

# PREEMRAFF LYSEKIL INCREASES BLENDING EFFICIENCY WITH EXPERION BLEND CONTROLLER

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Case Study

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**“Honeywell’s Experion Blend Controller is reliable and helps us solve our problems.”**

- Ronny Petterson, System Administrator Instrument, Preemraff Lysekil

**Honeywell**



## The ECO Diesel Blender at Preemraff Lysekil was the key focus for this project.

### BACKGROUND

Preem AB, with head offices in Stockholm, is the largest oil company in Sweden, with a refining capacity of more than 18 million cubic meters of crude oil every year. Preem's two refineries are among the most modern, environmentally-friendly in Europe and the world.

Preem's activities include production, sales, distribution, trading and feedstock supplies. Preem processes and sells gasoline, diesel and heating oils in Sweden and globally, with about half of their production exported. They also manufacture lubricants at their Scanlube factory in Göteborg.

Preem's two refineries, in Göteborg and Lysekil, are organized and operated as one joint refinery - Preemraff. With six operational depots, Preem also runs approximately 600 gas stations for private individuals and for heavy goods vehicles.

Preem is the biggest supplier of MK-1, or ECO Diesel in the Swedish market. ECO Diesel has a sulfur content of less than 5 ppm (parts per million), significantly lower than the maximum 50 ppm that has been the requirement in Europe since 2005.

### BENEFITS

Production and the facilities at Preemraff Lysekil and Preemraff Göteborg are managed and optimized as one system with shared management, strategy, development and future. Intensive effort is under way to work together to achieve the common objective of being one of Europe's most efficient refinery systems.

Honeywell's Experion Blend Controller was selected by Preem for its Preemraff Lysekil Eco Diesel Blender to replace an older Honeywell application that was becoming more difficult to support. Experion Blend Controller was initially installed in 2005 and recently upgraded, ensuring that Preem continues to achieve the following benefits for its ECO Diesel Blender:

- Improved blending efficiency
- Stable and reliable blender operation
- Meeting all return on investment (ROI) targets

In addition, the upgrade went extremely smoothly so that the planned one week contingency was not required.

### CHALLENGE

Preemraff Lysekil faced several challenges associated with its ECO Diesel blending operations.

First, Preemraff Lysekil had employed Honeywell's Blend Ratio Control (BRC) application on their TotalPlant System, and it had become more difficult to support because of its aging infrastructure. This challenge required a new DCS system (Honeywell's Experion® PKS platform), along with a new in-line blending control system.

In addition, ECO Diesel, which is a key product for Preemraff Lysekil, is blended primarily to ships, so the ECO Diesel blender faced additional challenges as described below:

- Using the ECO Diesel Blender to load ships requires the loading arm to have very steady operation. The pressure control valve for the ECO Diesel Blender is located near the jetty, while the pressure indicator is located near the component streams. This situation means there is significant elevation difference between the two, thus it is possible the pressure in the header can drop too low or even drain completely. If a blend is started

under these conditions, then the loading of the ship can be dangerous. In any case, pressure variations in the loading arm are unacceptable to operations, so there is a requirement for a warning to the operator that the pressure is too low to start a blend.

- Additionally, the ECO Diesel Blender is controlled by one of two pressure controllers. The pressure controllers, in reality, however, have the same pressure sensor and only the control valve is dual. Therefore, the operator must choose the correct pressure control valve at blend setup.
- All blends that go directly to the harbor are used to fill ships moored at the jetties. If there is a problem in the harbor, then the pumps feeding the blender are shut down by the harbor operators through a digital tag. In-line blending systems must stop on the same signal to bring the blender to a state equivalent to the pumps.
- In general, the blender blends directly to the ship, ensuring the blended volume is accurate. Immediate shutdown is always used to stop the blend. When this shutdown occurs, the in-line blending system needs to stop the pumps first prior to closing the flow controller value. Finally, during the blend, the operator needs the ability to change the pressure setpoint.

## SOLUTION

Preem chose Honeywell's Experion Blend Controller because of its ability to address these unique challenges of the ECO Diesel blender and also because of their past success with Honeywell's blending solutions.

Experion Blend Controller (EBC) is Experion®-based software that controls the operation of in-line blenders for gasoline, distillate, fuel oil, crude, bitumen and chemical blending applications. EBC ensures that components are blended in accordance with blend recipe specifications by controlling the pumps and flow controllers associated with the blending application.

Experion Blend Controller is part of Honeywell's Blending and Movement solution that delivers complete planning, execution and performance monitoring of off-sites blending and movement operations.

## NEXT STEPS

Building on the success of this project, Preemraff Lysekil has additional plans to migrate to Honeywell's Blending and Movement solution. "We plan to upgrade the Honeywell LCN based Storage Data Management (SDM) to Honeywell's Inventory Management, and upgrade the LCN-based Blend Ratio Control (BRC) on three other blenders to Experion Blend Controller. The upgrade to Experion Blend Controller on the ECO Diesel blender is the first step and recently we have begun upgrading our Diesel blender." said Ronny Pettersson.

### For More Information

Learn more about how Honeywell can help improve your blending and movement operations by visiting our website [www.honeywellprocess.com](http://www.honeywellprocess.com) or contact your Honeywell account manager.

### Honeywell Process Solutions

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