



Insight Session: Global feedstock assessment for SAF production

Worley Consulting
Low Carbon Team

11th November 2025



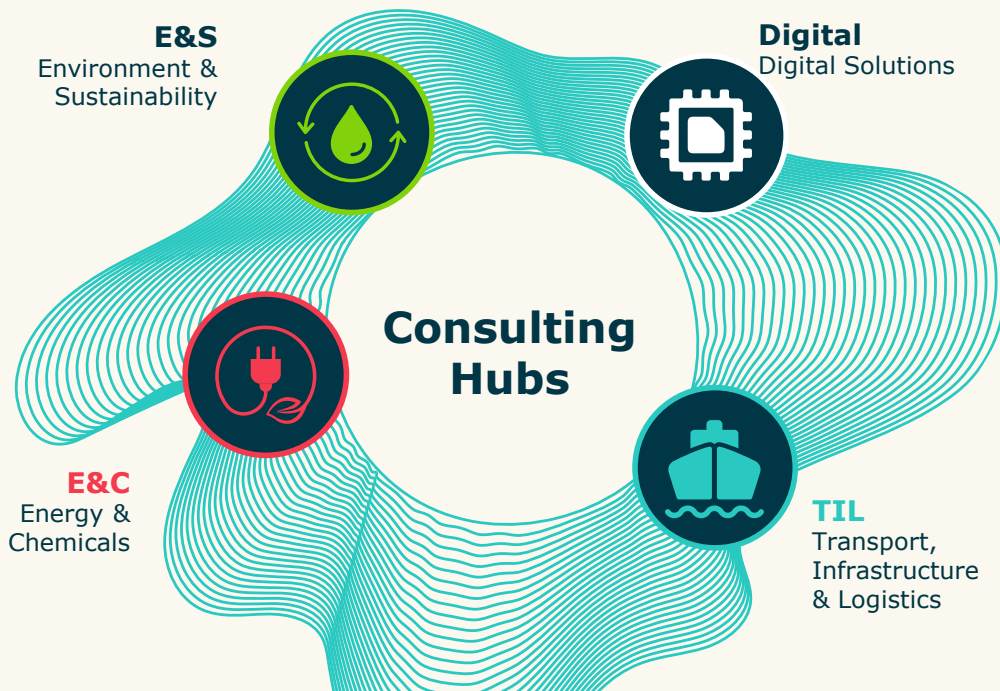


Worley's global group of consultants, scientists, engineers, and digital **experts dedicated to solving** the world's critical **infrastructure, environmental, energy, and resource challenges.**



Worley is a global professional services company of energy, chemicals and resources experts. We partner with customers to deliver projects and create value over the life of their assets.

