

The Future of PX and BZ: Adapting to Change

The 14th PTT Group Petrochemical Outlook Forum

Wednesday, 12 July 2023

Agenda



Importance of PX and BZ



Market Situation



Transformation

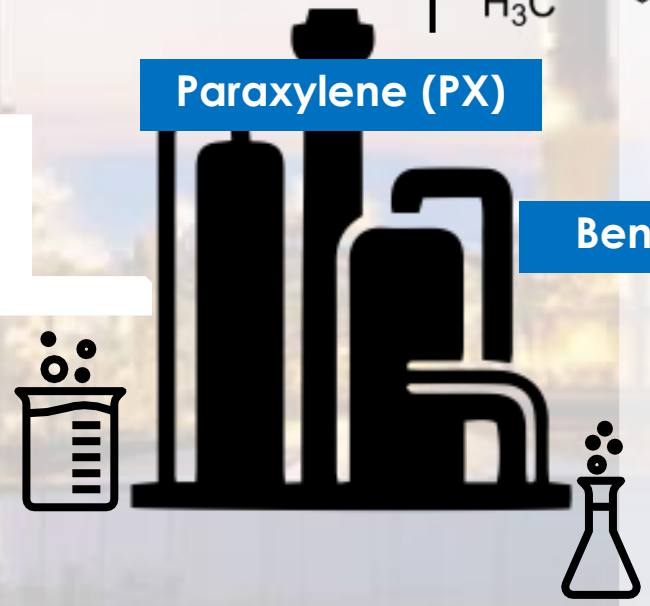
Importance of PX and BZ in the Industry

Upstream | **Refinery** | **Aromatics**

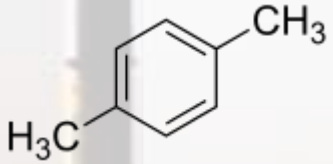




- Gas
- LPG
- **Naphtha**
- Kerosene
- Gasoil
- Fuel Oil
- Residue

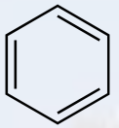


Paraxylene (PX)



Polyester Fiber
PET Bottle

Benzene (BZ)



Styrene
Cumene/Phenol
Cyclohexane

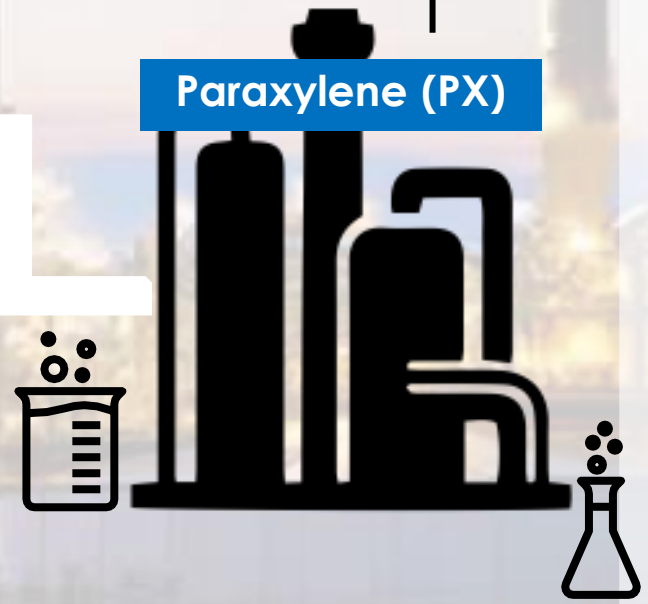
Importance of PX and BZ in the Industry

Upstream | **Refinery** | **Aromatics**





- Gas
- LPG
- **Naphtha**
- Kerosene
- Gasoil
- Fuel Oil
- Residue



Paraxylene (PX)

Polyester Fiber

PET Bottle





Importance of PX and BZ in the Industry

Upstream | **Refinery** | **Aromatics**



- Gas
- LPG
- **Naphtha**
- Kerosene
- Gasoil
- Fuel Oil
- Residue



Benzene (BZ)



