Nuclear and the Environment
“Environmental Issues in New Nuclear Power Programs”

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“Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia.”

5th Assessment Report, SG1, IPCC

Is there a role for Nuclear Power in Addressing Climate Change?
The Mitigation Challenge

Source: IPCC WGI 2013
CO2 emissions: Heading in wrong direction

Source: after IEA WEO 2013
Which energy technologies have the lowest life cycle Greenhouse Gas Emissions?

- Geothermal?
- Solar PV?
- Biomass?
- Nuclear?
- Others?
Life cycle GHG emissions – fossil fuels

Source: based on the Ecoinvent Database V3, 2014
Life cycle GHG emissions – RES, nuclear

Source: based on the Ecoinvent Database V3, 2014
How many CO$_2$ emissions does Nuclear avoid in one year?

• 1 Million tonnes?
• 10 Million tonnes?
• 100 Million tonnes?
• 1 Billion tonnes?
• 10 Billion tonnes?
Contribution to avoided CO2 emissions

Source: based on IEA data
What does nuclear have in common with renewable energy?
Low carbon shares – CO2 intensity of power

Source: based on IEA data
Where do we need to focus in order to reduce CO2 emissions?
IEA 2°C scenario in 2050: energy emissions

Source: after IEA WEO 2013, ETP 2014
What energy mix could limit future emissions to meet 2°C?
IEA 2°C scenario in 2050: Power Generation

Source: after IEA WEO 2013, ETP 2014
Does nuclear contribute to acidification?
Acidification potential: fossil fuels and pumped storage hydro

Source: based on data in the Ecoinvent Database V3, 2014
Acidification potential: renewables and nuclear

Source: based on data in the Ecoinvent Database V3, 2014
Will new climate change agreement (COP-21) be a turning point on the carbon economy?

- Carbon Neutrality in 2100?
- Sufficiency of INDC’s to meet reduction goals?
- Clarification on Finance?
- Is Paris the end of the Road?
Summary of Main Messages

• To address the climate change challenge all low-C technologies are needed
• Nuclear, along with hydro and wind have the lowest life cycle GHGs
  • Significantly contributed to avoided GHGs
• Nuclear avoids negative environmental consequences by low acidification.
• Nuclear can contribute to goal of carbon neutrality in the new Climate Change agreement at COP-21
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http://www.iaea.org/OurWork/ST/NE/Pess

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Vacancy Notice No. 2014/113

Position and Grade: Programme Management Officer (P-3) (two posts)
Organizational Unit: Africa Section 2
Division for Africa
Department of Technical Cooperation
Duty Station: Vienna, Austria
Issue Date: 15 August 2014
Application Deadline: 26 September 2014
Type/Duration of Appointment: Fixed term, 3 years (subject to a probationary period of 1 year)

Vacancy Notice Details

Education, Experience and Language Skills

- Advanced university degree in management, social sciences, science and technology, or international relations.
- Minimum of five years of experience in the development and management of technical cooperation programmes, preferably in the nuclear field.
- Excellent knowledge of written and spoken English. Good knowledge of written and spoken French desirable. Knowledge of another official IAEA language (i.e. Arabic, Chinese, Russian or Spanish) an advantage.

Remuneration

The IAEA offers an attractive remuneration package including a tax-free annual net base salary starting at US $56 198 (subject to mandatory deductions for pension contributions and health insurance), a variable post adjustment which currently amounts to US $37 653*, dependency benefits, rental subsidy, education grant, relocation and repatriation expenses; 6 weeks' annual vacation, home leave, pension plan and health insurance.

How to apply to the IAEA

Complete an Online Application

* Subject to change without notice

Applications from qualified women and candidates from developing countries are encouraged.

Organizational Setting

The Department of Technical Cooperation consists of the 16 regional Divisions (Africa, Asia and the Pacific, Europe and Central Asia, Latin America and the Caribbean, Middle East, North America, South America and Western Europe and the Arctic) and the Technical and Administrative Support Division. The Division for Africa (Afro) is one of the regional Divisions. The Division provides strategic direction for the IAEA's technical cooperation activities in Africa, taking into account Member States' needs, Member States' priorities, the nuclear and non-nuclear programme, and the IAEA's Medium Term Strategies. The Division is responsible for managing and implementing the IAEA's technical cooperation programme in Africa in the areas of: ensuring the integration of IAEA activities in the Member States' development planning and budgeting processes; promoting national capabilities in the nuclear field; and ensuring that the IAEA's programme in Africa is aligned with the United Nations Development Assistance Frameworks and relevant African regional and sub-regional arrangements.

The regional Divisions are responsible for planning, programming and implementing the IAEA's technical cooperation programme. The Divisions report to Member States through effective programme management, increased partnership building and improved coordination in each region.

Main purpose

Under the supervision and guidance of the Section Head, the incumbent manages programmes and projects in the area of nuclear development needs.

Role

As an active member of project and country teams, the Programme Management Officer provides professional inputs and exercises a high degree of initiative in developing and implementing the TC programme. He/she applies expert knowledge and procedures and effectively uses existing programming tools in a changing, high-pace environment.

Partnerships

The Programme Management Officer works with relevant IAEA departments and maintains collaborative relationships with development partners to increase awareness of the TC programme and programme delivery.
Selection Process

Candidate Assessment is conducted at various stages

- Application Review
- Written Technical Test
- Panel Interview
- SONRU Asynchronous Video Interview
- Psychometric and Leadership Skills Assessment

Recommendation