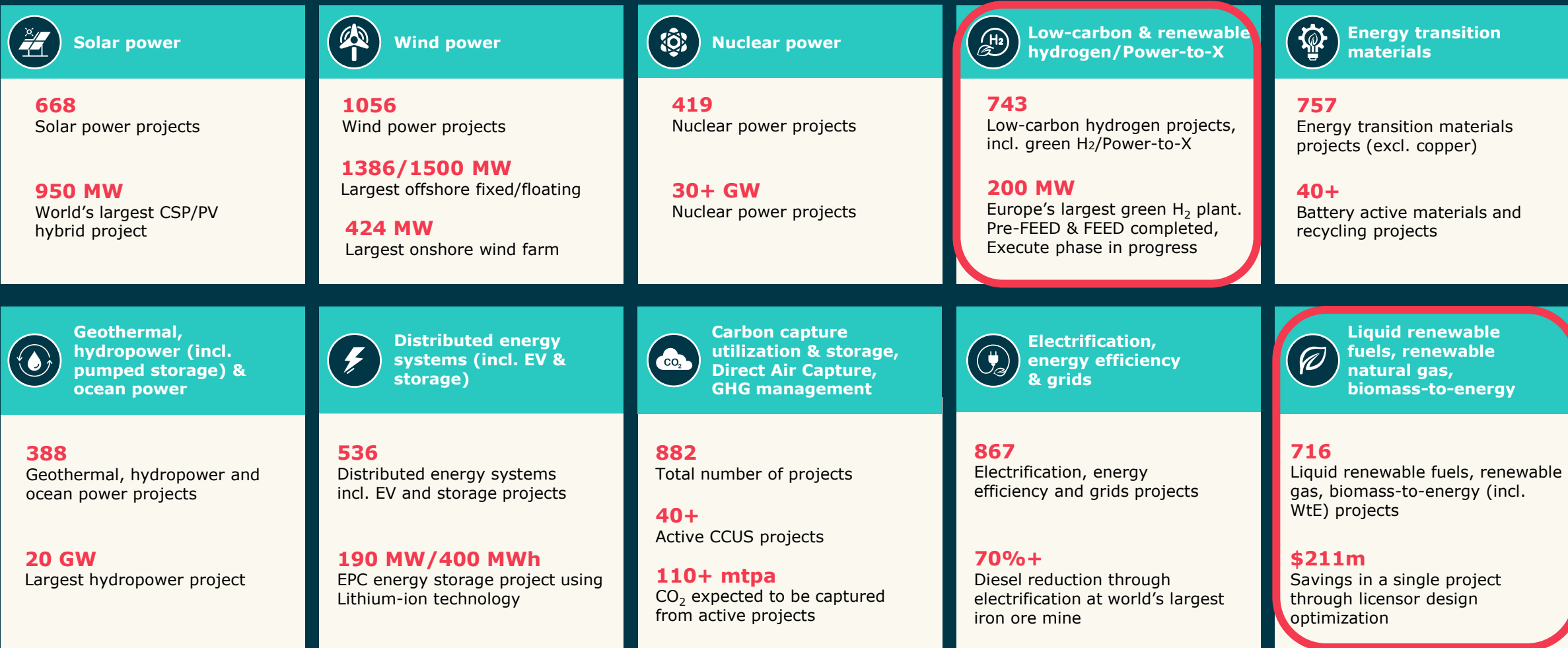
We're bridging two worlds, moving towards more sustainable energy sources, while helping to provide the energy, chemicals and resources needed now.



ENERGY TRANSITION PROJECTS

Summary of projects to date

6300+ projects*



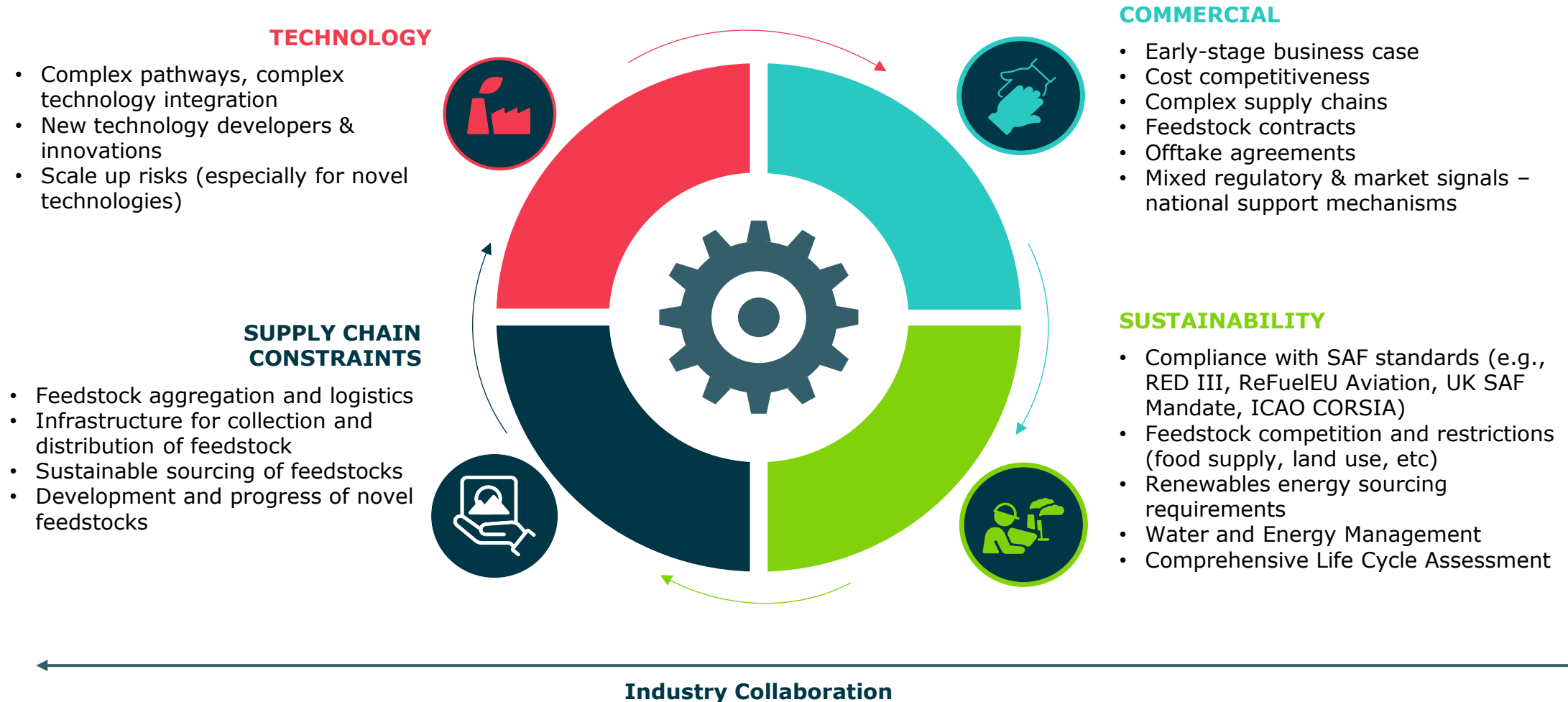
*Projects with multiple technologies are included in each relevant category but only counted once in the aggregate number. Does not include Natural Gas projects.

*References in notes field.

September 2025

Challenges Affecting SAF Development

We understand the challenges in the SAF market and support our clients to unlock opportunities and accelerate deployment.

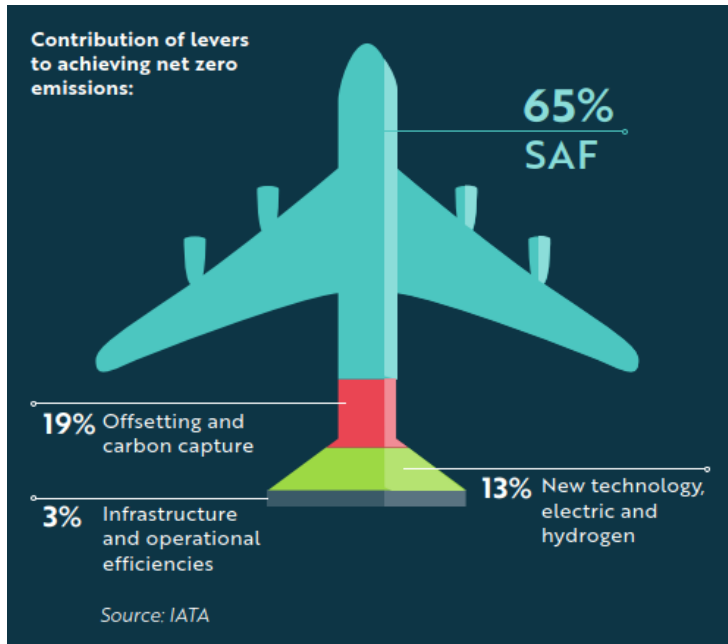


Introduction

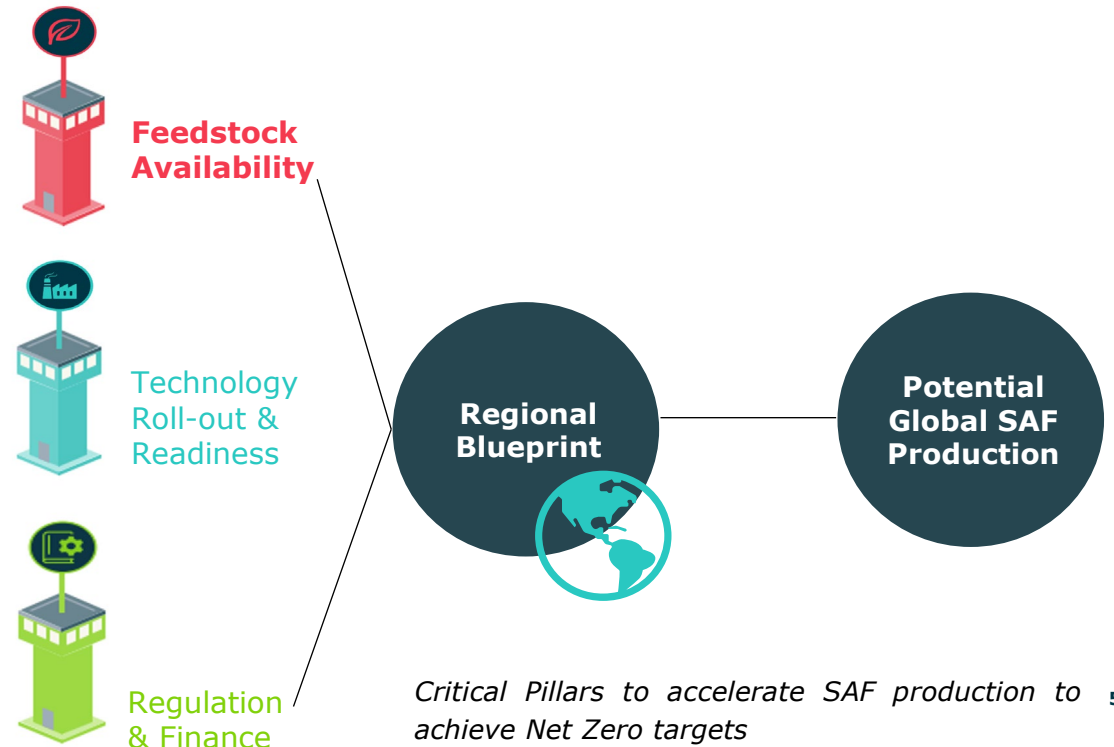
We were contracted by the International Air Transport Association (IATA) to obtain a clear, unbiased view on potential SAF production volumes in the short, medium and long term, to investigate the barriers to SAF production, and to identify the actions required to unlock the industry.

SAF estimated output of **2 Mt** in 2025 represents only 0.7% of total jet fuel consumption. The annual production must increase exponentially to reach **500 Mt in 2050** to enable net zero CO₂ emissions.

A comprehensive, credible, and **robust assessment of feedstocks** that can be used to produce SAF is necessary to allocate prioritized support to the **most promising areas and production pathways**.



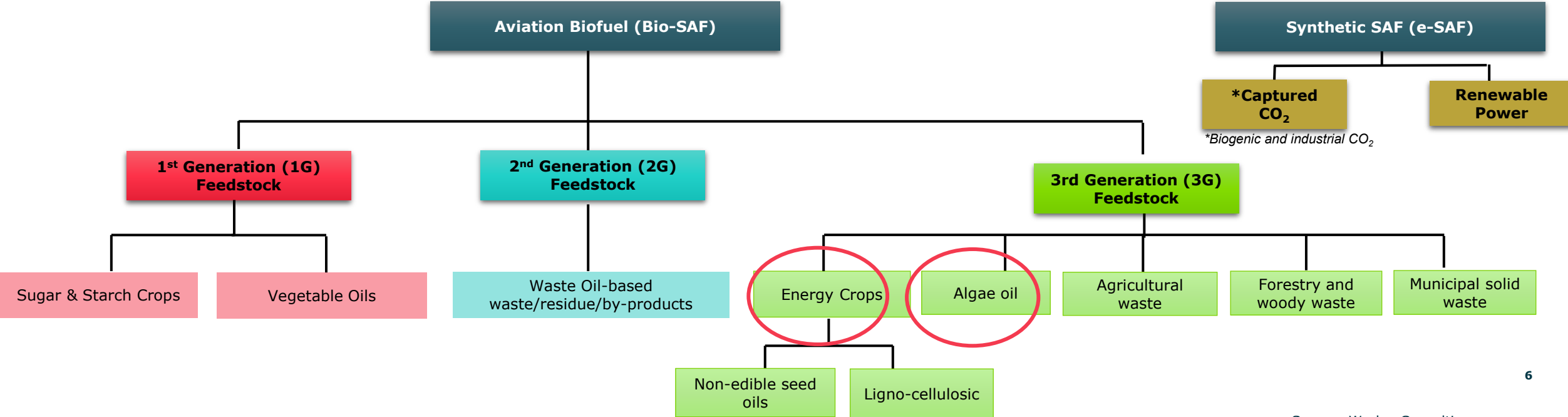
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Feedstock Assessment

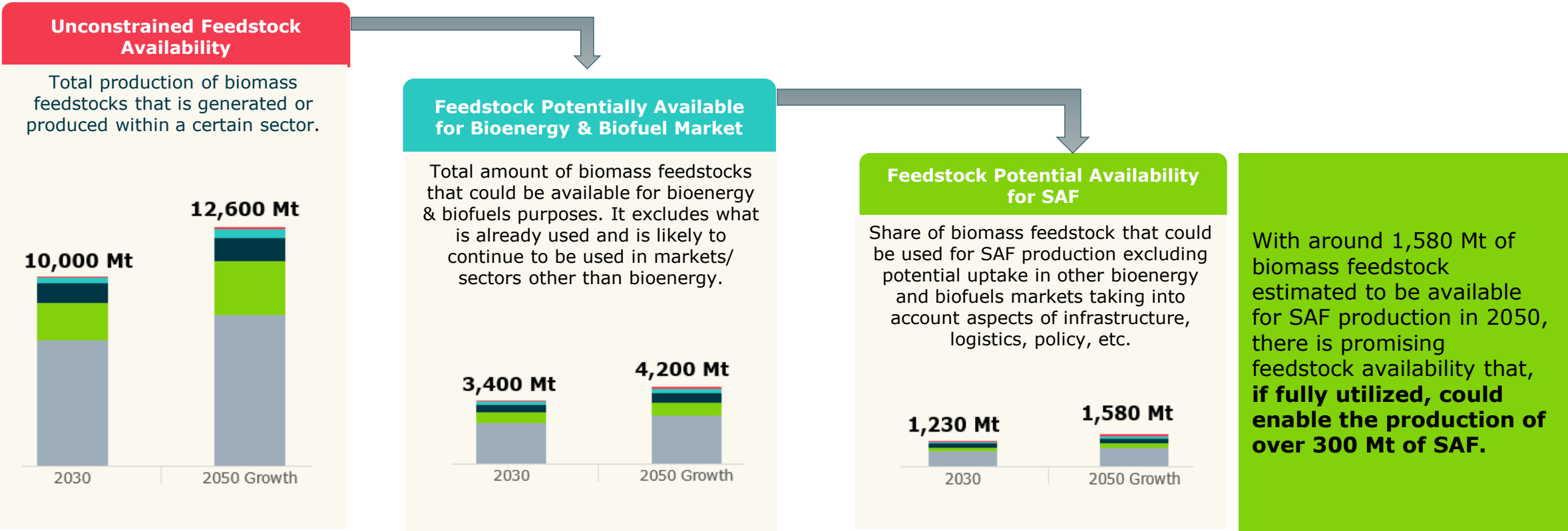
Defining the different feedstocks available by geography enables analysis of local biomass potential and competitive markets, allowing for geographic SAF production hotspots to be identified.

- The biomass feedstock assessment for SAF included a broad range of bioresources.
- To complement the biomass study, Worley Consulting engaged Supergen Bioenergy Hub, to conduct a high-level, indicative analysis of global energy crop potential. Given the immaturity of the market and uncertainty on the likelihood of said energy crops being cultivated, the use of energy crops as a feedstock was not included in developing the SAF production forecast.



Biomass Assessment

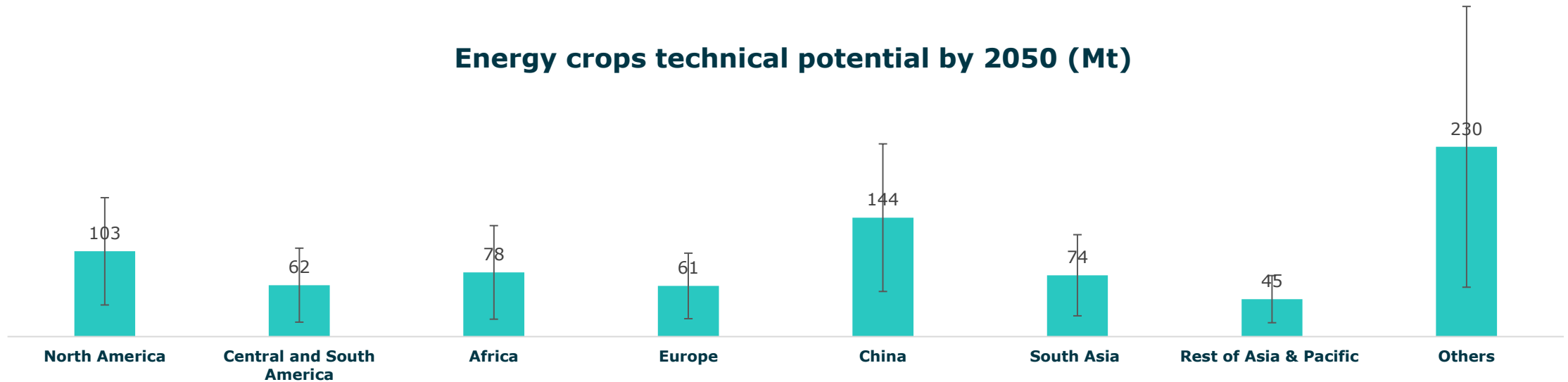
We adopted a bottom-up approach to ensure global consistency using standardized metrics and assumptions. When assessing feedstock availability for SAF, there are three layers that consider existing biomass logistics infrastructure, geographical distribution, and specific policy drivers.



Energy Crops

If energy crops are successfully established on marginal or degraded land, they could add to the potentially available feedstocks for SAF. Their inclusion could expand the oil-based feedstock supply for HEFA technology as well as cellulosic feedstocks for routes such as EtJ and gasification.

Energy crops technical potential by 2050 (Mt)

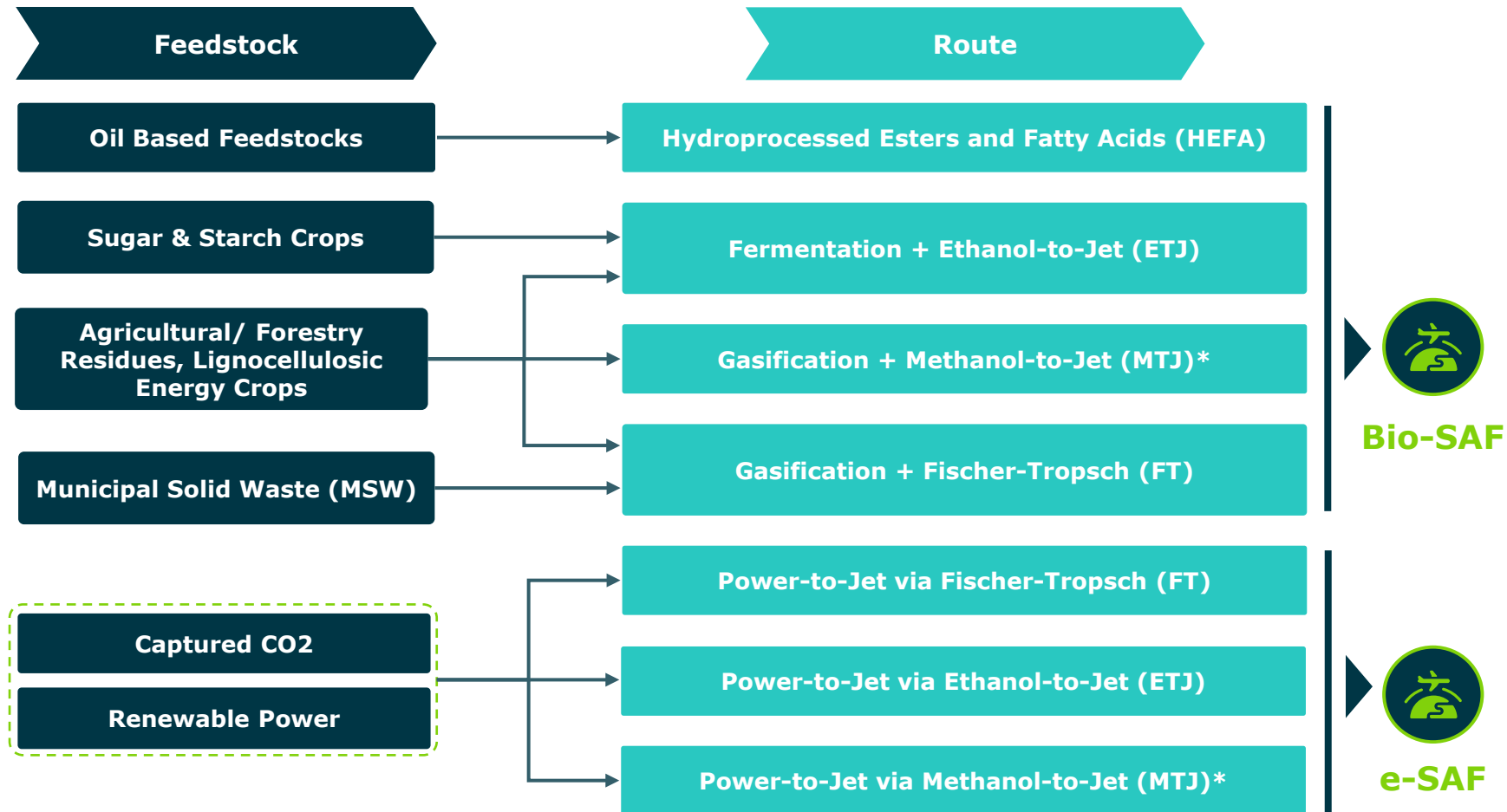


- This assessment provided regional potentials on cultivating non-food energy crops for SAF production. The purpose of the study was to understand the potential production of energy crops which could be grown and subsequently used for the production of biofuels.
- It should be noted that the study includes several assumptions and therefore the results presented have a considerable degree of uncertainty.

