**RESTORE Short Term Scientific Mission Hosting proposal**

STSMs are research visits to a host institution where the applicant will perform research activities that advance the objectives of RESTORE. STSMs must be between 5 and 90 days (although, they may exceed that duration in specific instances for Early Career Investigators). Successful STSM applicants are financially supported by the Action with a fixed contribution of up to 2500 EUR. STSMs do not fund research activities, only travel related costs. This information will be posted on the RESTORE website for potential applicants to review.

|  |  |
| --- | --- |
| **HOST Institution:** | Name: University College Cork (UCC)Country: IrelandITC Country yes / **no**Website: [www.ucc.ie](http://www.ucc.ie) |
| **Supervisor of the STSM:** | Name: Dr. Barry HayesPosition: Lecturer (Asst. Prof.) in Power and Energy SystemsEmail: barry.hayes@ucc.ie Phone : +353 21 490 2147 |
| **RESTORE MC Member:** **yes** / no | **ECI:**  **yes** / no |
| **The scope of the proposed research and its relevance for RESTORE Action** Our research activity is relevant to RESTORE **WG5 “Scale Jumping: Thinking beyond the building, identifying scale jumping potentials to neighbourhood and city level sustainability”**, and to the **WG5 subtask 2.2 on “Smart technologies at the neighbourhood and urban scale”**.This STSM will investigate the potential for buildings and blocks of buildings to operate as partners in the electrical energy system. It will examine the potential for various building types, including nZEB and plusEnergy buildings, to participate in energy trading in future smart grid scenarios. This research will carried out in collaboration with the CENTS (Community Energy Trading System) project (<http://www.centsproject.ie/>), a new €3.8M project that is developing a cooperative, peer-to-peer energy trading platform that allows individuals and communities to generate and share electrical energy.The STSM researcher will investigate the potential of buildings and blocks of buildings to offer energy flexibility services and to participate in local energy markets (such as P2P energy trading or community-based energy trading schemes). This work will develop case studies of existing and future neighbourhoods and communities, where buildings act as flexible energy nodes in urban and community microgrids, and become an integral part of overall energy system decarbonisation. The aim is that this research will result in a joint publication in a top international journal, based on the STSM final report.The research group at UCC Engineering, along with our partner research centres in Cork, IERC ([www.ierc.ie](http://www.ierc.ie)), ERI ([www.eri.ie](http://www.eri.ie)), and MaREI ([www.marei.ie](http://www.marei.ie)) have significant expertise in the area of demand response and energy management in buildings. The STSM researcher will have full access (if required) to the research facilities and expertise at these research centres, which include a full-scale laboratory microgrid. The STSM will be hosted in the School of Engineering (<https://www.ucc.ie/en/soe/>), at the main campus of University College Cork ([www.ucc.ie](http://www.ucc.ie)). UCC is located ten minutes’ walk from the centre of Cork, Ireland’s southernmost city, which is known for its friendly, welcoming atmosphere and easy access to the beautiful coastal and mountain areas nearby.  |
| **Potential applicant requirements:** The ideal applicant should have a background in either or both of the following areas: (i) energy management in buildings, and (ii) electrical power systems/smart grid. Some programming skills in MatLab, Python or similar tools are also desirable.Ideally, the candidate will have access to existing energy data from buildings and/or blocks of buildings in order to assist with developing case studies. Applicants are also encouraged to bring their own research ideas and projects for discussion, with the aim of developing new collaborations. |