

FUTURE OF POLYPROPYLENE

PAVING THE WAY FOR SUSTAINABLE SOLUTION

The 15th PTT Group Petrochemical Outlook Forum
Friday, 16 August 2024



**What Is Your
Survival Of The
Fittest?**

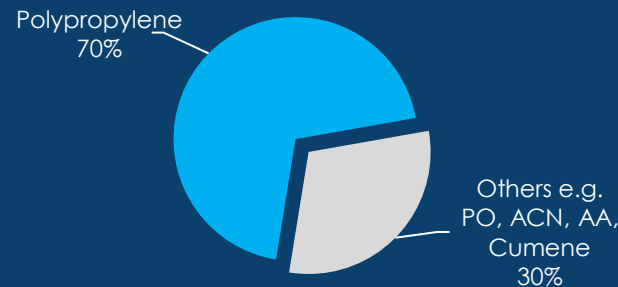
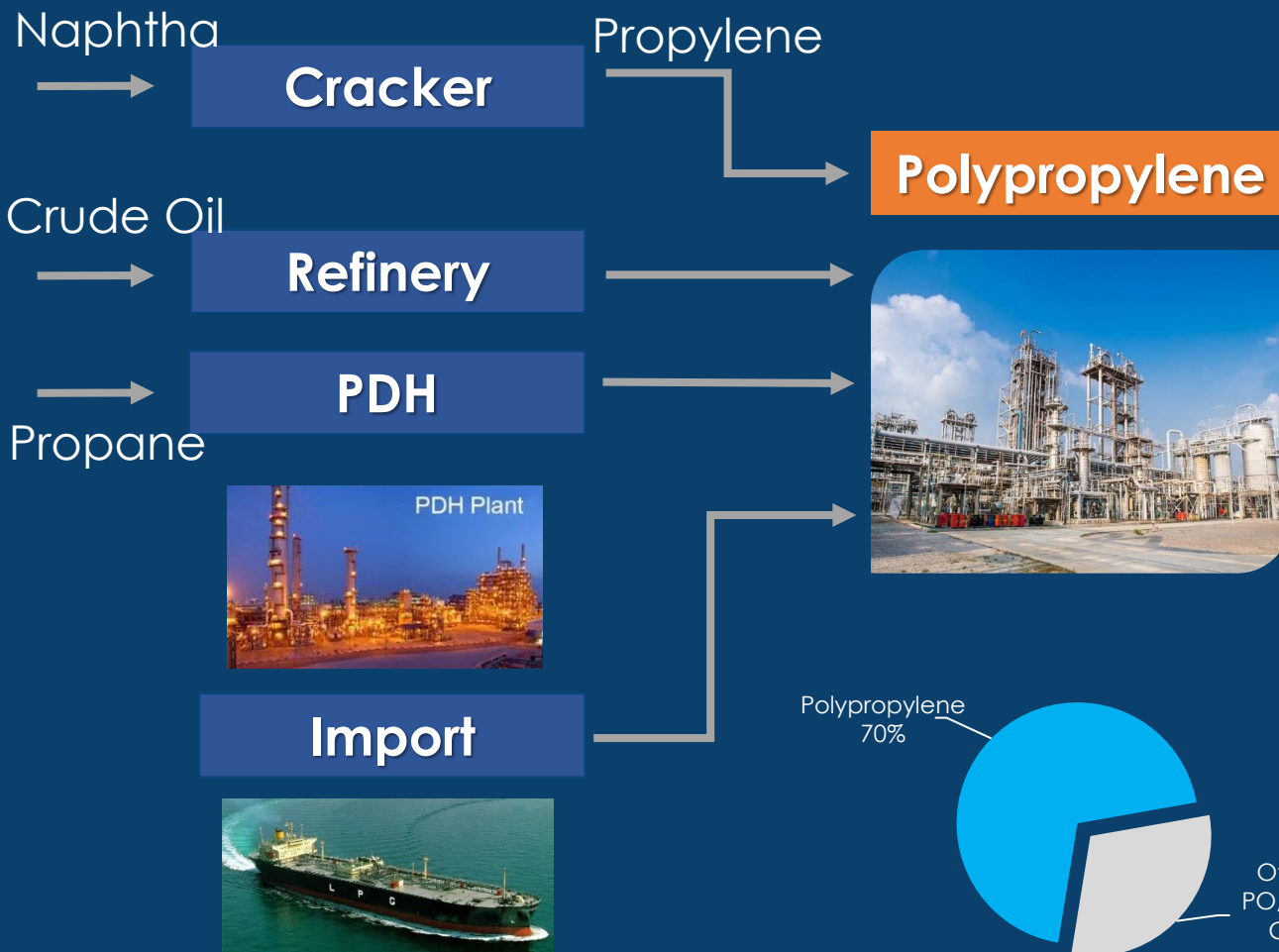
POLYPROPYLENE VALUE CHAIN

