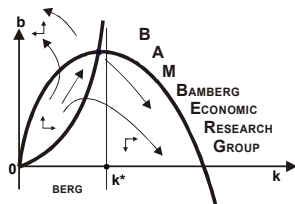


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VALBONA KARAPICI

**Electricity trade opportunities
in the SEE region –
the case for an integrated market**

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VALBONA KARAPICI

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SEE region – the case for an integrated
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Abstract

Despite ongoing liberalisation processes in the utility industries in the Balkan region, the Albanian electricity sector is still in the early stages. The process that would lead to the use of market or quasi-market mechanisms as part of reforms to the sector would bring greater competition into electricity markets in the interest of creating more competitive markets and lower prices. The theoretical framework developed in this thesis, alongside the evidence produced, suggests that the price reduction is better achieved through the integration of liberalised markets. We argue that major benefits in the southeast European (SEE) electricity sector could be achieved through the creation of a regional electricity market with the future prospect of becoming part of the integrated energy market (IEM). We provide insights into the possible comparative advantages that arise in the case of a simulated interconnected pool in some of the countries within SEE, particularly between the countries that share common borders with Albania. A difference in generation resources among the countries under investigation supports the suggested idea. A theoretical platform is constructed for electricity costs formation, from which key determinants of the generation portfolio and associated costs are calculated using optimisation problem software. Under the rationale of security of supply of the entire system, cost evaluation is preceded by demand and load forecast estimations. These are performed through two different approaches: the ARMA model, and an approach based on three different scenarios – base, high and low growth of the macroeconomic indicators that drive demand for electricity. The linear model set up to minimise the total costs of generation takes into account the calculation of short and long-term marginal costs. Results with differences in estimated costs give rise to the perspective of the simulation of the interconnected pool among the countries. Overall, it is found that costs under the interconnected scenario are lower compared with those achieved when countries operate as individual system operators, implying that there are economic benefits from the creation of a pool. Drawing on these findings, the analysis concludes with the development of policy recommendations targeted towards the issue of designing a package of policy measures in the context of integrated electricity markets. In this context, proper initiatives have to be seen in the view of parallel policies undertaken by the countries in the region, since all the involved countries could benefit from comparative advantages that arise in terms of generation costs due to the creation of a common pool as they can exchange electricity.

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List of abbreviations

<i>Acronym/Abbreviation</i>	<i>Definition</i>
AMM	Albanian Market Model
ANN	Artificial Neural Networks
ARIMA	Auto Regressive Integrated Moving Average
ATC	Available Transmission Capacity
CAO	Co-ordinated Auction Office
CCGT	Combined Cycle Gas Turbine
CEZ	Czech Corporation
DAM	Day-Ahead Market
Distcos	Distribution Companies
DOE	Department of Energy
DSO	Distribution System Operator
EC	European Commission
ECSEE	Energy Community of Southeast Europe
EEX	European Energy Exchange
ENTSOE	European Network of Transmission System Operators for
EPEX	European Power Exchange
ERE	Energy Regulatory Authority
ERU	Energy Regulation Office
EU	European Union
FERC	Federal Energy Regulatory Commission
GIS	Generation Investment Study
HPP	Hydropower plant
IEA	International Energy Agency
IEM	Integrated European Electricity Market
IPEX	Italian Power Exchange
IPP	Independent Power Producers
ISO	Independent System Operator
KESH	Korporata Elektroenergjitike Shqiptare
KOSOVO	United Nations Mission in Kosovo
LDC	Load Duration Curve
LMO	Local Market Operator
MA	Market Adjustment
MCP	Market Clearing Price
MGP	Mercato del Giorno Prima
MOU	Memorandum of Understanding
NEC	Net Export Curve
O&M	Operation and Maintenance
OCGT	Open Cycle Gas Turbine
OECD	Organisation for Economic Co-operation and Development
OTC	Over-The-Counter
PCM	Production Cost Model
PJM	Pennsylvania-New Jersey-Maryland
PSO	Public Service Obligation

rTPA	Regulated Third Party Access
SAPP	Southern African Power Pool
SDDP	Stochastic Dual Dynamic Programming
SEE	Southeast Europe
SEE CAO	Southeast Europe Co-ordinated Auction Office
SEE REM	Southeast European Regional Electricity Market
SEESP	SEE Market Service Provider
SEM	Single Electricity Market
SERC	State Electricity Regulatory Commission
SETSO	Southeast Europe Transmission System Operators
SPA	Share Power Agreement
SPCM	Strategic Production Cost Model
SPP	Small Power Producer
STLF	Short-Term Load Forecast
TAP	Trans Adriatic Pipeline
ToU	Time-of-Use
TSO	Transmission System Operator
WAPP	West African Power Pool
WB	Western Balkan

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