

Powering the Future of Electricity

As a leading utility company, we **leverage** a century of experience in electricity generation, transmission and distribution, to deliver comprehensive solutions and services for the global electricity industry

Infrastructure

Generation
Transmission
Distribution

Utility of
the Future



Israel Electric

Welcome to IEC

The Israel Electric Corporation Limited ('IEC') is a globally recognized leader with a track record of 100 years of operational excellence. IEC is responsible for all elements of the electricity system, including generation, transmission, distribution, and is the dominant and critical provider of the national electricity system in Israel. IEC leverages vast field-proven expertise to offer a wide range of services, projects, and solutions for infrastructure and advanced electricity world challenges.



IEC at A Glance



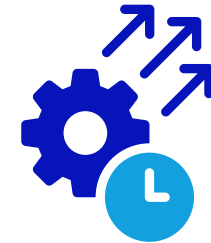
Essential Service Provider

IEC is an essential service provider of electricity in Israel and the sole vertically integrated provider in the electricity chain



Energy Island

Israel is an energy island, operating without backup from neighboring countries. With unwavering resilience, IEC provides secure and reliable electricity amidst increased demand, challenging geopolitical conditions, while adapting to extreme changes in grid requirements.



Ownership

IEC is 99.85% owned by the State of Israel, which is committed to the GHG reduction and in line with Paris Climate Agreement.

IEC at A Glance



Sustainable Electricity Generation

61.8% of IEC'S electricity production is from Natural Gas & LNG



Versatile Power Stations

All IEC power stations are dual fueled



Fast growth rate

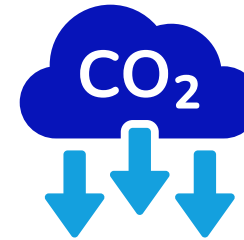
2%- 3% demand growth rate is expected during the next decade

IEC at A Glance



Natural Gas Fuel Independence

Significant natural gas discoveries in Israel have paved the way towards potential fuel independence



Supporting environmental initiatives

Actively promoting the integration of renewable energy, advancing electrification, and developing energy storage facilities



Israel Electric

Who We Are



100 years of electricity excellence

Established in 1923, the Israel Electric Corporation Limited ("IEC") is a globally recognized leader with a track record of 100 years of operational excellence.

IEC is responsible for all elements of the electricity system, including generation, transmission and distribution, and is the dominant and critical provider of the national electricity system in Israel.

Comprehensive System Operations

IEC is one of the world's leading and most advanced grid infrastructure companies.

With a service reach extending to nearly 3 million customers, IEC designs, builds, maintains, and operates the Israeli electricity system, featuring close to 6,000 km of high-voltage transmission lines and 70,000 km of low and medium voltage distribution lines.



Energy Island

Israel operates as an energy island, without backup from neighboring countries, facing increased demand, and maintaining low electricity generation reserves. IEC serves residential, commercial, agricultural, and industrial customers throughout the State of Israel, ensuring the supply of available, reliable, and high-quality electricity. The company upholds world-leading service standards, complies with economic and commercial regulations, and is dedicated to GHG reduction and environmental principles.

Skilled Workforce and Innovation Hub

IEC holds a skilled workforce of approximately 1,500 specialized engineers, offering diverse expertise in areas such as power plant design, sophisticated smart grid operation, and cutting-edge cybersecurity defense systems. In line with Israel's innovation-driven economy, IEC operates a dedicated innovation unit housing multiple laboratories, ensuring the organization remains at the forefront of the industry.

Global Engagement in Energy Projects

Engaged in renewable and conventional energy projects globally, IEC supports all project phases, from inception and design to retro-fitting existing systems, efficient and reliable design of different grid components, energy efficiency projects, cyber security operations, and personnel training.

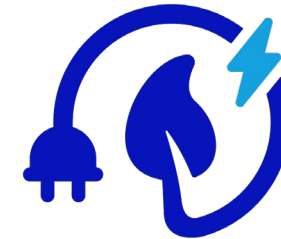
Expertise

IEC's deep knowledge spans across all elements of the electricity system, including generation, transmission, distribution, and supply. Our areas of expertise encompass a few premium domains that lie at the heart of the energy and utility future.



