Announcement

Visiting Research Fellow Programme, 2019

Objectives of the Visiting Research Fellow Programme

The Visiting Research Fellow Programme (VRFP) is an innovative approach to human capacity development and is designed to help professionals from OPEC Member Countries improve their expertise and technical skills in research in an array of energy-related issues. It does this by providing participants with the opportunity to become involved in the Secretariat’s research operation through practical experience and ‘learning by doing’.

Professional Benefits to Fellows

Participants in the VRFP benefit from being in the programme through:

- Involvement and close participation in the Secretariat’s research programme and studies;
- Contributing to ongoing projects in the Secretariat’s and strengthening of networks with Member Country professionals;
- Gaining experience at the Secretariat and deepening their knowledge of OPEC and understanding of its goals, priorities and activities;
- Opportunities to involve themselves in cutting-edge research and hands-on experience of policy issues in climate change and on a range of energy-related topics;
- Enhancing their professional experience through practical work assignments;
- Exposure to a rich international environment and interaction with researchers from OPEC Members and other countries;
- Broadening their career possibilities as a result of the experience and insights gained at OPEC.

General Eligibility Requirements

- The programme is open to applicants from Member Countries only. They must be nominated and supported by their respective OPEC Governors;
- Applicants should be professionals with a minimum of five years of relevant work experience;
- Applicants must be familiar with research methodology and should have a proven record of research experience;
- Participants are expected to be able to undertake the programme in English, which is the working language of the Secretariat;
- Applications must be submitted through the relevant Governor for OPEC.
**Expected Outcome/Deliverables**

- Participants in the programme will be involved directly in the research undertakings at the Secretariat and will contribute to them;
- Participants are required to deliver a report to the Secretariat on the findings of their research projects;
- Participants are required to make a presentation at the end of their assignments and to discuss their research findings with members of the Secretariat.

*All intellectual property arising from research by the programme’s participants belongs to the Secretariat. An intellectual property and confidentiality agreement will be signed before a successful participant is formally accepted into the programme.*

**Duration & Working Hours**

The duration of the programme will be six months. The Visiting Research Fellows are expected to observe the official working hours of the Secretariat.

**Allowances, Accommodation, Travel and Insurance**

Participants are required to have paid employment and to be able to fully support themselves financially while staying in Vienna, and they must provide adequate evidence of this through their nominating Governors before they can be admitted to the programme. The Secretariat will provide each participant with a monthly honorarium of €1,000 to assist with extra expenses. However, the Secretariat will not cover any costs related to the accommodation or travel of participants or their dependents. Participants must arrange their own health/sickness insurance and provide evidence that they possess adequate health coverage before arriving in Vienna. The Secretariat will not be responsible for any health or sickness claims stemming from the fellowship period. With regard to accident insurance at the workplace, the Secretariat will enroll participants in its accident insurance scheme for the duration of their stay in the programme at the Secretariat.

**Application Evaluation Criterion**

Candidates' professional merit and potential for successful research will be the main consideration when evaluating the applicants.

**Application Procedure**

Applicants are required to complete the application form, which includes writing an elaborate research proposal that should center on any of the topics listed below. Applicants are also requested to attach their latest Curriculum Vitae to the completed application form.

The following are the research topics available in the different Departments/Office/Unit at the Secretariat for the 2016 VRFP:
Data Services Department

Introduction to the Data Services Department

The Data Services Department (DSD) is responsible for supporting the research activities in the Research Division through provision of statistical data management and analysis, software development, and documentation/references management services. The department is the central provider of reliable, timely, up-to-date data, documentation and information pertaining to the oil market in particular, and energy and related issues in general.

Research topics:

1) Big Data, Machine Learning and Artificial Intelligence in Oil and Gas Industry

The candidate seeks to identify and summarize the positive influence that the adoption of Big Data, Machine learning and Artificial Intelligence can have on the Petroleum and Petrochemical industry. Exhaustive research will be carried out on the industry’s engagement and adoption of the above mentioned techniques in upstream, midstream and downstream operations to concisely summarise the varied applications and the potential benefits. The candidate will contribute to development of the OPEC Big Data project in terms of statistical analysis and programming.

Specific Eligibility Requirements

The candidate is expected to have a solid knowledge of statistical analysis and data mining techniques. Moreover, he/she should have a strong computing capability. Working experience with R or any other statistic software would be an advantage.