- Styrene
- Cumene/Phenol
- Cyclohexane

Factors Affecting PX & BZ Markets



Demand



Geopolitics

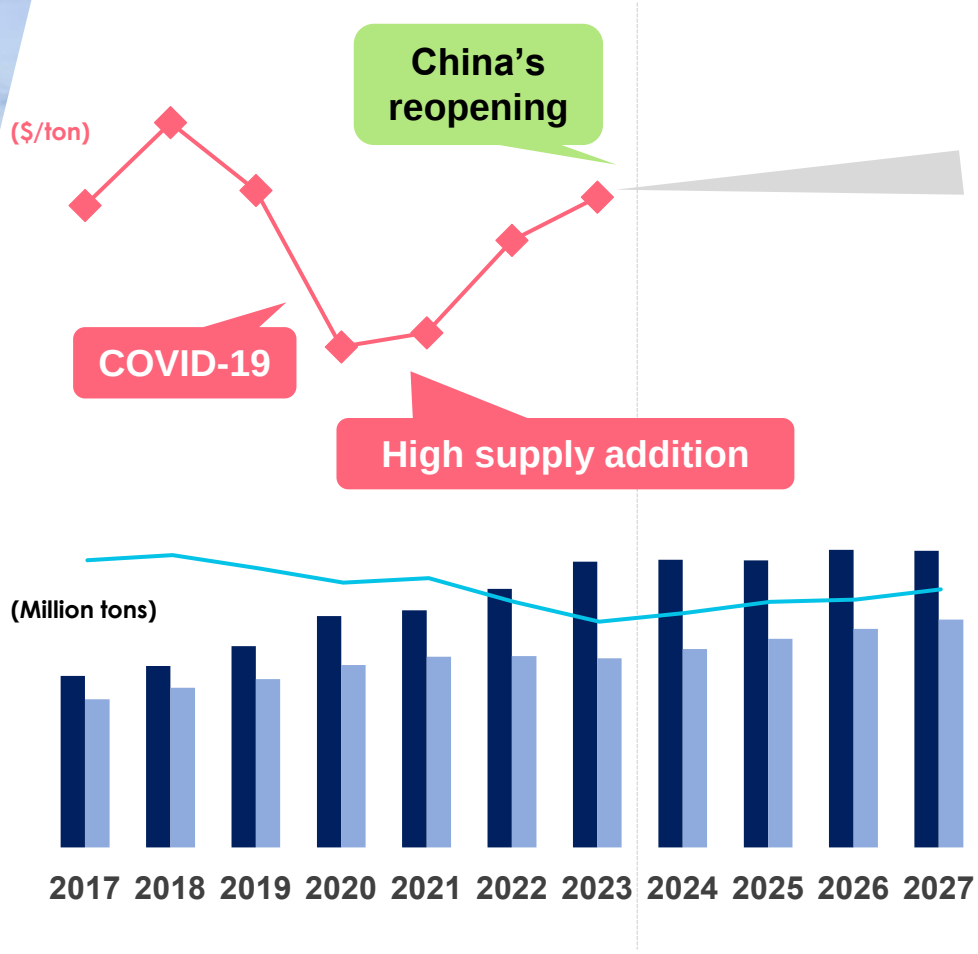


Supply



Trend-transition
(Bioplastics/Recycling)

Market Situation (PX)



