PEER REVIEW OF MASTER THESIS:
Analysis of Energy Savings Measures in Public Building in Russian Federation

AUTHOR:
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1) Overall Approach of Author of Master Thesis.
The author's main goal is description of energy efficiency policy in Russian Federation and design and evaluation of possible energy saving measures of a public building. The first part is performed very well. The second part shows that the author has not enough experience with analysis and presentation of outputs. However, the thesis shows some interesting and original points.

2) Description of the Master Thesis
In the first part of the thesis the author compares the governmental policy supporting energy saving measures in Czech Republic and Russia.
The second part deals with possibilities of energy efficiency measures implementation on the building of Tomsk Polytechnic University. The educational building consists of lecture rooms, small practice rooms, teacher rooms and corridors. The author analyses heat and electricity consumption from several last years. The analysis covers both year-to-year and seasonal fluctuations of energy consumption. The differences are explained by the behavior of building occupants and by climatic and weather changes during the year.
On the basis of analysis, author describes several energy efficiency measures: building envelope insulation, lighting system reconstruction and local electric heaters elimination.
The measures are evaluated from the economic point of view.
The author found approximately 30% potential of energy savings in the building.
Unfortunately, the economic evaluation shows that due to low energy prices the measures are too expensive for positive NPV.

3) Reached goals and their practical application
Generally, the main goals were reached. The work shows some new findings which could be spread in similar cases in the Russia.
The work fulfilled the assignment.
The thesis has some minor mistakes:
There is no description of the heat source in the chapter 3.2.
The Figure 4 describes annual consumption data. A bar chart would be more illustrative.
The Figure 14 is misleading. The reason of consumption drops are weekends which are not sorted on the scale (weekends are not in the same dates).
The Figures 16 and 17: the legend is doubled and the label says the same.
It would be great to recalculate energy to the same units and to present the overall balance.

Questions for author of the thesis:
Table 17: Both IRR and payback period are good, a lifetime of the measure is longer than payback period. Why is the NPV negative?
Table 18: Why is the operating cost for heating higher after building insulation?

Classification:
C (dobře.)

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