

Thursday, 19. February 2026

Session Energy (Room Amsterdam 2)

19–20 FEBRUARY 2026

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Sustainable Fuels Deployment for European Aviation, Maritime and Heavy Load Transport

Asif Ansar, Ralph-Uwe Dietrich, Nathanael Heimann, Yoga Rahmat
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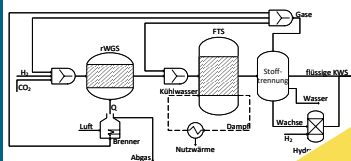


• Sustainable Fuels Deployment for European Aviation, Maritime and Heavy Load Transport • Dietrich, et. al • Dusseldorf • 19th February 2026

Techno-Economic and Life Cycle Assessment

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Economic
assessment

Technical
evaluation

TEPÉT
Standardizing economic process evaluations

Environmental
evaluation

Rigorous process simulation

- ☐ Efficiencies (X-to-Liquid, Overall)
- ☐ Carbon conversion
- ☐ Specific feedstock demand
- ☐ Exergy analysis



Chemical engineering cost estimation

- ☐ Year-specific CAPEX, OPEX, NPC
- ☐ Sensitivity analysis
- ☐ Identification of most economic feasible process design

Adapted ISO 14040/14044 LCA

- ☐ GWP
- ☐ Other impact categories
- ☐ Identification of impact drivers

Project ideas in CL5

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Topic1: New / advanced sustainable fuel and chemicals production

- New / advanced feedstocks | New production processes | New fuel types | Base chemicals like ammonia, synthetic methane, methanol, ...
- ☞ HORIZON-CL5-2026-02-D3-24: New CO2 capture technologies
- ☞ HORIZON-CL5-2026-02-D3-02: Competitiveness, energy security and integration aspects of advanced biofuels and renewable fuels of non-biological origin value chains
- ☞ HORIZON-CL5-2026-02-D4-06: Phase out fossil fuel in energy intensive industries through the efficient integration of renewable energy sources
- ☞ HORIZON-CL5-2026-02-D3-01: Large-scale production of liquid advanced biofuels and renewable fuels of non-biological origin

Project ideas in CLEANH2

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Topic2: Hydrogen Value Chain

- New / advanced electrolyzers | Upstream integration: fluctuation | Downstream integration: storage, transport, system integration
- ☞ HORIZON-JU-CLEANH2-2026-01-01: Development and validation of innovative approaches, catalysts, electrolytes and components for electrolysis technologies based on low-quality water
- ☞ HORIZON-JU-CLEANH2-2026-01-03: Improved components and tools to increase the safety of electrolyzers
- ☞ HORIZON-JU-CLEANH2-2026-01-04: Innovative business models advancing renewable electrolysis integration in industry
- ☞ HORIZON-JU-CLEANH2-2026-03-0: Multi-fuel SOFC powertrain for maritime transport

Partner search

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Type and role of partners

- Fuel consumer on the way to sustainable transport?
 - Explore new fuels and its impact on your environmental footprint and costs
- Fuel / chemicals supplier with pressure to become sustainable?
 - Explore the integration of renewables into your production scheme
 - Find electrolyzer applications that fit into your
- Technology supplier for fuel and chemicals?
 - Explore new process routes that include renewable feedstocks
- Technology developer for sustainable products?
 - Search for the economic and ecological optimal production
 - Quantify opportunities for improvement, localize bottlenecks
 - Predict new processes market rollout

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DLR-ESI Expertise Examples

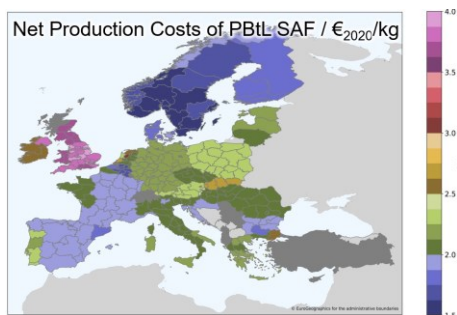
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Example 1: Where and how to produce SAF in Europe? At what cost?



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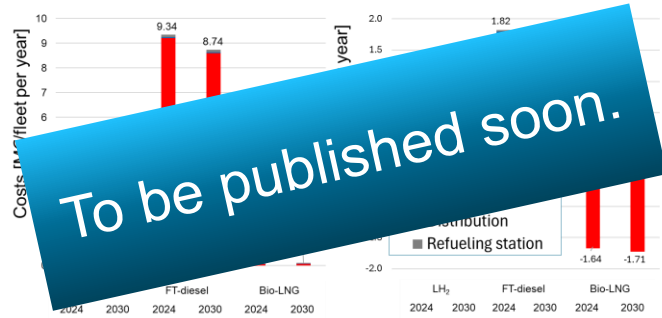
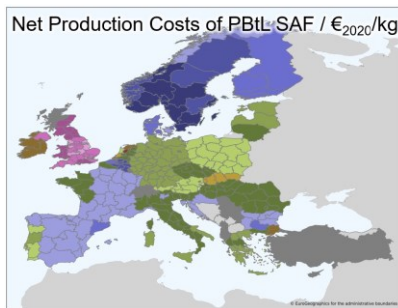


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Example 1: Where and how to produce SAF in Europe? At what cost?

Example 2: Fuel cost and Global Warming Potential of Truck fleets



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Example 1: Where and how to produce SAF in Europe? At what cost?

Example 3: Environmental Impacts of renewable diesel

Example 2: Fuel cost and Global Warming Potential of Truck fleets

