EVER 2020

Reviews - Improvement and Response

Automatic topology identification of weak low voltage networks and load management strategies for micro-mobility applications (Assigned reference: EVER20-10)

Reviewer 1: Accept without changes

The submitted work deals with an interesting idea consisting in taking advantage of the availability of the public street lighting networks during the day to serve loads related to electro-mobility. This is a state of the art topic which is in full harmony with the conference ones. Regarding the extended abstract, the reviewer found it well structured, well-illustrated, and well written. For these reasons, he recommends this work for presentation in EVER2020.

Reviewer 2: Accept with minor changes

For sure, electro-mobility is becoming a challenging issue for grid operators. There is a need of optimizing the usage of the available power networks before thinking about their reinforcement. The present study is developed within this framework. The adopted approach to achieve this target is sound especially the third phase consisting in implementing and integrating a smart pole prototype in an energetic community with high penetration of renewable energy.

My comments are listed below:

a/ a literature review should be included with the discussion of the previous works dealing with similar surveys including V2G approaches

In section II. LOAD MANAGEMENT a literature review is included and many related previous works that deal with the topic of electro-mobility load management are presented.

b/ a case study should be treated with the corresponding results presented and discussed

In section, IV. RESULTS & OUTLOOK, the simulation results are presented and analyzed.

c/ the legend associated to Fig. 1 is misunderstood. It should be made clearer for the reader.

In section, III. PROJECT IMPLEMENTATION, *A. Automatic Topology Identification*, the figure is modified and a through explanation is provided (figure 4: Unknown (left) vs. known topology (right).

Figure 4 aims at explaining topology identification of a network by illustrating the difference between a known and an unknown topology. In this example, a schematic of a radial network with multiple loads (i.e. lighting poles) connected to a LV transformer is presented.

Figure 4 (left) shows a presumed LV network with an unknown topology where no information about the connection between the nodes (loads), and the impedance of lines (cables) is available.

Figure 4 (right) shows the revealed topology of the same network with known information about the node connections and line impedances.