



HEATREUSE™

AN EFFICIENT SOLUTION FOR HEAT RECOVERY FROM A GREENHOUSE

- HEAT RECOVERY
- CLIMATE MANAGEMENT
- MOISTURE REMOVAL
- COOLING



NOVARBO

CREATING GREENER GROWTH

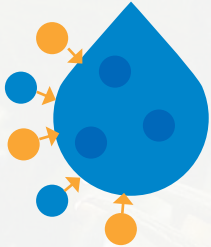
PART OF **BIOLAN** GROUP

ADVANTAGES AND BENEFITS



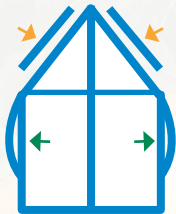
Significant annual energy savings

The heat can be recovered and collected for reuse



Droplet curtain

Cools and binds extra heat and moisture



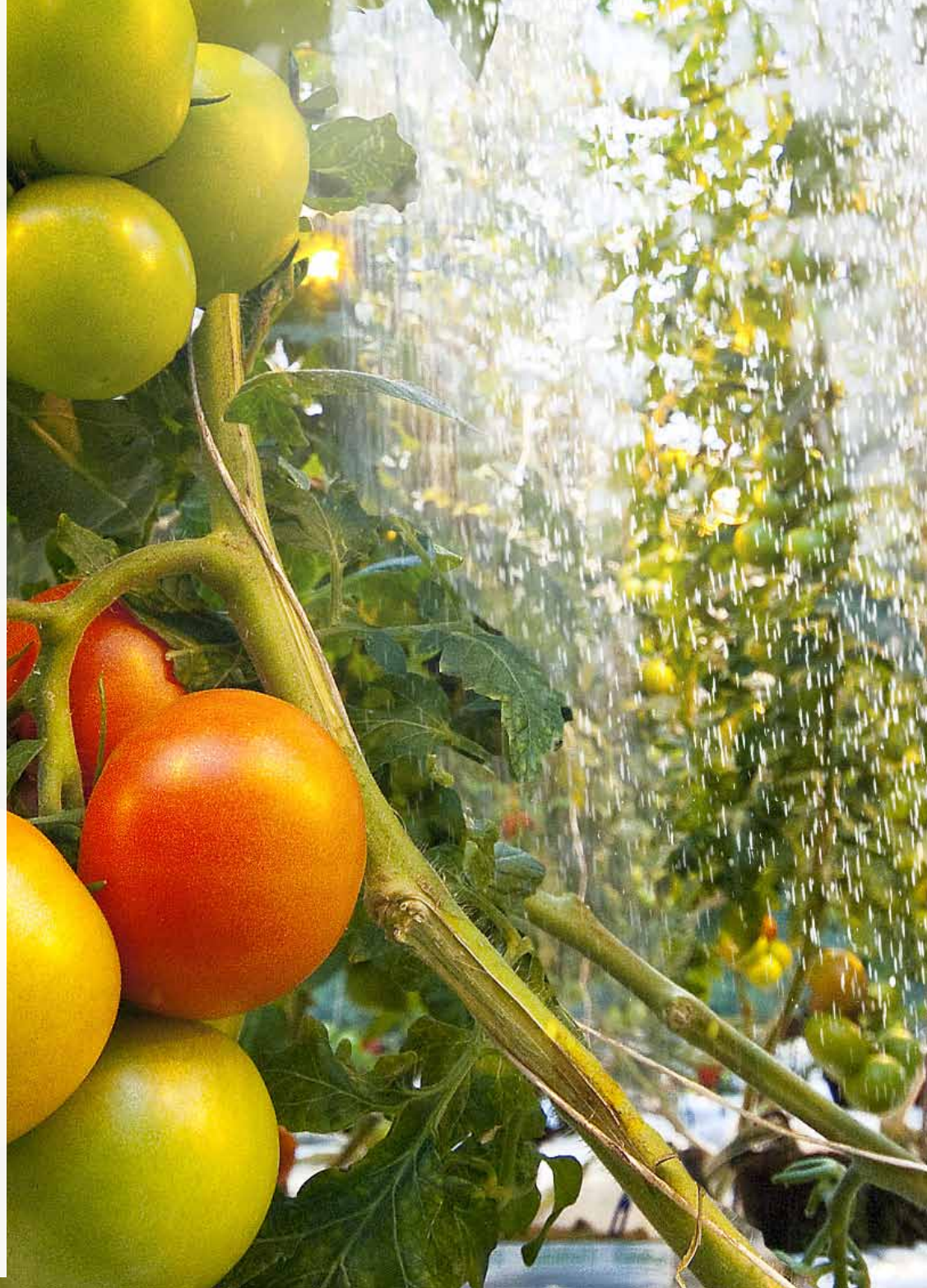
Closed greenhouse

Efficient climate control



High yield and quality of the crop

Up to 40% greater yield from the same area

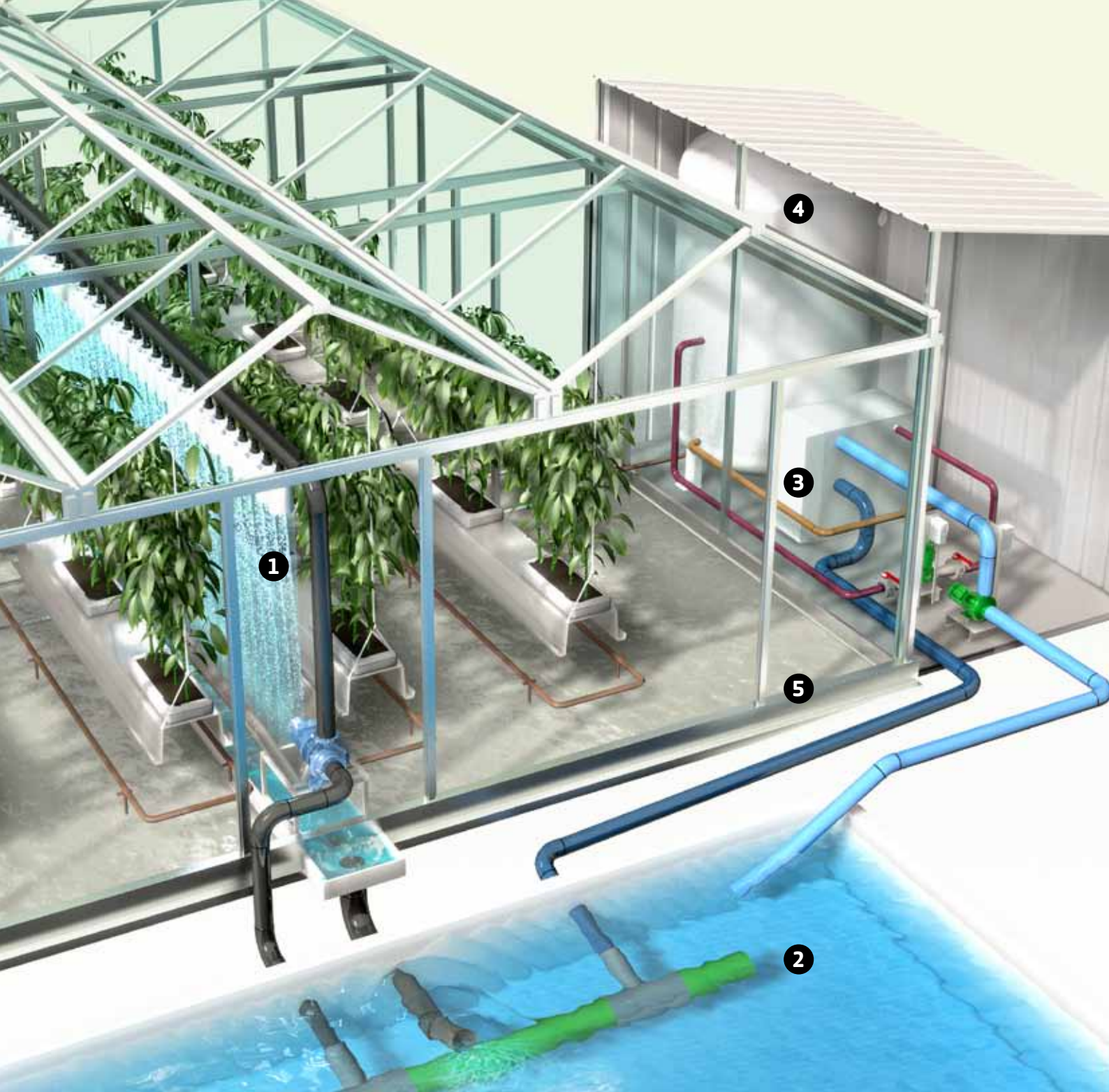


CREATING GREENER GROWTH

– an energy-efficient and eco-friendly greenhouse

Novarbo Heat Reuse™ utilises the patented Novarbo™ droplet curtain that was originally developed for cooling greenhouses. The droplet curtain enables recovery of the extra heat energy generated by the sunlight and the lamps. The heat is bound to circulating

water and conveyed into the heating circuit by means of a heat pump system. The quantity of thermal energy recovered can be up to 500 W/m². The heat is stored in a boiler, for further use for, for example, heating the greenhouse or the irrigation water.



Novarbo Heat Reuse™

Technology and principle of operation

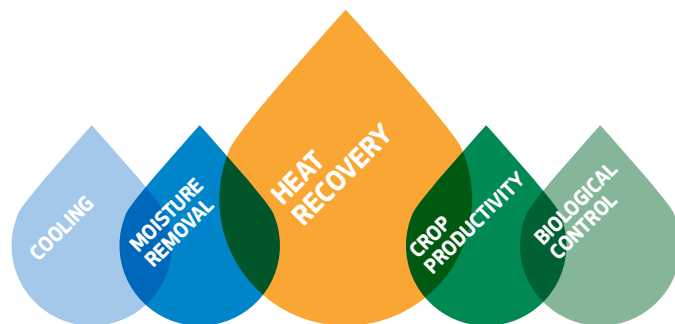
The droplet curtain system is an efficient heat exchanger: it absorbs solar energy and the excess heat generated by lamps from the greenhouse in circulating water, and conveys it further to the cold-water basin. From the cold-water basin the thermal energy is extracted by the heat pump into the hot water circuit, and the cooled water returns to the

1. Droplet curtain system
(with a water circulation of 50-70 l/s per 1000 m²)
2. Cold-water basin
3. Heat pump
4. Boiler
5. Adjustment automation

cold-water basin. The hot water warmed up by the heat pump is conveyed either directly into the heating cycle, or stored in the boiler, from where it will be used when required. There is no need to add any water into the droplet curtain circuit, as water vapour constantly evaporates from the plants into the air, and the droplet curtain captures it in the circulating water.

Novarbo Heat Reuse™

– all in one package



Novarbo Oy is the leading expert in professional horticulture and greenhouse technology. It is part of the Finnish Biolan Group. The company develops, manufactures and markets growth substrates, fertilisers and greenhouse technology for both organic and traditional cultivation.

The Novarbo™ system is patented and has been tested in co-operation with professional growers and research institutions. It operates efficiently in different climatic conditions and is applicable for both new and old greenhouses. The system is individually tailored to suit each location. The capacity of the system can also be individually selected according to the requirements of the plants and the greenhouse.

Novarbo Heat Reuse™ offers an eco-friendly and energy-efficient method for energy management. It is a new solution that enables cost-efficient climate control of the greenhouse.

Novarbo – Creating greener growth.

Scan
the code!



You will get more information about these topics:

■ **Savings all year round**

Examples of energy efficiency calculation

■ **Increased yield and better quality**

The benefits offered by the system

■ **Experience of use**

The Novarbo Heat Reuse in the greenhouse of Timo Juntti Oy's garden in Piikkiö.

 GROWTH SUBSTRATES

 FERTILISERS

 GREENHOUSE TECHNOLOGY

NOVARBO

CREATING GREENER GROWTH

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