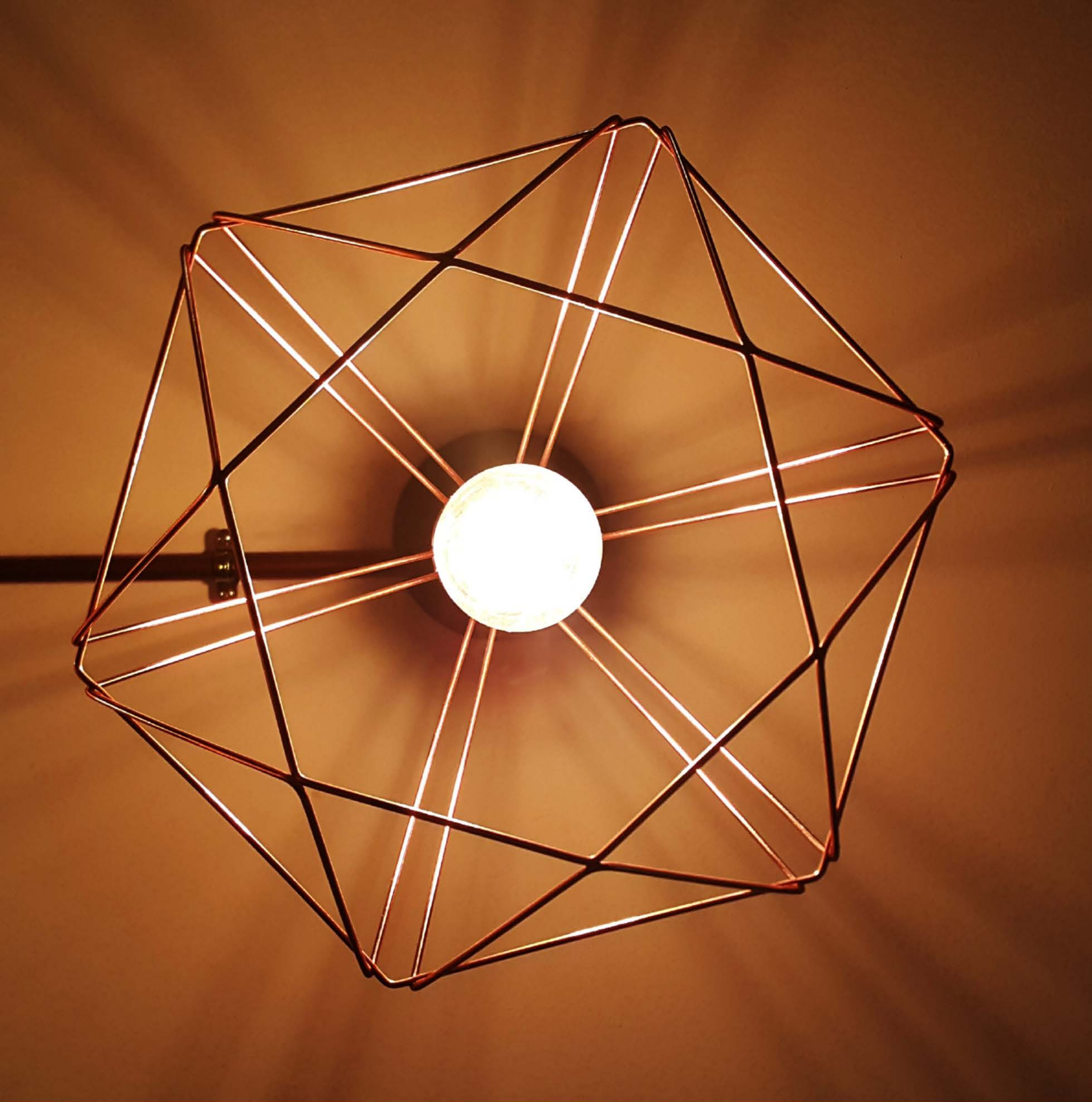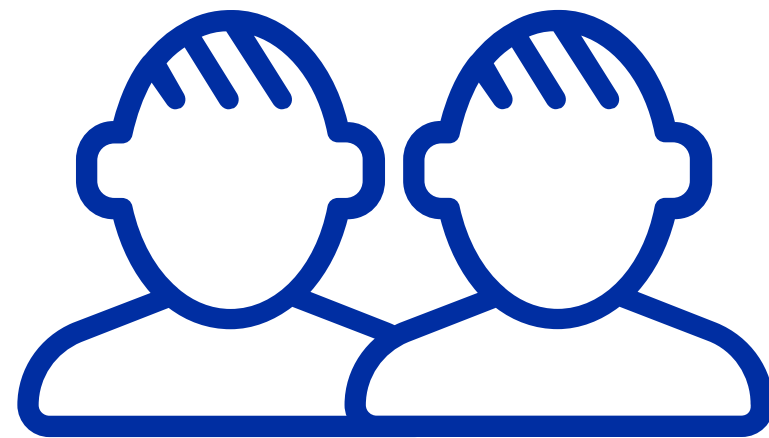BUSINESS
FINLAND

