

DEVELOPING DOWNSTREAM INDUSTRIES – OPPORTUNITIES & IMPEDIMENTS

By

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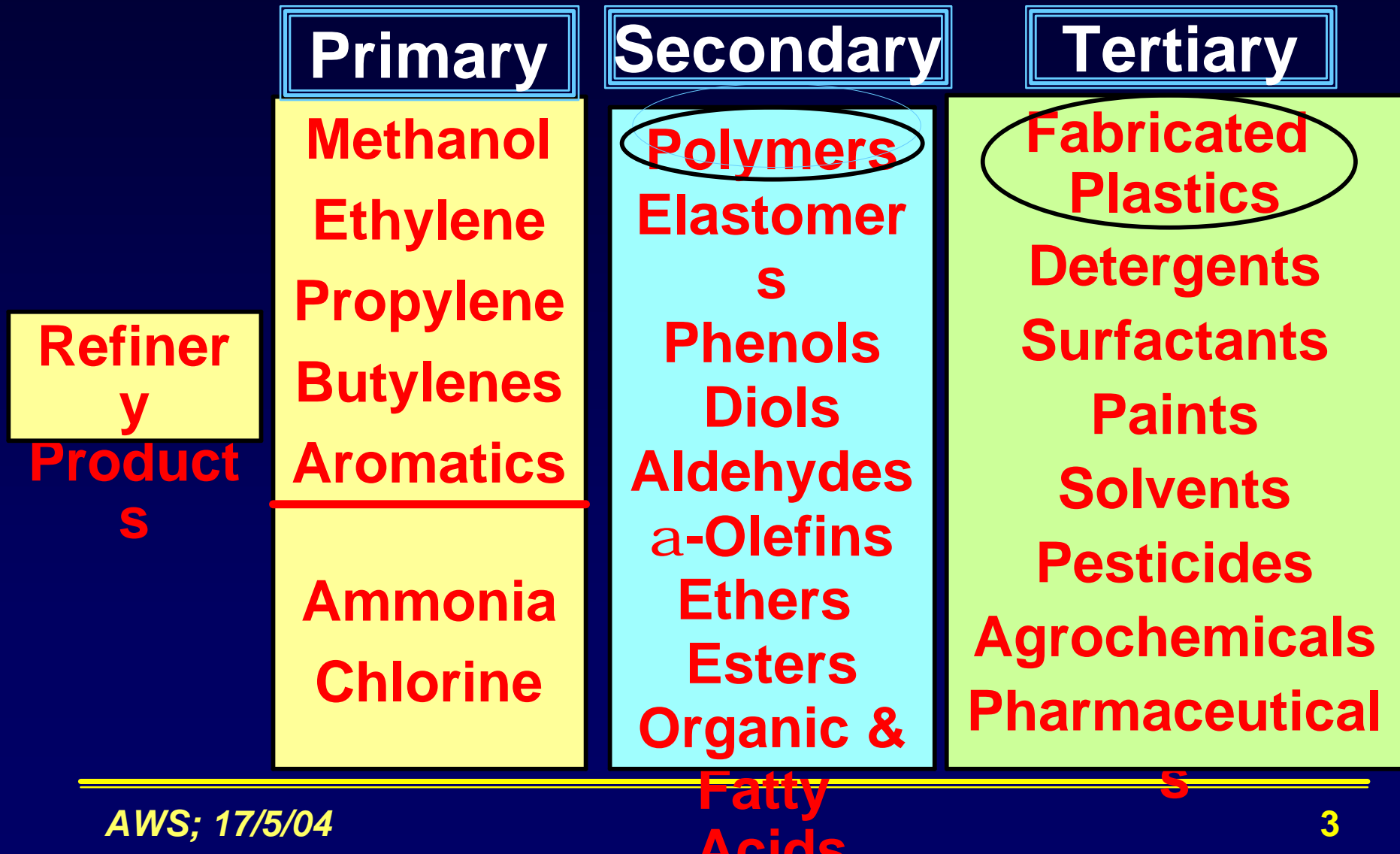
*Presented at the :
1st Saudi Gas Conference
Dammam, KSA
May 15-17, 2004*

Agenda

- **A Brief Overview of the Petchem Industry**
- **Downstream Petchem Industry**
 - **Plastic Conversion Industry as a Proxy**
 - **Salient Features**
 - **Resin Conversion**
 - **Market Profile**
- **Future Outlook**
 - **Opportunities**
 - **Challenges**
- **Concluding Remarks**

