

ENCONTRO EFS 22

ALUNOS ♦ EMPRESAS

Biomass to Advanced Biofuels: Maritime Sector as Potential Consumer

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Motivation and Objectives

- The emissions of the maritime transport sector represent 3.8% of the total in the EU.
- Biofuels will represent around 26 EJ in all transport sectors by 2050
- Unfeasible retrofitting of the current ships to LNG, methanol and other alternative fuels
- Hydrogen and Ammonia are potential sources only in the long-term
- Biofuels, as a transition source, are the only low-carbon fuels currently suitable for navigation
- In the European Scenario, Advanced Biofuels are the best option against the side effects of the first-generation biofuels (constrain food/feed production, deforestation)

Work plan

- ✓ The study aims to identify the biggest wheat, barley and corn producers in the EU to recover their lignocellulosic residues as a feedstock source to be transformed into Bio-FT Diesel.
- ✓ Well-to-tank assessment
- ✓ LCOE of the Bio FT-Diesel produced
- ✓ Carbon market assessment

Results

- The European continent has around 2 EJ of energy potential from grains residues (wheat, barley, maize, soybeans, and rice straw)
- Potential to produce 4.90 Mt of Bio FT-Diesel Annually (220 PJ) in 9 different countries
- Reduce 8.40% of CO₂eq per year
- Explore a carbon market of 260 M€ per year

