



G.S.I. PET DAY 2005

Polyester Global View

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AGENDA

- * Who are Tecnon OrbiChem?
- * Polyester over view - forecast by sectors & growth assumptions
- * World Capacity build-up and Utilisation by sectors
- * The 'Powerhouse' that is China.....
- *its impact on Raw Materials
- * The 'Free market' in Textiles
- * Fibre to Resin Conversions
- * Antidumping & Protectionism
- * Conclusions

TECNON ORBICHEM

A WORLDWIDE CONSULTING COMPANY



CONSULTING SERVICES

Tecnon OrbiChem

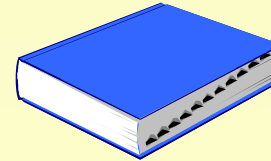
Private Studies

- ★ Feasibility
- ★ Marketing
- ★ Economics
- ★ Restructuring
- ★ Technology

Databases



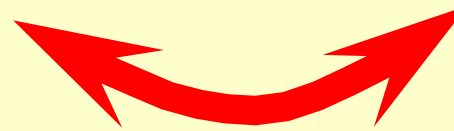
Annual Publications



Newsletters



fibres
plastics
intermediates
feedstocks



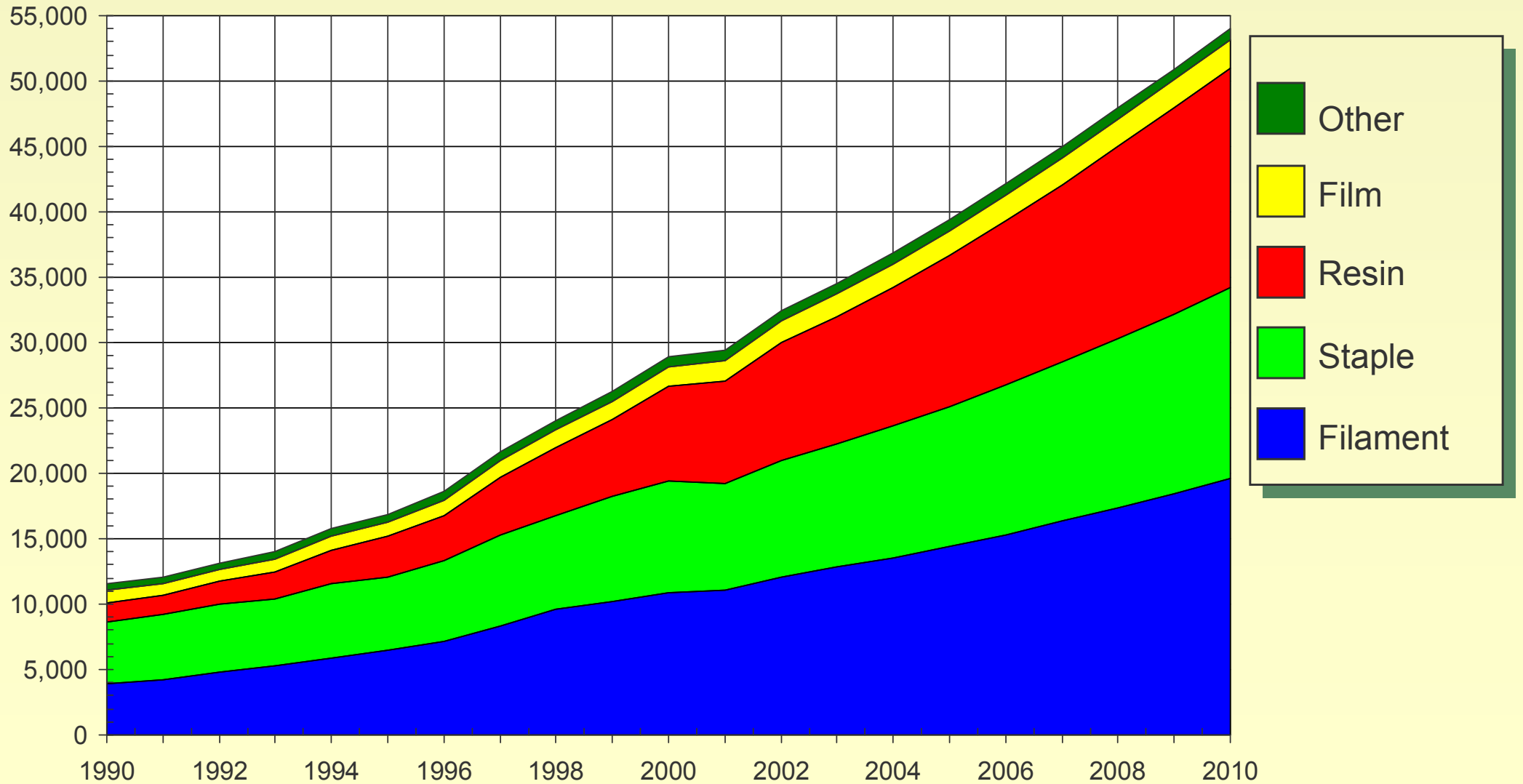
POLYESTER & INTERMEDIATES CONSUMPTION GROWTH (% AAGR)

	<i>'90-'00</i>	<i>'00-'05</i>	<i>'05-'10</i>
Filament	10.8	5.6	6.3
Staple	6.1	4.2	6.4
Film	5.0	5.3	3.2
PET Resin	17.0	10.4	8.0
Total	9.5	6.5	6.7
DMT	-0.8	-1.2	0.4
PTA	12.8	7.1	7.1
MEG	7.5	5.4	5.9
Paraxylene	9.4	5.8	6.5

Source: Tecnon OrbiChem

WORLD POLYESTER PRODUCTION BY TYPE

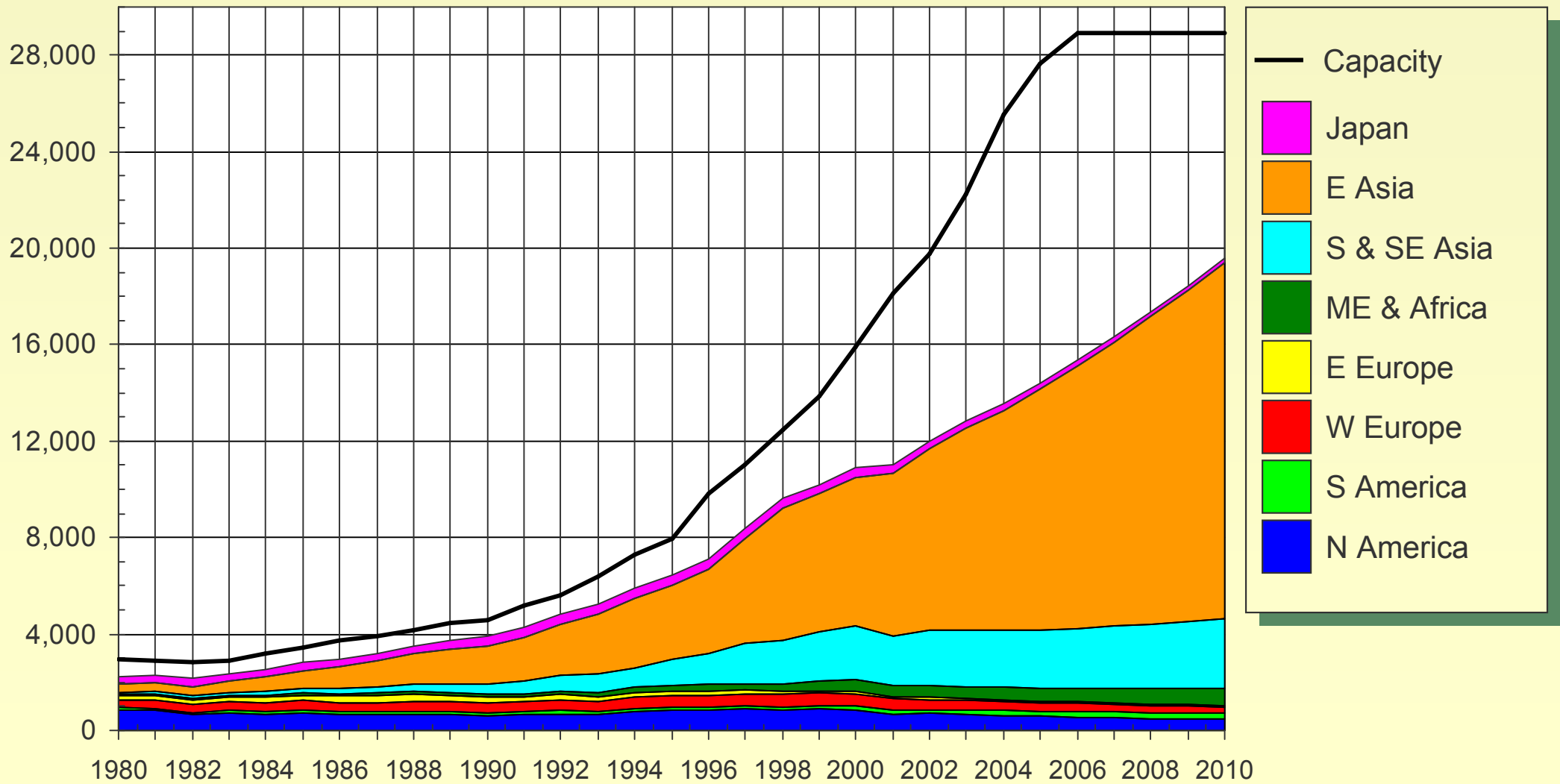
Thousand Metric Tons



Source: Tecnon OrbiChem

WORLD POLYESTER FILAMENT CAPACITY & PRODUCTION

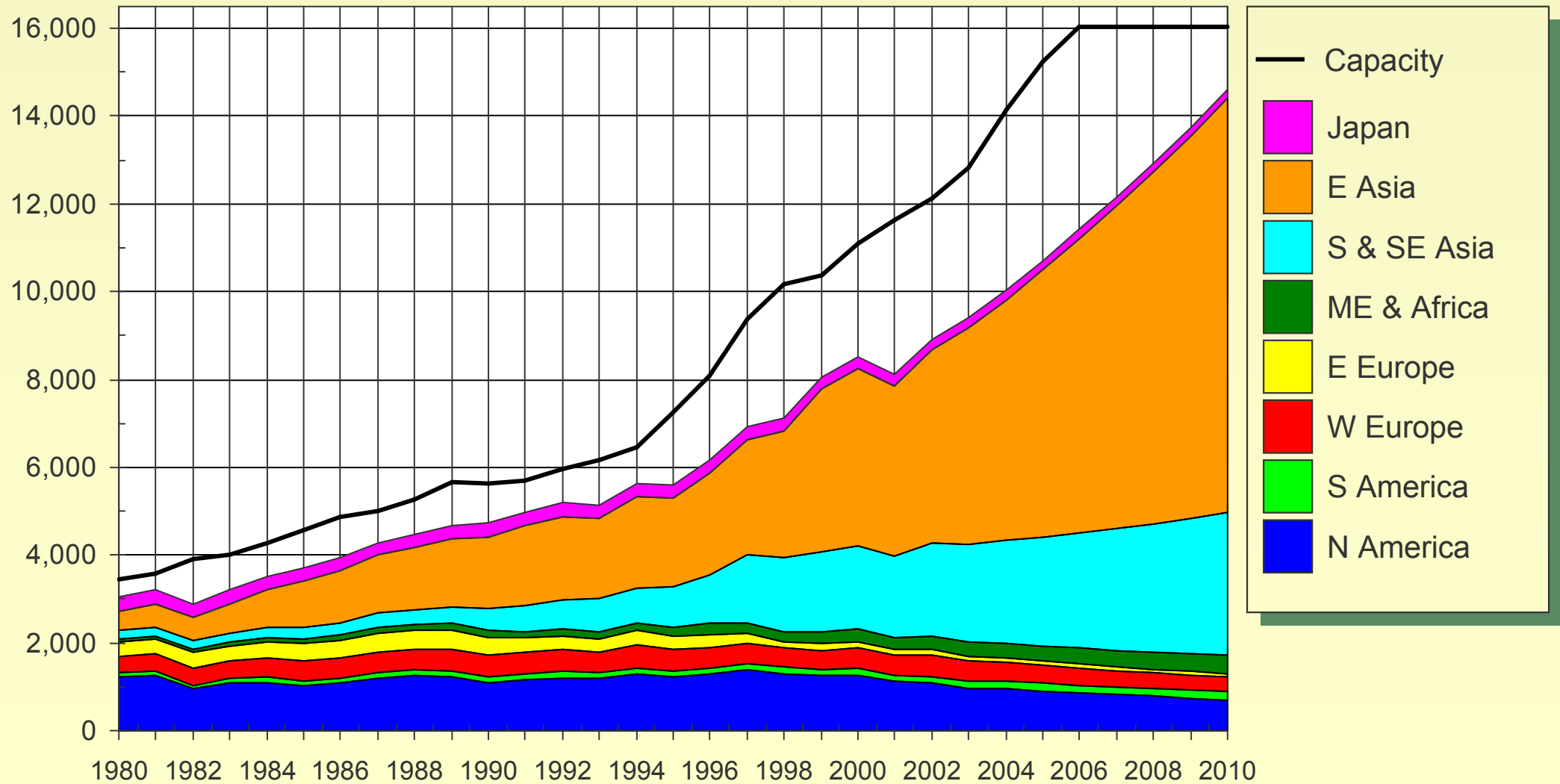
Thousand Metric Tons



Source: Tecnon OrbiChem

WORLD POLYESTER STAPLE CAPACITY & PRODUCTION

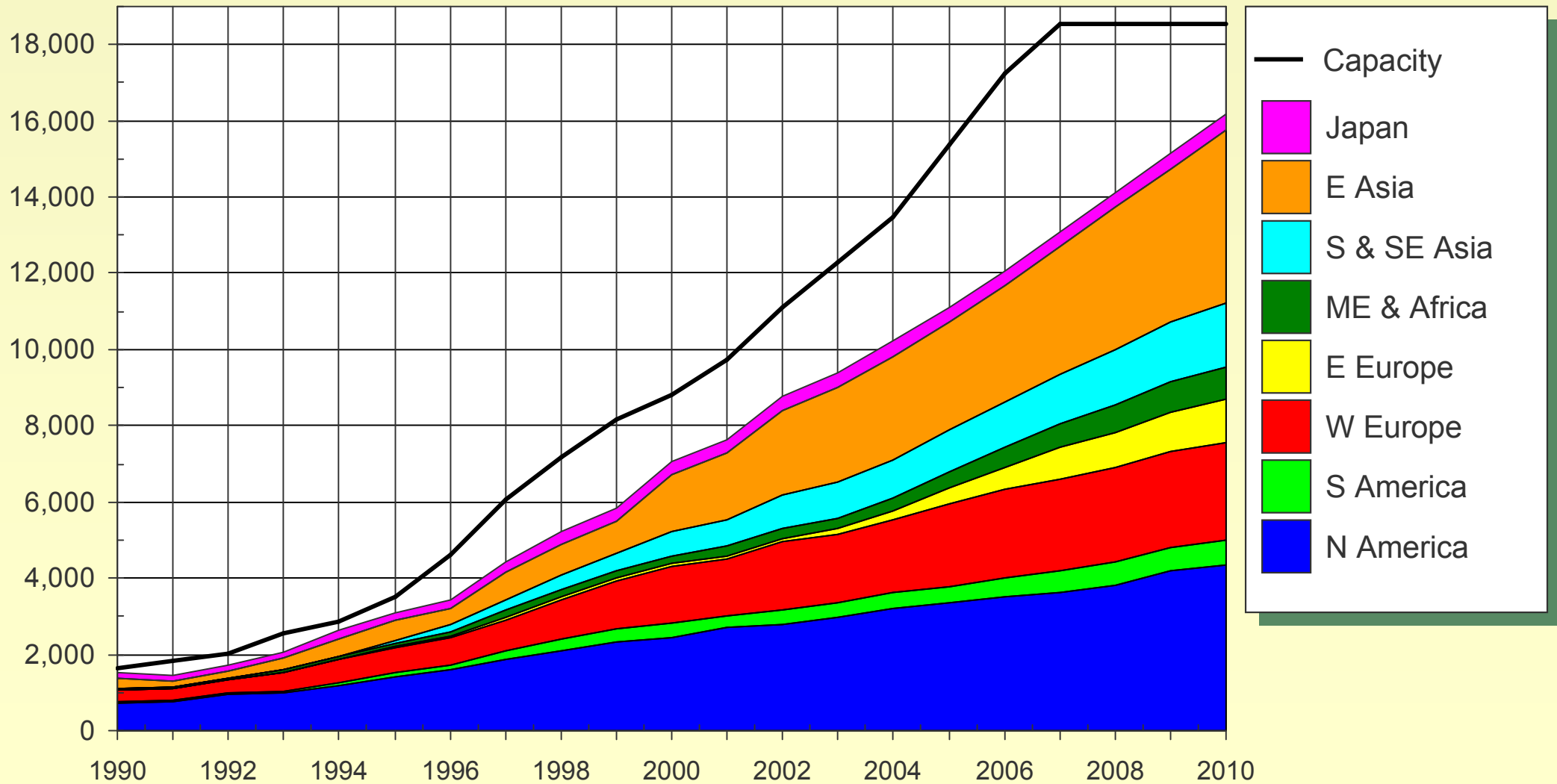
Thousand Metric Tons



Source: Tecnon OrbiChem