Cyber Security

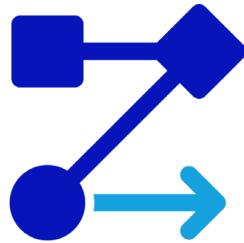
Being one of the most secure power utilities in the world and leveraging the capabilities of the Israeli cybersecurity powerhouse, IEC takes pride in its security competency. At IEC, we have elevated our cybersecurity expertise to the next level through the in-house development of unique solutions, which we are now proud to offer to organizations worldwide



Sustainable Energy

Committed to a more sustainable energy and environment, IEC has developed world-leading practices of production, and led projects such as the optimization of land use for power stations and efficient deployment of emission reduction systems (FGD, SCR, PM). The company has also gained broad expertise in reducing energy consumption by leading the largest national energy efficiency projects

Expertise



Decentralization

IEC led a major power market reform, transitioning from a single fully vertically integrated power system to an open market with diversified and distributed new entrants. Leading this transition provides IEC with unique first-hand experience in dealing with the opportunities and challenges of energy market democratization



Digitalization and Grid Transformation

Being accountable for the national energy reliability, IEC has prioritized grid digitalization and improvement as a top goal. These efforts and knowledge encompass sophisticated management systems, control systems, and data processing, as well as the optimization of switching and substations, transmission and distribution networks, and the operation and transformation of power plants

Services

The in-house engineering teams of IEC bring vast knowledge and a deep understanding of all project phases, from planning and feasibility studies through design and construction, up to the operation itself. IEC can assume complete turn-key responsibility from the strategic plan or can engage to provide a very focused scope of work. The agile structure of our services ensures that no project is too small or too big for us to handle. Below are typical services we offer.



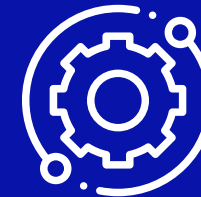
Strategic Planning

System Architecture, Future Needs, Resource Optimization



Studies

Feasibility, Technical, Environmental, Economical



Operational Support

Personal Training, Automated Systems

Services



Cost Estimations

Life Cycle Cost Analysis



Technical Specifications

EPC & Equipment Specs



Tenders

Evaluation, Analysis, and Management



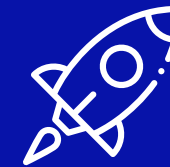
Design & Construction

Mechanical, Electrical, Civil, I&C



Supervision

For Construction & Commissioning



Innovation Support

Lab & Pilots, Evaluations, Innovation Practice

360° Electricity Security Concept

A comprehensive approach
for electrical, digital (cyber)
and physical threats



New Challenges for Electricity Security

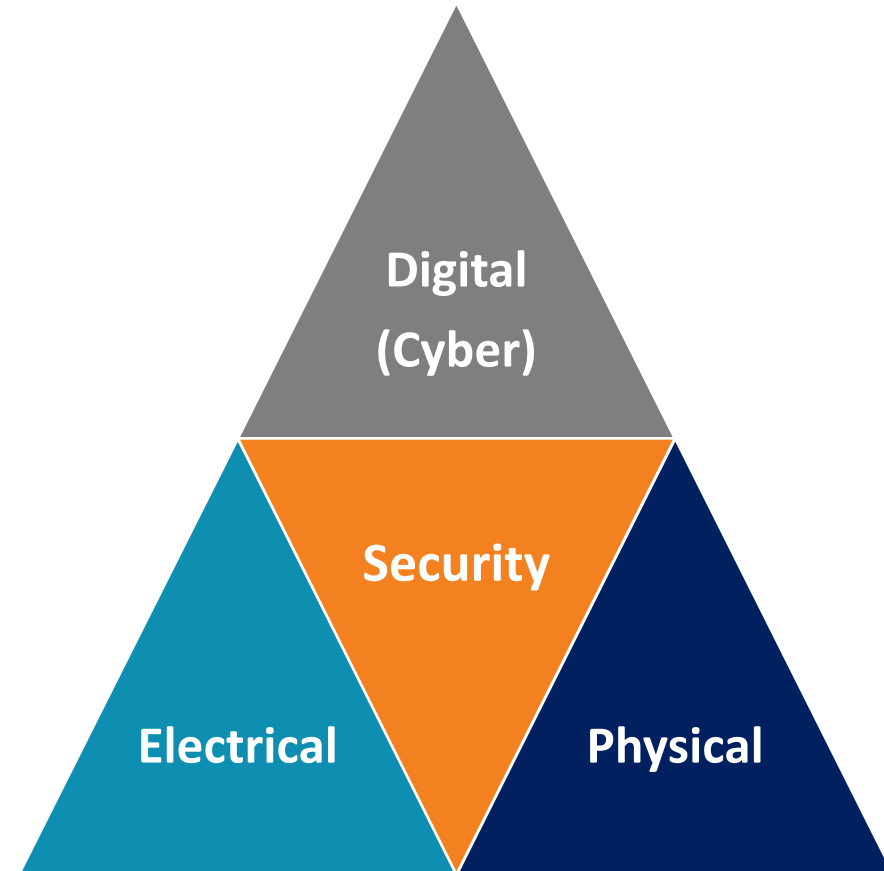
The electricity industry is undergoing significant transformations which for the first time in decades, have introduced new challenges to the security of electricity systems. These transformations are driven by the integration of diverse actors, new technologies, geopolitical instabilities, and the ongoing shift towards digitalization, decentralization, electrification, and decarbonization.

