

North Sea

Sweden

Norway

Mongstad

Project Profile

Mongstad

The Mongstad facilities in western Norway have been in operation since the mid-1970's and today encompass a refinery, a crude oil terminal, a technical development center and a wet gas processing factory. Throughout decades of expansion and modernization, ABB has kept pace with Mongstad's dynamic process control and electrification requirements by providing advanced, flexible solutions designed to meet both current and future needs.



Oil & Gas

Upstream and Midstream

Facts about Mongstad:

- The oil refinery is the largest of its kind in Norway with an annual capacity of 10 million tons of crude. It is owned by Mongstad Refining (79% StatoilHydro and 21% Shell).
- The crude oil terminal provides intermediate storage of more than 1/3 of all crude oil produced on the Norwegian continental shelf. The terminal is owned and operated by StatoilHydro.
- From 2010, a new Combined Heating and Power (CHP) station will provide heat and electricity to the Mongstad refinery and power to the Troll A offshore platform and the Kollsnes processing plant.

A key link in the Norwegian oil supply chain

Comprising Norway's largest oil refinery, a high-traffic shipping port and storage facilities for around one-third of the crude oil produced by the Norwegian state, Mongstad is vital to the Norwegian oil industry. Keeping the oil flowing in and out of Mongstad in a safe, efficient and environmental manner takes state-of-the-art technology, including electric power and process automation systems from ABB. ABB is the leading supplier of integrated electrotechnical solutions to the oil and gas industry, and has provided innovative solutions to the Mongstad facilities for over 30 years.

By consistently providing reliable, high performance process control capabilities to Mongstad, the scope of ABB automation technology has steadily increased. Today, ABB automation technology at Mongstad encompasses:

- 2,700 I/O boards with over 25,000 I/O's
- 150 redundant controllers distributed over 17 equipment outstations
- 67 PCU, 14 OIS and 25 computer nodes
- 4 INFINET rings
- 13 HMI servers, 33 dual-VDU consoles
- 500 process graphics
- 30,000 tags

A successful ABB multiscope supply

Throughout the Mongstad facilities, ABB has delivered a broad range of systems and services including control systems, electrical systems, analytics, instrumentation and engineering. The ABB scope has been proven by a successful long-term operational track record. In all the years that ABB control systems have been in service at Mongstad there has never been a production shut-down caused by ABB equipment.

The ABB logo, consisting of the letters 'ABB' in a bold, red, sans-serif font.



A long-term supply partner ... heading into the future with Mongstad

Environmental technologies

The local ecosystem around Mongstad is thriving due to StatoilHydro's efforts to maintain high environmental standards throughout their facilities and operations. Clean air solutions such as ABB electric power systems help ensure low emissions and minimal environmental impact to the area. Local wildlife includes a herd of deer and a wide variety of plants, birds and insects.



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The demand for crude oil production is unrelenting and places great challenges on refineries to maintain continuous high-volume processing with low environmental impact. Several steps are being taken at Mongstad to maintain this delicate balance as production volumes increase, and ABB electrification and automation technologies play an integral role. In 2008, new environmental projects at Mongstad utilizing ABB technology include:

EVM-RO (Energy Plant StatoilHydro Mongstad) Project

The Mongstad power station development project will integrate with the existing refinery and will include three sub-projects; a new gas line from Kollsnes to Mongstad, a combined heat and power (CHP) station and all necessary tie-ins to and upgrades to the existing refinery. For the EVM-RO project, ABB will supply:

- 2 x 50 MVA power transformers
- 2 x 12.5 power transformers
- 2 x 1600 KVA distribution transformers
- 2 x 630 KVA distribution transformers
- 22 kV MV Unigear switchgears
- 6 kV MV Unigear switchgears
- 690 V MNS switchgears
- 400 V MNS switchgears
- Electrical Control & Monitoring System
- Distributed Control System (DCS)

VOC (Volatile Organic Compounds) Recovery Project

The new VOC Recovery Project is designed to capture the oil vapor released during loading and unloading of the shuttle tankers at the crude oil terminal. The VOC project will use the following ABB equipment:

- 2 x 12.5 MVA power transformers
- 2 x 2500 kVA distribution transformers
- 2 x 630 kVA distribution transformers
- 6 kV MV Unigear switchgears
- 690 V MNS switchgears
- 400 V MNS switchgears
- ACS800 frequency converters and motors
- Distributed Control System (DCS)

SMIL (StatoilHydro Mongstad Environmental Project)

StatoilHydro has earmarked NOK 1 billion over a 3-year period for environmental technology to ensure environmentally effective operations at the Mongstad refinery. The SMIL project will involve building a new sulfur recycling facility and sour water stripper tower, and re-building the amine facilities. Processes performed at these facilities will be handled by ABB control and electrification systems.

A few of the many additional processes at Mongstad utilizing ABB process control and electrification systems include:

- Refining of crude oil to gasoline, diesel oil, jet fuel and other light petroleum products
- Processing of wet gas and condensate to propane, butane and naphtha
- Additional processes including de-sulfurization of diesel and gas oil, coke production and benzene reduction
- Product receipt and transfer from three sea-to-shore pipelines