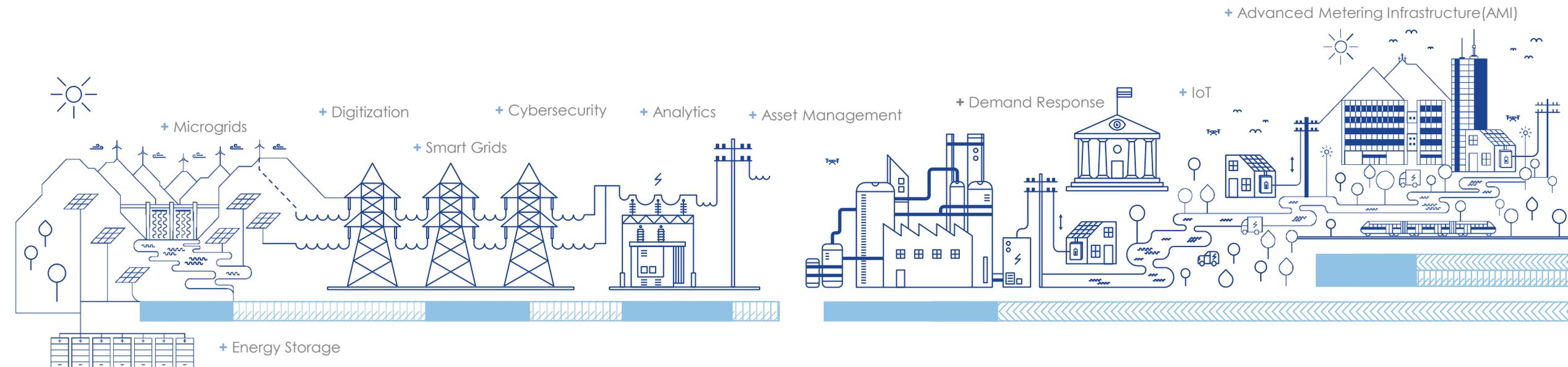




**Potencia y  
Tecnologías  
Incorporadas**

## WE BELIEVE IN ENERGY AS DRIVER TO CONTRIBUTE TO THE DEVELOPMENT OF OUR COUNTRY AND REGION

We put at reach of all players in the electric power value chain the necessary technologies and solutions for a successful and efficient development of their projects, so we can count on the highest quality energy.



# OUR COMPANY

20

years in the energy market

+70

employees in management, sales, support, consulting and projects

## ISO 9001 & 14001/ OHSAS 18001/RUC

Certificates which show our quality management, and our commitment to the environment and the occupational safety and health.

