

CE+T Group update

Together, let's make tomorrow's opportunities a reality

Ben Hayen

June 22nd 2022



www.cet-power.com



Belgium, Luxembourg, China, India,
United States, United Kingdom, France,
Germany, United Arab Emirates, Russia,
Malaysia, Australia.



The Power to Create

CE+T Group integrates international companies mastering advanced electrical energy solutions for more reliable businesses and sustainable future of the planet.

Stakeholders share common values and objectives for a better technology, enhanced performance and personal development for our employees, partners and customers.

Global trends 2022



Telecom

5G or Wifi 6
High speed access
Everywhere
Anytime
More critical
applications
Growth of
Public and Private
Networks



Disaster recovery

Restore fast vital
functions like
communication
and energy
Technology
and
innovation
to predict and
reduce impact
Displacement
of
population



Grid support

Offer – demand
balancing
Valorisation of
storage assets
Shift from fossil
energy
Renewable energy to
grow 5 times in 25
years
Decentralisation



Health research

Investments to
protect and cure
the people
Sharing
of
information to
fight disease
and
decentralisation
of
medical production



War for talent

Shortage
Technical
profiles
for R&D, sales
and
Services
Changes in
professional behavior
and
priorities

5 core values of the Group

Innovation

Technology is key for our future

Do it better, smart and simple

Challenge and question



Quality

Complex energy systems require quality products to deliver the needed performance and excellent support

Efficiency

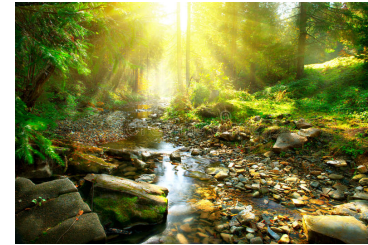
Less conversions

Less dissipation

Less cooling

Lowest footprint

Cost effective



Environment

Sustainable solutions

Social corporate responsible behavior

Recyclable, safe and green is the way forward

People

Our employees
Our customers
Our suppliers
Our stakeholders

Equality
Diversity
Socially engaged



Important recognitions



Our employees come first

- Commitment begins at the top
- Communication
- Clear roles
- Accountability
- All are Ambassadors
- Strong adhesion of the teams
- Embedded in the culture of the company
- Regular joint activities

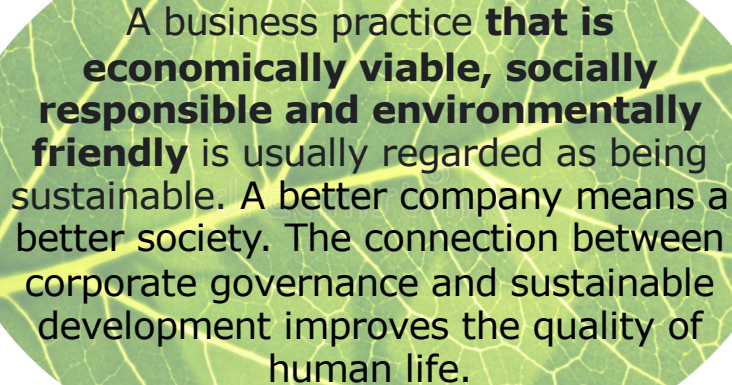


Sustainable Development Goals (SDGs)

CE+T Group selected in 2020 in **total 5 SDGs** to contribute on as part of our Corporate Social Responsibility program. Gradually we want to **integrate new SDGs** into the program.



Conducting sustainable business



A business practice **that is economically viable, socially responsible and environmentally friendly** is usually regarded as being sustainable. A better company means a better society. The connection between corporate governance and sustainable development improves the quality of human life.

First area be “pro-active” by providing state of the art solutions to optimize the usage of renewable energy resources in an efficient and simplified way, reducing the conversion losses with less need for cooling.

Second area focus on the worldwide installed base of less efficient systems that can be replaced by more modern equipment with a short payback time due to the energy savings from energy loss and required cooling.

