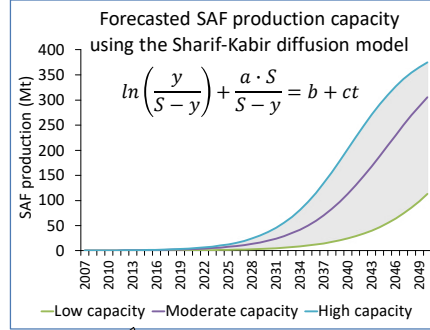


# Greenhouse gas emissions reduction from the use of Sustainable Aviation Fuels out to 2050



Dr. Freddy S. Navarro Pineda, Dr. Robert Malina  
[\\*freddy.navarropineda@uhasselt.be](mailto:freddy.navarropineda@uhasselt.be)  
 U Hasselt  
 CMK – Centre for Environmental Sciences



Enough to produce the expected SAF capacity by 2050 [1]

The future SAF production was estimated using a diffusion model

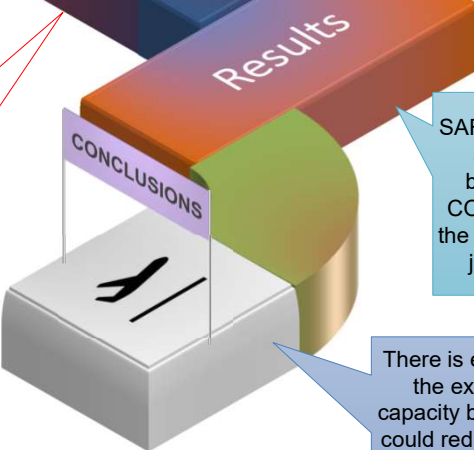
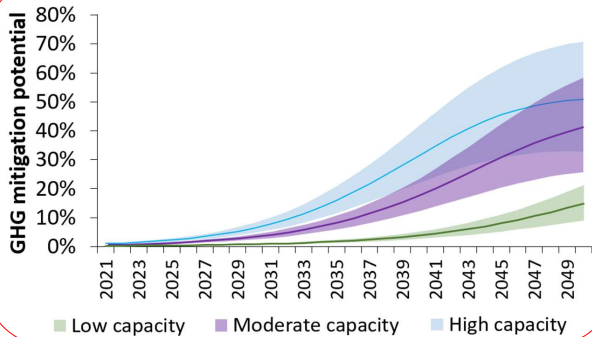
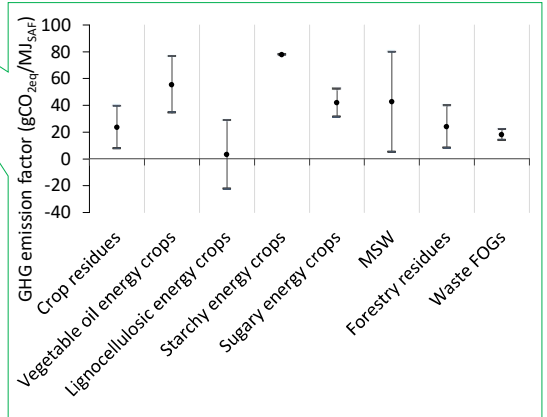
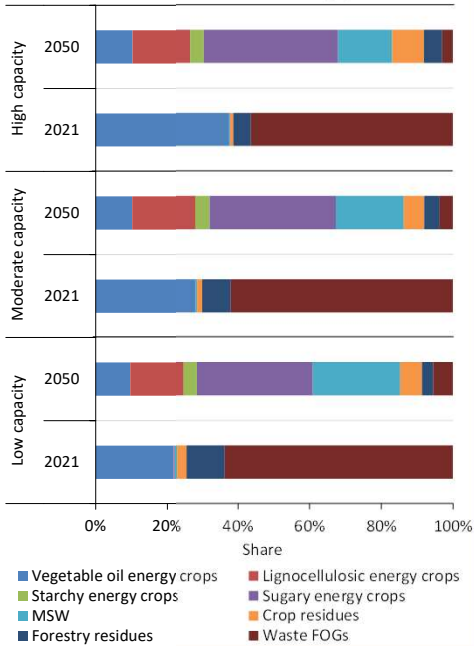
Unknown role of SAF on aviation decarbonization

Aviation fuels with lower GHG emissions

This depends on production capacity and feedstock availability

Taken from CORSIA [3]

Feedstock breakdown [2]



SAF GHG emissions by 2050 are estimated to range between 600 to 1500 Mt CO<sub>2eq</sub>, which are lower than the solely use of conventional jet fuel (1800 Mt CO<sub>2eq</sub>)

There is enough feedstock to cover the expected SAF production capacity by 2050. Furthermore, SAF could reduce the GHG emissions of the aviation sector by 9 – 20% and 30 – 70% in the most pessimistic and optimistic scenarios, respectively

## References

- [1] World Economic Forum, 2020. Clean Skies for tomorrow sustainable aviation fuels as a pathway to net-zero aviation.
- [2] Staples et al., 2018. Aviation CO<sub>2</sub> emissions reductions from the use of alternative jet fuels.
- [3] Carbon Offsetting and Reduction Scheme for International Aviation, 2019. Default Life Cycle Emissions Values for CORSIA eligible fuels