

Workshop on Energy Flexibility in Smart Buildings and Smart Grids

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Energy Flexibility
Smart Grid & Buildings

The Opportunities for EV in Local Energy Communities – A Local Electricity Market between Prosumers and EVs

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Type of talk: Invited talk

Abstract:

The local electricity market is a next-generation energy market approach that provides benefits for the local energy community players transacting their energy as goods and services. Electrical Vehicles (EVs) as prosumers and consumers can be considered the main players that constitute the local energy communities. With the reductions of feed-in-tariff (FiT), the consumers with generation capabilities are getting very marginal profits. As a consequence of FiT reduction, local electricity markets that support local electricity transactions are emerging as a good option. In this market, sellers (prosumers and small producers) and buyers (consumers and prosumers) can transact electricity with more attractive prices. EVs can also be considered part of the local energy community, but, usually, they are limited to buying electricity in retailers or, more recently, in any aggregator. With local electricity markets, EVs can participate as consumers and get some savings because they can buy electricity cheaper than the retailers' prices. The simulation should also include the energy management option to obtain the best participation solution in local electricity markets. The ideal scheduling of transactions (with retailers, with grid (FiT), and in the local market) can be obtained considering centralized solutions. The big problem of the centralized simulation is the execution time. It takes a long time when the number of participants increases. To avoid this situation the decentralized and iterative implementations can be used. Although these simulations don't get the ideal solutions, they can solve the problems with a great number of participants in feasible executions times.

Related References:

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