

# RECP Best Practice Catalogue

*Modification of R03 to handle water rejected  
from the R01 to be reused*

*Developed within the framework of MED TEST II*



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



The SwitchMed Programme is  
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# Best Practice - Modification of R03 to handle water rejected from the R01 to be reused

<b>SECTOR:</b>	<b>Food &amp; Beverage</b>
<b>SUBSECTOR:</b>	Manufacture of soft drinks; production of mineral waters and other bottled waters
<b>PRODUCTS</b>	Soft Drinks
<b>CATEGORY</b>	Process control or modification
<b>APPLICABILITY</b>	Utilities
<b>COMPANY NAME</b>	---
<b>COMPANY SIZE</b>	Large

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**Description of the problem  
(Base scenario):**

The company has an annual water efficiency target with a specific KPI that shall be achieved by the end of the year. Accordingly, all technically applicable measures in the company's process and the utility systems are investigated against this target to reduce the consumption of water in order to achieve it.

The company has 3 Reverse Osmosis (RO) units to treat and improve the quality of its input water and there is a potential to apply a water treatment measure which will enable reuse of the water rejected from the RO system.

**Description of the solution**

Modification of R03 in order to be able to treat all water disposed from R01 to enable its reuse.

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## Economic Benefits

Water saved =  $12 \text{ m}^3$  new water input in R03 (extra  $4 \text{ m}^3$  from R01)- $8 \text{ m}^3$  old water input in R03-1(new water disposed from R03) =  $3 \text{ m}^3$  per cycle \* 1 hr/cycle \* 8 hours/day \* 300 days/year =  $7,200 \text{ m}^3/\text{year}$  \* 2 Euro/ $\text{m}^3$  = 14,400 Euro/year

More electricity of 1.5 kWh/hr (energy needed per hour (cycle operating time)) \* 8 hr/day \* 300 days/year \* 0.12 Euro/kWh = -427.2 euro/year

Net saving = 13,970 Euro/year

## Environmental Benefits

Water Saving =  $7,200 \text{ m}^3/\text{year}$   
3,600 kWh/year of electricity consumption will be needed  
2 tons/year of CO<sub>2</sub> emissions will be resulted

## Health and safety impact

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## Capital investments & financial indicators

Investment= €10,000

Pay Back period=0.7 year

## Suppliers

Local

## Other aspects

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## Implementation

Implemented.