PP Is A Key Polymer for Everyday Products

Feedstock

Polymerization

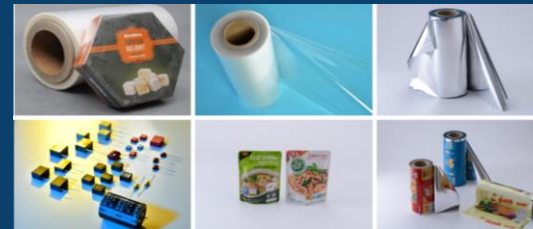
Application



119.7 Mil. MT in 2023

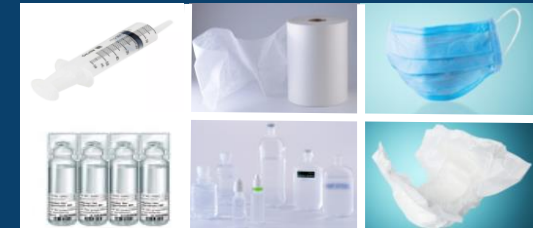
Flexible Packaging

BOPP, CPP, Blown, POF film



Healthcare and Hygiene

IV/IR bottles, syringe, ampoules, spunbond



Others e.g. extrusion, BM, 6%

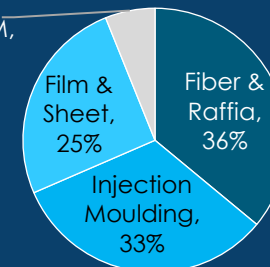
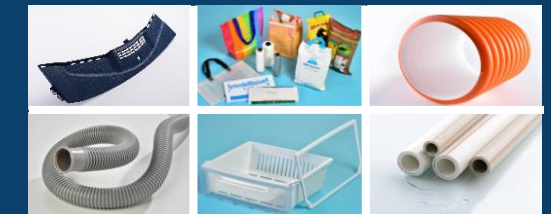
Rigid Packaging