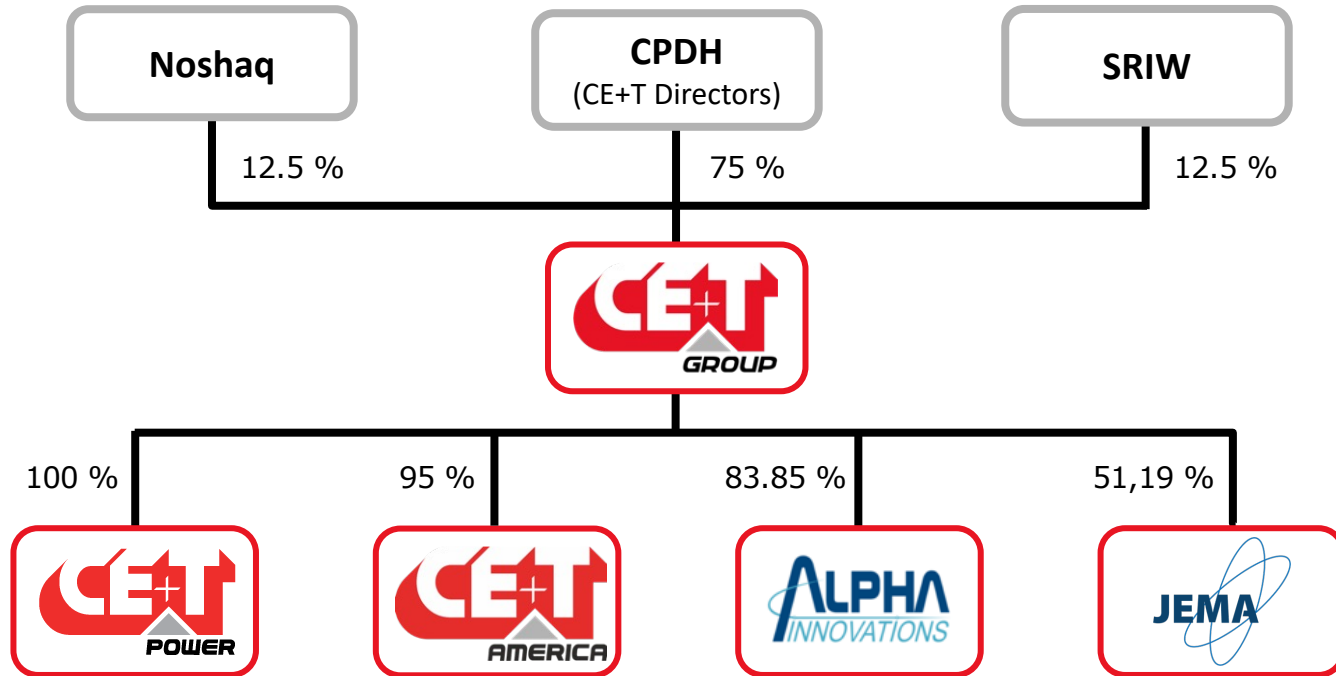
Third area reduce our own CO2 emissions.

Fourth area being involved in s our climate, for many years the different group companies are participating in important initiatives to help nature.

- CE+T Group files on average **5 patents per year**
- We currently have more than **45 active patents** including energy storage solutions
- These protections concern our **flagship technologies** such as ECI (high efficiency inverters), more economical and ecological modes of operation or a solution for **5G** antennas and full bidirectional converters
- These patents are active in **countries** such as USA, Europe, Russia, Australia, China, India, etc.

**PATENT
PENDING**

CE+T Group



Noshag and SRIW are regional governmental investment companies.

Executive team



Robert Eyben
CEO CE+T Group SA



Sophie Trinon
CEO Alpha Innovations SA



Rudy Kersten
CFO CE+T Group SA



Didier Dejace
CEO CE+T Power SA



Ben Hayen
VP CE+T Group SA



Mario Barbaresso
CEO CE+T America Ltd



Nicolas Bronchart
CEO Jema SA

INTRODUCTION GROUP COMPANIES



📍 Louvain-la-Neuve (Belgium)

📍 Haguenau (France)



Set up in 1937

Exclusive expertise in **ultra high precision DC power supplies** and **radio-frequency amplifiers**.