This is further challenged by a wide range of growing reliability threats such as extreme weather events, and increasingly sophisticated cyber threats. With these challenging conditions, adopting a new approach to electricity security is imperative.



360° Electricity Security Concept

IEC has leveraged its field-proven experience to develop a 360° Electricity Security Concept, a comprehensive approach that addresses the electrical, digital (cyber), and physical threats and their interconnected vulnerabilities across all aspects of the electricity system. This approach allows for a converged electricity security where each aspect is correlated with the other.





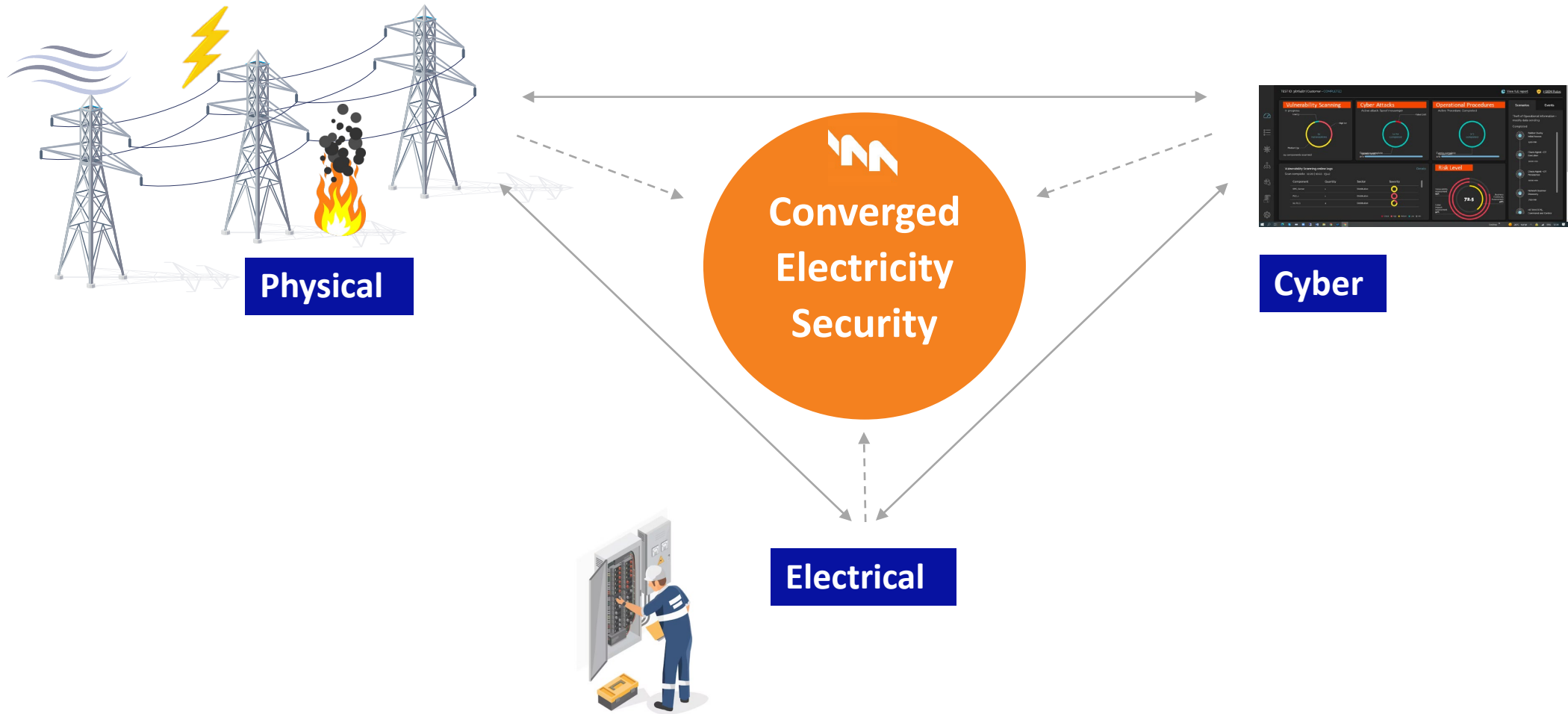
Israel Electric

Strategic Planning

By transitioning from a fragmented, component-based approach to a systematic approach, organizations can engage in dynamic and proactive strategic planning, instead of operating reactively and remaining static.