Note: Others includes transition economies in Central Eastern Europe and Central Asia such as Poland, Hungary, Czech Republic, Bulgaria, Romania, Slovakia, Russia, Ukraine, Belarus, Armenia, Georgia, Azerbaijan, and Kazakhstan, etc.

Technology Overview

There are multiple routes to producing SAF, using a wide range of feedstocks. Meeting future SAF demand will require all available routes to be leveraged.



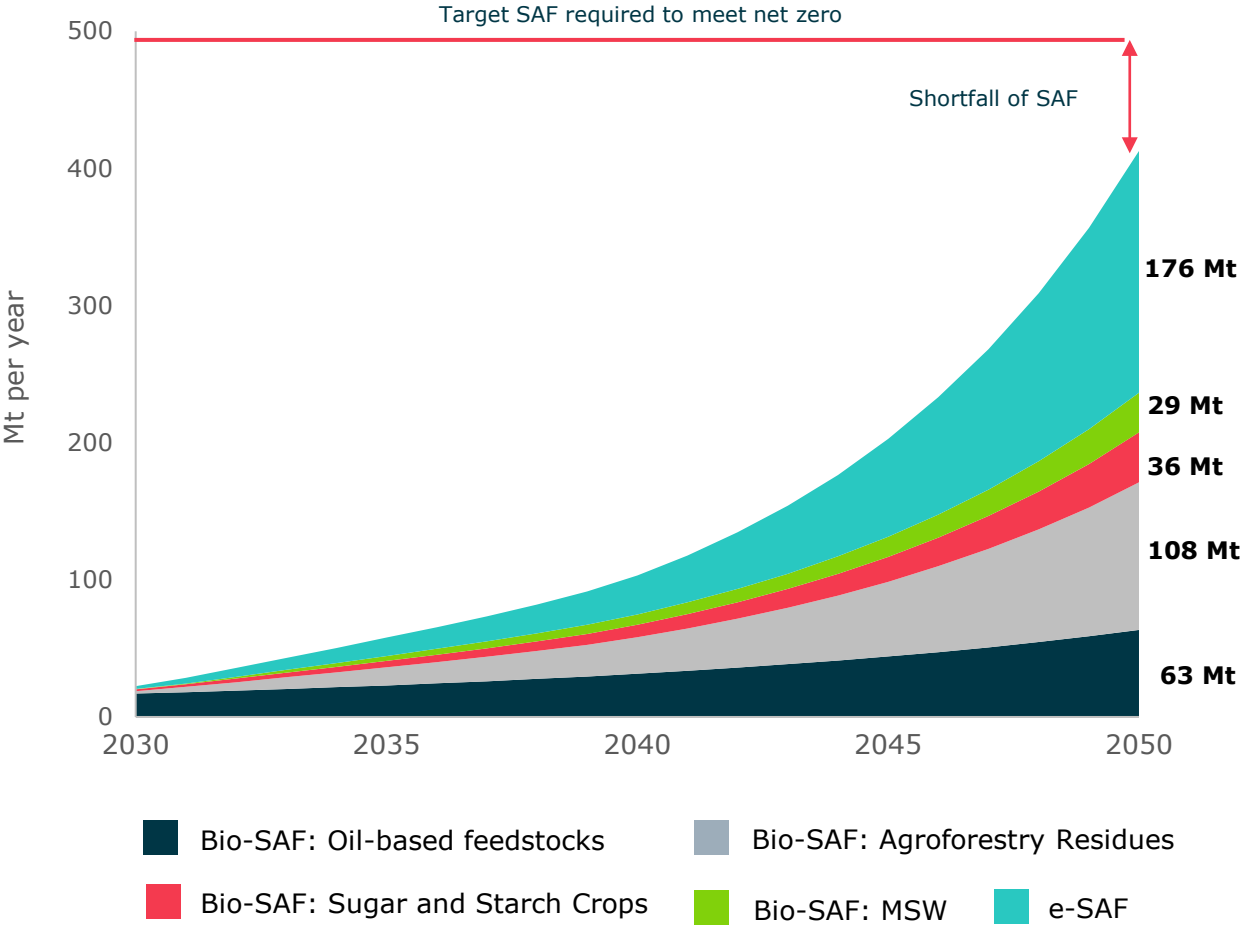
There are many other potential processes and routes for SAF production being considered, including pyrolysis and hydrothermal liquefaction.