JEMA **designs, develops, manufactures and provides** high performance power systems namely for:

- Medical – proton-therapy,
- Big science, particle accelerators (CERN)
- Transport and Industrial.



Power : 1 kW to 3 MW
RF Power : 1 kW to 500kW



Current: 0,1 A to 30 kA



Voltage : 0,5 V to 30 kV



RF Frequency: 30MHz to 3GHz



Long-term stability: up to 10^{-5}



Efficiency: > 96 % full load





📍 Louvain-la-Neuve (Belgium)

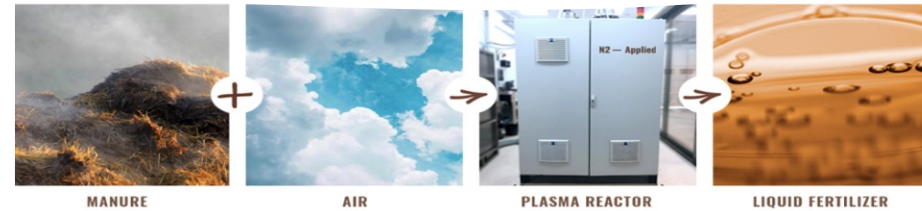
📍 Haguenau (France)

Jema Belgium and France are market leaders in high precision power solutions, using both complementary techniques which no one else can offer.



Recent new activity :

Powering **Plasma Torches** for effluents recycling



The fields of application are very diverse, covering the rapidly expanding field of green energies and reductions in human carbon footprint with the recycling of waste to produce organic and local fertilizers.

What makes Jema unique



Extraordinary R&D support, starting at the lead (specification exchanges with the customer, optimization of the proposed solution,...) and all along the project. Our tailor-made solutions allow the customers to have exactly what they need.



Superior manufacturing expertise, driving quality and efficient validation, for each project delivered.



Continuous support all along the project, including installation, commissioning, tests on site, production start, and support during the product life.



Set up in 1950

Exclusive expertise in **custom power solutions** and **industrial monitoring solutions**.

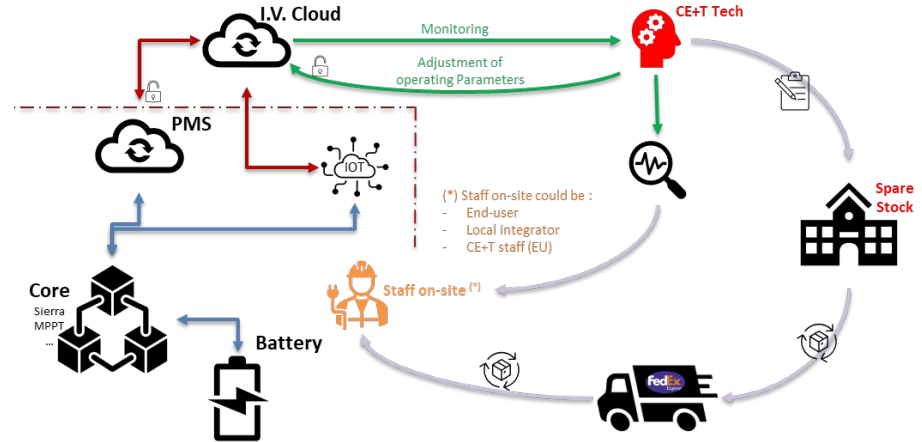
Alpha Innovations also **integrates 3rd party products, designs, manufactures and installs** high performance out-of-the-box solutions namely for:

- Medical – GE Healthcare
- Railway – Alstom
- Telecom – KPN, Proximus, Orange, Nokia, ...



Recent new activity :

Advanced monitoring and control tool to supply and customize **IoT, Artificial Intelligence, Power Management, Energy Management and predictive maintenance solutions.**



What makes AISA unique



Know-how of a highly experienced team in a modern organization and a very flexible company,



Personal accompaniment during the project from the customer specifications to the optimized proposed solution is operational



Full Scale company, design, prototyping, small series locally and capabilities in mass production



Our tailor-made solutions allow the customers to have exactly what they need, at a very competitive price



Repairability, customer support along the product life time, with possibility of a non-obsolence commitment up to 30 years long



- 📍 Headquarters in Wandre (Belgium),
- 📍 Subsidiaries and sales offices worldwide



Set up in 1934

Exclusive expertise in **modular converters** for dependable applications in a broad scope of industries.