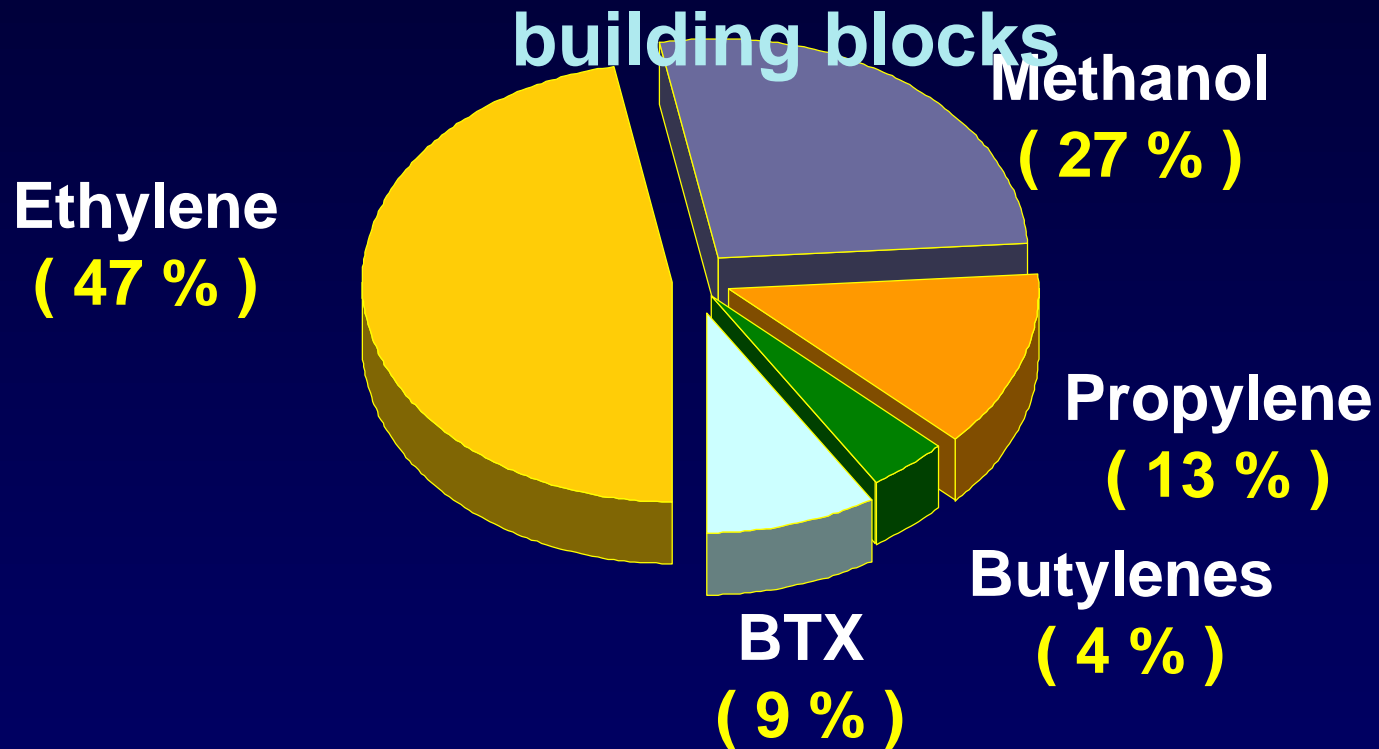
Overview of the Petrochem Industry

Petrochemical Industry Chain



Overview of Petrochemical Industry

Being Gas-based led to Unbalanced
Products Mix of Basic Petrochemicals

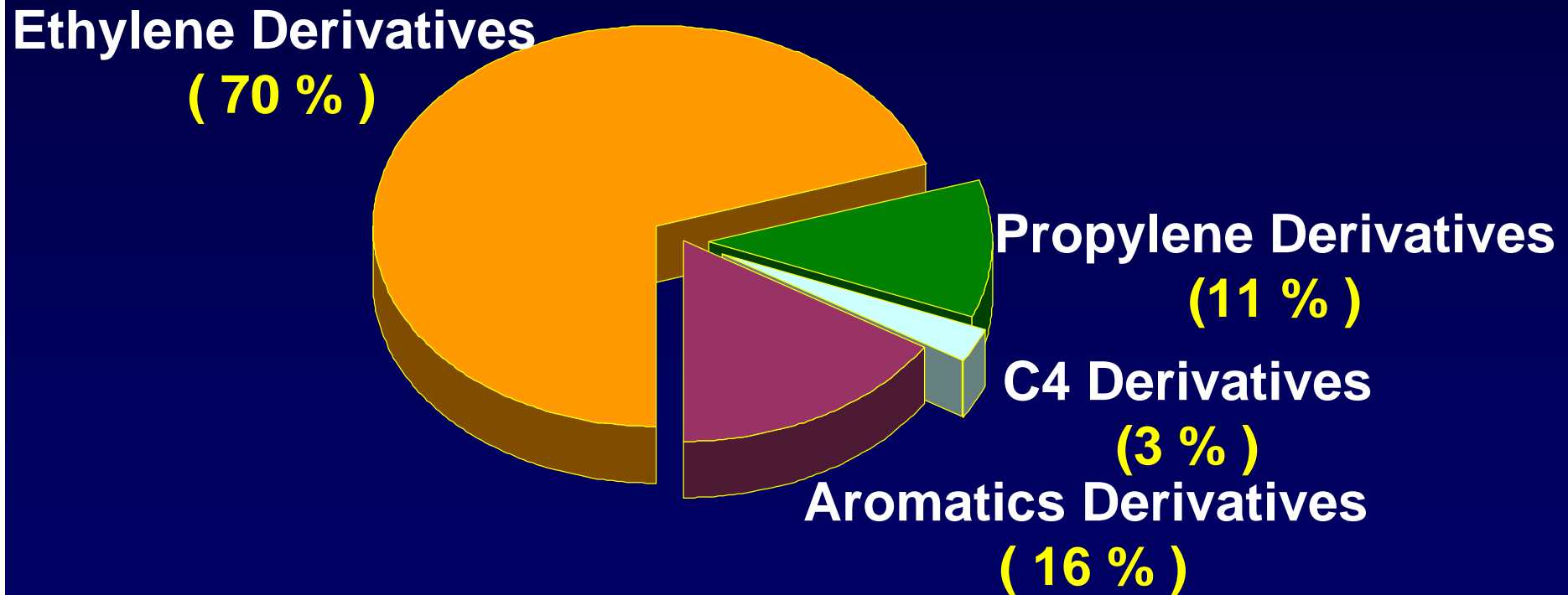


*Heavy reliance on Ethylene has partly limited
the type of downstream industries developed*

to date

Overview of Petrochemical Industry

*Petrochemical Industry In the Middle East :
Type of Feedstocks determine the
