Position: Fuels Quality and Emissions Science Associate

Type: Open-ended Contract
Start: September 2022

Application deadline: 24th June 2022

The evaluation of renewable and low-carbon fuels, in the frame of the refining industry transition, along with the electrification of transport, is at the core of this Science Associate position and the work is directly linked to Concawe's activities in the Fuels and Emissions Management Group (FE MG) and the Low Carbon Pathways programme in the Refining in the Energy Transitioning Management Group (RET MG).

Who are we?

- Concawe is the science division of an international non-profit association (The European Petroleum Refiners Association aisbl) whose mission is to provide research and technical support to the EU refining industry in the study of environmental, health, safety and toxicity issues relating to the refining of crude oil or renewable feedstock, and the distribution and use of petroleum or renewable products. Its goal is to improve the understanding of these issues by the industry, authorities, users and other interested parties.
- The Association represents the interests of 40 Companies operating refineries in the EU. Members account for around 95% of EU refining capacity and more than 75% of EU motor fuel retail sales.

What do we offer?

- Individual Training program, technology and professional skills development
- Responsibility and autonomy in your area of expertise
- A global view and concrete involvement on industry and societal challenges
- International and dynamic multicultural environment
- Competitive salary package complemented with fringe benefits
- Enhanced work life balance (working from home, sliding working hours system etc.)

What do we expect from you?

The role of the Science Associate combines general duties with responsibilities specific to the field of the Concawe's Fuels and Emissions Management Group regarding fuel quality, specifications, life-cycle performance in vehicles/vessels including pollutant and GHG emissions, electrification and other mobility-related topics in Europe (https://www.concawe.eu/topics/fuels-quality-emissions/)

What would be your activities?

General duties

- Support the development and implementation of the annual technical research plan as agreed with the relevant Management Groups and the Science Director. The scope of the work will be mainly focused on conducting and/or supervising studies related to fuels quality and emissions. This includes monitoring the existing fuels quality, assessing the impact that new feedstock could have on fuel quality, evaluating the influence of fuel composition on emissions, evaluating the impact of partial / full electrification on pollutant and life-cycle GHG emissions.
- Together with the FEMG Science Executive, develop the scope, review proposals and manage projects (including cost control) related to the specific research areas.
- Support the Science Executives and chairs of the Concawe Fuels and Emissions Management Group (FEMG) in the execution of their responsibilities.
- Contribute to the coordination of Concawe's Special Task Forces: STF-20 (Gasoline), STF-24 (Fuels specifications – CEN/TC 19), STF-25 (Diesel), STF-26 (advanced combustion), STF-28 (aviation fuels), STF-29 (Marine fuels) and STF-31 (gaseous fuels), defining the research programme and conducting / leading the agreed projects, in collaboration with the Member Companies' experts and the Science Executive FEMG.
- Manage and steer external consultants / research centers in the development of the research programmes.
- Liaise with Member Companies and external stakeholders and provide written documentation of the results
- Report progress and inform appropriate Management Groups, Science Committee as appropriate on his/her activities.
- Write and edit Concawe technical reports, briefing papers, articles etc., on topics related to the field of activity.
- Participate in international scientific conferences and develop network
- Comply with the governance rules of the Association and ensure that the STFs are aware of these rules.

Specific research programmes and responsibilities

This Science Associate position will focus on the following main tasks, each of which is relevant to the others:

1) Fuels quality

Fuels quality are permanently discussed and regularly evolving, due to the evolution of the technologies (e.g. powertrain or refining technologies), of the environmental concerns (e.g. pollutant emissions or air quality issues), of the market or of the introduction of new feedstock (e.g. renewable fuels). In this context, The Science Associate FEMG will be in charge of coordinating the work of working groups (composed of Member Company's experts) on the following topics :

- Coordinating Concawe's Special Task Forces on Fuels specifications and follow CEN/TC 19/WG 21 (Gasoline) and WG 24 (Diesel) meetings
- Coordinating Concawe's Special Task Forces on aviation fuelsand Marine fuels.
- Coordinating the monitoring of the corresponding fuels quality performed through fuels surveys
- Coordinating the development and the evaluation of new or alternative analytical techniques
- Collaborating with other industry stakeholders and public authorities to find common ground
- Drafting and / or contributing to relevant scientific publications and articles to disseminate the results of Concawe's analysis in the subject.

