



Apical

**Vision and strategy on
sustainable supply chain of
Waste and Residues and
value added creation to
downstream HVO/SAF
production**

Low Carbon Biofuels Forum

Online Webinar, 17 January 2024


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Leading Vegetable Oil Processor with an Expanding Global Footprint



2nd Largest
Vegetable Oil
Processor




2022 Refining
Capacity
10.6M MT



Top 3
Most Transparent
Vegetable Oil
Company Globally



99.8%
Traceability to
Plantation



15%
Global Market
Share

Fully Integrated & Highly Efficient Operations Across The Value Chain



TRANSFORMATION OF WASTE TO ENERGY

Plantation



■ ■ **POME Oil and EFB Oil**
POME: Palm Oil Mill Effluent
EFB: Empty Fruit Bunches

Refineries



■ ■ **Refinery Waste and Residue Extraction**
(e.g. SBEO: Spent Bleaching Earth Oil)

HORECA, Industries, Households, Waste Banks etc.

■ ■ **Used Cooking Oil (UCO)**



Apical  
Production of SAF from Waste and Residues



Apical along with its joint venture partner **CEPSA** will build the **largest renewable diesel and SAF plant in Southern Europe** with a capacity of 500kMT reducing 1.5 million tons of CO2 per year

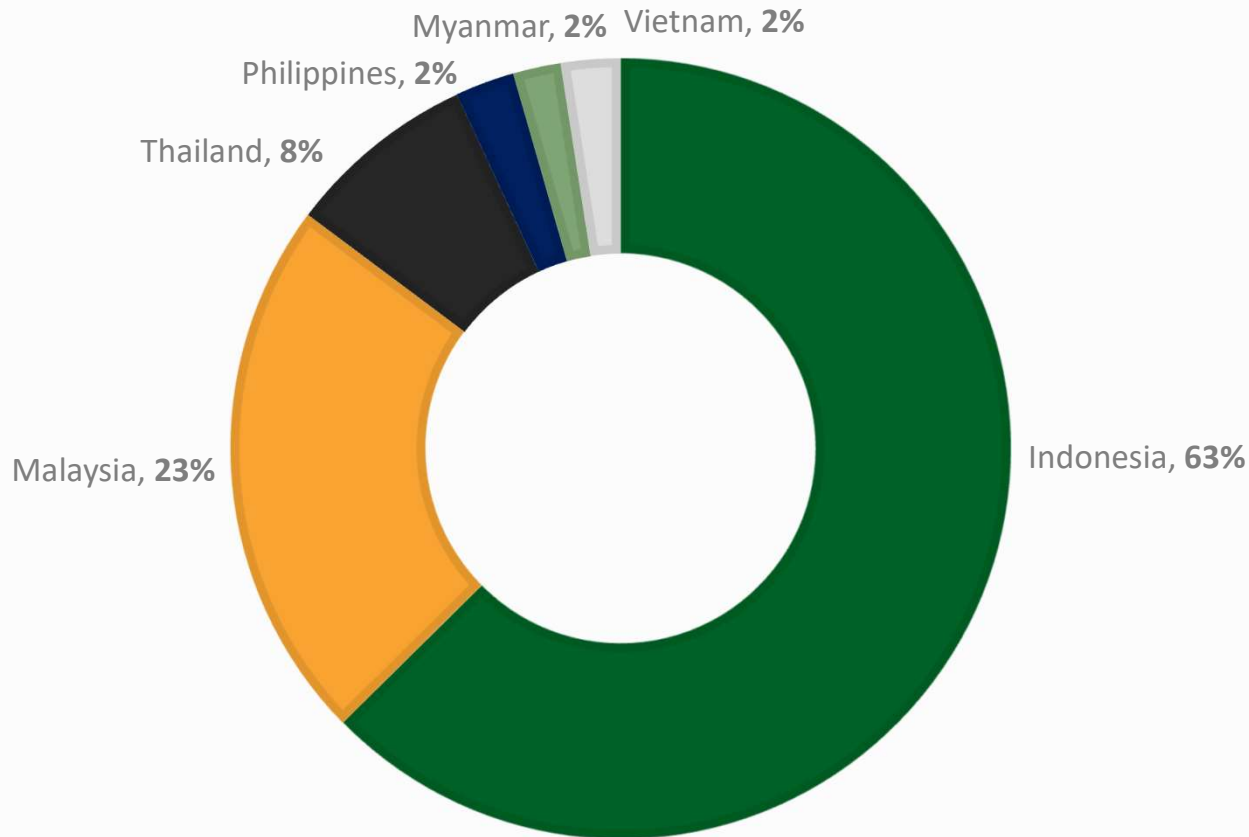
Capitalising on the strengths of ASEAN as a region to scale SAF production globally

