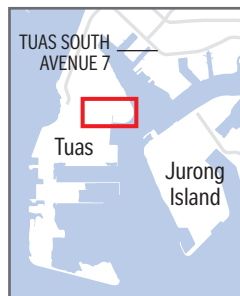
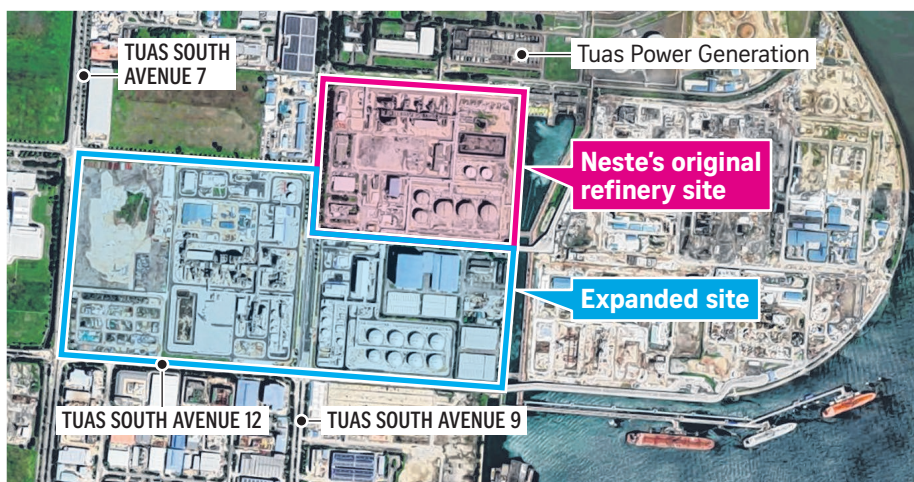


Scaling up green jet fuel production in Singapore

Finnish energy giant Neste officially opened its expanded refinery in Tuas South on Wednesday, making Singapore the world's largest producer of sustainable aviation fuel (SAF) by capacity. **The Straits Times** looks at what goes into making the renewable fuel.



EXPANDED SINGAPORE REFINERY



WHAT SAF IS MADE FROM

It is made from recycled waste materials from various sources, including:



Neste is developing technology to tap:

- **New raw materials**
Algae, agricultural and forest harvesting residues, and municipal solid waste
- **Power to Liquid (e-SAF)**
A synthetic fuel created with renewable energy, which is used to combine hydrogen molecules with carbon extracted from the atmosphere or from industrial waste gas

HOW SAF IS MADE

- 1 Pre-treatment**
Waste and residue materials are filtered to remove impurities
- 2 Refining**
Oxygen and other impurities like sulphur and nitrogen are removed from the treated renewable raw material to create pure hydrocarbons
- 3 Distillation**
The refined product is distilled further to create SAF that meets regulatory standards

HOW MUCH SAF CAN BE PRODUCED IN SINGAPORE

Neste's expanded refinery in Singapore can produce up to a million tonnes of SAF, or around 1.25 billion litres, a year. While this is enough to fill **500 Olympic-size swimming pools** and is 10 times Neste's previous SAF capacity, it represents **0.35 per cent** of the 359 billion litres of fuel consumed by airlines globally in 2019.

BY THE NUMBERS

Up to 80 per cent of greenhouse gas emissions reduced by replacing regular jet fuel with SAF

About \$2.3 billion invested into expansion of Neste's Singapore refinery

Expanded plant spans 45ha, or about **64 football fields**, up from 19ha previously

Close to 300 workers employed, up from 120 before

