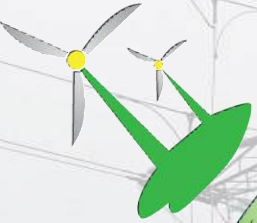


EDUSA

Green Energy





EDUSA GREEN ENERGY

Design and Development, Supplier,
Construction, Commissioning,
Maintenance,
High Voltage Test

EDUSA GREEN ENERGY



Starting with 2014, we have established headquarter in Romania, from where we operate internationally on all energy levels.



EDUSA GREEN ENERGY



Complete solutions for electrical domain:

- **Design and Development**
- **Supplier**
- **Construction**
- **Commissioning**
- **Maintenance**
- **High Voltage Test**



EDUSA GREEN ENERGY



Certifications:

ISO 9001:2015 Quality management systems

ISO 14001:2015 Environmental management systems

ISO 45001:2018 Occupational health and safety management systems



EDUSA GREEN ENERGY



Certifications:

Design, installation, operation and maintenance of electrical installations used in potentially explosive atmospheres in compliance ATEX Directive 2014/34/EU



INSEMEX
INSTITUTUL NATIONAL DE CERCETARE - DEZVOLTARE
PENTRU SECURITATE MINIERA SI PROTECTIE ANTIEXPLOZIVA

EDUSA GREEN ENERGY



Certifications:

- Design of electrical, overhead or underground voltage lines nominal voltages of 0,4 kV ÷ 110 kV, transformer stations with higher nominal voltage maximum 20 kV, medium voltage stations and 110 kV
- Execution of electrical, overhead or underground power lines nominal voltages of 0,4 kV ÷ 110 kV, transformer stations with higher nominal voltage maximum 20 kV, medium voltage stations and 110 kV



EDUSA GREEN ENERGY



Certifications:

- NR 10 - SAFETY IN FACILITIES AND SERVICES IN ELECTRICITY
- NR 11 - TRANSPORT, HANDLING, STORAGE AND HANDLING OF MATERIALS
- NR 18 - WORKING CONDITIONS AND ENVIRONMENT IN THE CONSTRUCTION INDUSTRY
- SECURITY IN THE ELECTRIC POWER SYSTEM (SEP) AND ITS PROXIMITIES



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Certifications:

- Installation and commissioning for equipment produced by **G&W Electric (Former Tozzi Electrical Equipment)**
- Installation and commissioning for equipment produced by **SANTERNO**
- Installation and commissioning for equipment produced by **FIMER**
- Installation and commissioning for equipment produced by **GoodWe**, we are **GoodWe PLUS+ Installer** (warranty extension to 10 years for all XS, DNS and SDT G2 inverters up to 20kW across Europe)

EDUSA GREEN ENERGY

ENEL Qualifications: Qualified Merchandise Group



- **LELE02_RO** Overhead lines up to 150kV (material, installation and tensioning) - ROMANIA
- **LEII15_RO** PV plant installation (BOP) & maintenance - ROMANIA
- **LELE05_RO** Works on MV/LV plants - ROMANIA
- **LESC02_RO** Electrical stations - electrical and electromechanical installations - ROMANIA
- **LESC01_RO** Complete primary cabins (civil and electrical works) - ROMANIA
- **LELE07_RO** HV underground cable lines (with solid or liquid insulation) - ROMANIA

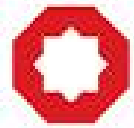
EDUSA GREEN ENERGY



ENEL Qualifications: Evaluation in progress Merchandise Group

- FEST06_RO EPC Electrical Power Stations MV/HV - ROMANIA
- LEII06_RO Construction of PV plants - ROMANIA
- LEII15_IT PV plant installation (BOP) & maintenance - ITALY
- SPPT27_IT ENGINEERING and REAL ESTATE SERVICES - ITALY
- LEII01_RO Electric vehicle recharge stands - works - ROMANIA
- FEIN12_RO Automatic LV switches for measurement units - ROMANIA
- FECA02_RO HV cables insulated with elastomers up to 170 kV - ROMANIA

Partners & suppliers



CNBM



JETION
SOLAR

Visionary Green Energy



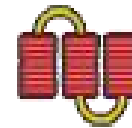
EMERSON™



ALIVECAPITAL®



ELETTRONICA
SANTERNO



ALTRAFO



GOODWE

YOUR SOLAR ENGINE



Innovation & creativity
at your service

E.M.G. S.n.c.
Bibbiena Italy

Partners & suppliers



Energy in Motion



HUAWEI



TALESUN



Operational team



We use local workers guided by our experienced engineers:

- 18 Engineers in Romania including collaborators
- 2 Engineers in Mexico
- 2 Engineers in Brazil
- 1 Engineer in Grece
- 1 Engineer in Chile
- 1 Engineer in Italy

SEMNFICATIVE WORKS



Romania:

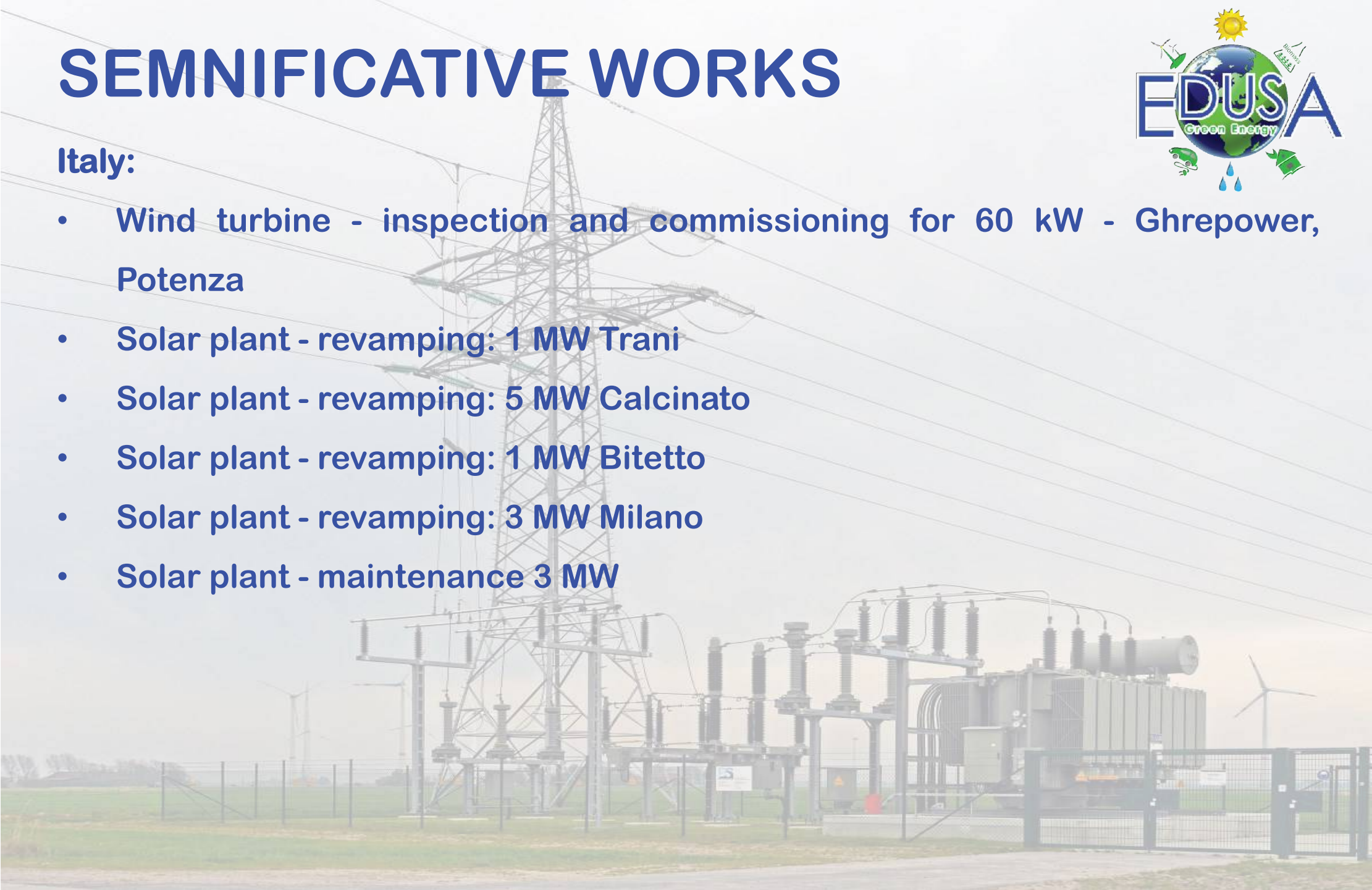
- Photovoltaic plant – development (including authorisations) and construction 30 MW for Talesun, 3R Energia
- Hydropower station - commissioning 700 kW for HIDROVLADENI
- Medium voltage cells TOZZI, G&W, Imequadri Duestelle and Boffetti - construction, commissioning, maintenance for 30 High Voltage Station
- Cogeneration station - inspection and commissioning for 3 MW Station
- Home photovoltaic systems - 120 projects - 500kW – “Casa Verde” AFM
- 3 Projects for ENEL, Dobrogea, Muntenia and Banat, 257 kW of photovoltaic panels and 403 kWh of batteries, part of a pilot program to reduce the carbon footprint of 110kV substations
- Solar plant - revamping: 1MW Banloc Timis

SEMNFICATIVE WORKS



Italy:

- Wind turbine - inspection and commissioning for 60 kW - Ghrepower, Potenza
- Solar plant - revamping: 1 MW Trani
- Solar plant - revamping: 5 MW Calcinato
- Solar plant - revamping: 1 MW Bitetto
- Solar plant - revamping: 3 MW Milano
- Solar plant - maintenance 3 MW



SEMNFICATIVE WORKS



Polonia

- Medium voltage cells SIEMENS - commissioning for 7 MW LOTOS Petrobaltic drilling rig

Mexic:

- Solar plant Villanueva - 828 MVA AC~1200 MVA DC - site manager and commissioning for inverter, power line and substation - FRIMER & Enel Green Power

