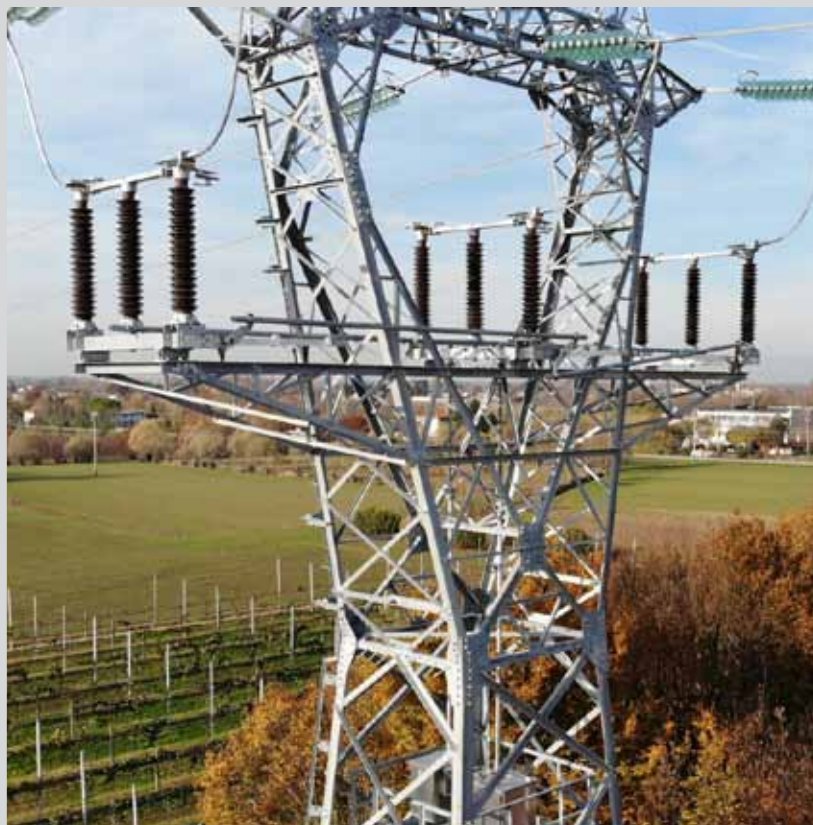


High Voltage Switching: the specialists



HV Switching



Coelme and Egic: the benchmarks in HV Switching

One century of excellence

COELME, EGIC and Southern States: among the oldest names in the electrical industry.

While COELME-EGIC has been active now for more than 70 years, Southern States started more than 100 years ago. This long-lasting experience allows us to propose a unique know-how.

Our resources amount to nearly 500 employees, 3 R&D centres and strategically distributed production and assembly units, worldwide.

As unrivalled specialists, we propose the widest range of switching devices, be they off-load like disconnectors, or on-load, like switchers. Moreover, our knowledge of specific issues and characteristics of High Voltage allows us to propose innovative, tailor-made solutions meeting all the real needs of our customers.



Trustworthy technology

Thanks to the knowledge of the special needs of electrical Transmission and Distribution, all COELME-EGIC products are designed without compromise. They generally comply with IEC and ANSI standards to serve all markets. However, specific versions compliant with other standards are also available.

Besides our knowledge of contact technology, we are using only premium materials and the most advanced protection technology to ensure long-lasting performance.

Contact technology

We master all contact types, be they operating in open air, in SF₆, or under vacuum conditions.

The contact pressure is optimised to limit both the contact resistance and the operating torque.

The current path and the contact design allow increasing contact pressure in case of fault current.

The reliability of each contact point is guaranteed by its own spring device.

Conductive materials

Our main circuits are characterised by:

- arms and HV terminals made of aluminium and electrical copper
- contacts made of electrical copper
- silver plating wherever necessary.

Protection against corrosion

This is a key feature of any equipment intended to operate outdoor. For COELME-EGIC, the only credible trial is field experience supported by severe and successful salt-spray tests, which has led to the use of:

- stainless steel or other corrosion-free materials
- hot-dip galvanising
- painting upon request.



Field-proven reliability

COELME-EGIC is used to the extreme conditions switchgear may be subjected to in some areas of the world. Our equipment is designed to meet all the requirements of IEC or ANSI standards, for temperature, altitude etc..., but can also be installed under very harsh environmental conditions, such as:

- seismic areas
- heavy industrial pollution or geothermal environment
- desert areas, subject to sand-winds
- icy climate, with performances up to 20 mm ice, and temperatures down to -70°C.












Performance for on-load and off-load switching

Disconnectors

COELME-EGIC offers a complete range of products meeting whatever need.








All types of disconnectors and earthing switches, also specifically designed for HVDC substations. Manual or motorised operating mechanisms, either for gang- or phase-by-phase operation. Making and breaking of induced and bus-transfer currents as per IEC standards, with possible higher ratings. Upon request, we can comply with any of your requirements differing from standards (higher terminal loads, for instance).

		Hookstick operated	Vertical Break	Double Break	Centre Break	V-Type C. Break	Pantograph	Semi Pantograph	Knee-type	Earthing Switch
										
IEC	ANSI									
17.5	15.5	■	■	■						■
24	25.8	■	■	■						■
36	38	■	■	■	■					■
52	48.3	■	■	■	■					■
72.5		■	■	■	■	■	■			■
123	121		■	■	■	■	■			■
145			■	■	■	■	■			■
170	169		■	■	■	■	■	■		■
245	242		■	■	■		■	■	■	■
300	-		■	■	■		■	■	■	■
362			■	■	■		■	■	■	■
420	-		■	■	■		■	■	■	■
550			■	■	■		■	■	■	■
800								■	■	■

More than disconnectors: switchers

COELME-EGIC proposes the tailor-made solution suiting your needs best.

Be it the case to switch railway lines, transmission lines, capacitor banks or reactors, we offer optimised solutions saving time, space and money. The transient control is our distinctive mark.

		Switchers for network compensation		Compact solutions			Switchers for railway electrification	
		Capacitor Switcher CapSwitcher®	Reactor Switcher RLSwitcher®	Circuit/Line Switcher CSH / LSH	Load Switcher LBS	Load-break Switcher VSD	AC Railway Switcher VSV	Railway Load Switcher LBS
								
IEC	ANSI				■			
12	8.25				■			
17.5	15.5	■	■		■			
24	25.8	■	■		■			
27.5							■	■
36	38	■	■	■	■	■		
52	48.3	■	■	■	■	■		
72.5		■	■	■		■		
123	121	■	■	■		■		
145		■	■	■		■		
170	169	■	■	■		■		
245	242	■	■	■		■		
362		■	■					
420	-		■					
550			■					

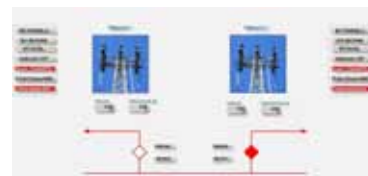
Outstanding performance through innovation

Innovative devices...

COELME-EGIC helps to solve specific issues with smart solutions.

For already known difficulties met in grid operation to be overcome, our R&D teams design special devices in close co-operation with customers:

- ICS®: a compact and easy-to-install current sensor for protection and grid management
 - AOM: an Autonomous Operating Mechanism, with GSM communication system for position monitoring and remote operation of equipment
 - DOM: a Digital Operating Mechanism IEC61850 (and others) protocol compliant, able to provide information about equipment conditions and alarms for maintenance need
 - Operating Mechanisms with special features, like, for example, rechargeable batteries and UPS module.
- ... as well as many other tailor-made solutions.



...powered by Research & Development...

Over the past years, special efforts were made by our research centres to develop new devices and expand our range of products: every year, we earmark large sums for R&D!

Experimenting is considered essential at COELME-EGIC, which is why our factories are provided with indoor and outdoor testing areas, where it is possible to reproduce, on a real scale, most of the equipment working configurations. Severe development tests are carried both in these areas and at external laboratories.

All type tests (dielectric, high-power, climatic, seismic ...) are certified by the most renowned independent laboratories; among them, CESI, KEMA, Les Renardières/EDF, ISMES, VOLTA, SVEPPI, KERI, FGH, ICMET, IPH...

In time, COELME-EGIC has established a beneficial cooperative relation and technical partnership with all of these laboratories as well as with other important Research Institutes, such as, for instance, the University of Padua (Italy).

...under the control of a total quality management system

Quality, Safety and Environment are taken very seriously in COELME-EGIC.

We were awarded successively with:

- ISO 9001, following all standard evolutions for the past 25 years
- ISO 14001, for the performance of our environmental policy
- BS-OHSAS 18001, for the management of health and safety.

Our activity focuses on design, production of critical components, assembly and factory reception process. Common components production is given to our network of suppliers. Most of them are ISO 9001 certified and all of them meet our internal quality criteria.

Individual tests all along the assembly process allow equipment to be verified and approved (measurement of voltage drops, mechanical tests, etc ...). Last but not least, commissioning is performed in compliance with IEC, ANSI, or customers' own specifications, which makes sure that our equipment meets your expectations.



Our goal: your satisfaction

Your expectations are our design rules

As grid and substation designers

You are facing new challenges: longer transmission distances, complex switching needs, and smart grid implementation; **you expect us to adapt to your requirements.**

- Our standard range extends up to 800 kV, and 75kA / 3s with thousands of disconnectors already in service.
- The installation of the equipment can vary on a large scale: horizontal, vertical or upside-down mounting, in-line, parallel or diagonal layout, parallel or perpendicular built-in earthing switch.
- We provide customised switching solutions, innovative operating devices and accessories to upgrade the grid.
- We support you during grid studies.

