

EVER 2020

Reviews - Improvement and Response

Development of a Monitoring and Evaluation Framework for Hybrid Renewable Mini-grids
(Assigned reference: EVER20-2)

Reviewer 1: Accept with minor changes

The extended abstract deals with a state of the art topic with meets the conference ones. It is developed within a collaboration research and development project which enhances the scientific merit of the work. With this said, some comments need to be addressed in the full paper, as:

- A synoptic of the hybrid PV- diesel generator with the possibility of its extension to a wind turbine shall be included and described,

Re: A synoptic of the hybrid PV- diesel generator

In the full paper a schematic of the hybrid min-grid and description of components is included (Page 3, paragraph 3, figures 3 and 4).

Re: the possibility of its extension to a wind turbine shall be included and described

In the full paper a brief explanation of the approach and additional information is presented. (Page 3, starting paragraph 4).

- The listed MEF features are for sure the most important requirements. These should be complemented by others related to micro-grid supervision and diagnosis.

That is correct, and this comment has been reflected in the full paper (page 5, paragraph 6)

In addition to data acquisition for monitoring, the system is integrated with control and diagnostic features. The mini-grid controller unit is programmed to control the load flow and trigger load shedding according to a set of pre-defined and adjustable load level scenarios. The mini-grid controller communicates with the inverters, battery and the generator to adjust the feed-in from the renewable generation to the demand. The mini-grid MEF also provides critical and timely data to the operator for diagnostic and operational purposes.

Reviewer 2: Accept with minor changes

The works could be of interest if the full paper would account for the following mandatory comments:

- The case study of the hybrid renewable mini-grid for which the MEF will be designed, should be presented and a brief description of the approach adopted for the proposed MEF implementation should be provided,

Re: The case study of the hybrid renewable mini-grid for which the MEF will be designed

The case study and the essential information about the electrification challenges and opportunities in South Africa (section: I. INTRODUCTION, B. South Africa Electrification), the history of project, international partnership and research collaboration, overview of the electrified community and the system is presented (II. HYBRID RENEWABLE MINI-GRID PROJECT).

Re: a brief description of the approach adopted for the proposed MEF implementation

A brief description of the approach adopted for the proposed MEF implementation including the definition and development of KPIs and development of the Data acquisition system is presented in sections III. SMART MONITORING AND EVALUATION FRAMEWORK, A. Key Performance Indicators and B. Data Acquisition and Management.

- Some results should be included and analyzed,

Results for the "Load Profile Estimation" and "Social Development Indicators" are presented in the results section (VII).

- The list of references should be updated. References should be written according to IEEE standards.

The "References" are now arranged according to IEEE standards.