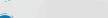


# 4th SEERC CONFERENCE ISTANBUL

**WOW ISTANBUL HOTEL and CONVENTION CENTER** 











# cigre

## 4th SEERC CONFERENCE İSTANBUL-TÜRKİYE

WOW HOTELS and CONGRESS CENTER

4"SEERC CONFERENCE ISTANBUL

OCTOBER 11, 2023 - First Day of Conference

08.30-10.00	REGISTRATION	
	HALL-1	ARTEMIS-1 HALL
	OPENING SESSION Zafer Benti Chair of SEERC	
10.00 -10.45	Philippe Adam General Secretary of CIGRE	
	Dr. Alparslan Bayraktar Minister of Energy and Natural Resources of Republic of Türkiye	
10.45 - 11.00	Handover Ceremony of SEERC Chair to Bosnia and Herzegovina	
11.00 - 11.45	COFFEE BREAK	
11.45-12.15	Keynote Speech Eleni Charpantidou – ENTSO-E Board Member Serhat Metin – Med-TSO Vice President	
12.15-12.25	Main Sponsor Welcome Speech ASTOR® Hakan Ünsal – Astor Energy General Manager	
12.25-13.30	LUNCH	
	Earthquake in Türkiye and Electric Power System Resilience Chair: Muhammer Nuri Aslan Deputy General Manager (TEİAŞ)	
13.30 - 15.00	Speakers: Ahmet Suat Üstün – Deputy General Manager (EÜAŞ) Ömer Baydilli – Head of Operation and Maintenance Department (TEİAŞ) Lale Yılmaz – Coordinator of Corporate Communication (ELDER) Özgün Ersoyoğlu – Regional Manager of Distribution Operations (TOROSLAR EDAS)	
15.00 - 15.30	COFFEE BREAK	



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## HALL-1 **EURELECTRIC SESSION** (15.30-16.15)

"Decarbonisation Speedways - Achieving Europe's 2050 Decarbonisation Objectives" Cillian O'Donoghue

Eurelectric **Policy Director** 

#### **CIGRE TUTORIAL WG C1.45** (16.15-17.30)

**Cost-Benefit Analysis Metrics** for New Interconnections

> Pierluiai Vicini Convener WG C1.45 Fabio D'Agostino Secretary WG C1.45

## **DISTRIBUTION SYSTEMS** AND SMART GRIDS

Crotia - Goran Spilac (Chair) Slovenia - Uros Kerin (Co-chair)

HALL-2

ID: 132

**Estimation of Georgian** Power System flexibility and adequacy

Archil Kokhtashvili

ID: 133

A clustering and benchmarking based monthly electricity consumption analysis for creating energy efficiency insights for the utility end-users

Hakan Demirer

ID: 143

The feasibility of frequency stabilization using battery energy storage system (BESS) in 400 kV power systems

Ergin Kayar

ID: 153

Distribution management system (DMS) integration in distribution network of Kosovo Turan Kocabayraktar

ID: 156

Challenges of protection system of Kosovo Distribution Network Nazir Naziri

ID: 170

Integration of solar power plants in distribution network examples from Bosnia and Herzegovina Seila Gruhonjic Ferhatbegovic

# ARTEMIS-1

**ELECTRIC TRANSMISSION** Austria - Klemens Reich (Chair) Greece - Dionysios Stamatiadis (Co-chair)

ID: 90

Transmission capacity maximization using dynamic thermal rating in Croatian

> **Power System** Zoran Buncec

> > ID: 101

Impact of the hydrological risk on the power grid: a case study on a portion of the Italian Transmission Power System exposed to the hazard

> of flooding Silverio Casulli

ID: 125 insulation systems Fault detection in power Umut Babur Elik transmission lines with artificial intelligence

Büşra Töre

ID: 126

**FACTS** for improved controllability of high voltage power transmission network in Georgia

Teona Elizarashvili

ID: 129

Challenges and opportunities for multipurpose interconnectors and wind off-shore generation Arman Derviskadic

ID: 161

Comparative performance analysis of network reduction on the transmission expansion planning Ahmet Ova

ARTEMIS-2 **POSTER SESSION** 

**ELECTRIC MACHINES AND POWER ELECTRONICS / ENERGY TRANSITION** Türkiye - Mikail Pürlü

> (Chair) (15.30-16.15)

