



## > THE OBJECTIVE

- > **Stop the reactive energy penalties** billed by the energy supplier
- > **Reduce the 5th and 7th-order harmonics** and their effects
- > **Increase the power** available on the transformer secondary
- > **Achieve a return on your investment** in less than 24 months

## > THE STRATEGY PROPOSED

- > **Analyse the economic data** in the company's management reports to determine the month when reactive energy consumption is the highest
- > **Carry out an inspection** of the installation, taking into account the large amount of equipment on the network using compression and speed variation, which generate 5th and 7th-order harmonics (ballast lamps, UPSs, cooling units)
- > **Determine the power** and technology of the equipment to be installed

## > THE SOLUTION CHOSEN

- > Implementation of **hybrid equipment** to simultaneously:
  - > **Compensate the reactive energy** and totally eliminate the penalties billed
  - > **Limit the phenomena generating disturbances** linked to 5th and 7th-order harmonics (distortion of images, lag on clocks at 50 Hz, incorrect measurements with instruments using a reference voltage) and heating of the conductors and magnetic circuits

Energy production, transmission & distribution

### ENERGY EFFICIENCY

Network supervision

Meteorological measurement

Audit & Inspection



➤ **€ 5 500** saved on the bill

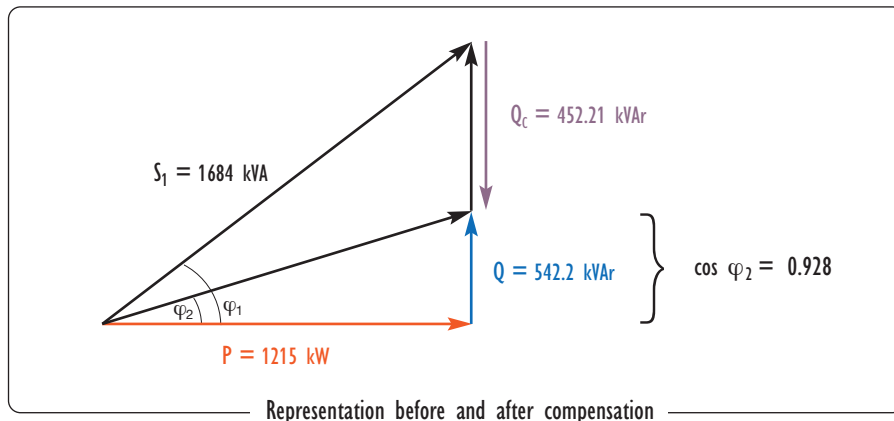
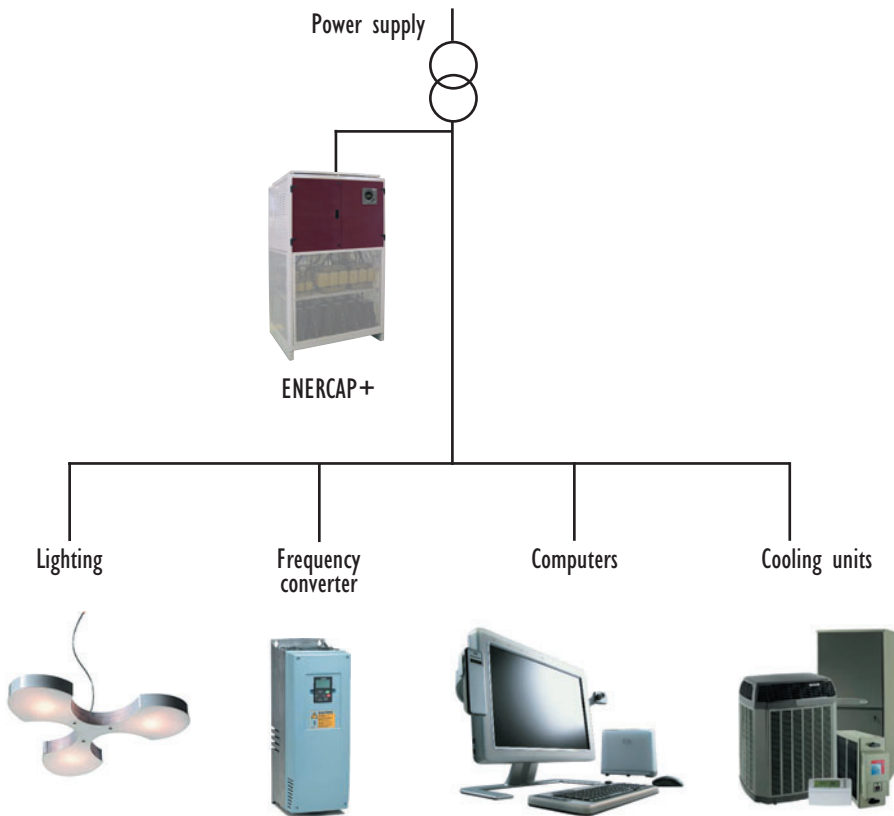
➤ **40%** lower investment cost than a separate solution