Cap & closure, TWIM, thermoform, housewares



Industrial

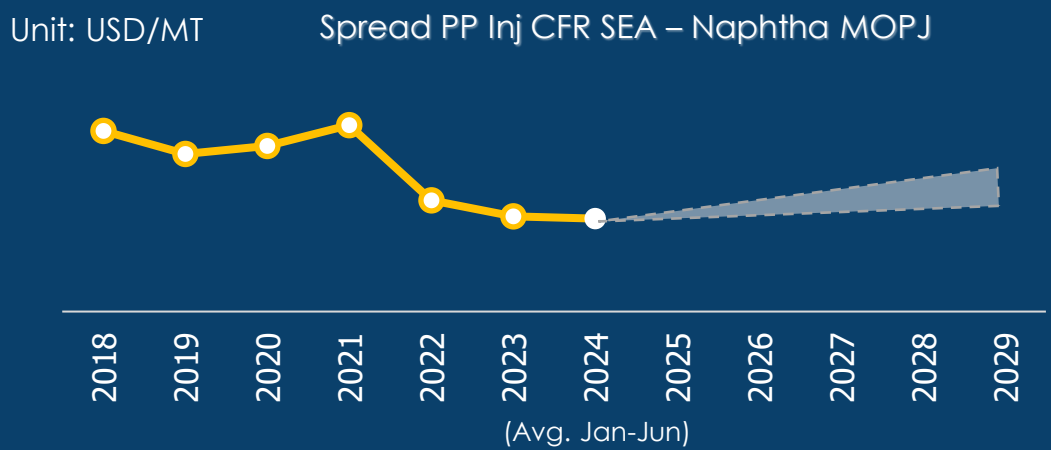