> > ID: 106

Short circuit analytical prediction for transformer winding Mattia Medini

ID: 118

Optical current transformers Melis Aliefendioğlu

In: 157

Instrument Transformers using alternative and eco-friendly high voltage

ID: 160

Reliability analysis and condition monitoring of power transformers from the Romanian Power Grid Bogdan Leu

(16.15-17.00)

ID: 171

Reliability of transformers Anatoly Shkolnik

ID: 162

Protection and metering solutions for transmission tie lines in the Romanian power systems

Iulia Cristina Constantin

ID: 225

Algorithm for calculation of line distance protection settings Vladimer Popkhadze

ID: 112

Insuring power system reliability under high renewables penetration with energy storages - a case for Ukraine Sergii Shulzhenko

ARTEMIS-3

**SPECIAL WORKSHOP** 



(15.30-16.30)

Overcoming challenges in DGA monitoring through innovative solutions Fliel Knuvalainen

(16.30-17.30)

**Testing Protection Relays** with Superimposed-Quantities and Traveling-Wave based Elements Thomas Hensler

15.30-17.30





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## HALL-1 **ELECTRIC TRANSMISSION**

Türkiye - Deniz Çoşkun -TEİAŞ (Chair) Kosovo – Kadri Kadriv (Co-chair)

Classification of power quality events in the transmission grid: comparative evaluation of different machine learning

models Umut Güvengir

ID: 191

Strategic positioning of transmission system operators to achieve longterm goals and sustainability of the green transition -Analysis and case study

Igor Ivankovic

#### ID: 192

An innovative solution for reducing EMFs: the "5-phases" pylons

Maria Rosaria Guarniere

9.30-11.15

ID: 195 A compact 24-pulses converter for overhead lines de-icing and reactive power

> compensation Roberto Spezie

> > ID: 193

An innovative OHL design for renewable energy harvesting and transmission: the "5-phases" pylons Maria Rosaria Guarniere

## **DISTRIBUTION SYSTEMS**

Greece - Emmanouil Voumvoulakis (Chair) Kosovo - Avni Alidemai (Co-chair)

HALL-2

AND SMART GRIDS

In: 179

Imputation and forecasting of energy consumption data collected by smart meters using big data technologies in the distribution system

operator Andrej Somrak

ID: 181

Low voltage direct current distribution roadmap of Türkiye Deniz Kartal

ID: 187

Analysis of loads during the summer-winter season in Substation (SS) 35/10 kV Giilani I

Eliona Aliju

ID: 205

Under-frequency load shedding based on Huang's Empirical Model **Decomposition approach** for estimation of df/dt and artificial heural hetworks

Maia Muftic Dedovic

ID: 221

The impact of renewable resources on the improvement of frequency and voltage value in the distribution network of Kosovo Avni Alidemai

## ARTEMIS-1

SPONSORED WORKSHOP **Prysmian** 

(10.15 - 10.55)

Reducing losses and increasing ampacity of overhead conductor - Bringing Sustainability for Grid Vitthal Sawant

(10.55 - 11.15)

Cable Production / Using Big **Data and AI for Predictive Quality and Maintenance** Erdinç Yüksel

#### ARTEMIS-2

**POSTER SESSION DISTRIBUTION SYSTEMS** AND SMART GRIDS / **ENERGY TRANSITION** 

Türkive – Mikail Pürlü (Chair)

(09.30 - 10.15)

ID: 131

Smart metering benefits for costumers and distribution system

Hamnijete Qorolli

ID: 138

The impact of wind park plants on mitigation of energy crisis (2022) in Kosovo's **Power System** 

Rexhep Selimi

ID: 176

Prevention of high voltage network disturbance propagation by on-line monitoring and diagnostic of relay protection Janez Zakonjsek

ID: 186

A novel method for short circuit calculation Giorgi Arziani

(10.15-11.00)

In: 189

An innovative metric for evaluating operational resilience of the high-voltage

grid Chiara Vergine

ID: 190

Smart grid project GreenSwitch Goran Levacic

ID: 233

The caterpillar and the butterfly the experience of Italian engineering

M. Celozzi

ID: 109

Optimization module and auction mechanism for trading of guarantees of origin Milan Josifovic