downstream derivative projects*



Source : Nexant ChemSystems

Overview of Petrochemical Industry

Polyolefins Capacities Addition (2003-2010)

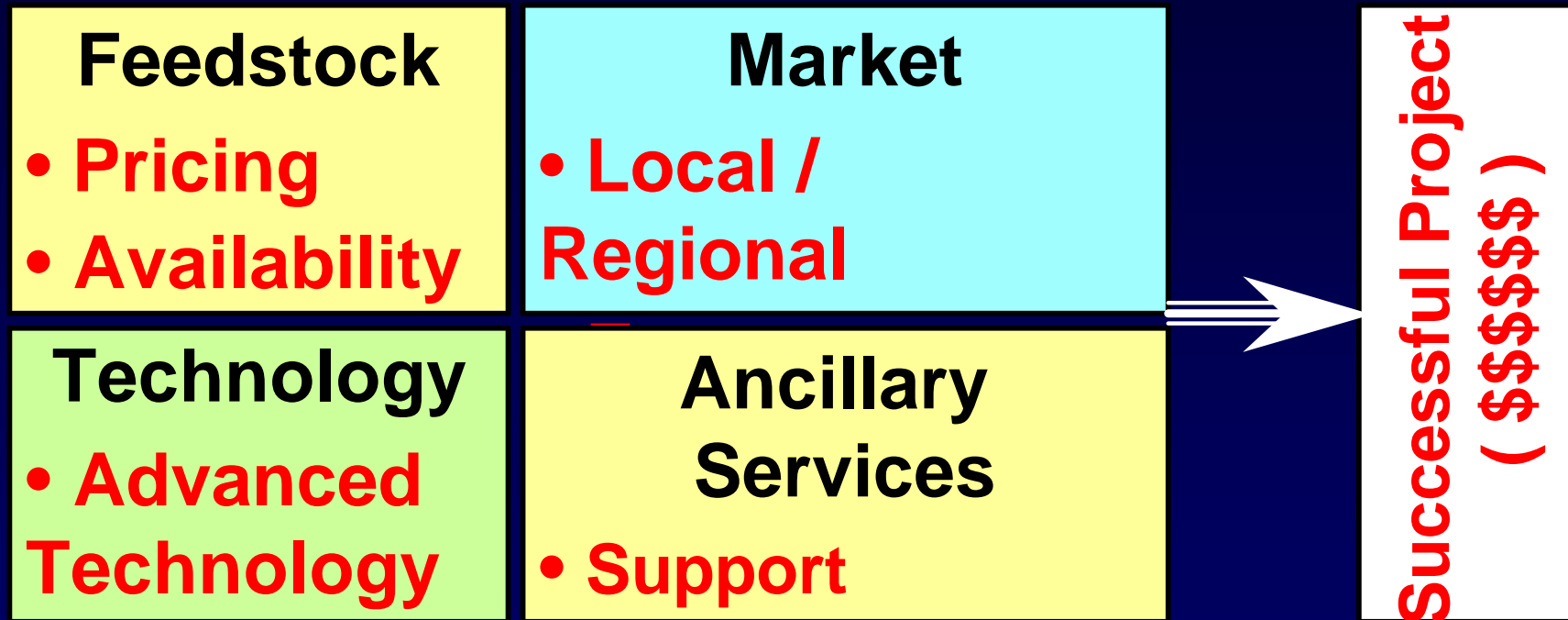
Polymer	Capacity (million tons/yr)		CAGR (%)
	2003	2010	
Polyethylene	2.35	6.25	15.0
▪ Linear Low	1.05	3.0	
▪ High Density	1.35	3.25	
Polypropylene	1.86	3.51	9.3
TOTAL	4.2	10.46	13.7

➤ *Focus of these expansions will be largely to meet growth in Asian demand . China's Net Polyolefins Import in 2007 is projected to be :*

