



Power Distribution | LV Grid Visibility

DEEPGRID[®]

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DEEPGRID® an Operational Analytics Applications Platform

WHAT WE DO

An Operational Analytics Apps platform for the visibility and optimisation of the Low Voltage network.

WHY WE DO IT

For a more affordable, reliable and sustainable neighbourhood grid.

OUR MISSION

We're determined to give each neighbourhood grid the intelligence it needs, so we have Zero Emission Neighbourhoods (ZEN) for everyone, now.





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DEEPGRID[®] Operational Analytics Apps LV GRID VISIBILITY

GRID VISIBILITY AT SCALE

- Current Fault Detection & Location Focus on the anticipation and prevention of faults
- MV Dead Section Location Detection of faults on an MV single phase
- Network Power Quality
 Measure quality of network against regulatory
 baseline requirements
- Energy Balance & Losses: Identify feeders and phases with higher Technical Losses; Identify areas with Non-Technical losses.
- Capacity Optimisation Anticipate power and current constraints by substation, feeder and line

GRID COORDINATION AT SCALE

- Solar PV Integration Identification of the best phase to connect a PV panel
- Electric Vehicle Charger Integration Identification of the best feeder to connect an EV charger
- Battery sizing & Optimal Placement What are the substations that can benefit more of having Distribution generation and Batteries

Network monitoring Smart Sensor



Optimisation Operational Analytics Apps



WE WORK CLOSELY WITH DSO TEAMS





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DEEPGRID® Network topology Feeder mapping

OVER 99% SUCCESS RATE



With the Grid Topology, we can advise the DSO on:

What is the best phase to connect a PV panel;

What is the best feeder to connect an EV charger;

What are the substations that can benefit more of having Distribution generation and Batteries.

We do it by using data from Smart meters, and data from the feeder pillars. The method was developed by Eneida - *patent pending*.

Success rate was measured by a DSO, comparing with manual mapping.





DEEPGRID[®] Grid Visibility

GRID GLOBAL STATE

BILLIONS OF DATA RECORDS, LARGE PERIODS OF TIME.

THE WHOLE GRID IN SIMPLE STATE CHARTS



GRID POWER OCCUPATION

How many substations are registering what level of power occupation?

How much capacity remains available for connecting new Loads? And new customers?



FEEDER CURRENT IMBALANCE 79 feeders in the grid have mean current imbalance between 100% and 116.7%





USER FRIENDLY INTERACTIONS



Click on bars to see the corresponding substations or feeders





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FROM GRID STATE TO SUBSTATION STATE IN ONE CLICK

Feeder current imbalance



IMBALANCE EXPLAINED. TAKE ACTION -

AND MUCH MORE: POWER FACTOR, INJECTION FROM GRID, VOLTAGE & VOLTAGE IMBALANCE





DEEPGRID[®] Reports

REPORTING

THE GRID IN INSIGHTFUL PDF REPORTS

Grid State and Substation State

with links for easy navigation









DEEPGRID[®] Reports

CREATE CUSTOM REPORTS

- - 	New report Report details Report name My costum report Start date 9/7/2019 Report description My costum report description	Striet substature Report type Current initialance End date 9/30/2019	X	Select Report Type and Period of interest
2	Desize Desize Desize Desize New report • Report details Total substations: 9 • Nm 107 108 109 101 111 200,111 112	Select substations Region 1 OutSocalize Area 1 Area 3 Area 4 Region 2 Unesuescent	X Proteix and confirmation SUBSCRIE UN	Select Substations
3	Present Present Report details Details Details Details Time: My costum report Type: Current imbalance Start date: 9/20/2019 Detection: Wy costum report description Created at: 10/2019 Detection: Wy costum report description Created at: Invalid Date: Reported at: Invalid Date: None: Biold Did Statutons 102 Statutons 103 Statutons 104 Statutons 105 Statutons 106 Statutons 107 Statutons 108 Statutons 109 Statutons 101 Statutons	Select substations	Review and confirmation	Review and Submit

REPORT GENERATED IN MINUTES. LINK SENT TO USER'S EMAIL. EASY SHARING OF REPORTS





DEEPGRID® Sensor EWS DTVI

- Measure currents up to 6 or 8 feeders (3Ph+N) and 3 Voltages
- Processing & Memory Capacity (1 year)
- · Self-powered and with energy backup
- · GPRS, 4G, Ethernet or Serial Communication. BLE for commissioning
- · Firmware remotely updated
- Robust, IP65, and very compact
- \cdot Very easy, "live", rapid installation



GENERAL

Supply Voltage	230 Vrms +15%, -25%	Housing	PC
Power Consumption	5W typical, from single	IP Rating	IP65
	phase (L3)	Dimensions (WxHxD)	250 x 135 X 45 mm
Max Power Consumption	14W with GPRS enabled		
Max. I Ower Consumption		Communication Protocols	GSM/GPRS (850/900/1800/ 1900 MHz) Bluetooth, 3.0 Magnetic, Wall Mount
Operating Temperature	-20ºC to 55ºC		
Operating Humidity	Up to 95%, non condensing	Mounting Options	
Antenna Plug	SMA	Weight	625g

CURRENT SENSORES

Туре	Tri-head flexible Rogowski coils	Operating Humidity	15% to 85%, non condensing
Probe Cable Length	406 mm	IP Rating	IP 65
Probe Cable Diameter	9,9 mm	Colour	Brown (L1), Black (L2),
Connector Plug	M12.8P.Male.Code A		Grey (L3)
Operating Temperature	-20 to 65 ºC	Current Range	3 X 600A



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DEEPGRID[®] Mobile App

ENEIDA DEEPGRID **IOT PLATFORM**

The solution also includes a mobile application that enables users to configure new devices (EWS DTVI-g) at installation time and register them into the DeepGrid® loT Platform. Users can also use the mobile app at any later time to connect to an installed device and visualize its real-time data

- · Secure access to the DeepGrid® loT Platform
- · Safe access to devices by Bluetooth secret pin
- · Configure device installation parameters
- · Real-time sensor readings
- Automatic validation of device installation







QUALITY

34.70

330.5



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