GLOBAL POLYESTER OVERVIEW

– SUPPLY EXPLOSION IN CHINA

Mumbai, India
Aug. 2014

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Agenda

• Demand Overview
• Supply Explosion
• Feedstock
  -- The Tale of PTA
Polyester Demand Outpaces GDP

Polyester Growth = 2.6 X GDP Growth
Regional Disparity In Derivatives Distribution

- **Americas**
- **EMEA**

- **PET**
- **TEXTILE FIBER**
- **INDUSTRIAL USE**
- **FILM**
- **OTHERS**

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Polyester Captures the Bulk of Fiber Demand Growth

Fibers, Million Metric Tons

GDP Growth (%)

-4,000 -3,000 -2,000 -1,000 0 1,000 2,000 3,000 4,000 5,000


Growth of Cotton
Growth of Polyester
Growth of Other Fibers
GDP Growth

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PET Still Has a Great Potential

Per Capita Demand, KG

World Average = 2.6 KG

Per Capita GDP, USD
Fibers Are Leading the Way

All In Melt Equivalent, Million Metric Tons

- Polyester Fiber: AAGR: 6.1%
- PET Resin: AAGR: 5.0%
- Others: AAGR: 4.4%
Asia Dominates Demand Growth

Million Metric Tons

- Americas
- Europe
- Africa & Middle East
- Asia (Exclude China)
- China

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Demand Engines in China Have Been Slowing

![Graph showing YOY Growth, % from 2003 to 2013 for different categories: Soft Drink, Fabric, and GDP.](image-url)
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Overbuild is Intensifying

Million Metric Tons

-4

2008 2010 2012 2014 2016 2018

Demand Growth

2008 2010 2012 2014 2016 2018

Operating Rates %

Forecast

Operating Rate

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PSF – Always Affected by Substitutes

Million Metric Tons

- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018

Operating Rate (%)

- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018

World Capacity

World Demand

World Op Rate

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PET – a Hard Time is Underway

- **World Capacity**
- **World Demand**
- **World Op Rate**

### Timeline
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018

### Measurements
- Million Metric Tons
- Operating Rate (%)
PET – Investments More Than The Market Can Handle

Million Metric Tons


Demand Growth
Radical Changes to Regional Export Landscape

Million Metric Tons

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Overbuilds Depress Profitability

Export, USD

Jan-11  Jul-11  Jan-12  Jul-12  Jan-13  Jul-13

PET EXPORT
Will Investor Fervor Cool Off?

Positive Signs:
- Major producers have almost completed an aggressive expansion wave.
- NDRC’s guideline has changed, no longer encouraging new capacities in East China.

Complexity:
- Local governments.
- Projects may move inland.
- Consumers’ desire to integrate upstream.
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World PTA Capacity Versus Demand

Million Metric Tons

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Diminishing PTA Trade

2010/2013/2018 NET IMPORT/EXPORT MILLION METRIC TONS
Asian PTA Spreads

Dollars Per Metric Ton

PTA Spread Over PX

Operating Rate, %

PTA Global Operating Rate

$125 Per Ton Spread

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Can the PTA Industry Realistically Rationalize?

<table>
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To Achieve 85% Industry Utilization

Capacity to Rationalize (MMT): 9
Plants to Rationalize (#): 31
Plant Size (KMT): <= 380
Can the PTA Industry Realistically Rationalize?

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To Achieve 85% Industry Utilization

- Capacity to Rationalize (MMT): 9 20
- Plants to Rationalize (#): 31 55
- Plant Size (KMT): <= 380 <= 520
Pricing Campaign -- Salvation or a Temporary Relief

![Graph showing changes in pricing over months from January to June 2014. The graph indicates a general decrease in pricing with a notable increase in June 2014.](image-url)
Conclusion

PTA:

A tough cycle remains on track until after expansions slow down.

Proactive throughput management is much better than forced shutdowns.

Polyester:

The market will continue to be chronically oversupplied.

Trade barriers are likely to further increase.

Relative disadvantage in feedstock pricing negotiations may not substantively change.