Clean Planet Technologies Secures US and Saudi Patents for Its Pyrolysis-Oil Upgrading Process, Strengthening the UK's Plastics-to-SAF Innovation Push

Monday 8 December, 2025

Clean Planet Technologies (CPTech), part of the Clean Planet Group, has announced that its core pyrolysis-oil upgrading process has now been formally patented in both the United States and Saudi Arabia, expanding the intellectual property protection of a technology that underpins the company's growing Plastics-to-SAF programme.

The newly granted patents follow the UK patent first awarded in 2022 and extend the global reach of CPTech's proprietary method for converting low-grade, highly variable pyrolysis oils into ultra-low sulphur fuels and circular petrochemical feedstocks — a breakthrough that improves stability, reduces impurities, and enables far more efficient downstream upgrading.

A foundation technology now enabling the next era of Plastics-to-SAF

Originally developed for ultra-low sulphur diesel, naphtha and marine fuels, CPTech's multi-stage upgrading process — fractional condensation, tailored hydrotreating, and precision distillation — is now a central enabling technology inside the company's Plastics-to-SAF (P2SAF) programme.

This approach allows CPTech to transform mixed waste plastics into an ultra-clean product suitable for further refining into sustainable aviation fuel (SAF). It forms the backbone of the SAFe-P2SAF system unveiled by CPTech CEO Dr Andrew Odjo at the SAF Global Summit earlier this year, where he presented the UK's first Plastics-to-SAF pathway to more than 500 policymakers, airlines, and industry leaders.

> "The fundamentals matter," **said Dr Andrew Odjo**."Reliable, consistent upgrading of plastic-derived oils is essential if we are to diversify SAF feedstocks. Securing these patents strengthens our ability to scale this work globally."

Patents arrive at a pivotal moment for UK SAF innovation

The timing aligns with a surge in momentum for CPTech. The company recently teased the arrival of equipment for its first P2SAF pilot facility, planned for commissioning in Q1 2026. This will be the first real-world demonstration of the SAFe-P2SAF platform, transitioning the technology from stage-presentation to steel-in-the-ground deployment.

With UK and EU SAF mandates coming into force, increasing pressure on bio-based feedstock supply chains, and growing airline commitments to decarbonisation, alternative circular feedstocks such as waste plastics are gaining strategic importance.

By securing patent protection in two major energy markets — including the United States and the Kingdom of Saudi Arabia — CPTech strengthens its position to license, develop, and protect its technology across jurisdictions central to global fuel production.

Innovating at the intersection of plastics and aviation

CPTech's patented process solves long-standing challenges associated with raw pyrolysis oil, which is typically unstable, oxygen-rich, metal-laden, and unsuitable for use in refineries or engines without extensive upgrading. By increasing stability, controlling variability, and removing sulphur, nitrogen and other contaminants, the technology produces a cleaner, more predictable intermediate oil — exactly what is required for advanced aviation-grade upgrading.

> "This patent was never just about improving diesel," **said Dr Odjo.**"It was about unlocking a pathway for waste plastics to become genuinely circular. Today, that pathway leads directly into SAF."

Media:





Related Sectors:

Environment & Nature :: Manufacturing, Engineering & Energy :: Travel & Tourism ::

Related Keywords:

Clean Planet Technologies :: Plastics-To-SAF :: Sustainable Aviation Fuel :: Pyrolysis Oil Upgrading :: Waste Plastics Recycling :: Circular Economy :: SAF ::

Scan Me:

A strategic building block for what comes next

With further CPTech announcements expected later in the year, the expanded patent protection sends a clear signal: the company is not only innovating in the lab and on the stage — it is securing the legal and commercial underpinnings needed to scale plastics-to-fuel production globally.

> “Turning difficult waste into strategic low-carbon fuels requires more than good science,” **added Dr. Katerina Garyfalou**, Clean Planet Technologies' COO. “It demands certainty, protection, and the ability to scale with confidence. These patents help us do exactly that.”

About Clean Planet Technologies

Clean Planet Technologies (CPTech) is part of the Clean Planet Group, dedicated to developing proprietary technologies that enable the sustainable use of plastics and the reduction of carbon emissions. Its portfolio includes innovations in Plastics-to-SAF, Plastics-to-Hydrogen, Plastics-to-Monomers, and containerised pyrolysis systems (CPS²). CPTech’s technologies support the circular economy by transforming low-value waste into high-value, low-carbon fuels and chemicals.

You can learn more about CPTech here

Company Contact:

Clean Planet Group

T. 020 3289 0055
E. hello@cleanplanet.com
W. https://www.cleanplanet.com/

Additional Contact(s):
Sophie Phelps

View Online

Additional Assets:

Newsroom: Visit our Newsroom for all the latest stories:
https://www.cleanplanet.pressat.co.uk