WORLD IDEAS
IN ENERGY

WORKING WITH FINNISH COMPANIES ENSURE YOU THE BEST AVAILABLE WORLD CLASS EXPERTISE AND USE OF ENERGY AND DATA.

- Finland has an extremely stable electricity grid with minimal losses.

- Internationally open Otaniemi and Åland island test beds for smart grid 2.0

- In Finland, many smart grid functionalities (e.g. load profiling, real-time billing, distributed power generation) are already implemented in the system.

BEST PRACTICES FROM FINLAND

Proven results from
public private cooperation

40%

40% of Finnish energy is
produced with renewables

99,9%

99,9998% grid reliability at
transmission lines*

* Fingrid 2016

ADDING THE FINNISH LAYER TO THE GRID

RELIABLE DATA & TRANSFER

- Industry leading standards in data transfer
- Utmost reliability in wireless network solutions
- Cyber secure platform for critical functions

POWER QUALITY AND RELIABILITY

- World class hardware to grid harmonization, reliability and balance
- Smart digitalization of substations

OFF-GRID AND MICROGRID

- Automated microgrid solutions
- Intelligent connection and utilization of renewable energy

MODERN AND CLEAN ENERGY PRODUCTION

- Reliable and emission free fuel cell energy production
- New generation waste to energy production

MONITORING OF MAINTENANCE AND AUTOMATION SERVICES

- End to end services for digitalized monitoring
- Service digitalization

RELIABLE DATA & TRANSFER

- Industry leading standards in data transfer

- Utmost reliability in wireless network solutions

- Cyber secure platform for critical functions

BaseN

Company background

BaseN was established in 2001 to provide extremely scalable and fault-tolerant network and service management systems for transmission and distribution operators. BaseN facilitates the way to enter the IoT world and the Smart Energy realm by digitalizing and connecting existing and modern LV/MV/HV equipment to offer new intelligent services.

Products & services

- A cyber secure platform for critical applications for power transmission and distribution operators to enable smart energy solutions. The security and reliability are key components in every layer of the platform, scalable to serve millions of connected devices.

EMTELE

Company background

Emtele offers a diversity of total service solutions for the communication and automatic control of machinery and devices.

Products & services

- Fieldcom for critical infrastructure

- Security as a service

- Technology solutions to support virtual care

- Automation and monitoring solutions (e.g. power quality monitoring and fault indication)

SATEL

Company background

SATEL radio networking technology is easy and fast to implement and use, and the life cycle costs are low. The utmost reliability of our technology means that your business runs smoothly in all circumstances and everywhere. The wireless network solutions are also expandable, flexible and secure.

Products & services

- SATEL offers radio technology solutions for both short-range and long-range communication. Radio technology is typically used in mission-critical applications where reliability and latency of the data transfer are essential to the operating system. It provides the means to transfer data over a point-to-point or point-to-multipoint link.

SEAM GROUP

Company background

SEAM enables intelligent and sustainable energy solutions. We provide software platform and expert services for optimization and management of both conventional and modern energy assets.

Products & services

SEAM DERMS
An unique combination of software platform and expert services for creating Distributed Energy Management System - fast and easily

WIREPAS

Company background

Wirepas is focused on providing the most reliable, optimized and scalable device connectivity to its customers. With our help customers can digitalize their current business processes and innovate for new disruptive models.

Products & services

- Decentralized network management.

