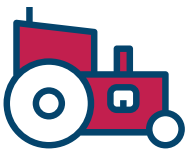




Energy Usage in Beet Sugar Production



Sugar production is energy-intensive. Heat and electricity are required in the sugar making process. Heat is needed at two points: during the evaporation and the pulp drying phase.



Because of the rural location of sugar factories, their seasonal production cycle and high energy requirements, on-site CHP units provide heat and electricity.



The primary fuel source of most sugar factories is natural gas. Some sugar factories run on coal. But this is being phased out.



Many sugar factories run anaerobic digestors to produce biogas from waste water. Some factories also produce biogas from the tops and tails, and pulp.



Biogas can be blended with natural gas in CHP plants to produce electricity and heat. This lowers the carbon intensity of sugar production.



Excess heat from the beet sugar making process can be redistributed to local district heat systems.



Combined heat and power (CHP) in beet sugar factories



CHP Systems

are characterised by **concurrent production of electricity/mechanical power and useful thermal energy** from a **single source of energy**

CHP Systems are up to

40%

more efficient than separate generation of heat and power



Energy Source



CHP Unit



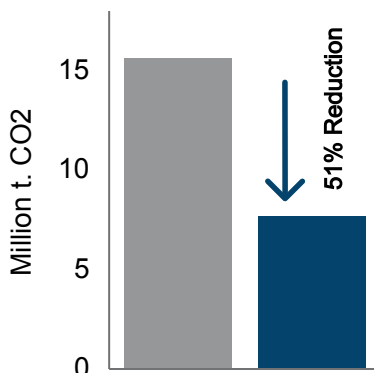
Electricity



Heat



Between 1990 and 2018
the sector **reduced CO2 emissions** by **51%**



■ 1990
■ 2018

Kg CO2 emissions per kg of product, relative to rice

