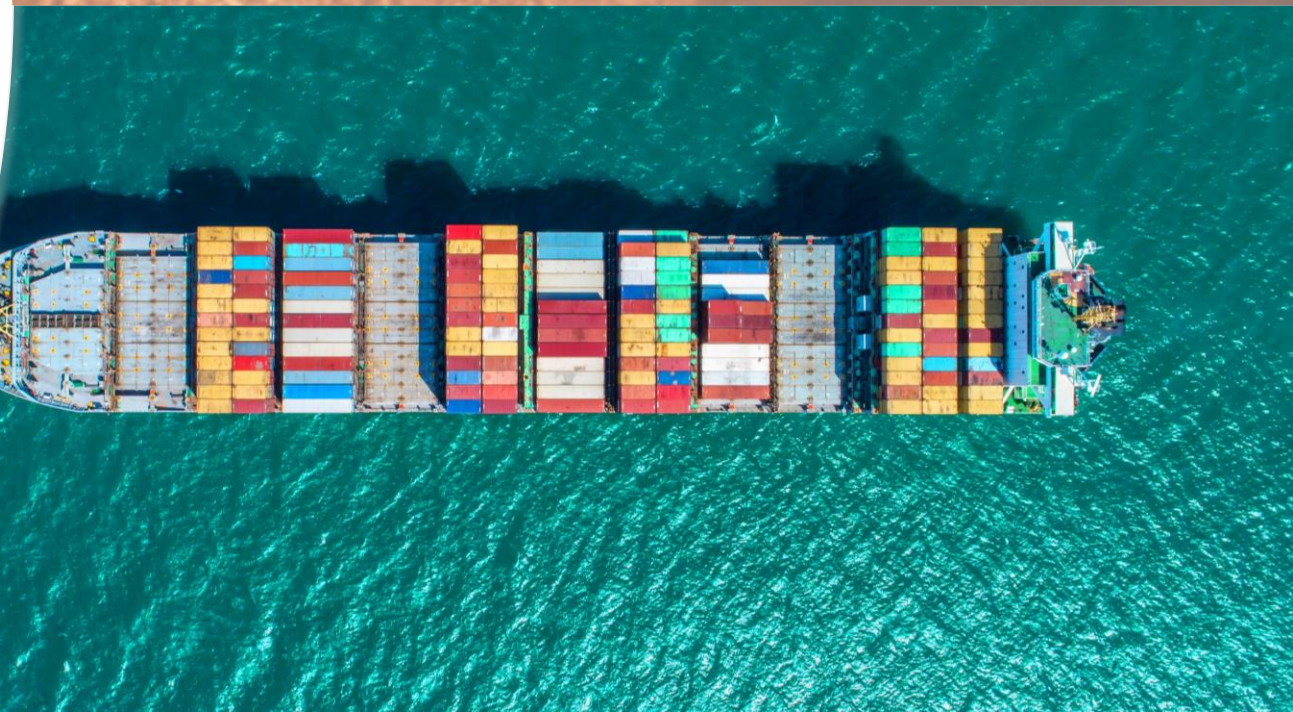
BL2F

Transforming Black Liquor to Biofuel

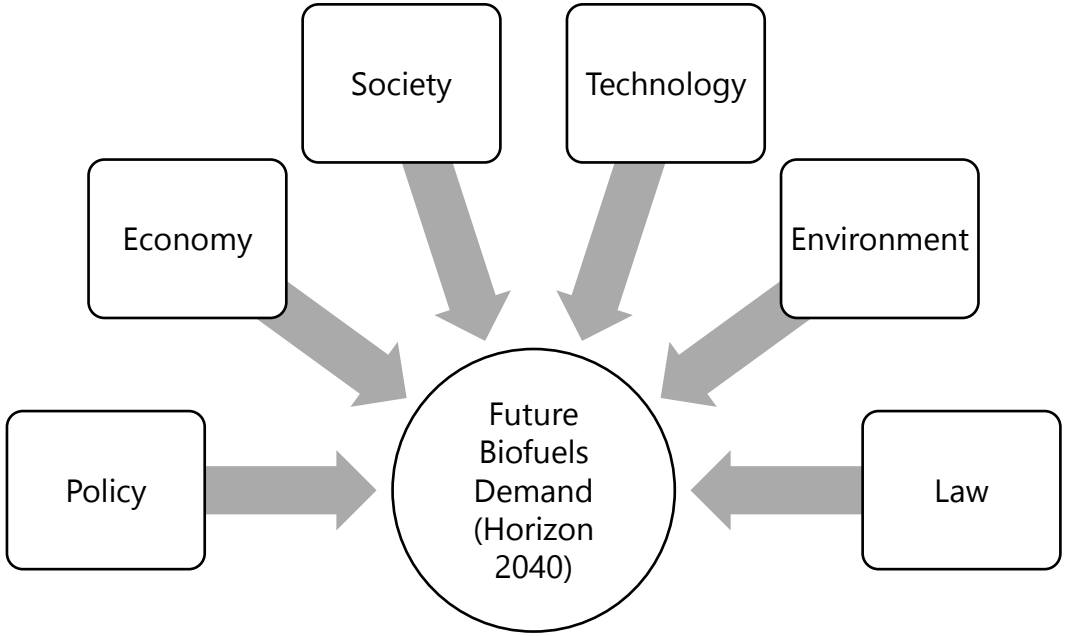
This project has received funding from the European Union Grant Number 884111

