THESIS REVIEWER'S REPORT

I. IDENTIFICATION DATA

Thesis title:	**Economic Appraisal of small Hybrid Powe Supply System**
Author's name:	**Aleksandr Kroshev**
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Economics, Management and Humanities
Thesis reviewer:	Ing. Pavel Pavlátka, Ph.D
Reviewer's department:	Department of Economics, Management and Humanities

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment **Choose an item.**

How demanding was the assigned project?

The aim of the work was to design a hybrid wind-diesel power plant for decentralized power supply system of village Khorey-Ver in this area (with low population density) is not economically efficient to build overhead lines and connect to DSO or TSO grid.

Fulfilment of assignment **Choose an item.**

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.

Thesis are structured into 4 key parts:

1) Calculation of diesel power plant considering details of researched object, determination of designed load and calculation of equivalent annual cost for different options of diesel generators
2) Integration of renewable source of energy considering considering horizontal and vertical axis wind turbines with economical valuation for specific region. Furthermore completed with the evaluation of optimal capacity and connected energy storage
3) Power converters with overview of power converters and rectifiers
4) Economic appraisal of small hybrid power supply system considering ain economical parameters, price action of production of electricity and integration of wind turbine in current power supply system

Assigned task is correctly fulfilled in this thesis and primary goals were successfully achieved

Methodology **Choose an item.**

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

The approach of net present value valuation combined with IRR and payback period used with relevant dataset was implemented correctly with all assumptions necessary to obtain relevant results

Technical level **Choose an item.**

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?

Student by this thesis proved relevant expertise in the field of thesis problematic

Formal and language level, scope of thesis **Choose an item.**

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?

Notations and formalisms were used properly and are organized in a logical way and presented in relevant structure.

Selection of sources, citation correctness **Choose an item.**

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?

Selection of sources was relevant and bibliographic citations meet the required standards

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.
Considered topic of RES energy sources combined with diesel power plant is interesting and valuable for such an area with low population density and without sufficient connection to DSO or TSO electricity grid. Therefore this topic and described example is useful for many locations and areas worldwide.

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.

Thesis

The grade that I award for the thesis is **A - excellent.**

Question:

1) **Please consider the impact of the oil price for the valuation, explain which methods could relevantly insure the maximum level of oil price for DPP source.**
2) **How could be solved the stability of the grid voltage of this local energy source after connection of load with considerable electrical induction.**
3) **Please describe the function of inverters, typical lifetime and principle of frequency regulation**

Date: **16.6.2020** Signature: Ing. Pavel Pavlátka, Ph.D.