

# Report on Bachelor / Master Thesis

Institute of Economic Studies, Faculty of Social Sciences, Charles University in Prague

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<b>Title of the thesis:</b>	Influence of renewable energy sources on transmission networks in Central Europe

## *OVERALL ASSESSMENT (provided in English, Czech, or Slovak):*

The aim of this thesis is analysis power and transmission systems in Central Europe regarding to insufficient transmission capacity between northern and southern Germany, Energiewende policy and existence of German-Austrian bidding zone. The Author employed ELMOD model to assess the exact impact on the transmission grid. The research found that higher feed-in of solar and wind power increases the exchange balance and total transport of electricity between TSO areas as well as the average load of lines and volatility of flows, and solar power is identified as a key contributor to the volatility increase, wind power is identified as a key loop-flow contributor. The paper is very nicely written: the literature review is done well, methodology emphasized very well, the presentation and structure are very good. My only critical comment in this respect is about motivation and contribution:

- Author need to clarify little bit more for the main contribution of this research, more detail will help reader understand more clearly.
- Despite that methodology has been conducted well, conclusion has been written weakly.
- The relaxations of assumptions of model are questionable. The limitation regards the ceteris paribus nature of the model needed explain carefully, and discuss the possible biasness of this limitation.
- Equations 4.1 – 4.6 in Chapter 4, needed to named and explain in page 41.
- The novelty value of the thesis needs to be improved.
- Author writes “We proceed by having look at res and full scenarios and the development of flows on the lines” in page 60. Thesis has not written with co-author.

### **Suggested question for the defense is:**

- The assumptions of perfect competition and welfare maximization do not reflect the reality. If oligopolistic structures with game theoretic approach better than current model, why does not Author follow this method?

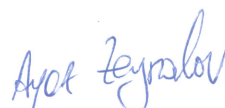
In the case of successful defense, I recommend “**výborně**”

**SUMMARY OF POINTS AWARDED** (for details, see below):

CATEGORY	POINTS
Literature (max. 20 points)	20
Methods (max. 30 points)	25
Contribution (max. 30 points)	20
Manuscript Form (max. 20 points)	20
<b>TOTAL POINTS (max. 100 points)</b>	<b>85</b>
<b>GRADE (1 – 2 – 3 – 4)</b>	<b>1</b>

**NAME OF THE REFEREE:** Ayaz Zeynalov

**DATE OF EVALUATION:** 31 May 2016



Referee Signature