Objective

- Analysing the major trends that will influence the demand for biofuels in aviation and shipping in Europe (time horizon 2040).



Methodology



For this study, a PESTEL analysis was carried out with the inputs of several experts who were interviewed on several identified factors.
The PESTEL analysis constitutes a framework of macro-environmental factors.

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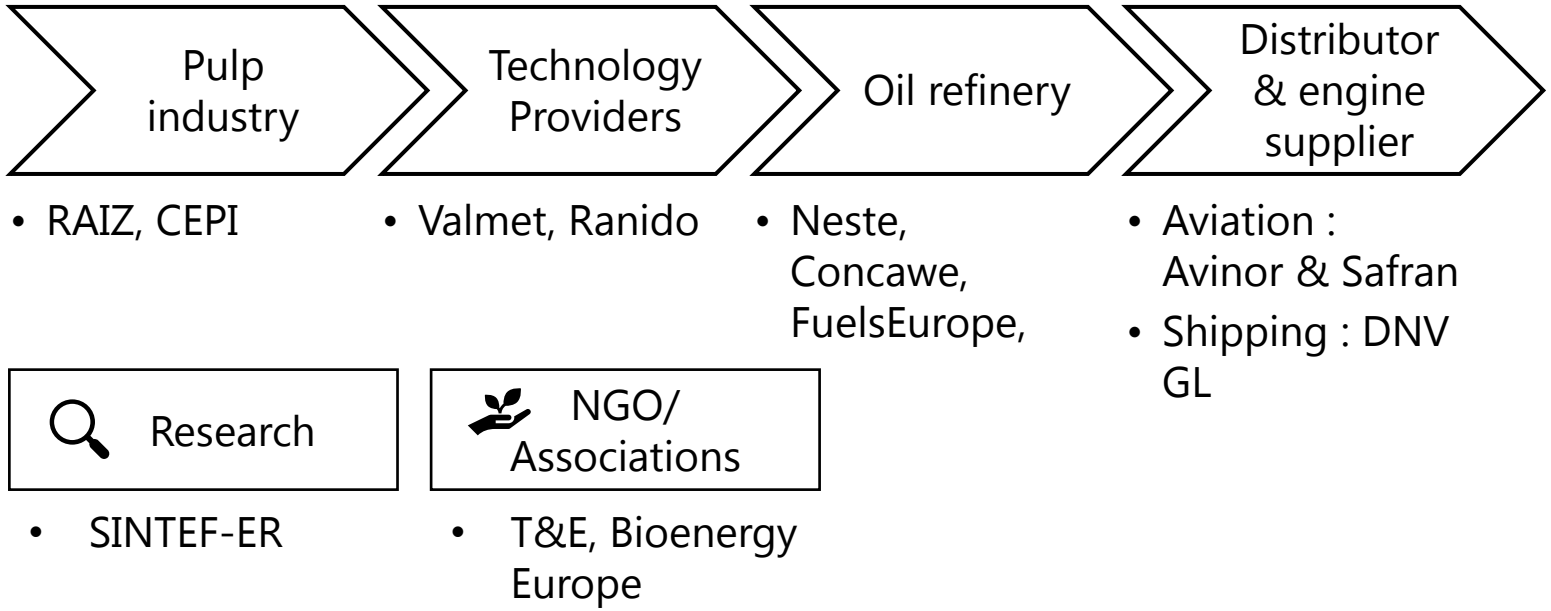
Methodology

A total of 13 experts were interviewed, with diverse expertise related to biofuels in aviation and/or shipping, or pulp industry (all along the value chain).