Comprehensive Electricity Security Assessment



International Business Offering

We offer a range of services by leveraging our internal knowledge and proprietary technologies. As trusted advisors, we collaborate with you to provide tailored solutions that meet your specific needs. We also provide integration and collaboration with third-party providers, ensuring access to the latest technologies and tools. Additionally, we assist in implementing these recommendations.



Trusted Advisor

A trusted advisor with a thorough understanding of the stakeholders needs and challenges



System Integrator

We bring diverse technologies together seamlessly, creating efficient and customized solutions that streamline processes and maximize overall efficiency



Tailored Solutions

From a singular problem solving and up to full scale service of field proven systems and practices

Project Lifecycle



Digital Twin for emulating, simulating, and validating operational events and cyber scenarios in a near-real-time, safe environment for ICS, OT, and SCADA systems



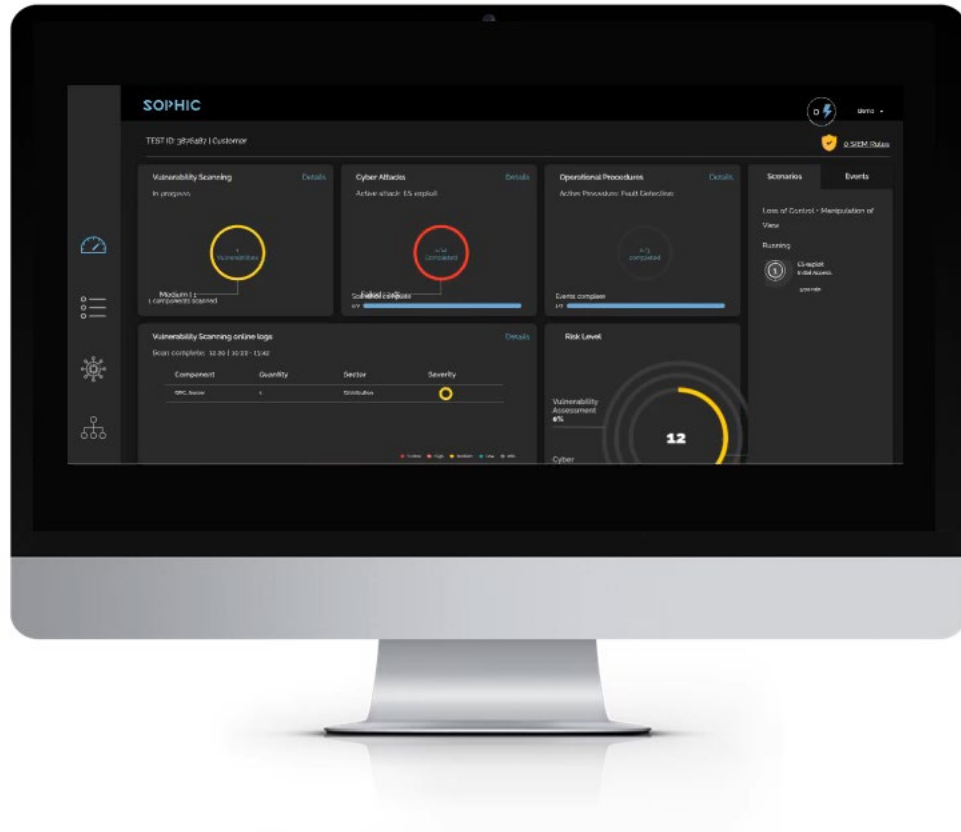
The Challenge

In our rapidly evolving world, the electricity industry is shifting towards digitalization, decarbonization and decentralization. The introduction of new actors and technologies to the grid along with constant updates, upgrades, and redesigns can pose significant risks.

Implementing these changes can introduce faults and disruptions or complete operational halts, which can result in substantial losses.



