PhD or PostDoc position on modeling for low-carbon and renewable energy transition at the University of Geneva, Switzerland

Background

Renewable Energy Systems group, led by Prof. Evelina Trutnevyte, at the University of Geneva is looking to fill several PhD or PostDoc positions on modeling for low-carbon and renewable energy transition in Europe and in Switzerland. Located at the Faculty of Science and at the interfaculty Institute for Environmental Sciences, Renewable Energy Systems group has three strategic research themes. First, it uses mathematical modeling and technology assessment tools in order to inform transition to renewable energy systems at all spatial scales, from neighborhoods and cities to countries and continents. Second, the group works with multi-disciplinary methods for improving quantitative long-range energy foresight for decision making under deep uncertainty. Third, the group searches for system-level socio-technical energy solutions that are techno-economically feasible, environmentally desirable, as well as acceptable and realistically implementable in society. The scientific work in the group regularly involves interactions with practitioners outside academia, including policy makers, stakeholders, and the wider public.

The successful PhD or PostDoc candidate(s) will work in one of the three projects: Horizon Europe project PRISMA "Net-zero pathway research through integrated assessment model advancements" (focus on Europe), Horizon Europe project COMPACT "Expanding integrated assessment modelling: comprehensive and comprehensible science for sustainable, co-created climate action" (focus on Europe), or SWEET EDGE project "Enabling decentralized renewable generation in the Swiss cities, midlands, and the Alps" (focus on Switzerland). In all these projects, the aim is to develop and apply new modeling tools to inform the transition to low-carbon electricity system that relies on very high shares of renewable generation. Depending on the background and interests of the successful candidate(s), the specific research topics could be:

(i) investigating the optimal set-up of grids, from microgrids to transmission, for electricity systems with high shares of renewable generation;
(ii) deriving strategies to achieve high shares of renewable generation through modeling at high spatial and temporal resolution;
(iii) analyzing realistic pathways to meet renewable electricity targets by improved modeling of spatial and temporal diffusion of renewable technologies;
(iv) integrating public acceptance of technologies and policies in techno-economic modeling.

The successful candidate will share the vision of modeling-based multi-disciplinary work at science-society interface that the Renewable Energy Systems group is conducting. The group's website and publications are examples of such work.

In return, the Renewable Energy Systems group provides a stimulating and innovative research environment to work on some of today's most pressing societal challenges – energy and climate change mitigation. The city of Geneva takes pioneering action in promoting renewable energy as well as hosts multiple international organizations that foster global transition. The Renewable Energy Systems group offers excellent conditions for PhD and Postdoc candidates, including a competitive salary as well as funds for travel to conferences and further education. The city of Geneva consistently ranks among the most attractive cities worldwide to live.

Application process and requirements

In order to qualify for the position, the candidates are required to have:

- Completed or nearly completed Master's or PhD degree;
- Proven knowledge of energy technology and energy systems;
- Knowledge of modeling energy systems at a national or continental scale, e.g. using Python or Matlab;
- Familiarity with geographic information systems, e.g. QGIS, is an advantage;
- Peer-reviewed journal publications as first author (for PostDoc applicants);
- Excellent English skills in understanding, speaking, and writing;
- French or German skills are an advantage;
- Readiness to move to Geneva (there is no possibility for home office).

Please send your application to job-res@unige.ch. The applications shall include:

- Motivation letter in English;
- CV;
- Recommendation letters or work certificates of two referees; the letters can be submitted by the candidate directly or can be sent by the referees to the email address above;
- Sample document of academic writing in English, e.g. peer-reviewed publication as first author, Master thesis, semester thesis;
- Scanned copy of the Master's degree diploma with grades (for PhD candidates only). In the case of nearly completed Master's degree, the latest transcript of grades should be submitted;
- If the size of the email exceeds 10 MB, only the motivation letter and CV shall be included in the email as well as a link for downloading the rest of the documents, e.g. Dropbox.

The first deadline of applications will close on Sunday, 4 December 2022. Further applications may be accepted. The starting date will be mutually agreed on. The successful candidates from outside Switzerland and European Union should count with additional 4-6 months for receiving their residence permit. For questions, please send an email to job-res@unige.ch.