12-month post-doctoral position offer for research and innovation in climate services for renewable energy

The Laboratoire des Sciences du Climat et de l'Environnement (LSCE) is offering a 12-month post-doctoral position for the development of new data and methods to process climate projections for the needs of the energy sector with focus on wind and solar power. The candidate will develop the data sets and methods for the Copernicus Climate Change Service (C3S) on energy [CLIM4ENERGY project].

Context: Climate-related challenges constrain a rapidly evolving energy sector. Ambitious climate change mitigation requires that low-carbon energies grow very fast in the coming decades. This rapid transition towards renewables makes the energy production, transmission and distribution increasingly sensitive to weather and climate variability. Energy producers need to anticipate resources, their variability at seasonal time scales and their trends over decades. Grid operators need to identify black-out risks, demand and supply patterns. Climate change also modulates the weather impact to energy systems. Changing precipitation patterns may affect the management of hydropower, wind and solar power resource.

LSCE leads the C3S project CLIM4ENERGY, designed to offer a number of datasets, methods and practical case studies for energy practitioners. LSCE is also in charge of designing high-quality climate projection data sets for the energy sector, and dedicated data sets and methodologies for the wind power sector. This can also be extended the solar PV production if time allows.

Description of post-doc work: The post-doc work will consist in developing high-quality climate projection datasets tailored to the energy sector, together with metrics to ensure the users of such data sets can properly assess them for their needs. In addition, innovative methods allowing the assessment of changes at various time scales (from hourly to decadal), risks and patterns of potential production will be designed and evaluated in a few case studies. These methods include statistical downscaling to the wind or solar farm level, or groups of farms, and statistical analysis using extreme value theory. The work will be done in a collaborative environment together with CLIM4ENERGY partners, in particular the Barcelona Supercomputing Center, and a few energy practitioners from the industry. One or several articles will be expected from the science developments.

The work will require a climate and statistical scientific background. Most analyses will involve the use of statistical theories and methods (downscaling, extreme values). An understanding of climate models and simulations is required. An interest in communicating research and innovation toward non-academic institutions is required.

Start, duration and salary: The post-doctorate will be hired by CNRS for 12 months with a net monthly salary depending on the experience.

Required experience: a PhD is required, with an experience in statistical analysis and statistical theory. Ease in using UNIX, shell scripting, and other programming languages (R, Python, FORTRAN) is necessary.

Contact for applications: Applications should be sent as soon as possible and before 31 March 2017. They should include a CV, a statement of research interests and the names of two references including e-mail addresses and telephone numbers. Applications should be submitted by e-mail to R. Vautard (robert.vautard@lsce.ipsl.fr) and Sonia Firion (Sonia.firion@lsce.ipsl.fr).