

October 29, 2008

**Opponent's report on the doctoral dissertation of Silvester van Koten
entitled *The Causes and Effects of Imperfect Unbundling in the
European Union***

The dissertation consists of three essays dealing with different aspects of unbundling electricity generation and transmission in response to the EU regulations introduced in the early 2000s. The purpose of these regulations was to promote welfare through economic efficiency attainable in a competitive environment. The first two essays involve development of theoretical models to analyse the effects of different types of unbundling, while the third essay represents an empirical study of the unbundling process in the EU.

The EU regulations are directed at the so-called *Vertically Integrated Utilities* (VIU), which combine electricity generation with electricity

transmission. Without effective competition the VIUs can reap monopoly profits and thus adversely affect welfare. The EU directives, on which this dissertation is based, allowed for the VIUs to choose between legal (partial) unbundling and complete ownership unbundling. In the case of the former, the VIUs may be in a position of keeping down competition by various means (including delaying the compliance with the directives). The first two essays related to the auctioning of the transmission facilities to comply with the EU directives. In the first essay the author solves a profit maximization problem of two bidders of which one is “privileged” by virtue of owning a share of the auctioneer’s revenue. The outcome leads to welfare losses. In the second essay the author considers the case of a legally unbundled VIU, which can increase its profits by bribing the manager of the legally unbundled generator to bid aggressively for the transmission facility. The result, again, is a loss of welfare. In the third essay, co-authored by Andreas Ortmann, the authors advance—and test—the hypothesis that those EU countries, which are perceived as possibly vulnerable to corruption, will be lagging in complying with the EU directives.

The work in this dissertation is of a high professional quality. The author is very familiar with the technical and institutional features of the electricity

industry. The survey of the literature appears to be complete and is certainly illuminating. The technical expertise of the author is amply demonstrated by the solution of the optimising problems in essays 1 and 2, and by the empirical analysis in essay 3. The original contributions to our knowledge are both theoretical as well as empirical, With regard to theory; the author provides equilibrium solutions to three forms of asymmetric auctions that presumably have not been solved before. With regard to the empirical contribution, the results that corruption-prone countries are more likely to exploit loop holes in the EU regulations, while not surprising are definitely new.

However, the dissertation is not without certain weaknesses.

The European electricity market is complex and has been changing rapidly since the late 1990's with the objective of opening up the electricity markets to the gradual introduction of competition and new regulations.

Prior to 2007, these regulations allowed EU countries to adopt less rigorous application of the process of "unbundling". The author refer to these adaptations as "*partial legal unbundling*", "*complete legal unbundling*" and "*ownership unbundling*".

On the 10th January 2007,¹ the European Commission issued a progress report about the results of a competition inquiry, which confirmed serious problems in the liberalized electricity markets. These Commission results are congruent with the conclusion and findings of the authors that revealed “serious malfunctions”.

In March the same year,² the Commission adopted conclusions on energy liberalization, calling for:

- full implementation in “letter and spirit” of existing EU directives, and;
- “effective separation of supply and distribution activities from network operations (unbundling)”.

Furthermore in September, 2007 the commission presented its “third liberalization package” (Eur Activ 20/09/07)³ which states its position unequivocally in terms of providing companies in member states with two options for separating electricity production and supply. These regulations

¹ Liberalising the EU energy sector, Published 4 October 2005

² Ditto

³ Ditto

explicitly exclude the soft options that form the basis of this dissertation's analysis. The author does not acknowledge the ongoing changes to industry policy that continue to impact the regulations and the issues surrounding them. The absence of this information weakens the strength of this paper contribution in the context of its contemporary relevance. It could be overcome by responding to the following.

It would be helpful if the author would explain the relevance of the analysis in this dissertation in light of the 2007 policy changes and the most recent determination of the EU Commission⁴ in regard to ownership unbundling.

Points of Concern

Understanding the technical terms used in this dissertation is crucial to the fluent reading and understanding of this dissertation.

A glossary at the outset of this dissertation would assist in comprehending the terminology and save time in re-reading material that was initially incomprehensible.

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Minor Point

English expression throughout could be improved to enhance the clarity of exposition. For example, does the author in his abstract on Page 92, third paper mean that the electricity companies ie the VIU's can "increase" their profitability through combined ownership of generation and transmission and or distribution networks? Or does he mean "maintain" profitability?

Or, is the author comparing the VIU's profitability prior to unbundling with its current status and suggesting it will increase from its past profitability?

In spite of the shortcomings, the dissertation represents a serious and rigorous piece of work that, in my opinion, is at or above the normal acceptance level at western universities such as the University of Michigan.

Thus, I definitely recommend the doctorate to Silvester van Koten.

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