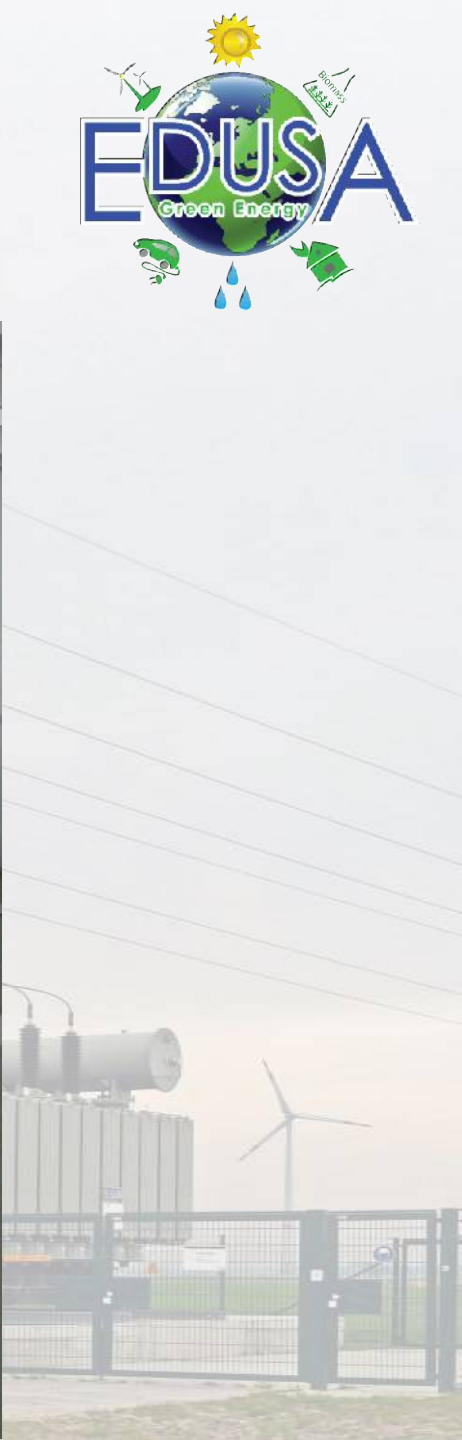
Brazil:

- Solar plant Sao Goncalo - Construction 400 MW SANTERNO inverter for TOZZI LATAM & Enel Green Power