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Methodology

As a first step, some major factors that may have an impact on the future biofuel demand were identified (presented hereafter).

- Influencing factors were analysed in terms of
  - Intensity of consequences:
  - Probability
  - Time horizon

Goal : Generate an impact index to quantify the impact of each factor on the future biofuel demand and hierachise factors

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Methodology

Example of graph (Next slide)

For instance, 7 factors that may have an influence on the future biofuel demand were identified in the political dimension. These factors were rated by experts justified with qualitative insights.

In the next slide, factor P1 is the one with the most significant impact index, meaning the factor with the most significant impact on future biofuel demand

What is implied by « factors with the most significant impact » ?

→ High intensity (closest to 4), High probability of occurrence (closest to 4), Short term (closest to 4)

→ Overall impact index > 30

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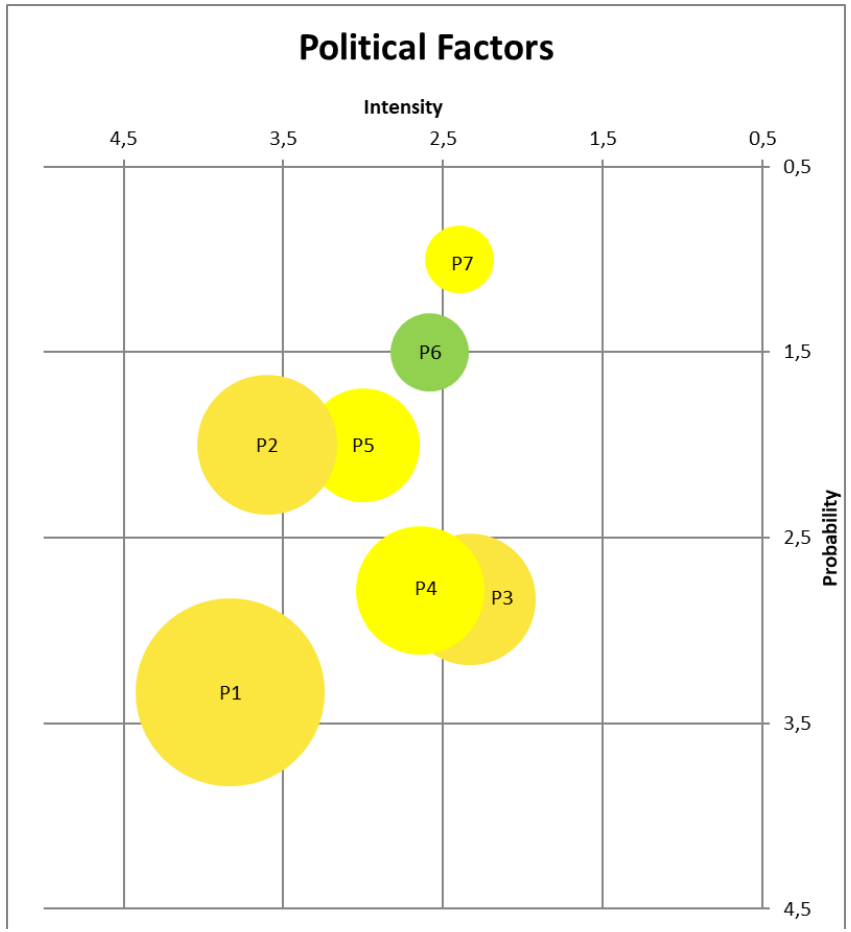
Methodology



Code	*Factor*	*Intensity (1 = weak / 4=strong)*	*Probability(1 = weak / 4 = Strong)*	*Term (1 = LT / 4 = ST)*	Impact Index
P1	**Policies promoting biofuels in aviation and shipping**	3,8	3,3	2,8	**36,2**
P2	Policies supporting biofuels in other sectors than aviation and shipping	3,6	2,0	2,8	20,2
P3	Policies diminishing EU ETS quota in aviation and shipping	2,3	2,8	2,7	17,6
P4	Policies promoting low-carbon energies	2,6	2,8	2,3	16,8
P5	Consolidation of the shipping industry in terms of policies	3,0	2,0	2,2	13,2
P6	Policies promoting domestic and local energy production	2,6	1,5	1,6	6,2
P7	Political crisis	2,4	1,0	2,0	4,8

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Main results:
Zoom on the factors with the most significant impact on future biofuel demand

Around 30 factors that may have an impact on the future biofuel demand were identified .
Experts interviews enabled the prioritisation of 4 major factors that will have a major influence on the future biofuel demand.

