

E-fuels: technology, economics, and actionable regulatory options

Background

Synthetic fuels (also known as e-fuels) are produced from electricity, carbon dioxide (or nitrogen in the case of e-ammonia), and low-carbon hydrogen. These products have lower carbon intensity than conventional fossil-based fuels and can utilize the existing fuel infrastructure due to their ability to blend with or replace existing fuels. As a result, these products are regularly presented as a critical technological option to decarbonize the emissions from hard-to-abate sectors (e.g., civil aviation, freight transportation). Indeed, e-fuels are projected to provide the bulk of the projected emissions reductions in these sectors. Against this background, understanding the conditions for the deployment of the new processing industries that will manufacture these e-fuels is key.

Missions

The purpose of this internship is twofold.

First, the intern will conduct a meticulous review of the small but rapidly growing techno-economic literature on both e-fuels and the manufacturing of these fuels. The ambition is to identify and analyze the different barriers (i.e., the technological, industrial, infrastructure, and institutional factors) that can hamper the deployment of these technologies. The goal is to assess the private sector's propensity to invest in these processing plants and to characterize the conditions for building them ahead of proven demand.

Second, the intern will produce a policy-oriented note that will discuss the different public policies (namely, the set of fiscal, market design, and regulatory actions) that can support the emergence of that emerging industry.

By nature, this internship aims to accumulate the essential knowledge needed to define a policy-relevant and academically ambitious doctoral project on this emerging industry.

Profil

This position is for a master's student with a good energy and environmental economics background and a strong interest in industrial organization and regulatory policy questions. Some knowledge of the underlying engineering can be helpful but not necessary.

The candidate must have organizational ease, autonomy, and the ability to interact with various interlocutors of the Chair. He also must demonstrate good writing skills in English.

A personal interest in the areas of the economics of climate change is a strong asset.

This internship can lead to a CEC thesis project.

Duration: Starting March-April 2024 for a 6 month-period

Location: Chaire Economie du Climat, Palais Brongniart, 28 Place de la Bourse, 75002

Salary: 80% minimum wage + meal vouchers-face value 9€

Contact and documents: send CV, Cover letter **plus** Master 1 grades (and Master 2 grades available) in **only ONE PDF file** to claire.berenger@chaireeconomieduclimat.org indicating the internship offer's (**only 2 applications maximum on all CEC internships offers**)

Application closure: January 9th, 2024

Interviews from January 10th, 2024

Final response to candidates: January 31st, 2024