## R + D + i Group

### OFFICES

#### Colombia

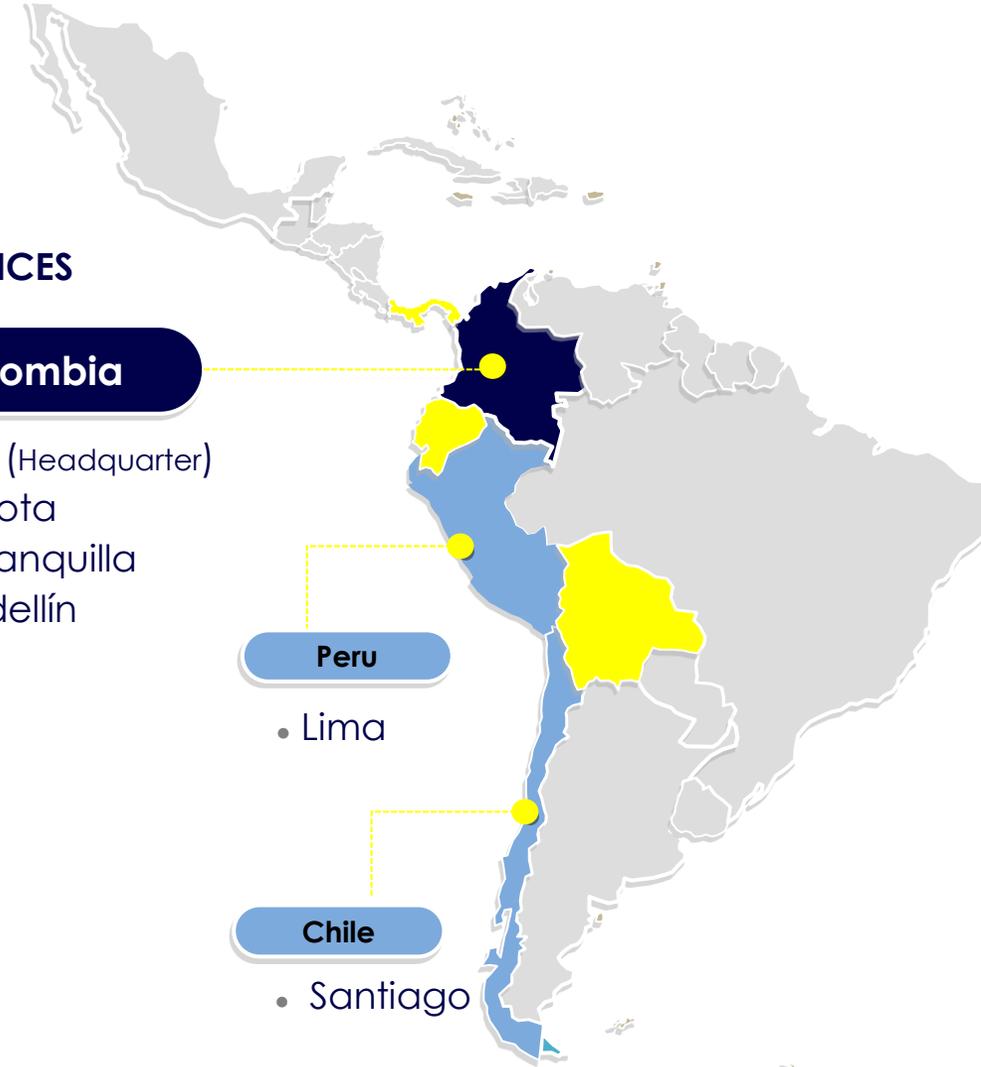
- Cali (Headquarter)
- Bogota
- Barranquilla
- Medellín

#### Peru

- Lima

#### Chile

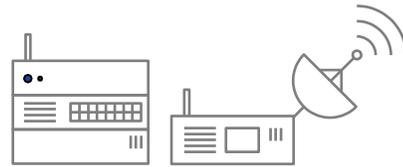
- Santiago



# WHAT WE DO

We understand that needs of each client and of each project are different, thus we are able to offer customized and comprehensive solutions, with a high level of quality, efficiency and effectiveness, virtues which are translated into economic efficiency for our customers.

## ENGINEERING



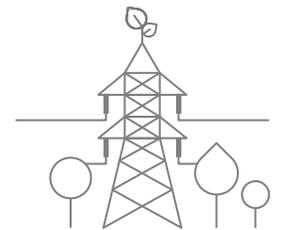
## TECHNOLOGIES

We permanently perform technological surveillance and establish strategic alliances with leading technology companies around the world, representing products and solutions of the highest quality, which allow us to respond to the current and future market needs.

We are a group of people with a high level of specialization, so that our clients are backed by experts regardless the challenges to overcome.

Our search for the best results is always accompanied by social responsibility and sustainable innovation, at an economic and environmental level, making PTI the best partner for project development.

## SERVICES



# OUR VALUE PROPOSITION



# OUR PORTFOLIO



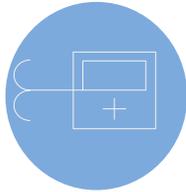
# OUR PORTFOLIO



Telecontrol, automation and protection



Power systems analysis and real time solutions



Power apparatus, instrumentation and power quality



Electrical projects and tests



# OUR PORTFOLIO



**Telecontrol, automation and protection**



Analysis of power systems and real time solutions



Power, instrumentation and power quality



Electrical projects and tests



- + Substation digitization.
- + Retrofit / Automation of S/Es.
- + Cybersecurity for electrical systems.
- + Telecontrol and Automation for distribution systems.
- + Automatic fault analysis and data collection.
- + Remote monitoring and management of critical variables.
- + IoT applications.

