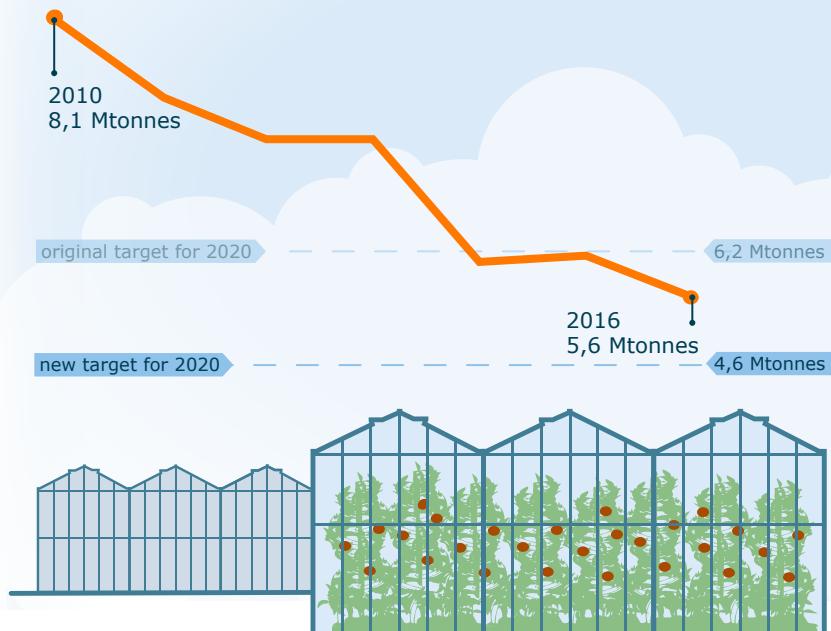


# Further reductions in CO<sub>2</sub> emissions in the greenhouse horticulture sector in 2016

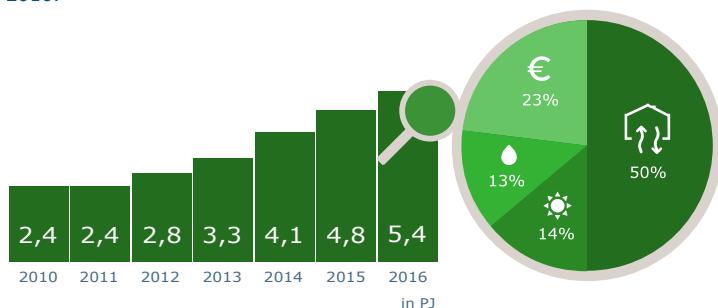


**There has been a further reduction in CO<sub>2</sub> emissions in the Dutch greenhouse horticulture sector in 2016, dropping from 5.8 to 5.6 Mtonnes. In the period 2010-2016, emissions declined by 31% from 8.1 to 5.6 Mtonnes. This puts the CO<sub>2</sub> emissions of 1.2 Mtonnes below the original goal of 6.2 Mtonnes, and 1.0 Mtonnes above the revised goal of 4.6 Mtonnes for 2020. The parties in the Covenant technically corrected the CO<sub>2</sub> goal to reflect the decrease in acreage and lower electricity sales.**

Since 2010, CO<sub>2</sub> emissions have declined by 2.2 Mtonnes, corrected for the outside temperature. The total CO<sub>2</sub> emissions in 2016 are 18% below the level of 1990, meaning that greenhouse horticulture is ahead of national development (+9%). This is clear from the Energie-monitor Glastuinbouw (greenhouse horticulture energy monitor) operated by Wageningen Economic Research.

## Decline in energy consumption in cultivation

In the greenhouses, energy is primarily required for heating (warmth) and lighting (electricity). While the energy consumption per m<sup>2</sup> increased as a result of intensification (due to lighting and other factors), extensification (due to decrease in the acreage of energy-intensive crops and other factors) caused a decrease in energy consumption per m<sup>2</sup> and at the same time energy was saved. On balance, energy consumption per m<sup>2</sup> of greenhouse space declined by 9% between 2010 and 2016. As a result, CO<sub>2</sub> emissions declined by 0.50 Mtonnes. From 2010 to 2015, energy savings accounted for 30% of the reduction in CO<sub>2</sub> emissions. Because of the further development of intensification in 2016 and the reduced extensification, energy savings increased in 2016.



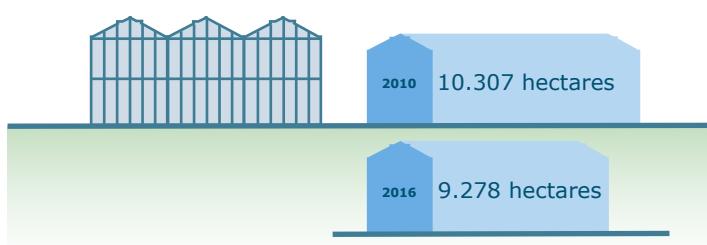
## Increase in use of sustainable energy

In the period 2010-2016, the use of sustainable energy in Dutch greenhouse horticulture more than doubled (+126%). As a result, CO<sub>2</sub> emissions decreased by 0.17 Mtonnes. Sustainable energy comprises geothermal heat (50%), solar energy (14%), biofuels (13%) and the purchase of sustainable energy (23%). Geothermal heat is the largest sustainable source and its use has greatly increased thanks to projects on large-scale greenhouse horticultural holdings and within growers' collectives.



## Decline in sale of electricity

The Dutch greenhouse horticulture sector generates warmth and electricity on a large scale using gas-fuelled combined heat and power installations. For this form of electricity generation, the heat that is released is used to heat the greenhouses. Besides use within the greenhouse, a lot of the electricity generated is sold. Due to the low electricity prices, generating electricity has become less attractive, and consequently the number of kilowatt hours sold by growers in the period 2010-2016 declined from 8.4 to 4.9 billion. This equates to a reduction in CO<sub>2</sub> emissions from greenhouse horticulture of 0.96 Mtonnes.



## Smaller area covered by greenhouses

The total area covered by greenhouses declined from 10,307 to 9,278 hectares in the period 2010-2016. Amongst other reasons, this was due to the economic situation. This decline of around 10% led to a reduction of CO<sub>2</sub> emissions of 0.52 Mtonnes.