



## Energy Management saves millions

**A large Danish plastic company is in front when enhancing the environment and decreasing the consumption of energy is in question. As one of the first companys in Denmark, R. Færch Plast A/S in Holstebro began six years ago to establish an organisation for energy management with the purpose of reducing the consumption of energy and find and implement energy savings that pay off.**

R. Færch Plast A/S extrudes film and thermoforms packaging for the food industry, retailing and for the pharmaceutical industry. In addition to packaging for ready-prepared dishes, the Assortment includes plastic packaging for meat

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Henrik Tornager,  
Energy- and environmental technician,  
Færch Plast A/S

The production at R. Færch Plast A/S is rather energy demanding. The extrusion is happening at approx. 300°C and the moulding at 170°C. To ensure, that the packaging will obtain the right form, supplied heat is removed as quickly as possible. It is done by leading a cooling media through the mould. Færch Plast uses regular water from the waterworks in a recirculative system. “All techni-

cal plants are build with the energy consumption in mind and in

In connection with an expansion of the plant a new cooling system for the procesheat using subsoil water as media has been build. The progress we set up several solutions for cooling the procesheat. In question was solutions like pure freon and pure ammonia, where the subsoil water extracts the heat from the condensation of the ammonia”, says Henrik Tornager Andersen, energy- and environmental technician at Færch Plast.

### **13 MILLION PAID BACK IN 4 YEARS**

Energy management also includes planning with energy consumption in mind, and therefore it was evident to use the concept when planning an 2 expansion of the plant 14.000 m production, storage and facilities for personnel. The expansion was complete in September 2002.



## SUMMARY

### COMPANY

R. Færch Plast A/S, Denmark

### SOLUTIONS

Automation solutions

- Process supervision
- Process control
- Data acquisition

### PRODUCTS

- Proficy iFIX™

### BENEFITS

- Easy maintenance and operation
- Easy access to data and information

The plant replaces two existing freon coolingplants and supplies the new production. The control-system for the new plant consists of a Siemens S7-400 PLC, three S7-300 and five ET200 modules for acquisition of signals from the five pump wells. In addition to this all 14 Vacon frequency converters on the subsoil water pumps, internal pumps, drycoolers on the roof and five Auma gears for regulation of the amount of water in every return well are connected by profibus. The controlsystem is operated through the superior Scada system at Færch. The Scada system is based on iFix and there are 40 operating stations distributed in the plant.

The job was carried out by Picca's department in Silkeborg, whom where responsible for executing the controlsystem for the complex subsoil water cooling system and all the connected regulations and security systems. According to Henrik Tornager the collaboration has been very rewarding. Especially the scadasystem has been brought up to a higher level. A lot of work has been put into adding functionality to the application. The system is very easy to navigate and the standard

solutions are adjusted to match the needs of Færch Plast exactly.

The profit of the solution is obvious. The necessity of establishing a new ammonia based coolingplant has been avoided, an investment around eight million Danish kroner. Approx. 13 million Danish kroner has been spent on the combined subsoil water solution instead, but with a yearly saving of the 2,200,000 kWh that is used running the existing freon- and the new ammonia compressors, it is absolutely the most economical solution. With the powerprice from 2002 as base a calculation shows, that the investment in the subsoil water cooling system has a pay backtime of four years.



For more information on our smart solutions, please visit our website [www.novotek.com](http://www.novotek.com)