

The background of the slide is a photograph of an electrical substation. The equipment, including tall metal towers, insulators, and busbars, is silhouetted against a bright, colorful sunset sky. The sun is low on the horizon, creating a gradient of orange, red, and yellow. The overall scene is industrial and atmospheric.

# Power Quality

Metal Enclosed vs  
Open Rack Capacitor Banks

This document may be subject to changes. Contact ARTECHE to confirm the characteristics and availability of the products described here.



# Moving together



## 1. Mounting options

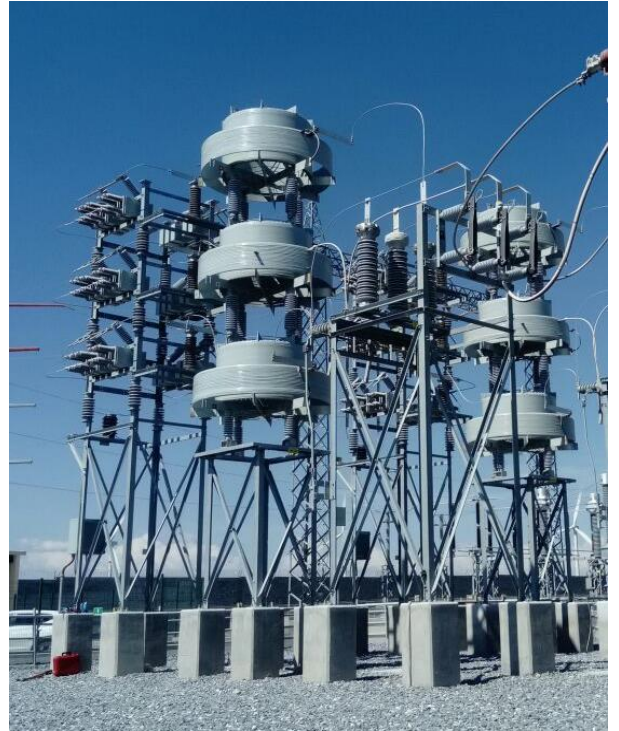
Power quality solutions such as capacitor banks and harmonic filters in M.V. have two mounting options.

The most typical is the open rack option. This includes a gavanized steel elevating structure on wich they are installed the prymary equipments that compund the solution.

Aditionally, control and signaling are installed in centralizing cabinets at the foot of these structures.

On the other hand there is newest and more compact mounting: The metal enclosed option.

This option allows a high level of integration and a longer useful life of the equipment.



*Open Rack mounting option*



*Metal enclosed mounting option*

## 2. Advantages of the metal enclosed solutions

What are the advantages of the metal enclosed solutions and why do i have to consider using this new kind of equipment?

### › ABOUT EQUIPMENT PROTECTION AND SAFETY

Our Metal Enclosed equipment have been designed and tested under the IEC 62271-part 1 and part 200 standard, a design reference for electrical HV switchgear equipment and the reference standard for the safety of people.

With an IP up to 54, weather and humidity control, we preserve the useful life of the components of our Capacitor Banks and Filters.

### › ABOUT INSTALLATION

The Open rack Capacitor bank or Filter are installed in elevating structures up to 10ft high to reach the security distances from the floor level.

These structures have to be assembled on site and mounted in their foundation requiring time and heavy tools and. in most cases, it is required unforeseen spare parts during assembly.

Plug&Play: The Metal enclosed solutions are fully assembled. They only must be placed on its foundation and connected to power and signaling.

### › ABOUT MULTISTEPS

Arteche has developed a high level of integration in Metal Enclosed Capacitor Banks and Filter even if you want a multistep or a filter solution.

### › ABOUT FOOTPRINT & ENVIRONMENT

The volume of space required is usually greater in Open Rack solutions compared to Metal Enclosed solutions, including necessary safety distance with the other substation equipment.

The Metal Enclosed option has advantages as it is less invasive.

### › ABOUT SEISMICITY AND WIND

The Metal Enclosed Capacitor Banks are less vulnerable to the wind and earthquakes. Arteche has performed seismic validations, according seismic standards ETG1020 and IEEE 693 to both options, Open Rack and Metal Enclosed.

### › ABOUT MAINTENANCE

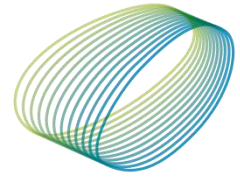
It is also important to note that maintenance in Metal Enclosed Capacitor Bank is performed at ground level, without the need for work at heights.

### 3. Comparasion of both mounting options

Features	Metal Enclosed	Open Rack
Installation	● ● ●	● ○ ○
Protection	● ● ●	○ ○ ○
Footprint	● ● ●	● ○ ○
Safety	● ● ●	● ○ ○
Seismic	● ● ●	● ● ○
Maintenance	● ● ●	● ● ○



*Metal Enclosed Multistep Harmonic Filter in Sendero Midstream – New México*



**arteche**

Moving together