SIE ELECTRICAL ENGINEERING SOLUTIONS

Presentation scheme

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Presentation scheme

- Background
- S.I.E. Services
- Softwares
- Experience
- Opportunities

SIE ELECTRICAL ENGINEERING SOLUTIONS

Head of studies sector

- Electrical engineer
- Master degree in grid analysis
- Consultant at S.I.E.
- Power Flow and Stability
- Electromagnetic transients
- Power quality
- International training: USA, China, Argentina

Countries	Type
Uruguay	Power Flow, Stability, Transients, management, Power Quality, Protections
Spain	Power Flow, Stability
Mexico	Power Flow, Power Quality, Protections
Panama	Power Flow, Stability
Brazil	Stability, transients
Australia	Power Flow, insulation coordination
Ethiopia	Power losses analysis, losses course

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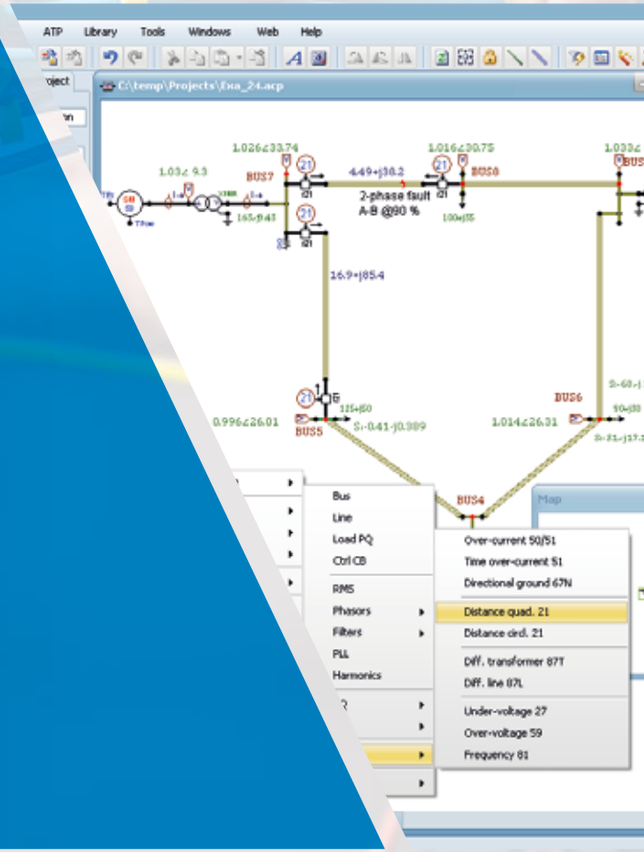

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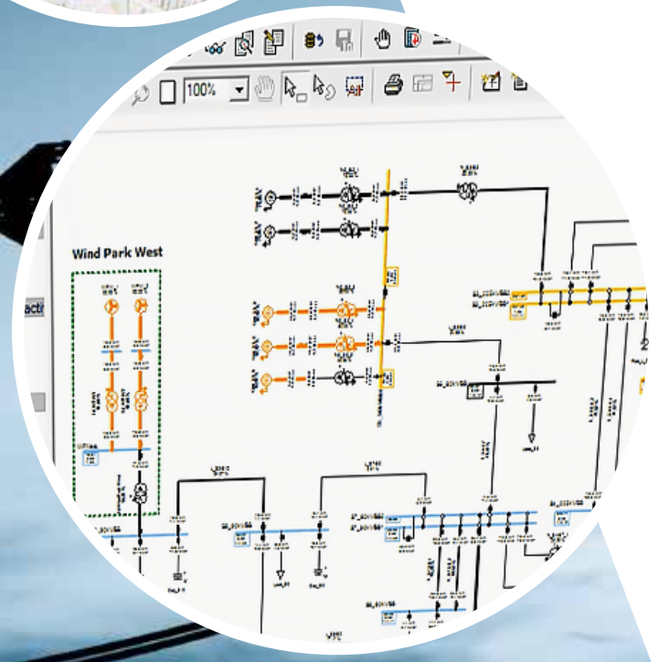
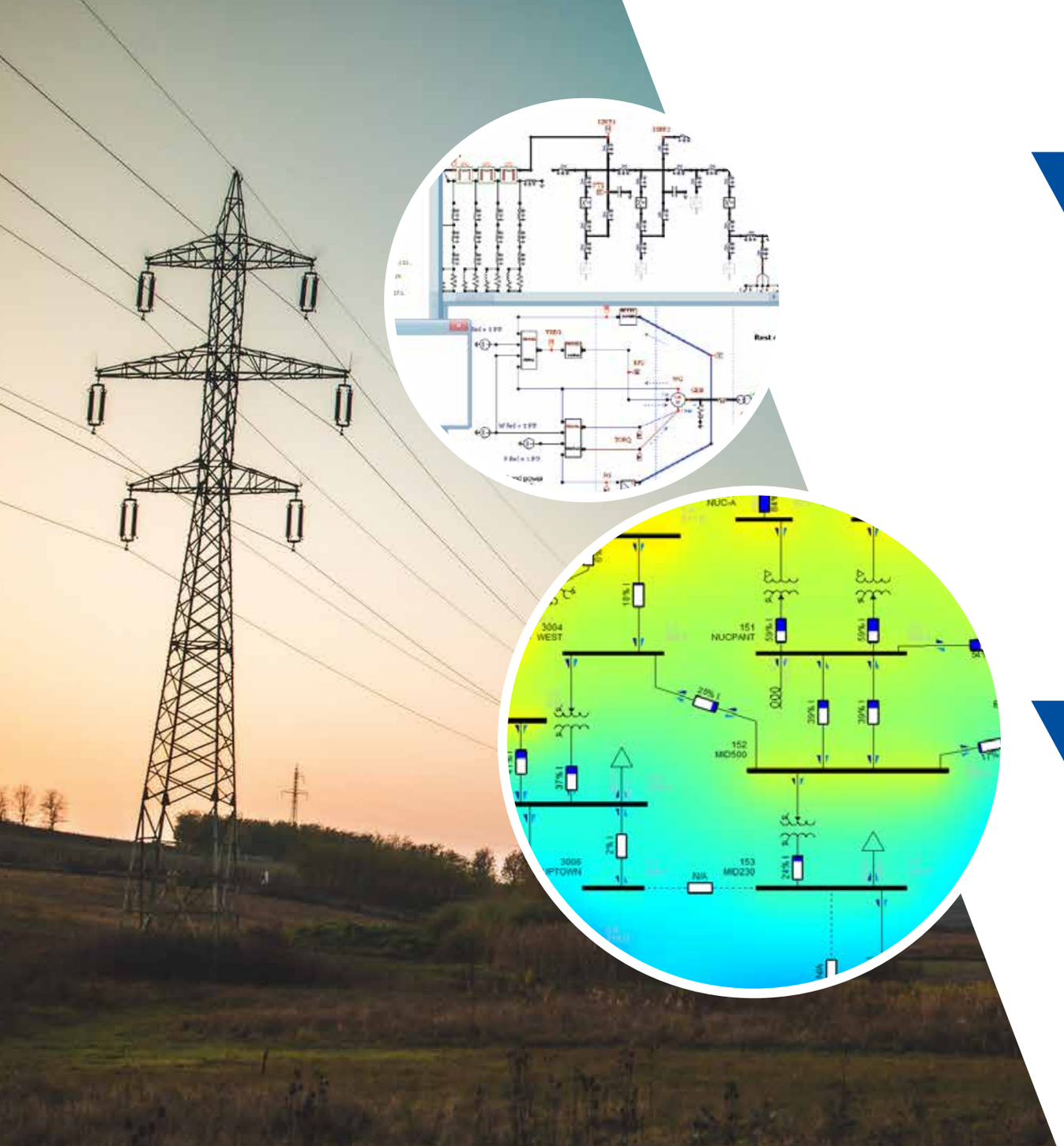


Power flow studies:

- Model elaboration
- Losses
- Capability curve
- Compensation
- Short circuit
- Interconnection studies

Transient electromechanics studies:

- Dynamic model elaboration
- Model user, setting and creation
- Frequecy and voltage stability
- Stationary over voltages



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Transient electromechanics studies:

- Dynamic model elaboration
- Lightening over voltages
- Insulation coordination
- Switch TRV specification
- Reactor calculation electrical
- Lines and cables electtrical characteristics calculation

Power flow studies:

- Dynamic model elaboration
- Model user, setting and creation
- Frequecy and voltage stability
- Stationary over voltages

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Short courses

- Models approval and validation for electromechanical and electromagnetic transients in non-conventional renewable generation

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Short courses

- Methodology for inertia estimation on electrical grids.
- Power losses study on electrical grids.

