Vinyls Industry Update

World Vinyl Forum

September 2007

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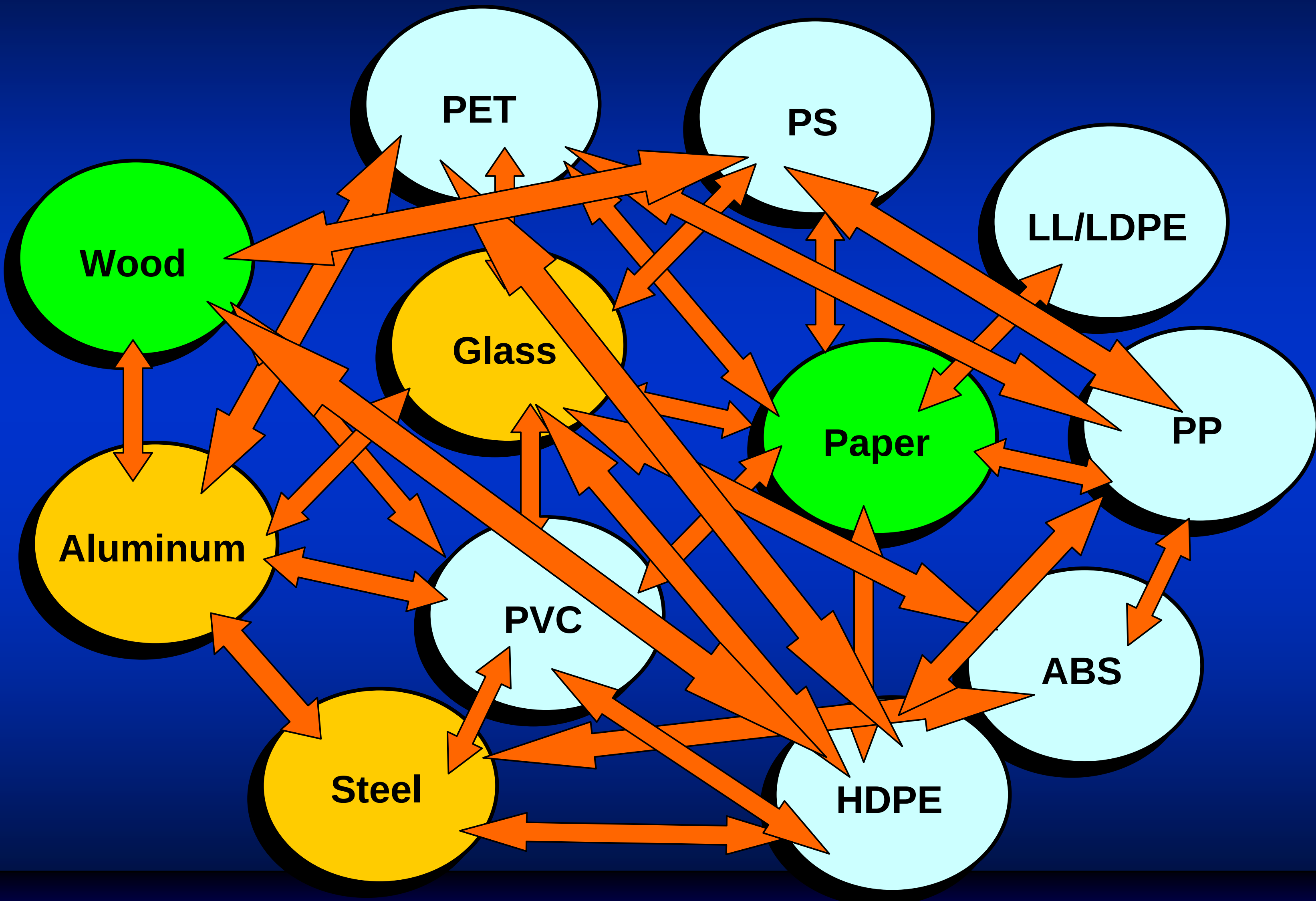
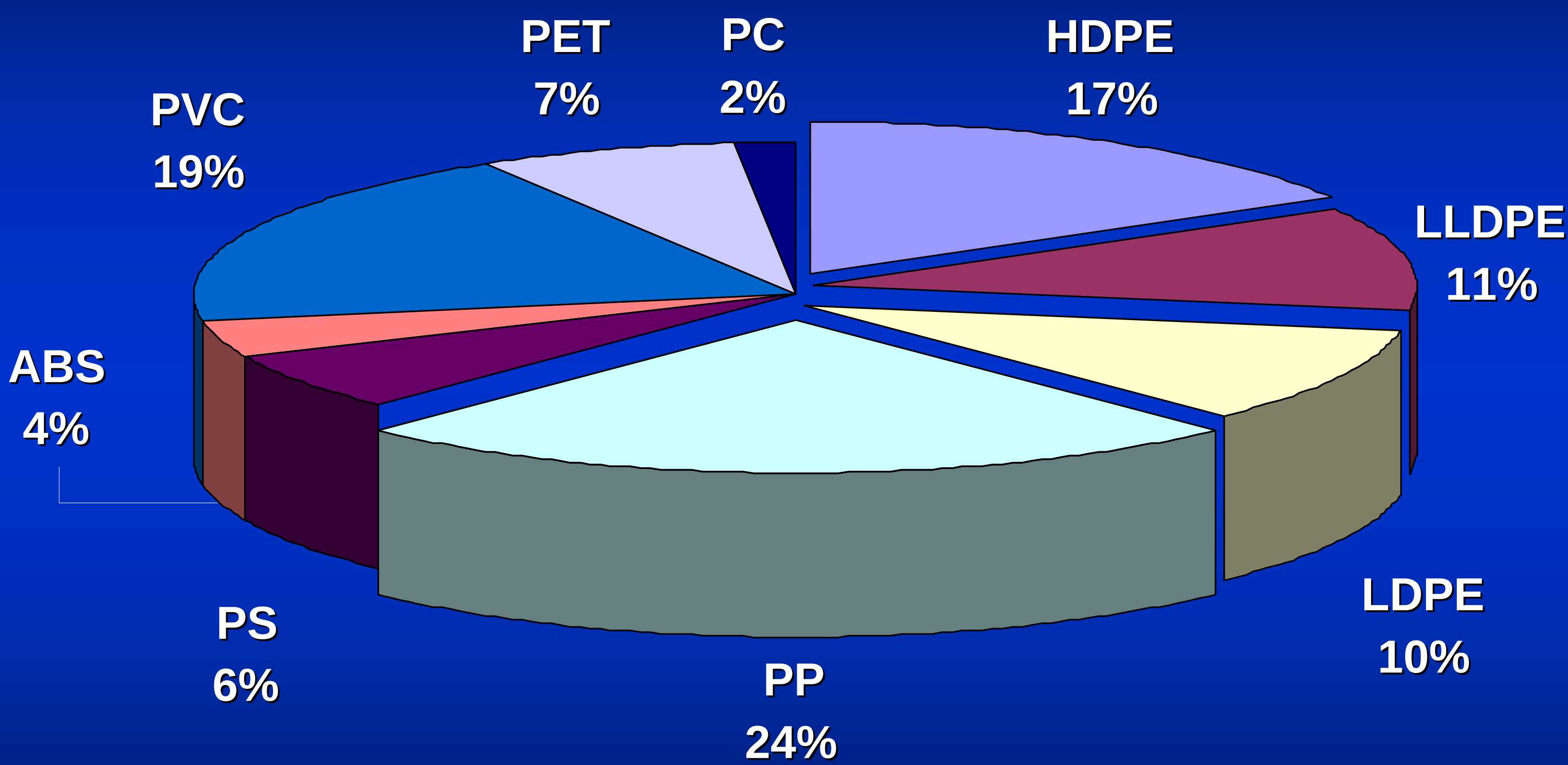
Global Business Director
Chlor-Alkali & Vinyls