Our Solution

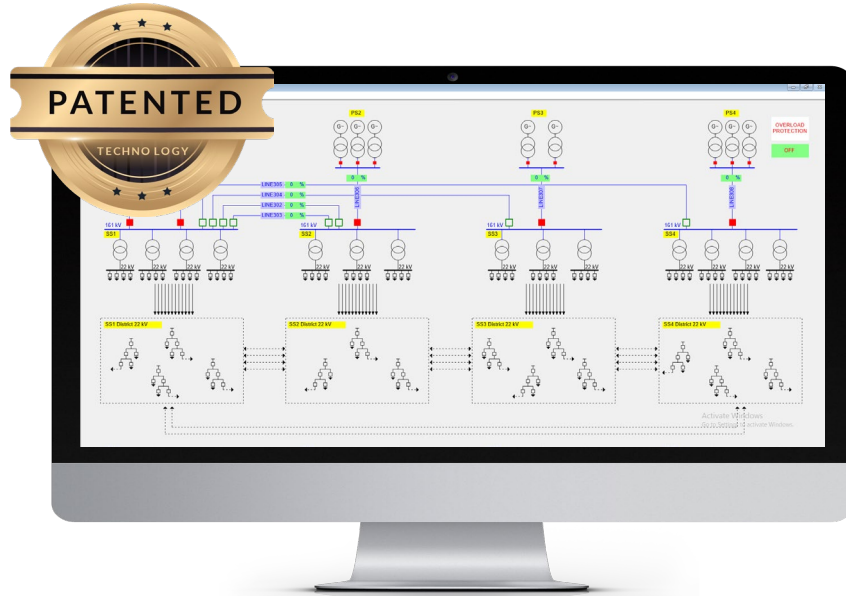


IEC has developed a dynamic platform for emulating, simulating, and validating updates and operational events to critical infrastructures, in a near-real-time safe environment before deployment.

With Zone™ you can run endless operational events and cyber scenarios, including vulnerability scanning and test the impact of planned changes without endangering the operational process.

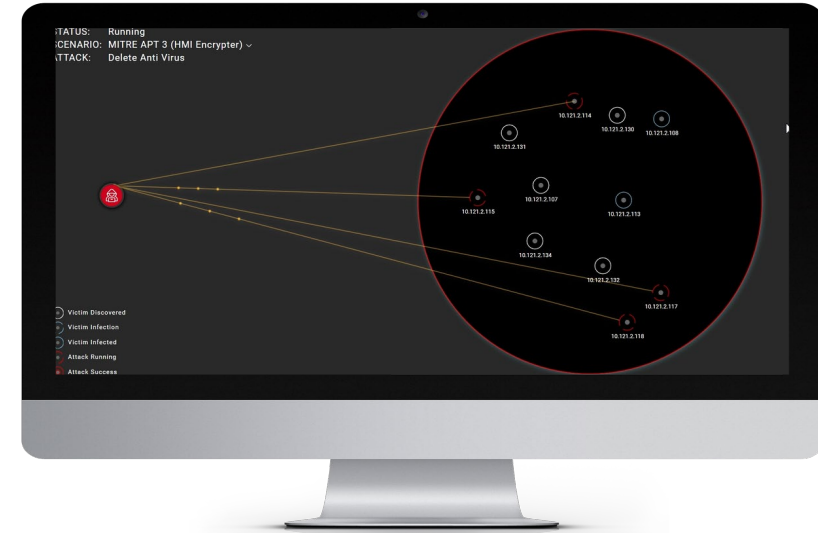
Zone™ is a proprietary patented technology, offering unique and unparalleled capabilities.

Zone™'s Uniqueness



Digital Twin

Zone™ replicates an identical digital model of any critical infrastructure, fast and effectively and enables a dynamic simulation of operational events and cyber attacks



Cyber Sturdiness

Capable of running cyber attacks on the digital model to validate the system's cyber sturdiness

Zone™'s Uniqueness



Field-Proven

Developed by engineers from IEC based on our stakeholder's understanding and field-proven solutions



Advanced Electricity World Solution

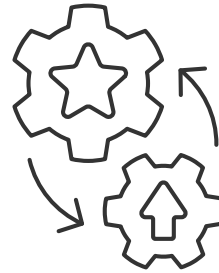
Examining the behavior of the network in a dynamic and evolving manner to seamlessly integrate new elements, including renewable energy technologies, PV panels, energy storage, smart meters, and more

Features and Capabilities



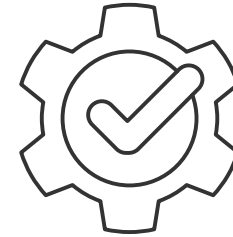
Black Swan Events

Capable of simulating and analyzing the impact of unforeseen, rare and unpredictable extreme events and outlier anomalies (Black Swan events) on the electrical grid network.



Dynamic Modeling

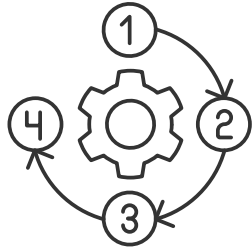
Dynamically modeling events, allowing for the continuous change of network configuration and parameters.