- Synchronized time and frequency division multiple access (TDMA & FDMA)

- Adaptive multi-hop mesh topology

- Homogeneous device management

- Flexible hardware-independent architecture

POWER QUALITY AND RELIABILITY

- World class hardware to grid harmonization, reliability and balancing

- Smart digitalization of substations

- Energy storage for power availability stabilization

ENSTO

Company background

Ensto is an international and family owned company specializing in the development, manufacture and marketing of electrical systems and supplies for the distribution of electrical power and electrical applications.

Products & services

- Solutions for electrification, electricity distribution, lightning and electric vehicle charging.

- 1500 V DC microgrid (off and on grid) for rural area electrification to avoid non-technical losses

MERUS POWER

Company background

Merus Power designs and manufactures a wide range of world leading **power quality solutions** for dynamic reactive power compensation, active harmonic filtering and power protection.

Products & services

- Our solutions portfolio includes active harmonic filters, STATCOMs, SVCs and UPQ energy storage solutions.

OFF-GRID AND MICROGRID

- Automated microgrid solutions

- Intelligent connection and utilizations of renewable energy

- Stabilization of generated power

- Demand driven power production

MODERN AND CLEAN ENERGY PRODUCTION

- Reliable and emission free fuel cell energy production

- New generation waste to energy production

- Integrating different energy sources to the grid

BIOGAS PLANT
Envor Protech

Company background

ENVOR PROTECH offers
high-class specialist services in technology, design, project management and industrial economics. The services also include equipment and plant deliveries

Products & services

- **Project management and engineering services in the fields of process and environmental technology**

- **Process and plan design services**
  - Waste management: Focus is especially on anaerobic digestion of organic matter (biogasification).
    The biogasification technology is based on the HLAD (High Loaded Anaerobic Digestion).
  - Process technology
  - Waste water treatment: Envor Protech designs waste water pumping stations and equipment buildings. The scope of design includes general arrangement plans, detail design of pump tanks, equipment buildings and other equipment. The company also designs waste water unit processes and other waste water solutions for the process industry and industrial plants.

- **Equipment and plant deliveries**

CONVION

Company background

Convion Ltd. is a leading fuel cell system developer committed to commercializing solid oxide fuel cell systems in range of 50–300kW for distributed power generation.

Products & services

- Convion provides a complete power generation solution based on SOFC technology. Products will be distributed to global markets in cooperation with key partners and customers.

MONITORING OF MAINTENANCE AND AUTOMATION SERVICES

- End to end services for digitalized monitoring

- Service digitalization

- Fault indicator combined with secondary substation monitoring

- Telecom infra and services

HEADPOWER

Company background

HeadPower Oy provides Finnish cloud services for infrastructure network companies.

Products & services

- Headpower digital product range consists of applications and instructions that facilitate and enhance network operators, network designers, contractors and equipment suppliers daily work.

MIRASYS

Company background

Mirasys is one of the leading providers of open platform Video Management Systems (VMS) for IP and analog camera surveillance applications and systems

Products & services

- We develop and offer comprehensive solutions, which help organizations manage, analyze and utilize video image data as extensively as possible

BaseN: Global full stack IoT Platform

- BaseN operates and develops its **own full stack** IoT Platform
  - Since 2001, privately held company
  - Fully owned IPR with US Patents
  - IoT platform ➔ Industrial grade IoT enablement
  - Customers in Europe, Americas and APAC

- SaaS / PaaS – Software / Platform as a Service
  - Designed to be real time, linearly scalable, fault tolerant and inherently distributed,
  - Suitable for mission critical applications
  - 24x7 SLAs provided to customers
  - Transparent billing, pay as you grow

- BaseN platform provides a state of the art IoT solution with the capacity of handling millions of devices with long term continuity, scalability and fault tolerance. BaseN provides integration and connectivity of all legacy and contemporary, hardware and software, that is necessary for the continuous and secure operations of our customer's IoT. BaseN ensures a constantly evolving ecosystem offering a cost-efficient solution that enables increased productivity, resource optimization and continuous operations under the Platform as a Service (PaaS) framework

1	User Experience
2	Thing (Device) Management
3	Data Science & Analytics
4	Extensive Application Programming Interfaces (APIs)
5	Spime containers
6	BaseN Platform Core
7	BaseN Platform Operating Environment
8	Computing & Storage Hardware and Edge Equipment
9	Data Centers
10	Network Access