ENEL Station



ENEL Station



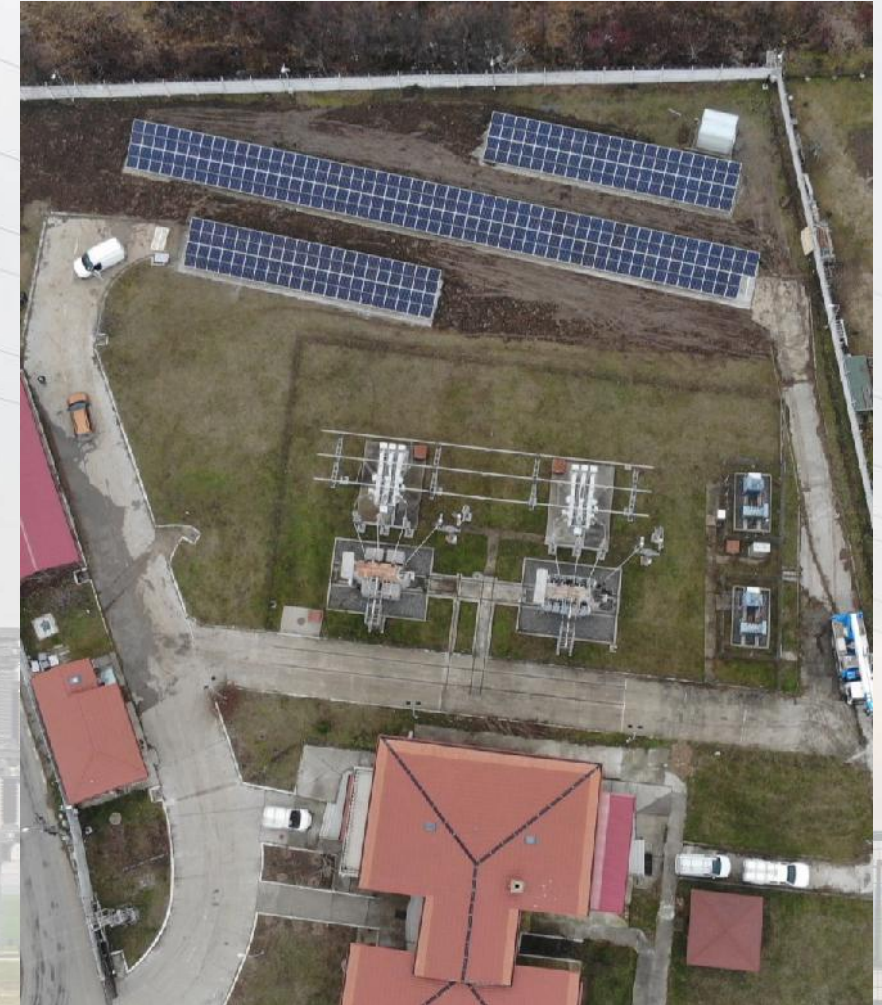
ENEL Station



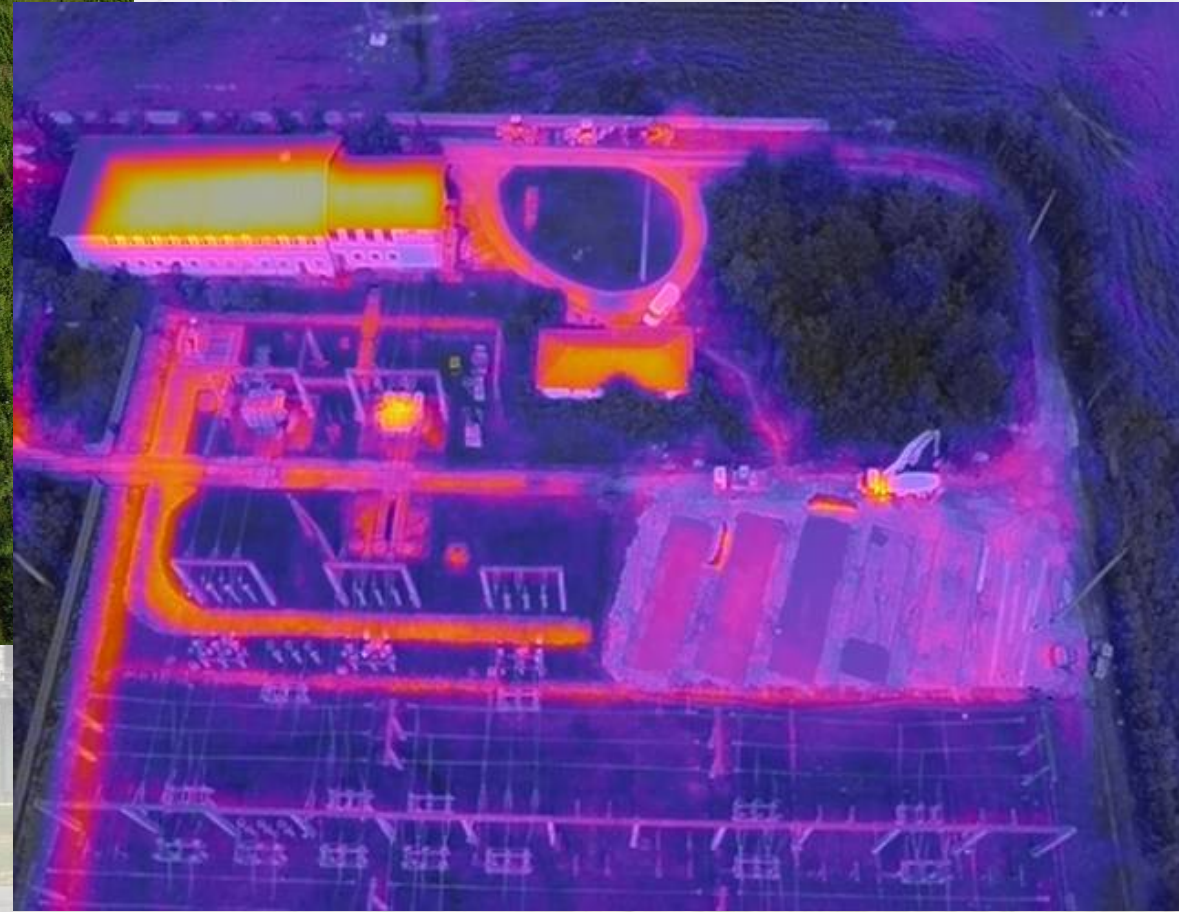
ENEL Station



Compensation system for own technological consumption from renewable solar energy sources



Compensation system for own technological consumption from renewable solar energy sources



Compensation system for own technological consumption from renewable solar energy sources



Compensation system for own technological consumption from renewable solar energy sources



