

# Case Study

## Duvel Moordgat NV, Belgium chooses for green!

### Introduction

The Duvel Moortgat Group, founded in 1871, is an independent producer of authentic speciality beers and premium brands.

Around the world, the group is considered to be the leading producer of blond, bottle conditioned, high fermentation beers, a dominant position owed largely to the success of its best-selling product Duvel. A niche player, Duvel Moortgat occupies a leading position in the strategic segments of speciality beers and premium brands like Duvel, Maredsous, Bel Pils and Vedett.

Today, the group's beers are exported to over 40 countries.

Its current success is based on following factors:

- high-quality products;
- strong brands
- a variety of national and international distributions channels;
- modern production facilities

The use of the latest technologies to ensure the product quality, enabling the Group to respond very flexibly to the commercial needs of the domestic and foreign market, is one of their strategic sustainability goals.

Subject to this goal is carbon dioxide (CO<sub>2</sub>) emission. Duvel wanted to decrease the CO<sub>2</sub> emissions of their brewery by:

- investing in a new CO<sub>2</sub> recovery system;
- using the CO<sub>2</sub> as refrigerant.



As an expert in the area of total CO<sub>2</sub> & O<sub>2</sub> management Norit Haffmans offered Duvel a modern Low Oxygen (LO) CO<sub>2</sub> recovery system.

With this system Duvel has the advantage being able to recover their own CO<sub>2</sub> in an early stage when the emission of CO<sub>2</sub> is very low. In other words Duvel can already start recovering CO<sub>2</sub> when the inlet CO<sub>2</sub> gas has a purity of 99% v/v, enabling them to reach a final outlet purity, due to stripping technology of Norit Haffmans, of 99.998% v/v.

### CO<sub>2</sub> as refrigerant

In addition to the LO recovery plant, Norit Haffmans offered CO<sub>2</sub> as coolant to Duvel. CO<sub>2</sub> is an environmentally friendly refrigerant with good cooling properties. The CO<sub>2</sub> used in this system is cooled down to -30 °C or even -40 °C thus allowing Duvel to save energy and to reduce emission of detrimental gases. As the system is a closed system, no gases are emitted into the atmosphere.



## CO<sub>2</sub> as refrigerant

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Using CO<sub>2</sub> as a coolant has the following advantages:

- environmentally friendly as CO<sub>2</sub> is noncorrosive and nonflammable.
- the amount of CO<sub>2</sub> produced in the installation is not harmful to employees. With the use of detectors, leaks easily can be tracked down.
- a coolant with good cooling properties at a lower temperature provides energy savings.
- cost-efficient, with lower operating costs.



“The reason for choosing the Norit Haffmans’ CO<sub>2</sub> recovery system with CO<sub>2</sub> as refrigerant confirms Duvel’s continuous contribution to the environment and once more emphasises Duvel’s ambition to be sustainable and reduce their CO<sub>2</sub> footprint.”



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Haffmans BV reserves the right to make changes in the technical specifications at any time.

## CO<sub>2</sub> as refrigerant

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leading in purification

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