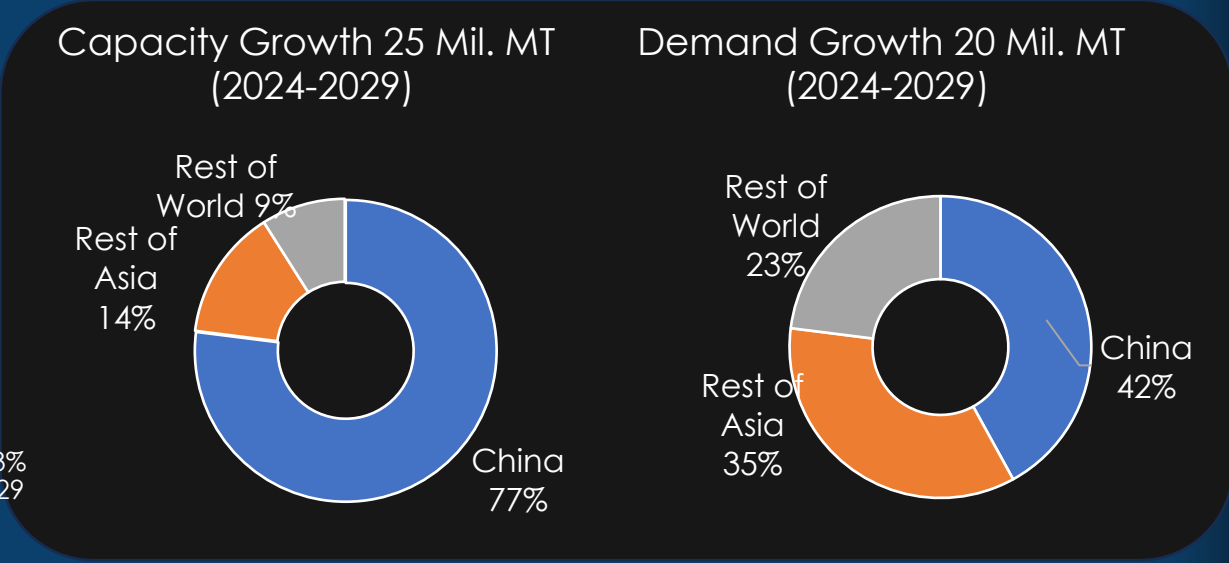
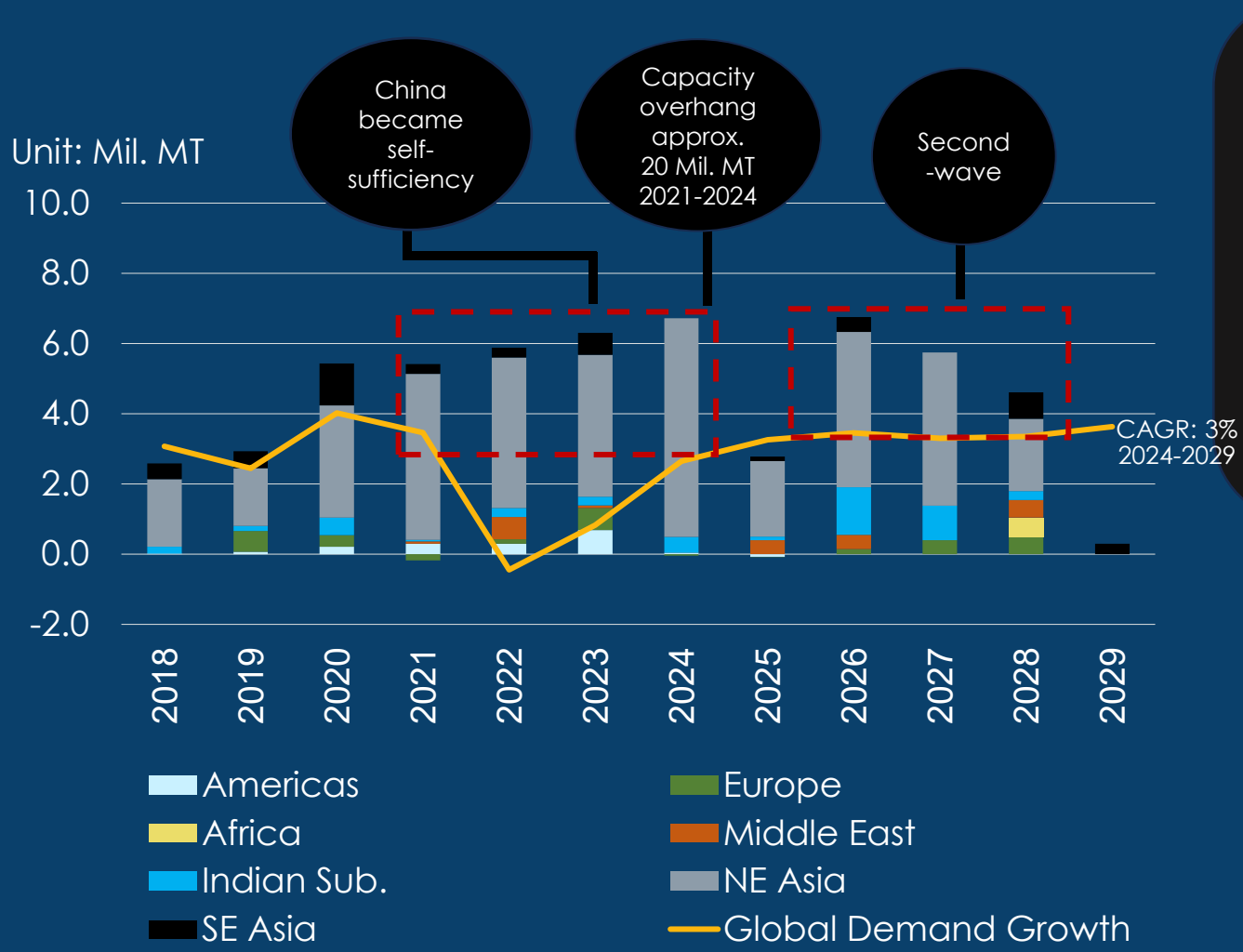
Appliance, auto-parts, textile, raffia, pipe