## TECHNOLOGIES

- + Gateways.
- + Industrial communication switches.
- + Control, automation and protection equipment.
- + PMUs, AMUs, Controlled Switching Devices.
- + Industrial Connectivity equipment.
- + Satellital Communication M2M.
- + Thermal and visual asset monitoring.



# OUR PORTFOLIO



Telecontrol, automation and protection



Analysis of power systems and real time solutions



Power, instrumentation and power quality



Electrical projects and tests



- + Power systems Design and Analysis.
- + ADMS (GIS, SCADA, DMS, OMS).
- + Advanced analytics (intelligent load shedding, AGC, others).
- + Energy Efficiency.
- + Real time dynamic simulation of electrical power systems.
- + Real-time laboratory for cybersecurity tests, microgrids, digital S/Es, R&D (prototyping V-development), design and testing of wide-area protection systems, HIL, PHIL, RCP schemes.

## TECHNOLOGIES

- + Power system analysis software.
- + Real time comprehensive platform for power system management.
- + Real time simulation platforms.

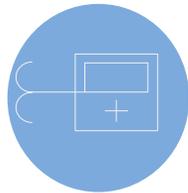
# OUR PORTFOLIO



Telecontrol, automation and protection



Analysis of power systems and real time solutions



Power, instrumentation and power quality



Electrical projects and tests



- + Distribution grid automation.
- + Remote fault detection and location in distribution grids.
- + Power quality improvement.
- + Condition based maintenance.

## TECHNOLOGIES

- + Reclosers.
- + MV Switchgears.
- + Fault indicators.
- + Submersible transformers.
- + MV capacitors.
- + Primary and secondary metal clad switchgears.
- + HV & MV instrument transformers.
- + Electrical parameters monitoring systems.
- + HV & MV Disconnect Switches.
- + Electrical test equipment.
- + Power Transformers.

# OUR PORTFOLIO



Telecontrol, automation and protection



Analysis of power systems and real time solutions



Power, instrumentation and power quality



Electrical projects and tests

## STUDIES

Consulting, engineering and electrical studies:

- + System analysis
- + Protection coordination.
- + System stability.
- + Energy quality and efficiency.
- + Grid Code compliance, analysis and validation.

+ Special and routine tests on transformers, LV, MV & HV apparatus, protection relays, meters, transducers, energy meters. cables, earthing systems.

## ELECTRICAL TEST

+ Partial discharge tests, energy quality measurements, step and contact voltage, ground resistivity and earthing, power factor ( $\tan \delta$ ), Excitation current, VLF tests and  $\tan \delta$  in medium voltage cables, High-pot, primary and secondary injections.

## PROJECTS

- + Construction and retrofit of MV/HV Substations.
- + Construction of MV overhead lines and underground networks.
- + Construction of MV/HV industrial electrical installations.

# OUR PORTFOLIO



Advanced Metering  
Infrastructure



Asset Investment  
Planning and  
Management (AIPM)



Non-conventional  
renewable energy



Real time simulation  
laboratory



Battery Storage  
Systems



# OUR PORTFOLIO



**Advanced Metering Infrastructure**



**Asset Investment Planning and Management (AIPM)**



**Non-conventional renewable energy**



**Real time simulation laboratory**



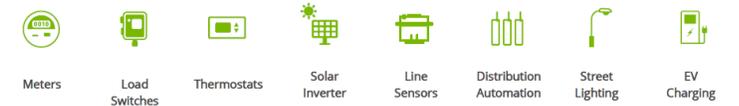
**Battery Storage Systems**



**Landis+Gyr**

Advanced measurement for utilities under a unique multifunction platform. Applications which allow to collect data, manage demand, control residential networks, manage interruptions, perform analytics on the distribution network, among others.

Grid Analytics   Demand Response   Meter to Cash   Consumer Tools   Network Management   Streetlight Control   Distribution Automation



## TECHNOLOGIES

- + Centralized AML.
- + Smart Meters.
- + MDM (Master Data Management).

