



## BEST PRACTICE FACTSHEET



### **Continuous commitment to energy and environmental efficiency**

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**Time Investment**  
 3 months

**Money Investment**  
 Steam traps: 3000€  
 Steam accumulators: 110.000€

**Savings**  
 € 85.000/a  
 Reduce cost 10% of natural gas needs

**Year of Realisation**  
 2014

**Other benefits**  
 Steam produced is of high quality  
 Distance management of steam generators  
 Accurate monitoring  
 Less breakdowns  
 Less maintenance

## Coca ColaTria Epsilon

Founded in 1969, Coca-Cola Tria Epsilon is Greece's leading non-alcoholic beverage bottler. With 553.497 million liters of product sold, the company meets the needs of millions of consumers in Greece by producing and distributing a unique portfolio of quality products. The company produces 15 brands and more than 200 different, top quality products in a range of packaging sizes that are much loved by Greek consumers. Through its activity and operations, the company adds value to the Greek economy and supports local development: the annual purchasing spending reaches €150 million on average, while 50,000 tons of Greek fruits are used to produce the company's juices and soft drinks, thereby supporting domestic production.

**Coca-Cola Tria Epsilon is committed to environmental protection.** Water is a key ingredient of its products and a vital natural resource for all. The company has long been committed to preserving and contributing to water replenishment, through initiatives such as the "Mission Water" program. Since 2008, 3 drinking water units and 50 rainwater harvesting systems have been installed on 28 Aegean islands, helping to save more than 62,465,000 liters of water per year, directly benefiting more than 45,000 residents in water scarcity areas, improving their lives.

### **Initial Situation**

Coca-Cola Tria Epsilon is present across Greece through its production units and its dynamic sales teams' network. 96% of the products traded are produced domestically, in the company's facilities in Greece. 100% of juices are produced in Schimatari plant, which also produces 96% of soft drinks, the rest being produced in Heraklion plant, while Aigio plant is bottling total volume of water. The plant in Schimatari was founded in

1989, completing 26 years of successful operation. Today, is one of the most modern soft drinks and non-alcoholic beverages production units in Europe and one of the 5 model plants of the Coca-Cola Hellenic Group.

The mechanical installations of Schimatari plant consists of 3 steam generators (one of these is double), of 2x1.5 t/hr, 3 t/hr and 4 t/hr nominal steam capacity respectively. Natural gas is used for the steam production. Steam is used

to heat up water for processing equipment cleaning and disinfection (CIP), and Juices pasteurization.

### **Measures**

During the last 4 years a major investment programme of 18 million Euros was implemented in Schimatari facilities, which aimed at renovating and upgrading the building facilities and reinforcing and streamlining the production lines. Since the beginning of

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2014, important investments of 8 million Euros have been under way that aim at improving the management efficiency of energy resources and water and reinforcing further the plant's production capacity.

### **Online Steam traps' monitoring**

(Optimisation of the Production-Juice Line Maintenance)

Pasteurisers and Aseptic tanks are crucial for juice and steam distribution and optimization is very important in order to prevent breakdowns. One basic need of the company was the on line monitoring of the steam traps' functionality. Initially, steam traps were being monitored with infra-red camera on a monthly basis. The intervention included a new sensor that was attached to the steam traps and connected with a control panel showing which steam traps are working at any time. The measure provides an easy way at any time to check the functionality of steam traps around the plant.

### **Steam accumulator to improve quality of steam**

Steam generators produce instantly steam that lacks of quality (wet steam). In times of excess needs the pressure was falling resulting to lower temperature of steam and breakdowns especially in the pasteurizers of juice lines. A steam accumulator has been entered between steam generators and steam collector filled in 50% with water. Steam generators feed with steam the steam accumulator, and from the top two outputs feed with dry steam the steam collector and the production lines. Steam produced is of high quality resulting in no breakdowns due to

sludge, water hammering and blocking of pipelines.

It is a very easy way to operate equipment with low maintenance cost that takes place indoor by the company technicians.

Maintenance department is no longer facing frequent problems due to steam operating processes.

### **Steam generators optimization**

(Maintenance – Boiler Room)

Steam generators have their own cycle in order to produce steam changing the cycle from off-low-high (from 7 to 10 bars). In order to keep the pressure in the steam collector around 6 bars the variation of pressure from steam generators is between 5,5-8,5 bars.

Online SCADA system is used to monitor the pressure variation in the steam collector and the variation of pressure is very high causing overheating or pressure breakdowns at the production. Due to clean steam production after the implementation of a steam accumulator, the function of steam generators is now controlled from the pressure of the steam collector. As a result steam generators have their own cycle internal in order to produce steam but actually trying to reach the steam pressure at the collector. As a result there are savings of 500m<sup>3</sup> of natural gas/day=200euros/day from December 2014.

**Reduce cost 10% of natural gas needs = 85.000euros/year**

**Insulation of steam collectors** In order to improve the quality of steam at the production lines, steam collectors are insulated. From the bottom of the steam accumulator superheated water is fed in the steam generators resulting to less

fuel gas to increase the temperature to 180°C (water temperature was 90°C before the implementation of insulation and now is 130°C).