**Affordability and
Accessibility of
Waste & Residues**

**Best GHG
Savings**

**Sustainably
Derived &
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Potential Feedstock for SAF in ASEAN



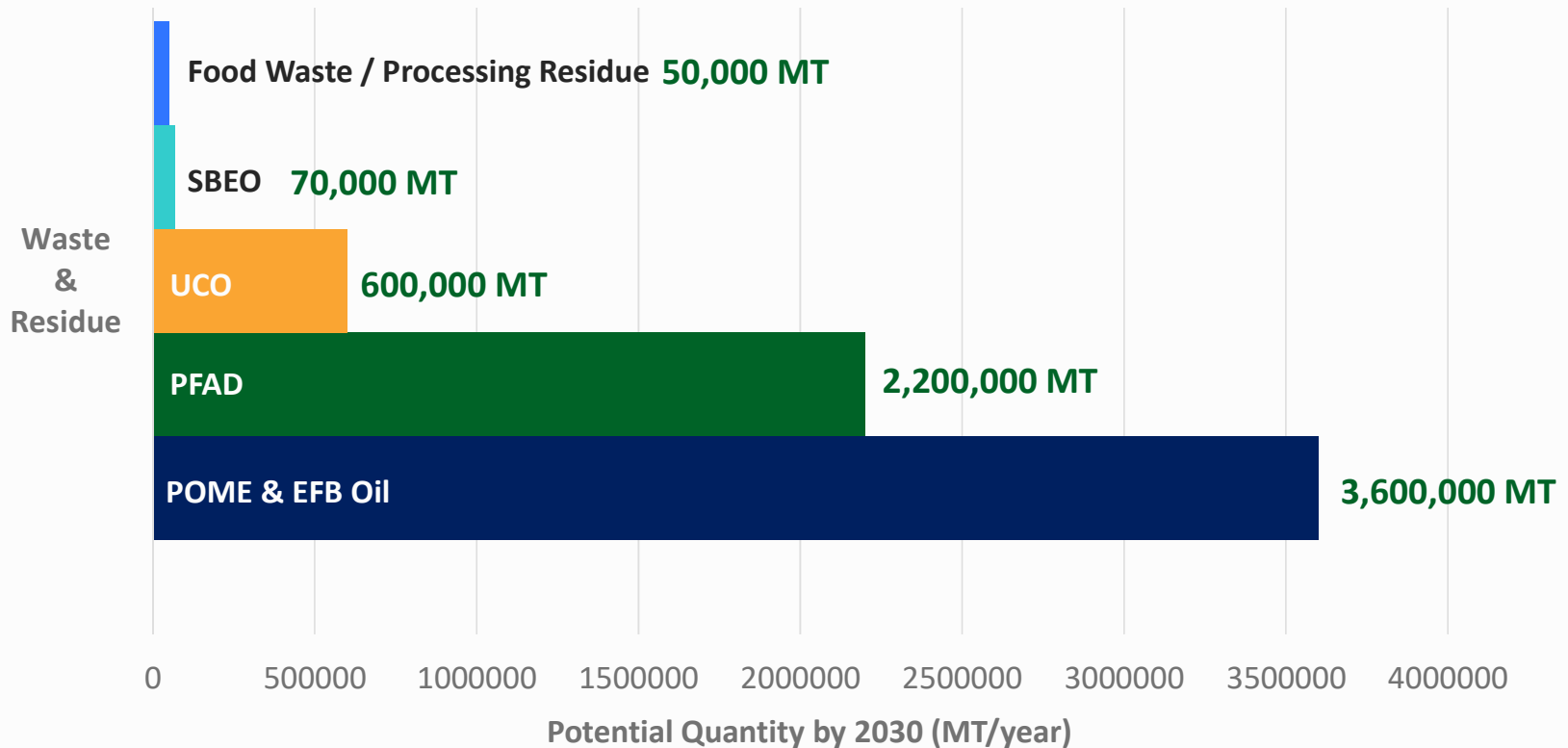
Six ASEAN countries combined have the potential to offer **more than 10.4 million MT of waste and residue oil** per annum for SAF production such as:

- Used Cooking Oil (UCO)
- Palm Oil Mill Effluent (POME)
- Empty Fruit Bunch (EFB) Oil
- Palm Fatty Acid Distillate (PFAD)
- Spent Bleaching Earth Oil (SBE0)
- Food Waste / Processing Residue

Indonesia's feedstock potential for HEFA SAF



Indonesia is capable of generating over **6.5 million MT** of feedstock for Hydro-processed Esters and Fatty Acids (HEFA) SAF by 2030.



Apical Sourcing – Waste and Residues Volumes

SOURCING CAPACITY

POME Oil and EFB Oil

- Over 250 CPO mills (in-house and long-term strategic partner mills)
- 3rd party mills in Malaysia and Thailand backed by LTC for POME and EFB Oil through our existing relationship of CPO supply chain

SBEO and Refinery Waste Oil

- Captive sourcing of SBE from our own refineries (largest refinery in Indonesia by capacity by 2025)
- Commissioned 1st SBEO plant and plans to expand
- Additional Upside - Potential for sourcing SBE from outside

PFAD

- 2nd largest palm oil refinery in Indonesia by capacity (10.5MMT) and largest by export from Indonesia
- Ongoing expansion will make Apical the largest refinery by capacity in Indonesia by 2025
- Additional Upside - Some PFAD reserved for captive use but can be diverted to HEFA plants if required
- Additional Upside - Potential for sourcing from 3rd party

UCO

- Strong global UCO sourcing team. Established presence in Indonesia, China and Middle East
- Leverage on existing customers of edible oil as well as innovative collection strategies (self funded community led collection through Tanoto Foundation)
- Expanding sourcing in other region – Other SEA countries, India through our existing team

	2023	2030
Total:	600 kMT	2,000 kMT

Using Innovative Ways to Collect UCO (5Cs)

OUR COLLABORATION WITH SOCIAL-BASED FOUNDATION



Private Household



Circular Economy: UCO from Private Household to Waste Banks and Philanthropic Organization

Social-Based UCO Contributors

Waste Banks



Philanthropic Organization

Contribute UCO Supply to **SHU**



Waste & Residue Collection PT Sumber Hijau Utama (SHU)

"Social-Based Incentive" as a Corporate Social Responsibility (CSR) and Circular Economy program for Private Household

Tanoto Foundation

Collaborate with **Tanoto Foundation** to run "**RUMAH ANAK SIGAP**", an early childhood education program by using "Social-Based Incentive" developed by **Apical**

Supporting for:

Early Childhood Education and Development



Benefits:

1. Cash incentive to each member of private household
2. Social program such as;
 - a. Cooking class workshop with "Women Leaders"
 - b. Circular economy workshop to gain advantage from recycle and household waste/residue



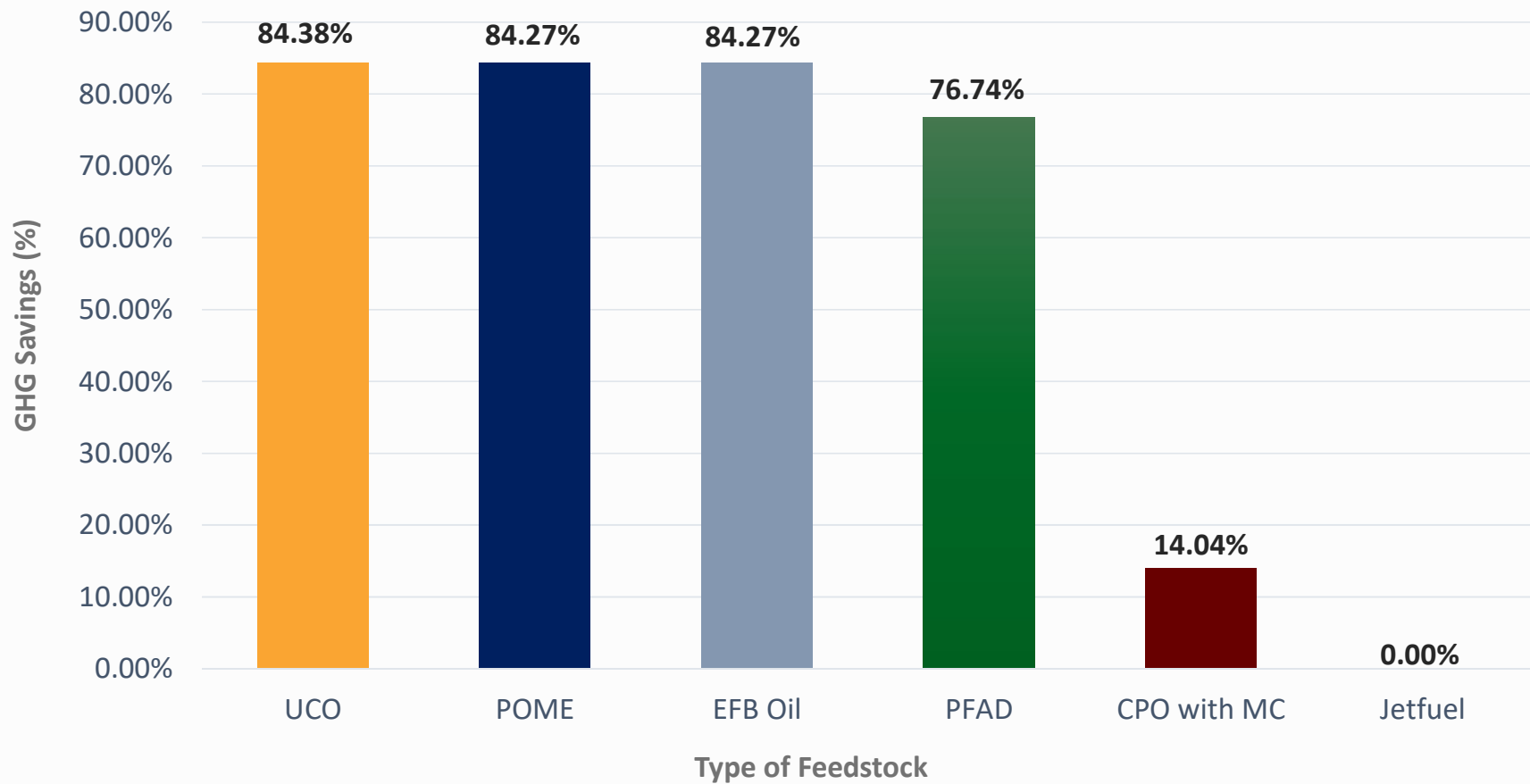
Capitalising on the strengths of ASEAN as a region to scale SAF production globally

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Feedstock GHG Savings For SAF Production vs. Conventional Jet Fuel



Calculations derived from a third-party consultant.

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Our Philosophy: Waste / Residue Must Be

- Sustainable
- Traceable to the Point-of-Origin
- Handled and Sourced responsibly
- Results in much lower GHG emission compared to Fossil Fuel
- Carries zero sustainability risk to the end-user

📄 First Class Sustainability Standard

- All mills producing POME Oil & EFB Oil is certified ISCC-EU for Waste/Residue.

📄 First Class Transparency

- Fresh Fruit Bunch more than 99% Traceability to Plantation.

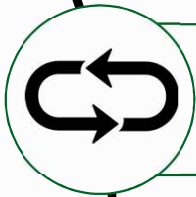
📄 First Class Quality & Handling

- State-of-the-art separation & collection technology for POME Oil & EFB Oil method.

Building Blocks to Sustainable Sourcing of Feedstock



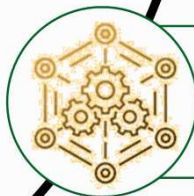
ISCC certified of mills and refineries.



End-to-end closed loop collection from the point of origin.



Digitalised supply chain tracking to the point of origin.



Integrated waste / residue operator with a pilot project for the on-boarding into European Union Data Base (EUDB).

OUR STRENGTHS

- ✓ Strong Sustainability credentials
- ✓ One of the largest integrated producer of Vegetable Oil, largest exporter from Indonesia with large global customer base
- ✓ Global infrastructure for the collection of waste and residue feedstock
- ✓ Critical mass of waste and residue feedstock supply to set up a profitable SAF business
- ✓ Experienced in managing lowest cost competitive manufacturing facilities
- ✓ Capital for Investment





Apical

Thank you!