Portfolio of standard off-the-shelf products includes namely:

- Inverter – DC/AC converters
- Multidirectional 3-port converters
- Uninterruptible Power Supplies (UPS)
- Microgrid components

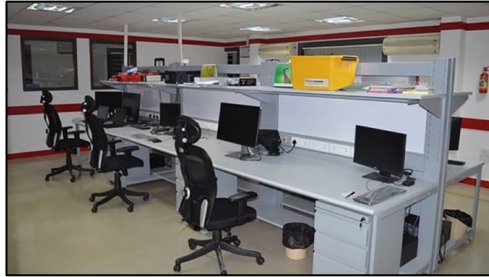




- 📍 Headquarters in Wandre (Belgium),
- 📍 Subsidiaries and sales offices worldwide



CE+T India Chennai



CE+T India Bengalore



CE+T China Suzhou



CE+T Services Belux



CE+T Luxemburg Troisvierges



Gertek Schwarzenbruck (Ge)

What makes CE+T Power unique?



Listen to and understand customer needs



Supply solutions operating under different conditions, such as harsh environment, limited space, poor quality grid, unreliable power source, on board applications, earthquake zones, ...



Focus on market segments where the cost of a power outage of the critical applications is so important it must be avoided as much as possible.



Be the preferred partner to enable our customers to focus on their core business with innovative and state of the art solutions.



Support the customer before, during and after the installation

Maximize the operator's applications uptime
Operate with lowest OPEX
Provide best protection to disturbances
Optimized footprint

Products and solution range - Red Line Solutions

Standalone Inverter

e-one 3

e-one 10

Y-One

Bravo ST

Modular Inverter

Bravo 4

Bravo 6

Bravo 10

Bravo ECI

Bravo 25

Media

Bravo TSI

Modular UPS

Flexa 25

Flexa 200

Flexa + SBP

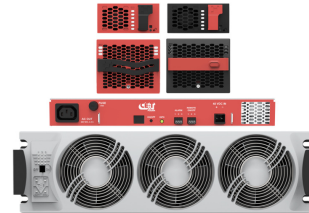
Multidirectional Converter

Sierra 10

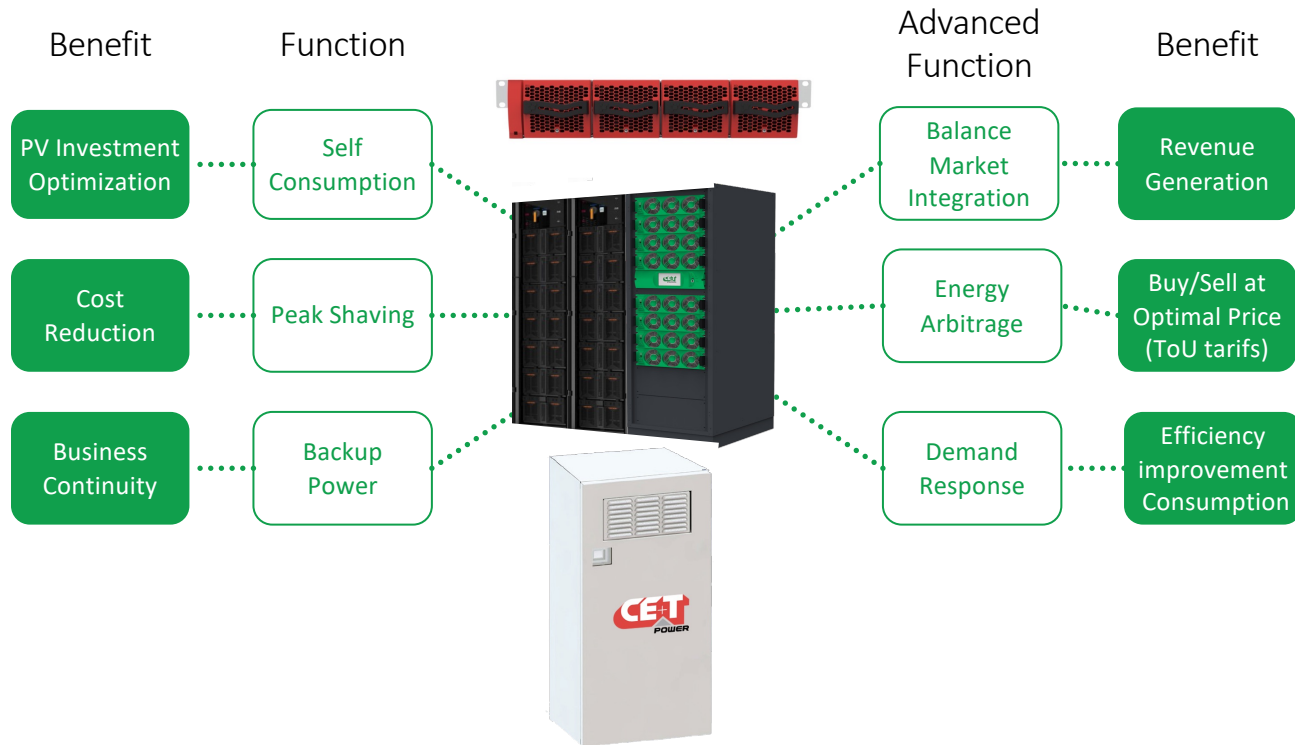
Sierra 25

Stabiliti 30C3

Hercules 200



CE+T Energy Storage - Green Line Solutions



CE+T Services



In **Belgium**, we offer **end-to-end solutions** via **CE+T Services (part of CE+T Power)**:

- **Diagnostic & Analyse:** to offer the most suitable solution;
- **Installation:** including preparation, FAT and commissioning;
- **Maintenance:** with different SLA options;
- **Trainings:** to allow you to be as independent as possible, if you wish.

In addition to CE+T products, we also offer **monobloc UPS, DC solutions** and all other **components** needed for a backup solution.





- 📍 Headquarters in Suwanee, Atlanta GA
- 📍 State of the art R&D facility in Austin, TX
- 📍 sales offices in Dallas, Chicago, Denver and Sacramento CA.



Manufacturing and Training center Atlanta GA



R&D lab , Austin, Texas, USA

CET America established in 2012, merged with CE+T Energy solutions in 2020 including the assets of Ideal Power acquired in 2019 (3 port converter Stabiliti).

CE+T America delivers innovative power conversion solutions to system integration and project development partners, enabling renewable energy sources for both on & off grid applications

Our products deliver superior reliability and compelling return on investment for integrating renewables with energy storage at a competitive cost, backed by first-rate customer support

Our technical team has considerable experience in both converter design and power semiconductor design, as well as system integration expertise



What makes CE+T America unique ?



Zero downtime: Our solutions offer back up power with no single point of failure, redundancy by true modularity which keeps customers process/application on all the time.