# OUR PORTFOLIO



Advanced Metering Infrastructure



Asset Investment Planning and Management (AIPM)



Non-conventional renewable energy



Real time simulation laboratory



Battery Storage Systems



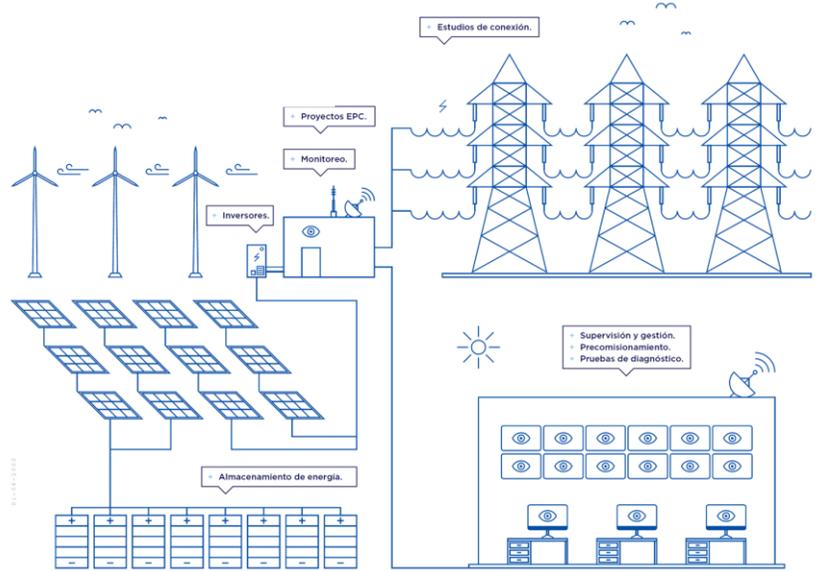
Solution for planning and management of investments. It helps companies decide where and when to invest to optimize performance, ROI and manage risk.

AIPM: Asset Investment Planning and Management.

## TECHNOLOGIES

+ Software C55.

# OUR PORTFOLIO



- + EPC projects.
- + Connection studies.
- + Supervision and management system.
- + Battery Energy Storage Systems.
- + Electrical tests and systems commissioning.

# OUR PORTFOLIO



Advanced Metering Infrastructure



Asset Investment Planning and Management (AIPM)



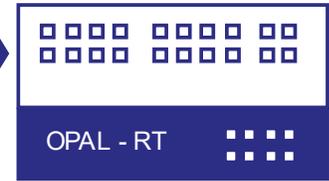
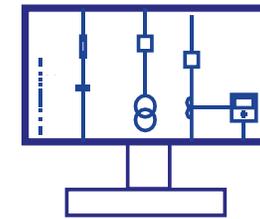
Non-conventional renewable energy



