

Cross-Border R&D Funding Programme – Energy Storage - Background

Energy policy and related drivers are necessitating greater energy efficiency in buildings, together with diversification from traditional forms of energy supply by using for example, on-site renewable electricity generation. As a consequence, energy storage must match the wide spectrum of non-dispatchable renewable energy supplies with user demand patterns if carbon and strategic energy cost savings are to be fully realised. While the development of large scale energy storage will find opportunities in an all-Ireland context, large civil engineering works will encounter environmental and cost barriers in their implementation. Therefore the principal aim of this research is to assess the extent to which the existing and future built environment can provide local energy storage and virtual bulk thermal and electrical energy storage for non-dispatchable small and large scale renewable energy in providing technology solutions as part of a holistic response to future energy systems in Ireland.

To meet this aim, a number of themes have been developed. The first theme is based on the prediction of built environment energy use, the impacts of renewable energy and energy efficiency policies and aspirations going forward. A second theme will be that of energy storage and the physical development of processes compatible with the built environment. A third theme will be that associated with development of the techno-socio-economic instruments necessary to evaluate and influence legislation, policy, business opportunities, public interpretation and public education as to the role of energy storage within the built environment.