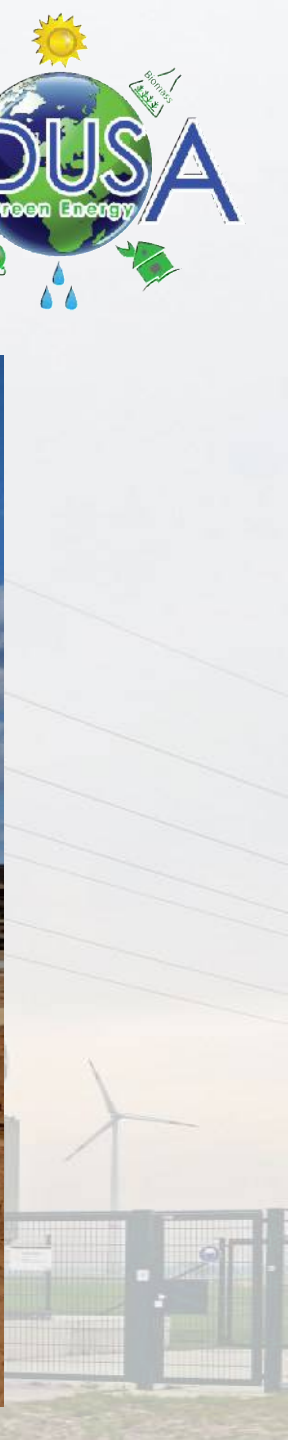
Solar plant Villanueva



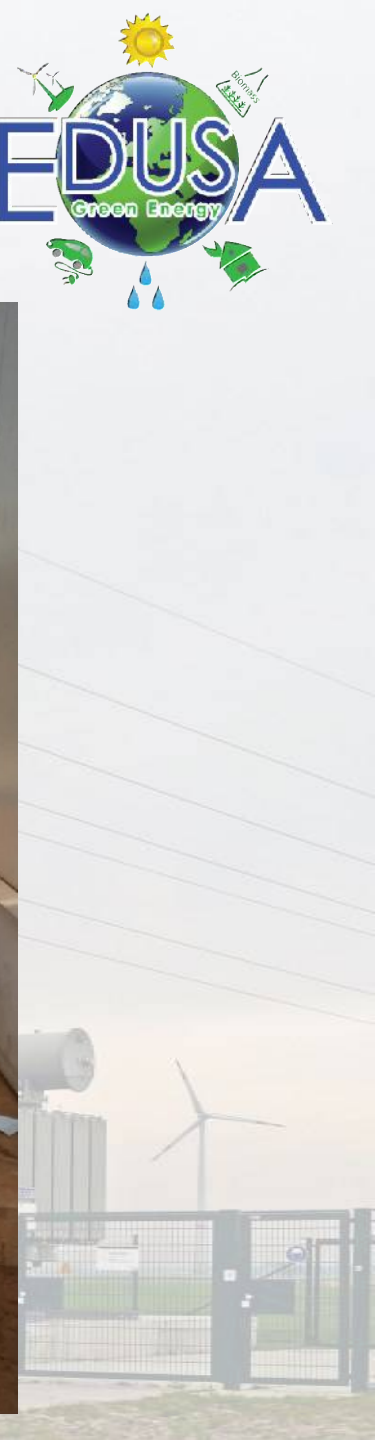
Solar plant Villanueva



Solar plant Sao Goncalo



Solar plant Sao Goncalo



Solar plant Sao Goncalo



Solar plant Sao Goncalo



Cogeneration station



Cogeneration station



Romania maintenance



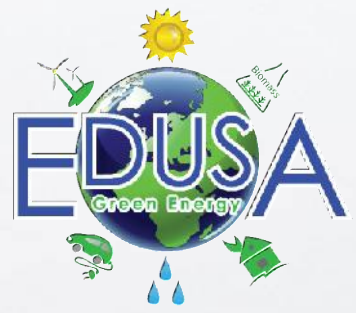
Romania construction



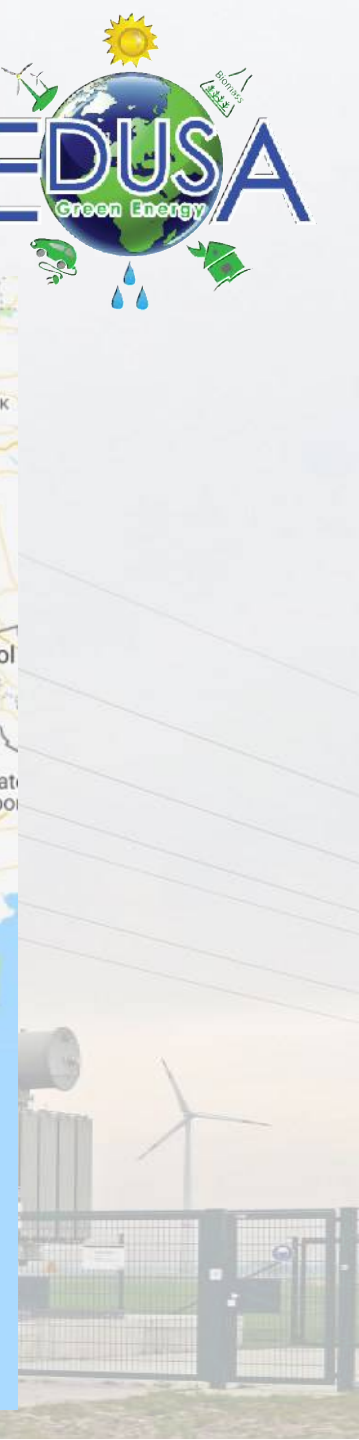
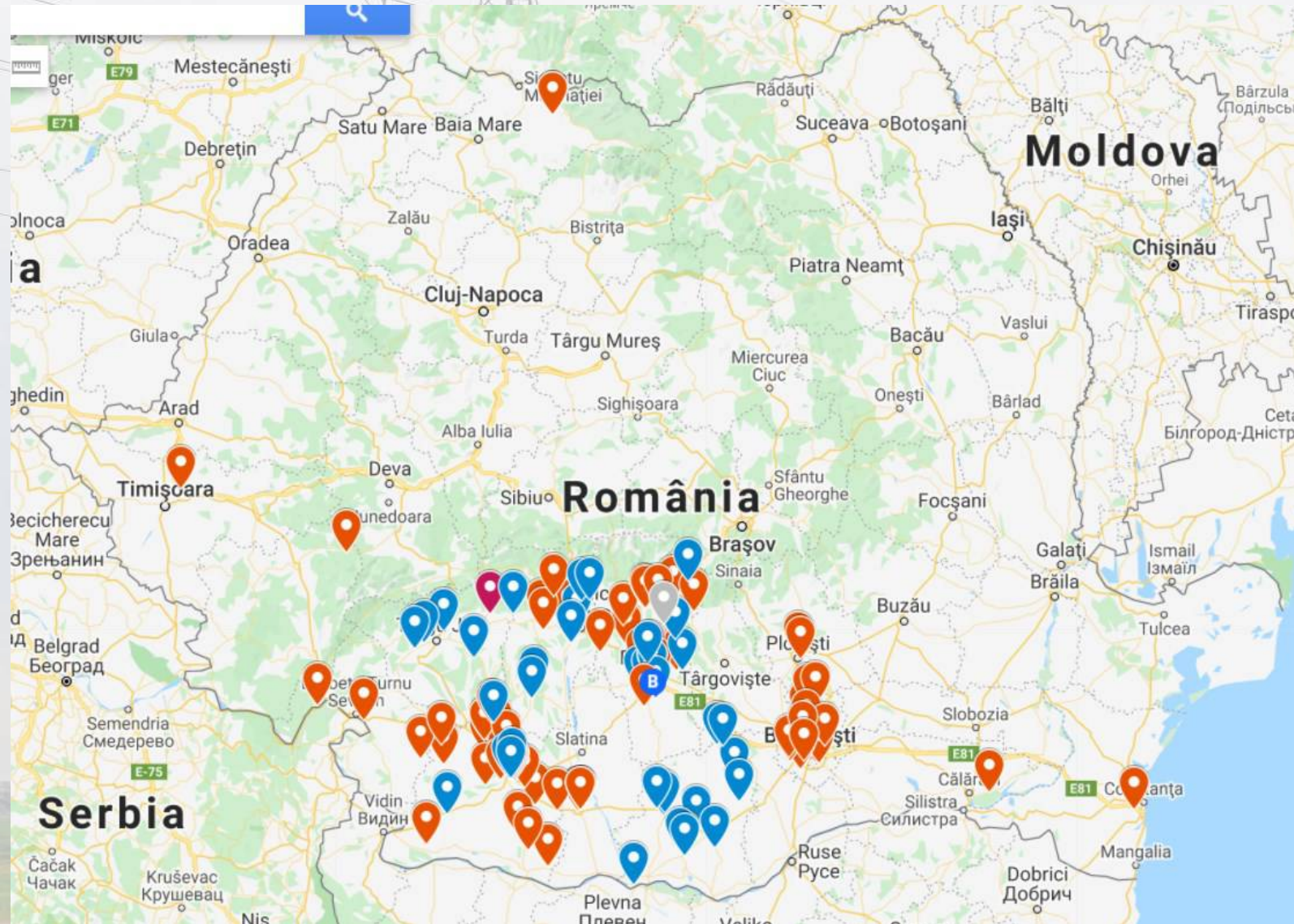
Romania construction