As contractors and turnkey solution providers

You demand switchgear specialists' backup, to focus on project management; **you expect us to prove being a reliable partner.**

- We proved many times to be a reliable partner for deadlines and complete logistics (e.g. 420 3-pole sets in 123 and 420 kV were delivered for a single project).
- We study with you the refurbishment or the upgrading of existing substations.
- We propose modular, easy-to-install equipment to reduce your installation time.
- We optimise cost, space and function through innovative combinations of switches.

As end-users

You expect continuous service of the switchgear, with reduced maintenance, and trouble-free operation; **you want simply ... to forget about your equipment!**

- We can provide training and/or supervision for installation and commissioning.
- On average, our equipment works for more than 30 years with limited maintenance.
- Our most demanding customers have recognised their sturdiness and reliability.



A wide range of services to make your operations easier

Installation

Our on-site intervention teams can provide erection-, testing- and commissioning-related services upon request.

After-sales service

Traditional after-sales activity:

- spare parts
- repair
- assistance
- preventive maintenance.

Processing special requests:

- refurbishment or upgrading of live parts
- replacement on existing structures
- motorisation of manually-operated devices
- upgrading of insulators pollution level
- addition of bus-transfer or induced currents switching devices.

We serve our customers, we serve the World

As a world leading company – we are proud to state we are one of the top companies in our field – **COELME-EGIC** has delivered more than 100,000 switches in more than 100 countries.

We stand as a long-time partner for most of our customers. We have been supplying the major utilities of Europe for 60 years and our presence in the Americas and Asia is more than 30 years old. We have accompanied the electrical development of Europe, South-East Asia, China, Middle East, Africa and South-America.

America	Europe	Middle and Far East	S.E. Asia and Oceania
Argentina Transener Bolivia Ende Brazil CEMIG CESP CHESF COPEL CPFL Energia Eletronorte Eletrorul Furnas Chile CGE Chilquinta Energia Enel Transelect Colombia EPM Ecuador Isa CNEL CELEC EEQ Inecel Transelect El Salvador Etesal Guatemala INDE/Trelec Honduras ENEE/EEH Mexico CFE Peru Enel Distribución Enel Generación Luz del Sur REP Uruguay UTE Venezuela CorpoElec	Albania KESH/OST Austria Bewag KNG E-Steiermark Belgium ELIA Engie/Electrabel Bulgaria ESO NEK Estonia Eesti Energia Elering Finland Fingrid France EDF RTE SNCF Germany 50hertz Tennet Greece IPTO Italy E-Distribuzione RFI Terna Kosovo KOSTT Norway Statnett Poland PSE Romania Electrica Transelectrica Russia FGC Serbia EMS Sweden Svenska Kraftnät Vattenfall Turkey TEIAS UK National Grid ENA Ukraine Ukrenergo	China CSPG MOR SGCC Georgia GSE Engurhesi Ltd India PGCIL Iran TAVANIR Iraq MOE Jordan NEPCO Pakistan WAPDA Saudi Arabia ARAMCO SEC Sri Lanka CEB	Australia Energy Austr. Powerlink Queensland AusNet Services TransGrid Indonesia PLN Malaysia SEB TNB N. Zealand Trust Power Philippines NGCP Thailand EGAT MEA PEA Vietnam CPMB EVN NPMB PTC SPMB NPT PECC

Africa

Algeria Sonelgaz Burkina Faso Sonabel D.R.Congo SNEL Egypt EETC Ethiopia EEPKO Ghana GRIDCO Morocco ONE Kenya KPLC Ketarco Tanzania TANESCO Tunisia STEG Zambia ZESCO
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Most of the major contractors in the world trust us.

ABB, Abengoa, Alstom, Ansaldo, Artech, Cegelec, Clemessy, Cobra, Efacec, Eiffage, Elecnor, Encosmos, Enel Green Power, Forclum, Hyosung, Hyundai, Iberinco, Isastur, Ineo, Isolux, Mitsubishi, Omexom, Rhona, Schneider, Siemens, Spie, TSK, UK Power Networks... are among them.

We are partnering to serve end-users, worldwide.

Our customers qualify us and certify our products

COELME-EGIC was awarded qualifications by important customers, such as ABB and SIEMENS. Like many of our customers, you may require specific qualification procedures. This is a step we are used to undertaking. Many demanding customers have also certified our products according to their accurate and strict rules. Among them are EDF/RTE, SNCF, E-DISTRIBUZIONE, TERNA, RFI, CFE, TRANSELEC, CHESF, FGC, ARAMCO, FINGRID ...



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