Major factors influencing future biofuel demand

Dimension	Factors with the most significant impact on future biofuel demand	Impact Index
Political	Policies promoting biofuels in aviation and shipping	36
Economic	High cost competitivity of fossil fuels	35
	Cost competitivity of imported biofuels	32
Societal	Health crisis	37

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Major political and legal factors influencing future biofuel demand

Policy will be the most decisive factor in the evolution of the biofuel demand in the next 20 years.

Discussions with experts highlighted that the use and demand for biofuels in Europe will mostly be driven by political decisions, which will be among the highest impactful factors on the future biofuel demand.

The 6.1 deliverable (policy & stakeholder mapping) of BL2F underlined that an increasing number of policies promoting biofuels and advanced biofuels in aviation and shipping are expected at both European and national scales, along the lines of the RED II Directive. Throughout the last few years, several European countries have been implementing biofuel and advanced biofuel mandates in aviation or shipping, and this trend is expected to continue.

The push of policies towards biofuels and advanced biofuels will be key to driving the biofuel demand in the next 20 years. Biofuels are needed for the decarbonisation of the transportation sector and attract great interest to both the aviation and shipping industries. Interviews conducted with experts highlighted that biofuels are one out of multiple solutions to decarbonize aviation, and will most likely be a medium-term solution for aviation.

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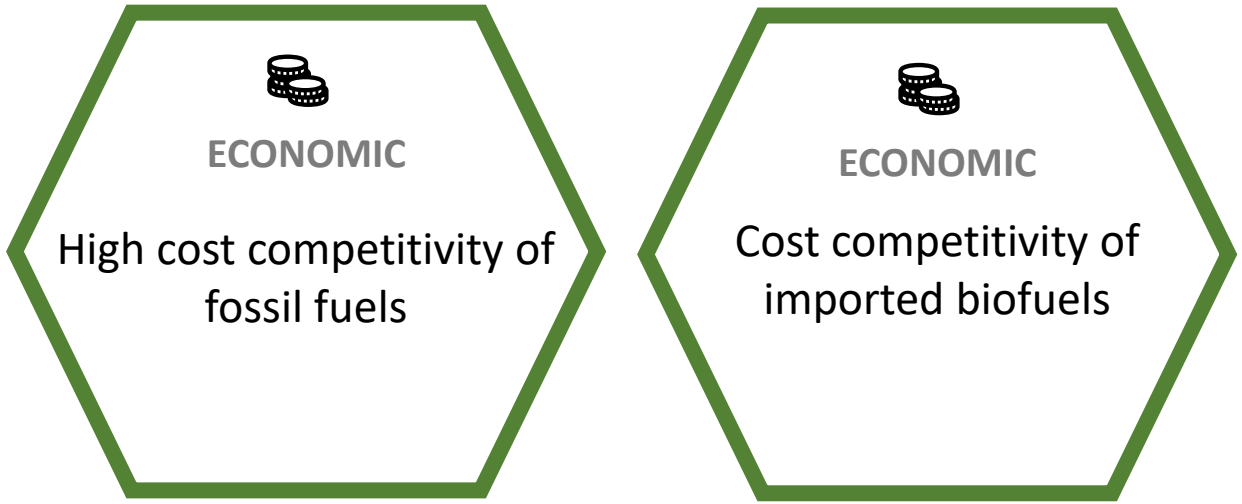
Major economic factors influencing future biofuel demand



High cost and competitiveness of fossil fuels:

Fossil fuels will remain competitive over biofuels in the next 20 years. Indeed, although the share of renewable and sustainable fuels will increase over time, the share of fossil fuels may remain dominant by 2040.

Without policy interventions, accounting for the environmental cost of fossil fuels, solutions to make biofuels more affordable or a decision to favour their use by end-users, fossil fuels will continue to be favoured by the targeted industries as a principal source of energy and demand for biofuel risks remaining at a low level.

Cost competitiveness of imported biofuels

The cost competitiveness of advanced biofuels partly depends on the degree of proximity of the feedstocks to the market. However, the cost competitiveness of first-generation biofuels imported from Asian countries, including palm oil, has been a driver for the biofuel demand in the last years. However, the phase-out of palm oil from transport fuel adopted by the EU in 2018 announces a drop in the demand for food-based fuel.