Romania construction



“Casa Verde” AFM



LOTOS Petrobaltic drilling rig



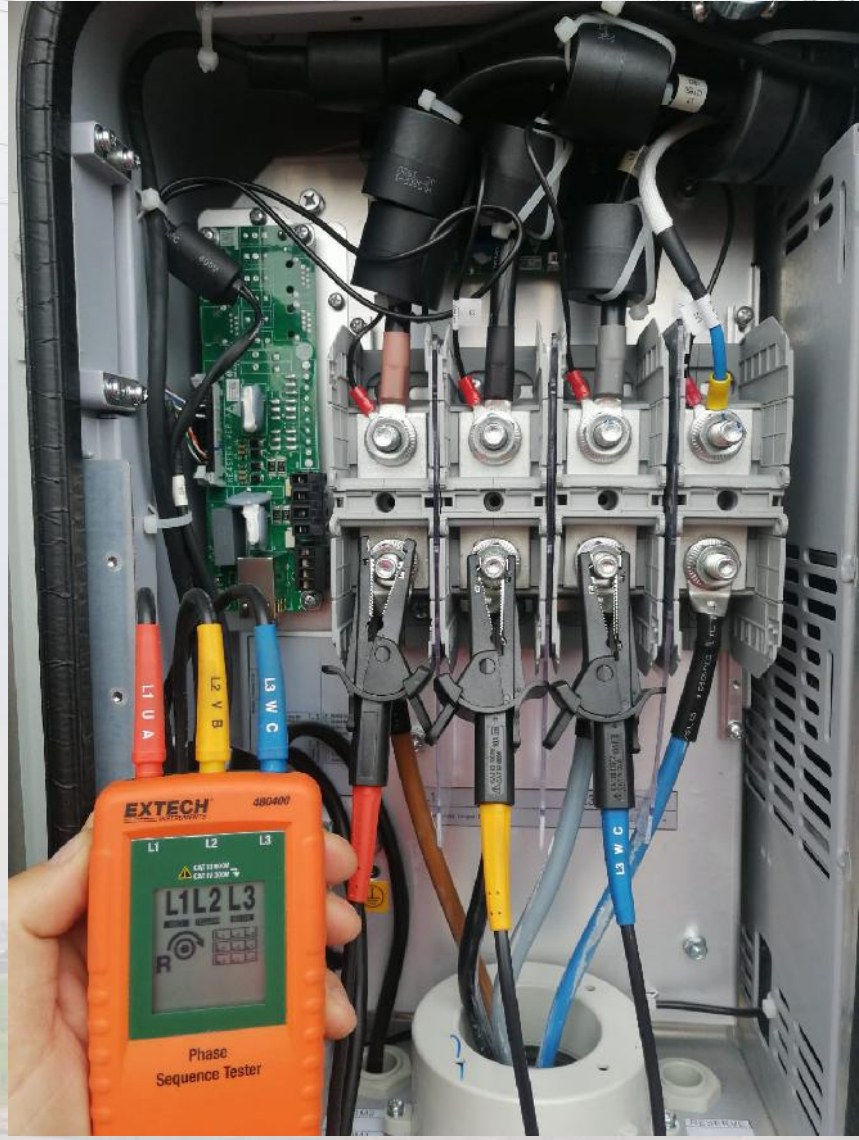
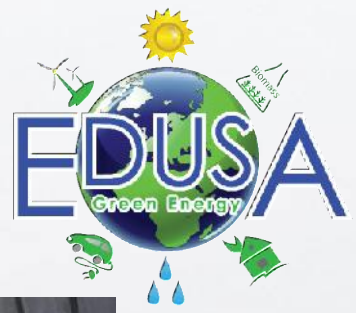
Wind turbine, Potenza, Italy



Italy 3R Energia



Italy Revamping



Italy Revamping



Revamping calcinato 1MW Italy



Air inspection



Air inspection

DJI Mavic 2 Enterprise Dual

Work area: 6000 m

Maximum time flying: 31 min

Satellite positioning: GPS +
GLONASS

Visual Camera

4056×3040 (4:3)

4056×2280 (16:9)

video: 4K: 3840×2160 30p

Thermal Camera

Pixel pitch: 12 μm

Spectral band: 8-14 μm

640×480 (4:3); 640×360 (16:9)

