THESIS REVIEWER'S REPORT

I. IDENTIFICATION DATA

Thesis title:	**Off-grid Electrification Through Independent Solar Photovoltaic System**
Author's name:	**Dexter Chintu**
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Electrical Power Engineering
Thesis reviewer:	Doc. Mgr. Jakub Holovský, Ph.D.
Reviewer's department:	Department of Electrotechnology

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment — **ordinarily challenging**

How demanding was the assigned project?

The project required application of skills already learned during the university courses.

Fulfilment of assignment — **fulfilled with major objections**

How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.

Only one point (out of four) relating efficiency calculations was addressed directly. The task that included crisis case is missing. Remaining tasks were addressed indirectly. Presented simulations in MATLAB were not in the assignment.

Methodology — **partially applicable**

Comment on the correctness of the approach and/or the solution methods.

Student was able to compile somehow complete set of equations addressing the problem. Some of the equations were however very simplistic and did not correspond to the state of the art. In other cases, sophisticated computer simulations were used. Unfortunately, too many mistakes were done in the application of calculations.

Technical level — **E - sufficient.**

Is the thesis technically sound? How well did the student employ expertise in the field of his/her field of study? Does the student explain clearly what he/she has done?

Too many mistakes and numerically wrong or misleading values. For example, it is not possible to assume that sun is shining 10 hours per day at peak power, as it was used in eq. (3.1), giving unrealistically high requirement for battery capacity. Also, it is impossible to calculate today's household consumption based on 10 incandescent bulbs, each with 75W shining for 6 hours per day, as shown in Table 1. The voltage of battery is not unified. Once it is assumed 12V , another time it is assumed 48V. Backup generator is not mentioned at the beginning and suddenly it is included.

Formal and language level, scope of thesis — **C - good.**

Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?

Language level is excellent, but formal level as a scientific text is not so good. Some equations are not numbered, in some of the graphs the axes are not properly labeled. Left part of equation (2.1) is completely missing.

Selection of sources, citation correctness — **E - sufficient.**

Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?

There are many sources, some of them useful and relevant, but refs [49] and [50] are completely out of topic. Some references are never mentioned in the text as for example [7],[8],[9],[10] This makes the citation method quite suspicious.

Additional commentary and evaluation (optional)

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Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.
Please insert your comments here.

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

Summarize your opinion on the thesis and explain your final grading. Pose questions that should be answered during the presentation and defense of the student's work.

Some aspects of the thesis looks to me a bit suspicious. I do not like the style with a lot of general words with little concrete information. I did not understand what was the purpose of the MATLAB model and I missed a lot of details there. On the other hand, the thesis supervisor was not from CTU and probably was not a PV system expert, which may be the reason why mistakes occurred. Anyway, some effort has been spent that should be appreciated. The grade that I award for the thesis is **E - sufficient.**

Date: **26.1.2024** Signature: