

# SUCCESS STORY



# carbotreat

## CO<sub>2</sub> SOLUTIONS

a Bouman Industries company

## Twence

Producer of sustainable raw materials and energy

### Installation

- CO<sub>2</sub> capture plant
- Sodium Bicarbonate production
- Liquefaction installation
- Installed in 2014

### Location

- Hengelo, The Netherlands

### Customer

- Twence



## At a Glance

### Application

- Waste-2-Energy

### Capacity

- 3.000 MT CO<sub>2</sub> per annum

### Benefits

- 90% Carbon Capture rate
- 99.998% CO<sub>2</sub> purity
- Reduced emissions of other harmful substances
- Reduced operational cost through in-house bicarbonate production
- Reduced emissions by eliminating transport of bicarbonate to site
- Low maintenance cost through regeneration of amine solvents

### The Challenge

Twence is highly committed to sustainability and renewable energy. Twence produces raw materials for industries, building materials and energy from waste and biomass.

The facility generates CO<sub>2</sub>, which needs to be captured and converted into useable valuable resources

### The Results

The solution not only achieves low CO<sub>2</sub> emissions through carbon capture, but also reduces the plants emission of other harmful substances. The amine based solvent system ensures highly reliable operation with cost savings for bicarbonate and the opportunity to turn former emission into revenue.



carbon capture



CO<sub>2</sub> purity



diesel fuel avoided



bicarbonate production

Get in touch with us

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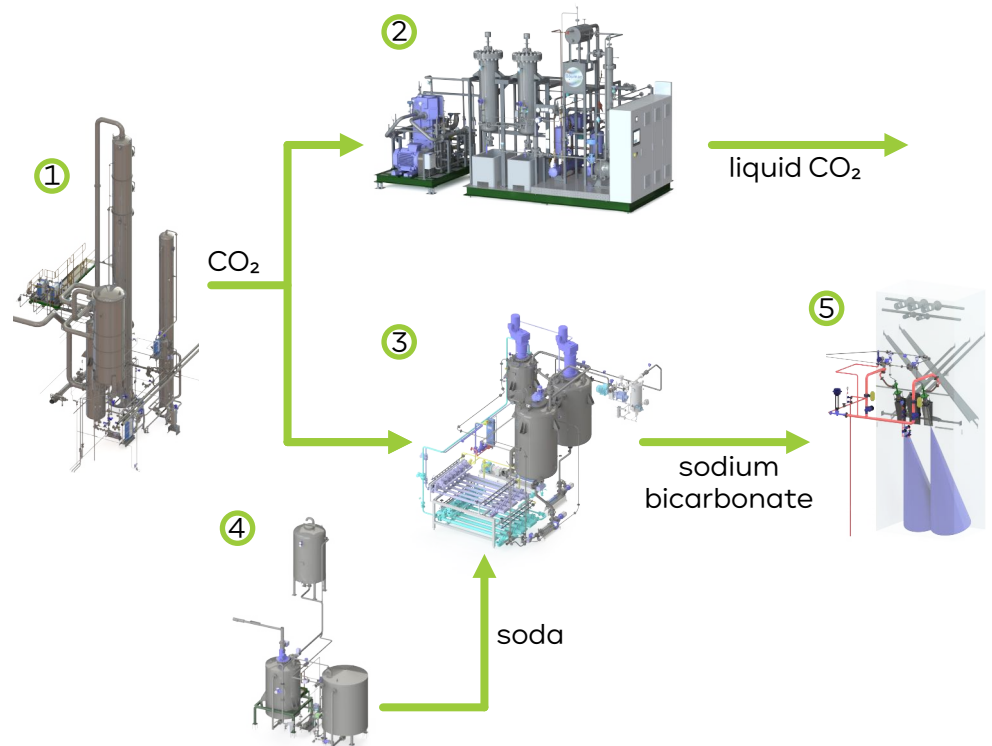
### The Solution

The carbon capture installation catches the CO<sub>2</sub> from the gases, using an amine-based solvent in an absorber. This rich solvent with the CO<sub>2</sub> bound then enters the stripper, where it is desorbed to almost 100 percent pure CO<sub>2</sub>.

This pure CO<sub>2</sub> is used as a valuable resource for the next two parts of the installation:

- Production of sodium bicarbonate which is utilized to clean the last remaining harmful substances from the main plant.
- Converting the pure CO<sub>2</sub> into a transportable liquid, which is applied as fertilizer in greenhouses or can be used for carbonization of soft drinks.

### The Process



- ① Carbon Capture plant
- ② Liquefaction plant
- ③ Sodium bicarbonate plant
- ④ Soda dissolving system
- ⑤ Sodium bicarbonate injection

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