Predictive Analysis

Ability to predict the activity of new elements and assess their impact on the quality of electricity in the network.

Features and Capabilities



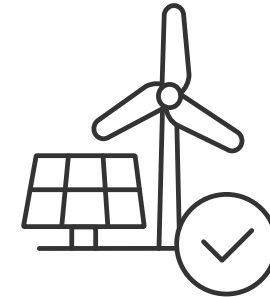
Automated User Data Transformation

Mostly automated transformation of users' data within the power grid and ICS models, streamlining the integration process for enhanced efficiency.



Continuous Reporting and Mitigation Recommendations

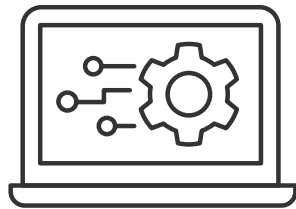
Ongoing generation of reports and recommendations for the mitigation of potential damages, ensuring a proactive approach to power grid security.



Comprehensive Power Grid and ICS Model Integration

Integration of power grid and ICS models, covering generation, transmission, substations, distribution, renewables, as well as digital and physical PLC models, communication infrastructure, data networks, user interfaces, and control center models.

Features and Capabilities



Continuous Vulnerability Scanning and SIEM

Implementation of continuous vulnerability scanning and Security Information and Event Management (SIEM) for robust cybersecurity measures.



Simulation Capabilities

Ability to simulate all components of the electrical grid network, including production, transmission, heating, distribution, and low voltage.

Game Changer Award

POWER and Chemical Engineering magazines awarded Zone™ the prestigious Game Changer award for digital solution, ingenuity and scale of project, 2023

POWER



Strategizing Cyber Security



The Challenge

The cyber-risk landscape is ever-evolving and organizations face the need to comprehend their risks and swiftly implement protective measures.

The challenge lies in obtaining true, deterministic insight into cyber maturity, readiness, and risk, enabling the identification and closure of gaps while avoiding non-contributory activities.

This requires continuous insight into the organization's cyber landscape and dynamically adapting to internal and external changes.

Understanding all facets of the company is crucial, along with translating them into active, dynamic, and continually updated business-cyber activities to fortify cyber sturdiness.