84.2 Mil. MT in 2023

GLOBAL PP DEMAND/SUPPLY LANDSCAPE

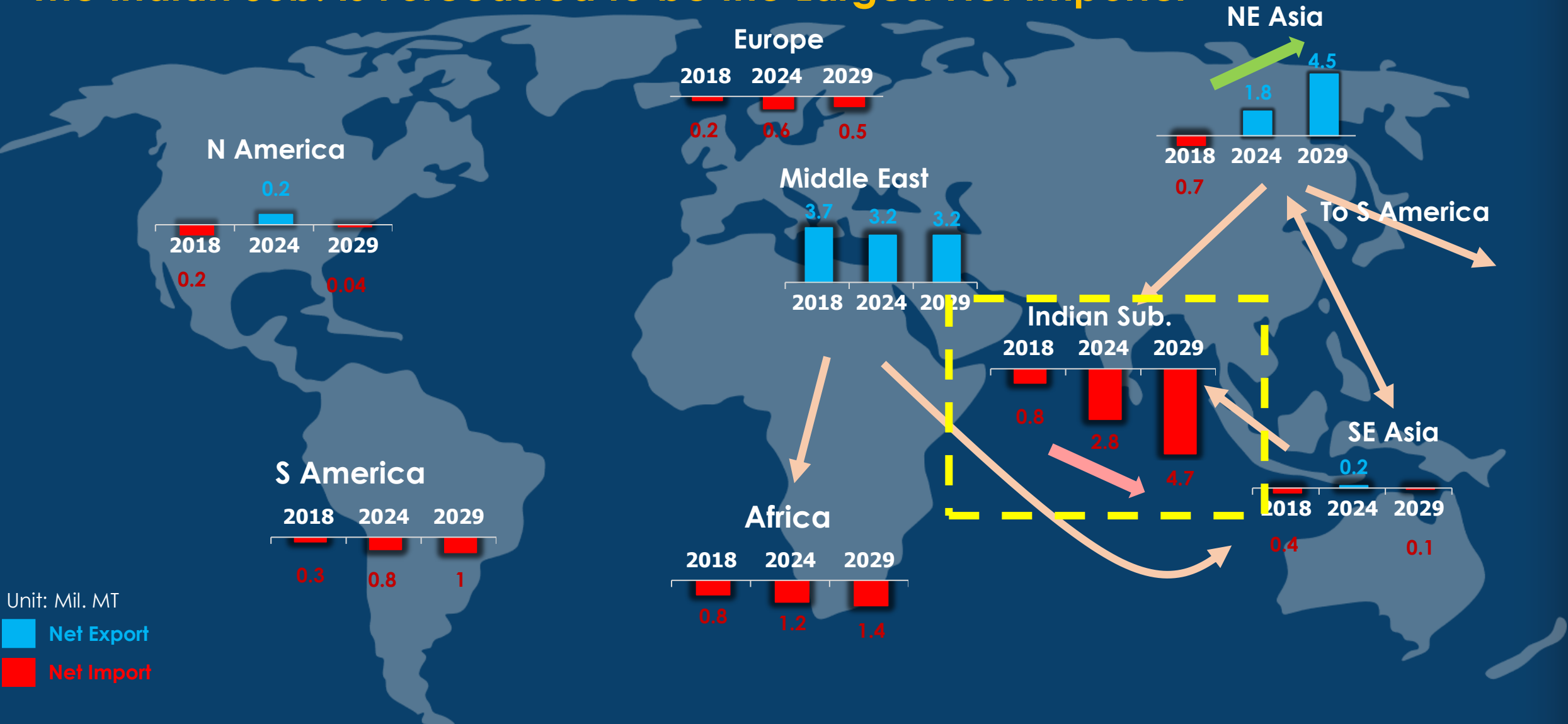
Overcapacity Investment and Second-Wave Potential in China



Source: CMA and HMC Analysis

GLOBAL PP TRADE FLOW

Increasing Supplies and China Self-sufficiency:
The Indian Sub. Is Forecasted to be the Largest Net Importer