Plastics Compete with Other Plastics & Traditional Materials…

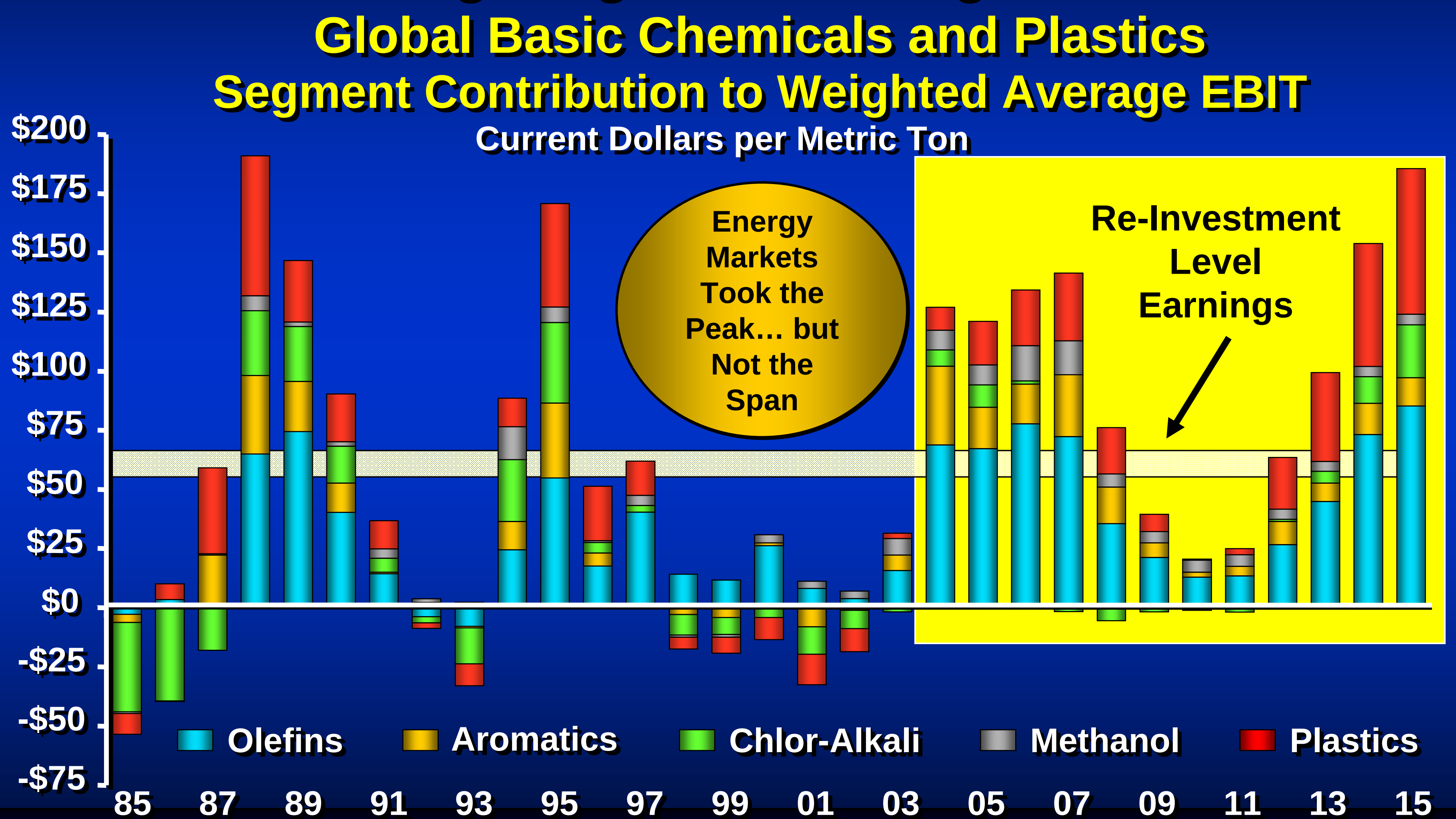


Global Plastics Consumption 2007



World Polymer Demand = 183 Million Metric Tons

Global earnings remain strong despite record energy prices. Additions of low-cost production will generate somewhat higher global earnings in the future.



Capital Costs

Process	EPC Cost / Ann. Ton '00-'03	EPC Cost / Ann. Ton 2007	Inflator Factor: '07 X '03
Ethylene	500 – 550	800 - 900	1.6 – 1.8
Methanol	250 – 300	400 - 500	1.6 – 1.8
HDPE	650 – 700	1,000 – 1,200	1.6 - 1.8
Aromatics	600 – 650	1,000 – 1,100	1.6 - 1.8
Vinyls (Chlorine to Vinyls)	360 – 380	580 – 680	1.6 - 1.8

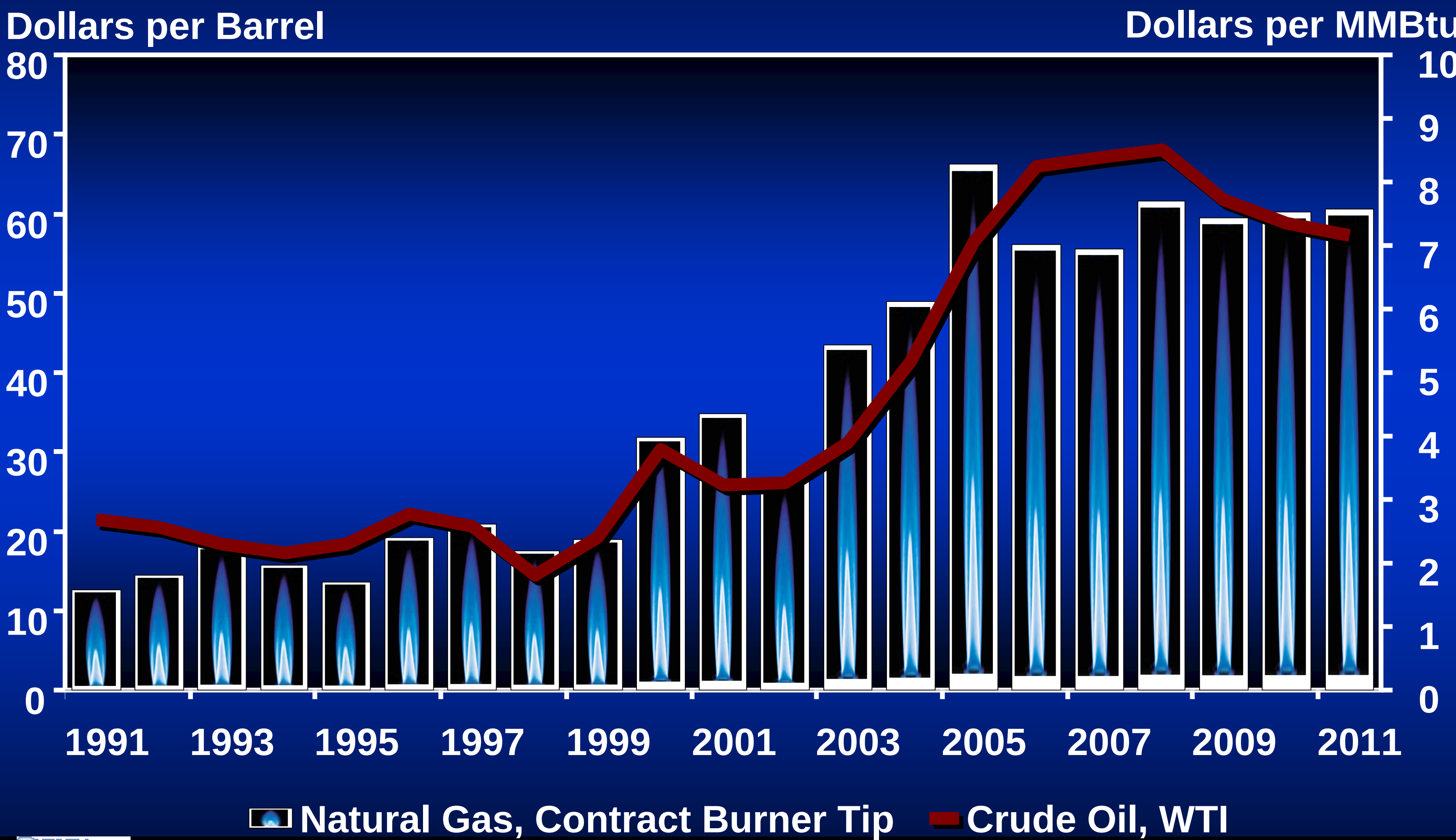
The pattern repeats across numerous processes / products

Key Driver on the Capital Is Higher Material Costs

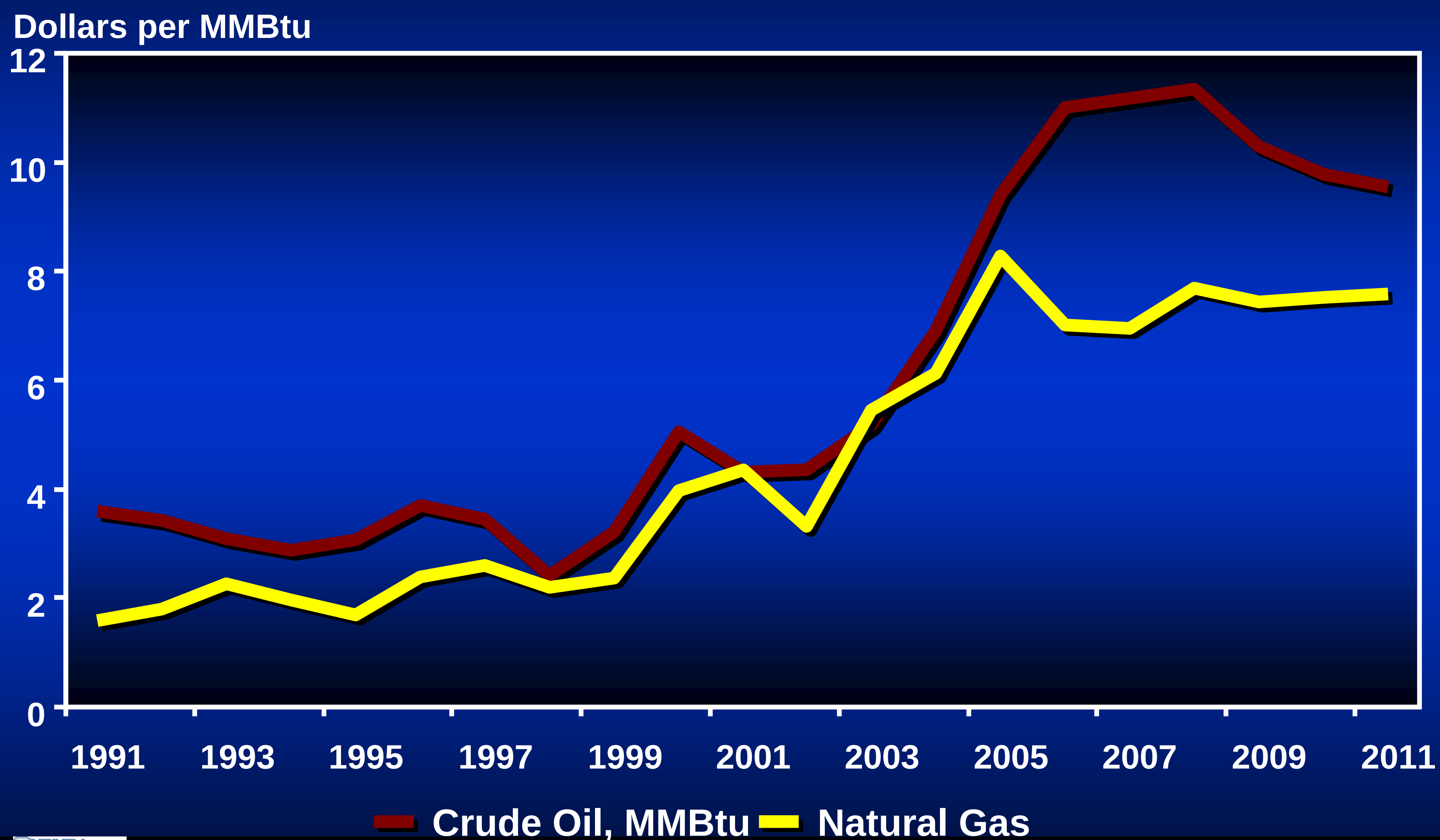
Material	Cost : 1Q 2002 ($/Ton)	Cost : 4Q 2006 ($/Ton)	Inflator Factor '06 X '02
Carbon Steel	~ 200	~ 900	4.5
316 Stainless	~ 2,000	~ 4,500	2.2
Nickel	~ 7,000	~ 35,000	5.0
Aluminum	~ 1,400	~ 2,500	1.8
Zinc	~ 1,000	~ 3,500	3.5

Stone & Webster / COMEX / London Metals Exchange Data

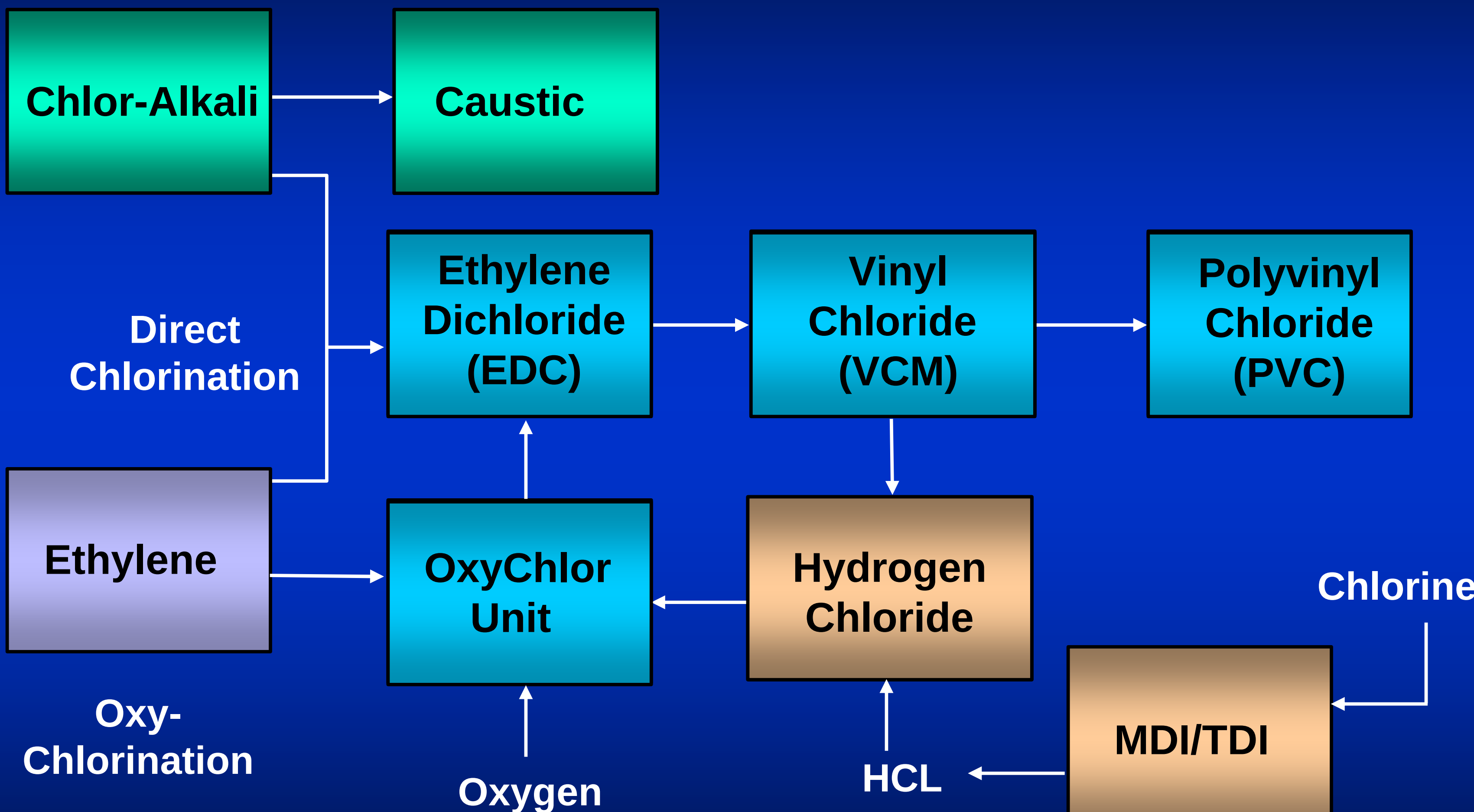
Natural Gas vs. Crude Oil



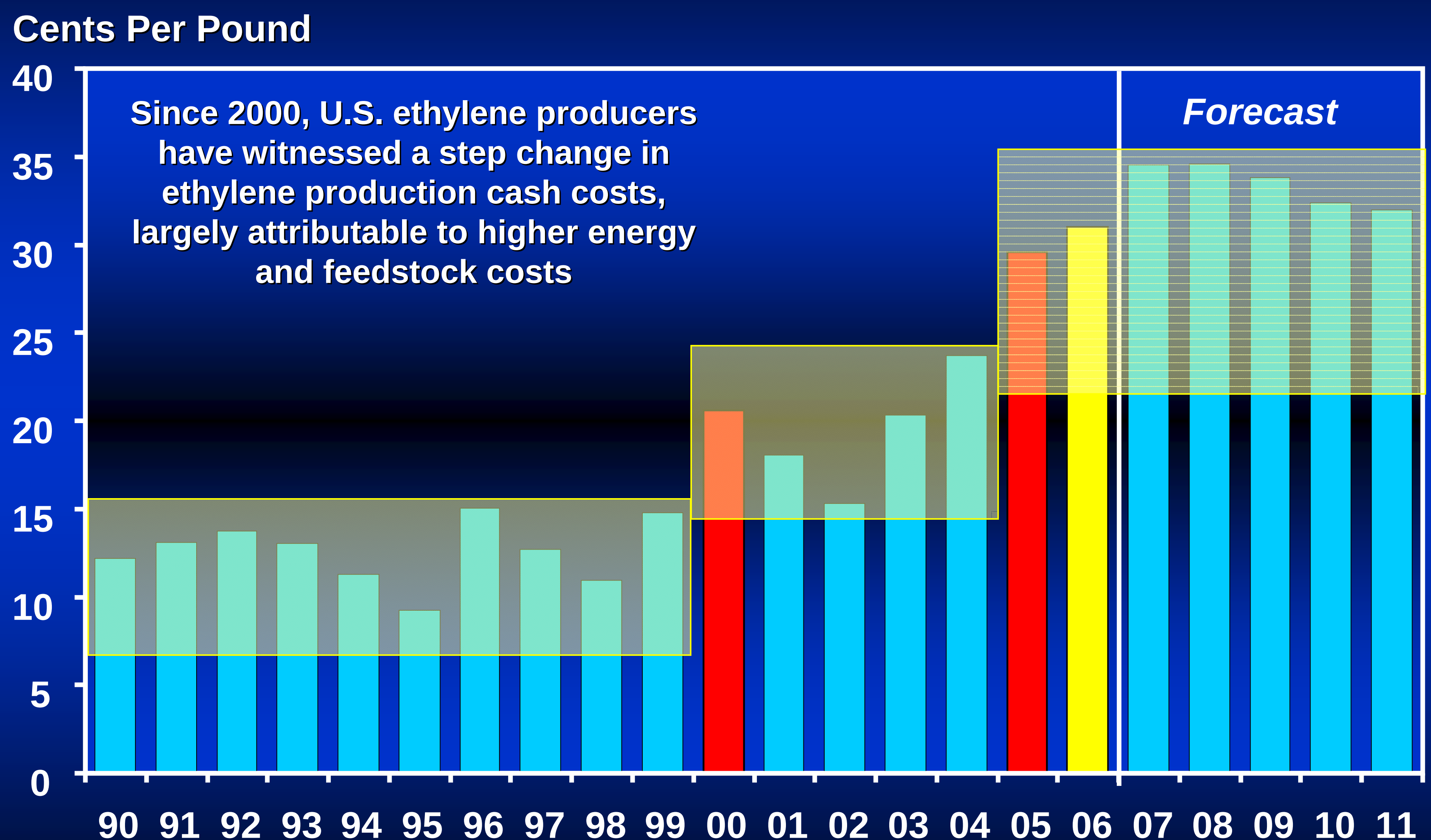
Natural Gas vs. Crude Oil



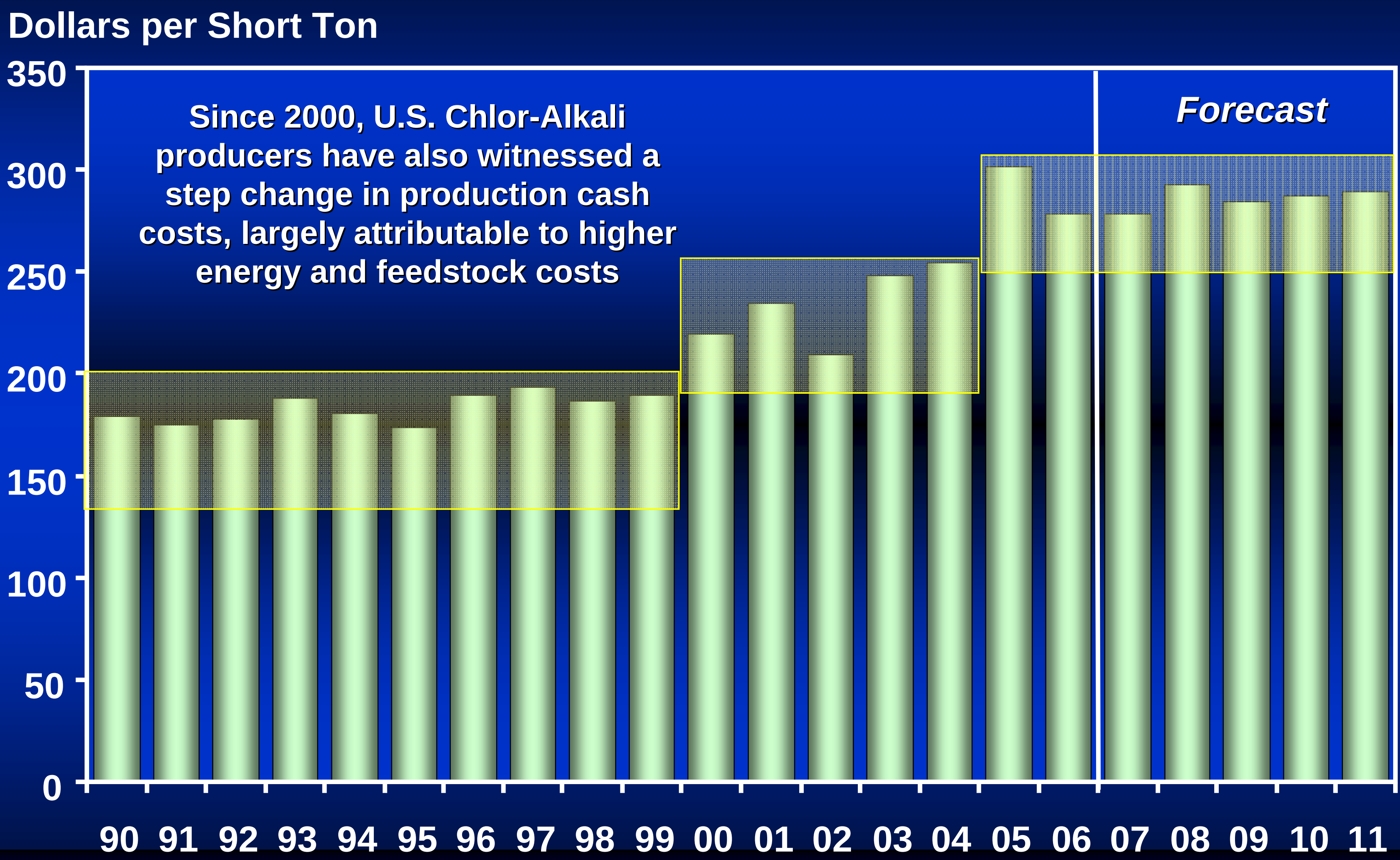
Chlor-alkali/Vinyls Flow Chart



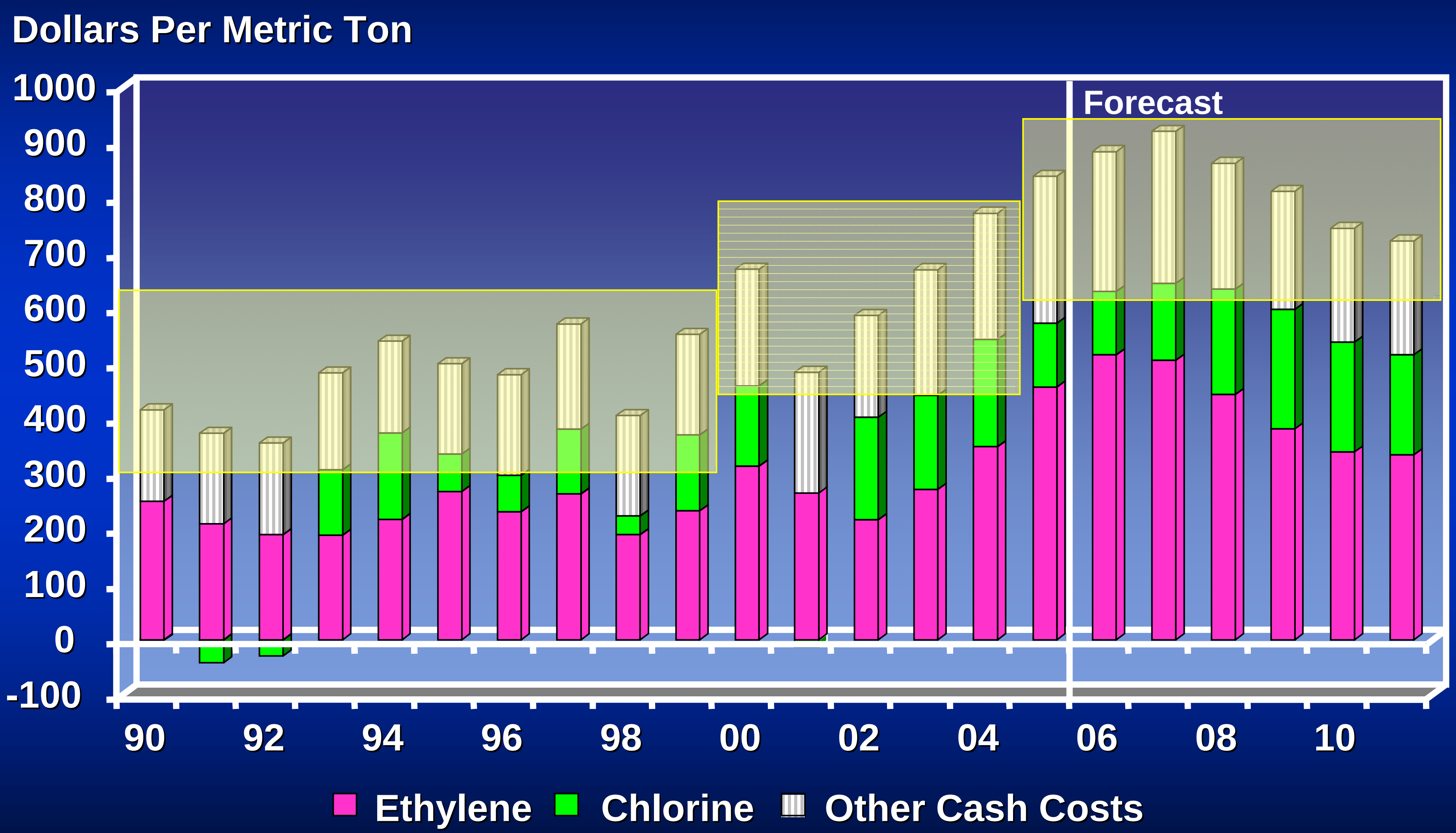
U.S. Ethylene Cash Costs Rose with Higher Energy Prices



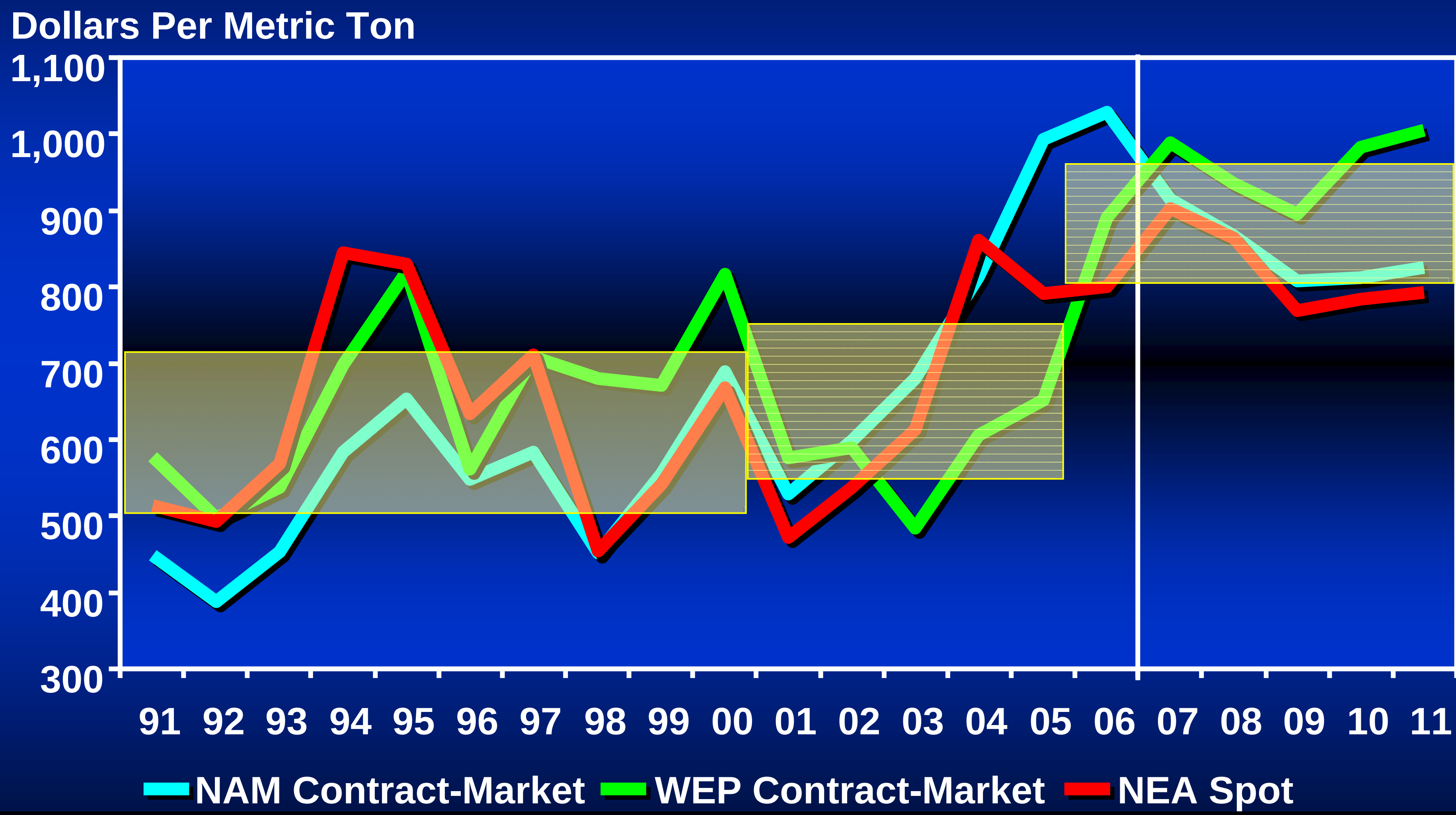
U.S. ECU Cash Costs Followed As Well



U.S. PVC Cash Costs



Regional PVC Netback Comparison After Disc. & Freight



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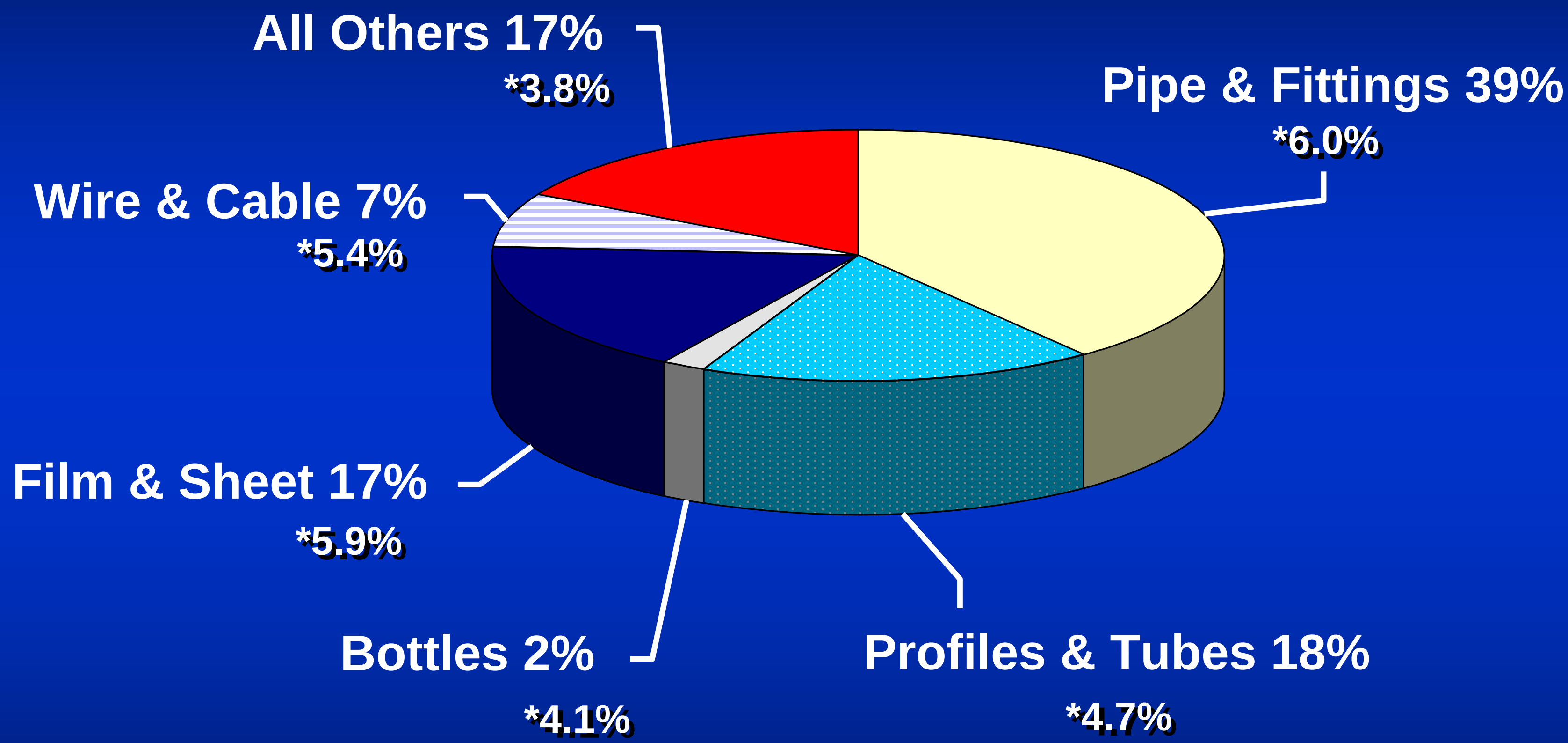
World PVC Consumption Detail

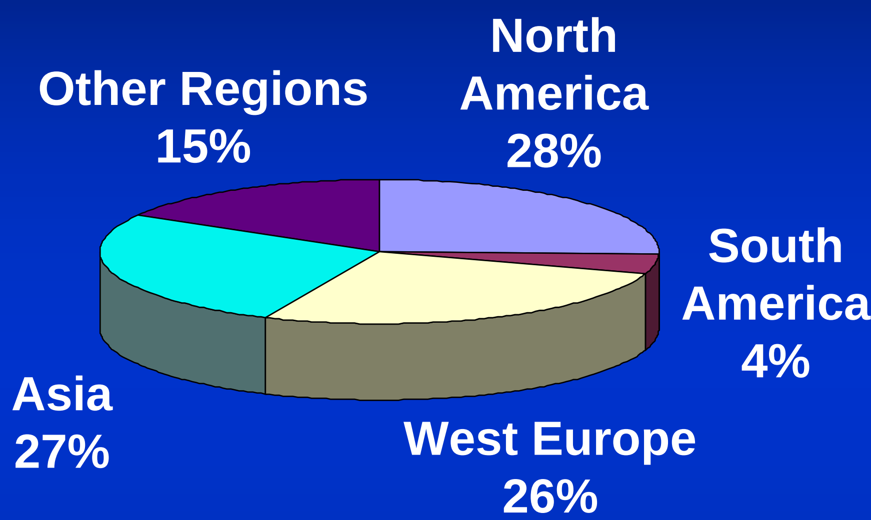
***5.0% AAGR 07-12**



2007 Total Domestic Demand = 33.5 Million Metric Tons

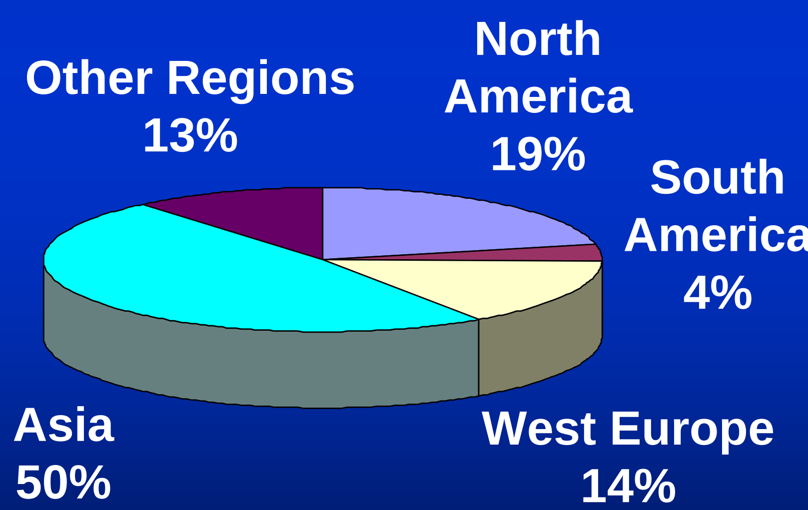
World PVC Capacity

1992



Total Capacity = 22 Million Metric Tons

2012



Total Capacity = 50 Million Metric Tons

Regional Demand Comparison

	Domestic Demand Growth Rates	
	2002-2007	2007-2012
North America	0.2	1.8
West Europe	1.9	0.7
Northeast Asia	7.9	7.0
World	5.1	5.0

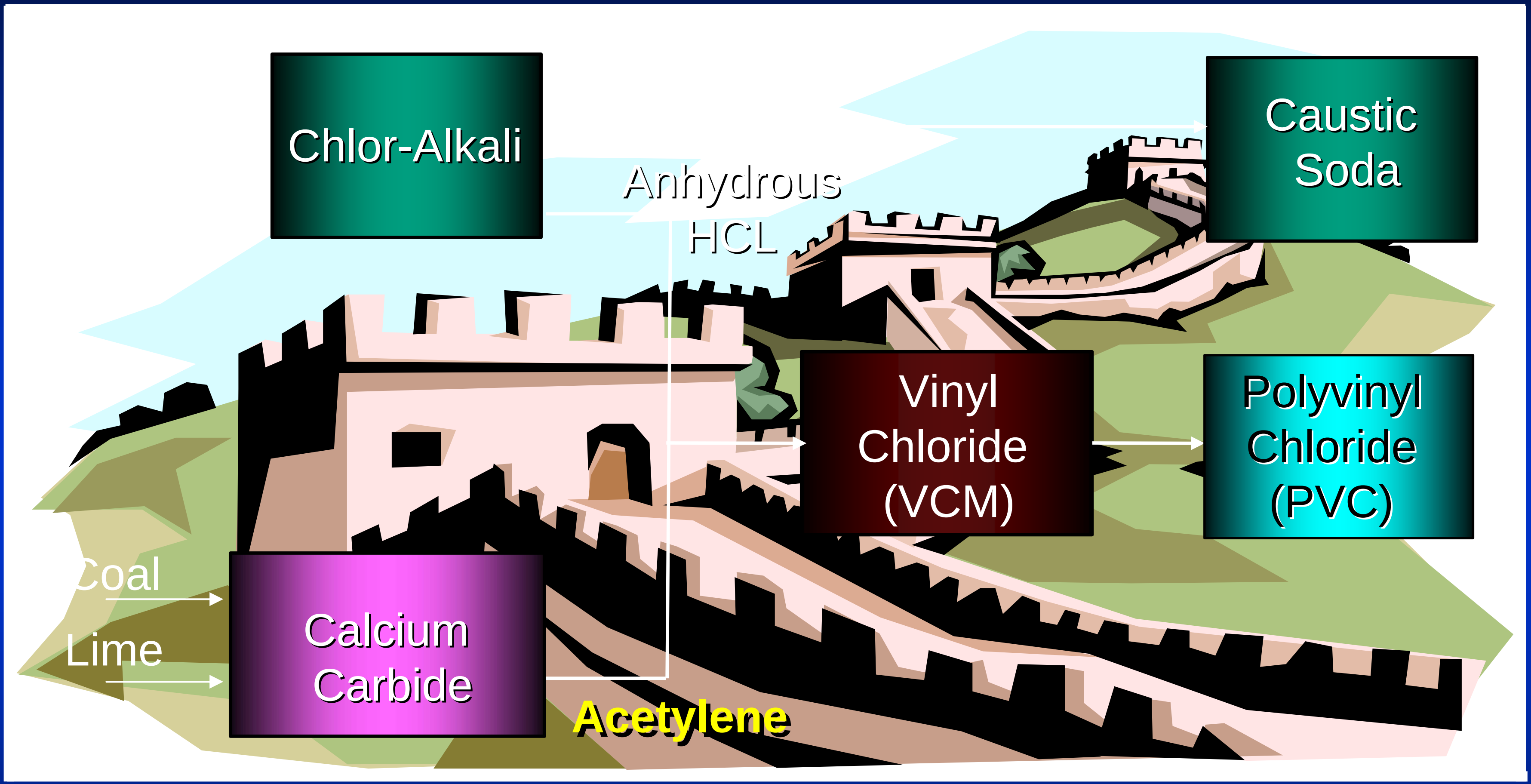
PVC Trade Flows

1990,2000, 2010

What Factors Influence China PVC Growth?

- Developing economy
  – PVC is durable and a relatively cheap building block
- Huge construction sector
  – Strong GDP, most populous country
- Push for self reliance
- 2008 Beijing Olympics

What Makes China Different?



64% Acetylene based PVC in 2005

78% Acetylene based PVC in 2007

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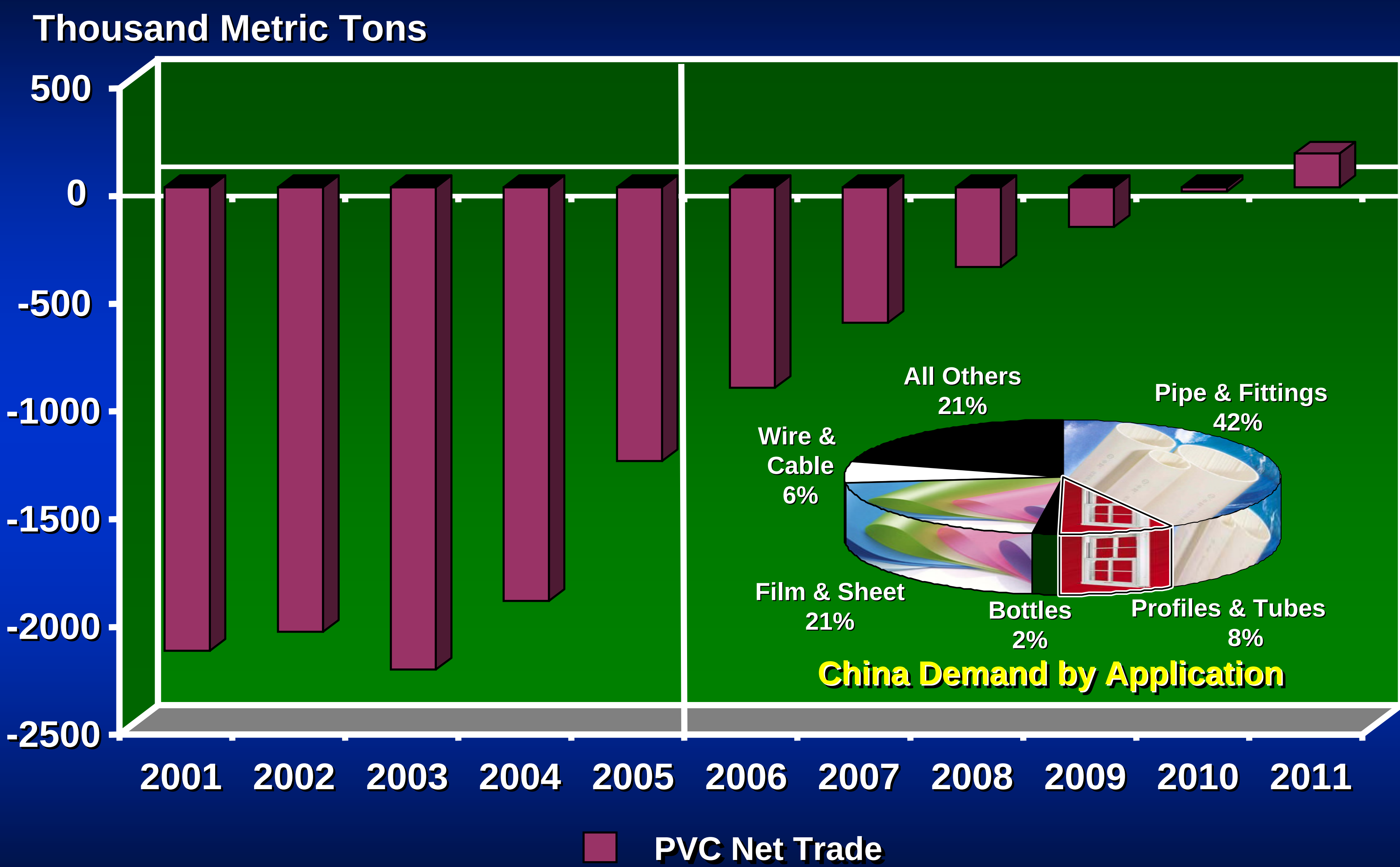
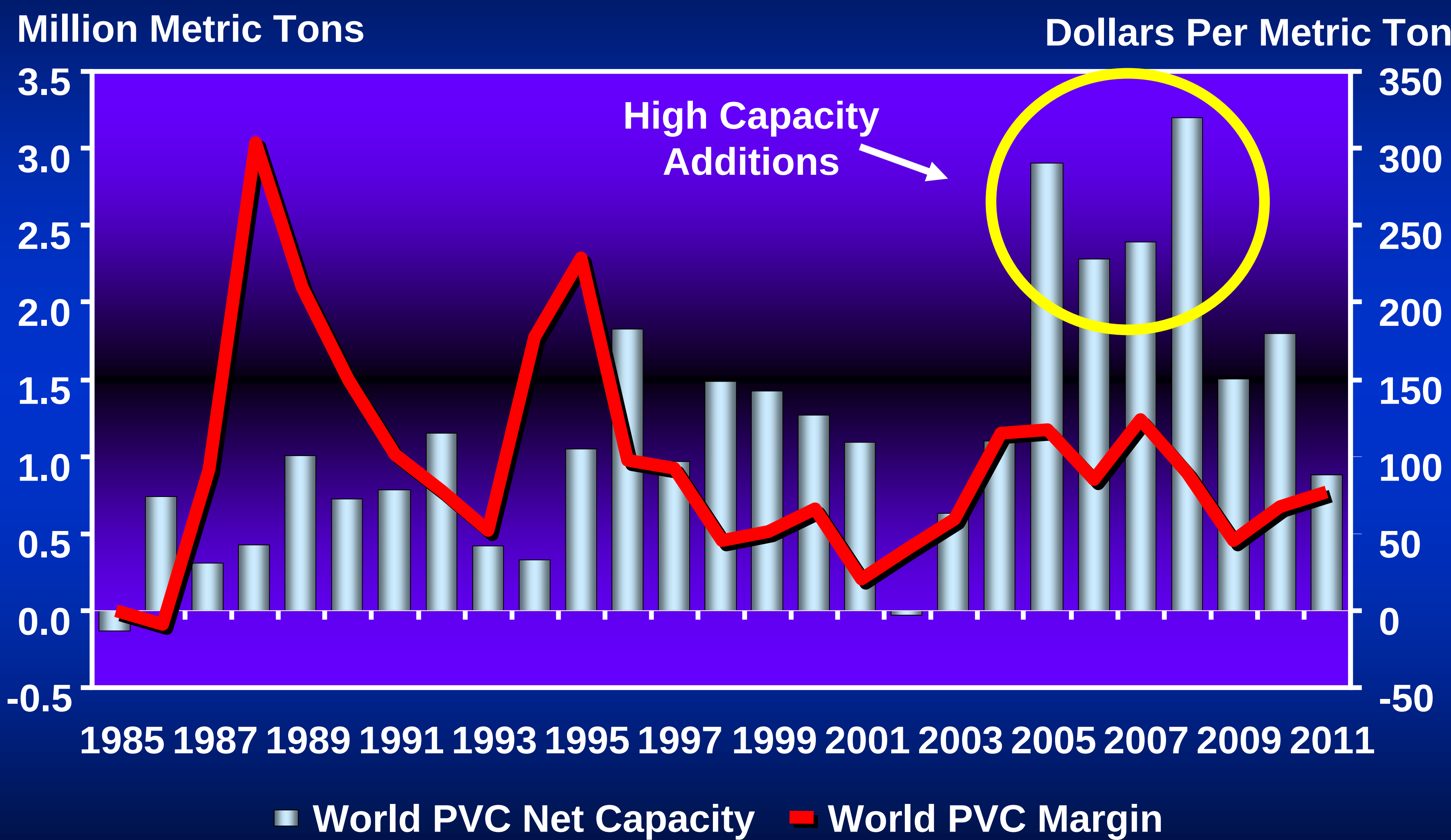
China and PVC

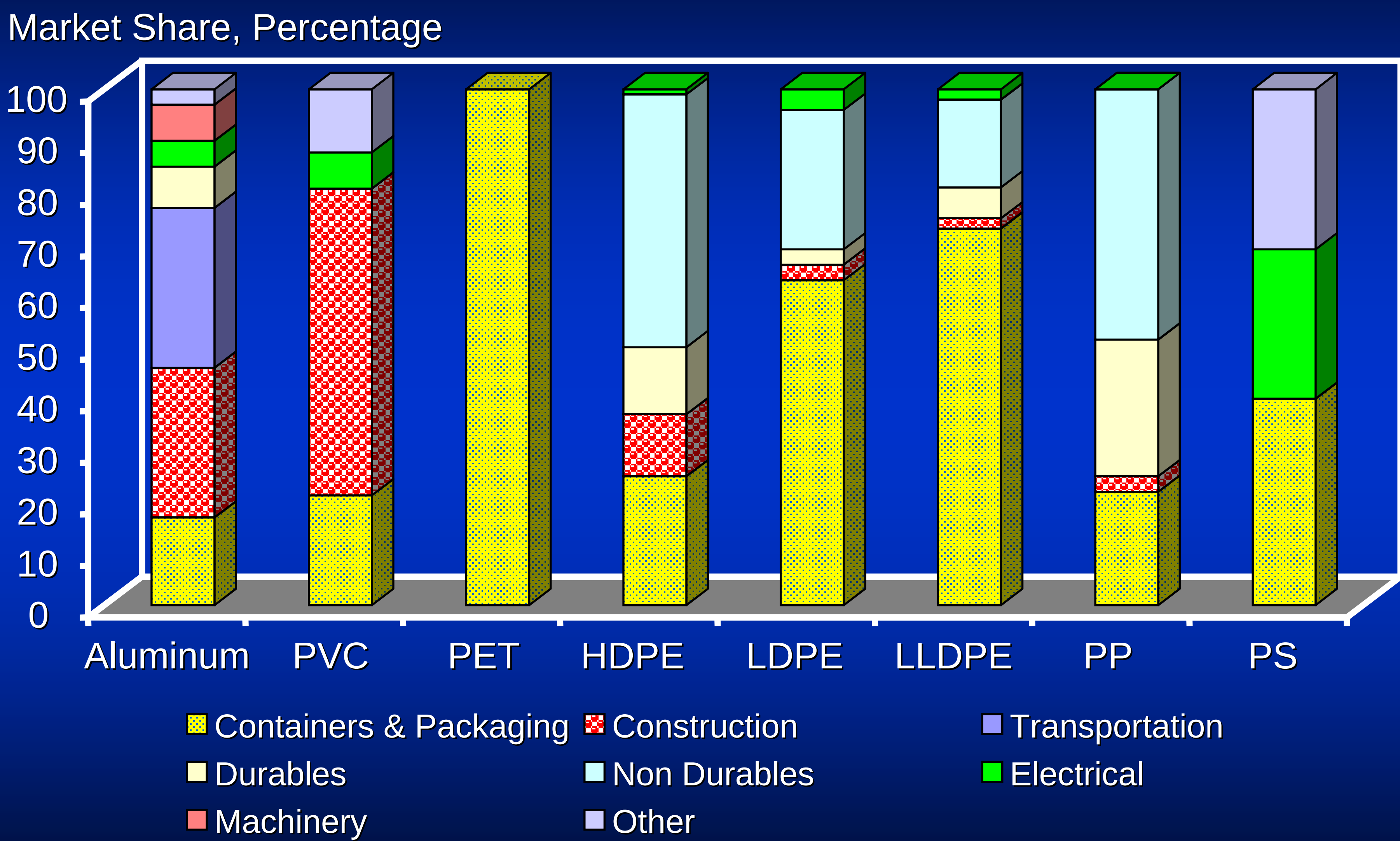


China Becoming Self-Sufficient

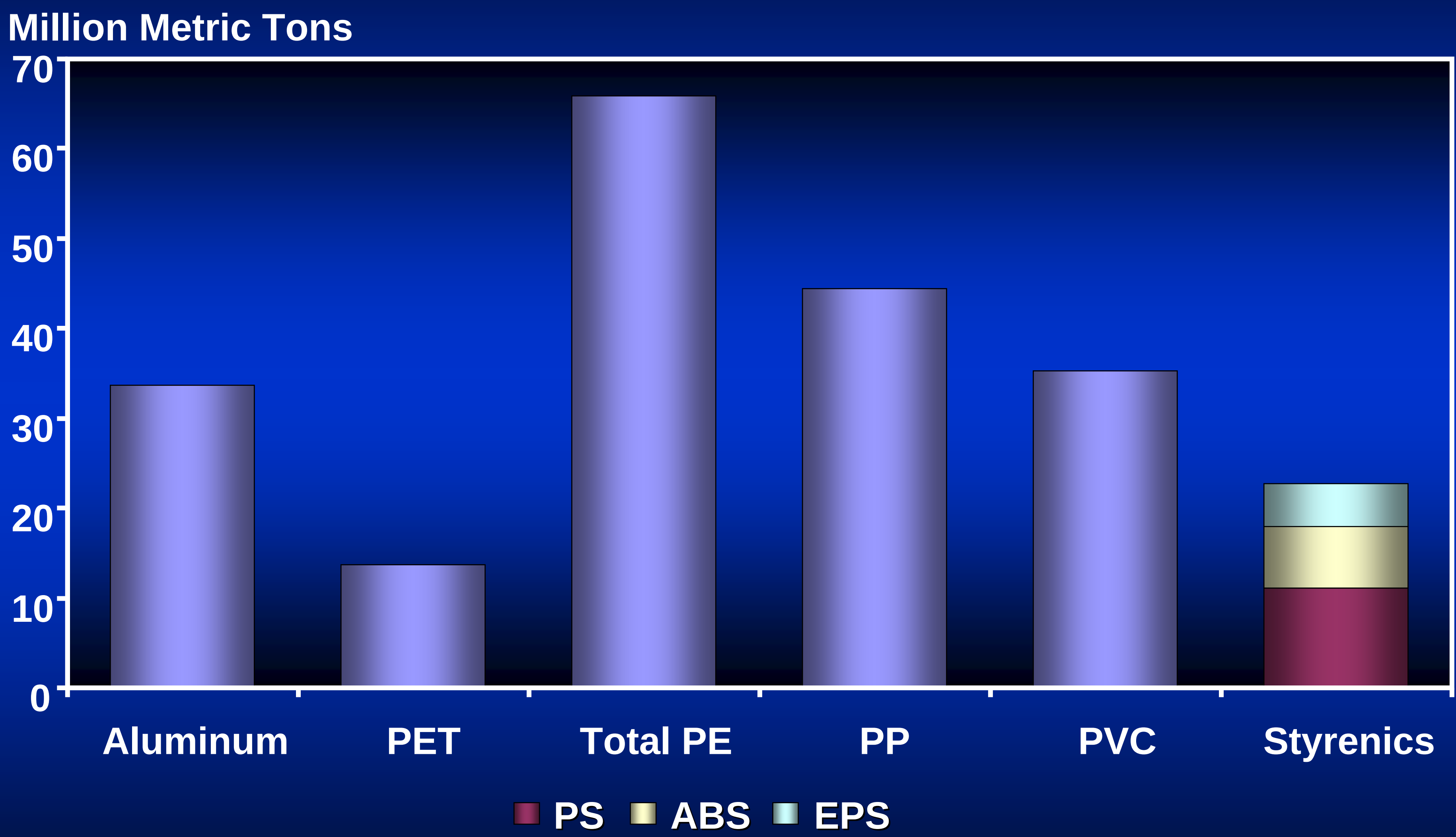
World Net PVC Capacity Vs. World PVC Margin



Vinyls vs. Aluminum vs. Plastics



Vinyls vs. Aluminum vs. Polymers



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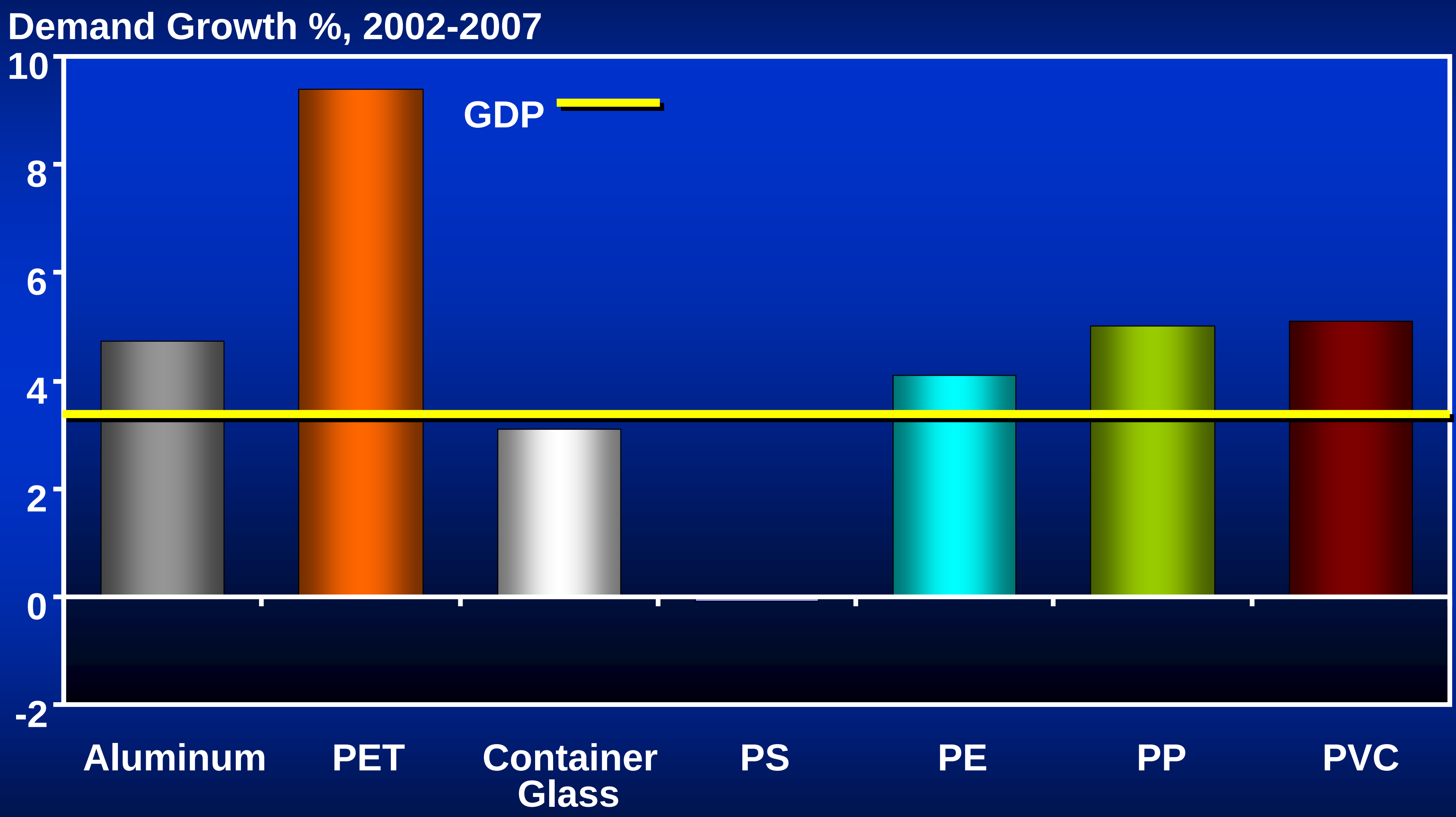
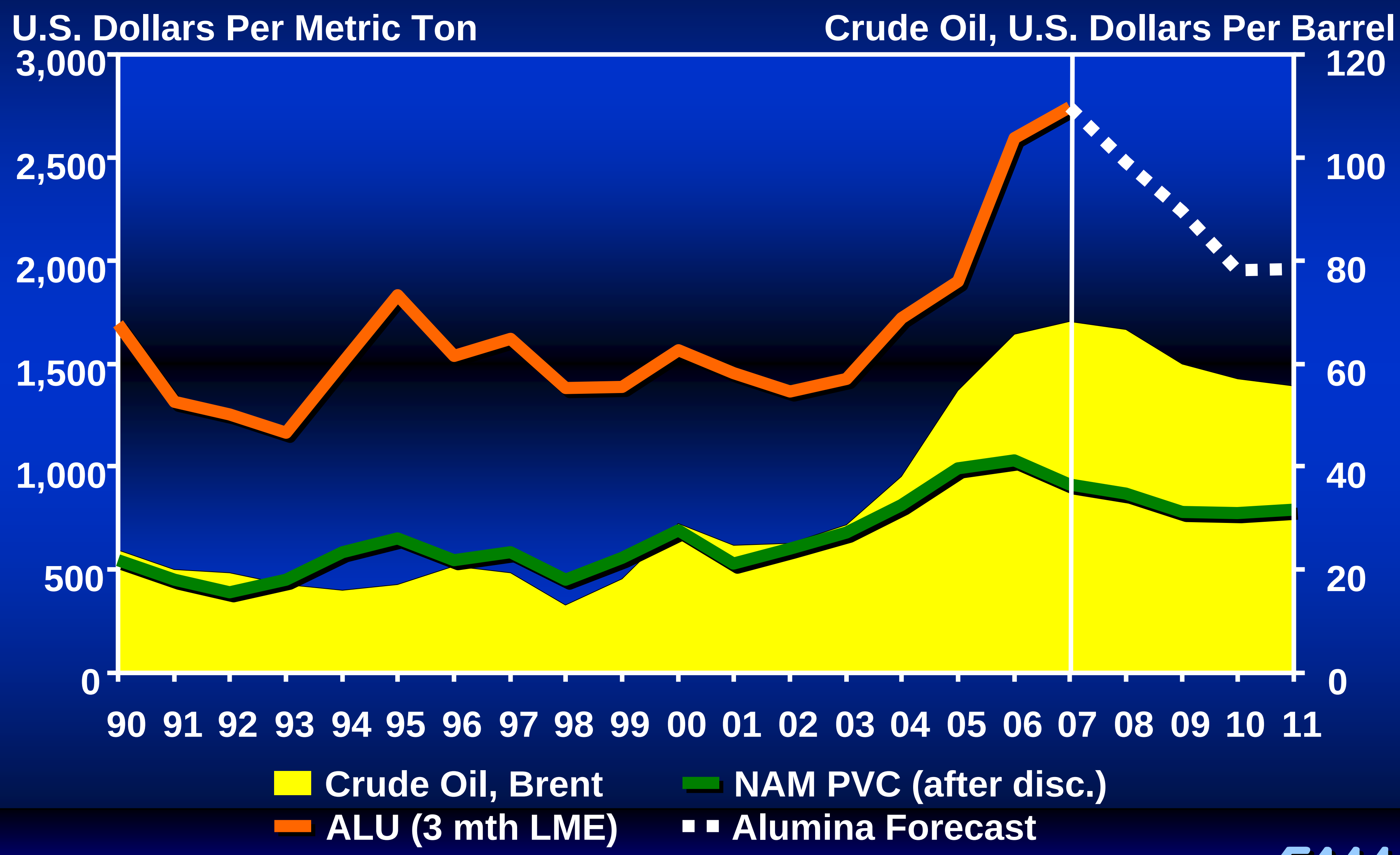
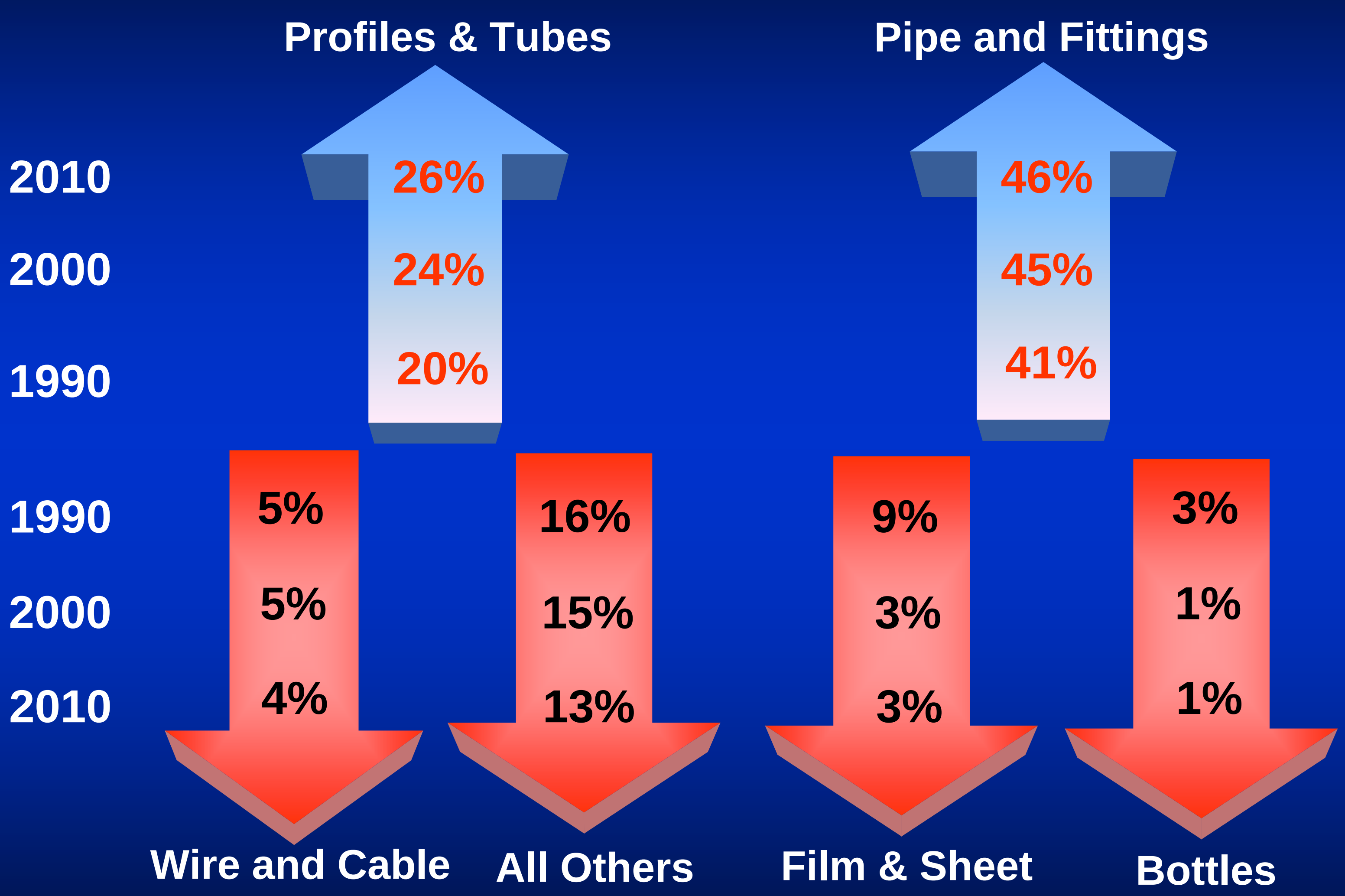
Relative Demand Growth



PVC vs. Aluminum



North America PVC Consumption

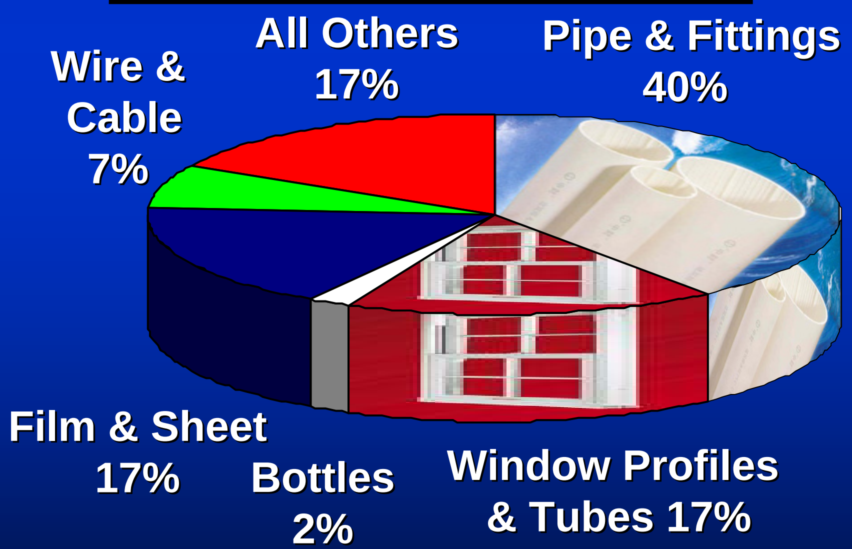


PVC Market Factors

- Growing at 5% per year driven by:
  - **China and developing countries**
  - **Construction**
- North America PVC market has changed
- Trade & Capacity trends have shifted
- Margins – regional variance
- Prices higher forever?

PVC Per Capita Consumption
KG Per Person

	2001	2006	2011
World	4	5	6
China	4	7	9
US	19	21	22
India	1	1	2
West Europe	14	14	14
CIS	1	3	4
Central Europe	4	6	8
Africa	0	0	0



Total World Demand = 33.5 Million Metric Tons

PVC - The Future

- Capacity will be built in Asia to meet demand
- China will become a net exporter of PVC
- Important demand potential in Central Europe/CIS and Africa
- Prices levels will be higher in the future due to higher energy costs
- PVC will remain a leading infrastructure building product

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Thank you for your time