



MV SWITCHGEAR FOR PRIMARY DISTRIBUTION NETWORKS

The Medium Voltage switchgear for Primary Distribution Networks developed by **Ormazabal** is grouped in two technologies: gas-insulated and air-insulated. They are characterised by metal enclosures, modularity, flexibility, limited maintenance, high level of safety and reliability.

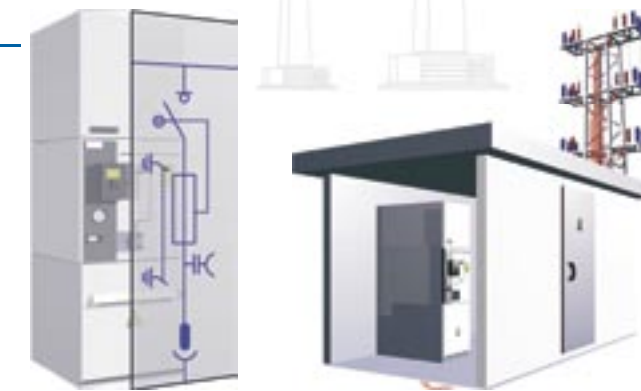
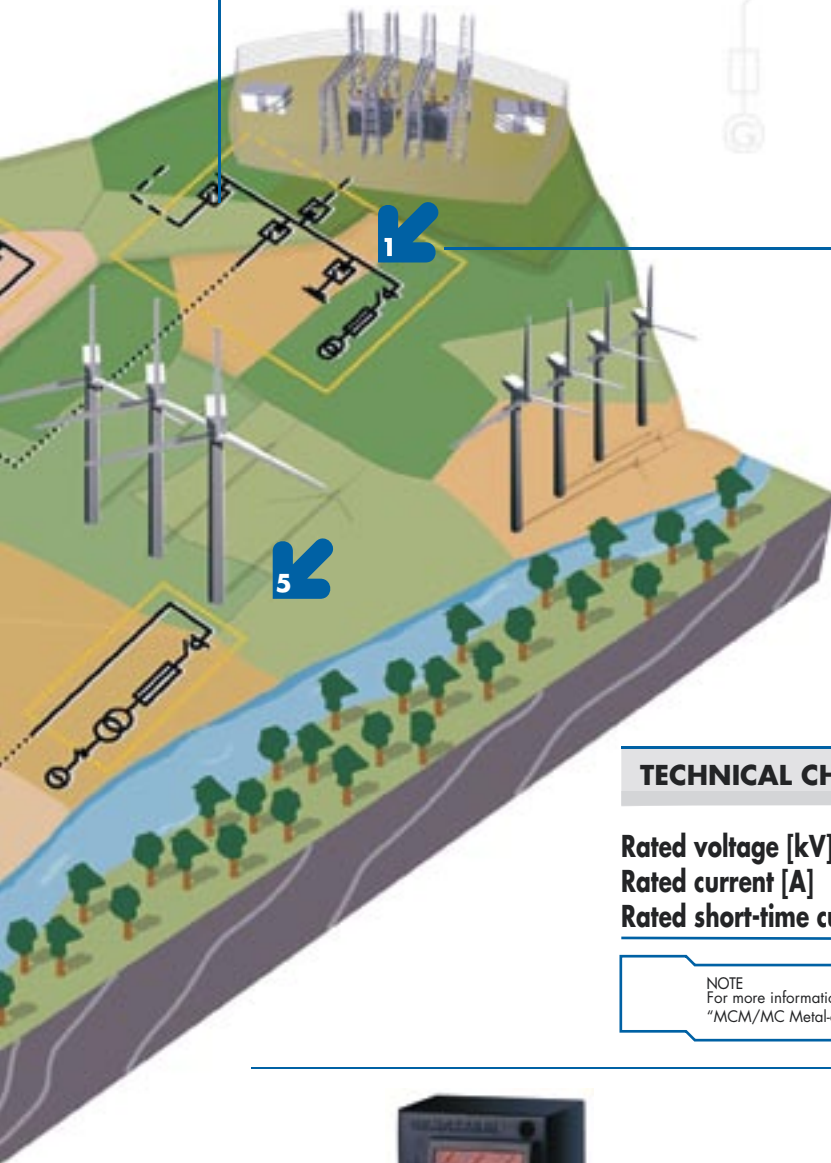
The product range is made up of:

- **CPG.0** cubicles (CPG System), GIS type.
- **CPA** system, with air-insulation (metal-clad type).
- **MCM / MC** cubicles, air-insulated switchgear with draw-out type circuit breakers.