2) Assessing; the quality of data in the JODI world oil database with specific focus on oil supply and demand.

The study will focus on identifying reporting methodology differences between JODI and the OPEC with the aim of maximizing the usage of the JODI oil database. The candidate is expected to utilize basic statistical methods and time series analysis in identifying outliers and trends in JODI data.

Specific Eligibility Requirements

The candidate is expected to have a solid knowledge of statistical analysis and data mining and data bank techniques. Moreover, he/she should have a strong computing capability.
Energy Studies Department

Introduction to the Energy Studies Department

The Energy Studies Department (ESD) is responsible for monitoring, analysing and forecasting world energy developments in the medium- and long-term and reporting thereon. It also monitors developments, and undertakes specific studies on energy demand and production-related technology and the emerging implications for OPEC.

ESD furthermore identifies and follows up key areas of research and development (R&D) and facilitates and supports coordinated planning and implementation of collaborative energy related R&D programmes of OPEC Member Countries; as well as identifies prospects for OPEC participation in major international R&D activities.

R&D activities undertaken by ESD include carrying out studies and reporting on medium to long term developments in the petroleum industry; providing effective tools for and carrying out model based studies for analyses and projections of medium and long term energy supply/demand and downstream simulation; elaborating on OPEC’s Long Term Strategy; and monitoring, analysing and reporting on relevant national or regional policies, such as fiscal, energy, trade and environmental, and assessing their impacts on energy markets.

Research topics:
Applicants are required to choose one of the four below research topics proposed by ESD:

1) Energy efficiency evaluation: trend and implications

This research assignment would include the following:

The focus of this research topic is the evolution of energy efficiency and its potential further development as well as its impact on energy demand. Research will cover the historical trends in energy efficiency in the main world regions/countries and major demand sectors, including not only energy demand but also the transition to a more efficient use of energy in major sectors (e.g. in the power generation and transportation sectors).

Furthermore, the impacts of regulation, policies and emerging technology developments will be assessed. Finally, the resulting study will provide an outlook on the further advancement of energy efficiency in different energy demand sectors and in the main regions/countries. The outcomes of the study will be integrated, to the extent possible, into the World Oil Outlook 2019.

Specific Eligibility Requirements

- This assignment requires technical and analytical skills as well as research abilities.
- A Post Graduate degree in Econometrics/Engineering economics/chemical engineering
- Ample knowledge of the oil and gas industry and marine sector
- Excellent modelling skills
- At least 3 years of working experience on related issues
• Fluency in oral and written English
• Teamwork, accountability and professionalism

2) Plastics recycling: ambitions and limitations

In general, this assignment would include, but shall not be limited to, the following:

Research should focus on an analysis of the potential for recycling plastics at the global and regional levels. It should analyse recent announcements from policy makers to increase the rate of plastic recycling with the aim of reducing environmental pollution and dependency on fossil fuels (e.g. EU’s strategy “A European Strategy for Plastics in a Circular Economy” released in 2018).

Furthermore, research should emphasize limitations to recycling from a technological and economic perspective. Finally, the study should estimate the potential reduction in demand for oil-based products such as LPG and naphtha stemming from the recycling of plastics, taking OPEC’s Reference Case projections related to the petrochemical sector into account.

Specific Eligibility Requirements

• Advanced related university degree (Master or PhD) in Chemical related disciplines.
• At least 3 years of working experience on related issues
• Fluency in oral and written English
• Teamwork, accountability and professionalism

3) Non-crude liquids supply: trends and outlook

New oil and gas modern technology are growing rapidly, with GTL, DME, as well as the generation of biofuels being particularly at the core of greenhouse gas emission mitigation, clean energy development and energy security plans.

This research would examine historical trends in non-crude liquids supply, including liquid biofuels (fuel ethanol and biodiesel), gas-to-liquids (GTL) and coal-to-liquids (CTL), as well as MTBE and kerogen (but excluding natural gas liquids, condensate, oil/tar sands and tight oil). It would examine key sources of supply and drivers of growth in these liquids, including the availability of ‘feedstock’, economics, demand for these liquids, and energy policy, including mandates, where appropriate. It would develop a modelling framework to project supply for major producers for both the medium- and long-term. The outcomes of the study will be integrated, to the extent possible, into the World Oil Outlook 2019.

Specific Eligibility requirements

• Advanced related university degree (Master or PhD) in energy-related disciplines
• At least 3 years of working experience on related issues
• Fluency in oral and written English
• Teamwork, accountability and professionalism
Environmental Matters Unit

Introduction to the Environmental Matters Unit

Within the Research Division, the Environmental Matters Unit (EMU) is responsible for monitoring, analysing, reporting and advising on developments pertaining to the international debate on environmental matters affecting the energy sector. To this end, EMU’s activities are client based and result oriented. EMU places emphasis on the needs of Member Countries with regard to policy research and analysis related to emerging challenges in the climate change/energy nexus.

Research topic:

1) Pathways for limiting global warming to 1.5°C and the impact on global energy mix and oil demand

Endowed with half of the world’s known oil and gas reserves, the Middle East and North Africa (MENA) region became – particularly during the second half of the twentieth century – a cornerstone of the global energy architecture. This architecture is currently undergoing a structural transformation, prompted by two different forces: decarbonization policies and technological improvements.

The adoption and quick entry into force of the Paris Agreement marked a major step forward in international efforts to address global warming. For the first time, developed and developing countries committed to act in order to limit global average temperature increase to well below 2 °C, and to pursue efforts to further limit this to 1.5 °C above pre-industrial levels.

This research topics aims at analysing the INDCs of the United States of America (USA) and China – the two countries which are ranked as the world's largest emitters of greenhouse gases (GHGs) accounting for about 40% of global GHG emissions, as well as being two major oil consumers. The research will examine their submissions and views, as well as literature, with the objective of understanding the future path of their actions while implementing their INDCs, and will attempt to develop clarity on what the potential impact of such actions on their energy sectors in general and oil demand in particular might be.

Specific Eligibility Requirements

The applicant should demonstrate academic and/or professional expertise in the fields of:

- Climate change negotiations;
- Policy research.
Introduction to the Petroleum Studies Department

Within the Research Division, the Petroleum Studies Department (PSD) is responsible for continuous monitoring of oil and product market developments in the short-term, and reporting thereon in a timely and precise manner to Member Countries. Its objective is to provide pertinent and reliable information and analyses in support of decision-making and policy-making in Member Countries, as well as to highlight the conditions under which the world oil markets are balanced.

PSD is also responsible for carrying out, on a continuous basis, research programmes and studies on short-term energy market issues. Its objective here is to make reports and ad hoc papers, highlighting particularly important issues available to Member Countries for their use and consideration.

A further area of responsibility is conducting a series of regular forecasts by elaborating on and analysing oil market scenarios. These findings will then be reported to Member Countries for information purposes, as well as in support of policy-making.

Research topics:

1) Assessing regional crude supply/demand balances

The objective of this study is to assess crude oil supply/demand balances by region (excluding NGLs or any other refinery secondary unit feedstocks, such as straight run fuel oil and blend stocks). The study should provide a breakdown of OPEC and non-OPEC refinery intake as well as crude oil production to derive at crude stock changes. Although the study will cover the global crude oil market supply/demand balance for OPEC and non-OPEC, some regions such as the Middle East, Asia and the US will be covered in greater detail due to their significance. In addition, the study could show crude oil trade flows between the regions.

To achieve this objective, the candidate is required to apply analytical and quantitative techniques and models, such as dynamic simulation and modelling approaches.

This study should cover the following issues:

1- Regional oil supply assessment
2- Oil demand estimation regionally
3- Oil Balances and various scenario by dynamic simulation

The visiting research fellow (VRF) will extract demand and supply elasticities for the following cross-section:

a- BRIC
b- G7
c- US
d- UK
e- Japan
Specific Eligibility Requirements

- This assignment requires technical and analytical skills as well as research abilities.
- A Post Graduate degree in Econometrics/Engineering economics/chemical engineering
- Ample knowledge of the oil and gas industry and marine sector
- Excellent modelling skills
- At least 3 years of working experience on related issues
- Fluency in oral and written English
- Teamwork, accountability and professionalism

