

Deadline: 15 January 2021



APPLY 28/2020

# Research Software Engineer

## IIASA ENERGY (ENE) PROGRAM

**Vacancy 28/2020 - The successful candidate will join a small team of software developers working with researchers at ENE and collaborating institutions on further developing and continuously improving these tools to support energy- and climate-related research in ENE and in the wider academic community. An interest in the scientific content of the software tools – climate change and energy transition research – will help communication within the multi-disciplinary teams and developing a deeper understanding of the user needs.**

### BACKGROUND

The IIASA Energy (ENE) Program is one of the leading scientific research institutions in the realm of integrated assessment of climate change and the systems transition to implement the Sustainable Development Goals (SDGs). In addition to its own high-impact research, ENE provides a range of services to the broader research community.

As part of its mission, ENE hosts dozens of interactive scenario web databases (aka Scenario Explorer). These databases form an integral part of the infrastructure for research conducted at ENE and in the wider integrated-assessment research community and they are also a key tool for dissemination of scientific insights and results. The databases are used in particular for assessments by the Intergovernmental Panel on Climate Change (IPCC) and projects with research partners in the Integrated Assessment Modeling Consortium (IAMC).

The databases are 3-tier web applications (Web UI, JAVA servlets, ORACLE RDBMS), which are based on more than 10 years of experience supporting the research community. The entire software stack has been re-designed and reimplemented over the past four years. For an example of this tool, visit the **IAMC 1.5°C Scenario Explorer** [1], which is the most prominent instance of this service currently deployed; it presents the quantitative scenario data underpinning the IPCC Special Report on Global Warming of 1.5°C (SR15). For more information on our **modeling platform infrastructure**, please refer to the documentation.[2]

In addition to the modeling platform, researchers and software developers at ENE are managing several open-source tools to facilitate modelling and analysis of climate change mitigation scenarios. These tools and packages are developed in an open, collaborative process implementing best practices of scientific software development. Two highly visible tools here are the **MESSAGEix framework** [3] for integrated-assessment modelling and the **Python package pyam** for scenario data analysis and visualization[4].

The successful candidate will join a small team of software developers working with researchers at ENE and collaborating institutions on further developing and continuously improving these tools to support energy- and climate-related research at ENE and in the wider academic community. An interest in the scientific content of the software tools – climate change and energy transition research – will help communication within the multi-disciplinary teams and developing a deeper

understanding of the user needs.

[1] <https://data.ene.iiasa.ac.at/iamc-1.5c-explorer>

[2] <https://software.ene.iiasa.ac.at/ixmp-server>

[3] <https://message.iiasa.ac.at>

[4] <https://pyam-iamc.readthedocs.io/>

## JOB DETAILS

The successful candidate will closely collaborate with scientists from the IIASA ENE Program and their international partners in addressing the following tasks:

- Assist in the conceptual development and implementation of new features in the new scenario data infrastructure (Scenario Explorer and related software stack) to support its use for research and science communication.
- Contribute to ongoing research activities by implementing new features in the scientific software packages in close collaboration with scientific staff.
- Provide user support to scientific staff at ENE and collaborators in the wider community concerning the use of all ENE web databases and scientific software.
- Maintain and enhance the aforementioned existing web database software platform in a modular and portable fashion in accordance with modern standards of software engineering.
- Ensure that the web-based tools and features are functional across different devices (desktop computers, tablets, mobile phones).
- Documentation of the software stack and all modules at high professional standards.
- Assist in operating the existing web applications and database instances.
- In line with the team spirit that prevails at IIASA, the incumbent may occasionally work on other tasks assigned by their superiors, that might not be directly related to this appointment but where the post holder has relevant experience and skills, and/or a shortage of immediate personnel capabilities requires such.

## REQUIREMENTS AND QUALIFICATIONS

- Candidates should have the willingness and ability to work in an international multi-disciplinary team, and be flexible and adaptable in responding to deadlines.
- Good written and oral communication skills in English are essential.
- Preferably, the selected candidate will hold a BS or MS (or equivalent, e.g. DIFH) in computer science or related fields.
- Experienced software practitioners are welcome to apply.
- Applicants should have hands-on experience with developing software and be familiar with relevant tools and techniques (RDBMS, Java and RESTful interfaces, vue.js, Python, docker) and/or keen on extending their skill set.

## APPOINTMENT TERMS

The successful candidate will be expected to take up the position as soon as possible, and will initially be offered a full-time (40 hours per week), fixed-term contract for one year. There may be a possibility to consider part-time working hours. Following an evaluation of the first year's work, the appointment period may be extended. Duties will be carried out at the IIASA premises in Laxenburg, near Vienna in Austria.

This position is classified as a "Professional level" post.

### WE OFFER:

The minimum annual gross salary for this position is € 40,123 which is exempt from income tax in Austria (subject to the principle of income aggregation – "Progressionsvorbehalt")

The advertised salary is:

- Negotiable, based on the qualifications, skills and experience of the selected individual
- Subject to deductions for health insurance and/or social security
- Not directly comparable with other employers in Austria, due to the unique legal status and privileges granted to IIASA

Details about further attractive benefits [here](#).

## About IIASA

IIASA is committed to a working environment that promotes equality, diversity, tolerance and inclusion within its workforce. This is reflected in our [Core Values](#). We encourage qualified candidates, irrespective of gender, from all religious, ethnic, and social backgrounds to apply. In the case that candidates are equally qualified, preference will be given to applicants from countries where IIASA has a [National Member Organization](#) (NMO).

## Further Information

For further information about this opportunity please contact:

[Dr. Daniel Huppmann](#), Senior Research Scholar

For general information about working at IIASA, please contact:

[Ms. Alia Harrison](#), Recruitment Coordinator

## Applications

To apply for this opportunity, you will need to provide the following documents in English:

- **A cover letter outlining your motivation for and fit to the position**
- **Your Curriculum Vitae or Resume**
- **The names, addresses (including e-mail), and telephone numbers of two work-related reference givers**

Applicants are also encouraged to include with their applications evidence of successful contributions to development of open-source (scientific) software and/or of collaboration on multi-developer software projects; for instance, links to a GitHub profile and/or specific projects or pull requests; or references/testimony from collaborators.

**Deadline for receipt of applications: 15 January 2021**

**APPLY**