Source: Chemical Market Analytics

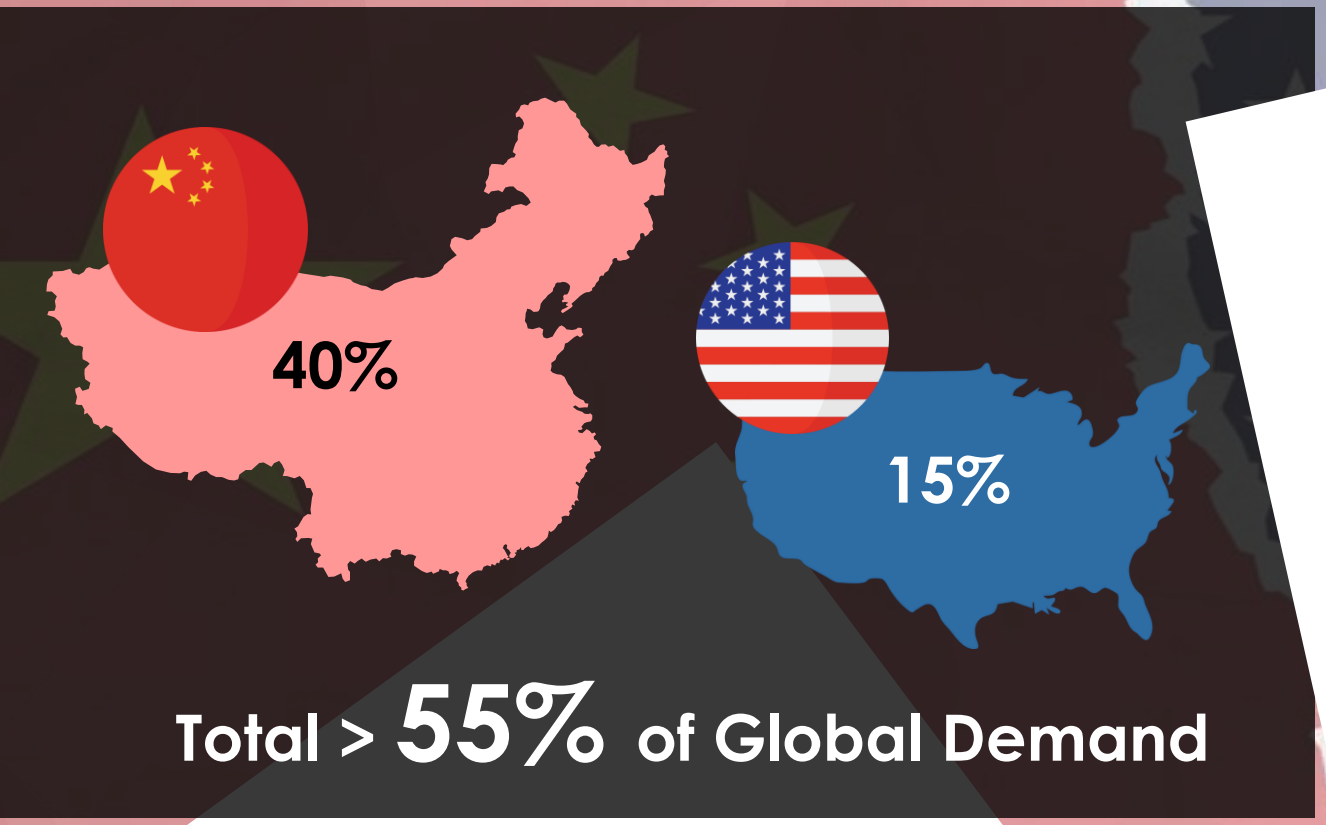
China = 60%
of Global Demand

COVID-19 limited demand growth

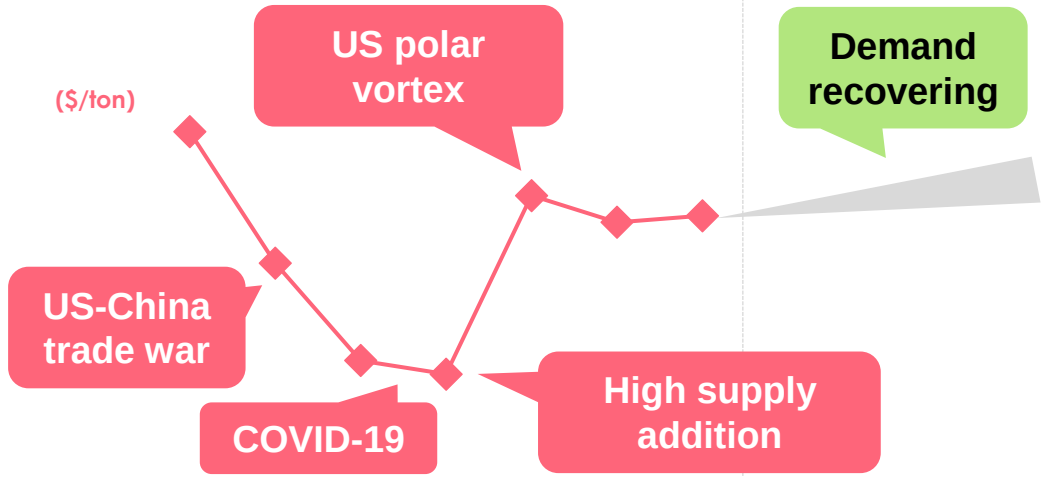
Large supply addition during 2020-2023 put further pressure