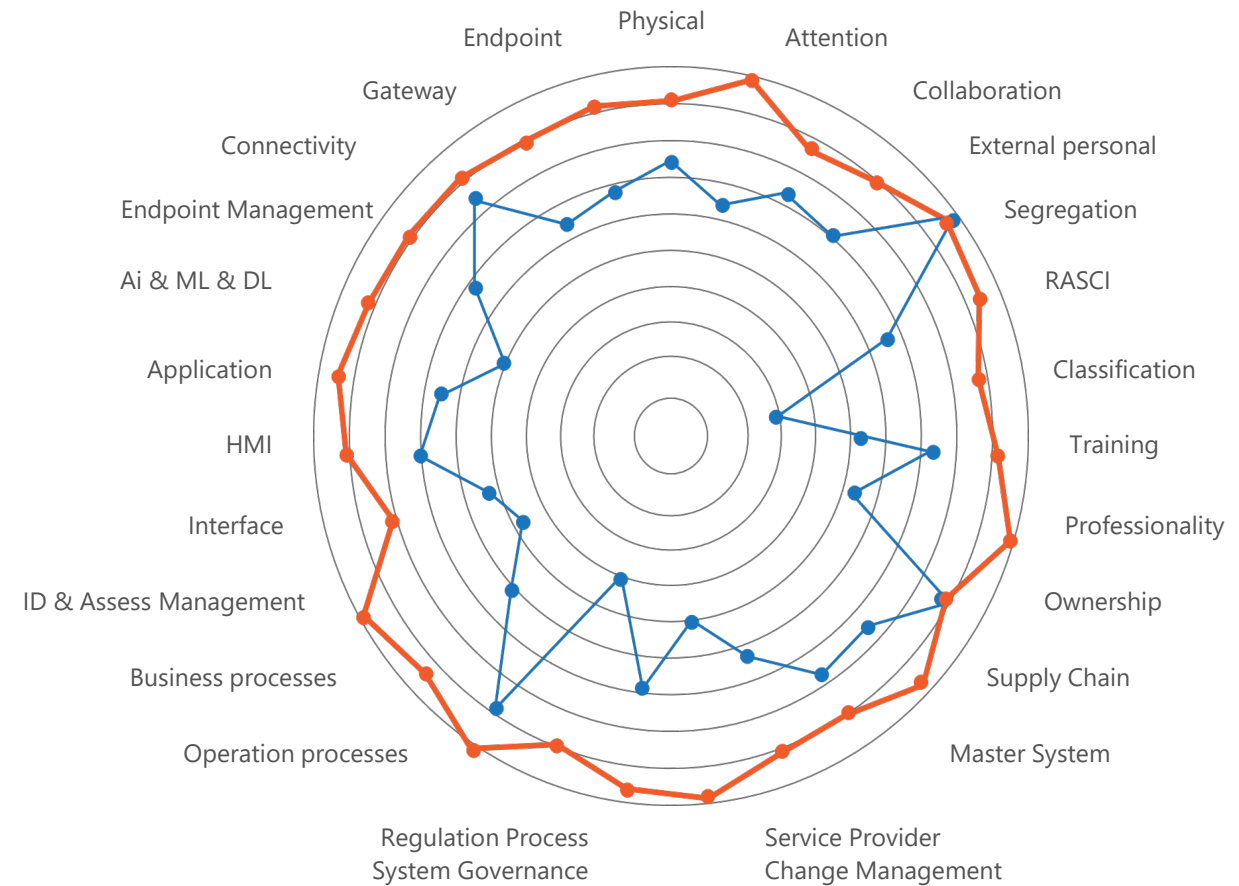


Strategizing Cyber Security

RCMA is a unique model and methodology based on IEC's 30 years of experience as one of the most secured organizations in the world.

RCMA is a comprehensive multilayer and multi-segment cyber assessment providing decisions makers at any organizational level with the best path for optimal cyber readiness and maturity.

Customized to the specific environment of each organization, RCMA allows for the optimization and balance of business risk appetite, operational needs, and cyber investments, empowering organizations to understand their current cyber level and take strategic actions to improve their cyber posture.



RCMA's Uniqueness



Field-Proven

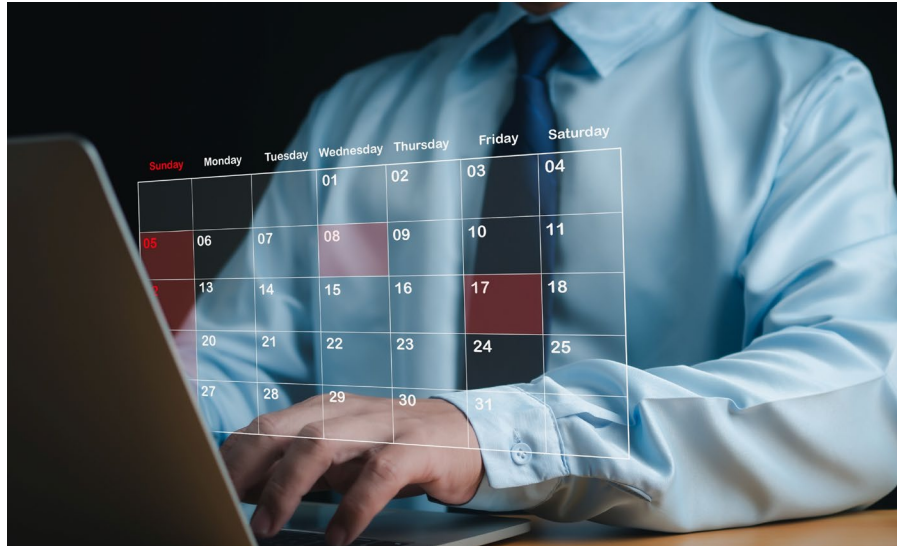
Developed By IEC's vast cyber and operational experience and in-house engineers



Complete Cyber Journey Support

From deterministic picture of the current cyber picture up to a fully adaptive roadmap, providing continuous, real-time adjustments and guidance

RCMA's Uniqueness



Rapid

Carried out in just 7-12 weeks, based on our efficient assessment using a unique methodology to analyze selected data



Continuous

Implementing Cyber Roadmap, monitoring and measuring quarterly progress and KPIs, and identifying any roadblocks. We provide ongoing updates on cyber frameworks and methodologies and present any relevant new findings

Features and Capabilities



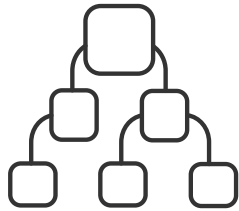
Adaptable

To customer characteristics, environment, culture, regulations



Multi-segment

Cyber readiness, Cyber Maturity, Cyber Risk QRA and IRM



Multilayer

Structured to organizational layers from board to field management



Actionable

Clear actionable recommendations with measurable KPIs based on industry standards

Project Management and Engineering





Israel Electric

Engineering Services

Our comprehensive range of services covers the entire project lifecycle, starting with conceptual design and techno-economical analysis to ensure optimal feasibility and efficiency.

