

17J003 - Internship Proposal

Title: *Dimensioning and evaluation of reference H2 early market use cases in France*

EIFER (European Institute for Energy Research) was established in 2001 as collaboration between the Karlsruhe Institute of Technology (KIT) and Electricité de France (EDF). Today EIFER has an international team of more than 100 researchers. The hydrogen team is currently looking for a student in the scope of a prospective study related to hydrogen early markets.

Hydrogen can be considered both as an energetic carrier (energy storage, fuel for transportation devices etc.) and as an industrial raw product used in different sectors of the industry (steel, glass, food, chemicals and plastics etc.). Electrolysis enables carbon free generation of hydrogen directly at end application sites and hence is a promising option for decarbonizing some industry sectors and developing energy smart-solutions for industrial environments/applications, including valorizing and managing local production of electricity or grid services provision.

The assigned tasks involve

- Fundamentals / Sectorial analysis of current and upcoming hydrogen consumption in France
 - Applications, localization, profile of major consumers, technical and economic constraints
 - Analysis of conventional H2 providers for France with localization and characteristics of production
 - Analysis of electricity price structure in France (energy part, taxes, grid fees on regular and reserve markets) and regulations applying for industry sectors
 - Analysis of current and upcoming regulatory framework for self-production and self-consumption of electricity in France (legal basis, feed in tariffs). Panel of (industrial/commercial) committed electricity self-generating companies.
- Technical economic analysis / Modelling work
 - Description of reference use cases based on market picture revealed previously
 - Modelling H2-production and usages of the reference use cases and optimization work (sizing of installation (CAPEX) and operating strategy (OPEX) with regard to given H2-demand profiles to lower TCO
- Emerging conclusions / Key factors for success
 - Based on algorithms/strategies developed, sensitivity analysis to identify Key factors/indicators required for already mature or future business cases. SWOT analysis
 - Recommendations and next points to be further investigated

Required qualifications / skills / interests

The position is aiming at students in technical/economics sciences.

- Interested in the field of energy and environment
- Knowledge in modelling/programming (intermediate level)
- Analysis of public databases
- Fluent in French and English, additional knowledge of German would be of value

Conditions

- Duration: 6 months, starting at soon as possible
- Location: EIFER, Emmy-Noether-Str. 11, 76131 Karlsruhe, Germany
Working hours: 39.5 hours per week
Monthly compensation: 450 €

Contact

If you want to join a highly motivated research group, please forward your application including all relevant information (curriculum vitae and cover letter, in French or English) to jobs@eifer.org. Please refer to the offer number 17J003!

For additional information concerning the work please contact: Annabelle Brisse, brisse@eifer.org, Tel. +49 (0) 721/6105-1317.