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How did we calculate the renewable sources needed to meet the 14% SAF 2030 target in the Netherlands?

Explaining the numbers

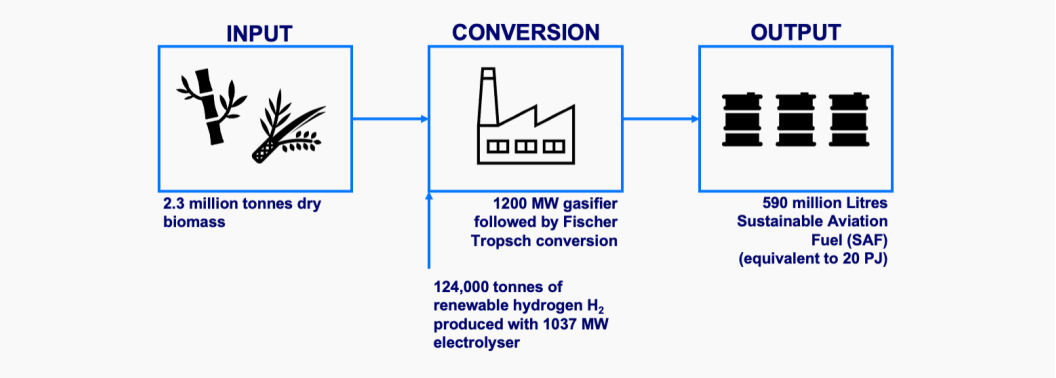

Figure 1: Schematic example of the inputs and conversion technology required to produce sustainable aviation fuels to meet the 2030 target in the Netherlands

Based on the 20 PJ that are required to reach the 2030 target in the Netherlands, we can calculate how much input is needed to produce enough Sustainable Aviation Fuel (SAF).

In this example, we use dry biomass (for instance in the form of forest and agricultural residues like straw) as source of carbon dioxide (CO_2) and combine it with renewable hydrogen (H_2) (Figure 1). Together, these can be converted using gasification and Fischer Tropsch technology pathways in a ratio of 2.1 hydrogen to 1 carbon monoxide (CO).

A gasifier of 1200 MW with an input of 2.3 million tonnes of dry biomass is used to produce syngas. This amount of biomass represents around 5% of the potential 40 million tonnes of dry biomass that the Netherlands can supply domestically by 2030.[1]

In addition, 124,000 tonnes of renewable hydrogen is also needed to produce this SAF with a 1037 MW electrolyse which requires the use of 5,200 GWh (= 18.7 PJ) of renewable electricity.

In this example, we imagine that 30% of the electricity comes from solar energy and 70% is from wind energy. To put this into perspective, this represents 1150 MW capacity of solar energy which is equivalent to 2 million solar panels requiring 2,300 hectares of land

[1] RVO, Platform Bioeconomie and Chemistry NL 2025, Creating value in the bio-based economy

and 1,200 MW of wind energy which is equivalent to 120 offshore wind turbines of 10 MW each.

The syngas is processed using Fischer-Tropsch to produce **590 million litters of SAF**.

Looking for opportunities in regions to increase investments in renewable fuel by reaching new groups

Everyone can play a role in increasing the demand and investment in the scale-up of the necessary renewable fuels production to reach our climate targets.

As part of this campaign, we are looking for opportunities within regions, highlighting what of renewable fuels volumes can be produced if we mobilise the demand. Using the sustainable raw materials that are already there, we want to show examples of what could be possible.

By calling upon new groups, such as the travellers who may often be overlooked, we highlight that they can also participate in mobilising new investments.

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