

# RECP Best Practice Catalogue

*Integrate the third 40 bar compressor into  
the sequencer*

*Developed within the framework of MED TEST II*



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



The SwitchMed Programme is  
funded by the European Union

# Best Practice - Integrate the third 40 bar compressor into the sequencer

<b>SECTOR:</b>	<b>Food &amp; Beverage</b>
<b>SUBSECTOR:</b>	Manufacture of beverages
<b>PRODUCTS</b>	Carbonated and still mineral waters in 25 cl and 100 cl glass packaging, and in PET bottles, 50 cl, 100 cl, 200 cl and 500 cl. Flavoured mineral water and soda in 25 cl glass and 100 cl PET packaging.
<b>CATEGORY</b>	Process control or modification
<b>APPLICABILITY</b>	Utilities
<b>COMPANY SIZE</b>	400 employees



The SwitchMed Programme is funded by the European Union

# Best Practice - Integrate the third 40 bar compressor into the sequencer

## Description of the Problem (Base Scenario):

The unit has 3 compressors of 40 bar: two compressors of 190 kW connected in parallel through a sequencer and a third of 220 kW not yet integrated in this sequencer.  
This configuration leads to overconsumption of energy because of more frequent starts of the 3rd compressor.

## Description of the Solution

In order to optimise the use of these three compressors, it is proposed to integrate this third compressor into the sequencer. So, depending on demand, the sequencer will start one or two or three compressors at a time.  
Following its integration into the sequencer, it is estimated that the downtime of the 3<sup>rd</sup> compressor will be extended by two hours a day for a significant energy savings.



The SwitchMed Programme is funded by the European Union

# Best Practice - Integrate the third 40 bar compressor into the sequencer

## Economic Benefits

By reducing the operating time of the 3<sup>rd</sup> compressor of 2 hours/day:  
Annual energy savings = 220 kW x 2hours/day x 365 days/year = 160,600 KWh/year  
The average cost of electricity is around 0.02 €/KWh.  
Annual financial savings = 160,600 KWh/year x 0.02 €/KWh = 3,250 €/year

## Environmental Benefits

Annual energy savings of more than 160 MWh  
Reduction of CO<sub>2</sub> emissions = Energy saved x Emission factor =  
160,000 KWh x 0.000670 tons CO<sub>2</sub>/KWh = 107.2 tons of CO<sub>2</sub>e/year

## Health and safety impact

Not relevant



The SwitchMed Programme is funded by the European Union

# Best Practice - Integrate the third 40 bar compressor into the sequencer

<b>Capital investments &amp; financial indicators</b>	Cost: 2,250 € Return on investment: 0.69 year
<b>Suppliers</b>	Compressor suppliers or local supplier
<b>Other aspects</b>	No technical barriers, no impact on product quality
<b>Implementation</b>	



The SwitchMed Programme is funded by the European Union