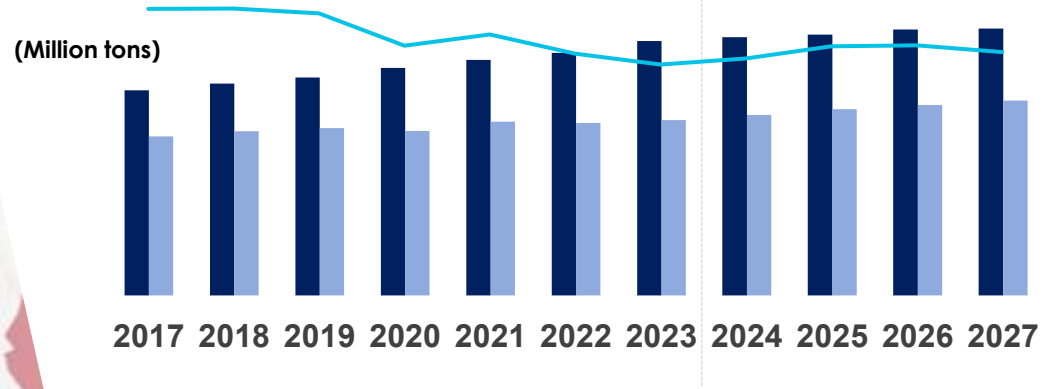
China's recovery will support market

Market Situation (BZ)



Total > **55%** of Global Demand





US-China trade war suppress demand



Supply was disrupted by **freezing weather**



Demand's recovery will support market

Source: Chemical Market Analytics



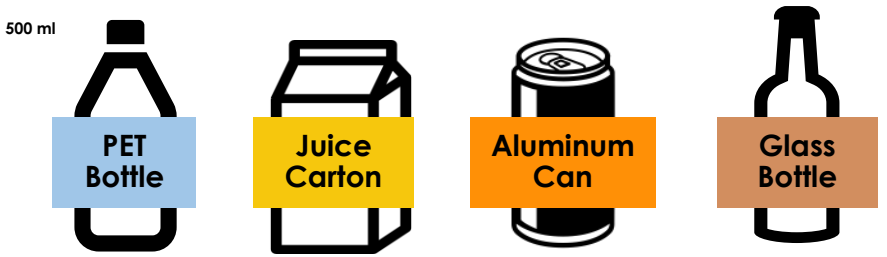
Source: International Bottled Water Association