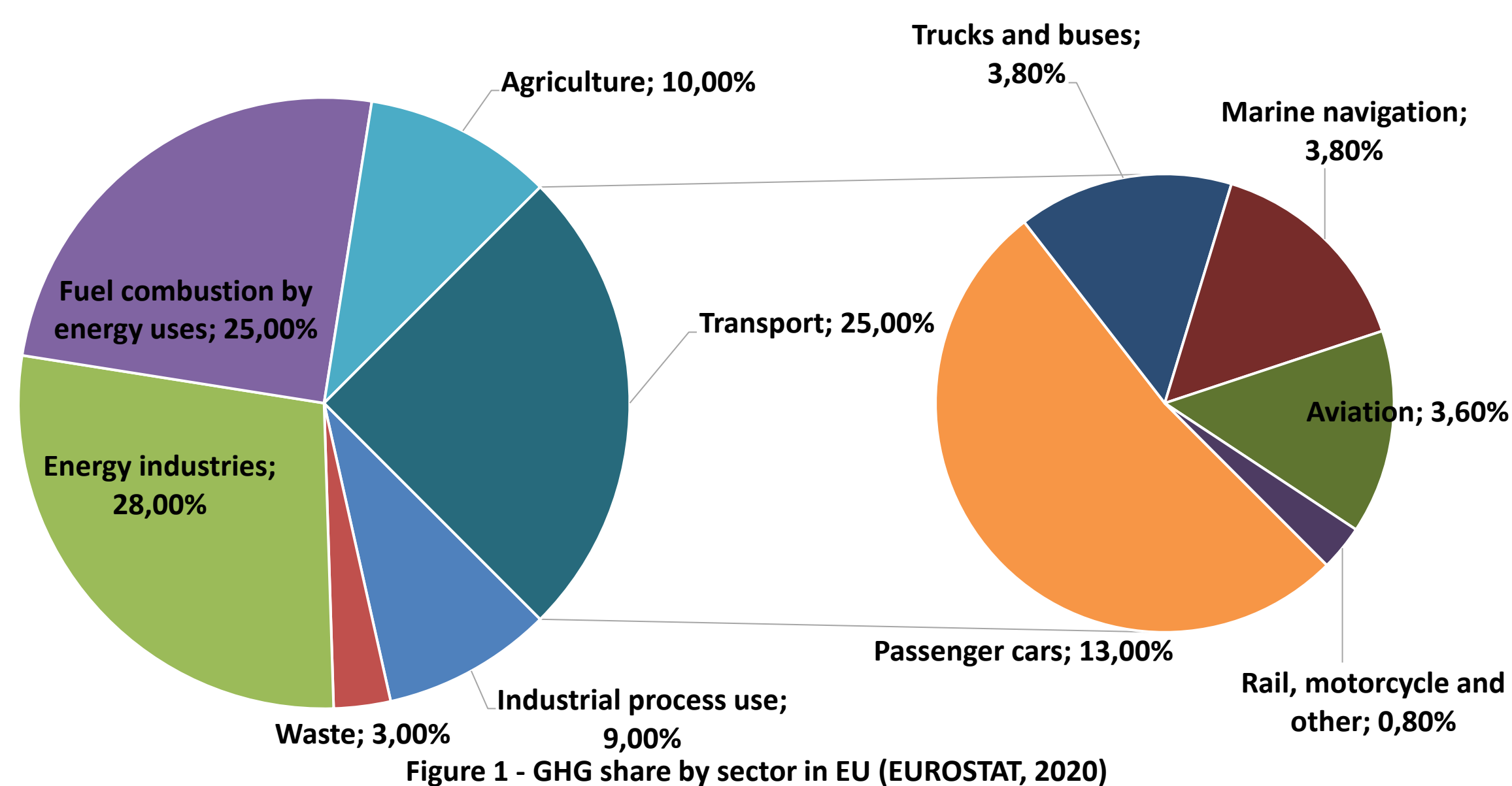


Figure 1 - GHG share by sector in EU (EUROSTAT, 2020)

