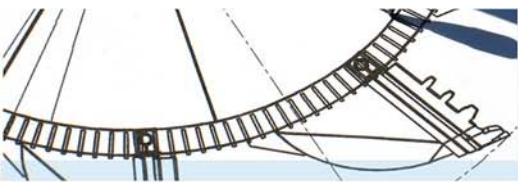


One Step Beyond

consulting services



Electricity Coordinating Center Ltd.



Who we are



EKC was established in 1993 with prime task to coordinate exploitation and control of power systems in South East Europe.

In 1994, the activities were extended to consultancy services, provided primarily to its founders, and thanks to innovative thinking and in-depth understanding of regional electric power systems, the number of clients and the type of services has been extended to a much broader scope.

Since 2007 consulting is our primary activity.

We can provide consultant services in area of electric power systems, transmission and distribution systems, power generation, power quality and energy and market management.

Services and tools that we provide are based on obligation to provide neutral, objective and expert advices that can guide our clients to success.

EKC experts use professional software tools known worldwide and application software developed by EKC used extensively in the Continental Europe.

In addition to consultant services, we also share our knowledge by organizing educational and professional trainings through EKC's Education Center.

Area

Well known and recognized consulting company particularly in the region of South East and Central Eastern Europe as well as in the region of the Black Sea, the Middle East and Central Asia.

Services

A full range of services, including short and long term planning, technical consulting, software solutions and know-how, as well as market development in the electricity sector.

People

Highly skilled and experienced staff, educated and trained to fulfil any given task, with a solid reputation of delivering high quality services on time.

Knowledge

We can help you raise the level of knowledge in your company and widen the access to valuable information by building data bases, providing expert analyses and creating software applications.

Founders and Owners



Serbian Transmission System and Market Operator
www.ems.rs



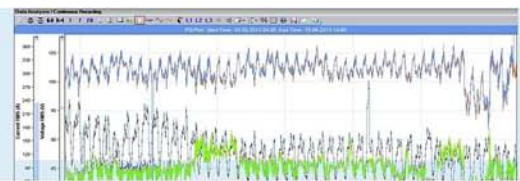
Montenegrin Transmission System Operator
www.cges.me



Macedonian Transmission System Operator
www.mepso.com.mk



Power Utility of the Republic Srpska
www.ers.ba



Regional Projects

We performed numerous studies related to the power system analysis, new transmission projects, connection of new power plants to the transmission grid, connection of electric power systems to the European interconnection and creating of electricity markets.



"Electricity Highway 2050"



"Southeast European Cooperation Initiative (SECI) Regional Transmission Planning Project"



"Black Sea Regional Transmission System Planning Project"



"Software Solution for Automated DACF Procedure"



"Stock Taking: Regional Power Trade in Southern Caucasus"



"Development of Methodology and Software for CEE Flow-Based Auctions"



"Feasibility study: Synchronous Interconnection of the Power System of IPS/UPS with UCTE"



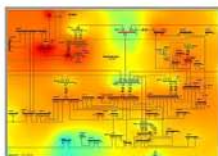
"Interconnection of the Power System of Turkey to UCTE"

All activities related to **SECI** (*Southeast European Cooperative Initiative*) Development of Interconnections of Electric Power Systems of "SECI" countries for better integration to European System are available on web site

www.ekc-ltd.com.

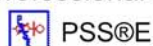


Our Tools



Software Tools

To implement numerous projects world-wide, our experts use professional software tools:



WASP IV



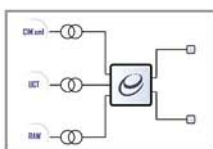
DlgSILENT Power Factory

SDDP



GTMx

ORACLE ORACLE



Software Applications Developed by EKC

EKC provides the software solutions in the field of electric power systems. Our software follows specific needs of energy stakeholders for professional and fast tools to cope with numerous technical procedures. After successful application of the software on several national and regional projects, these software tools have been widely used throughout the Continental Europe.



TPC Tool (in cooperation with DMS Group)

Tecnical Parameters Calculation Tool - Software for models processing, load flow and PTDF/Maxflow calculation, designed for CEE Central Allocation Office in Freising for 8-TSOs flow-based coordinated auctions.



TNA -Transmission Network Analyzer (in cooperation with DMS Group)

TNA - software for validating, fixing, merging and converting load flow data, load flow and contingency calculations, NTC and PTDF/Maxflow capacity calculations, and short circuit analyses. TNA supports working with UCT and CIM xml data formats.



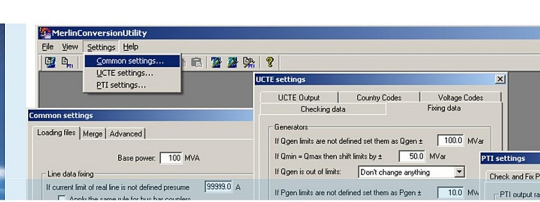
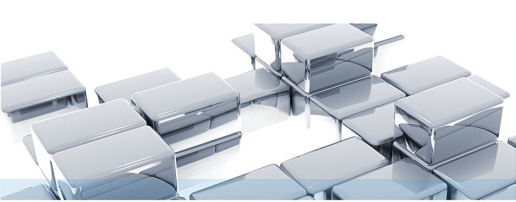
MERLIN

Conversion and merging utility software which allows bidirectional conversion of data between UCTE data format and PSS/E raw format as well as merging of several models into one. The software is recommended by the ENTSO-E (UCTE) Secretariat and is widely used by more than half of European TSOs.



BETSEE

Web-based platform for the SEE inter-TSO balancing market, used as a prototype for the Regional Balancing Mechanism.



