

Customer Case Study

## Gassco

### Ensuring the Uninterrupted Transportation of Gas Supplies

**Solution:**

Online Booking System

**Product:**

BEA WebLogic Server® 8.1

**Industry:**

Energy

**Partners:**

Hydro IS Partner

**Country:**

Norway

**Business challenge**

Create a Web-based marketplace to manage the process of entering into gas transportation contracts. Application infrastructure needed to provide optimal availability, maximum performance, and watertight security.

**Solution**

Deployed BEA WebLogic Server 8.1 to create a secure, always-on online market for buying and selling capacity in the gas pipeline network between the Norwegian continental shelf to Europe and the UK.

**Results**

Ensured gas shippers experience a continuously available environment, in which they can buy and sell capacity at any time. Provided end-to-end application security, covering the J2EE and non-J2EE components of the application. Enabled Gassco to implement the latest Web Services technologies, and reduce cost and complexity.

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**Customer brief**

Gassco is responsible as operator for transporting Norwegian gas to continental Europe and the UK through a 6,600-kilometer network of pipelines. The company carried more than 75 billion cubic metres of dry (sales) gas to market in 2004, equivalent to about 14 percent of all European gas consumption. In its role as capacity allocator, Gassco is required to provide access to the gas transport system on objective and transparent terms. These must serve all gas shippers and contribute to the most efficient possible utilization of Norwegian offshore resources. Gassco AS is wholly owned by the Norwegian state, and serves as operator for the 'Gassled' joint venture between oil and gas companies on the Norwegian continental shelf.

### Business process challenge

Gas from the Norwegian continental shelf provides Europe with a substantial energy supply. Once mined from under the sea bed, it is transported by pipeline (as liquefied natural gas or as compressed natural gas) from the off-shore field to a processing plant on land, such as the giant Kårstø plant north of Stavanger in Norway.

This transport of gas from the Norwegian continental shelf was previously organized through various joint ventures. This meant that different pipelines had different sets of owners, with each one organized as a partnership. With effect from January 2003, the transport systems have been integrated in a major new joint venture called 'Gassled'. This is a joint venture between oil and gas companies on the Norwegian continental shelf, and the partnership operates as the formal owner of the Norwegian gas transport infrastructure.

*"The robust, unified application infrastructure enables us to implement the latest Web Services technologies. It is highly flexible, and it enables us to reduce cost and complexity."*

*Kjell Bårdsen, IT Advisor, Gassco*

The Gassled network is separated into five areas. Gassled Area A, for example, covers the pipeline carrying rich gas from the Statfjord field in the North Sea to the Kårstø plant. It previously belonged to the Statpipe joint venture and runs for 309 kilometers. Gassled Area B is the pipeline carrying rich gas from the Åsgard field in the Norwegian Sea to Kårstø north of Stavanger—this runs for 707 kilometres.

With the formation of Gassled, Gassco needed a Web-based marketplace to support the contract process of entering into short, medium, and long-term gas transportation contracts. "We needed a secure, robust, and high performance applications infrastructure to manage the end-to-end booking process," explained Kjell Bårdsen, IT Advisor at Gassco. "We had been working with Hydro IS Partner (IT subsidiary of Hydro) for some time and we relied on their expertise to recommend a suitable service infrastructure."

### Solution

Working in close partnership with Hydro IS Partner, Gassco developed the gasviagassled.com application, a Web-based marketplace for buying and selling capacity in the gas pipeline network between the Norwegian continental shelf to Europe and the UK. Participation in GasViaGassled is confined to gas shippers. Once they are registered, the shipper is given access to a secure Web site: [www.gasviagassled.com](http://www.gasviagassled.com). An individual PKI certificate is required to access this site, which provides an overview of all the capacity in the pipeline system, with shippers able to book available capacity at any time. The site also carries news reports and information about planned activities, which could affect capacity in the pipeline network.

Gassco's Transport Control Center (TCC) at Bygnes, north of Stavanger, manages the gas transportation. The company's capacity management department monitors each shipper's nominated gas volumes, and compares these with the capacity booked. If a

shipper operates outside the contractual booking it has made, Gassco will endeavour to help correct this position. Each entry in GasViaGassled is digitally signed and dated, giving users the confidence that all transactions are traceable. Gassco's capacity management department can also revise limits on available capacity. When additional capacity becomes available at short notice or reductions are required, it can publish the details and manage the allocation process.

Gassco offers monthly and annual capacity several times a year for booking by shippers. Before doing this, it requests information from various groups to determine available capacity and who is entitled to book it. These details are entered into [www.gasviagassled.com](http://www.gasviagassled.com) for each year until 2028. Capacity can become available at short notice for a single day or a short period and is offered to shippers via an email facility.

The company also offers a secondary market for gas capacity. If a shipper needs additional capacity or cannot use all it has booked, it can post bids or offers in the secondary market.

BEA WebLogic Server 8.1 is the centerpiece of this advanced Web infrastructure. It provides a rock-solid foundation for building and extending the integrated, enterprise-class GasViaGassled application. The J2EEcompliant Service-Oriented Architecture, and support for rich tool sets, enables the Hydro team to separate the presentation, business logic and data, providing the underlying core functionality necessary for the application. The application server resides in an IBM AIX environment and is clustered in order to distribute load and eliminate any single point of failure within the business critical system.

### **Results**

Last year, Gassled delivered a total volume of 75 billion square meters of gas to the receiving terminals, and the system delivered 99.89 percent availability. The highest daily volume delivered was 265 million square meters of gas.

According to Bårdsen, BEA WebLogic Server 8.1 has an important role to play in the transportation of this gas across the Gassled network. "It is imperative that we have 24x7 hours availability," he said. "Using BEA WebLogic Server 8.1, shippers experience a continuously available environment, allowing them to buy and sell capacity at any time of the day or night. Quite simply, if the transport network stopped, and gas supply halted, we would lose significant amount of revenues and goodwill—and many European customers would be without their gas supplies. Thankfully, in the BEA environment this would not occur."

Security is an imperative aspect of GasViaGassled and BEA WebLogic Server 8.1 provides end-to-end application security, covering the J2EE and non-J2EE components of the application. Security policies are created and managed by security administrators, and represent flexible, dynamic rules that can be changed without re-coding or re-deployment. “We use PKIs in a very secure environment to identify users and obtain electronic signatures on the contracts,” explained Bårdsen.

He concludes, “The robust, unified application infrastructure enables us to implement the latest Web Services technologies. It is highly flexible, and it enables us to reduce cost and complexity.”

### About BEA

BEA Systems, Inc. (NASDAQ: BEAS) is a world leader in enterprise infrastructure software, providing standards-based platforms to accelerate the secure flow of information and services. BEA product lines—WebLogic®, Tuxedo®, JRockit®, and the new AquaLogic™ family of Service Infrastructure—help customers reduce IT complexity and successfully deploy Service-Oriented Architectures to improve business agility and efficiency. For more information please visit [bea.com](http://bea.com).

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