

## EKC - Electricity Coordinating Center Ltd. Transmission & Distribution Systems

Regional leader in providing engineering and consulting services for transmission and distribution systems

EKC' vast experience in transmission and distribution system operation has increased reliability and efficiency our client's power systems operation.

We offer strategic advisory and analytical support at every main stage of the project development:

- idea conception and development
- pre-feasibility and feasibility studies
- design and project implementation
- commissioning and warranty period

### Our success:

*... reliable and highly competent consultant who delivers at agreed commitments in professional and collegial manner ...*

**EKC's** goal is to provide strategic technical support to our clients, which guarantees safe and reliable operation of electrical system for present and future system conditions. Our advisory services in domain of transmission and distribution include:

- Long-term planning and network development
- Operational planning
- Disturbance analyses
- Integration / connection of new generating and demand facilities
- Grid code compliance testing
- Defence and restoration plans
- Electricity balancing
- Power quality
- System monitoring and control
- Expanding of interconnection
- Grid code development
- Third party review

Our comprehensive list of clients comprises:

- electric power transmission and distribution utilities
- national and international funding agencies and financial institutions
- governmental organisations
- new generation or demand connection customers
- investors in power sector projects

EKC's highly skilled specialists have been providing creative and efficient solutions for large variety of engineering problems using professional software tools such as PSS/E, DigSILENT and CAPE. Together with our partners in academic institutions and software developers, EKC developed software tool **Transmission Network Analyser - TNA** for performing complex transmission and interconnection analyses. Our TNA software is now widely used in Continental Europe.

**EKC's** services in domain of Transmission and Distribution systems include:

### POWER SYSTEM MODELLING

Model development (steady state and dynamics)  
Model validation (steady state and dynamics)  
Model integration and continuous maintenance within interconnections

### STEADY STATE ANALYSIS

Load flow & contingency analyses, Voltage and reactive power analyses and control  
Power losses analyses  
Short circuit analyses  
System optimization assessment  
Analyses of power exchange scenarios, Sensitivity analyses  
Grid transfer capacity calculation  
PV and QV analyses  
Reliability assessment

### TECHNO-ECONOMIC ANALYSIS

Technical optioneering, Options' advantages /disadvantages evaluation  
Cost/benefit analysis  
Project risks, assumptions, issues and dependencies assessment

### SYSTEM MONITORING AND CONTROL

Consulting services for SCADA/EMS modules  
WAMS  
Optimal PMU placement

### RELAY PROTECTION SYSTEMS

Relay protection settings modelling  
Relay protection settings review  
Relay protection coordination studies

### POWER QUALITY ANALYSIS

Site measurements  
Voltage flickers (normal and switching operation)  
Harmonic distortion assessment

### DYNAMIC ANALYSIS

Voltage stability, Transient angle stability, Frequency stability  
Small signal stability (low frequency oscillations)  
Fault-ride through studies  
Critical fault clearing time analysis  
EMT analysis

### GRID CODES RELATED SERVICES

Harmonization of national planning & operational requirements with ENTSO-E codes  
Grid code compliance testing  
Testing procedures, On-site testing, Grid compliance testing reports

### SYSTEM BALANCING

Technical requirements  
BSP compliance  
Regional integration

EKC offers strategic advisory and analytical support at every main stage of the project development.

**EKC's** professional and in-house developed software tools:



We are focused on our clients' benefits starting from the idea conception and development, pre-feasibility and feasibility studies, design and project implementation, commissioning and warranty period.

Our comprehensive list of references include successfully delivered projects in transmission and distribution in Europe, Black Sea region, Middle East, Central Asia and Africa.



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