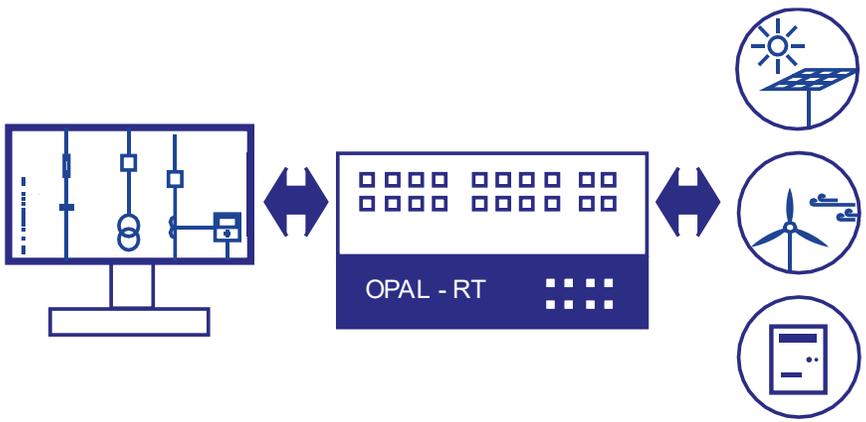
Real time simulation laboratory



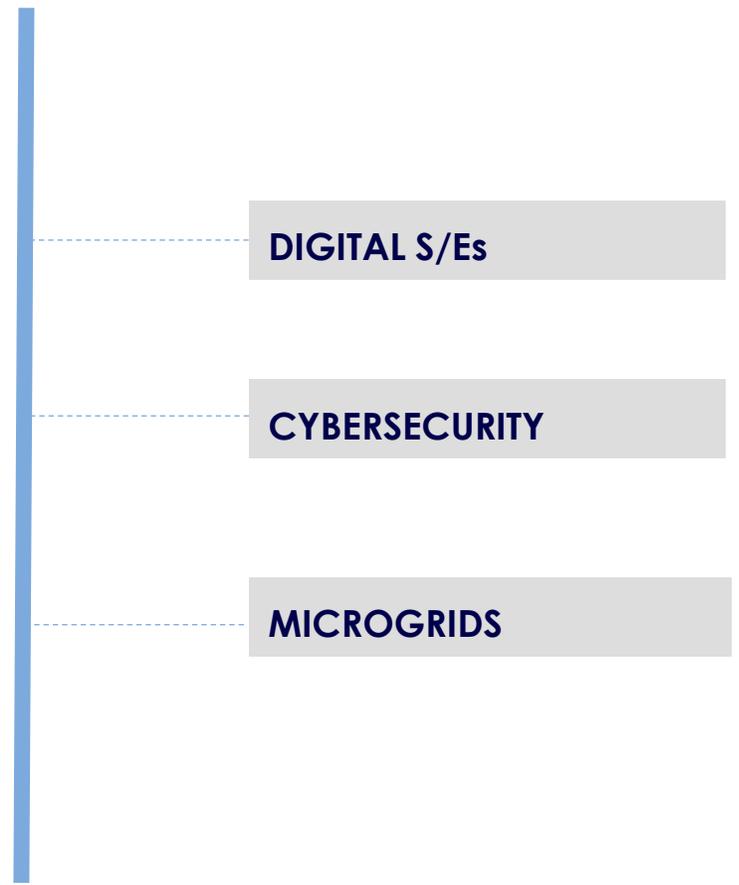
Battery Storage Systems



# REAL TIME SIMULATION LABORATORY



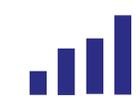
Real-time Simulation Laboratory is a platform to analyze the operation of the electrical system and ensure reliability and safety.



Accuracy in pre-commissioning analysis



Reduction of costs, time and risks in commissioning



Efficient simulation of systems with frequent topological changes



Validation of new planning, operation and management strategies

# OUR PORTFOLIO



Advanced Metering Infrastructure



Asset Investment Planning and Management (AIPM)



Non-conventional renewable energy



Real time simulation laboratory



Battery Storage Systems



Microgrids and utility scale solutions.

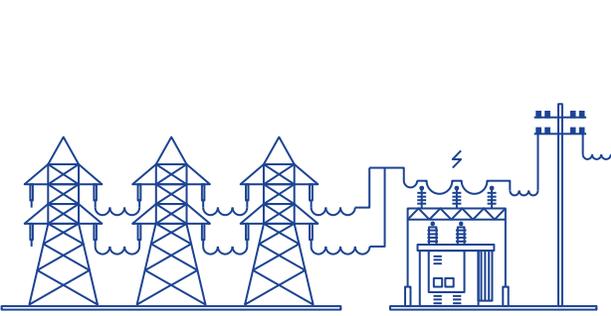
- + Congestion relief.
- + Frequency regulation.
- + Peak shaving and investment deferral .

## TECHNOLOGIES

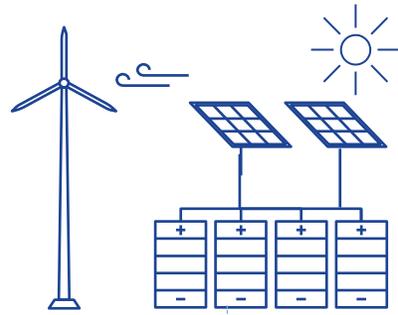
- + Network services.
- + Microgrids.
- + Demand Response.
- + Plant remote management.

