



Dawcul is proud of its partnership with Elessent Clean Technologies, a progressive company that is dedicated to producing high quality, cleaner products for the world. It is a leading source of solutions for decarbonizing the industrial manufacturing sector and transitioning the industry to a sustainable future.

Elessent's emission control systems help refiners meet ever more stringent environmental requirements, using BELCO® wet scrubbing technologies to focus on abating SOx and NOx emissions from FCCUs, fired heaters and boilers and Dynawave® wet scrubbing technology for sulphur recovery unit (SRU) emissions.

A Global leader in process technologies Elessent's mission is to drive sustainability and carbon neutrality.

Products

BELCO® Wet Scrubbing platform

BELCO® wet scrubbing technology is the global standard for controlling refinery flue gas emissions. Elessent also offers BELCO® emission control systems for combustion processes, steam generation, carbon black plants and other applications.

Their proprietary BELCO® wet gas scrubbing systems reliably achieve very high levels of pollutant control for SOx, NOx, fine particulate matter, heavy metals, and other pollutants. Out of the more than 500 wet gas scrubbers designed by Elessent Clean Technologies, more than 150 units are based on BELCO® wet scrubbing technology.

BELCO® wet scrubbing operates on the principles of saturation, absorption, condensation and filtration. Specialised vessels and spray nozzles are used to control a variety of pollutants. The system is configured specifically for the requirements of each application.

How the BELCO® Wet Scrubbing platform works

The technology consists of a spray tower along with a set of filtering modules and a set of droplet separators that are designed to remove coarse particulate matter by impaction. The sprayed water droplets also provide absorption to reduce SO2 emissions when used in combination with a scrubbing agent.

Gas leaving the spray tower goes through a set of filtering modules to remove fine particulates.

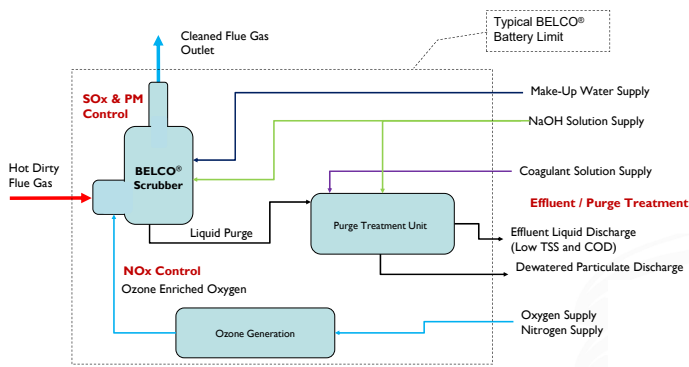
Benefits

- ◆ Simple, effective and well proven
- ◆ Made up of a single tower that controls all emissions
- ◆ Highly reliable
- ◆ An integrated solution that saves plot space
- ◆ Efficiently cleans flue gases to regulatory limits
- ◆ Ensures reliable operations for years without interruption
- ◆ Delivers exceptionally clean and cooled flue gases to support the long-term uninterrupted performance of the carbon capture process



A single upflow tower controls many pollutants

Elessent Clean Technologies



Belco® scrubbing process overview

Applications

- ◆ FCCUs
- ◆ Refinery Incinerators
- ◆ Fired Heaters
- ◆ Boilers
- ◆ Fluid Cokers

Dynawave® jet scrubbing technology

DynaWave® reverse jet scrubbing technology has a distinctive design and many benefits to help reduce air emissions and increase efficiency and cost-effectiveness in refineries, sulphur plants, sulphuric acid plants, metallurgical plants, power, cement kilns, waste incinerators and many other applications.

The process combines acid gas absorption, particulate removal and hot gas quenching all in one vessel. In many conventional scrubbers or simple caustic scrubbers, each function occurs in a different area of the vessel, or outside the scrubber altogether.

With DynaWave® technology, even oxidation is achieved in situ in the same vessel sump. No other scrubber is capable of this performance. With minimal equipment inside the vessel the DynaWave® scrubber is an extremely reliable and low-maintenance scrubber.

The key is the intimate mixing of the gas and scrubbing liquid in the inlet barrel. The DynaWave® reverse jet scrubber is an open duct in which scrubbing liquid is injected, through a non-restrictive reverse jet nozzle, counter current to the dirty inlet gas.

Gas enters at the top of the vessel and travels down the inlet barrel while the liquid is sprayed upward into the barrel. The liquid collides with the down-flowing gas to create the "Froth Zone," a region of extreme turbulence with a high rate of mass transfer.

The clean, water-saturated gas continues through the scrubber vessel to mist removal devices. The liquid reverses direction and returns to the vessel sump for recycling back to the reverse jet nozzle.

Reagents

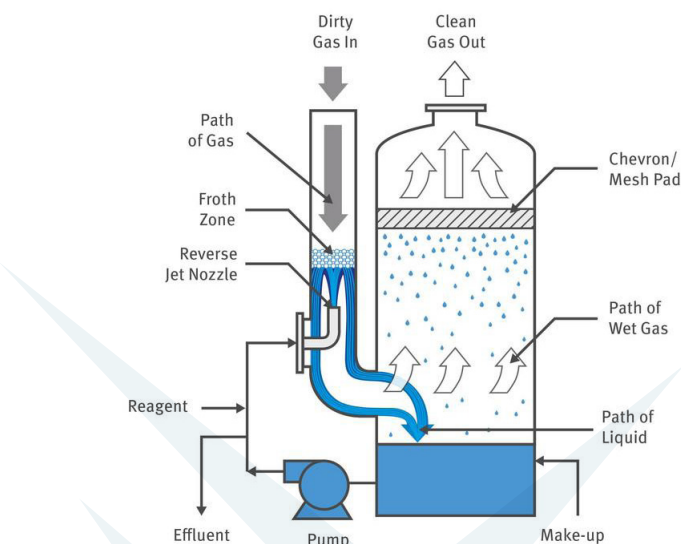
- ◆ Caustic
- ◆ Lime
- ◆ Ammonia
- ◆ Limestone
- ◆ Hydrogen Peroxide
- ◆ Ammonia
- ◆ Magnesium Hydroxide
- ◆ Soda Ash
- ◆ Zinc Hydroxide

Benefits

- ◆ Guaranteed low SO₂ outlet from the stack at all times
- ◆ High on-stream reliability
- ◆ Simple operation, low maintenance and little operator attention required
- ◆ Virtually unpluggable, with large, open-bore liquid injectors and non-restrictive, open vessels
- ◆ Small footprint

Applications

- ◆ Sulphur Recovery Units
- ◆ Sulphuric Acid
- ◆ Non-Ferrous Metals
- ◆ Power
- ◆ Cement
- ◆ Chemicals



Typical Dynawave® Reverse Jet Scrubber

Dawcul is an Authorised Distributor for Elessent Clean Technologies across Eastern Europe. For more information please contact your local regional representative.



Your partner in energy since 1977