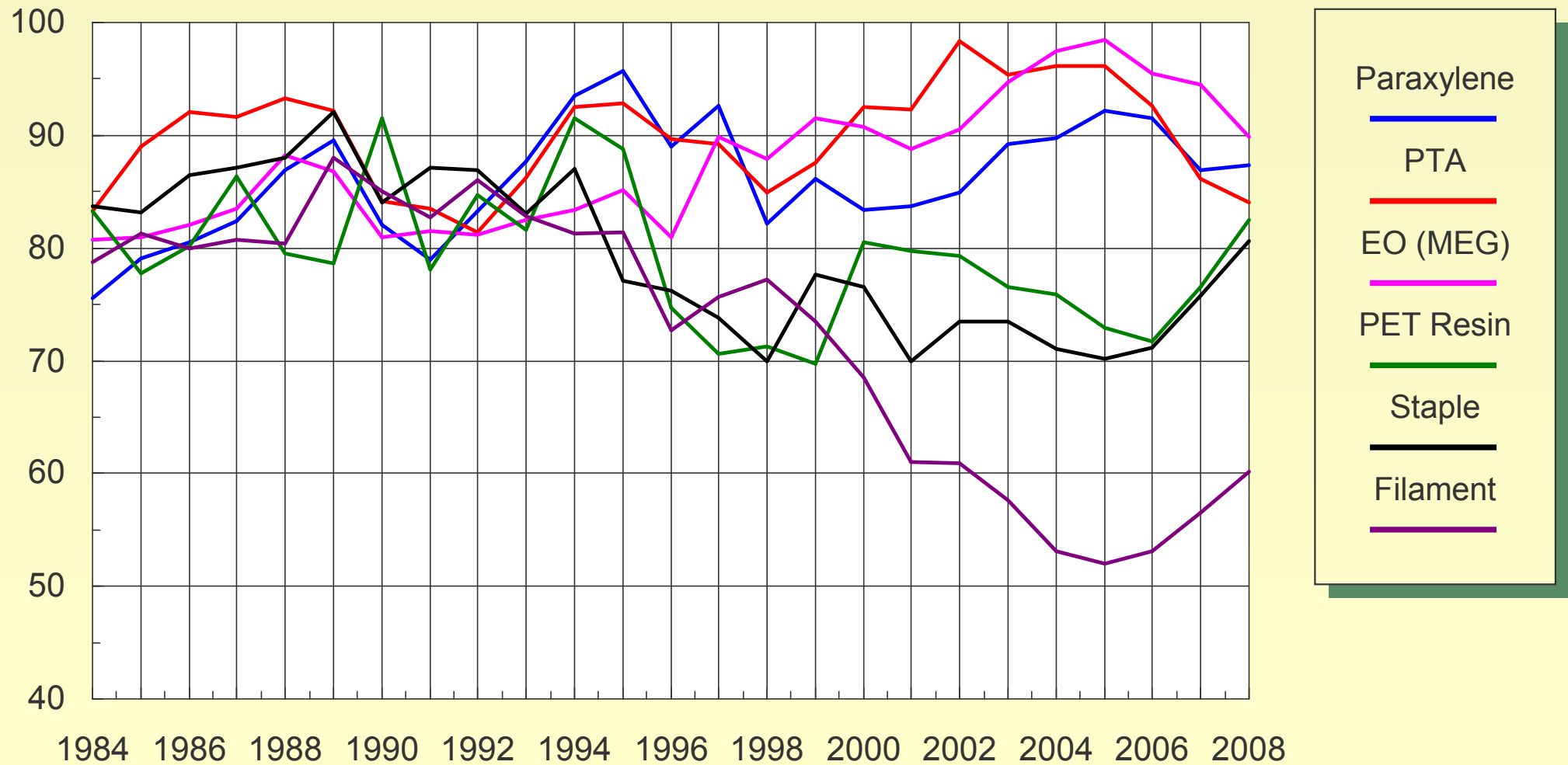
WORLD PET RESIN CAPACITY & PRODUCTION

Thousand Metric Tons



Source: Tecnon OrbiChem

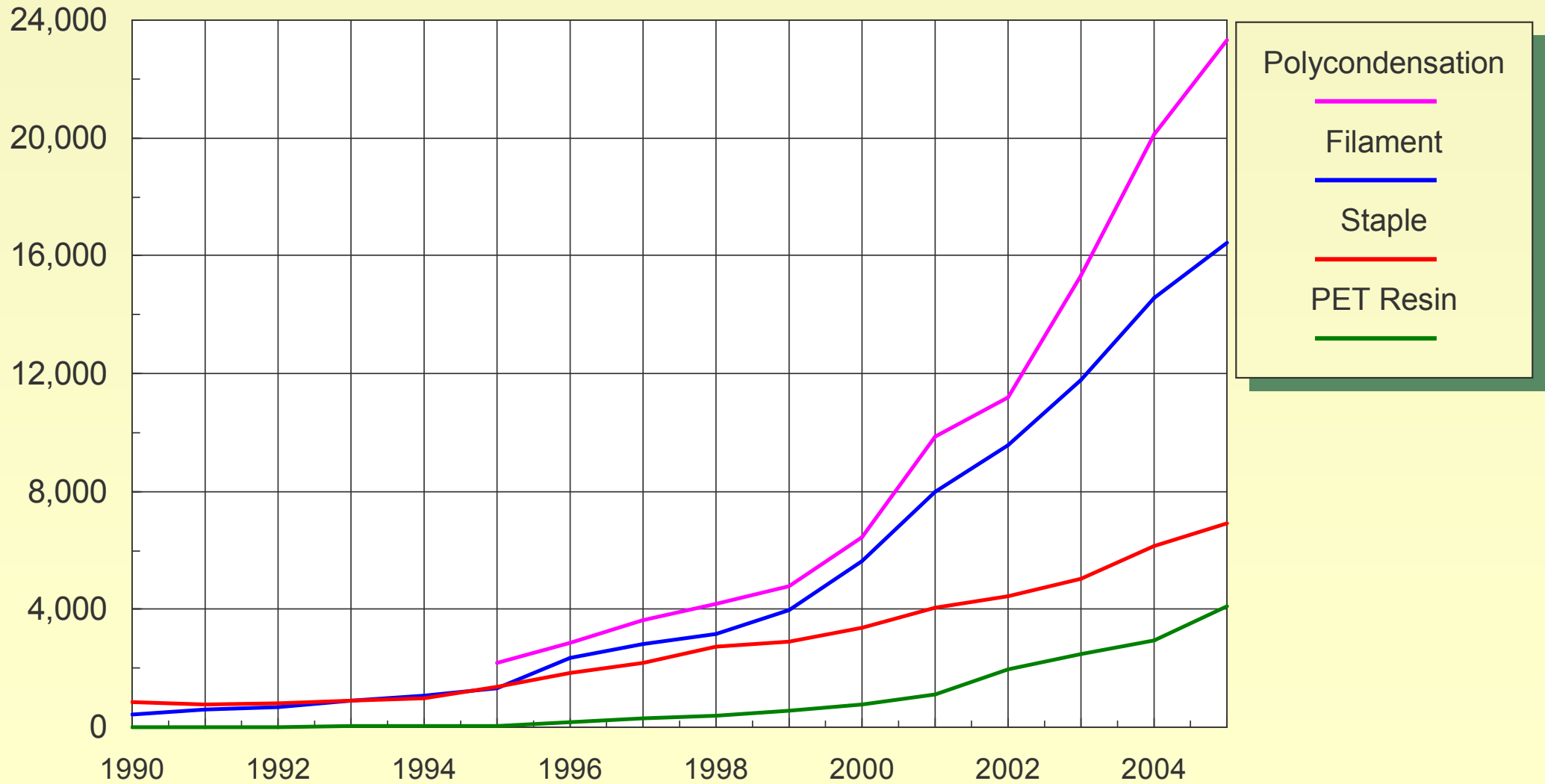
WORLD POLYESTER CHAIN CAPACITY UTILISATION (% Of Nameplate)



Source: Tecnon OrbiChem

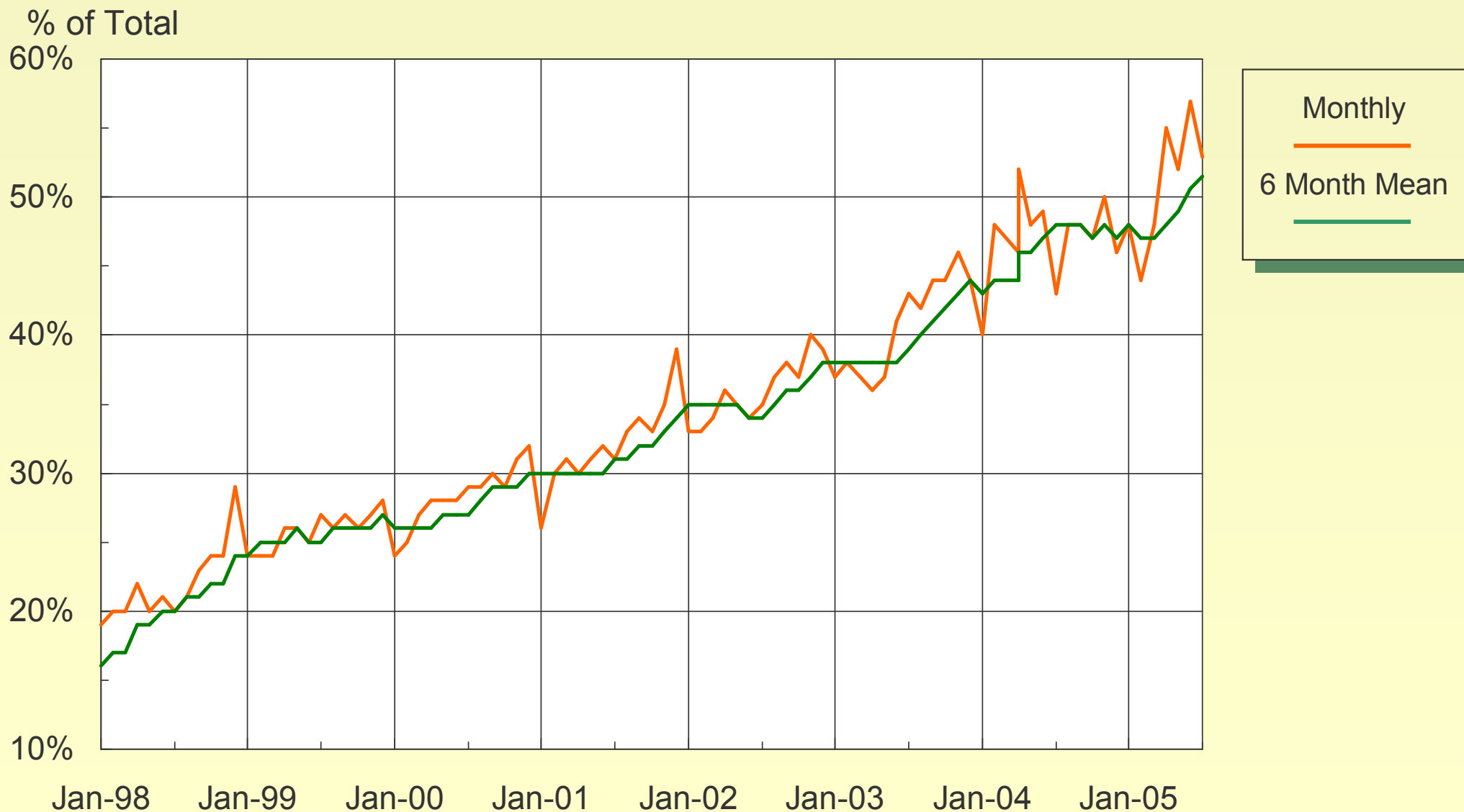
CHINESE POLYESTER CAPACITIES 1990-2005

Thousand Metric Tons



Source: Tecnon OrbiChem

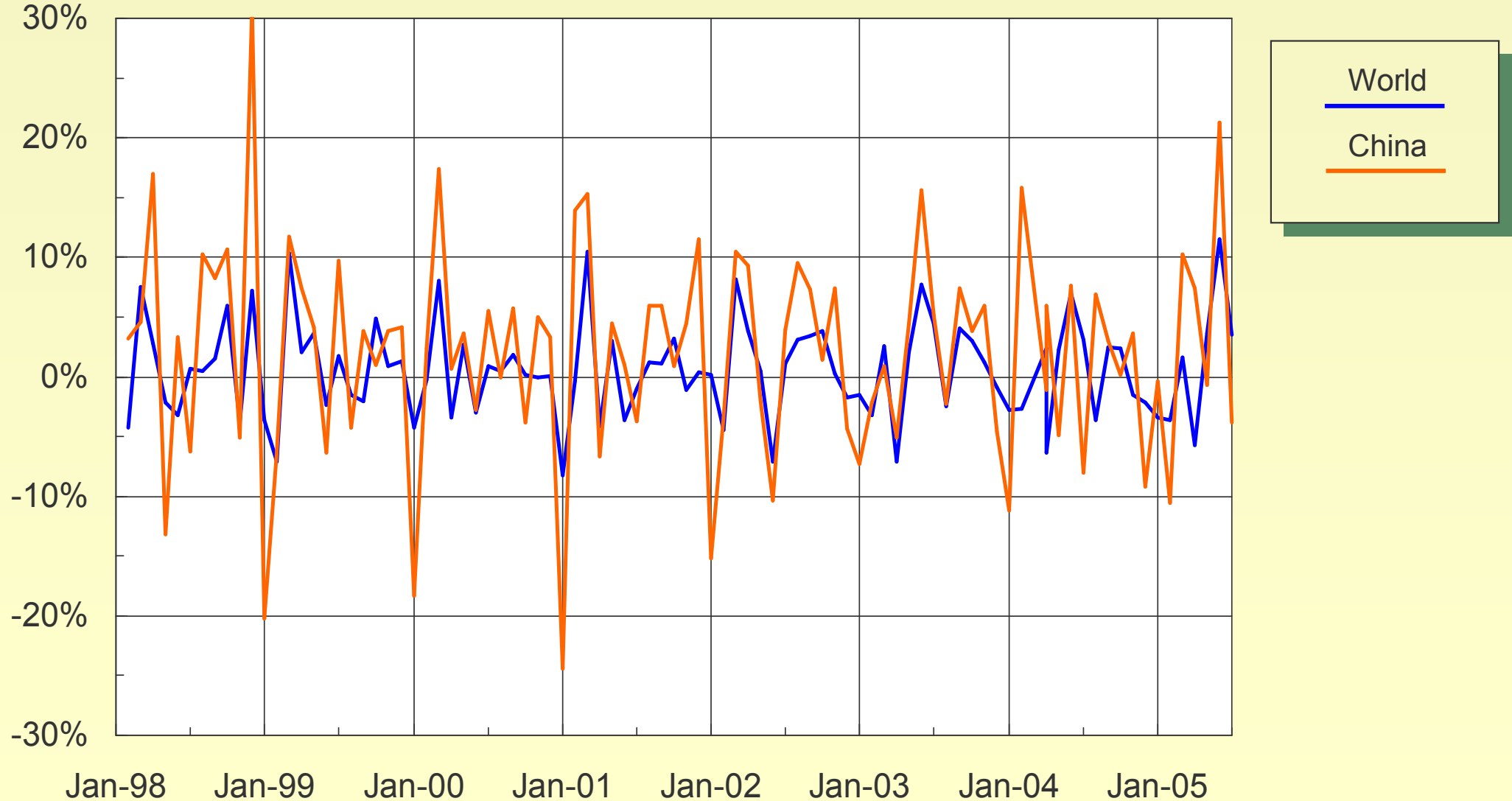
CHINESE SHARE OF POLYESTER FIBRE PRODUCTION 1998-2005



Source: Tecnon OrbiChem

MONTHLY VARIATION IN WORLD & CHINESE POLYESTER FIBRE PRODUCTION

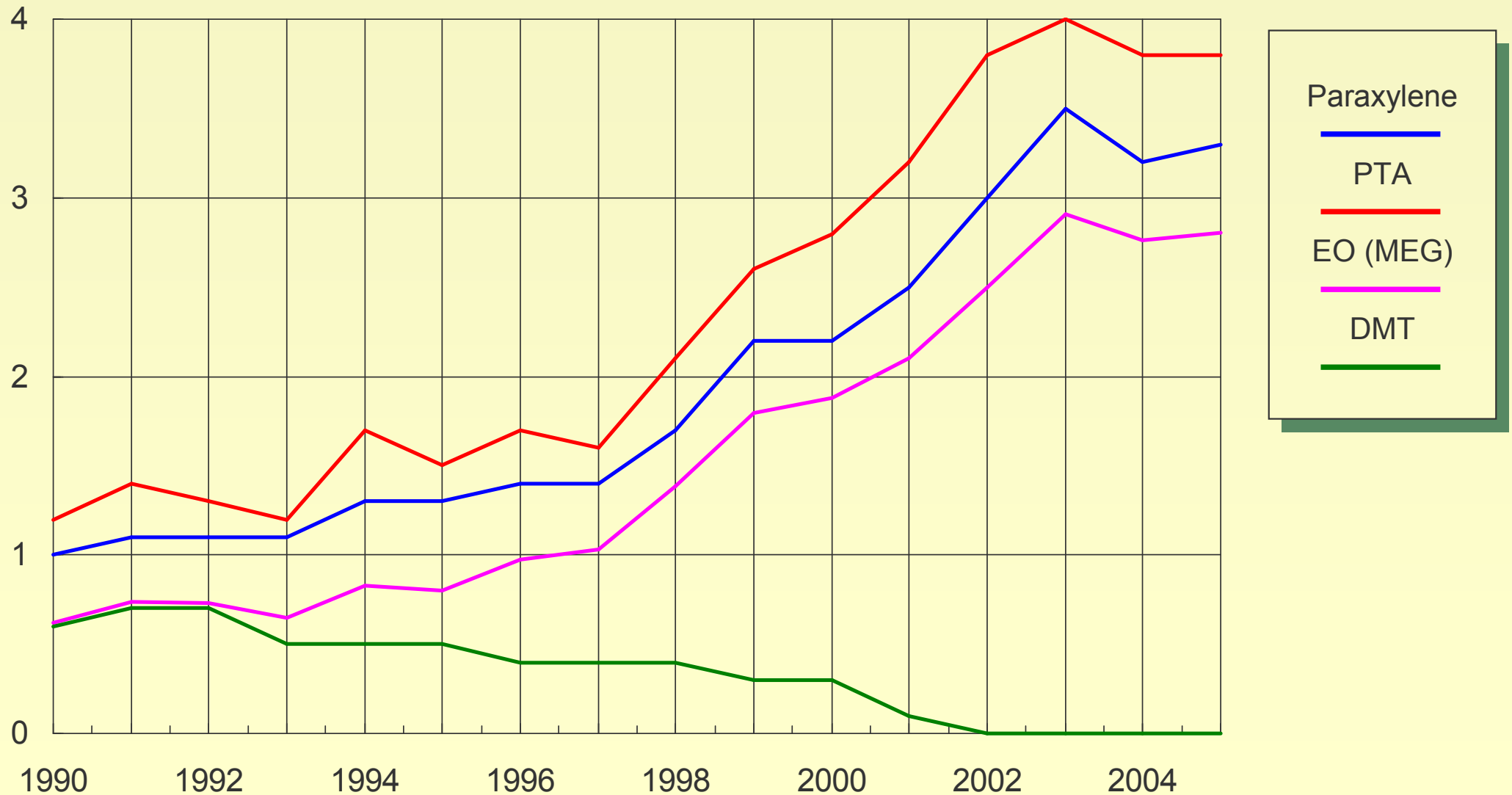
Change on Previous Month



Source: Tecnon OrbiChem

EFFECT ON INTERMEDIATES OF 15% INCREASE IN CHINESE POLYESTER FIBRE PRODUCTION

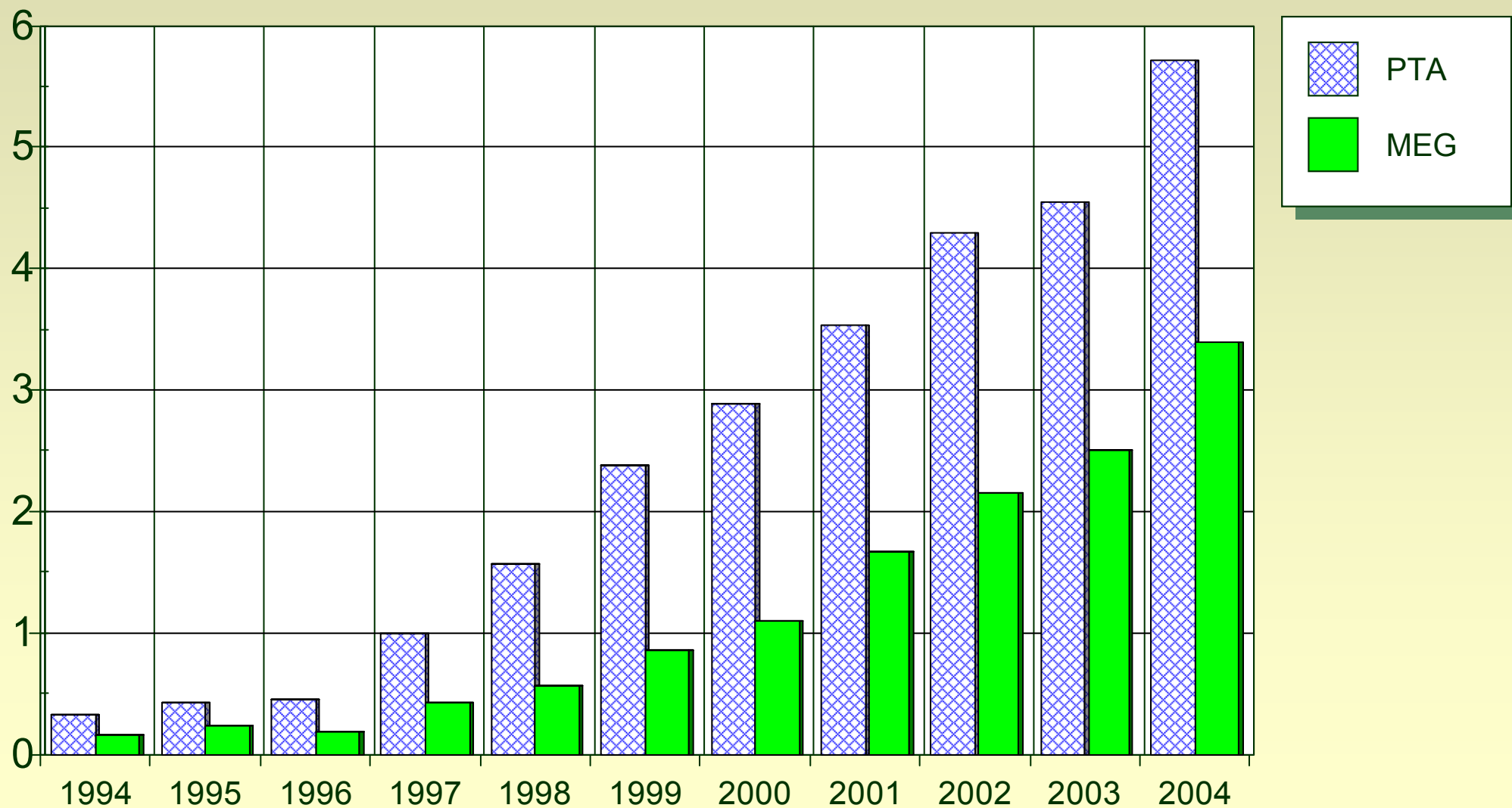
Change in World Utilisation Rate (%)



Source: Tecnon OrbiChem

CHINA – IMPORTS OF PTA & MEG 1994-2004

Million Tons



Source: Tecnon OrbiChem

TEXTILE & APPAREL IMPORT QUOTA REMOVAL 2002 - 2004

- * 31 Dec 2001 - Round 3 Of Quota Removal
- * China Textile Exports To US Double In 2002
- * China Share Of EU Textile Imports Doubles
- * But 80% Of Quotas Were Still In Place
- * 49% Of Textile Trade Was Still Quota Controlled
- * **31 Dec 2004 - ALL Remaining Quotas Went**

AREAS OF MAJOR US IMPORT GROWTH FROM CHINA H1 2005

<i>Category/Description</i>	<i>Increase H1 '05 vs '04</i>	<i>% Change</i>
<i>c/mmfm non-knit shirts</i>	<i>4,007,246 dozen</i>	<i>463</i>
<i>c/mmfm skirts</i>	<i>3,743,400 dozen</i>	<i>879</i>
<i>c/mmfm pajamas/nightwear</i>	<i>3,582,855 dozen</i>	<i>647</i>
<i>c/mmfm swimwear</i>	<i>2,244,101 kg</i>	<i>408</i>
<i>c/mmfm curtains</i>	<i>7,687,648</i>	<i>32</i>

mmf = man made fibre

c = cotton

Source: Tecnon OrbiChem

2005 A YEAR OF CHANGE IN GLOBAL TEXTILE MARKETS

- * 1 January 2005 - Final Withdrawal Of Textile Quotas**
- * China Introduces Textile Export Taxes To Allay US and EU Fears**
- * Q1 2005 - China's Textile Exports To US & Europe Surge**
- * US & Europe Supports Industry's Request For Safeguard Measures**
- * China Offers To Increase Level & Range Of Export Taxes**
- * Europe comes to new quota agreement with China**
- * US imposes quotas while US and China continue to negotiate safeguard measures**
- * Re valuation of the Yuan in July, although not very significant**
- * US and Europe embargo various China exports as quotas are filled**
- * EU & China agree deal to release Chinese exports stopped at European ports. US still negotiating.**

RECENT FIBRE PLANT CONVERSIONS TO PACKAGING RESIN

			kt	
1994	Canada, Millhaven	Celanese/KoSa	184	Staple
2000	US, Ashboro	Tolaram/Tiepet/StarPET	40 – 100	Filament
2000- 2	China, Beijing	Yanshan P.C. (Petro Shan)	50+	Fibre & Film
2002	China, Zuhai	Yuhua PET	60+	Fibre
2003	US, Cooper River	DuPont/DAK Americas	130-150	Staple
2006	US, Pearl River	Wellman	135	Staple
2006	Mexico, Queretaro	Invista	180+	Staple?

Source: Tecnon OrbiChem

PET ANTIDUMPING CASES PROLIFERATE

- * **November 2000** - EU Imposes Antidumping Duties on PET Imports from Taiwan, South Korea, India, Thailand, Malaysia & Indonesia
- * **February 2004** - EU Imposes Antidumping Duties On PET Imports from China, Australia & Pakistan (Pakistan later rescinded).
- * **March 2004** - Brazilian Antidumping Action Filed vs Argentina & US
- * **April 2004** - US Antidumping Action Filed vs Asians
- * **October 2004** - US imposes antidumping measures on PET from Taiwan (deminimis), Thailand, India & Indonesia
- * **April 2005** – US waives antidumping duties on Thailand, India & Indonesia as injury not proven
- * **September 2005** – Brazil antidumping duties on Argentina & US
- * **Nov/Dec 2005** - EU to review antidumping measures particularly regarding Korea & Taiwan which hope for their removal

CONCLUSIONS

- * **Global Over-Capacity Constrains Prices for Polyester Fibre & PET Packaging Resin**
- * **~40% of World Polycondensation Capacity is in China**
- * **Balanced Polyester Intermediates Markets are Very Sensitive To Chinese Demand Swings.....or major supply disruptions (*Katrina*)**
- * **2005 Textile Import Quota Removal Threatens Major Shifts In Global Trade To China's Benefit**
- * **Capacity Expansions Continue & Spread**
- * **Antidumping Cases & Trade Disputes Escalate**
- * **Volatile prices throughout Polyester Chain**



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