- POLYETHYLENE : 6.5 MILLION TONS
- POLYPROPYLENE : 2.6 MILLION TONS

Downstream Petrochemical Industry

Success Matrix



A Combination of these Factors is Essential to Develop the Downstream Industry in KSA

- Skilled Workforce

Downstream Industry - Plastic Conversion Industry as a Proxy

- **Salient Features of the Industry**
- **Polymer Conversion Profile**
- **Market Profile**

Salient Features of the Industry

① INDUSTRY STRUCTURE

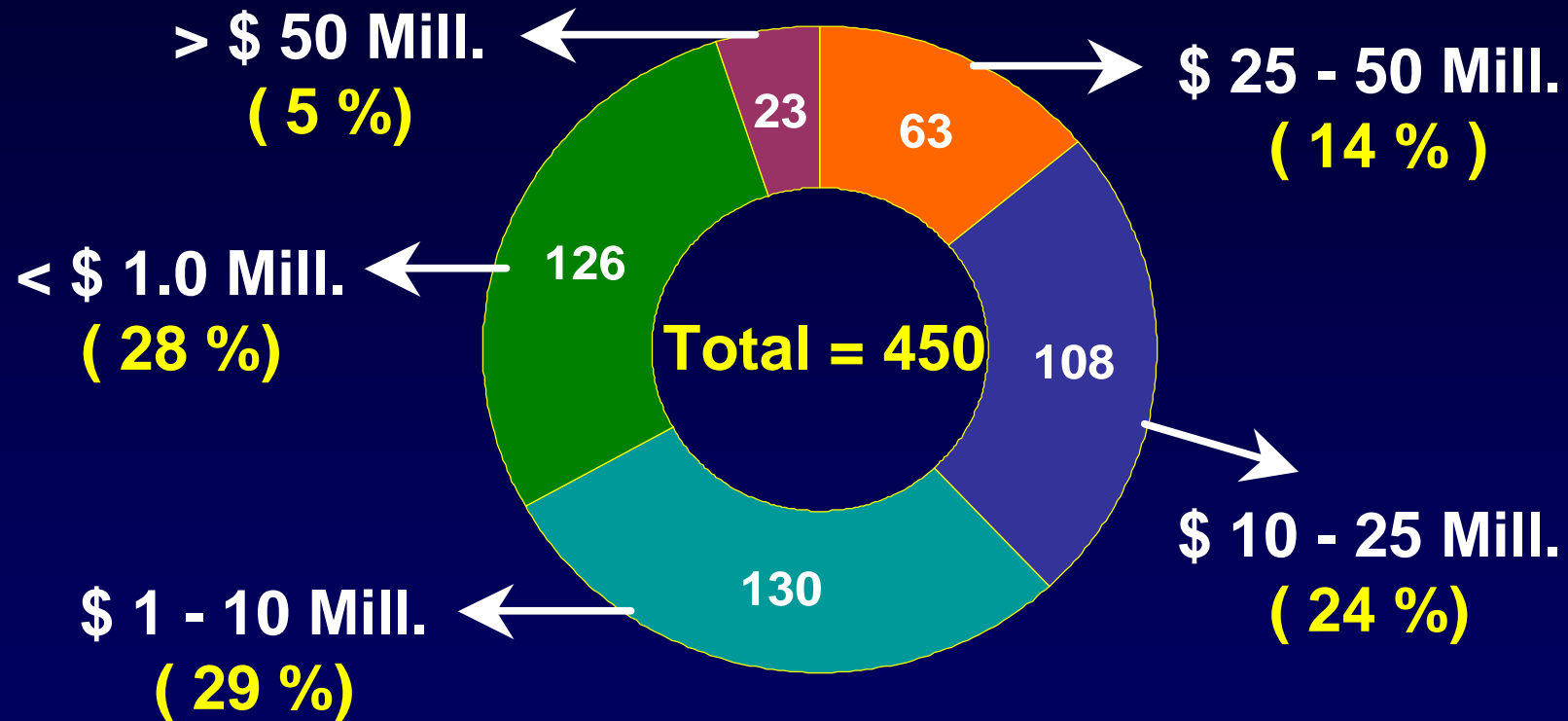
- First Conversion Plant Commissioned in 1959.
- Private Ownership,
- Modest Foreign Partnership (# of JVs = 7 %)
- Fragmented Industry Composed of Large Number

of Small Plants

Region	Plants #	Share of Total Plants (%)	Share of Total Capacity (%)
Western	200	44	40
Central	120	27	35
Eastern	130	29	25
KSA Total	450	100 %	100 %

Salient Features of the Industry

Plant Distribution per Capital Investment - 2002



- *Over ¼ of the Plants are Very Small,*
- *Large plants represent 5 % of total, but account for over 50% of Polymer Conversion*

Salient Features of the Industry

② MAJOR MACROECONOMIC INDICATORS A Small Contributor to Non-oil Sector

	Plastic Conversion Sector	Share of Manufacturing Sector (%)
Establishments	450	14.4
Capital Investments (Billion US\$)	4.75	8.5
Manpower	24,750	8

Source : GOIC Data Bank

Salient Features of the Industry

③ PRODUCTS

- **Focused on Low Value-added End Products**
- **Products Market Value = US \$ 1.25 Billion / yr**
- **Significant volume of Finished products are Imported (ca. 24 % of total consumption)**
- **Focused on 3 Main Locally Produced Resins :**
 - **Polyolefins, PS, and PVC, collectively represent 88 % of Polymer Converted**
 - **Imported Resins represent 14% of total demand**

Salient Features of the Industry

④ MARKETS

➤ Local Market Focus

- Domestic Market Share = 91.5 %
- Export Market Share = 8.5 %

➤ Most of Current Local Plastic Market Segments are becoming “*Mature*”.

