

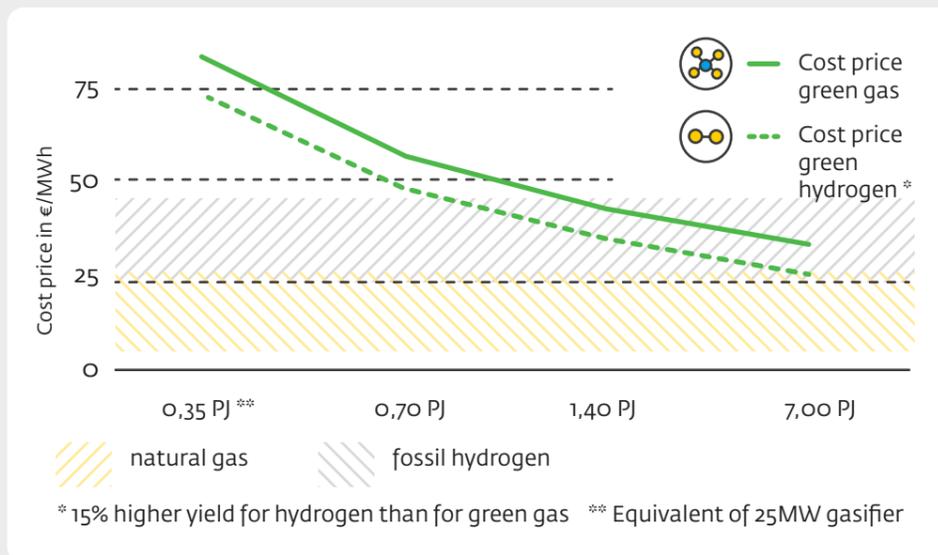
# TorrGas Outlook 2030: scalable, affordable and CO<sub>2</sub> negative green gas and hydrogen production

More than 25PJ of green gas capacity by 2030

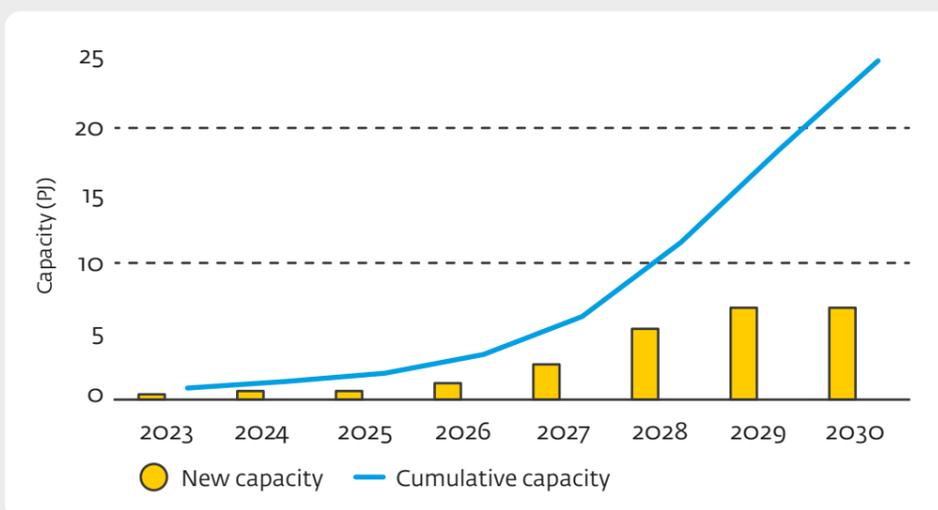
TorrGas technology is scalable to 100 MW (1,4 PJ green gas) per gasifier, which is an essential element to low cost green gas and green hydrogen production. By using high (volumetric) energy density torrefied pellets, TorrGas plants ensure there is no dependence on locally available biowaste and enable efficient supply for upscaling. The conversion of waste streams into high value products (green gas or green hydrogen and biochar) significantly reduces the carbon footprint.

## Scale up and lower costs

TorrGas technology can be scaled up to 100MW per gasifier.



Scaling up results in dramatic cost reductions in both Capex and Opex, allowing green gas and hydrogen to be produced at competitive price levels compared to fossil by 2030.



TorrGas plants are aimed to scale up to 3 PJ+ per location by building plants with multiple gasifiers.

## Efficient and low cost transport

Torrefaction converts heterogeneous, low-quality waste streams into homogeneous, high-quality biofuels.

- Torrefaction increases energy density and thus dramatically decreases the number of transport movements.
- Less and simpler handling transactions, also enabling efficient supply by barge or vessel.
- Significantly lower carbon emissions as a result (LCA comparison to untreated biomass supply); typical carbon efficiency of 85-90%.



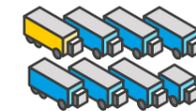
**Torrefied pellets**  
One truck of torrefied pellets...



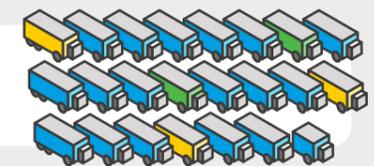
Transport movements per day per 0,1 PJ green gas.



**Manure**  
... equals 7,5 trucks of manure...



**Grass / straw**  
... equals 22,5 trucks of grass or straw.



## Significant CO<sub>2</sub> savings

- Each operational 1,4 PJ TorrGas location saves minimally 130.000 MT of CO<sub>2</sub> emissions per year.
- CO<sub>2</sub> captured in biochar can be locked into long lifecycle products (composites, fertilizer). This creates a permanent carbon reduction of another 60.000 MT per 1,4 PJ green gas.
- A CO<sub>2</sub> price of €50 per MT results in a €15-20 per MWh lowering of green gas or green hydrogen costs, enabling fossil parity at relatively low CO<sub>2</sub> prices.

