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**THE RELEVANCE OF UNBUNDLING  
FOR COMPETITION IN ELECTRICITY  
MARKETS: IMPLEMENTATION,  
EXPERIENCE, AND REQUIREMENTS  
FOR THE FUTURE**

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## Editorial

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**Biographical note:** Hans Auer is an Assistant Professor at Energy Economics Group (EEG) at Vienna University of Technology, Austria. He holds a PhD in Energy Economics and a MSc degree in Electrical Engineering from Vienna University of Technology. His main research interests are electricity market restructuring analysis, in general and economic aspects of grid regulation and RES-E grid integration, in particular. In the past 10 years he has been responsible for the scientific coordination of a variety of research projects founded by the European Commission (*GreenNet*, *GreenNet-EU27*, *GreenNet-Incentives*) as well as other international and national projects in the field of electricity market restructuring. He has also authored more than 15 peer reviewed scientific papers and book contributions.

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Restructuring of the electricity supply industries aims to implement competition in general, yet realises that some elements of the electricity supply chain (like electricity grids) still remain natural monopolies. Consequently, it is considered best for the electricity systems to be separated into clearly defined and separately accounted entities such as electricity generation, high-voltage transmission, low-voltage distribution and customer supply. This is called unbundling of previously vertically integrated utilities. Worldwide, there already exists considerable experience with different models of unbundling vertically integrated electricity supply industries.

This special issue aims to further improve our understanding of the relevance of unbundling for competition in electricity markets. From the market design perspective, this means, in particular, the separation of the competitive businesses of electricity generation and customer supply, on one hand, and the regulated grid infrastructure (transmission and distribution grid), on the other hand. But, aside from the individual development of each unbundled segment, the entire electricity supply chain also has to be continuously evaluated on an aggregated level, in order to guarantee security of supply (e.g. generation and transmission adequacy) in case of market failures and/or other disincentives, e.g. for investments into the grid infrastructure.

The following papers critically review the overall design and functioning of electricity markets in selected countries and regions: F.P. Sioshansi addresses the variety of problems of continuous reforms of electricity market reforms based on selected examples worldwide, with special emphasis on the US experience. Haas et al. discuss the relevance of cross-border transmission capacities (transmission adequacy) for competition in the Continental European electricity market. M.S. Arellano assesses the recent changes of Chile's electricity law, the first country to reform and restructure the

electricity supply industry in the mid-1980s. Recommendations to overcome the imperfection of the two electricity market reforms of another Latin American country, Brazil, are derived in L. Losekann's contribution. Going around the globe, A. Moran analyses the emergence and recent developments of the Australian electricity market. Security of supply analyses in the (isolated) electricity markets in Singapore and UK in Chang et al. conclude the first badge of paper on country-specific experience.

In the second badge of papers the electricity networks – both transmission and distribution grids – are the core focus of interest. Lieb-Doczy et al. evaluate the international experience (mainly the UK and the USA) of unbundling ownership and control of the transmission grids by Independent System Operators (ISOs). A comprehensive discussion on implementing incentives for adequate investments and quality standards in the distribution grids under different grid regulation regimes, notably the price cap model, is conducted in G. Shuttleworth. Remaining contributions, furthermore, underpin the necessity of clear unbundling and the establishment of transparent rules for non-discriminatory grid access for distributed (DG) and/or renewable (RES-E) electricity generators: Weber et al. assess the benefits of providing system services by distributed generation. A systematic approach estimating the impact and the costs of wind integration into the existing electricity system is presented in Söder et al. Di Castelnuovo et al. analyse the spatial pricing in the context of RES-E generation in the UK electricity market. Eventually, C. Huber critically reviews the state-of-the-art of different RES-E policies in a competitive environment.

Finally, I wish to express my sincere thanks to Prof. M.A. Dorgham (Editor-in-Chief) and the *Int. J. Global Energy Issues (IJGEI)* for having me given the opportunity of editing this special issue on 'The relevance of unbundling for competition in electricity markets: implementation, experience, and requirements for the future'. I would like to thank all the authors of this special issue for their commitments in preparing their excellent papers. I also thank those whose papers could not be included in this special issue, not because their contribution was less interesting but because ultimately a final selection had to be made. I also thank all the referees who worked under a very tight time schedule and helped me in maintaining the standard of this reputed journal.

Last but not least, my sincere thanks go to Ms Janet Marr (Journal Manager) and the production team for their hard work in putting the papers together and publishing this special issue.

Hans Auer  
(Guest Editor)

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