#### ARTEMIS-3

SPONSORED WORKSHOP



(09.30 - 10.30)

The Silent Power Player: Leakage Reactance's Impact on Transformers

Dr. Kamran Dawood



(10.45-11.15)

The innovative future-oriented pioneer of on-load tap-changers ECOTAP®VI Guenter Panzer

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#### HALL-1 HALL-2 ARTEMIS-1 ARTEMIS-2 ARTEMIS-3 SPONSORED WORKSHOP **AUTOMATION AND CONTROL ELECTRIC MACHINES AND** WIE SESSION **POSTER SESSION** Serbia - Ninel Cukalevski **POWER ELECTRONICS/** THE ROLE OF WOMEN IN THE **AUTOMATION AND CONTROL** ENPAY (Chair) **ELECTRIC TRANSMISSION FUTURE OF ENERGY SECTOR /ENERGY TRANSITION** Türkiye - Benan Başoğlu Georgia - Giorgi Kosovo – Pranvera Dobruna Türkiye – Burak Esenboğa (Co-chair) Amuzashvili (Chair) Kryeziu (Chair) (11.30 - 12.15)(Chair) Türkive - Kerem Köseoğlu (11.30-12.30)(11.30-12.15)Sustainability in the supply of ID: 86 (Co-chair) transformer components Dynamic tariffs and smart Philippe Adam ID: 105 Emrah Yürekten electric vehicle charging ID: 174 Karolin Ersöz Gülsün Alkan Çolak **Electricity tampering** infrastructure Impact of renewable Teona Elizarashvili detection system project Andreja Ivartnik Kanduc generation on distance Muna Saleh Al Jabri protection and adaptive ID: 100 algorithms to optimise ID: 116 Application for optimization performance ADMS for planning and der **ENERGY SECTOR FROM THE** of capacity reserve trading Rajesh Ananth control in distribution network MİTAS ENERGY PERSPECTIVE OF YOUNG auctions Boris Njavro WOMEN Goran Jakupovi ID: 178 Türkiye – Hayriye Gürbüz (12.15-13.00)Analysing electromagnetic In: 122 (Chair) ID: 108 and thermal effects of **Power Quality System within** Mitaş' Sustainability in (12.30-13.00)Autonomous mobile robot for using aluminium shield and Romanian TSO Overhead Transmission Line warehouse logistics magnetic shunt combinations Ciprian Diaconu **Industry and Construction** Beril Bulut at high-voltage level Şeyma Tuğba Ayrancıoğlu Ahmet Acet Özlem Taşcı autotransformers ID: 147 Neşri Murat Bingöl Sonnur Erdem ID: 110 Necmettin Mert Koçanalı Monitoring and management Osman Fakıoğlu Central dispatching and of ambient conditions of the ID:197 generation control system electirical grid with sensor for Electric Power Industry A modular design for OHL network system of Serbia grounding systems based on Büşra Töre Goran Jakupovic deep electrodes (12.15-13.00)Maria Rosaria Guarniere ID: 111 Emerging problems in system ID: 169 ID: 210 Digitization of DSO business operator training and possible Adriatic Corridor: A step processes based on the training simulator solutions towards deployment of Italian agnostic relational model Ninel Cukalevski multiterminal HVDC systems of process flows on the Enrico Maria Carlini example of Public Enterprise ID: 124 Electric Utility of Bosnia and The system split and blackout ID: 213 Herzegovina detection application Hybrid high voltage AC and DC Jasmin Heljıć Igor Bundalo system strength evaluation with large penetration of ID: 207 renewable energy sources The concept of Ukraine's Enrico Maria Carlini power system development taking into account the impact of the pumped-storage power plant in modern conditions Oleksandr Ryabenko ID: 214 The role of PSPP in the implementation of strategy of accelerated development of RES in the countries of South-Eastern Europe Yuriy Landau

ID: 229 The implementation of intraday auctions and its impact on the Croatian Electricity Market Martina Vajdić

11.30-13.00

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HALL-1 HALL-2 ARTEMIS-1 ARTEMIS-2 ARTEMIS-3 **ELECTRIC MACHINES AND NGN SESSION** SPONSORED WORKSHOP **AUTOMATION AND CONTROL POWER ELECTRONICS** Italy - Massimo Pompili "NGN FEATURES: WHAT CAN **NGN PROVIDE US"** Türkiye - Tuğçe Demirdelen (Chair) (Chair) Türkive - Ahmet Kerem Greece - Dionysios **PSCAD** Stamatiadis (Co-chair) Georgia – Giorgi Köseoğlu (Chair) Amuzashvili (Co-chair) Drenusha Gashi Boadan Leu ID: 128 Automatic generation control In: 87 Michael Schrammel Determination of the (14.00-14.45)working scheme in Georgia, L-location of partial under the liberalized energy Lessons Learned: TSO market discharges in the power **Experiences from EMT Studies** transformer model using UHF Mikheil Odisharia Türkiye – Gökhan Önal sensors (Chair) ID: 134 Djordje Radmilo Dukanac A dynamic thermal rating Ümit Çetinkaya architecture for thermal ID: 98 Yahya Mrabti Pressboard barriers in smart monitoring and congestion Öner Alican management in the Italian connection systems for high Grid voltage power transformers Enrico Maria Carlini Hakan Coşer ID: 102 ID: 136 SA-RAGROUP Challenges and the role of Istanbul: City centre 14.00 - 15.45 the dispatch center in the infeed with voltage source (15.00-15.45)converter-based HVDC management and control Arman Derviskadio of the power transmission Overhead transmission system - a summary analysis towers: An overview of ID: 107 Vezir Rexhepi loading test, design and strain Coupled numerical gauge correlation electromagnetic-structural Selahattin Selçuk Çıplak ID: 155 simulation for transformer Yılmaz Erdinç Saçılık The relationships between concentrations of particulate winding matter (PM2.5 and PM10) and Mattia Medini meteorological parameters in ID: 152 the Sarajevo Canton: seasonal Current transformers variations dimensioning in the context of Sabina Dacic Lepara digital substations Anamaria lamandi ID: 173 The impact of interconnection line synchronization on power system dynamic stability Giorgi Erikashvili ID: 180 Investigation of the effect of batteries on frequency control in power system Muhammet Furkan Yılmaz

**COFFEE BREAK** 





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#### HALL-1 HALL-2 ARTEMIS-1 ARTEMIS-2 ARTEMIS-3 SPONSORED WORKSHOP **AUTOMATION AND DISTRIBUTION SYSTEMS CONTROL/ENERGY AND SMART GRIDS** TRANSITION Türkiye – Belgin Emre Slovenia - Kresemir Bakic Türkay (Chair) (Chair) Romania - Ciprian Diaconu (Co-chair) Türkiye - Tuğçe Demirdelen (Co-chair) Transparency in competitive ID: 88 energy markets and ID: 198 Effective lightning mitigation transparency platform of Development of energy method on unshielded FYIST monitoring system for distribution line by using high Ömer Kırcalar sustainable production in the charge ratings Externally textile industry **Gapped Line Arresters** (EGLA) Duygu Durdu Koç Ertuğrul Partal ID: 217 The first lessons from rocket ID: 99 attacks on Ukrainian power An Al-based scalable and integrated monitoring system relative power unit's automation and control system for the electrical 16.00-17.30 grid systems (17.15-17.30)Oleg Agamalov Umut Güvengir Long Term Gas Policies for SEE and Strengthening ID: 218 ID: 120 Hypergrid: coordination and Implementation of artificial Position of Turkive control of different HVDC neural networks in conductor Oğuzhan Akyener tension calculations link Enrico Maria Carlini Ömer Burak Yücel In: 127 ID: 234 Geopolitics impact on **Electrical extensive** electrical grids during energy analysis of the power network transition in the presence of the air core Massimo Rebolini reactor FCL in the phase and neutral positions ID: 166 Hamed Vasheghanifarahani Short-term solar radiation prediction based on artificial ID: 130 Impacts of variable renewable neural network for Cukurova Region energy on new wholesale Burak Esenboğa market in Georgia Giorai Khorbaladze **Closing Session**

17.30-18.00

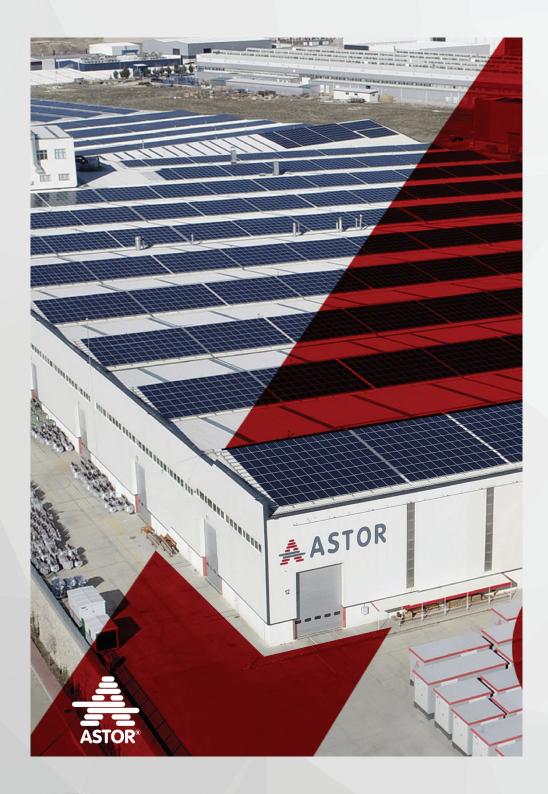
CHAIRMANSHIP PROJECT: Short Summary of "CIGRE South Eastern Region Electricity Overview: Generation, Consumption and Renewable Energy" Tuğçe Demirdelen (SEERC TAC Chair)

#### **Closing Remarks**

Ayten Sümer (CIGRE Türkiye NC General Secretary) - Erkan Alan (SEERC Secretary)







## **ASTOR ENERGY A.Ş.**



Astor Enerji A.Ş., founded in Istanbul in 1983, is a significant real sector company that has been shaping the electromechanical manufacturing industry with over 40 years of expertise in transformer production and sales.

The company has represented our country successfully on a global scale, being innovative and setting the direction for the sector.

The company headquarters relocated from Istanbul to Ankara in 2014 and continues its production activities in two integrated factory buildings in Ankara, specifically in the Ankara ASO 2nd Organized Industrial Zone, covering a total area of 140,000 square meters with 105,000 square meters of indoor space.

The products manufactured by the company are used in all stages from the generation of electrical energy to its delivery to end-users. The company has the capacity to produce four main product groups needed by the sector under one roof, namely Power Transformers, Distribution Transformers, and Medium and High Voltage Switching products. Within this framework, the main products and services include oil-immersed and dry-type distribution transformers, power transformers, special-type transformers, industrial transformers, medium and high voltage switching products, large-scale and project-based production and field installations, as well as transformer substations including concrete and metal sheet kiosks.

Astor Enerji also generates clean energy through a 6.6 MW rooftop solar power plant located on the factory roof. In addition to its core activities, the company is involved in Solar Energy System investments and operations, as well as Electric Vehicle charging network investments and operations. With the growth potential

in its activities, the company is also increasing its number of qualified employees, providing employment to over 1,750 people in its current facilities.

In addition to its strong position in the domestic market, Astor Energy exports approximately 40% of its products to over 90 countries, with slightly over 50% of its exports going to European countries.

Astor Enerji operates through an R&D oriented approach thus conducts original R&D design, computer and software-supported analysis, and development activities for special products demanded from both domestic and international markets. Within this context the company also carries out verification activities by producing prototype products and testing them in its accredited test laboratories.

With the capacity to test all of its inhouse products in an internationally recognized R&D and accredited test center, the company also collaborates with the International CESI/KEMA laboratory.

Astor Enerji, which was the 147th largest industrial enterprise according to ISO- 500 2021 data, moved to the 128th place according to ISO-500 2022 data. When we look at the ranking based on transformer and switching product manufacturers, Astor Enerji ranks first. The shares of Astor Energy, which continues its activities with a corporate understanding, started to be traded in the Star Market of Borsa Istanbul (BIST) on 18.01.2023 with the code "ASTOR". Due to the increase in trading volume and market value, in addition to its presence in national and international indices, Astor Enerji has been included in the BIST 30 index as of July,2023,

astoras.com.tr



#### **PRYSMIAN GROUP**



Prysmian Kablo ve Sistemleri A.Ş. is the Turkish operation of Prysmian Group, a world leader with around 31,000 employees, and 108 plants in over 50 countries. The company has been headquartered in Mudanya (Bursa) since 1964 and stands out in the Prysmian Group as one of the 16 plants that can produce both energy and telecom

cables under the Prysmian and Draka trademarks. The product range includes all energy cables up to 220 kV, copper conductor communication cables up to 3.600 pairs, optical fiber cables, railway signaling cables, elevator systems, studio broadcast cables, and specialty cables for industrial applications. Mudanya plant can now produce more than 22.000 types of cables.

Türk Prysmian also delivers "turnkey" projects for cables and systems providing each one customer-tailored and premium services. With a capacity utilization rate of 71% in 2022, Türk Prysmian continues to be a privileged export center within the Prysmian Group, exporting approximately 18% of its TRY 7,186,815,354 turnover in 2022. With a wide geographical coverage, the company exports to more than 50 countries today including but not limited to the Turkic Republics and the Middle East. Listed on Borsa Istanbul, Türk Prysmian Kablo ve Sistemleri A.Ş. is committed to continually improving the efficiency of its products and services both in Turkey and in the global markets.



## **GÜNGÖR ELEKTRİK**



Güngör Elektrik was established with the main objective of offering engineering, material production and trade, operation, maintananve and other services to electricity production, transmission and distribution facilities and it has carried our these activities

for the past 34 years accordingly. Establishment purpose and main activities of company is commitment of construction, contracting, project and engineering services and operation-maintenance services of electricity energy transmission, distribution, and generation facilities. It has carried out its activities in accordance with this aim and its mission for the past 34 years. It has become one of the five leading brands in the industry (with domestic/foreign capital), especially in the past 15 years. Our most important objective and our primary objective for next 10 years is to survive and protect our competitive power despite all the negativities that we expect to experience in our country and our sector.

www.gungorelektrik.com

#### **ENPAY**



**ENPAY** ENPAY is a producer of Transformer Components. As the pacesetter in its industry ENPAY has 4 manufacturing plants located in Turkive, India, Slovakia and Bulgaria with a product range of Magnetic Cores, High Voltage Insulation; Transformerboards, HVAC

and HVDC Insulation Components and Current Transformers.

ENPAY is a reliable partner to its customers in solving complex technical problems with an excellent reputation and market track record. High qualified staff, a strong know-how, an enviable R&D base, an engineering center with design capabilities and a comprehensive range of products are the most valuable assets of ENPAY, a leading example of how sustainable supply can enable the growth of the industry.

www.enpay.com

## **ŞA-RA GROUP**

Setting off the business in 1985, announced for its successes in the world more than SA-RAGROUP 38 years, ŞA-RA energy has become pioneer in the sector and associated its reputation with high quality. SA-RA is one of the most prominent companies in the world with its manufacturing capacity of a total of 638.500 tons. Energy transmission line towers and hardware, substation steel structures, bolts, conductor and cables, silicon insulators, highway quardrails, lighting and gsm poles represent the product range of Şa-Ra.

SA-RA energy performs its production activities in 13 industrial factories with a total of 480,000 m2 outdoor and 150.000 m2 indoor area. 10 of these factories are based in Adana facility and 3 are based in the Ankara facility.

SA-RA is the only company in Türkiye and one of the few in the world that can produce all the aforementioned products within the same group and simultaneously provide turnkey construction services in the areas of power transmission lines, open and gas insulated substations, back-to-back converter stations, energy distribution systems and telecommunication projects.

www.sara.com.tr

#### **PSCAD**



PSCADTM (PSCAD) is the world's most advanced tool for power systems EMT simulations. As power systems evolve, the need for accurate, intuitive simulation tools becomes more and more important. With PSCAD you can build, simulate, and model your systems with ease, providing limitless possibilities in power system simulation.

PSCAD has earned the trust of power system leaders around the world in more than 80 countries for over 40 years. Our software provides unparalleled reliability, speed, and accuracy for a range of applications, including:

- Insulation coordination: lightning, switching, TOV, and TRV;
- Harmonics, ferro resonance, and power quality;
- Power electronics: HVDC and FACTS;
- Wind, solar, and distributed generation;
- Protection and relays;
- Equipment failure analysis.

As the developers of PSCAD, our technical team provides consulting services, expert advice, and in-depth training and technical support on electromagnetic transient (EMT) studies. Clients have depended on our expertise for over 40 years, making PSCAD simulation software the longest standing, industry leading transient study tool today.

www.pscad.com

## **LEAN POWER SOLUTIONS**



Lean Power Solutions (LPS Energy), serves as a solution partner to leading companies in the global market. Lean Power Solutions consists of an international team of highly experienced specialists. Lean Power Solutions is dedicated to solve the market's most challenging problems in an affordable, reliable, and efficient manner. Lean Power Solutions provided high-quality services to global

leading companies including TSOs, DSOs and manufacturers, and the company will continue to be a reliable partner for valued clients. LPS provides technical support and consultancy services on grid compliance, insulation coordination, protection and relay coordination, harmonic studies as well as fault analysis, power electronics and equipment failure analysis. Lean Power Solutions is the representative of PSCAD, RTDS and CYPE in Turkey.

www.leanpowersolutions.com

## MITAS ENERGY AND METAL CONSTRUCTION INC.



MİTAŞ ENERGY MİTAŞ Energy and Metal Construction Inc. delivers power transmission and distribution projects at EPC/turnkey/engineering basis all over the world. Its activities include turnkey/EPC contracting, development of FEED, survey, design engineering, procurement,

installation, civil works and construction, testing, commissioning and rehabilitation for power transmission and distribution lines, substations, and renewable energy infrastructures. MİTAŞ Energy is part of the MİTAŞ Group that manufactures and exports steel structures to 136 countries, and has become a locomotive industrial enterprise with its contributions to the global power infrastructure and wellbeing of the global community.

MİTAŞ Energy, aiming to be the pioneer of technological innovations and sustainable energy transmission and distribution solutions, has the Headquarters in Ankara, Türkiye. MİTAŞ Energy will continue to offer sustainable and "green" engineering solutions with its advanced technological infrastructure and passion for excellence. Its efforts for sustainability and distinguished qualifications of MİTAŞ Energy are recognized by the major TSO's, private investors and leading Oil&Gas companies all over the world.

www.mitasindustry.com

#### MR



MR has an important job in the transmission and distribution of electrical energy: 50% of the electricity produced worldwide is regulated using our products. Founded in Regensburg, Germany, in 1868, we are a majority family-owned business, already in our sixth generation. Currently, around 3,700 employees work at the Maschinenfabrik Reinhausen GmbH headquarter in Regensburg as well as in 41 associated companies and 28 countries.

We help our global customers - energy producers, public and industrial grid operators and transformer manufacturers - with intelligent systems to regulate load flow and power guality for a safe, economical and resilient power supply. We provide high-quality products such as on-load tap-changers and de-energized tap-changers, innovative sensors, automation technology and analytics. As well as an increasing number of digital solutions.

www.reinhausen.com

#### MARKE



Marke Elektronik is a representative company focused on electrical test equipments and industrial electronic components since 1993. Located in Istanbul / Turkey, Marke is serving to Turkish industry with high-quality products of technology leaders. Our main focus is the

testing solutions for electrical power industry. For medium & high voltage asset manufacturers we provide electrical test equipments and systems starting from stand-alone high voltage test sets up to turnkey high voltage test laboratories.

www.markeelektronik.com

#### EMEK ELEKTRIK INDUSTRY



Founded in 1969, EMEK Elektrik Industries Inc. is a proud, independent, responsible and globally well-respected manufacturing and testing company serving in the electromechanical sector. EMEK manufacture high quality and reliable products, taking both safety and environmental requirements into consideration.

www.emek.com.tr

#### **EPIAS**



■ Enerji Piyasaları İşletme A.Ş. is an energy exchange company was established on March 2015. EPIAS is responsible for managing and operating energy markets, including power, gas and environmental commodities. Mission is; efficient transparent and sustainable operation and development of energy markets and vision is being global reference point for energy market.

www.epias.com.tr

#### **BEST**



Balıkesir Elektromekanik Sanayi Tesisleri A.Ş. (BEST), founded by the Yırcalı Family in 1966 in Balikesir, was established with %100 domestic capital. BEST is the first high-voltage transformer manufacturer in Turkey.

www.besttransformer.com





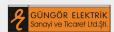






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