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Major societal factors influencing future biofuel demand

The Covid-19 crisis, which led to a societal, economic and political crisis, was taken as a concrete example to illustrate this factor. The global pandemic drove acute political decisions at national levels to respond to an unpredictable threat, having a high impact on the economy, including the transportation sectors and society, impacting citizens' mobility.

With an impact index of 37, this factor is one of the most impactful, influencing strongly the future biofuel demand in the short term. This crisis drove lower demand for aviation and shipping, decreasing the demand for biofuel in these sectors (Cristina Mestre T&E, 2020). Covid-19 however has a limited impact on long term energy demand, as it rebounds quickly post-crisis (McKinsey, 2020).

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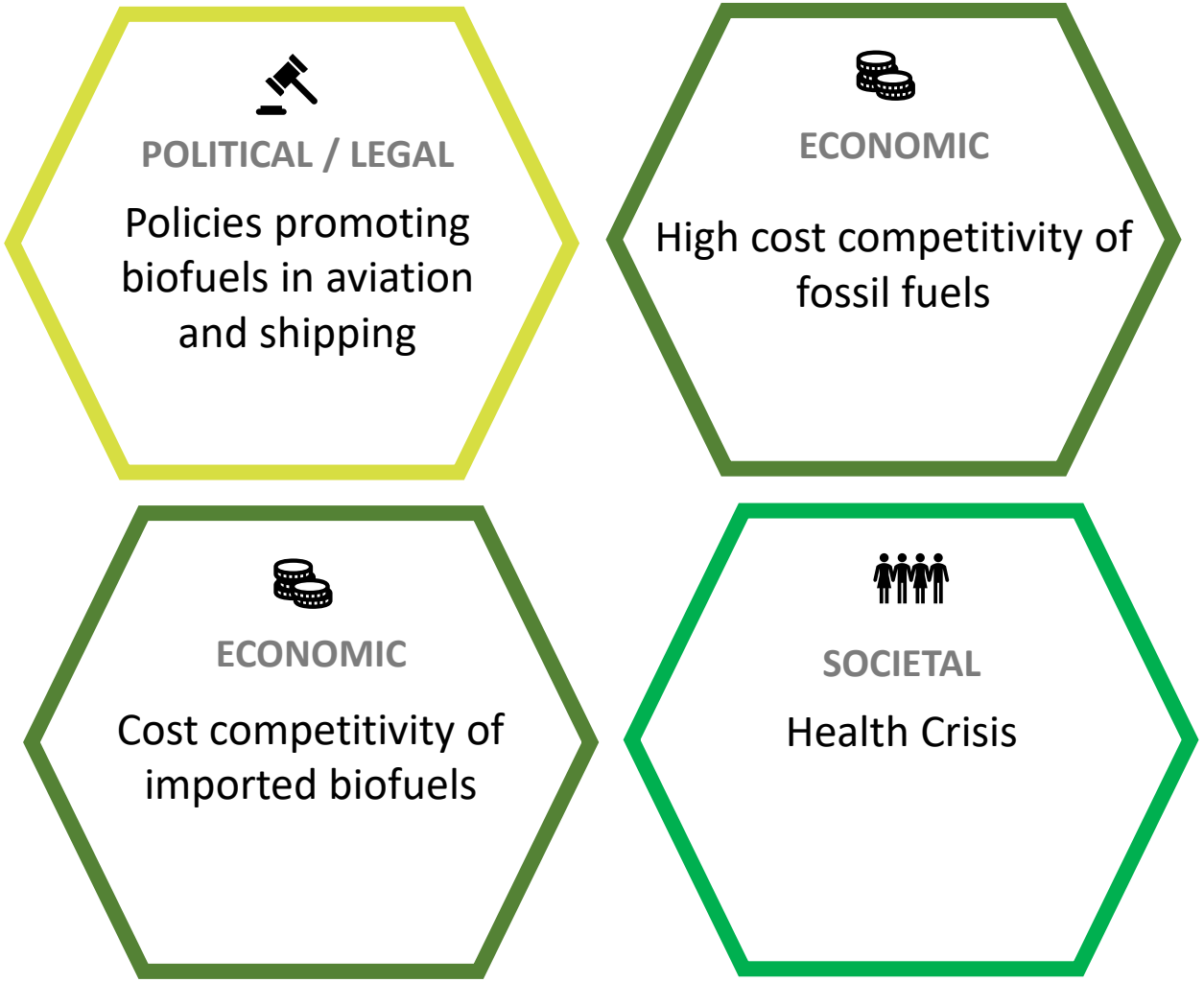
Major factors influencing future biofuel demand



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