2) Performance and emissions

Because of growing concerns on air quality, vehicles and vessels are requested to lower their pollutant emissions. As an essential element of the combustion, the fuel composition and its properties may (or may not) have an impact on the related performance and emissions. In this context, the Science Associate FEMG will be in charge of:

- Coordinating Concawe's Special Task Forces on Gasoline, Diesel, advanced combustion, and gaseous fuels.
- Developing and coordinating research programs evaluating the impact of fuel composition and properties on the performance and the emissions, as well as the impact of new powertrain technologies, new aftertreatment features and partial/full electrification.
- Selecting the ad hoc research centers / contractors to perform these programmes and preparing the contracts.
- Liaising with the Science Executive Air Quality (AQ) in assessing the impact that new emissions levels could have on air quality matters.
- Drafting and / or contributing to relevant scientific publications and articles to disseminate the results of Concawe's analysis in the subject.

3) Low Carbon pathways

Electrification and alternative low carbon feedstocks will play a key role, progressively replacing oil in the transition towards 2050. These alternative feedstocks will include, among others, fuels from biomass residues, waste materials, green/blue hydrogen, potentially associated with recycled CO2 to form electro-fuels ("e-fuels" or Power-to-Liquids – PtL). In this context, the Science Associate FEMG will be in charge of:

- Preparing and participating in the ERTRAC (European Road Transport Research Advisory Council) meetings, with a focus on the Energy and Environment working group, updating the roadmaps and contributing to the ad hoc working groups.
- Developing and coordinating research programs evaluating the impact of new feedstocks, their origin, their process and their life-cycle GHG emissions, as well as their impact on engine compatibility and emissions.
- Evaluating the impact of different scenarios of partial/full electrification on life-cycle GHG emissions, electricity and fuel demand.
- Selecting the ad hoc research centers / contractors to perform these programmes and preparing the contracts.
- Liaising with the Science Executives FEMG and Refining Technology (RT) in assessing the potential impact of future fuels specifications on the refining sector.
- Liaising with the Science Executive RETMG and the corresponding management group in updating about the progress of the work in this area.
- Supporting the Science Executive FEMG in the FuelsEurope's related tasks contributing to improve the understanding of existing and future challenges linked to their Clean Fuels For All strategy.

- Drafting and / or contributing to relevant scientific publications and articles to disseminate the results of Concawe's analysis in the subject

4) Support on other related Technical Projects:

In addition to the targeted activities described above, it can be expected that the SA will be involved in related technical and cross-disciplinary projects within Concawe.

The work can be structured in such a way that projects can overlap and progress in parallel. A permanent position is proposed in order to ensure that the expertise is properly retained internally.

What is your professional profile?

Education & Experience:

Note: Please be informed that all the below listed points are desirable, however not mandatory – more of the below criteria the candidate meets = higher chances he/she has to be considered for this position

- A science/engineering background and a proven track record in an oil refining industry, auto-industry, research institute or similar.
- A good understanding of the impact of fuel quality on vehicle/vessel performance and emissions, with a demonstrated knowledge in one or more specific areas related to this subject.
- A broad knowledge of the properties of petroleum and bio-based products, their manufacture and distribution, their influence on the emissions performance of on-road and off-road vehicles and the regulatory requirements governing their marketing and use.
- A strong background in engine / combustion / aftertreatment technologies.
- A good understanding of statistics: repeatability, interval of confidence, designs of experiments and statistical models.
- Capacity to quickly learn and understand the refining, biofuel and transport industries issues.
- Interest in the transition of the EU industry towards climate change ambition.
- Sound understanding on the key GHG mitigation technologies and alternative fuel options.
- Familiarity with Well-to-Wheels principles and modelling techniques to assess the CO2 impact of different technologies and alternative fuels.
- Familiarity with the related pieces of legislation at EU level (e.g. EN 228 and EN 590, Euro 6/7, FQD, CO2 standards, RED II/III).
- Some familiarity with modelling tools (modelling experience in this field is desirable but not essential), and an interest in acquiring a more in-depth knowledge and working relationships with those active in these fields.

Skills & Competencies

- Highly organized individual
- Proficiency in English (oral and written) is essential; other EU languages are an asset
- Committed to high-level and transparent science
- Keen interest and awareness of the European institutions decision-making processes for technical issues.
- A team player with the capacity to effectively facilitate technical teams
- Good communication skills, both verbal and written
- Permit to work in EU will be considered as an advantage

Additional

- Self-starter
- Ability to work in autonomous way
- Ability to adapt in multicultural environments
- Comfortable with multi-tasking
- Team-working spirit

Organisational Fit: Reports to the Science Executive Fuels Quality and Emissions

The position is based in Brussels (Belgium)
To apply, please send your CV, your bibliography and motivation letter to: recruitment@concawe.eu mentioning “CONCAWE Fuels Quality and Emissions Science Associate” in the subject of your e-mail.
By applying for this vacancy, you agree that we use your personal data for recruitment purposes only. All your private information will be deleted from our files after the recruitment process.