Their field of application are installations for substations up to 36 kV .



CPG.0-V: Circuit breaker cubicles



CPG.0-F: Fused protection cubicle

TECHNICAL CHARACTERISTICS

	CPG.0	CPA	MCM	MC
Rated voltage [kV]	24/36	12	24	36
Rated current [A]	1600	2500	2000	2000
Rated short-time current [kA]	25	31.5	40	25

NOTE
For more information, refer to catalogues: "CPG modular cubicle system up to 36 kV" / "MCM/MC Metal-clad and metal enclosed switchgears" / "CPA cubicle system up to 12 kV"

PROTECTION, CONTROL, AUTOMATION AND TELECOMMAND

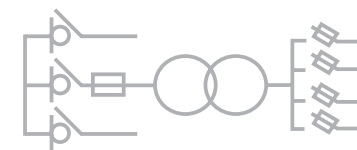
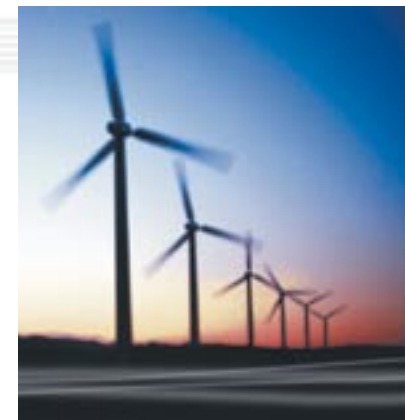
The **ekorSYS** family, patented by **Ormazabal**, includes a series of digital units for protection, measurement, control and signalling which can be integrated in the Medium Voltage cubicles. It provides a high level of application flexibility and significant added value to the installations, extending their working life and providing even more personal and material safety.



TECHNICAL-COMMERCIAL DEPARTMENT

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- Transformer Substations
 - Prefabricated Transformer Substations up to 36 kV
 - **Medium Voltage Applications For Wind Farms up to 36 kV**
- Medium Voltage Switchgear for Secondary Distribution Networks
 - CGM-CGC System
 - CGMCOSMOS System
- Medium Voltage Switchgear for Primary Distribution Networks
 - CPG System
 - CPA System
- Protection, Control, Automation and Telecommand
- Electrical Distribution Transformers
- Low Voltage Boards

Transformer Substations



Medium voltage applications for Wind Farms
Up to 36 kV

DESCRIPTION

Ormazabal manufacturer of electrical switchgear up to 36 kV, both in primary and secondary distribution networks, covers with its variety of products the needs of Medium Voltage installations for Wind Farms, offering customised turnkey solutions, with:

- Prefabricated substations
- Electrical switchgear for primary distribution networks
- Electrical switchgear for secondary distribution networks
- Distribution transformers
- Protection, Control, Automation and Telecommand units
- Connectors and accessories



PREFABRICATED SUBSTATIONS

The wide range of prefabricated concrete substations is characterised by the fact that its construction, assembly and built-in equipment can be entirely factory-built, as well as its high resistance to harsh weather conditions, its integration in the environment and minimum visual impact, its successfully natural ventilation tests, etc.

Designed to house the Secondary Distribution electrical switchgear up to 36 kV, their main applications are:

- Transformer Substations: with **natural ventilation tested up to 1600 kVA***.
- Connection stations to the distribution networks.
- Collecting and/or sectionalising stations.