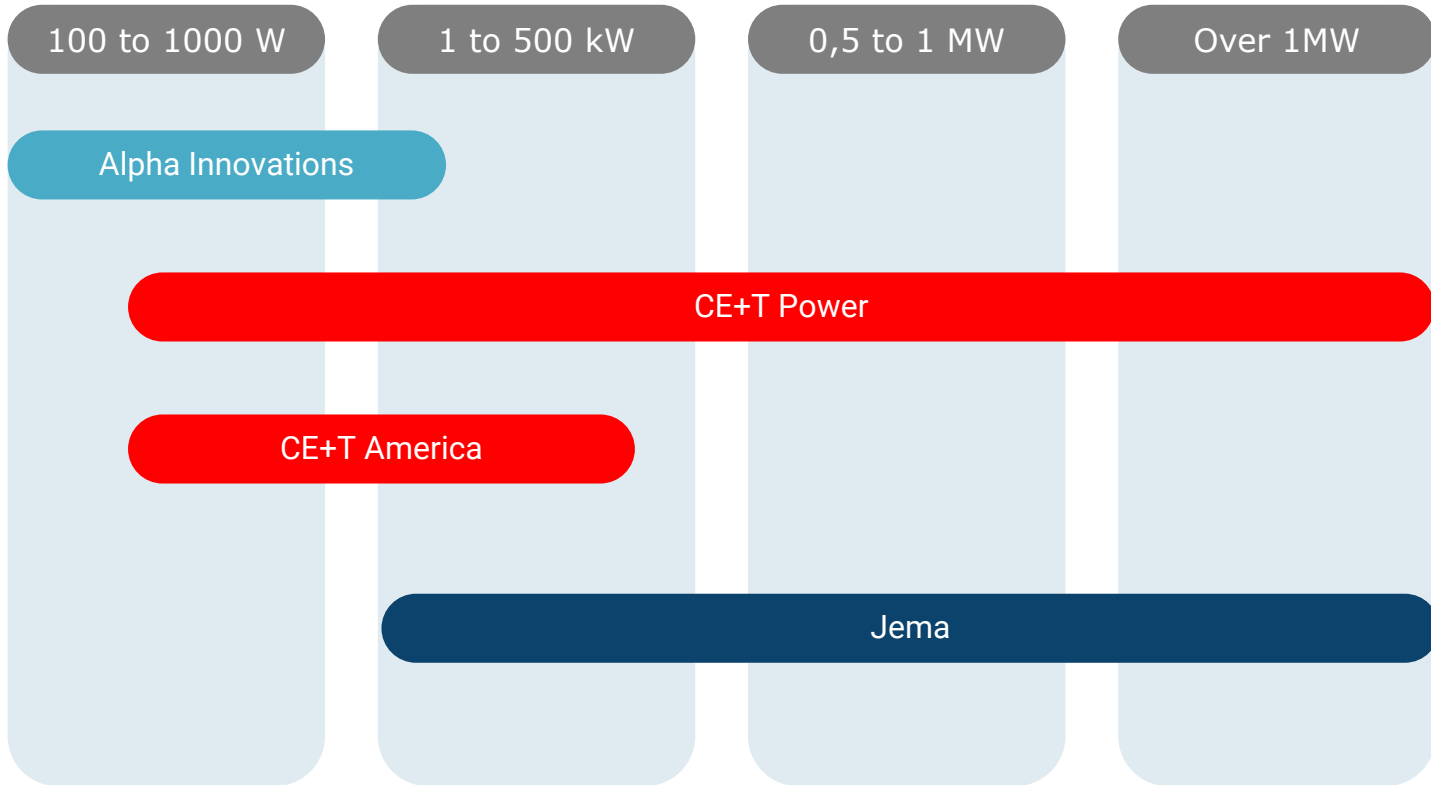


Zero cost: Our technologies include smart energy features allowing a return on customer investment.