# CUSTOMERS SEGMENTS

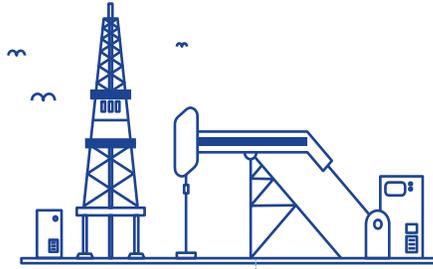
We design solutions for companies in different sectors, always at service of electrical infrastructure for our country and region, so we can count on the highest quality energy.



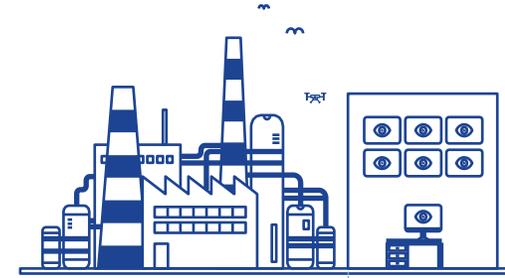
**UTILITIES**



**NCRE**



**OIL & GAS**



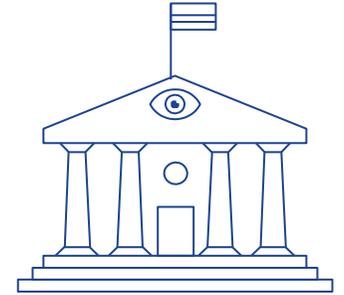
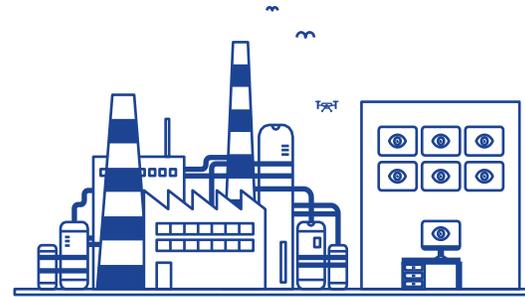
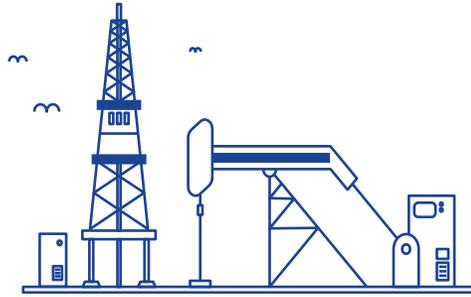
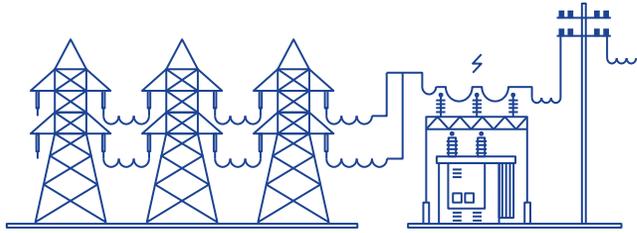
**INDUSTRY**



**ACADEMY**

# OUR CUSTOMERS

We design solutions for companies in different sectors, always at service of electrical infrastructure for our country and region, so we can count on the highest quality energy.



# SOME EXPERIENCE

Improvement of SAIDI, SAIFI, DIU and FIU indexes



Overhead

Underground



Supply of remote fault indicators, installation and SCADA integration



Grid Automation



Reclosers



Supply and SCADA integration



Telecontrol & Tele management



Industrial networking equipment



Supply and integration



Underground grid automation



Submersible MV Switchgears IP68



Supply and integration



# SOME EXPERIENCE

## Substation digitalization

Architecture design, implementation and maintenance of BusStation IEC61850 in +60 500/220/115 kV Substations.

**Customer:**  
CODENSA - ENEL



## Protections Management

Architecture design, Supply and commissioning of terminal server for the integration of 156 multi-brand relays in 7 S/Es HV/MV.