(* To confirm other values, contact our Technical-Commercial Department

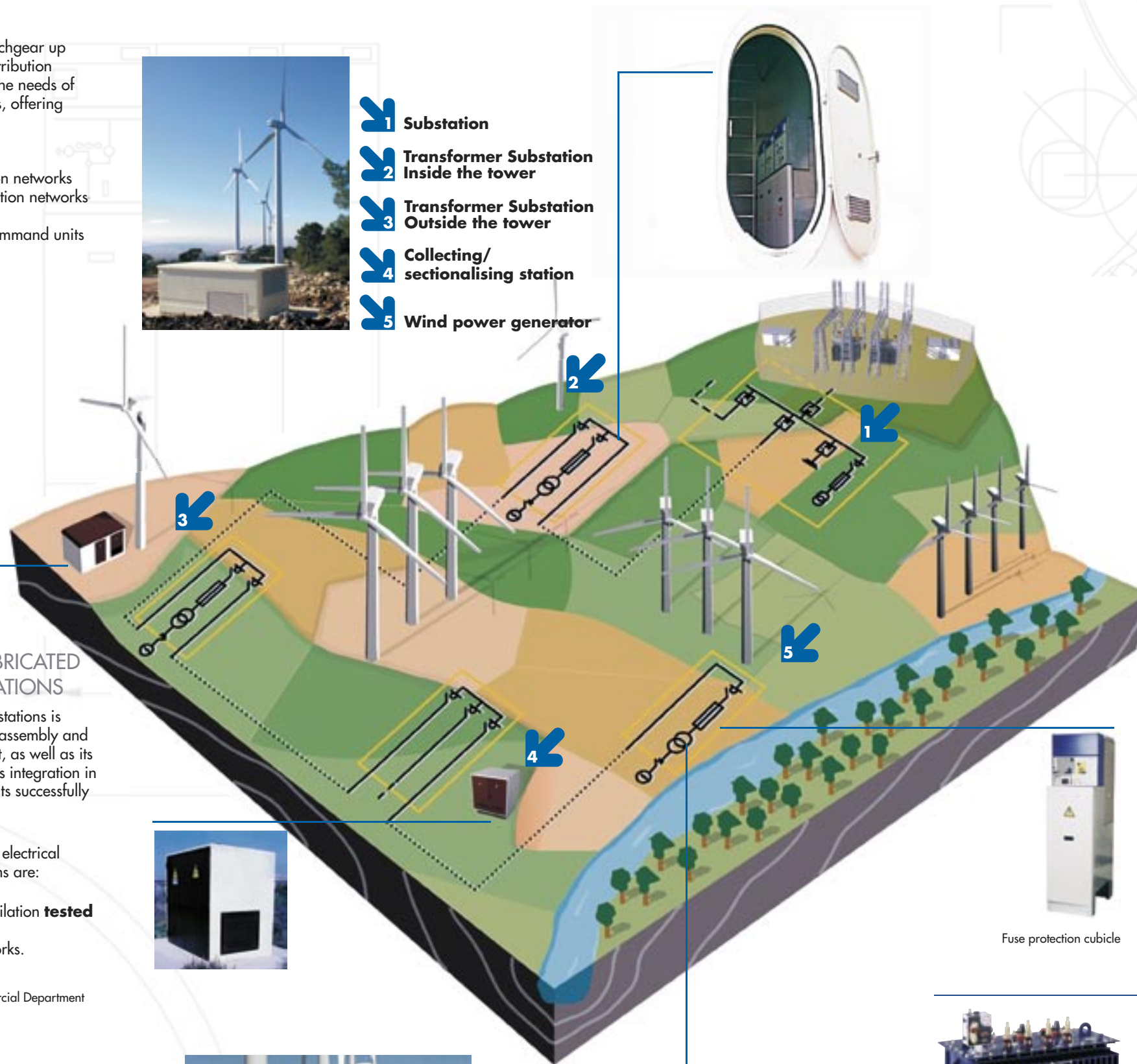
The following models are available:

- For indoor or outdoor operation.
- Surface, half-buried or underground.
- Monoblock or modular panel structure, attaining a great variety of lay-outs.

NOTE
For more information, refer to catalogue: "Prefabricated Transformer Substations up to 36 kV"



- 1 Substation
- 2 Transformer Substation Inside the tower
- 3 Transformer Substation Outside the tower
- 4 Collecting/sectionalising station
- 5 Wind power generator



MV SWITCHGEAR FOR SECONDARY DISTRIBUTION NETWORKS

The field of application of the **CGMCOSMOS system** (up to 24 kV) and **CGM-CGC system** (36 kV) cubicles is:

- Wind power generator Transformer Substations.
- Connection stations to the distribution network.
- Collecting and/or sectionalising stations.

