

Thesis evaluation of: “Economic Evaluation of Centralized and Autonomous Power Supply Systems in Oil and Gas Industry”

Thesis Author: Bc. Vadim Ershov

Author writes his thesis on the topic: “Economic Evaluation of Centralized and Autonomous Power Supply Systems in Oil and Gas Industry”. He develops his thesis firstly from technical point of view – he gives the basic overview of used technology. The thesis then continues with selected technology – gas turbines. The technology is measured against centralized Power Supply System (PSS).

The approach which has been chosen is a standard comparison against the base indicator, in this case the base indicator is PSS in the Krapivinskoe oil-field. The key indicator which has been chosen is the Net Present Value (NPV). It is surely a possible indicator, however as the author rightly (but indirectly) points out – it might be (and in reality it is) predominantly dependent on chosen real interest rate (in this case it is substituted by WACC, consisting of Russian interest rates). It would be advisable to calculate the NPV based on at least WACC using US dollar interest rate (due to dollarization of Russian economy).

By in large, the thesis is very well researched for and shows author’s preparation for the work. It has to be mentioned author’s good combination of multiple fields of study.

The results are well sum-up with final result that for Krapivinskoe oil-field the centralized PSS is more economical when using the NPV metric. What can be seen as very interesting and possible future point of investigation is when author discuss the importance of APG utilization factor. Due to higher APG factor, which is to be raised by 2020 onwards, author calculates economic feasibility of autonomous PSS. Such result is practically usable and can be used within industry sector.

The text is understandable and without major flaws which might prevent general understandability. However, some stylistic proof reading might be required to increase comprehensibility, the errors within the text unfortunately and unnecessarily lowers the overall standard of the thesis. From formal stylistic point of view the thesis is on average due to typing errors, not uniform marking of tables (sometimes up, sometimes down).

Proposed grade: C

Questions to author:

1. In figure 1.1 – Power supply systems in Russia: Please explain why the centralized and autonomous PSSs exist next to each other. The thesis's logic speaks of otherwise.
2. Please explain if any charges are levied on released pollutants when burning APG in autonomous PSS.
3. The result of the thesis stands on two major pillars: WACC rate and APG factor. Please explain what might be the consequences of changing interest rate to the ones backed by US dollars.

Čestné prohlášení:

Já, Miroslav Zadák, narozen 8.11.1985, nemám pracovněprávní či jiný vztah k jiné součásti ČVUT.

V Praze dne: 5.6.2017

Miroslav Zadák