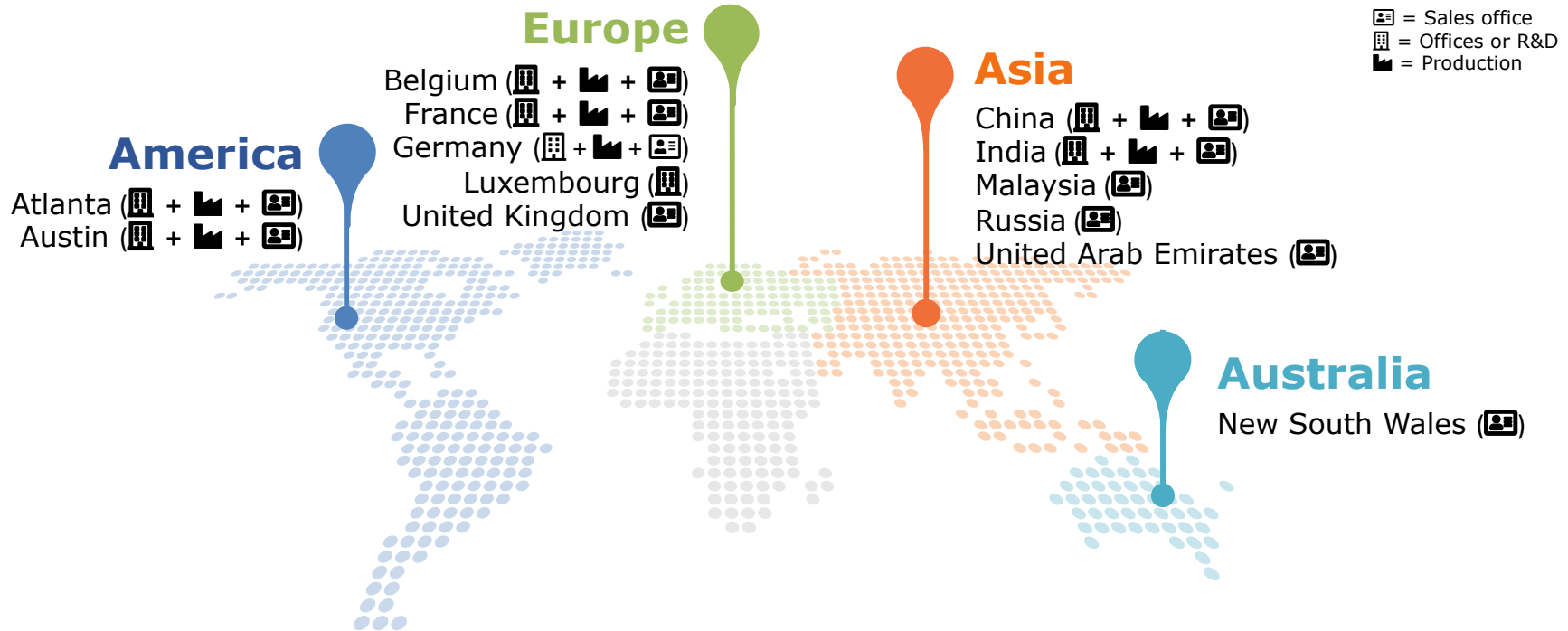


Zero carbon footprint: Our solutions allow easy integration of renewable energy sources thus reducing consumption from energy produced by fossils fuel.

Range of power solutions



Worldwide Presence

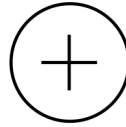


CE+T Power: Belgium (2), Luxembourg, India (2), China (3), United Kingdom, France, Germany, United Arab Emirates, Russia, Malaysia and Australia.

Alpha Innovations (BE), Jema (BE + FR) & CE+T America (USA)

MARKETS & APPLICATIONS

Medical



- Medium to high power systems
- Monitoring & control
- Customization



- Proton therapy
- Radio-isotopes production
- Medical device sterilization
- Ultrasound equipment
- X-rays and RMN controls
- Dialysis equipment
- Water treatment equipment
- Respiratory equipment
- Hospital emergency backup

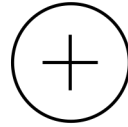
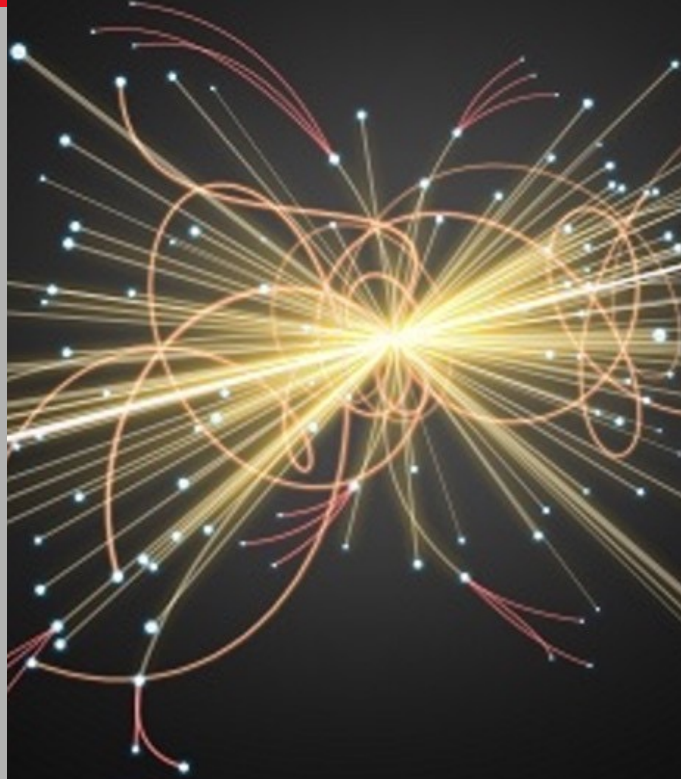