**Customer:**  
EMPRESA DE ENERGÍA DE BOYACÁ



## Availability of information reliably and securely

Architecture design, Supply and commissioning of redundant and cybersecurity communication system for the interconnection of +30 S/Es.

**Customer:** COMPAÑÍA ENERGÉTICA DE OCCIDENTE

## Substation Management

Architecture design and integration of 13 remote SEs in MV using gateways concentrators.

**Customer :** ELECTROCAQUETÁ



# SOME EXPERIENCE

## Power Systems Studies

---

Load Flow, Short Circuit, Protection Coordination, Electric Arc Analysis and Transient Stability Analysis of all factories in Cali, Cartago, Malambo and Sabanagrande.

**Customer:** INGREDION



## Electrical asset diagnosis

---

Diagnostic tests in all substation.

**Customer:** EMPRESA DE ENERGÍA DE PEREIRA

## Reliability

---

Relays testing and settings calibration

**Customer:** EMCALI



# WHY CHOOSE US

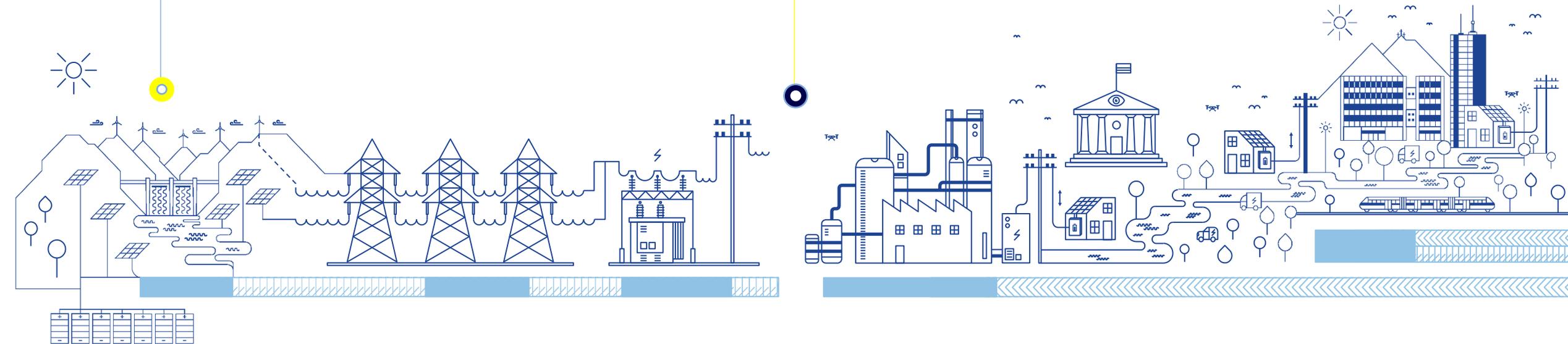
TECHNICAL SUPPORT

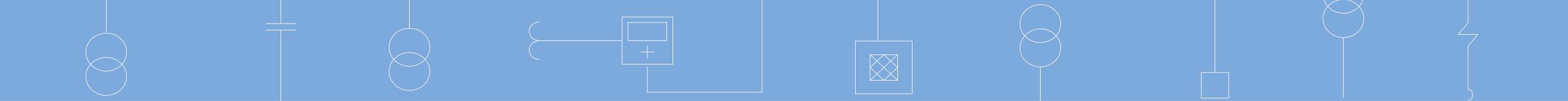
KNOWLEDGE TRANSFER

EXPERIENCE

AFTER-SALES SERVICE

QUALIFIED STAFF





# THANKS

Let's schedule a meeting

[pti@pti-sa.com.co](mailto:pti@pti-sa.com.co)



[@ptisacolombia](https://twitter.com/ptisacolombia)

## CALI

Av Guadalupe # 2-50

Tel: + 57 2 336-6461

## BOGOTÁ

Av Carrera 7 #156-68 Of 1303

Tel: + 57 1 743-3556

## BARRANQUILLA

Calle 77B #57-103 Of 1108

Tel: + 57 5 309-3992