➤ **13%** reduction in the apparent power drawn = power available for other equipment

➤ **27%** gain in rated power

➤ **24%** reduction in joule losses, saving **€ 8 000** per year

**Return on investment < 24 months**



### Recommended products

Product	Description	Code
ENERCAP+	487.5 kVAr - Control 37.5 + (6 x 75)	CAP161

# > RELATED SERVICES

- INSTALLATION AUDIT AND PRELIMINARY INSPECTION
- EQUIPMENT DEFINITION ADVICE
- COMMISSIONING AND VERIFICATION AFTER INSTALLATION

### > AN AUTOMATIC CABINET EQUIPPED WITH:

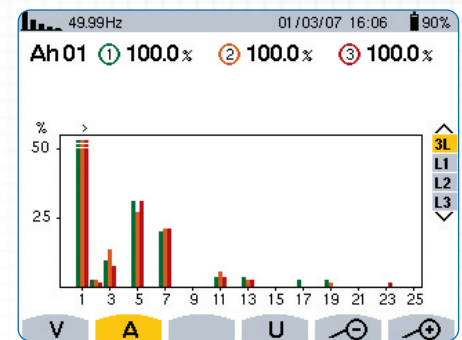
- PRISMATIQUE safety capacitors guaranteeing maximum operating safety
- inductances synchronized to the frequency of the 5th and 7th-order harmonic currents
- an ENERPHI-12M controller which measures the  $\cos \varphi$  and controls automatic connection and disconnection of the capacitors according to the  $\cos \varphi$  required

### > A COMPLETE SOLUTION: ONE CABINET, TWO FUNCTIONS

- reactive energy compensation
- filtering of harmonics

### > AN ECONOMICAL SOLUTION:

- 40 % saving compared with a solution based on separate compensation and filtering
- 68 % space saving with a single cabinet



Representation before filtering



Representation after filtering

**FRANCE**  
**Enerdis**  
 1-9, rue d'Arcueil - BP 675  
 92542 MONTROUGE Cedex  
 Phone: +33 1 47 46 78 00  
 Fax: +33 1 42 53 64 78  
 info@enerdis.fr  
 www.enerdis.fr

**UNITED KINGDOM**  
**Chauvin Arnoux Ltd**  
 Waldeck House - Waldeck Road  
 MAIDENHEAD SL6 8BR  
 Phone: +44 1628 788 888  
 Fax: +44 1628 628 099  
 info@chauvin-arnoux.co.uk  
 www.chauvin-arnoux.co.uk

**MIDDLE EAST**  
**Chauvin Arnoux Middle East**  
 P.O. BOX 60-154  
 1241 2020 JAL EL DIB (BEIRUT)  
 Phone: +961 1 890 425  
 Fax: +961 1 890 424  
 camie@chauvin-arnoux.com  
 www.chauvin-arnoux.com