Transformation

Hygiene Habits

▼

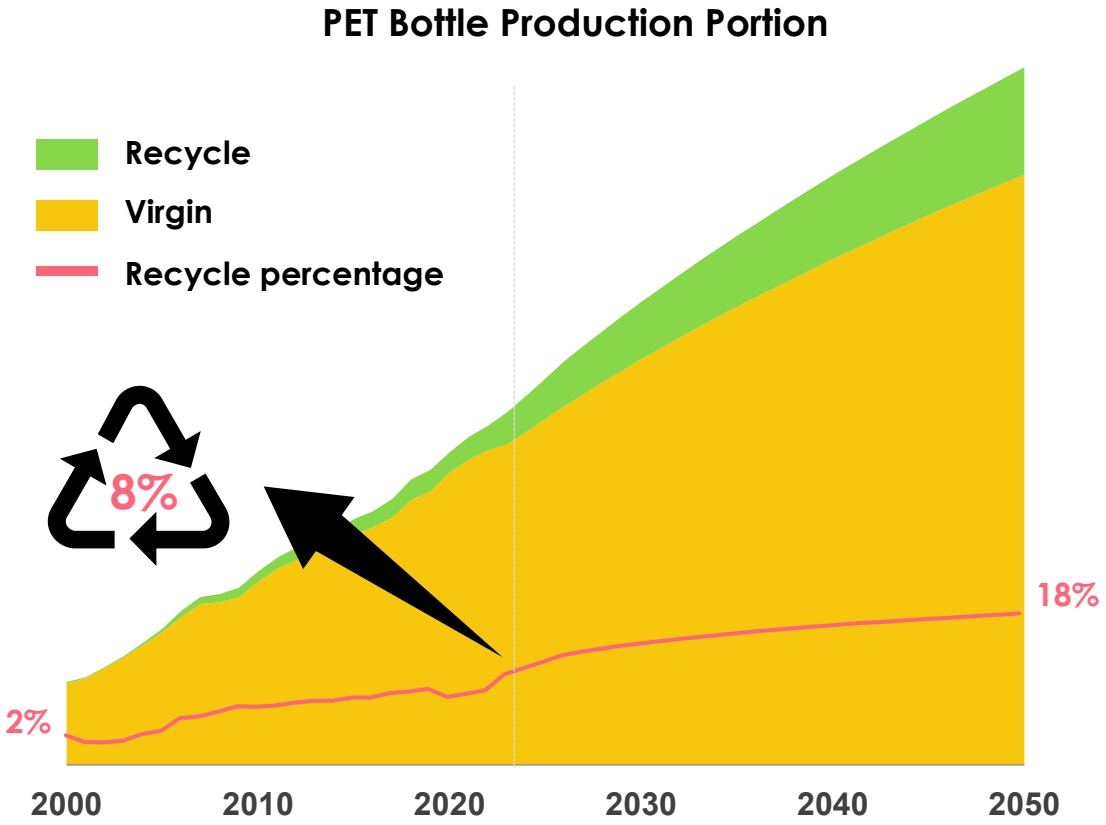
Sustainable Practices
(i.e. Bioplastics/Recycling)





Greenhouse Gas Emissions

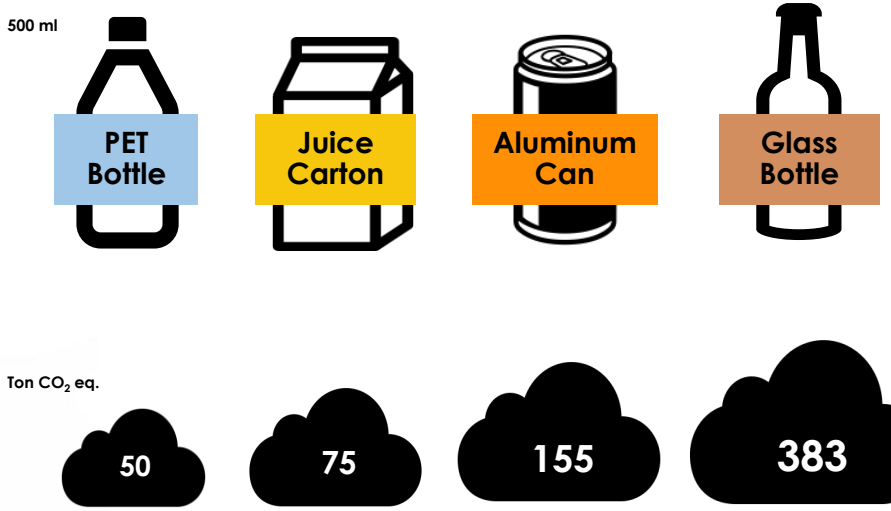
Transformation



Hygiene Habits

▼

Sustainable Practices
(i.e. Bioplastics/Recycling)

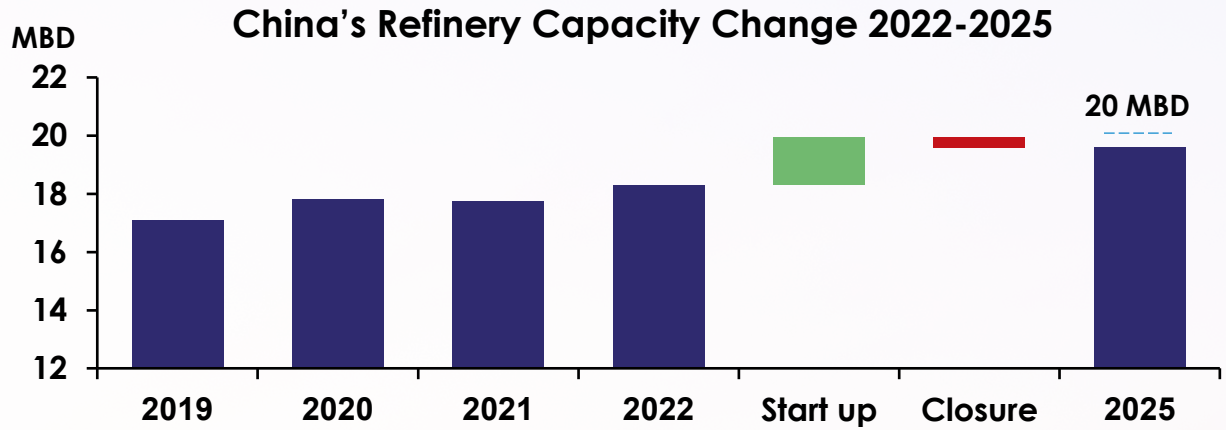


Greenhouse Gas Emissions

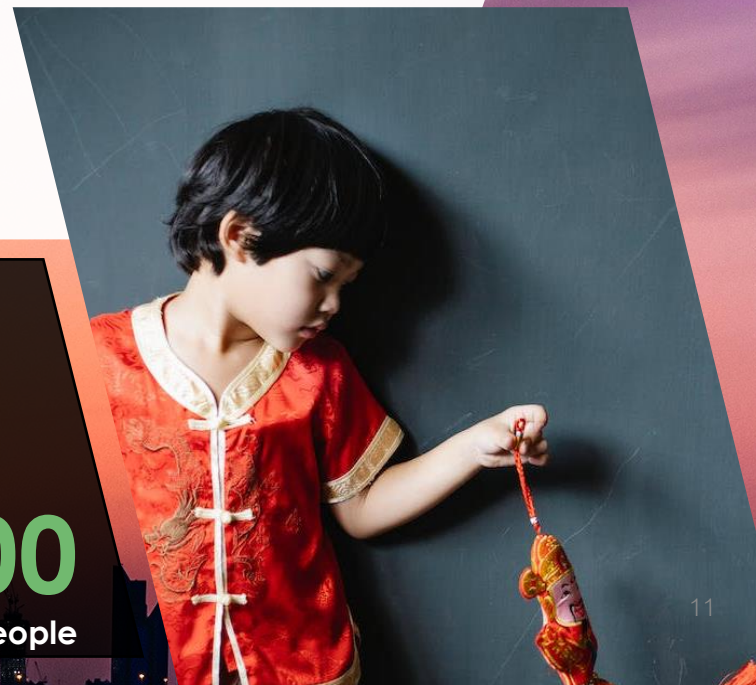
Source: Chemical Market Analytics



Transformation



Cap Refining Capacity at 20 MBD in 2025



Slowdown of China's Population Growth

850,000 people in 2022

India's Growth

9,600,000 people

Source: Argus and National Bureau of Statistics

Transformation

More Plastics Used in "Electric Vehicles"

- Lightweight
- Flame Retardant
- Durable
- Inexpensive

Every 10% Weight Reduction ~ Energy Savings 5-7%

Safety and Durability

Cost Savings 25-50% over Metal



Source: American Fuel & Petrochemical Manufacturers, Kaysun

Key Takeaways



Huge supply additions will be limited by China's policy



Virgin plastic remains essential for daily life



Modern technologies promote the need for plastic


If we fail to adapt,
we fail to move forward
John Wooden