PROJECT DETAILS

Project Title:

Enhancing Resilience of Power Grids through Integrated Management of Electric Vehicles and Distributed Energy Resources Under Smart Grid Scenario

Project Summary:

This project presents novel methodologies to enhance grid stability under the increasing charging load of EVs and integrated uncertain distributed energy resources (DERs). A precise and efficient electrical characterization model for EV chargers will be developed based on measured harmonic spectra for accurate assessment of power demand and non-linear content. Novel strategies will be developed and implemented to mitigate voltage fluctuations and frequency deviations caused by EV integration to enhance the power quality of the grid. This project outcomes will provide scalable and sustainable solutions for grid stability amidst the anticipated surge in EV adoption and DER integration.

Preferred Applicant Skillset:

A self-motivated PhD candidate with excellent organisational, problem-solving and project management skills. Candidates with strong knowledge of electric power systems planning and operation, existing research trends in renewable energy resources and energy storage systems with quantitative skills including familiarity with Python are desired.

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