

Torrefaction and gasification

Innovative and scalable technology that produces a sustainable synthetic gas

In addition to sustainable electricity, the energy transition also requires more and more renewable gas. The Torrgas process converts waste streams into synthetic gas (syngas), more sustainable and efficient than combustion. The resulting syngas is a good alternative for fossil fuels and feedstocks. Besides, it enables the sustainable synthesis of a wide range of base chemicals.

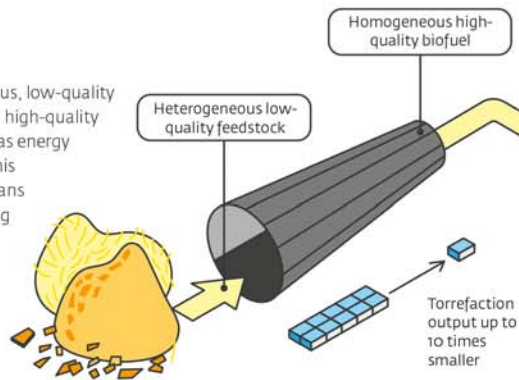
Waste streams as feedstock



Torrefaction processes use a wide range of waste streams that would otherwise be burned or left to perish. This greatly increases the amount of waste that can be reused.

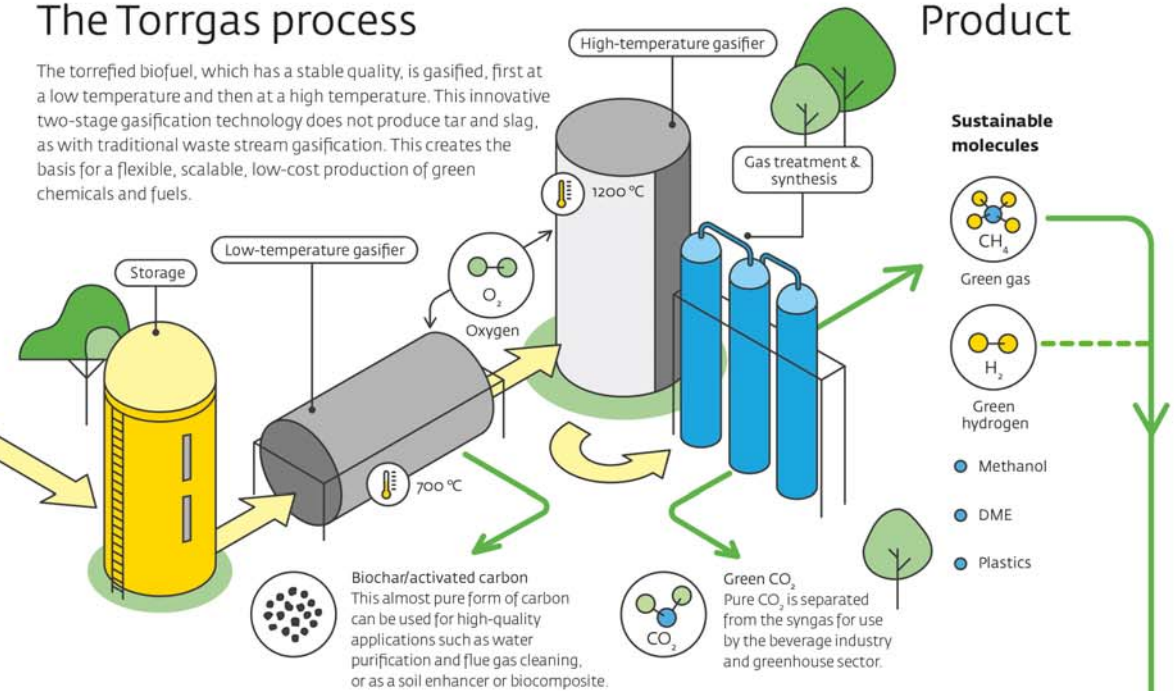
Torrefaction

Torrefaction converts heterogeneous, low-quality waste streams into homogeneous, high-quality biofuels that are around ten times as energy dense as the original feedstocks. This enables efficient transport and means torrefaction is a vital link in enabling large-scale reuse of problematic waste streams.



The Torrgas process

The torrefied biofuel, which has a stable quality, is gasified, first at a low temperature and then at a high temperature. This innovative two-stage gasification technology does not produce tar and slag, as with traditional waste stream gasification. This creates the basis for a flexible, scalable, low-cost production of green chemicals and fuels.



Uses of green gas

The Torrgas process produces green gas from syngas. This gas is transported through gas infrastructure to users in the industrial domain (for use as a feedstock and for process heating) and to the built environment.



Benefits of the Torrgas process



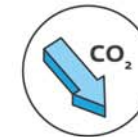
Scalable
A Torrgas plant can be scaled up to 100 MW.



Affordable
Activities such as the scaling up and marketing of biochar and green CO₂ make it increasingly cheaper to produce syngas. So much so, in fact, that it can even compete with fossil alternatives on price.



Fully circular
Low-quality waste streams are fully converted into high-value molecules (syngas and green CO₂) and products (biochar).



CO₂ reduction
Waste streams are converted into usable products. This prevents combustion and carbon emissions, effectively removing CO₂ from the atmosphere.

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crossing borders in energy