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Paper Title: PV–Battery Powered Surface Water Heat Pump System Control and Simulation

Bio :

Joyce Assaf is a third-year Ph.D. candidate in the Renewable Energies and Storage Systems (MERS) team at the GREAH laboratory, Université Le Havre Normandie.

Holding a master's degree in renewable energy from the Lebanese University, her research focuses on developing an advanced energy management strategy for a surface water heat pump powered entirely by renewable energy sources — integrating photovoltaic generation, wind power, and battery storage.

She is actively contributing to *WaterWarmth*, a European project funded by the Interreg North Sea Region program, involving five partner countries: France, Belgium, Germany, Sweden, and the Netherlands. The project is currently deploying and validating this multi-energy system across more than five pilot sites to support the decarbonization of heating networks in real operational environments.