They can be installed in the tower itself, in a prefabricated building or in a civil work.



Example: 36 kV OL1L1P configuration inside the wind power generator

The following features are included in the cubicles:

- Fully gas-insulation providing protection against harsh environmental elements.
- Safety for persons and installations.
- Reduced size and weight, making it easy to enter through the tower door.
- Optimisation of exploitation costs due to its low level of maintenance.
- Modularity and extensibility allowing for future cubicle installation without the necessity of replacing all the equipment.

Additionally, the modular cubicles have the following advantages:

- Flexibility in the configuration of arrangements.
- Availability and simplicity of replacing only one position.



NOTE
For more information, refer to catalogue: "Electrical Distribution Transformers"

TECHNICAL CHARACTERISTICS

	CGMCOSMOS		CGM-CGC
Rated voltage [kV]	12	24	36
Rated current [A]	400/630	400/630	400/630
Rated short-time current [kA]	16/20*	16/20**	16/20

(*): 25 kA under request
(**): 21 kA under request

Transformer protection

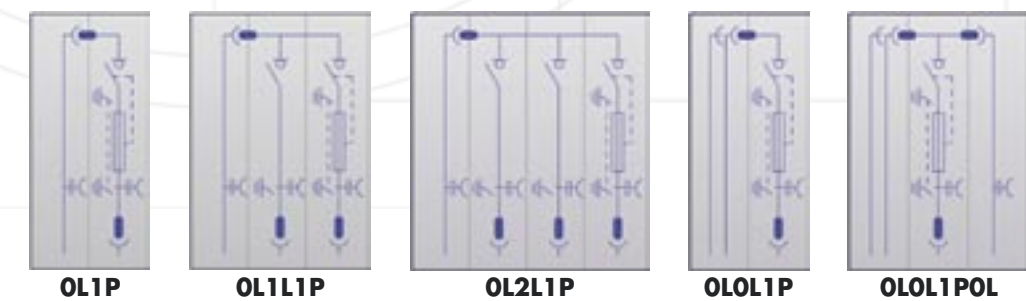
The protection functions with fuses or circuit breakers allow for the protection of transformers up to 36 kV with the most commonly used power values.



PHYSICAL CHARACTERISTICS

	DIMENSIONS				Weight [kg]	MAXIMUM WIDTH [mm]
	Width [mm]	Depth [mm]	Height [mm]	Fuse Protection Modular Cubicle		
OL1P	24 kV	835	735	1740#	180	580##
	36 kV	850	1035	1800	300	590##
OL1L1P	24 kV	1200	735	1740#	275	470
	36 kV	1270	1035	1800	440	480
OL2L1P	24 kV	1565	735	1740#	370	470
	36 kV	1690	1035	1800	580	480
OL0L1P	24 kV	1020	735	1740#	200	580##
	36 kV	1030	1035	1800	350	590##
OL0L1POL	24 kV	1385	735	1740#	240	690##
	36 kV	1400	1035	1800	395	700##

(#) Available in 1300 mm height
(##) Side bushings dimension included
Note: For configurations with circuit breaker protection cubicles, please contact our Technical-Commercial department.



NOTE
For more information, refer to catalogues: "CGMCOSMOS modular and compact system up to 24 kV" and "CGM-CGC modular and compact system 36 kV"

TRANSFORMERS

The transformers of up to 2500 kVA and 36 kV have different dielectrics: oil, silicone or midel; with specific designs, sizes and reduced losses suitable for this type of installations.

NOTE
For more information, refer to catalogue: "Electrical Distribution Transformers"

CONNECTORS AND ACCESSORIES

Ormazabal commercialises connectors, terminals, adapters, bushings, surge arresters and accessories (by **Euromold**), that cover the cable connection requirements in Wind Farms, with maximum ranges of 1250 A and 630 mm², offering great flexibility and adaptability.