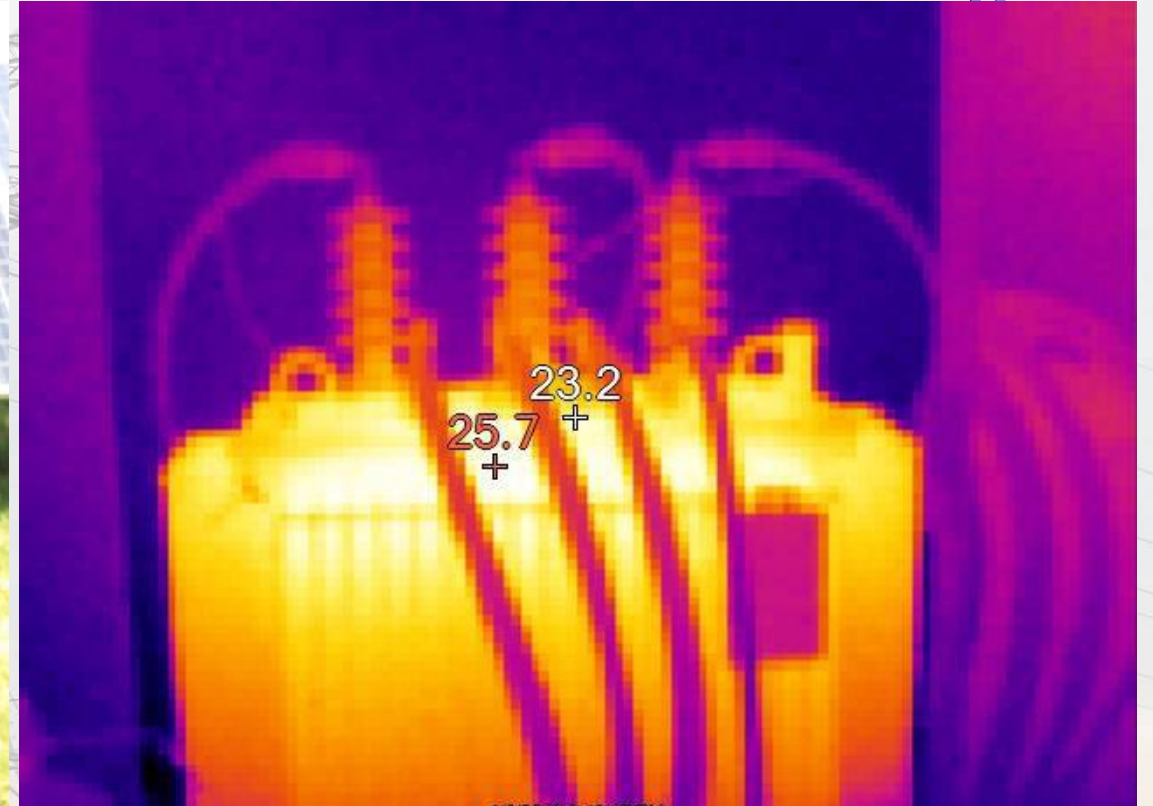
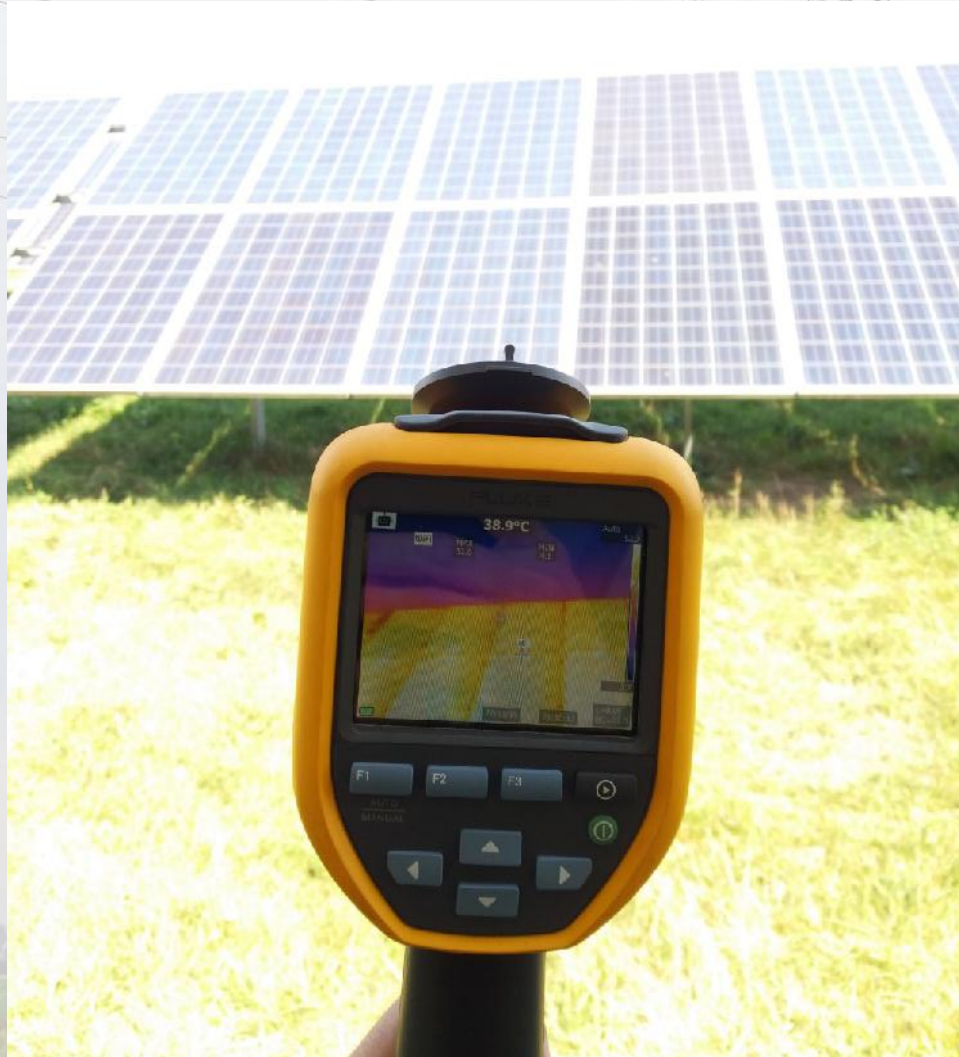
Thermal interval:

High Gain: -10° - 140°C;

Low Gain: -10° - 400°C



Thermography



High voltage test

Equipment

Output voltage

- AC 0 – 80 kV_{rms}
- DC 0 to ±110 kV

Output current (continuous)

- AC 14 mA_{rms}
- DC ±5 mA

Short-circuit current

- AC 30 mA_{rms}
- DC ±17 mA



Measurement equipment



| Equipment | Technical characteristics |
|---|---|
| Hight Voltage Test Set, BAUER GmbH, PGK 110 HB | 0kV-110 kV 0-10mA |
| Megohmmeter MEGGER MIT 525 | 5000V 10TΩ |
| Megohmmeter METREL MI 3200 | 0,12-MΩ-10TΩ |
| SCHLUMBERGER GP 3050 three-phase current-voltage kit | 320 Vca f=50Hz 100 Aca f=50 Hz |
| EuroSMC PTE-100-C Current-voltage kit | Generation: 350Vcc; 250 Vca; f=50Hz; 100 Aca; f=50 Hz Measuring: 250 Vca f=50 Hz; 20 Hz-2000 Hz |
| Megohmmeter FLUKE 1587 | 0,01-MΩ-2GΩ |

Measurement equipment



| Equipment | Technical characteristics |
|--------------------------------------|--|
| FLUKE 1587 Multimeter | 100 V _{cc} 1000 V _{ca} f=50 Hz 400 mA _{cc} 400 mA _{ca} f=50 Hz 50 MΩ |
| METREL MI2124 Earth Ground Tester | 0,11Ω-19,99kΩ |
| Megohmmeter FLUKE 1507 | 0,01MΩ-10GΩ |
| FLUKE 1621 Earth Ground Tester | 0,15Ω-1999Ω |
| NEUMANN KPG 25Kv High voltage kit | 0-25 kV _{cc} |
| FLUKE TiS20 Thermovision camera | -20 +350 °C |
| MEGGER MIT 525 megohmmeter | 10 kΩ-10 TΩ |

Virtual headset

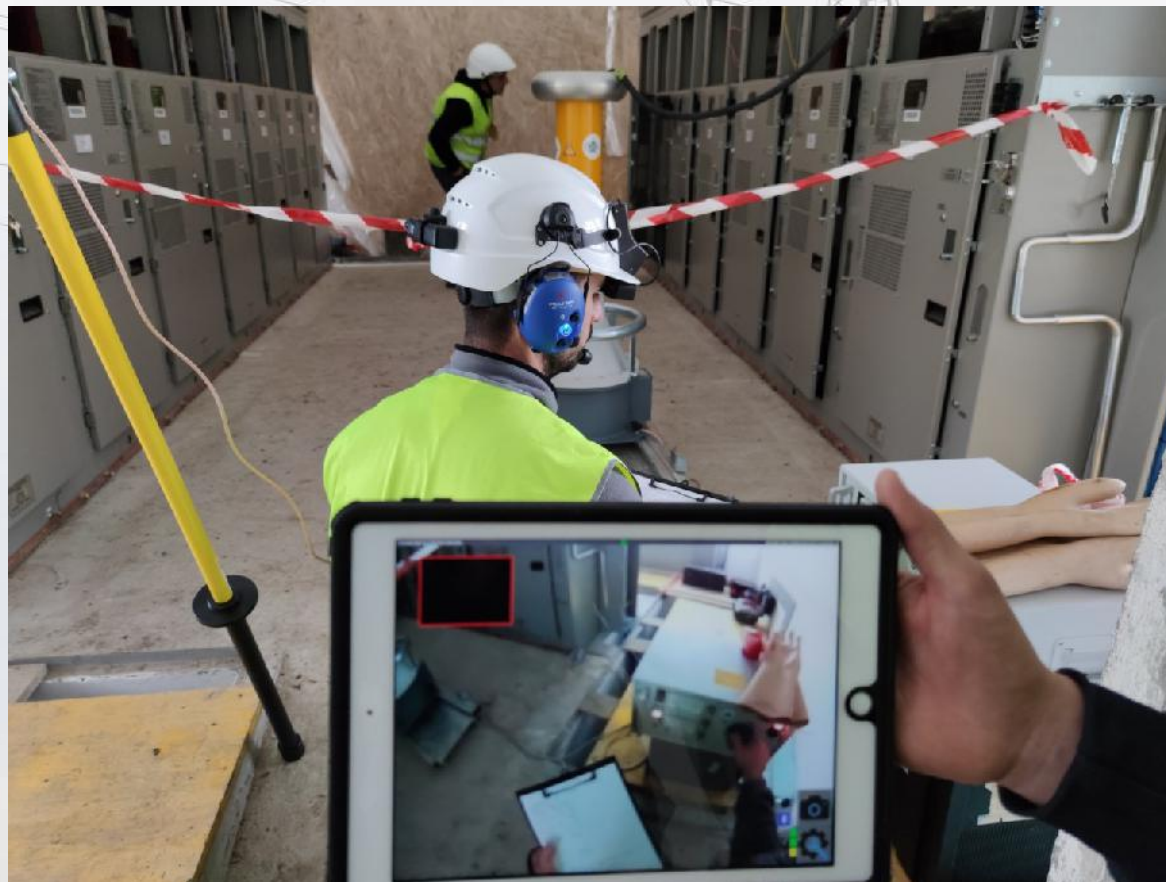
KIBER HELMET

Kiber Helmet capabilities:

- allows engineers and inspectors to see what the person wearing the helmet is seeing in real time
- enables high-resolution image capture and real-time mark-up of images
- supports easy document share
- permits multiple people support sessions, with video recording and playback



Virtual headset





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