

# OCAP HARNESSES TECHNOLOGY AND DATA TO MEANINGFULLY REUSE CO<sub>2</sub>

Working closely with Capgemini Engineering, OCAP harnesses technology to take full control of its CO<sub>2</sub> distribution, enabling effective reuse and helping prevent unnecessary emissions

## POWERING POSITIVE CHANGE

OCAP, which stands for Organic CO<sub>2</sub> for assimilation by plants, is an exciting, forward-thinking organization dedicated to the reuse of CO<sub>2</sub> to prevent unnecessary emissions and energy consumption. Recognizing that too much CO<sub>2</sub> is produced globally, OCAP is on a mission to capture carbon waste from industrial processes and then redistribute to it those who need it, thereby eliminating the need to produce more.

**Client:** OCAP, a Linde Group company

**Region:** Netherlands, Europe

**Industry:** Energy and utilities

**Client Challenge:**

OCAP wanted to draw upon future-proof technology to help track, measure, and control its CO<sub>2</sub> distribution to greenhouses in order to reduce excessive natural gas consumption resulting in lower CO<sub>2</sub> emissions.

**Solution:**

OCAP partnered with Capgemini Engineering to develop and implement the MyOCAP digital ecosystem, an innovative platform that provides the organization with a full overview and control over its CO<sub>2</sub> distribution.

**Benefits:**

- Reliable tracking and control of OCAP's CO<sub>2</sub> distribution
- Savings realized by not having to visit customers for flow meter readings, and elimination of manual read errors for more accurate invoicing.
- Provides OCAP customers with valuable insights about their own CO<sub>2</sub> consumption.

Greenhouse horticulturalists need CO<sub>2</sub> to help their crops grow better. Until recently, they generated their own supply with a boiler or combined heat and power installations fueled by natural gas. This provided heat for the greenhouse and CO<sub>2</sub> for the plants. However, in summer, when no heat is needed, the installation was fired just for CO<sub>2</sub>, which was a waste of energy.

OCAP, a Linde Group company, was established to meaningfully reuse CO<sub>2</sub>, in part by helping horticulturists burn much less natural gas and even switch to sustainable energy, such as geothermal and residual heat. Two sources of CO<sub>2</sub> are used in the Rotterdam port area; upgrades are made to the CO<sub>2</sub> quality; and OCAP then transports the CO<sub>2</sub> via an extensive pipeline network to more than 600 customers (greenhouses) in the Netherlands.

Given the nature of OCAP's approach, it recognized the need to harness the power of technology and data in order to accurately track, measure, and control its CO<sub>2</sub> distribution. To do so, the organization needed a platform that could offer insight and help understand details such as how much waste CO<sub>2</sub> was being captured. OCAP therefore approached Capgemini Engineering to build, maintain and support a digital ecosystem for its operations.



## A DIGITAL ECOSYSTEM FOR REAL-WORLD RESULTS

The organization engaged Capgemini Engineering to support the development of a robust and future-proof bespoke application that would ultimately become its primary resource for carbon emissions information. This led to the creation of the MyOCAP digital ecosystem, a platform that gathers CO<sub>2</sub> consumption data from OCAP customers and then provides them with valuable insights, much like a cell phone gives users statistics about their data usage.

For OCAP personnel, the platform provides additional functionality. It delivers comprehensive monitoring of their CO<sub>2</sub> production and consumption balance and helps control distribution between different consumers. This is normally only required during the summer when there is more CO<sub>2</sub> demand than the system can deliver.

Capgemini Engineering also provided detailed IT facilities for process monitoring as part of its service. OCAP personnel use this monitoring system to track the distribution of CO<sub>2</sub> through the pipeline equipment in real-time from a control room in Botlek/Rotterdam. In addition, process monitoring is necessary to keep track of details such as pressure, flow, and temperature to help detect potential leaks and improve safety throughout the distribution network.

Since MyOCAP was first developed, OCAP and Capgemini Engineering have expanded the platform with a multitude of features and capabilities as demand for the service has grown and technology has advanced. From the display of Agriport CO<sub>2</sub> and CO<sub>2</sub> production data to the implementation of a webservice API that retrieves consumption data from local equipment in the field, and new reporting capabilities, the partners have maintained a strong focus on the continuous improvement of the solution to make it more effective and profitable for OCAP.