2) Assessing oil inventories outside OECD countries

Global inventories consist of three major components. Firstly, total OECD commercial stocks and Strategic Petroleum Reserve (SPR). The second component refers to total non-OECD stocks. The third component, oil at sea, consists of oil in transit and floating storage. In theory, the change in total global oil inventories should equal the difference between global oil supply and demand - called the balance. Nevertheless, in reality, the data published by different sources doesn’t match the abovementioned equation and there is a noticeable discrepancy between observed and implied inventory levels. The objective of this research topic is to study the historical relationship between the balance and implied inventory levels and to try to explain the missing oil. In doing so, this study will need to carefully examine the second component of global inventories, namely non-OECD stocks, which have become increasingly significant in recent years, as growth in the non-OECD economies has led to an increase in oil demand.

To achieve this objective, the candidate is required to apply analytical and quantitative techniques and models, such as dynamic simulation and modelling approaches.

Specific Eligibility Requirements

- Advanced related University Degree (Master or PhD) in economics or energy economics related subject
- Strong background and relevant work experience in energy econometrics as well as modelling techniques.
- Proficiency in the use of Excel, PowerPoint and econometric software
- Teamwork, accountability and professionalism are important trait
Introduction to PR & Information Department

The Department is statutorily responsible for presenting OPEC's objectives, decisions and actions in their true and most desirable perspective, contributing to the awareness of governments, national and international institutions and companies, as well as the general public, about OPEC and its activities, while presenting the OPEC Secretariat as a professional institution in the field of energy market data, analyses and projections.

Research topics:

1) Updating the Bulletin

The OPEC Bulletin is an important outreach tool for OPEC, providing information on OPEC activities, but also allowing for more "soft" reporting, which puts a human face on Member Countries and provides some social and cultural information. What design elements should be updated? How can the look and feel of the magazine – from cover design, to layout, to font color and style, to paper size/format – be updated so that it better reflects the profile and global role of the Organization? How can the content be improved? In other words, what aspects – from the leader/editorial, to feature articles, to SG diary articles – of the magazine’s current content should be improved, modified, changed or removed? What other features or columns could be included? How can the Bulletin elicit contributions from non-Secretariat writers? How does it compare to other magazines of a similar calibre in look and content? How can the regular preparation, editing, and production of the magazine be improved or made more predictable? Or, alternatively, what are the current challenges to having a more regular, more dependable, more reliable production schedule?

Specific Eligibility Requirements

- University degree in graphic design and/or publishing preferred. Journalism degree also welcome, with an emphasis on writing for publications.
- University degree in graphic design and/or publishing preferred. Journalism degree also welcome, with an emphasis on writing for publications.
- Advanced degree (Master’s) in similar or related fields would be useful but not required.
- Relevant work experience in editing, the preparation of manuscripts, magazine publishing, and layout and design.
- Knowledge or familiarity with economics, energy, and/or oil markets useful.
- Interest in public relations and media outreach useful.
- Proficiency in the use of Adobe InDesign (Adobe Photoshop potentially useful).
- Teamwork, initiative, creativity and professionalism are important traits in the candidate.
- University degree in Design, Communications, Public Relations, Marketing or related field.

2) OPEC Design & Production in the 21st Century: On the Visual Display of Quantitative Information

Recent trends in academia, in the field of the social sciences and in the financial services industry demonstrate on ongoing move away from overloaded PowerPoint slides towards greater simplicity, less text, and more eye-catching visual designs and graphical displays –
particularly for the presentation of quantitative information and statistical data. Given that much of the work and activities in which OPEC is involved relies on similar analytical presentations, it may be useful to the Organization and its staff to consider revamping the way they work with PowerPoint and the way they prepare their materials for public presentations (as well as for its written materials made available through the website and printed materials). The Summer Fellow could explore some of the tools being used in other fields to present quantitative information in visually appealing ways, could do an audit of all OPEC materials in order to identify areas or specific products that could be improved by incorporating visual displays and infographics, and could propose new ways of working with PRID’s Design & Production Unit for the preparation, elaboration and production of such materials for the benefit of the Secretariat as a whole.

**Specific Eligibility Requirements**

- University degree in Design, Communications, Public Relations, Marketing or related field.
- Good communication and business presentation skills.
- Thorough knowledge of PowerPoint and Adobe Creative Suite
- Strong analytical and conception skills
- Knowledge of current tools for visualization