

*Canadian Plastics 13th Annual Resin Outlook
Conference
October 2, 2008*

Outlook for Polyethylene and Polypropylene Resins

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 **Nexant**

Hurricane Ike was the size of Texas



Rainfall in Toronto lighter than predicted from Hurricane Ike

The amount of rainfall from the remnants of **Hurricane Ike** has not been as great as was forecasted earlier Sunday. Once **Hurricane Ike** degraded into a post-tropical depression, the downpour tapered off.

David Philips, a senior climatologist for Environment Canada, **thinks we dodged a bullet, referring to the remnants of Hurricane Ike** and the frontal system as: "a 1-day wonder."

Toronto and surrounding areas were initially expected to get up to 80 mm of rain by tonight as remnants of the hurricane combined with a frontal system sitting over southern Ontario.

Arnold Ashton, a severe weather Meteorologist with Environment Canada, said the amount of rain in such a short time **may cause lake and river levels to rise.**

Tonight, the rain will be heavy at times ending overnight. The wind will shift from south 30 km/h to northwest 30 **gusting to 50.**

Source: thestar.com, September 14, 2008, by Jaspreet Tambar



Since the Last Canadian Plastics Conference, Business Fundamentals have Greatly Changed

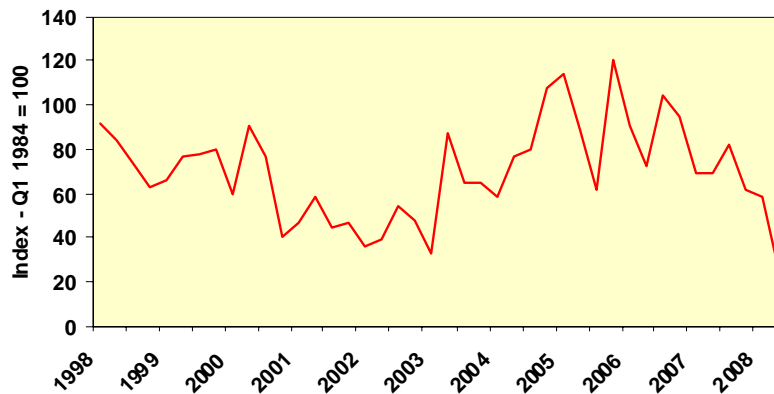
- Crude oil prices have doubled from \$58/bbl to \$116/bbl, affecting petrochemical feedstock prices
- The U.S. economy has slowed. GDP growth was just 0.9% in Q1 and 2.8% in Q2, of which the lion's share was due to exports
 - Output by the U.S. goods sector shrank 1.5% in 2007 affecting petrochemical demand for houses, autos, etc.
- Other global economies are slowing down:
 - China GDP growth forecast down from 11% (2006 – 2007) to 9.8% (2008); demand for polyolefins has cooled recently
 - Germany/UK economic growth almost halved from 3% (2006-2007) to 1.8% (2008)

The U.S. economy and business fundamentals directly affect Canada



U.S. Petrochemical Margins have Declined with High Feedstock Costs, Declining Demand...

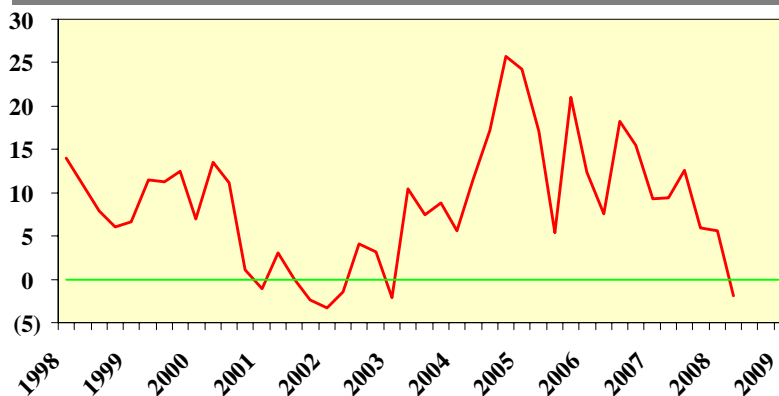
United States Cash Margin Index
(Petrochemicals and Polymers)




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... and with Operating Rates at 80 Percent, Simple Return on Replacement Capital is Negative



United States Average Return on Replacement Capital
(Petrochemicals and Polymers)



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Polyethylene Global Overview



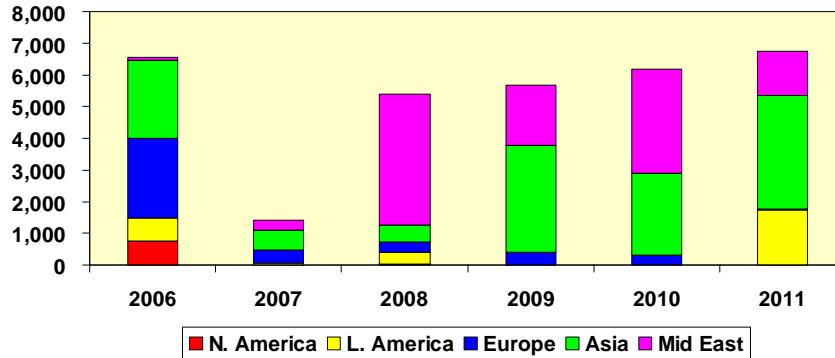
Polyethylene Operating Rates were High

- Globally, companies have been operating close to effective capacity
- Significant changes in investment and trade patterns have and will continue to occur
- Additional industry consolidation expected
- Most investments are for large LLDPE/HDPE gas phase reactors followed by bimodal HDPE plants. Most of the LDPE plants being built will be based on tubular reactor technology and will produce commodity grades



No New PE Plants are Being Built in Developed Countries (Shift is to the Middle East, China and Latin America)

Global PE Capacity Growth, Announced Start up Dates
(thousand metric tons per year)



The figure shows all under construction or firmly planned

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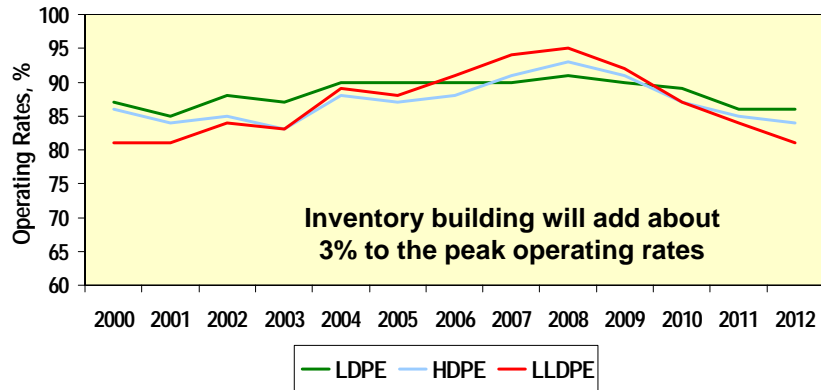
About 3 Million Tons per Year of New Capacity is Scheduled Short Term, but at the End of the Year

PE Type	Country	Company	Capacity	Planned	Expected
LDPE	UK	SABIC	400	3Q08	4Q08
	Iran	Amir Kabir	300	2008	2009
		Arya Sasol	300	2005	2Q08
	Saudi Arabia	SEPC	400	4Q08	2009
LLDPE	Iran	JAM	300	3Q08	2009
	Kuwait	Equate	225	3Q08	4Q08
	Saudi Arabia	Yansab	400	4Q08	4Q08
		Sharq	400	4Q08	4Q08
HDPE	Brazil	Pet. Uniao	200	3Q08	3Q08
	Iran	Arya Sasol	300	2005	2Q08
		Jam	300	2008	2009
	Saudi Arabia	SEPC	400	2008	2009
		Sharq	400	4Q08	4Q08
		Yansab	400	4Q08	4Q08

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PE Operating Rates Peaked in 2007/Early 2008

Global Polyethylene Operating Rates



The bottom of the cycle will be slightly above the 2000/2001 trough

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Polypropylene Global Overview

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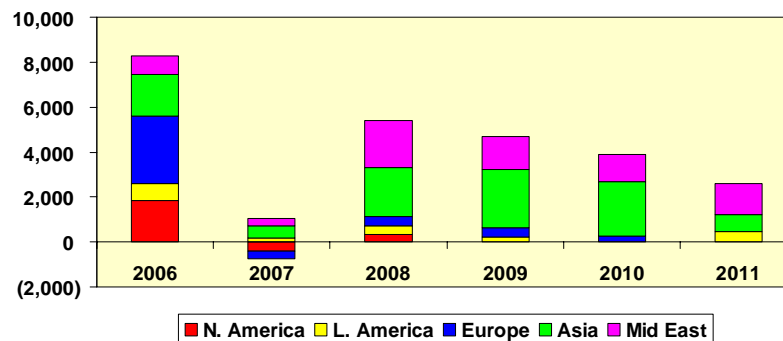
Polypropylene Operating Rates were High

- Propylene will be a limiting factor for significant new capacity in developed countries
- Substantial amount of new capacity in Brazil, China, Middle East and Venezuela
- Longer term too much capacity will severely impact profitability, but accelerate demand growth
- Industry consolidation, M&A expected with financial buyers becoming potentially significant owners

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Polypropylene Capacity Growth is in China, Latin America and the Middle East

Announced PP Capacity Additions by Region
(thousand metric tons per year)



The figure shows capacity either under construction or firm plan

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Most of the New Polypropylene Capacity will Not Start Up until the End of the Year

Country	Company	Capacity	Planned	Expected
Mexico	Indelpro	350	2Q08	2Q08
USA	LyondellBasell	200 (350)*	2Q08	2Q08
Brazil	Braskem	350	2Q08	3Q08
Germany	Borealis	330	2008	2008
China	Formosa	450	2008	4Q08
Japan	Japan PP	300	2008	2009
South Korea	Samsung	320	2008	2008
India	Reliance	900	2009	4Q08
Iran	JAM	300	2008	2009
Saudi Arabia	APPC	450	2008	Delayed
	Ibn Zahr	500	2008	2009
	NatPet	400	2008	Delayed
	Yansab	400	4Q08	4Q08
Total for 2008		~3,300		

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North America

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The Polyolefins Business in 2007 was Not Very Good for Producers or Processors

- **Producer operating rates were very high**
 - Domestic demand was weak (0-2% growth)
 - Exports were very strong (+20-30%)
 - Most producers operated close to or at effective capacity
- **Polyolefins profit margins were poor**
 - High energy/feedstock costs meant high olefins prices
 - Polymer price increases didn't match olefins cost increases
 - Capacity was shut down with more scheduled
- **Processors were under extreme cost pressure from their customers**

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Other Factors Impacted Polyolefins in 2007

- **Houston port congestion reduced exports**
- **No hurricanes or major operating problems (second year)**
- **Mergers and acquisitions continued**
 - Basell acquired Lyondell
 - Koch acquired Huntsman
 - SABIC acquired GE
- **SABIC began selling polyethylene in the United States (East Coast terminal)**

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Outlook for 2008/2009: Supply Situation

- Polyethylene capacity in North America has declined
 - Petromont shut down 580 MPY HDPE in April
 - No new capacity starting up
- North American polypropylene capacity has declined
 - Shutdown of Dow, LA December 2007 (-450 MMPY)
 - Shutdown of Ineos, TX December 2007 (-450 MMPY)
 - Shutdown of Basell Canada mid-year (-790 MMPY)
 - Start up of Basell line mid-year (+440 MMPY)
 - Start up of Indelpro Mexico (+770 MMPY, 2Q08)
 - Shutdown of LyondellBasell Morris plant June 2008 (-280 MMPY)

This is the first time since 1980/1981 when U.S./Canadian capacity has declined from a previous year with no prospects for additional capacity

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Outlook for 2008/2009: Recession

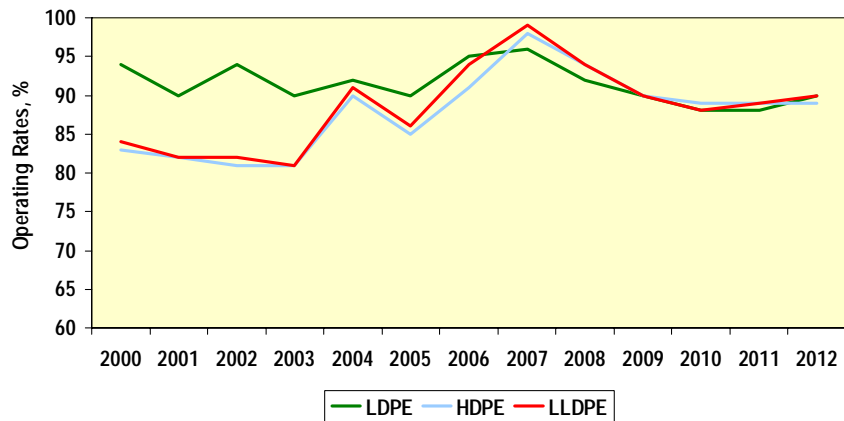
- Domestic polyolefins demand declines 1-5%
- Demand in countries with a high U.S. export component will decline
- Polyolefins exports decline 10-20% by year end
- Any unplanned outage, unless massive, will not have a significant impact on prices
- Prices will decline – difficult to quantify

A mild recession will not have a significant global impact

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Operating Rates could Decline to <90% in 2008 and into 2009 in the Recession Scenario

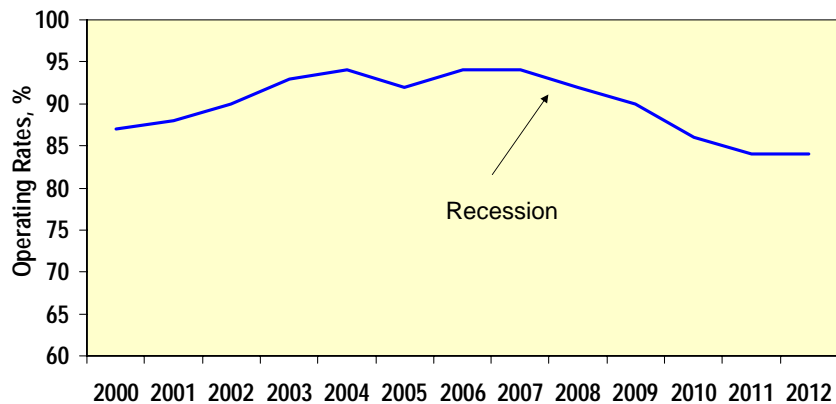
North American Polyethylene Operating Rates: Recession



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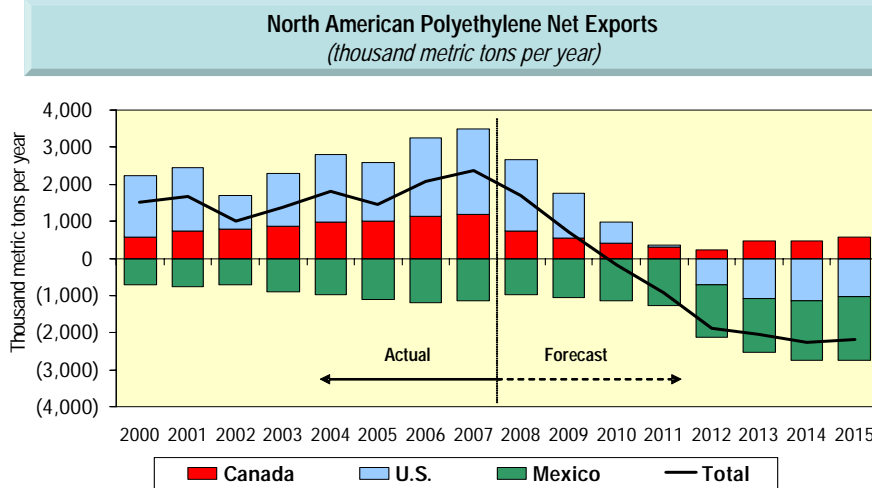
PP Operating Rates were 94% in 2007, but the Downturn Could be Worse than 2001

North American Polypropylene Operating Rates



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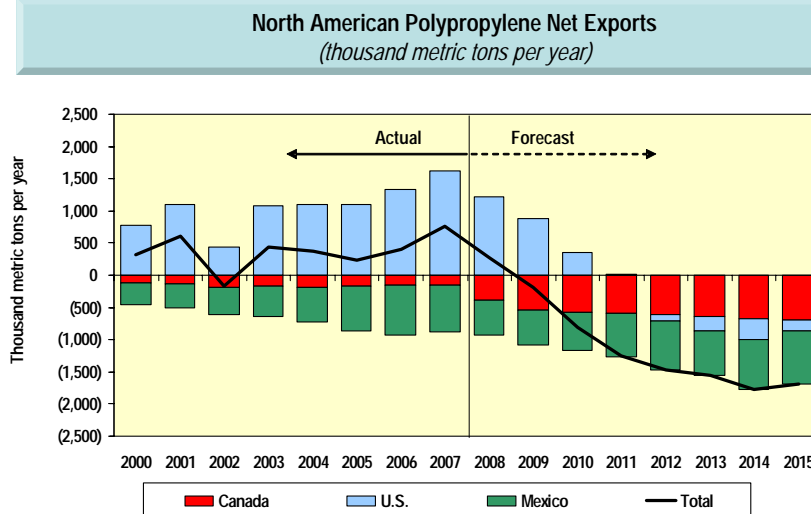
Large LLDPE and HDPE Deficits are Projected, but LDPE Exports will Continue (Declining Rate)

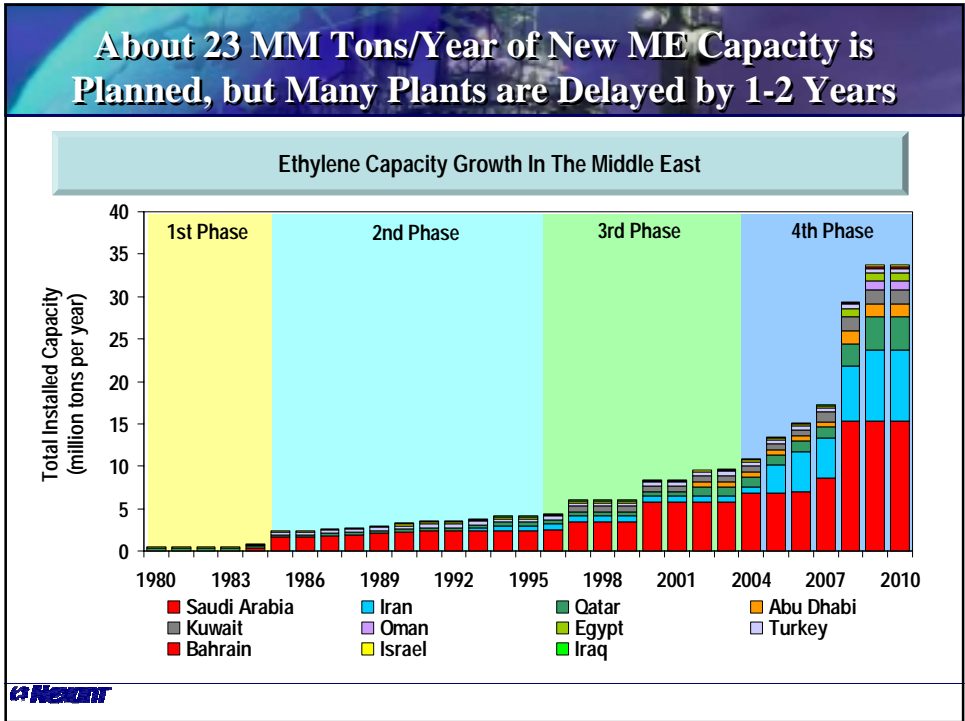
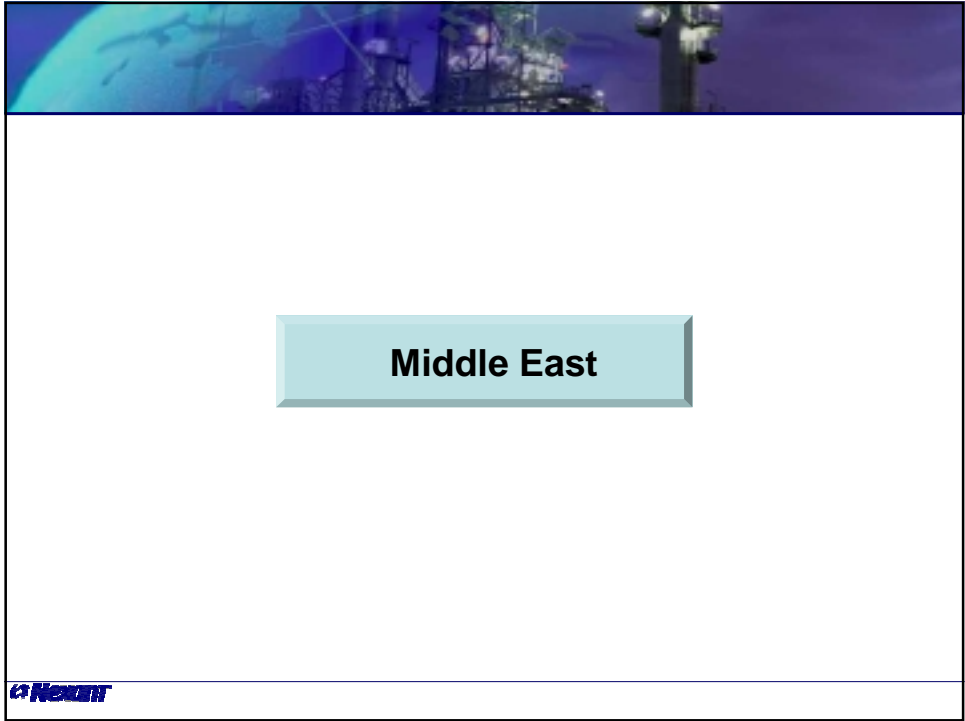


Canada will continue to be a net exporter of PE



North America Could Become a Net Importer of Polypropylene by 2011





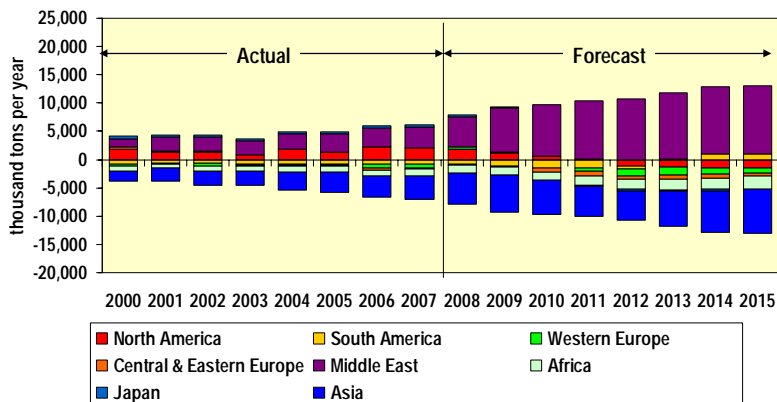
There are Some Important Issues Facing These New Projects

- New producers emerging
- Ethane maxed out so new complexes will crack more propane and butane resulting in more propylene
- Freight rates for new production will be higher
- Capital costs much higher than original estimates
- People shortages
- Starting up some of these complexes has been, and will continue to be problematic

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The Middle East will Become the World's Supplier of Commodity Polyethylene

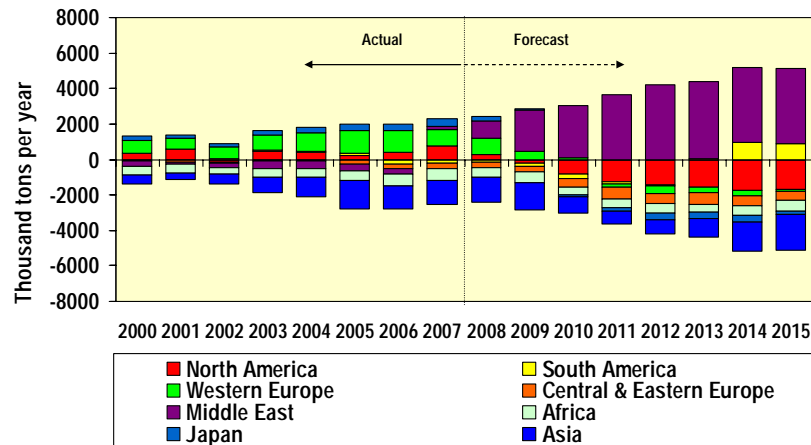
Global Polyethylene Net Exports
(thousand metric tons per year)



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The Middle East will Become the Major Supplier of Polypropylene

Global Polypropylene Net Exports
(thousand metric tons per year)

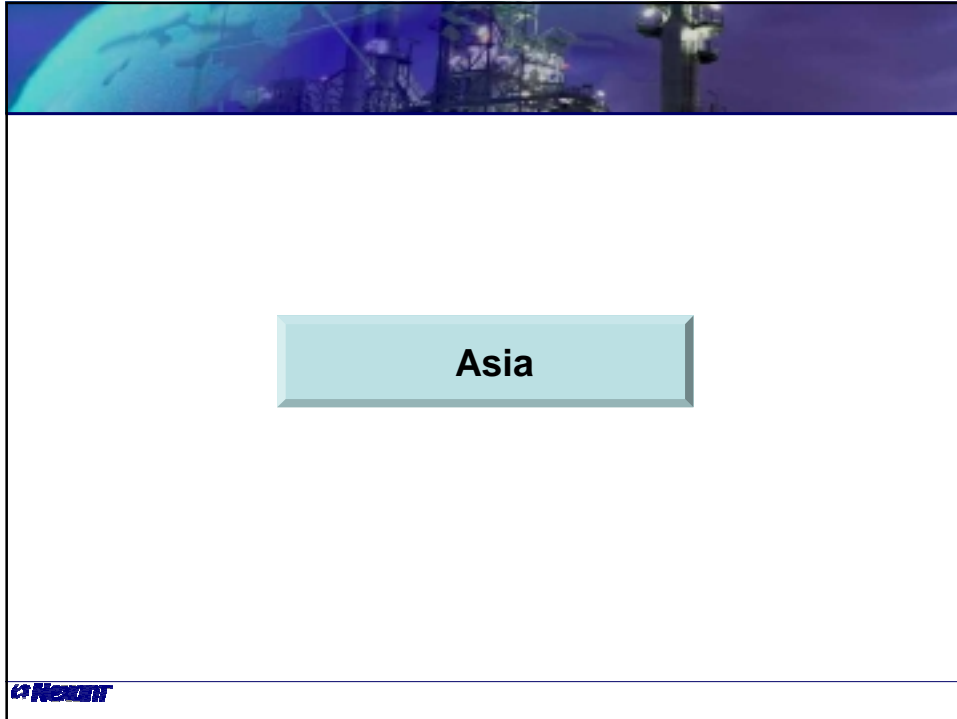


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Middle East Exports will Have to Target Additional Regions

- Asia will not have a sufficient deficit to absorb all of the export oriented Middle East polyolefin capacity
- As a result, Middle East producers will
 - Displace polyolefins exports from higher cost countries
 - Look for new markets
- Exporting specialty grades will also be a viable strategy

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China is the World's Largest Polymer Importer

- Polyethylene demand in 2008 was about 45% of total Asian demand and 15% of total global demand. Polypropylene demand was 48% of Asian demand and 18% of global demand
- About 50 percent is produced in China and 50 percent imported
- On a net trade basis, China imports about 42% of globally exported polyethylene and 44% of polypropylene
- China has become the world's largest exporter of fabricated products and finished products
- China began exporting cars in 2007

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Outlook for China

- Substantial amount of new capacity planned, but there will be delays
- Capacity will come on stream 2009-2011 which will reduce imports
- Polyolefin imports will increase after the current round of planned expansions
- Environmental legislation may limit polyethylene growth in selected applications, but may be offset by growth in other markets

China will remain the largest and most competitive export market

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India is a Major Growth Market

- With its large population base, low per capita consumption and high economic growth, energy and petrochemicals demand has been growing at a high rate
- India has become a major global center for high technology service
- Investment in the petrochemical sector is controlled by domestic companies
- Mumbai is the major plastics conversion center but high growth in other cities is now occurring as they become technical service centers

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India Could Become a More Significant Factor in Petrochemicals

- Two major investments occurring:
 - Indian Oil Company (PE/PP)
 - Reliance (primarily PP)
- Large net exporter of polypropylene. Moderate importer to balanced in most other polymers but next wave of expansions will create a large net export position
- Potential for process and product exports
- Reliance is looking at international investments to become a global player

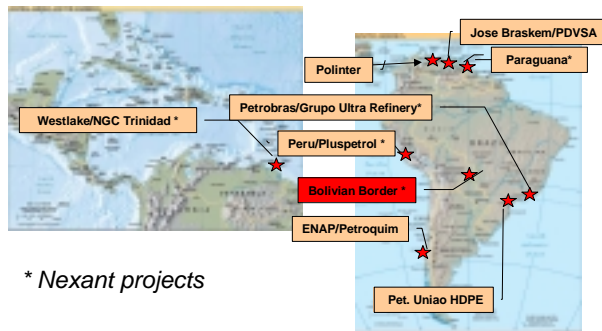
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Latin America

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There are Many New Projects in Latin America, but Timing and Politics are Issues

Latin American Polyethylene Projects



* Nexant projects

New Capacity Projects - does not include debottlenecks or minor expansions



Approximately 5.4 Million Tons per Year of New Polyethylene Capacity is Planned

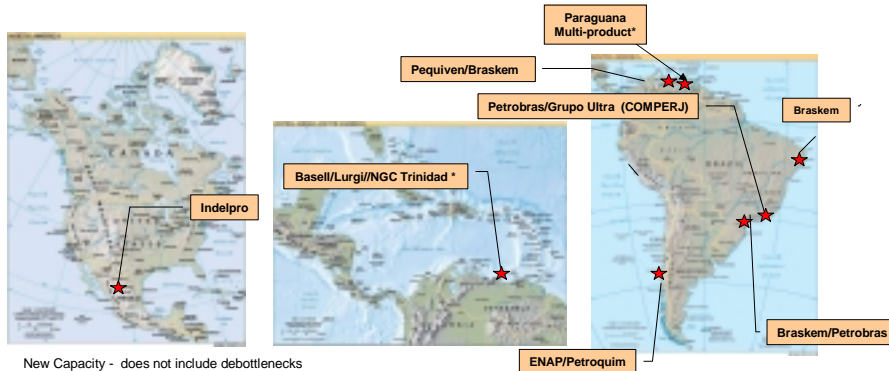
Country	Project	Capacity, KTA	Start up
Brazil	Polietilenos Uniao	HDPE (200)	2008
	Braskem	HDPE (200)*	2011
	Dow	LLDPE (350)*	2011
	Petrobras/Grupo Ultra	PE (~650)	~2013
Chile	ENAP/Petroquim	PE (550)	2011+
Peru	Pluspetrol/other	PE (550+)	2011/2012
Trinidad	Westlake/NGC	LLDPE/HDPE (570)	2011
	Venezuela	Braskem/Pequiven (Jose)	PE (1,100)
	Pequiven (Polinter)	LDPE (300), HDPE (300)	2011/2012
	Pequiven (Paraguana)	PE (650+)	2012/2013
TOTAL		5420+	

* Sugarcane ethanol based



There are More Than 3 Million Tons per Year of Polypropylene Capacity Planned

Latin American Polypropylene Projects



New Capacity - does not include debottlenecks

* Nexant current and former projects



Approximately 3.3 Million Tons per Year of New Polypropylene Capacity is Planned by 2014

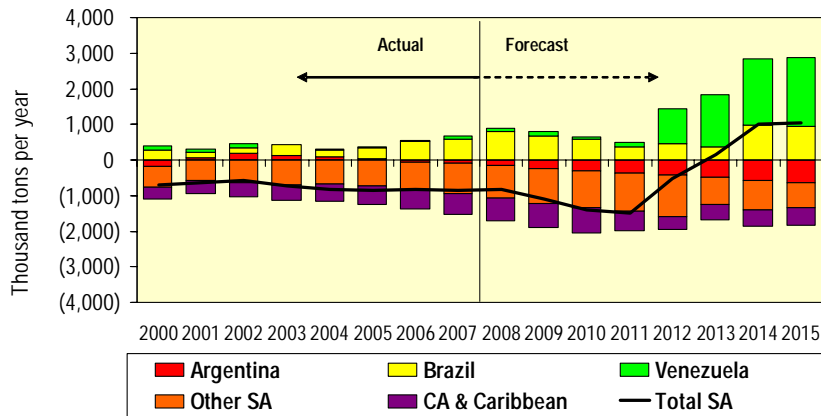
Country	Project	Capacity, KTA	Target start up
Brazil	Braskem/Petrobras	400	Late 2008
	Braskem	300	2010
	Petrobras/Ultra	850	2013/2014
Chile	ENAP/Petroquim	200	2011+
Colombia	Ecopetrol	40	2008/2009
Mexico	INDELPRO	350	2Q08
Trinidad	Basell/Lurgi/NGC*	450 *	2012
Venezuela	Braskem/Pequiven	350	2010
	Pequiven (Paraguana)	350+	2012/2013
TOTAL		3,290+	

* Methane to methanol to propylene (MTP)



Latin America will Move from Net Imports to Exports of Polyethylene by 2013

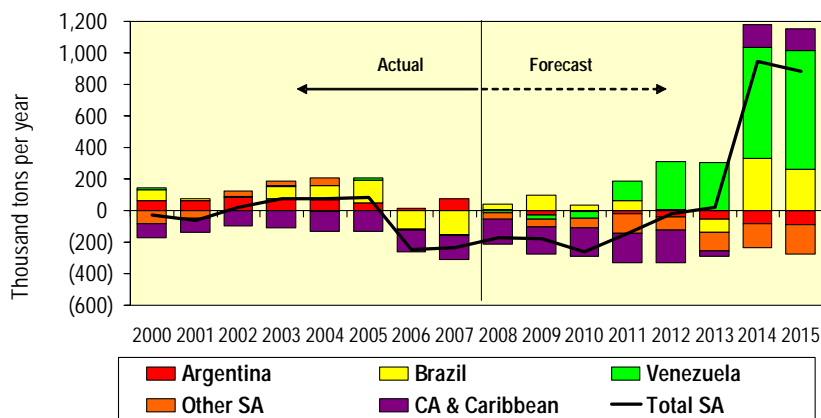
South America Total Polyethylene Net Exports
(thousand metric tons per year)




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Latin America will Have an Increasing Polypropylene Surplus After 2013

South America Polypropylene Net Exports
(thousand tons per year)

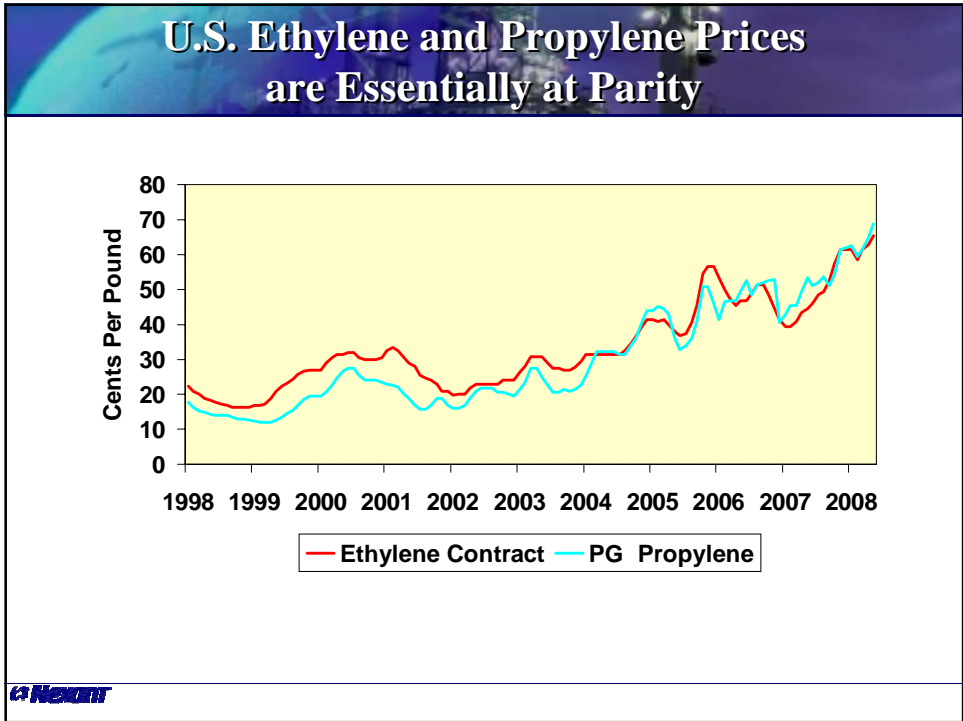


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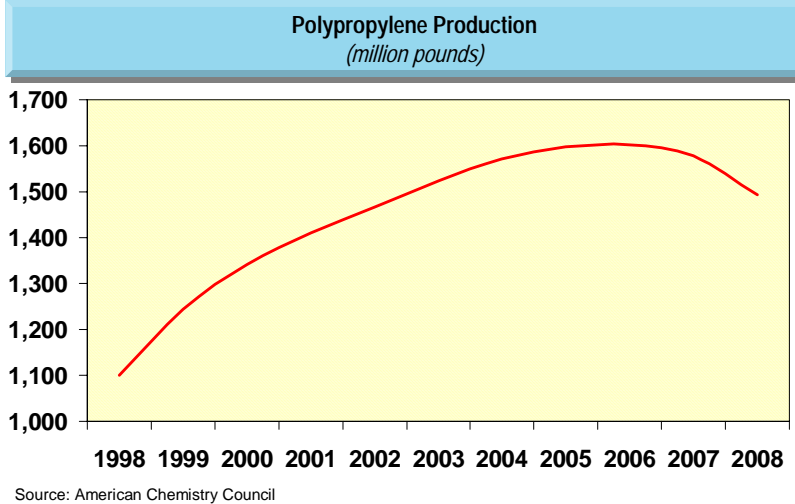


Summary and Conclusions

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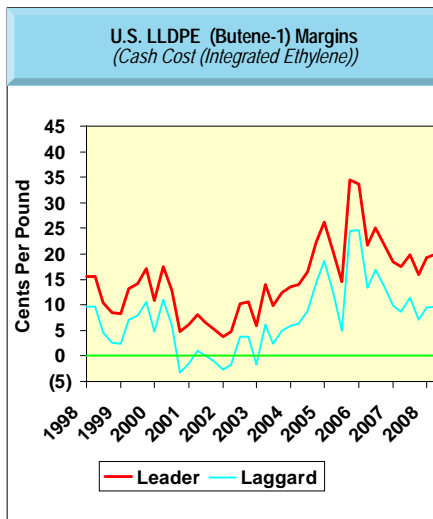
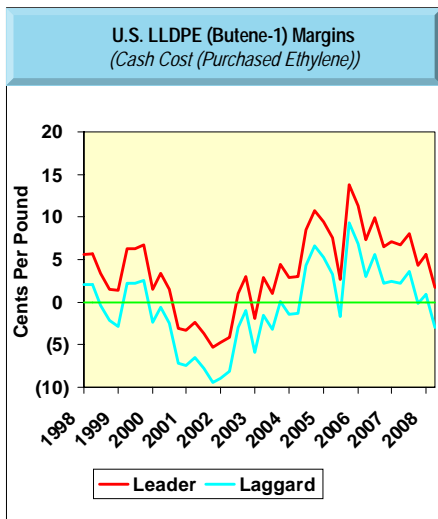


U.S. Polypropylene Production Peaked in 2007 and has Fallen by 3 Percent Since



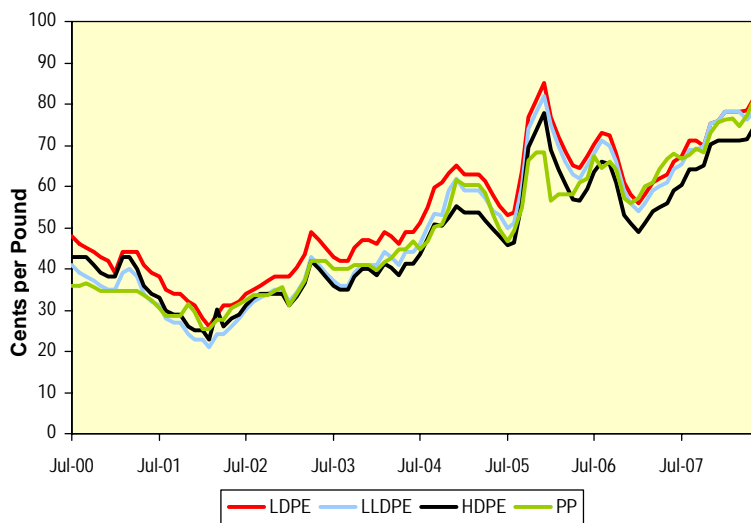
News

Integrated LDPE Margins have Declined, but not Dramatically



News

USGC domestic polyolefin prices have not been as strong as export prices but the trend was upwards



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Olefins and Polyolefins Market Summary Overview

- Subdued GDP growth and little or no growth in U.S./Canadian demand for finished goods
- Nexant forecasts continuing declines in crude oil and stable U.S. natural gas prices. Hence, pressured polyolefin prices
- U.S. ethylene:propylene price to remain at parity
- U.S. polyolefin exports to remain high as well as stable

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The Next Downturn Could Potentially be Worse than Prior Downturns

- Historically, low cost producers in the Middle East did not set prices as there was no need
- Low cost producers could set prices in the next downturn as they compete for the available export market
- This will result in lower export prices. Some companies in high cost countries will not be able to compete in the export market thereby intensifying domestic oversupply

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As a Producer, What Can You Do?

- The current situation calls for two distinct short-term business plans
 - Mild Recession
 - Massive Recession
- Within these cases a constrained supply scenario needs to be developed
- Product demand and sales for each scenario needs to be assessed
 - Domestic
 - Export
- Managing supply to domestic and export customers

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As a Processor, What Can You Do?

- **Inventory: To build or not to build, that is the question!**
- **Supplier relationships**
 - Solidify
 - Raise the maximum in contract volumes
- **Alternative supply sources**
- **Avoid long term fixed price contracts with your customers**
- **Expand product portfolio**
 - Other polymers
 - Other related areas
- **Look at acquisitions**
 - Existing product portfolio
 - Diversifying into other products and markets
- **Expand internationally**
 - China
 - Latin America

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At the “END Of The Day”, What is Needed is a Major New “END” Use to Spur Demand Growth

The latest development in “RIGID” packaging



Plastic coffins: www.goriacorp.com

Plastics: Now, you can take it with you!

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