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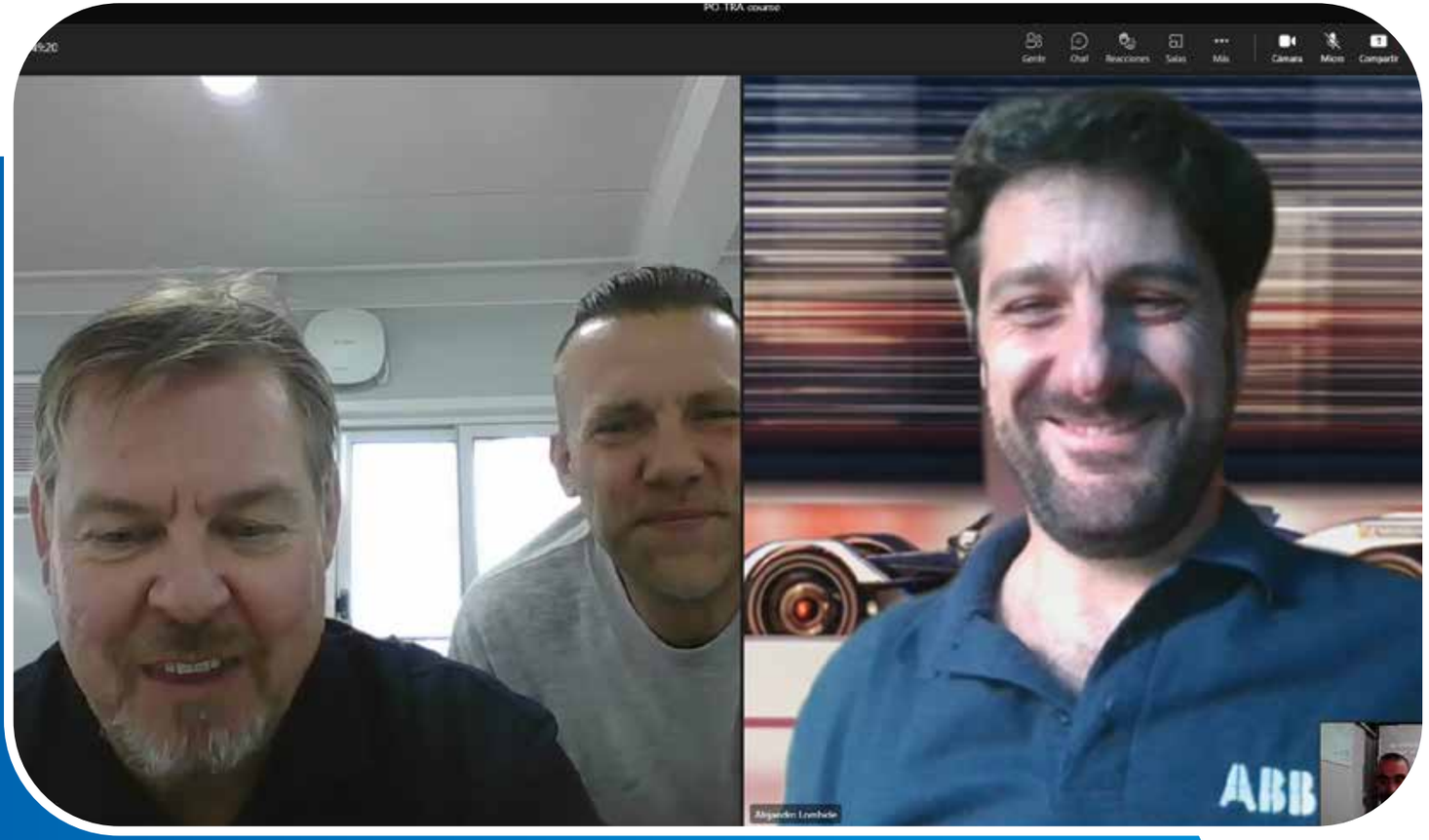
Short courses

- Power quality
- Python programming for engineers

Short courses

- PO-TRA-SL-0001/02



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Softwares

Current	Uses
PSS/E	Power flow, Short circuit and stability
ETAP	Power Flow, stability and harmonics
ATP/Draw	Electromagnetics transients

Future	Uses
ANAREDE	Power flow
ANAFAS	Short Circuit
ANATEM	Stability
PSCAD	Electromagnetics transients
DigSilent	PF, SC and transients

PSS®E

python

etap Thinking Power

ATP DRAW
The Graphical preprocessor to ATP
Electromagnetic Transients Program

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Background

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Softwares

Experience

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Experience (1)

Year	Location	Project	Description
2022	Uruguay	UPM 2	Training on PO-TRA-SL-0001/02 regulation for foreign and national engineers in charge of on-site building at UPM 2 facilities.
2022	Uruguay	Albisu	Modeling of photovoltaic farm, installed power 10 MW. Modeled for power flow, short circuit and stability studies.
2022	Uruguay	Tubacero	Modeling of photovoltaic farm, installed power 0.3 MW. Modeled for power flow and short circuit studies.
2022	Uruguay	Pamer	Modeling of photovoltaic farm, installed power 3.5 MW. Modeled for power flow and short circuit studies.
2022	Uruguay	Cristalpet	Modeling of photovoltaic farm, installed power 1.3 MW. Modeled for power flow and short circuit studies.
2022	Uruguay	Giacote Menafra	Modeling of photovoltaic farm, installed power 20 MW. Modeled for electromagnetics transients studies.
2021-2022	Uruguay	Punta del Tigre	Photovoltaic farm, installed power 30MW. Power flow and stability model creation.

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Experience (2)

Year	Location	Project	Description
2021	Uruguay	Zonamerica: private town	Grid and load modeling for private town, free commerce zone. Voltage studies. Installed power: 8MW.
2021	Ethiopia	National transmissiongrid	Creation of a power losses guide manual.
2020	Uruguay	Statcom insertion studies	Studies determination for the installation of a 180 MVA Statcom in a transmission Substation.
2020	Ethiopia	National transmissiongrid	International training in power losses, study philosophy and results oriented methodology.
2020	Ethiopia	National transmissiongrid	Power losses study for the complete transmission grid.
2020	Argentina Uruguay	CTM	Calculation of neutral reactors in expansion project of CTM (Mixed Technical Commission) Salto Grande - Uruguay.
2019-2020	Mexico	Sol de Sonora	Photovoltaic farm, installed power 10MW. Power flow, harmonics and protections studies.
2019	Uruguay	Salto Grande	Reclosing study in transmission substation Salto Grande - 500 kV.
2019	Uruguay	Anillo 500 kV	Study for the insertion of a shock reactor in the context of grid transmission planning.
2019	Uruguay	Anillo 500 kV	Energization study for 2 transmission lines, taking into account lines transpositions. Comparison against stablished limits.
2018-2020	Panama	Ikakos 0, 1, 2 & 3	Photovoltaic farm, installed power 40MW. Power flow and stability model creation. Power flow and stability studies. Contract management.
2018	Uruguay	Anillo 500 kV	Modeling of electrical line parameters from physical topology, conductor type, tower type and geographical disposition. Reactive compensation study.

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Experience (3)

Year	Location	Project	Description
2018	Uruguay	Anillo 500 kV	Calculation of neutral reactors for grid transmission planning. In total, 800 kms in transmission lines to be fully compensated.
2018	Uruguay	Punta del Tigre	Energization study for belonging lines of Punta del Tigre substation - 500 kV.
2018	Mexico	Bluemex	Photovoltaic farm, installed power 90MW. Power flow and reactive compensation studies.
2018	Mexico	Camargo	Photovoltaic farm, installed power 25 MW. Power flow and reactive compensation studies.
2018	Australia	Lilyvale	Photovoltaic farm, installed power 118MW. Power flow and insulation coordination studies.
2018	Uruguay	Uruguayan grid modeling in ATP/Draw	The whole Uruguayan electrical transmission grid, modeled for electromagnetics transients studies. Almost 5000 MW installed in generation, 300 transmission lines, 250 transformers and their respective loads, capacitors and inductors bank, etc.
2016	Uruguay	Wind power plant Pampa	Ferroresonance study in the context of the insertion of a wind power plant.
2016	Uruguay Brazil	Conversion station HVDC	Modeling of frequency conversion station HVDC - 50 Hz/60 Hz - 500 kW - boundary between Uruguayan and Brazilian grid.
2015	Uruguay	Montes del Plata	Connectivity study, installed power 160MW. Impact analysis and grid planning in transmissiongrid.
2015	Uruguay	Ombues generator	Connectivity study, installed power 10MW. Impact analysis in country Distribution and Transmission grid.
2014	Uruguay	Multiple studies	26 connectivity studies. Loads and generators with authorized/installed power between 2.5MW and 20MW. Loads and generators to be installed on Distribution grid. Impact analysis in country Distribution and Transmission grid.