SAF must meet carbon intensity and sustainability criteria for certification – this can vary by region

*The Methanol-to-Jet route is under ASTM evaluation

Global Forecast

Even with an ambitious expansion of e-SAF and many of the bio-SAF pathways, this core forecast indicates that global SAF production potential may achieve just over 400 Mt by 2050, revealing a significant shortfall compared to the 500 Mt required to achieve net-zero.



Feedstock: Globally there is sufficient feedstock to meet the 2050 SAF targets

Technology: The technology rollout/scale-up is a limiting factor and needs to be improved

Regulation & Finance: Financing for projects needs a creative and collaborative approach - bringing together industry, financing, airlines and government partners

Enablers to achieving 500 Mt of SAF in 2050



Industrial partnerships to de-risk projects through supply/demand guarantees between fuel producers and airlines



Policy incentives in support of SAF that **promote the uptake of new technologies** through funding or price support



Building durable trust among stakeholders, supporting engagement, collaboration, information sharing, transparency and value sharing



Shifting value beyond solely financial to include environmental and social value



Development of **renewable power capacity and grid infrastructure**



Government and private sector **support for SAF**, promoting production in all regions and **maximizing utilization of all feedstocks**



Maximizing commercially developed production routes and feedstocks, while supporting development of new feedstocks and technologies



Strengthening Original Equipment Manufacturer (OEM) and equipment supply chains and fostering early collaboration with project developers



Supporting global access to biomass feedstock by addressing any logistics, infrastructure, and supply chain bottlenecks



Standardization, replicate designs and build in parallel

Read the Full Report

[Access the Report here](#)



Sufficient SAF feedstock available, but tech rollout is key to net zero

New IATA study with Worley Consulting finds deployment pace, not supply, is the key challenge to decarbonizing aviation.

Worley Consulting, in collaboration with the International Air Transport Association (IATA), has [published a study](#) confirming that feedstock availability is not the main barrier in achieving net zero aviation – the real challenge lies in accelerating the rollout of sustainable aviation fuel (SAF) technologies and diversifying production pathways.

Worley Consulting conducted a feedstock assessment at a regional level, developing a robust data set and delivering actionable analysis of feedstock availability across all SAF pathways. The study provided:

- clear visibility into realistic SAF feedstock availability by region
- technology assessments across all SAF pathways, including technology and commercial readiness
- a review of the current regulatory environment



Q & A



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