## A BRIGHTER FUTURE FOR HORTICULTURE AND BEYOND

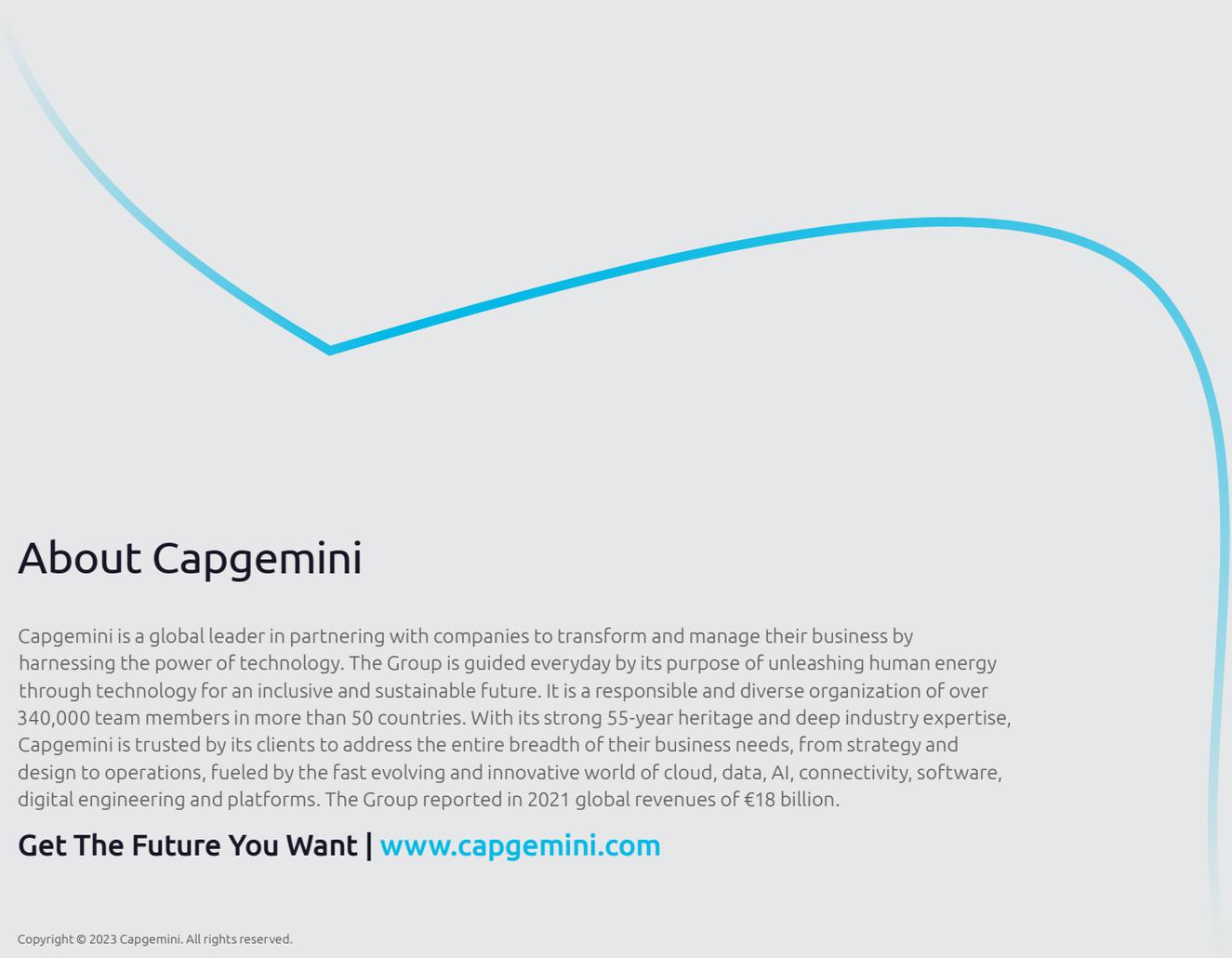
The innovative MyOCAP solution has brought about a number of considerable benefits for not only OCAP but the environment as well. The annual supply of 0.6 megatons of CO<sub>2</sub> to the greenhouse horticultural sector saves the sector 0.3 billion m<sup>3</sup> of natural gas.

In addition, MyOCAP has granted the organization far greater tracking and control over its distribution network while simultaneously reducing the amount of manual work needed for essential tasks – such as meter measuring – for over 600 end customers. The solution has made physical visits to client locations to take flow meter readings obsolete, saving huge amounts of time and money while eliminating manual errors that once lead to incorrect invoicing. OCAP customers also

get valuable insights about their own CO<sub>2</sub> consumption. All of this has improved the production and quality of horticulture products by making CO<sub>2</sub> consumption more efficient and strategic, which in turn contributes toward a stronger competitive position for the Dutch greenhouse market. At the same time, the environment benefits from reduced natural gas use.

To support the greenhouse horticultural sector's goal to become fully sustainable by 2040, greenhouses must have access to a sufficient amount of external CO<sub>2</sub>. Therefore, OCAP and Capgemini Engineering have continued their partnership on a long-term basis with the aim of saving millions of cubic meters of natural gas and reducing carbon emissions by hundreds of tons of CO<sub>2</sub>.





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