MEGA TRENDS

Global PP Demand Continues to Grow, Aligned with the Trends



Demographic
Shift



Health and
Wellness



Urbanization



Disruptive
Technology



Sustainability

SUSTAINABILITY PATHWAY

The Market Has Responded to the Sustainability Trend

Trend Towards



Single-use Plastic is Banned



“Net Zero” Target



Sustainability is not just about the Environment

Market Responds



Increasing of Inter-Material Replaced Products



e.g. fiber-based, bio-based with fast development to improve performance



Enforcement of Low Carbon Emission

Brandowners / customers seek for low carbon emission solutions

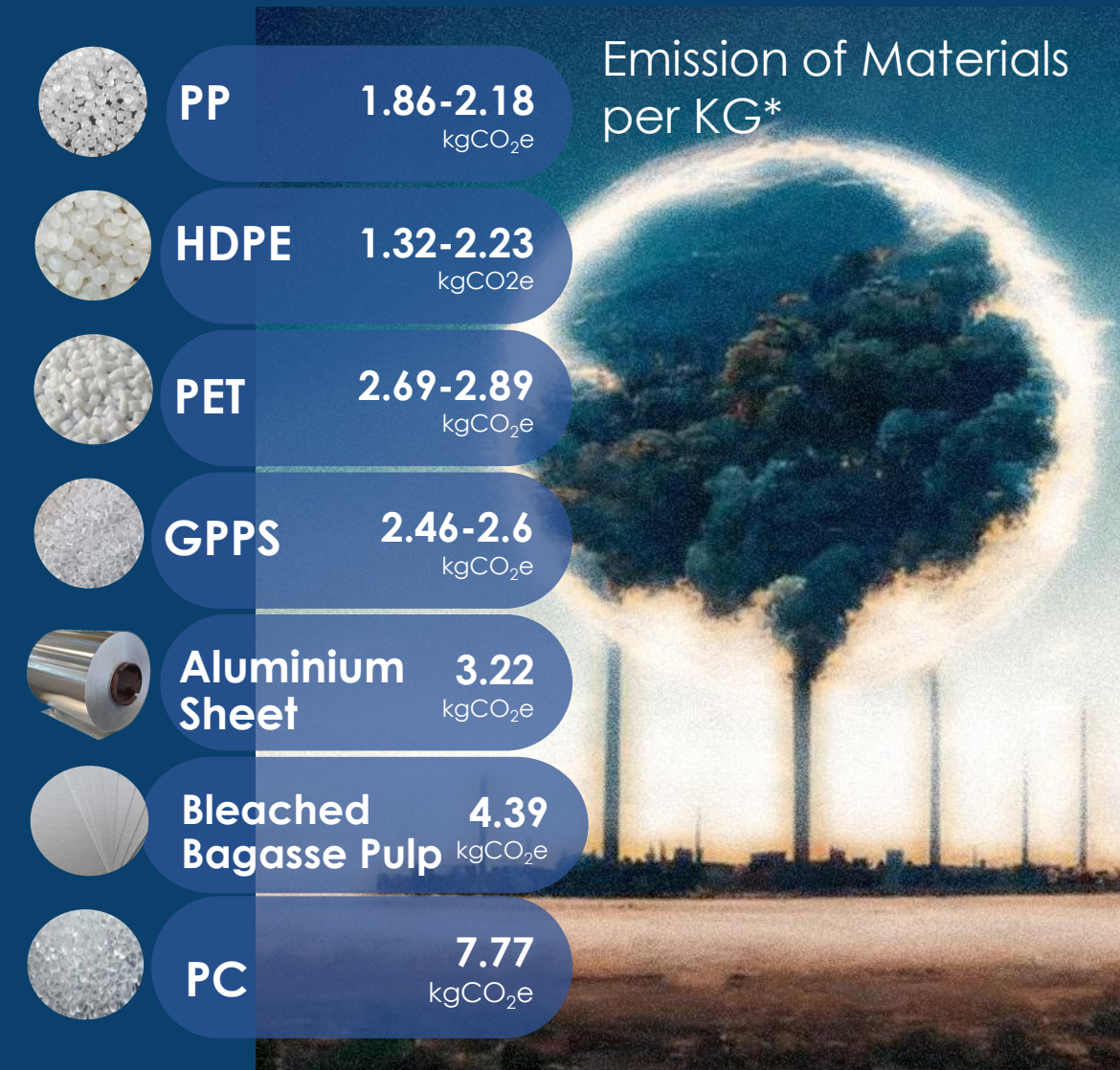


Engagement along Value Chain

Implementation of international requirements

PP: SUSTAINABLE MATERIAL

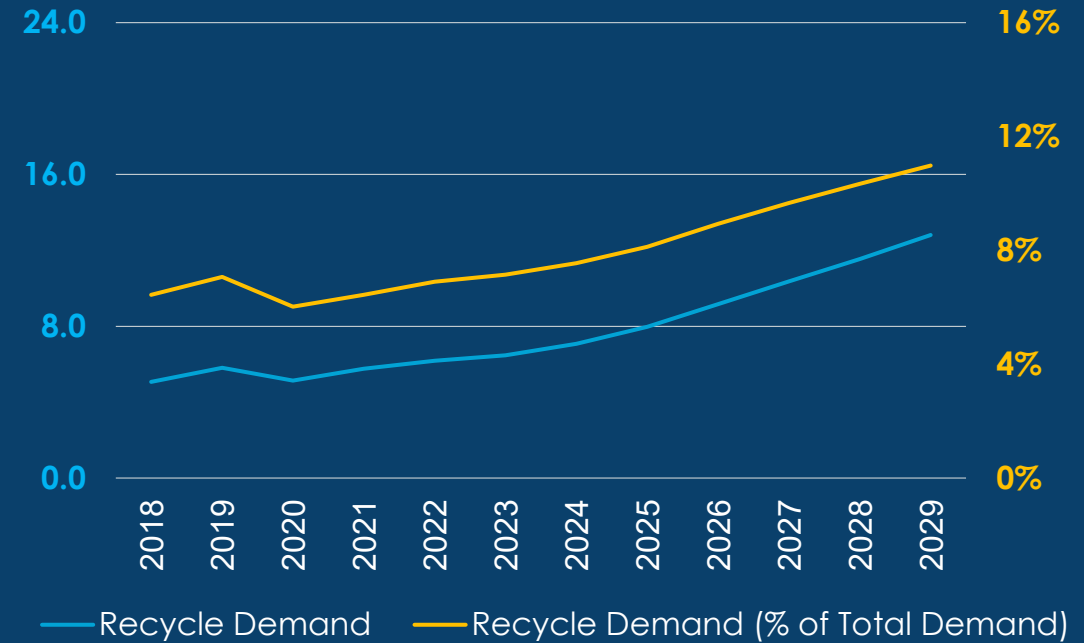
Recyclable with Less CO₂ Emission Compared to Other Materials:
Paper, Metal, Aluminum, Other Plastics



Unit: Mil. MT

Global Recycle PP Demand

Percentage



Source: CME and HMC Analysis

And we make it more sustainable
through **Innovation and Partnership**
Make it not only the products but **also the Process**

*Source Emission factor & CFP of material, not the products from TGO

PP: INNOVATION-DRIVEN MATERIAL FOR SUSTAINABILITY

Higher-Performance and Greener Materials



