Turning Heat, Power and CO₂ into Perfect Tomatoes

SLOWENIAN TOMATO GROWER HARNESSES AVUS 100PLUS CHP SYSTEM TO BOOST GREENHOUSE EFFICIENCY AND ACCELERATE PLANT GROWTH



With a strong commitment to sustainability, they focus on minimizing their environmental footprint whilst producing and delivering fresh, locally grown tomatoes.

High-performance CHP system maximizes greenhouse efficiency

Paradajz d.o.o, founded in 2007, is a leading tomato producer in Slovenia. The company employs around 160 people and is best known for its broad selection of high-quality tomato varieties. In addition, the company has received several awards, emphasizing the company's high product quality and sophisticated sustainbility practices.

To meet the high heat demands of their greenhouse operations and optimize plant growth conditions, the company chose to implement the avus 1000plus combined heat and power (CHP) system, which runs on natural gas. This high-performance unit not only provides reliable energy but also enhances overall efficiency on-site.

A System that delivers energy, heat, and natural CO₂ in one smart solution

To further improve sustainability and operational efficiency, an exhaust gas catalytic converter system was installed, enabling the treatment of engine emissions. Thanks to special exhaust gas treatment, the CO₂ contained in the exhaust gas is diverted into the greenhouse environment, where it acts as a natural fertilizer and significantly increases plant growth and productivity. Higher CO₂ concentrations can enhance photosynthesis and lead to improved plant growth.

With an electrical output of 999 kW and a thermal output of 1,036 kW, the avus 1000plus delivers a total system efficiency of 87.9% — comprised of 43.2% electrical efficiency and 44.8% thermal efficiency. This ensures that both power and heat are used to their maximum potential, directly contributing to a more energy-efficient and cost-effective greenhouse operation. The CHP system was housed in a 12metre container, designed to keep noise emissions low and facilitate a streamlined installation. Thanks to the plug-and-play configuration, the setup process was fast and straightforward. This project stands as a strong example of how intelligent CHP integration can create real environmental and operational benefits — all while supporting the growth of healthier, more resilient crops.

