



**UP-CYCLING OF
COFFEE-TO-GO-CUPS =
IMPROVING THE
CO₂ BALANCE**

PYREG

Closing material cycles by using coffee-to-go-cups as a valuable resource

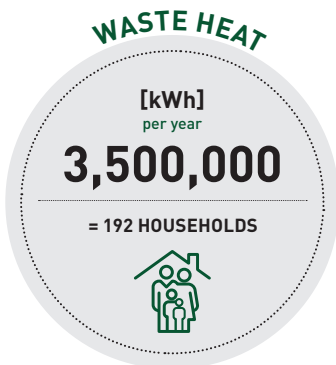
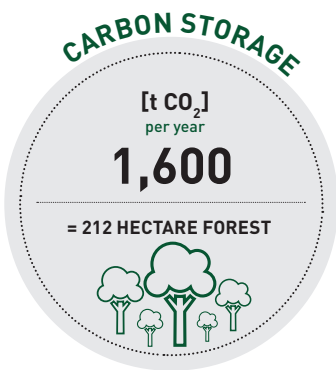
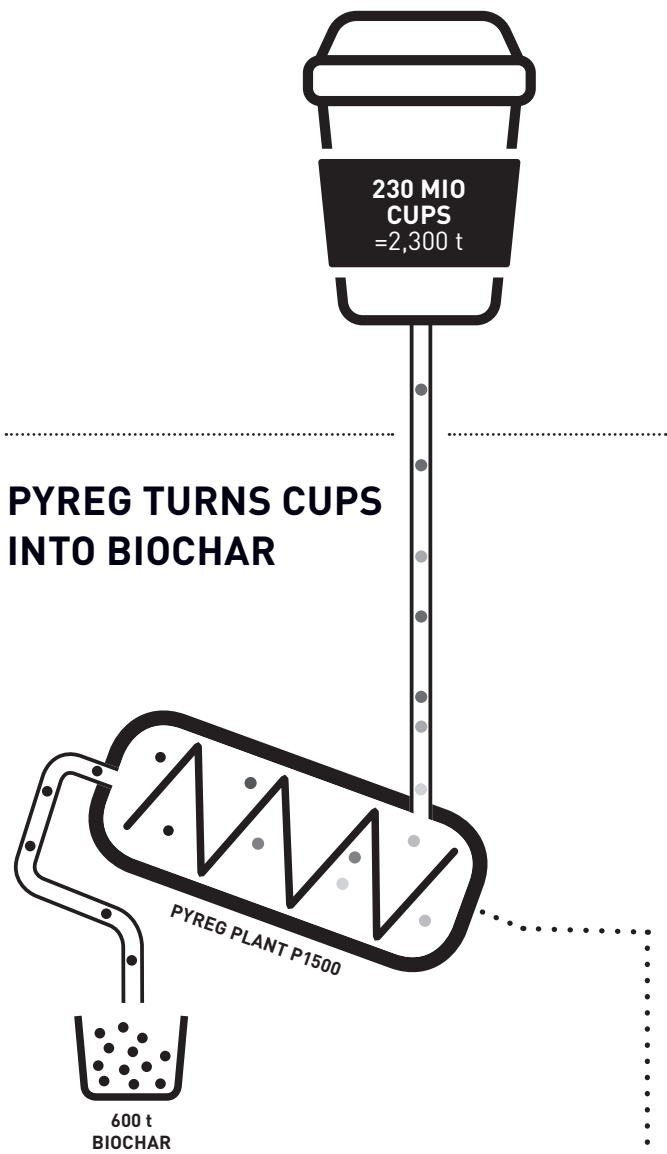
Returnable cups have to be used 10-25 times to have a better ecological balance than a commonly used coffee-to-go-cup. Therefore the use of returnable cups can only solve a part of the problem. Recycling solutions for one-way-cups exist, but the need of clear-cut separation as well as pollution due to food residues and PE waste (such as straws and lids) make the implementation difficult. As a result most of the one way packaging is burned in huge incineration plants.

PROBLEM

“2,8 billion one-way-cups block german waste bins”, is only one of many headlines found in the media today. Criticized are not only the cups themselves, but also the distributing companies.

CARBONISATION IS THE SOLUTION

Within the carbonisation process coffee-to-go-cups are carbonized at a temperature of 500-700 °C. During this process the waste is reduced by three quarters of the amount – 100 tons of cups are reduced to 25 tons of biochar. The energy which is needed for this process is produced by the system itself. Additionally 600 kWh of waste heat can be used for other purposes, e.g. one PYREG system can heat up to 190 households. Certainly a perfect up-cycling.



CHARACTERISTICS

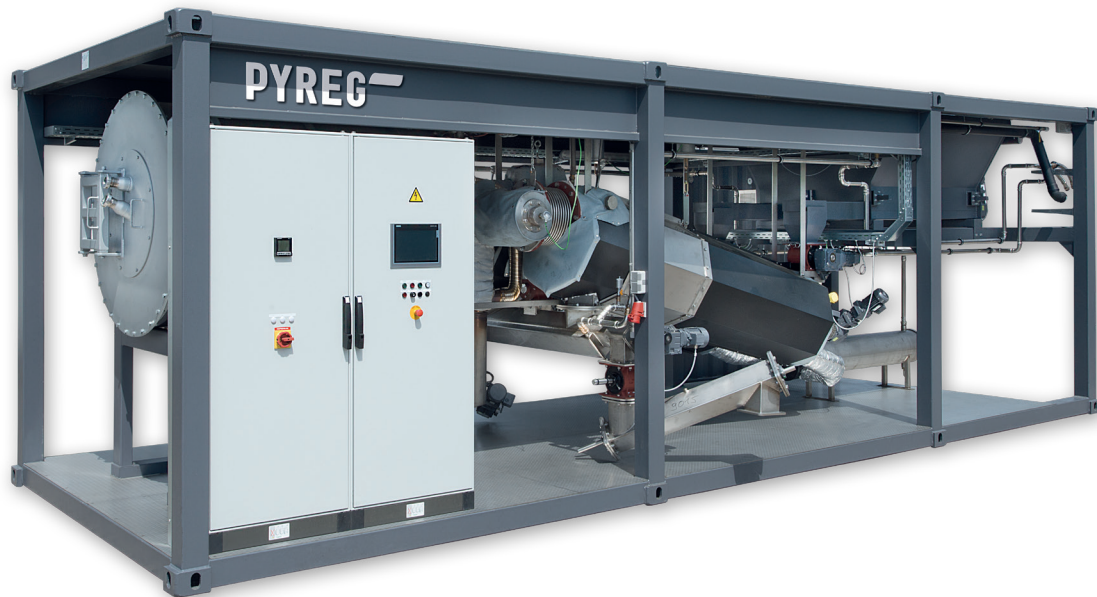
High quality biochar has many advantages. As soil improver biochar functions as a sponge, that stores water and nutrients at first before a slow release. It also supports the humus formation and the crop growth and at the same time reduces the use of mineral fertilizer. Crop failure is reduced and material cycles are being closed.

DIFFERENCE

In contrast to burning the waste, the included carbon is not being released into the atmosphere but being sequestered during the process. Other waste products – such as plastic straws – evaporate through the high temperature. Carbonisation is in comparison to combustion not only climate neutral – it even stores additional CO₂.



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RECYCLING



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