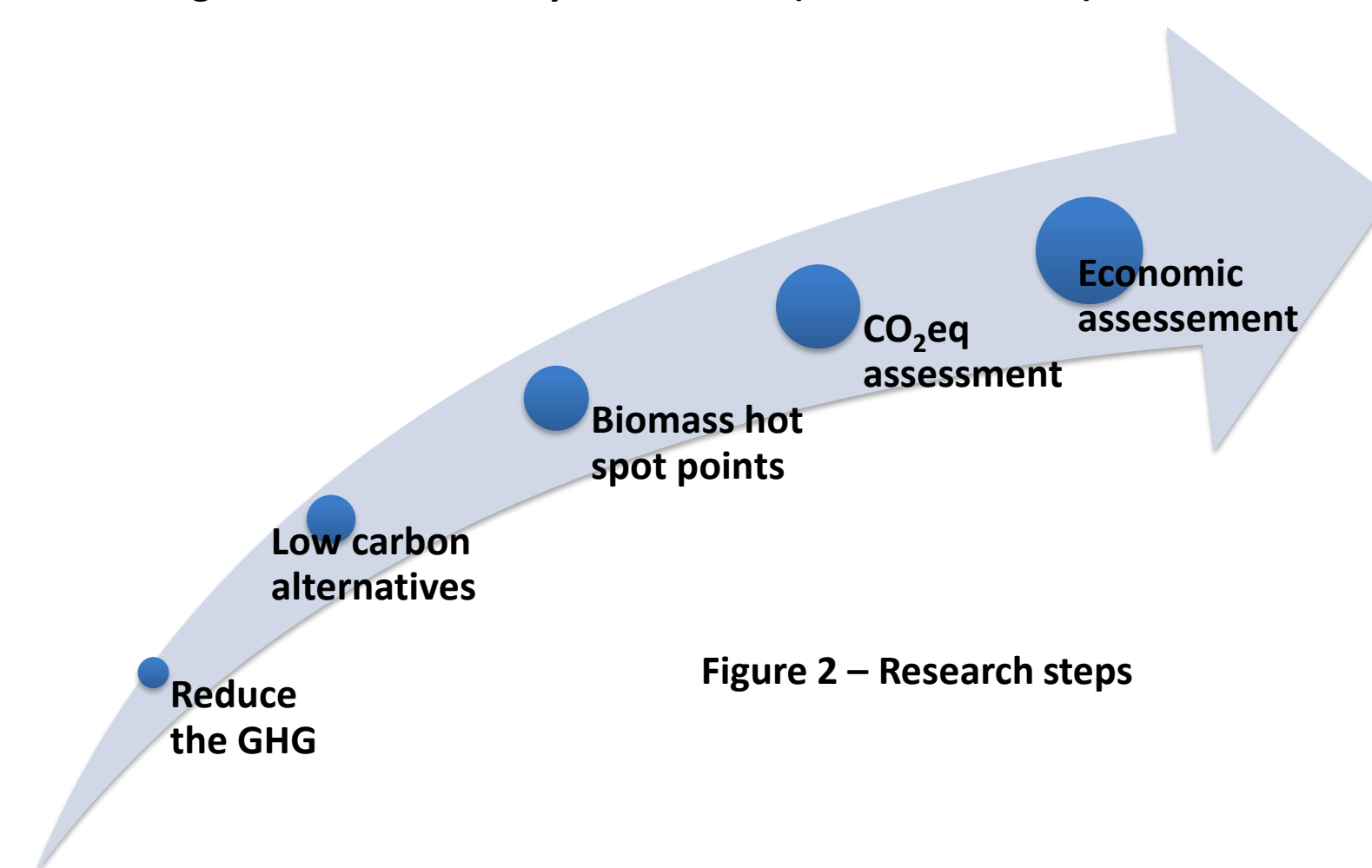


Figure 2 - Research steps

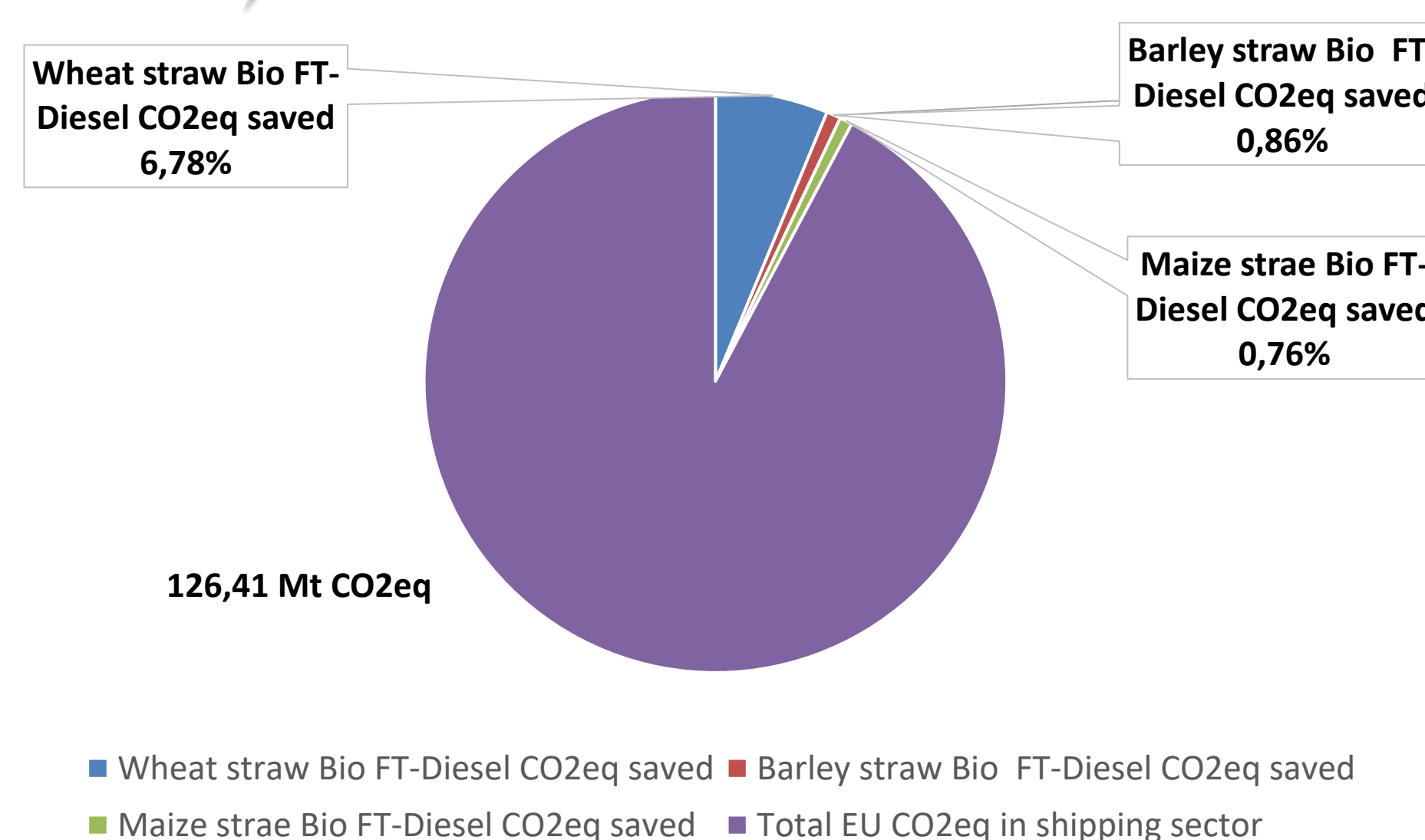


Figure 3 - CO₂eq saved in the EU shipping sector