

I. IDENTIFICATION DATA

Thesis title:	Design of an Energy Independent Household
Author's name:	Gaurav Singh
Type of thesis :	bachelor
Faculty/Institute:	Faculty of Mechanical Engineering (FME)
Department:	Department of Energy Engineering
Thesis reviewer:	Ing. Jitka Jeníková
Reviewer's department:	CTU in Prague, FME, Department of Energy Engineering

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	ordinarily challenging
<i>How demanding was the assigned project?</i>	
The difficulty of the assignment corresponds to those placed on bachelor's theses.	

Fulfilment of assignment	fulfilled
<i>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.</i>	
The bachelor's thesis fulfilled every point of the assignment.	

Methodology	correct
<i>Comment on the correctness of the approach and/or the solution methods.</i>	
The chosen solution procedure is correct.	

Technical level	B - very good.
<i>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?</i>	
An overview of the possibilities of designing the off-grid household and the overall work is very detailed and clearly written. The author also used large number of English sources, some were also in the Czech language.	

Formal and language level, scope of thesis	B - very good.
<i>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?</i>	
The thesis is organized and clear and understandable. There is only a small number of typos at work. In terms of graphics the work is on a high level and gives a clear impression. There are a few mistakes – for example on page 7 in a Table 5 there is a demand of 32,3 liters per day per resident, but on the page 8 there is a value of 39,75 L/day-resident. The value in Table 5 doesn't correspond to the rest of the information given. Page 19 refers to a "Graph 1" which is not presented in the work. The same is on the page 21 and 38 rev. to Graph 1 and 8). I supposed it is due to the renaming graphs to images, but this kind of mistakes should be avoided.	

Selection of sources, citation correctness	D - satisfactory.
<i>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?</i>	
The number and the selection of sources is very good. The listing of sources does not correspond to the Standards - especially for citations of web pages it causes problems. These misspelled citations make it virtually impossible to find some information. For example for sources 14, 23 and others it is not possible to distinguished what it is (book, article, script, presentation,..). The problem arises in chapter 7 which I explain further. There is also a number of missing citations – fig. 10, 11, 13, 14, Table 20 and 21 are missing some of the sources.	

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 grade that I award for the thesis is **C - good**.

The thesis is clearly explained and sufficiently extensive. However, the overall very good impression of the thesis is reduced with the citations and arising consequences. In Chapter 7 (page 30) it is not clear when the author made the analysis of cost of pellets. I assume that the author made those calculations in February (when he wrote he gain the price of LPG). On the 11th of June the price is aprox. 14 % lower than the one stated by the author which is even bigger difference than used in the sensitivity analysis.

In the defense, please answer the following questions:

- 1) Why is there a 10% decrease in battery prices in the sensitivity analysis in the Scenario 2, while Scenario 1 and 3 have the value of battery prices decrement of 15 %?
- 2) In the sensitivity analysis for 3 cases the price of fuel (pellets or LPG) is the most influential one. You decided to give it a 3 % annual increase in the investigation of the effect of the parameters. Is 3 % enough? What would happen if You calculate the scenarios with lower average price (current price) of wooden pellets? Would it influence the order of variants according to overall economy?

Date: **11.6.2021**

Signature:

