



MASTER THESIS SUPERVISOR REPORT

Name of Master Thesis: **Hybrid power plant for power supply of autonomous objects**

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Scientific adviser CTU: **Ing. Michaela Makešová**

The aim of the discussed master thesis is to propose technical solution of hybrid power plant for power supply of autonomous objects in Russia.

The thesis is divided into 3 main parts. The first part is devoted to the description of the current state of electricity supply trunk gas pipeline consumers of main gas pipelines. Author describes technical requirement for the power supply in detailed conditions. This part also analyses possibility of renewable energy usage. Author analyses theoretical renewable production and proposes a model of required production.

The second part is widely devoted to the technical solution. A detailed model of consumption in real time is presented and also the model of renewable production is presented here. There are listed six configurations proposed to cover the supply, different combinations of wind turbines and diesel production. One of these combinations is chosen and in the last chapter is economically evaluated.

Third part is devoted to the economic analysis of proposed solution, with discussion of all inputs and their possible change in time, also sensitivity analysis is presented. Economic model sets the revenues by pretending to be an owner of company selling the produced electricity. This fact I consider as very unusual, but realistic.

The student worked regularly, although his approach could be more proactive. The citations are used regularly following the citation norms.

I consider the submitted work as above average. It has a logical structure and it is easy to read. There are no weak or illogical parts and the chosen approach is fully corresponding with the

scope of the problem. I have a few comments on both the formal and content part. The thesis is written with a few typographic and syntactic errors and also the research part is less broadly processed than computing part.

As a supervisor I can conclude that submitted diploma thesis demonstrates good orientation in the topic and the all the aims of the master thesis instructions are fulfilled and therefore I recommend the thesis to be accepted and to be graded

B – Very good

Questions regarding the master thesis:

- 1) Can you explain more the value of discount rate?
- 2) Can you compare actual situation in the electricity markets between Russia and Czech Republic?

Prague 10.6.2020
Ing. Michaela Makešová