Recyclable Higher Performance Products

Mono-Material

Multi-Material Laminate

PET
Adhesive
PE

Mono-Material PP

PP
Adhesive
PP

Inter-Material Substitution

H2483

H5416T

Durable application that is easily recycled.

Light Weight Material

LIGHT WEIGHT

EA648G

Maintaining the dimensional stability and performance

AVAILABLE NOW

Traceability-Certified Low Carbon Feedstock

Bio-Circular PP

BIO CIRCULAR PP

ISCC
International Sustainability & Carbon Certification

Used Cooking Oil

Circular

CIRCULAR PP

PCR Mixed Plastic Waste

Mechanical Recycled PP

PCR

PIR

Global Recycled Standard
© Textile Exchange

KEY TAKEAWAYS

Paving the Way to Sustainable PP Solution



Considering challenging period, Asia producers are adapting to changes such as **improve feedstock competitiveness, adjust business model, diversify market, and explore sustainable options**

Sustainable solution needs to plug in innovation ways such as **reduce usage** at source, **multiple usage, ease of recyclability**, and **replacing non-sustainable materials**

To bring sustainable solutions to market, we need to be **committed** to working closely with its **value chain partners**: technology providers, converters, end-users



“ **Innovation** Is The Ability To
See Change As An
Opportunity – Not A Threat ”

Steve Jobs