➤ Expansion & Growth is driven by “*Me Too Approach*”

Salient Features of the Industry

⑤ SUPPORTING INDUSTRIES

➤ **Polymeric Resins Suppliers**

- 1 Local & 4 Regional Suppliers with Combined Polymers Production Capacity of 8.5 Mill. Tons (Year 2002).

➤ **Molds & Die Makers**

- 4 Local Suppliers

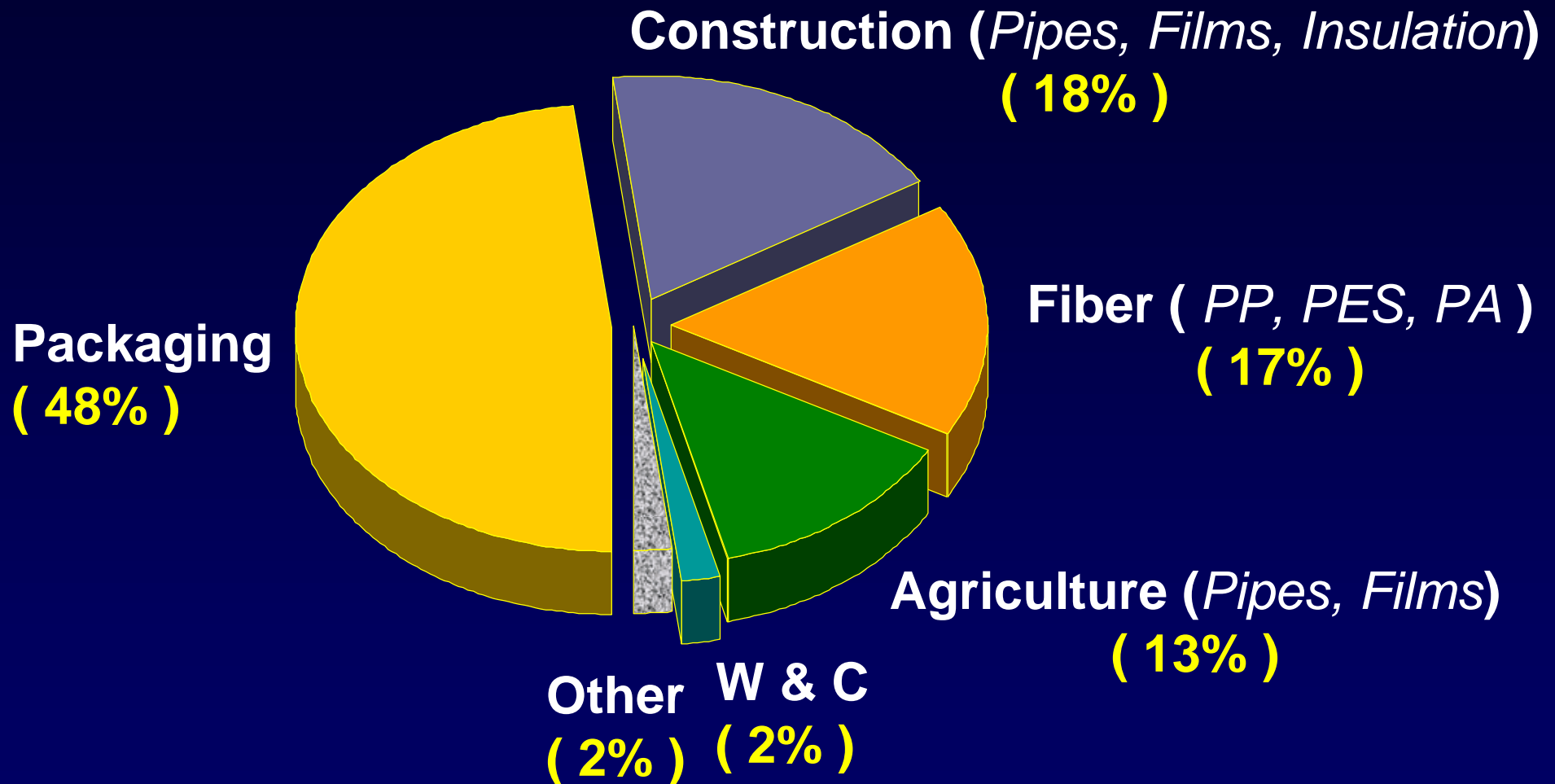
➤ **Master Batch/Additives Suppliers**

- 7 Local Suppliers with Combined Production Capacity of 50 Kta

Polymer Conversion Profile - 2003

Polymers Utiliz.Rate	Capacity (Kta)	Demand (Kta)	(%)
Polyethylene LL, LD, HD	525	375	71
Polypropylene	370	270	73
Vinylics (PVC)	380	225	59
Styrenics (PS)	120	90	75
Terephthalics (PET, PES)	160	100	62
Total	1,555	1060	68

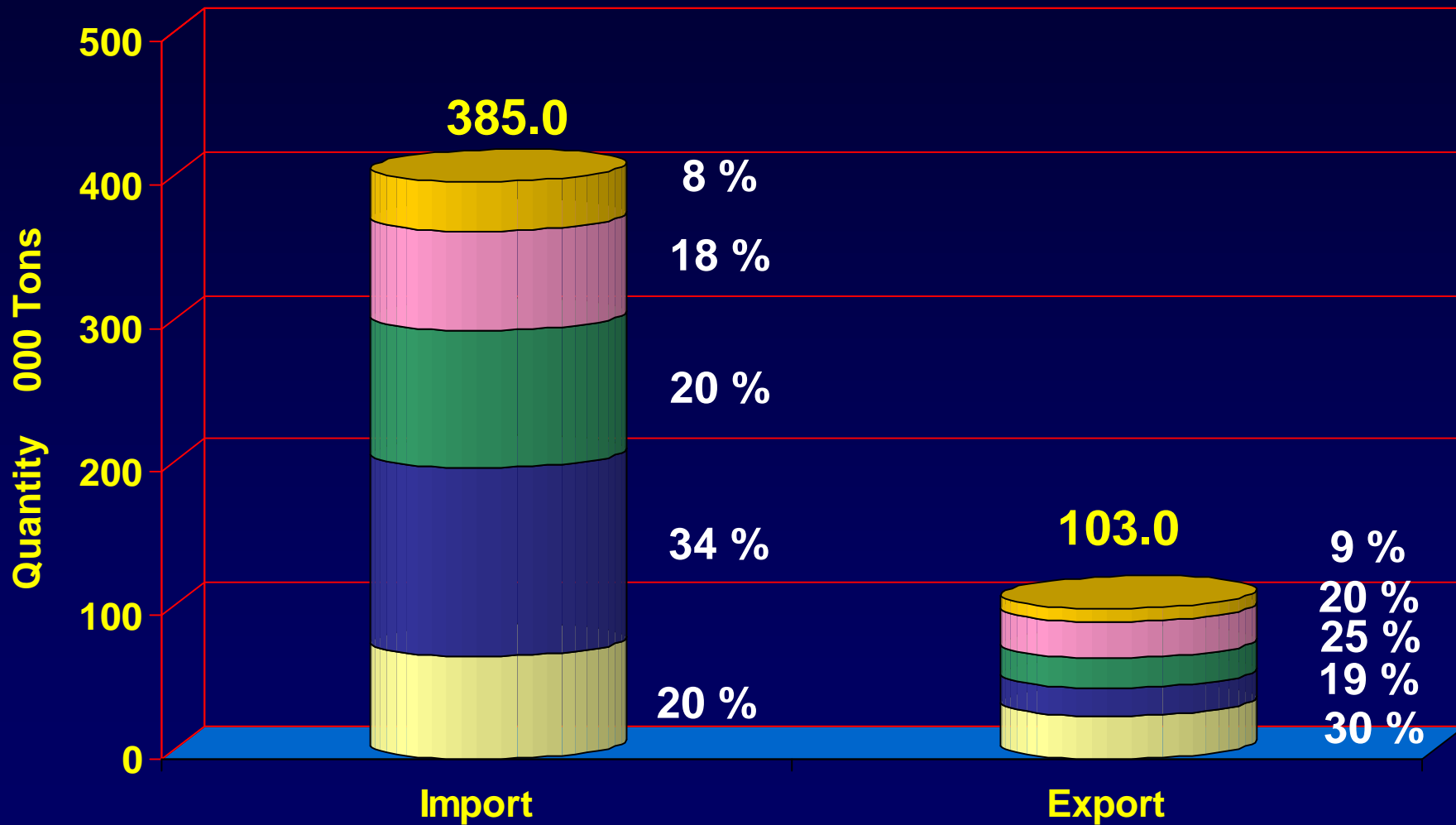
Market Profile



Packaging : Films, Raffia Bags, Bottles, Injection Moulding

Market Profile

FOREGIN TRADE (Year 2002)



■ Film & Sheet ■ Household Products ■ Bags & Sacks ■ Pipes ■ Others

Future Outlook : Opportunities

① Opportunities in Domestic Markets

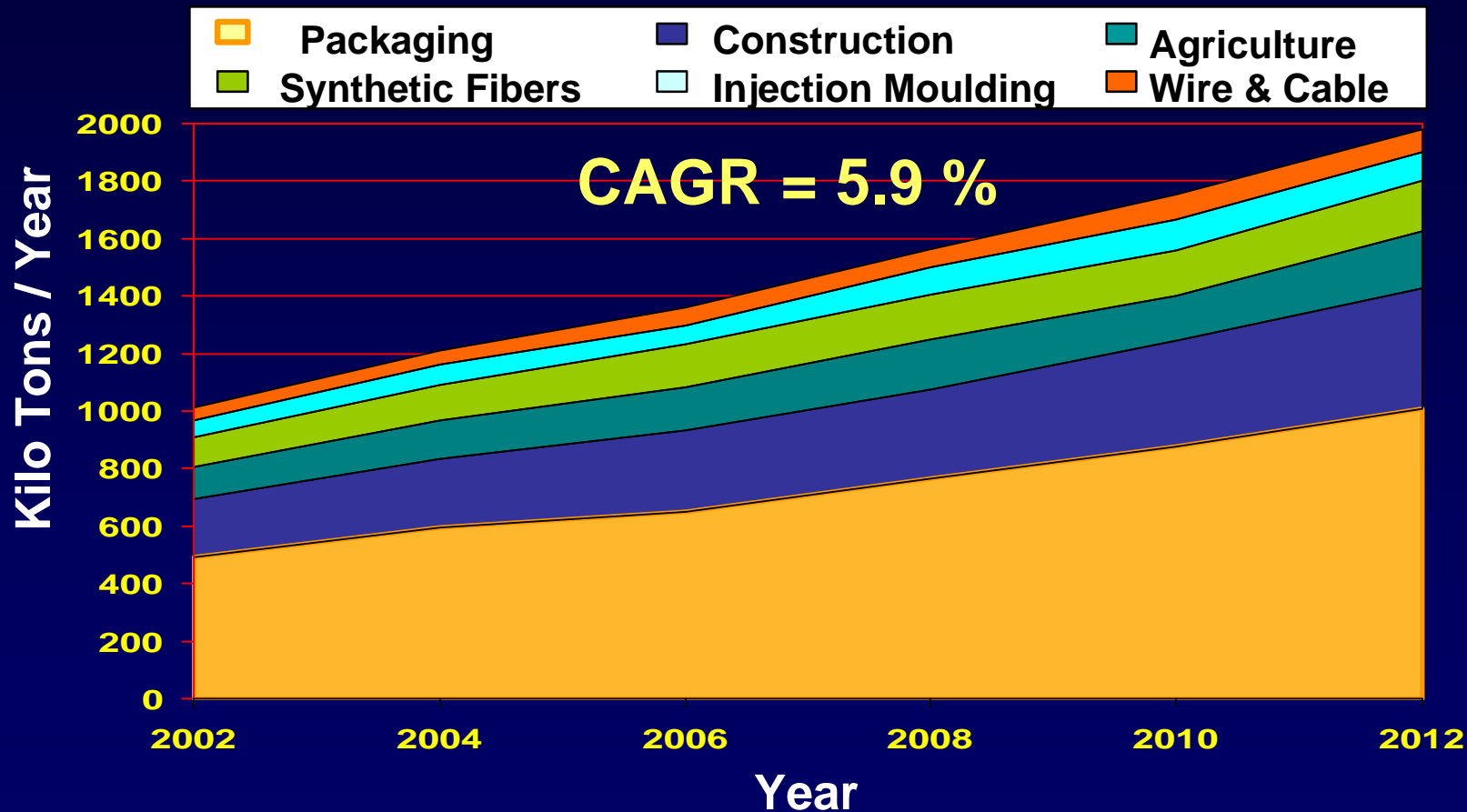
- **More Local Resin Producers; resulting in :**
 - More Competitive Resins Prices
 - Wider Range of Resin's Grades
 - Better Technical Services

- **Strong Growth in Demand for Plastic Pipes (Growth Rate = 8 % p.a.) as a result of :**
 - The Upstream Gas Plan
 - Desalination Projects (36 Drinking Water Projects)
 - Wastewater Treatment Projects (186 Sewage Projects)

Future Outlook : Opportunities

① Opportunities in Domestic Market

Trend of Plastics Demand by End-use (2002–2012)



Future Outlook : Opportunities

② Opportunities in Export Markets

➤ **Export to the US Market**

- US enjoyed a Net Trade Surplus in Fabricated Plastic Products till 2001;
- Became a substantial Net Importer of Plastic Products in 2002 (mainly bags & injection molded items).

➤ **Export to Europe**

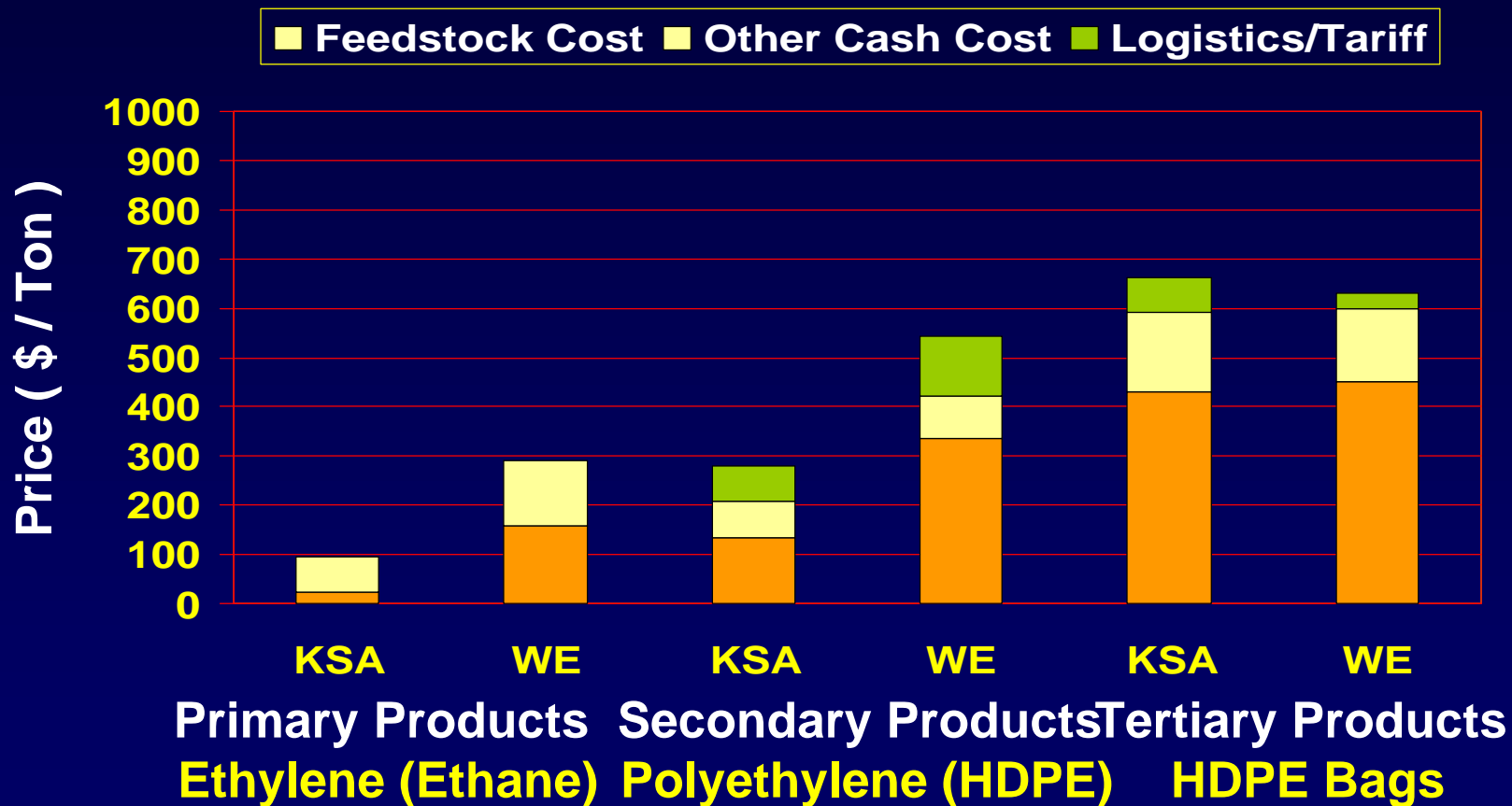
- Europe is a Net Importer of Plastic Products
- China is the largest supplier of polyethylene bags to the EU, followed by Malaysia and Thailand.
- The obvious question is :

Why haven't Saudi Converters Captured this Market ?

Future Outlook : Opportunities

② Opportunities in Export Markets

Dilution of Feedstock Cost Advantage along the Production Chain



Future Outlook : Opportunities

② Opportunities in Export Markets

- **Capturing Opportunities in Export Markets will heavily depend on : Raw Material Prices .**
- **Penetrating Export Markets require :**
 - Marketing Alliances between Converters
 - Special Resins Prices for Export-oriented Fabricated Plastics
- **Plastic Converters should consider utilizing their Free Capacities for Export Sales at : Cash Cost Prices .**

Future Outlook : Challenges

- **The Advent of Trade Barrier Removal, and the**
- **Increasing Competition from Low-cost Imports from China leading to :**
 - **Pricing Ramification**
 - **Lower Margins**
- **Volatility of Resins Prices (which account for 40% to 70 % of total manufacturing cost)**

Concluding Remarks

- **Plastic Converters Missing out Opportunities on :**
 - Specialities,
 - Efficiency;
- **Significant Capacity Under-utilization.**
 - Spare Capacity = 31 % Plus
 - Represent a High Fixed Cost
- **Free Capacity could be reduced through :**
 - Brand Management
 - Improved Project Management
 - Better Marketing

Concluding Remarks

- **To fully utilize their potential, Plastic Converters must become a “*Cost Leader* “ by adopting :**
 - **Advanced Technology;**
 - **Economies-of-Scale;**
Consolidation and production JVs are one way to expand capacity and reduce costs.
 - **R & D;**
Focusing on process improvements rather than on product development.
 - **Focus on High Value-added Products (Secondary Conversion)**

**Thank You For Your
Attention**