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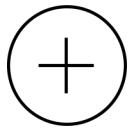
Big Science



- High voltage customized power systems
- High power solid state RF Amplifiers
- Particle accelerators at different stages:
 - Ion source
 - Extraction (kickers or other magnets)
 - Main coil
 - Dipoles and quadrupoles
 - Acceleration cavities
- Laboratory equipment
- Energy conversion from new storage innovation



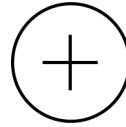
Transport



- Low to high power systems
- Power backup
- Energy Management
- Monitoring & control
- Customization
- Trackside and on-board
- Railways / Metro / Airports
 - Platform screen doors
 - Emergency lighting
 - Power signalling equipment
 - Station equipment
 - Communications systems
- Maritime - cruiselines
- Aerospace
- Electrica vehicle charging
- Embedded solutions
- Predictive maintenance



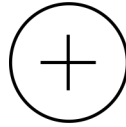
Telecom/Cable



- Low to high power systems
- Power backup
- Energy Management
- Micro-grid
- Monitoring & control
- Customization
- Reduced footprint
- Full scale solutions for small Broadband street cabinets
- Remote Power Feeding of 5G cells
- Outdoor energy enclosures dedicated to extreme climate
- Edge computing – regional sites
- Core & cell sites AC backup



Industries



- Medium to high power systems
- Power backup
- Energy Management
- Micro-grid
- Monitoring & control
- Customization
- Pipeline control backup
- Desalinization plants
- Outdoor energy enclosures dedicated to extreme climate
- Oil rigs electrical backup
- LNG
- Plasmatorch
- Steel plants

RWE
The energy to lead

 John Cockerill

 umicore

METALLO 
THE FURNACE OF INNOVATION

Cegelec

ScanArc
PLASMA TECHNOLOGIES

 Sumitomo
Heavy Industries, Ltd.

EverZinc⁺

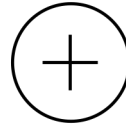
SKF

N2 — Applied

VENTURE GLOBAL LNG


Partner Forum 2022

Data center



- Low to very high power backup (up to 5MW)
- Energy Management
- Distributed architecture
- Integration of renewables
- Monitoring & control
- Customization
- Micro-edge
- Distributed edge data center
- Edge data center
- Colloq
- Enterprise data center
- Governmental data center
- E-commerce
- Financial transactions



SOLUTECH



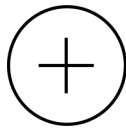
EQUINIX



Spark NZ



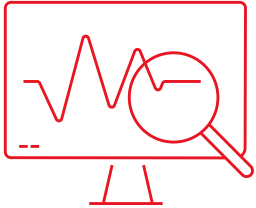
Energy Management



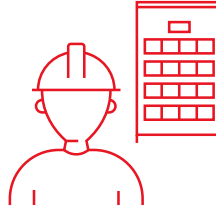
- On-site Power Management System
- Remote Monitoring & Control
- Customization
- Combined with Power backup
- EV charging support
- Grid boosting
- Off-grid
- Microgrid AC
- Microgrid DC
- Energy Storage
- Booster
- Grid support
- Energy Arbitrage
- Ancillary Services



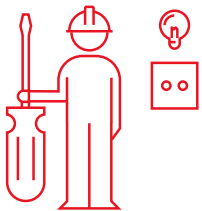
Global Services



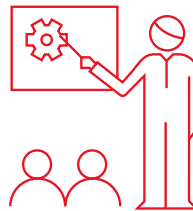
Diagnostic & Analyse:
to offer the most suitable
solution also remote



**Installation and
Commissioning**



**Maintenance and
site intervention:**
with different SLA
options



Training (on-site,
class room or remote)

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for your attention

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