Having right information
at right moment
is the basis of success



Transmission and Distribution Systems

Network master plans
Power system studies (Load flow, Dynamics and stability, Reliability, Harmonics analyses,...)
Development of interconnections and regional electricity exchanges
Grid Code, Policy and Recommendations

Power Generation

Generation master plans
Integration of power plant to power system
Power plants ranking
Renewable sources (connection to electrical grid)
Management and control of production unit

Electric Power Systems

Electric power system management and control (Power Frequency Control, Black Start, Defence Plan, ...)
Demand forecasts and analyses
Demand side energy management
Energy efficiency
Losses in power network
Sustainable development

Electricity Market and Economy

Electricity market analyses
Congestion management
Cross-border trade mechanisms
Balancing mechanisms
Cost benefit analyses
Market Code

Power Quality

Development of monitoring program
Device installation and monitoring
Data analysis (power frequency, transients, fault analysis, power factor, flicker, voltage, unbalance, harmonics...)
Evaluation of power quality, setting guidelines for national standards

Control Center - Consulting Services

Preparation of Tender Documents and Technical Specifications
Assistance with Evaluation of Bids and Contract Negotiations
Supervision and Monitoring during the Project Implementation

Software Solutions

Network data processing
Load flow and transmission capacity calculation (NTC, PTDF/MF), DACF
Short circuit

Education and Training

Educational and professional trainings through the Education Center

Our Clients and Partners



Interconnection Projects

400 kV tie-line Elbasan (ALB) - Bitola (MKD)	(2012)
New Interconnections MNE - ALB	(2010 -2012)
New Interconnection MNE - BiH	(2012)
Oman 400 kV Interconnection Network Studies	(2012)
400 kV tie-line Serbia - Montenegro	(2010)
400 kV tie-line Serbia - Romania	(2009)
Submarine HVDC cable Italy-Montenegro	(2008)
Emirates National Grid Interconnection	(2006-2008)
Connection of UCTE and IPS/UPS	(2004-2008)
Reconnection of 1st and 2nd UCTE Synchronous zones	(2003, 2004)
400kV tie-line SS Ugljevik (BiH)-SS S.Mitrovica (RS)	(1998, 2004)
400kV tie-line SS Nis (RS) - SS Skopje (MKD)	(2004)
Transfer Capabilities in Balkan Region	(2004)
400kV tie-lines MK-RS and ALB-MNE	(2003)
400kV tie-line Greece - Bulgaria and Amyndeo (GR)-Bitola (MKD)	(1998)
Connection of Bulgaria and Romania to UCTE	(1996)

Transmission and Distribution Projects

Restoration Plan of Montenegrin Power System	(2012)
Reliability Indicators for the Armenian Power System Operation	(2012)
400 kV line Lastva - Pljevlja (MNE)	(2011)
Western Serbia - 400 kV Transmission System Upgrade	(2011)
Transmission Network Development Plan (MNE)	(2011)
Distribution networks of Podgorica and Niksic till 2025	(2010)
IPF Montenegro -Transmission and distribution	(2009)
Moldavian Transmission System	(2008)

Policy and Regulatory Framework

Grid Code (MKD)	(2012)
Market Code (MKD)	(2012)
Grid Code (MNE)	(2011)
Defense Plans (MNE)	(2011)
Restoration Plan (MNE)	(2011)

Power Quality

Power Quality Performance of the Transmission Network (MKD)	(2012)
Power Quality Performance of the Transmission Network (MNE)	(2013)

Connection of New Power Plants

HPP Dabar 176 MW (BiH)	(2012)
TPP Nikola Tesla B3 700MW (RS)	(2010)
HPP Dub and HPP Ustipraca 22 MVA (BiH)	(2010)
HPP Ulog 40 MVA (BiH)	(2010)
HPPs Kelag 51 MW (MNE)	(2010)
CCGT EMAL 2200 MW (UAE)	(2009)
TPP Tuzla 450MW and Kakanj 300MW (BiH)	(2009)
TPP Stanari 390 MW (BiH)	(2008)
HPPs on river Drina 302 MW (BiH)	(2008)
CCHP Skopje 250 MW (MKD)	(2007)
TPP Gacko II 660 MW (BiH)	(2007)

Renewables Projects

Wind Power Plant Bogdanci 36.8 MW (MKD)	(2013)
Wind Farm Plandište 102 MW (RS)	(2012)
Large Scale Wind Integration in SEE	(2011)
Wind Power Plant Krnovo 72 MW and Mozura 46 MW (MNE)	(2011)
Wind Power Integration (MNE)	(2011)
Wind Power Integration (RS)	(2011)

Regional Planning Projects

E-Highway	(2012-...)
SECI TSP (Southeast Europe)	(2002-...)
BSTP (Black Sea Region)	(2004-...)
Stock Taking (Southern Caucasus)	(2012)
CARTRANS (Central Asia)	(2008)
Generation Investment Study (Southeast Europe)	(2005, 2007)

Electricity Market

SEE Evaluation with Market & Network Analysis	(2012)
SEE Supply, Demand and Transmission Projections	(2007/09/11/12)
ETSO Cross Border Trade Mechanism	(2004)

Software Solutions

TNA Software Application	(2012)
Automated DACF Software for SEE TSOs	(2012)
BETSEE - Balancing Electricity Platform for SEE	(2010-...)
Software for CEE CAO Freising	(2008)



Electricity Coordinating Center Ltd.

Vojvode Stepe 412 · PO BOX 50 · 11040 Belgrade 33 · Serbia
 Phone +381 11 397 42 73 · Fax +381 11 397 18 13
 gm@ekc-ltd.com · www.ekc-ltd.com