THESIS SUPERVISOR'S REPORT

I. IDENTIFICATION DATA

Thesis title:	**Hybrid power supply of an offgrid rural area in Tomsk region**
Author's name:	**Kirill Teushchakov**
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Economics, Management and Humanities
Thesis supervisor:	Ing. Tomáš Králík, Ph.D.
Reviewer's department:	Department of Economics, Management and Humanities

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment **ordinarily challenging**

How demanding was the assigned project?

The complexity of the assignment corresponds to the requirements for a master thesis.

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.

The assignment was fulfilled more in terms of form than content. The chapters dealing with the optimization model show a strong simplification that goes beyond the technical reality. Combined with factual errors, the obtained results are unrealistic and unusable.

Activity and independence when creating final thesis **F - failed.**

Assess whether the student had a positive approach, whether the time limits were met, whether the conception was regularly consulted and whether the student was well prepared for the consultations. Assess the student's ability to work independently.

The cooperation with Mr. Teushchakov was far from ideal. He decided to work completely independently. Our contact was thus very sporadic, which led to a situation where I lost the opportunity to influence the optimization model in any effective or significant way.

Technical level **E - sufficient.**

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

The technical level of the work is strongly below average. The combination of strong and unjustified simplifications and major computational errors makes it impossible to accept the results as relevant. Unfortunately, the student also often does not explain his calculation sufficiently, which makes it significantly more difficult to evaluate the work. The thesis would therefore appreciate a revision of the entire optimization part.

Formal level 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?

Formally, the work meets all the requirements. However, there are several typos and unclarities (originating from misuse of English), that slightly affects the overall clarity and readability of the presented thesis.

Selection of sources, citation correctness **B - very good.**

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?

All formalities concerning the sources and their citations are fully corresponding with required standards. The student was able to select relevant sources of information and then use them effectively. Thus, the only criticism is that the student did

not make use of scientific articles dealing with the optimization of stand alone systems. Had he done so, he could have drawn inspiration for his techno-economic model.

Additional commentary and evaluation (optional)

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.

The submitted thesis formally covers all the points of the assignment, but the quality of the optimization and computational part severely compromises the whole work.

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

Since the student has met all the requirements for the master thesis in the required quality, I recommend the submitted work to be accepted, and I have following questions:

1) Please explain in detail the logic of the optimization model (from the construction of the consumption diagram using the coefficient of concurrency to the discussion of the different scenarios - in particular the reason why the battery size remains the same for all variants).

2) You state that the maximum of your system is 49.76 kW. How do you explain that with this maximum the annual consumption is 464 MWh (1272.15 kW per day x 365 days)?

The grade that I award for the thesis, if all the explanations from question 1 are done in sufficient quality, is **E - sufficient.**

Date: **19.6.2021** Signature: