



COMPANY PROFILE

# PROTECTA ELECTRONICS LTD.



PROTECTION, AUTOMATION AND  
CONTROL FOR POWER INDUSTRY





At Protecta we are specialists in the production of own-developed numerical fault protection relays and automatic controllers for the global power industry, offering innovative solutions for the toughest technical challenges.

Our predecessor company was founded in 1949; ever since, our growth has been uninterrupted. Protecta maintains long-term relationships with its customers relying on its solid know-how, customer-focused development, service-oriented approach and reputation for quality and reliability.

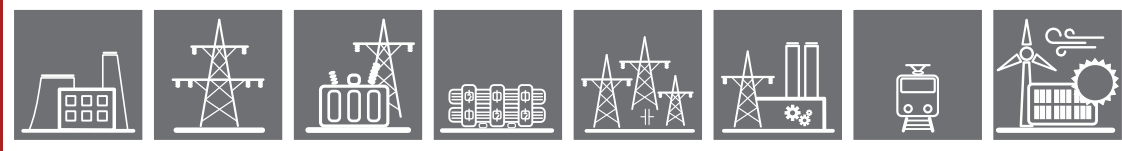
We are confident that the Protecta brand will gain worldwide reputation in the power industry as we direct our business to reach our vision focusing on four core values – innovation, quality & reliability, flexibility and customer support. The whole organization works towards a common vision and shared, focused goals.

Our latest EuroProt+ product family of IEDs draws on more than 60 years' experience in the field of efficient protection relaying for the power industry. It is these protection, automation & control devices and solutions that combine technology and expertise to provide the power network the required intelligence and reliable operation.

Continuing Protecta's tradition of integrity, respect and innovation, we are eager to meet new challenges, create new products and serve new markets.

LÁSZLÓ EPERJESI  
MANAGING DIRECTOR  
PROTECTA LTD.





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PROTECTA PROVIDES OWN-DEVELOPED STATE-OF-THE-ART PROTECTION, AUTOMATION & CONTROL INTELLIGENT ELECTRONIC DEVICES (IEDs) FOR SEVERAL FIELDS OF APPLICATION IN THE GLOBAL POWER INDUSTRY MARKET.

Protecta Electronics Ltd. has a track record of more than 60 years in the production and development of electromechanical and solid state protection devices. R&D engineers of the former state-owned Electric Power Research Institute constitute the core staff of the company. For its research and development, Protecta relies on the most qualified experts in the field. We believe that our future success is based on our present strength and past experience.

Today we focus primarily on the production of numerical fault protection relays and automatic controllers.

This highly qualified and experienced team makes innovation Protecta's most outstanding tradition. The choice of products offered by the firm includes the full range of protection functions for high- and medium-voltage networks, including power stations and industrial applications.

Protecta provides complete solutions for all high-performance feeders, transformers, lines and busbars, including industrial protection applications.

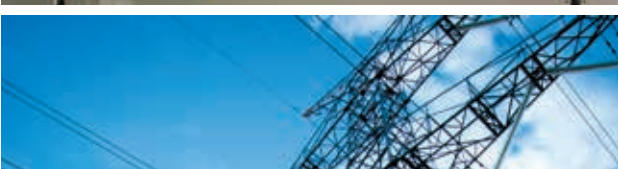
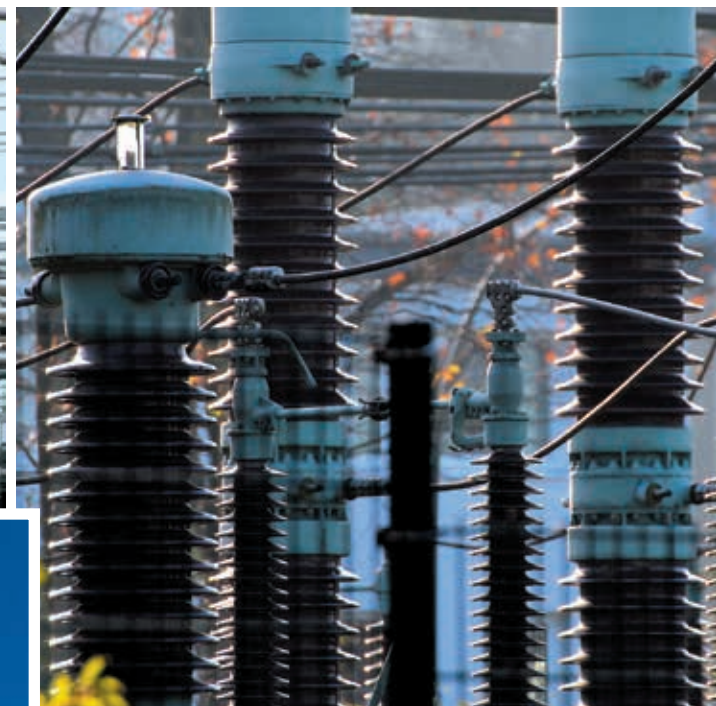
## Over 60 years of innovation

In addition to protective devices we also manufacture substation automatic controllers and special devices such as transformer voltage and tap changer controllers, transformer inrush current minimizers, Petersen coil controllers, and high-speed transfer devices for transformers and incoming feeders.



Protecta's headquarters are located in Budapest, the capital city of Hungary.





Having acquired a majority stake in Prolan-Power Co., we can also provide SCADA systems, offering full-scale substation protection, control and SCADA system solutions using a comprehensive range of communication protocols.

Protecta's success is based on the following core values, described in detail on Chapter 'Company philosophy': innovation, quality & reliability, flexibility and customer support.

These values allowed us to increase our market share in Hungary above 60% in high-voltage applications and up to 90% in medium-voltage distribution networks. In the recent years we also expanded our role in export markets, thus reaching various locations all over the world. International sales has been constantly growing recently.

At present, we have more than one hundred regular customers.







PROTECTA PLACES GREAT EMPHASIS ON THE QUALITY, RELIABILITY AND SECURITY OF THE PRODUCTS AND SERVICES IT OFFERS. WE DO OUR BUSINESS IN FULL COMPLIANCE WITH THE INTERNATIONAL STANDARDS AND HAVE BEEN CERTIFIED UNDER THE QUALITY MANAGEMENT SYSTEM ISO 9001:2009, ENVIRONMENTAL MANAGEMENT SYSTEM ISO 14001:2015, OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM BS OHSAS 18001:2007 AND INFORMATION SECURITY MANAGEMENT SYSTEM (ISMS) ISO/IEC 27001:2013.



✓ ISO 9001 FOR QUALITY

✓ ISO 14001 FOR ENVIRONMENT

✓ ISO 45001 FOR HEALTH & SAFETY

✓ ISO 27001 FOR INFORMATION SECURITY

These certifications reflect our commitment to provide high quality competitive products and services that meet the customer requirements and to achieve their satisfaction at all times through the implementation and improvement of high quality standards while being committed to environmental protection and occupational health and safety.





THE SUCCESSIVE GENERATIONS OF DEVICES ALWAYS KEPT ABREAST OF, AND AT TIMES WERE AHEAD OF, THE GLOBAL TECHNICAL LEVEL. OUR PREDECESSOR WAS AMONG THE FIRST COMPANIES IN THE WORLD TO START THE LINE PRODUCTION OF PROTECTIVE DEVICES WITH INTEGRATED ELEMENTS.

Protecta has a track record of over 60 years. The company was founded by its predecessor, the Electric Power Research Institute (VEIKI). VEIKI's predecessor, the VILLENKI research institute started the development of electric protective relays and automation devices for networks and of the protective philosophy of the electric power system in 1949.

The Company started its operation on 1 January 1990. Following privatization, Protecta assumed an orbit of intensive growth, reflected in the dynamic increase of both revenues and profits. Today, Protecta is fully owned by individuals who play key roles in the day-to-day operations of the firm.

The overwhelming majority of Protecta's products consists of state of-the-art stand-alone digital devices and complex protection systems mounted in cabinets. The EuroProt and OmegaProt digital device families were launched in 1996. The SigmaProt product family, offering more compact and efficient solutions, was put on the world market in 2002.

In 2010 the EuroProt+ product family was released. While designing this new family, we selected some of the most advanced microprocessors and microcontrollers in the world intended for industrial applications, which gave the devices extraordinary computing and processing power. Both the hardware and firmware designs of the device are based on the IEC 61850 standard.

## Tradition of research and development

As a result, EuroProt+ compares favorably with the cutting-edge protection devices available in the global marketplace. Currently we have the most up-to-date digital devices available for every typical protection and automation function. Our products have the IEC 61850 certification issued by KEMA.

In 2014 Protecta Ltd. acquired a majority shareholding in Prolan Power Co., a company which continues Prolan Co.'s work of developing and installing control and automation devices on the Hungarian electric-power transmission network. As a result, Protecta can provide a full-scale solution for substation secondary technology.





## 1960

Transistor-based protective devices appear on the market.



## 1990

After the change of regime in 1989/90 the research institute establishes Protecta as a limited liability company. Introduction of the first numerical (microprocessor-based) protective relays.



## 1996

Market launch of the EuroProt and OmegaProt digital device families.



## 1997

In February, key-employees buy the company from the state. Ever since, Protecta has been a privately owned company with Hungarian private persons as its shareholders.

## 1970

Transistor-based relays are replaced by protections with analogue integrated circuits.



## 1949

State-owned research institute VILLENKI, Protecta's predecessor starts the development of electric protective relays and automation devices for networks and of the protective philosophy of the electric power system. Start of the development of the first generation of electromechanical protection devices.





# MILESTONES

Launch of the native IEC 61850 EuroProt+ product family on the global market following two years of development.



Introduction of the SigmaProt product family, offering more compact and efficient solutions.

**2002**



**2010**

**2013**

Debut of the IED EP+ S24 series, which contains a special selection of EuroProt+ modules chosen with cost effectiveness in mind.



**2014**



Protecta purchases the majority of shares of Prolan Power Co., enabling the company to cover the full scale of substation secondary technology through the combination of competences and products.

**2016**

Launching our "entry-level" IED EP+ S16 series on the market.







FOR OVER SIXTY YEARS OUR COMPANY HAS BEEN COMMITTED TO CREATING INNOVATIVE, RELIABLE AND EASY-TO-USE PRODUCTS FOR THE POWER INDUSTRY THROUGH OUR HIGH-SKILLED TEAM AND CUSTOMER ORIENTED ATTITUDE.

# VISION

We are confident that the Protecta brand will gain worldwide reputation in the power industry in the near future.

# OUR

# MISSION

To support the more reliable and safer electrical energy network by providing our innovative and customer-focused products and services. We are very proud of our strong engineering background, so we would like to maintain this for the next generations as well.



# CORE VALUES

## INNOVATION

Innovation is an essential factor of Protecta success. We strive to exceed our clients' expectations by delivering innovative and effective solutions; therefore, we are committed to ongoing innovation and product development.

## FLEXIBILITY

The company is always open to new solutions and special requirements. We adapt our products to meet even the most demanding user requirements.

**WE CAN, AND WE DO** ☑

Protecta Ltd.'s every product is the result of in-house development. This fact, together with the flexibility provided by the optimum size of our company, facilitates dynamic adaptation to demand, compliance with the most state-of-the-art requirements and the tailor-made solutions of specific tasks that may cause difficulties to our competitors.

# QUALITY & RELIABILITY

Quality and reliability are self-evident expectations from Protecta products. Consequently, the company is committed to the continuous improvement of quality so that products and services will always meet the customer requirements and quality specifications. We see quality as the foundation to the success of our business.

## CUSTOMER

**SUPPORT** The Protecta technical support team is helping our clients through quick and competent responses, consistent communication, quality information and professional trainings as well so as to improve workflow efficiency and to reduce operational costs.

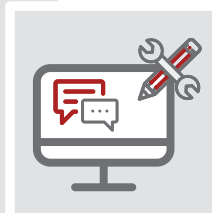
We offer a comprehensive service to customers as well as assistance during FAT, commissioning and maintenance. Therefore, Protecta Ltd. is more than a device manufacturer; we provide complete protection and control systems as well.



## APPLICATION TEAM

Our Application Team provides support for application design, development and testing throughout our product development process. They contribute to the product development by considering the application from user and technical angles alike; as a result, the IED development provides the best solutions even for the most demanding problems.

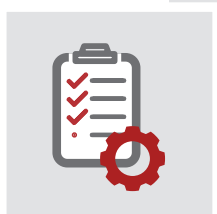
Furthermore, the App Team offers technical training, consultation and support, as well as on-site assistance to customers throughout the life cycle of our products.



## MANUFACTURING

Our manufacturing team offers a wide spectrum of services including supply chain management, product enhancement, packaging and development of testing. This team also handles quality and reliability issues.

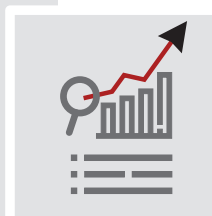
Our extensive knowledge of the industry players and commitment to working closely with the most reliable suppliers enable us to provide to our customers the most advanced, cost-effective and reliable manufacturing solutions.



## MARKETING & SALES

Our specialized Marketing Team is constantly looking into the actual needs of our customers/partners, relying on the recent technical developments in the industry.

Our Sales Department, consisting of highly qualified professionals, adapts and promotes solutions and services that are tailored to each customer. Our sales strategy focuses on achieving the best cost-benefit ratio with maximum reliability.



## RESEARCH & DEVELOPMENT

For research and development, Protecta relies on the most qualified experts in the power energy sector, with comprehensive field experience and an impressive track record. Our R&D Team develops innovative products, solutions and services by focusing on our customers' requests, thus helping us adapt our products to meet all user requirements.

Considering that our products are installed in the electric power grid, where quality and reliability are essential, we treat those attributes as priorities.





PROTECTA NATIVE IEC 61850 PRODUCTS OFFER COMPREHENSIVE SOLUTIONS FOR FAULT PROTECTION AND FOR THE AUTOMATION & CONTROL OF LOW-, MEDIUM- AND HIGH-VOLTAGE ELECTRIC POWER NETWORKS' EQUIPMENT.

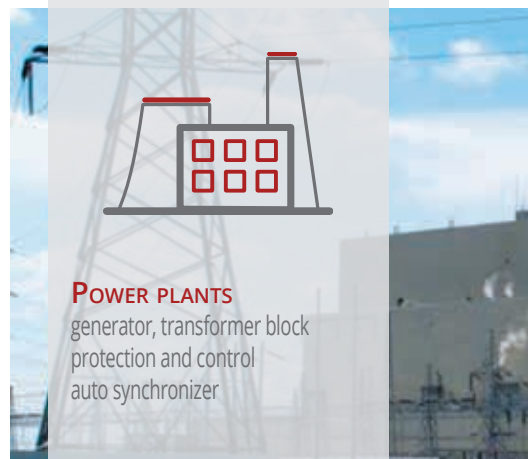
OUR DEVICES CAN BE APPLIED IN A WIDE AREAS OF APPLICATION – FROM POWER GENERATION TO HIGH VOLTAGE TRANSMISSION, DISTRIBUTION NETWORK AND INDUSTRIAL APPLICATIONS.

MOREOVER, OUR DEVICES CAN BE USED IN RAILWAY CATENARY AND RENEWABLE ENERGY APPLICATIONS AS WELL.



### POWER PLANTS

generator, transformer block  
protection and control  
auto synchronizer



### TRANSFORMERS

transformer protection and control  
automatic voltage regulator  
arc suppression coil controller  
automatic even-driven bus transfer



### BUSBARS

distributed and centralized busbar  
protection  
high speed bus transfer



### INDUSTRY APPLICATIONS

incoming feeder  
motor and small generator  
protection and control



### RAILWAY APPLICATIONS

railway catenary and transformer  
protection and control







**TRANSMISSION LINES**  
distance and line differential  
protection and autorecloser



**DISTRIBUTION NETWORKS**  
feeder, capacitor bank protection  
and control load shedding



**RENEWABLE ENERGY**  
protection against island operation  
reverse power flow  
inverter control  
small generator protection





We are proud to highlight some of our key projects (non-exhaustive list) where we have been, and will continue to be, able to create value for our customers.



#### **PAKS NUCLEAR POWER PLANT, HUNGARY:**

Protecta provides complete protection solution for the 6 kV auxiliary system all for 4 units between 2013-2018. 3rd phase has finished by delivering feeder, transformer protections and automation devices.

#### **TRANSNET, SOUTH AFRICA:**

Transnet is the largest firm in the transportation network of South Africa. Cooperation between Transnet and Protecta started in 2004, when we delivered the first distance protection devices for railway lines.

At present, more than 150 such devices are in operation. In 2015 we started delivering the new EuroProt+ devices as well.



#### **HIGH-END PRODUCT CUSTOM DESIGNED BY PROTECTA EXCLUSIVELY FOR AN END-USER:**

ENEL is the largest electricity utility company in Italy, responsible for the electric power supply of the country on the 10 kV-130 kV voltage levels.

Up till now more than 2000 Protecta distance protection devices have been installed on the ENEL network, most of them in Italy, plus several hundreds in Romania.

Furthermore we are present with Petersen coil controllers and transformer protection devices at ENEL.







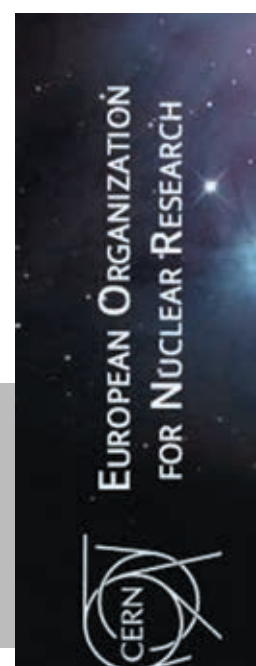
## RELAY MANUFACTURER WITH AN EXPANDABLE PORTFOLIO:

Sprecher, Austria is our partner and throughout their activities we got a long frame agreement with Stedin, the Netherlands and we have been delivering since 2011.

Products: line differential, transformer differential relays – more than 500 pcs.

## MAVIR, HUNGARY:

In the secondary system reconstruction project of the transmission network of MAVIR (Hungarian TSO), Protecta Ltd. has been delivering the complete main protection and control systems for several transmission substations since the beginning of the refurbishment.



## VIVAVIS (FORMER: IDS) GERMANY AND SWITZERLAND:

With their SCADA system and our protection and control devices it became possible to provide complete substation solutions throughout Germany and Switzerland.

New projects are always on their way.

## MAIN CONTRACTOR WITH CAPABILITY OF PANEL BUILDING / LOCAL ENGINEERING / SYSTEM DESIGNING / SYSTEM INTEGRATION:

CERN, Switzerland. Complete 66 kV and 400 kV substations with OVIT Hungary. Protecta provided all protections, BCUs and gateways.





**sprecher**  
automation

**STEDIN** NET

**MEINBERG**  
[www.meinberg.de](http://www.meinberg.de)

**VIVAVIS**  
DECODING THE FUTURE

**AMW** Anlagen-Montagen Werder GmbH



**e-on**

**MVM**

**MOL**

group  
**m v m**

**Mexico**

**Columbia**

**Venezuela**

**Ecuador**

**Peru**

**Morocco**

**EGE**

**enel**

**CERN**

**ARCTEQ**

**Jacobsen Elektro**  
FOR ALL YOUR ENERGY REQUIREMENTS

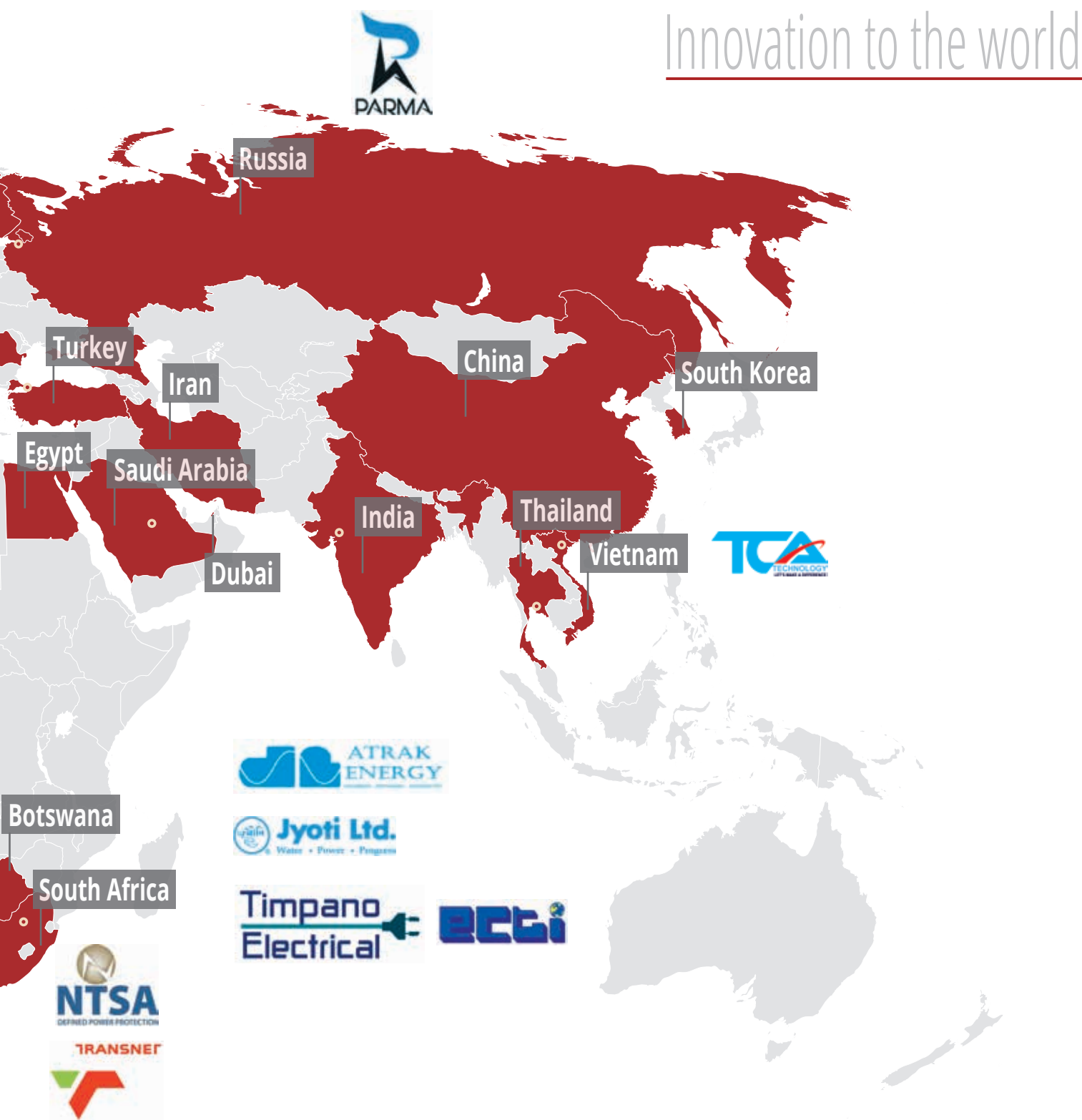
**MICROENER**

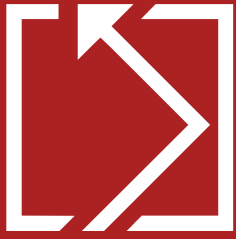
**Microelettrica Scientifica**



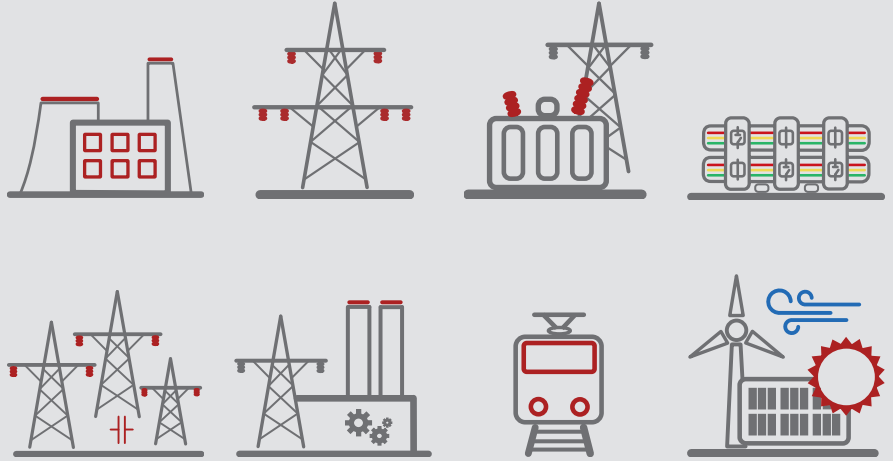
PROTECTA MAINTAINS DIRECT RELATIONS WITH ITS END CUSTOMERS. FOR US, THEY ARE NOT ONLY CUSTOMERS BUT PARTNERS IN THE FULL SENSE OF THE WORD.

Protecta has an extensive network of business relationships outside Hungary as well. Some of them are limited to a single project while others have developed into long-term, regular cooperation. This chapter focuses on companies outside Hungary with strong contractual relationship to Protecta.





# PROTECTION, AUTOMATION AND CONTROL FOR POWER INDUSTRY



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