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Experience (4)
supervision and approval

Year	Location	Project	Description
2015-2016 and 2020-2021	Uruguay	Estrellada Melowind	Eolic farm, installed power 50MW. Power flow, stability and electromagnetics transients model approval. Power quality study and field test approval.
2015 and 2020-2021	Uruguay	Alto Cielo	Photovoltaic farm, installed power 20MW. Power flow, stability and electromagnetics transients model approval. Power quality study and field test approval.
2017-2018 and 2020-2021	Uruguay	Pampa	Eolic farm, installed power 140MW. Power flow, stability and electromagnetics transients model approval. Power quality study and field test approval.
2017 and 2019-2020	Uruguay	Astidey	Eolic farm, installed power 50MW. Power flow, stability and electromagnetics transients model approval. Power quality study and field test approval.
2017 and 2019-2020	Uruguay	Cadonal	Eolic farm, installed power 50MW. Power flow, stability and electromagnetics transients model approval. Power quality study and field test approval.
2017 and 2019-2020	Uruguay	Colonia Arias	Eolic farm, installed power 70MW. Power flow, stability and electromagnetics transients model approval. Power quality study and field test approval.
2017 and 2019-2020	Uruguay	R. del Este	Eolic farm, installed power 50MW. Power flow, stability and electromagnetics transients model approval. Power quality study and field test approval.
2017 and 2019-2020	Uruguay	R. del Sur	Eolic farm, installed power 50MW. Power flow, stability and electromagnetics transients model approval. Power quality study and field test approval.
2015-2016 and 2019-2020	Uruguay	Valentines	Eolic farm, installed power 70MW. Power flow, stability and electromagnetics transients model approval. Power quality study and field test approval.
2014 and 2019	Uruguay	Agua leguas 1	Eolic farm, installed power 50MW. Power flow, stability and electromagnetics transients model approval. Power quality study and field test approval.
2014 and 2019	Uruguay	Agua leguas 2	Eolic farm, installed power 50MW. Power flow, stability and electromagnetics transients model approval. Power quality study and field test approval.
2017-2018	Uruguay	Jolipark	Eolic farm, installed power 20MW. Power flow, stability model approval. Power quality study and field test approval.

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Experience (5)
supervision and approval

Year	Location	Project	Description
2017 - 2018	Uruguay	Ladaner	Eolic farm, installed power 50MW. Power flow, stability and electromagnetics transients model approval. Power quality study and field test approval.
2017 - 2018	Uruguay	Palomas	Eolic farm, installed power 50MW. Power flow, stability model approval. Power quality study and field test approval.
2017	Uruguay	Juan Pablo Terra	Eolic farm, installed power 140MW. Power flow, stability model approval. Power quality study and field test approval.
2017	Uruguay	Colidim (El naranjal)	Photovoltaic farm, installed power 50MW. Power flow, stability model approval. Power quality study and field test approval.
2016 - 2017	Uruguay	Montes del plata	Biomass generator, installed power 160MW. Power flow model approval. Power quality study and field test approval.
2015 - 2016	Uruguay	Fingano	Eolic farm, installed power 50MW. Power flow, stability model approval. Power quality study and field test approval.
2015 - 2016	Uruguay	Polesine II	Eolic farm, installed power 50MW. Power flow, stability model approval. Power quality study and field test approval.
2015 - 2016	Uruguay	Vengano	Eolic farm, installed power 50MW. Power flow, stability model approval. Power quality study and field test approval.
2015 - 2016	Uruguay	Vientos de Pastorale	Eolic farm, installed power 50MW. Power flow, stability model approval. Power quality study and field test approval.
2015 - 2016	Uruguay	Cobra (Kiyu)	Eolic farm, installed power 50MW. Power flow, stability model approval. Power quality study and field test approval.
2014 - 2015	Uruguay	Gemsa Polesine I	Eolic farm, installed power 50MW. Power flow, stability model approval. Power quality study and field test approval.
2014 - 2015	Uruguay	La Jacinta	Photovoltaic farm, installed power 50MW. Power flow, stability model approval. Power quality study and field test approval.

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S.I.E. Services

Softwares

Experience

Opportunities

Co-working opportunities

- Technical representation (regional and worldwide)
- Power system engineer at your disposal
- Software consultancy licences purchased
- Short course trainer or seminars representation
- A team member you can count on

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