We excel in detailed design, where we meticulously translate concepts into practical solutions. With our expertise in project management, we ensure seamless coordination and execution.

Our team specializes in mechanical and process design, electrical and controls design, instrumentation, civil design, and substation design, delivering high-quality and reliable solutions tailored to meet any project's requirements.

By integrating these key disciplines, we offer holistic and integrated engineering services to drive successful project outcomes.





Israel Electric

Consulting Services

We offer Owner's Engineer and Engineering Services encompassing extensive studies such as feasibility, technical, environmental, and economical assessments, along with conducting surveys like topographic and demographic analysis. Our team excels in cost estimations and life cycle cost analysis, empowering clients to make informed decisions.

Specializing in preparing technical specifications for both EPC (engineering, procurement, and construction) projects and equipment specifications, we also manage tenders and contracts diligently, ensuring smooth project execution.

Our design services span various disciplines, including mechanical, electrical, civil, and instrumentation and control (I&C). To ensure project success, we provide construction and commissioning supervision, overseeing every stage of implementation





Israel Electric

Construction Services

Our expertise in Management and Supervision during construction encompasses a broad spectrum of skills and experiences. With a wealth of knowledge working with major equipment suppliers, we excel in overseeing civil and electro-mechanical works. Additionally, our capabilities extend to the establishment and management of a Local Staff Professional Training Center, ensuring a skilled workforce. We specialize in facilitating both cold and hot start-up processes, coupled with comprehensive Commissioning services. Our proficiency extends to contractors' integration and management, heavy equipment operation, and thorough site suitability assessments. Furthermore, our commitment to high standards is evident in our environmental, health, and safety (EHS) practices, ensuring the well-being of both personnel and the surrounding environment.





Israel Electric

Transmission Infrastructure Services, Nationwide Turnkey Solutions

Maintenance of critical infrastructure, including Extra High Voltage (EHV) power lines, High Voltage (HV) power lines, switching stations, and substations employing both Gas-Insulated Switchgear (GIS) and Air-Insulated Switchgear (AIS) technologies. Additionally, we specialize in the implementation of state-of-the-art Automation, Command, and Control systems to enhance operational efficiency. Our expertise extends to both underground power grids and overhead power grids, ensuring a versatile approach to meet diverse project requirements. Whether it's the meticulous planning and execution of EHV lines or the sophisticated integration of automation systems, we are committed to delivering reliable and cutting-edge solutions in the power infrastructure domain.





Israel Electric

Flexible Service Structure

Our flexible service structure is tailor made and addresses various client needs, offering full engineering, procurement, and construction (EPC) services, owner engineering, feasibility studies, master plan design, owners' engineering, deployment, and trusted advisory services.



Global Reach Projects

Our portfolio includes a diverse range of projects spanning multiple sectors, with a global reach.



Global Reach Projects



Renewable Wind Farms



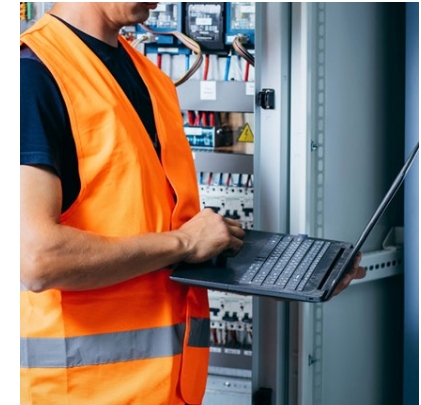
Renewable Solar Farms



Solar Thermal Farms



Transmission and Distribution Grid



Grid Automation



Digital And Cyber Solutions



Gas Turbine Power Stations



Combined Cycle Power Stations



Coal Fired Power Stations



Substations

Global Reach Projects



Decarbonization of Fossil Fuel-Based Power Stations



Emission Reduction



Energy Storage



Retrofit



Repowering

Unique Projects Expertise



Vast experience in optimization of water & waste use and re-use



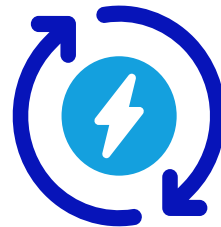
Extensive experience in all types of cooling systems



Integrating control systems & data processing



Coal & bulk handling systems optimal design



State of the art emissions reduction measures:
FGD, SCR, LNB, Particulates & monitoring.

Project Lifecycle Activities

