

IEEE PES Foothill Section Seminar Working Group on Data-Driven Modeling, Monitoring, and Control in Power Distribution Systems

Friday, Sep 1st | 1:00 PM – 2:00 PM (CDT)

11:00 AM – 12:00 PM (PST)

Zoom Meeting Link:

Meeting ID: <https://ucr.zoom.us/j/92606483529>

Analyzing Energy Community Integration in Distribution Network Operations

Abstract:

The energy transition towards renewable sources has led to the emergence of local energy communities (LECs) as transactive collectives for coordinated resource utilization. Defining an automatic energy management system (EMS) is crucial for successful LEC implementation. The presentation deals with operating multiple energy communities in the same distribution network. The proposed procedure adopts an optimization technique and considers the collaborative characteristics of local energy communities. It analyzes transaction prices and describes the challenges associated with coordination, balancing, and settlement of transactions in a multi-community environment. Furthermore, the presentation deals with the use of the reactive power compensation service that local energy communities can provide.



Alberto Borghetti

Graduated (with honors) in electrical engineering in 1992 at the Univ. of Bologna. Since then, he has been working with the power system group of the same University, where is now a Professor of Electrical Power Systems. IEEE Fellow (class 2015). Resident Corresponding, Academy of Sciences of Bologna Institute (since 2022). His research and teaching activities are in the areas of power system analysis, power system restoration after blackout, electromagnetic transients, optimal generation scheduling, and distribution system operation. Author or coauthor of over 170 scientific papers published in peer-reviewed journals, books or presented at international conferences. He received the 2016 ICLP Scientific Committee Award and the 2018 CIGRE Technical Council Award. From 2010 to 2017 Associate Editor of IEEE Trans. on Smart Grid, from 2018 to 2022 Associate Editor of IEEE Trans. on Power Systems, from Jan 2019 to Feb 2023 he served as Editor-in-Chief of Electrical Engineering – Archiv fur Elektrotechnik.