THESIS REVIEWER'S REPORT

I. IDENTIFICATION DATA

Thesis title:	**Energy Flexibility of Single-family House Located in Region of Central Europe**
Author's name:	**Andreeva Elizaveta**
Type of thesis :	master
Faculty/Institute:	Faculty of Mechanical Engineering (FME)
Department:	Department of Environmental Engineering
Thesis reviewer:	Ing. Jakub Šimek
Reviewer's department:	Department of Environmental Engineering

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment **challenging**

How demanding was the assigned project?

The assigned project was challenging, because it deals with very actual issue with limited number of sources of state of the art research. The student had to process detailed literature review of the issue, set own KPI, build a dynamic simulation model and simulate and analyze several simulation scenarios.

Fulfilment of assignment **fulfilled**

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 completely fulfilled.

Methodology **outstanding**

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

Student logically and correctly builds on findings out of the literature review and state of the art research. The dynamic simulation is than used as a main tool for solving the goal of the thesis. There can be no objection to chosen approach.

Technical level **A - excellent.**

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?

The technical level of the thesis is excellent. Individual parts of the thesis are connected in very organized and logical manner. Particular conclusions are well explained, which proves very good orientation in the student's field of study.

Formal and language level, scope of thesis **B - very 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?

The work contains just minimum number of typing errors. As formal shortcomings can be mentioned:
1, Units are often not written in italics
2, For the temperature difference is used °C instead of K
3, There is very often missing gap between a value and its unit (for example 0.25m, 33%, 8°C)

Selection of sources, citation correctness **A - excellent.**

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?

The thesis contains a wide range of sources that are properly cited.

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.

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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.

The student appropriately applied the knowledge gained during the study and demonstrated a very good orientation in the field of study. The work has excellent level from the point view of expertise, but also clarity and logical continuity.

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

Questions:

1) Could you explain the choice of temperature difference 8 K for turning off the PID controller? Also you have stated that the contribution of the storage tank of 500 l to overall delayed operation is 7 hours. However it seems that this number also contains the dependence of the thermal inertia of the walls. Wouldn't it be more correct to simulate the scenario with and without the storage tank to evaluate the contribution on the delay just for the storage tank?

2) I can't agree with the conclusion that, "reduction of the thickness of the insulation material leads to rise of time constant". Could you explain or correct this statement?

Date: **17.8.2020** Signature: