

IndianOil in Petrochemicals Propelling Economic Growth in India



IndianOil

Petrochem Conclave - 2012

16th March 2012



- Global Trends
- Reflections - India
- Market Drivers/Trends/Challenges
- Petrochemicals in India
- IndianOil's Vision
- IndianOil's Petrochem Investments
- Conclusion

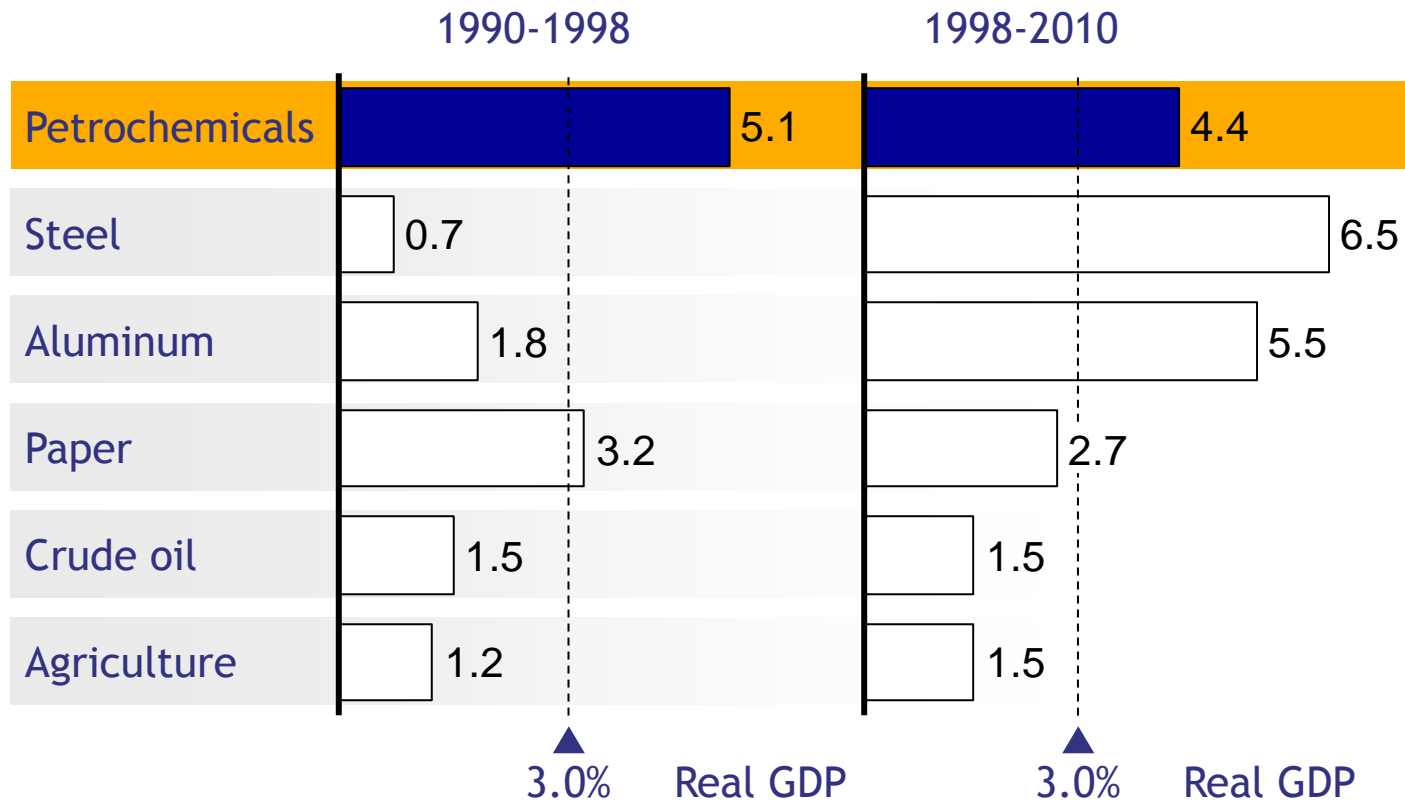


- **Global Trends**
- **Reflections - India**
- **Market Drivers/Trends/Challenges**
- **Petrochemicals in India**
- **IndianOil's Vision**
- **IndianOil's Petrochem Investments**
- **Conclusion**

Petrochemicals - The Growth Drivers

Global volume (tonnage) growth rates over past 21 years

Per cent per year (curve fit basis)



Petrochemicals has delivered steady growth above Real GDP....

Note: Total population grew 1.3%/year since 1990

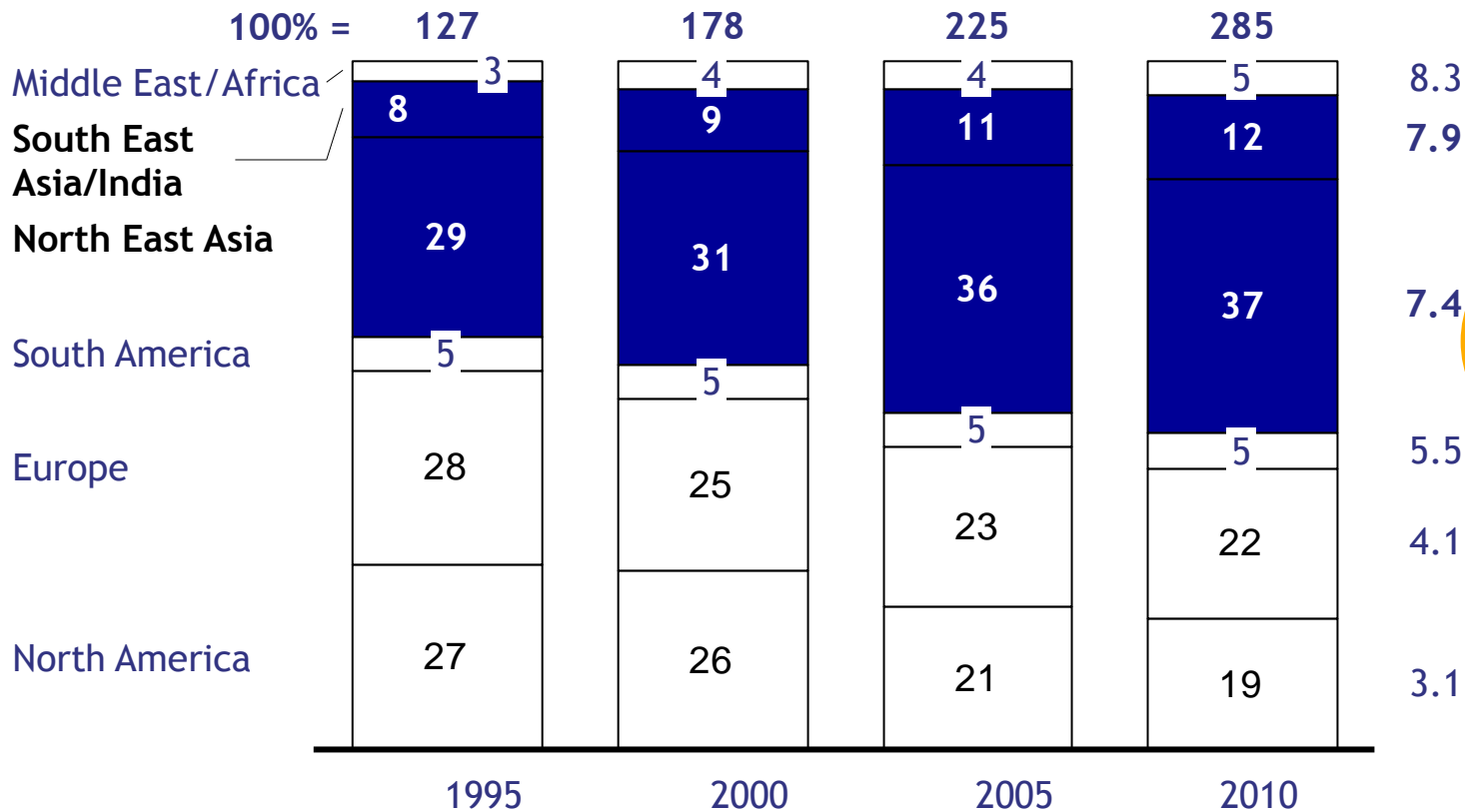
Source: Tecnon (100 petrochemicals), IISI (steel), WBMS (aluminum), RISI (paper), BP statistical yearbook (oil) FAOSTAT (agriculture), Global Insight WMM (GDP), US Census (population)

Asia's consumption growth

Percent of consumption – 16 key end products*

Million tonnes per year

CAGR 1995-2010



Global
5.5%

Asia's consumption growth has greatly outpaced other regions.....

* Includes PP, PE, PVC, PS, polyester/PET, PC, ABS, SAN, polyols/isocyanates, SBR, SBL, acrylates, VAM, epoxies

Business Centres

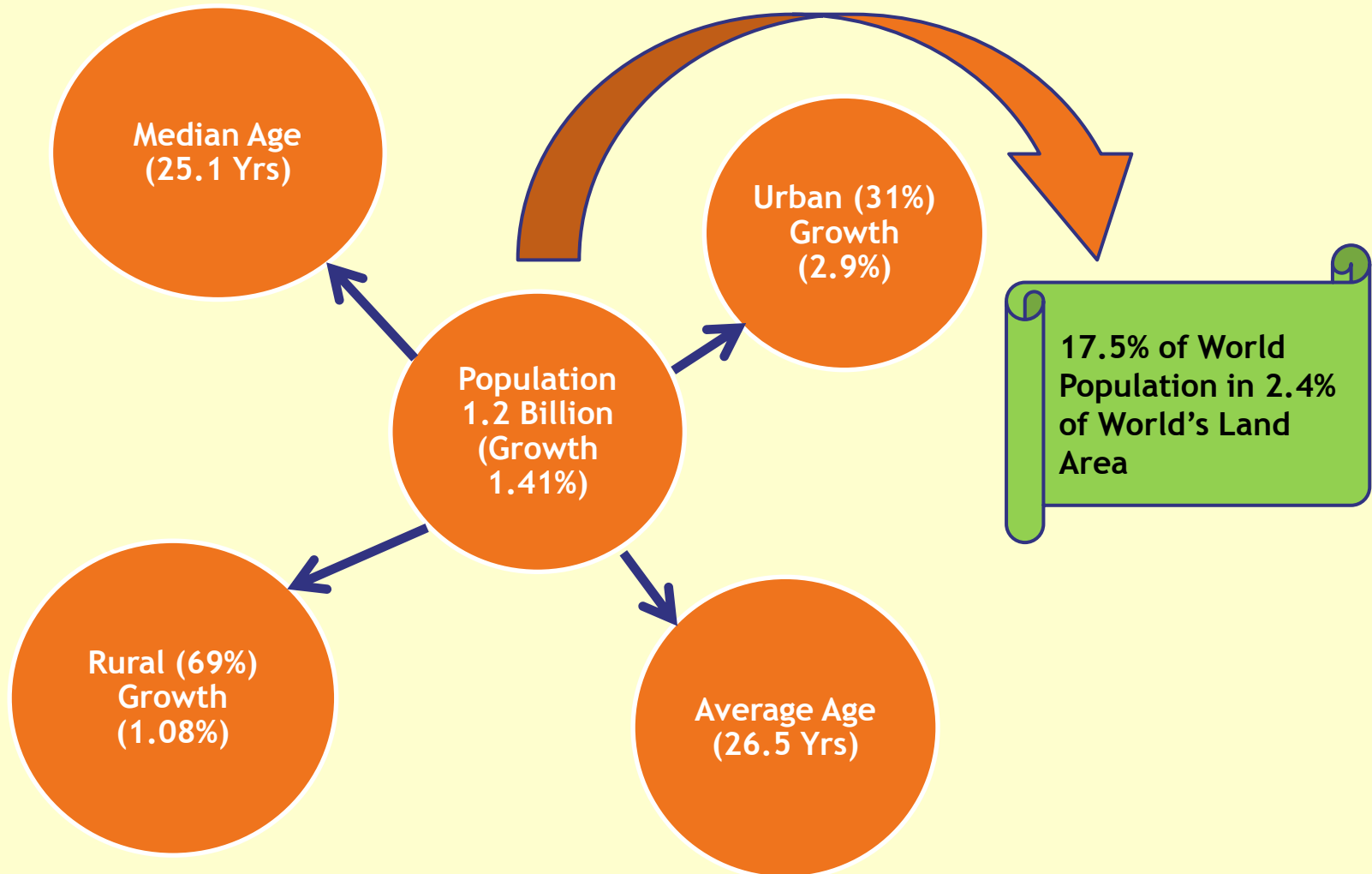
- Traditionally US & West Europe
- Now Reversed:
 - Feed stocks : Middle East
 - Consumption : China, India, Far East
 - Investments : FE, ME, India & China
 - End Use : Asia, US, Europe





- Global Trends
- Reflections - India
- Market Drivers/Trends/Challenges
- Petrochemicals in India
- IndianOil's Vision
- IndianOil's Petrochem Investments
- Conclusion

India - Demographics



Reflections - India



2nd fastest growing large Economy

% GDP growth	China	India
FY 2011	9.2	7.8
FY 2010	10.3	7.4
FY 2009	9.2	6.7

Source : World Energy Outlook 2010, IEA



4th Largest economy in terms of GDP (PPP*)

USA	China	Japan	India
14,658	10,086	4,310	4,060

Unit: Billion, USD

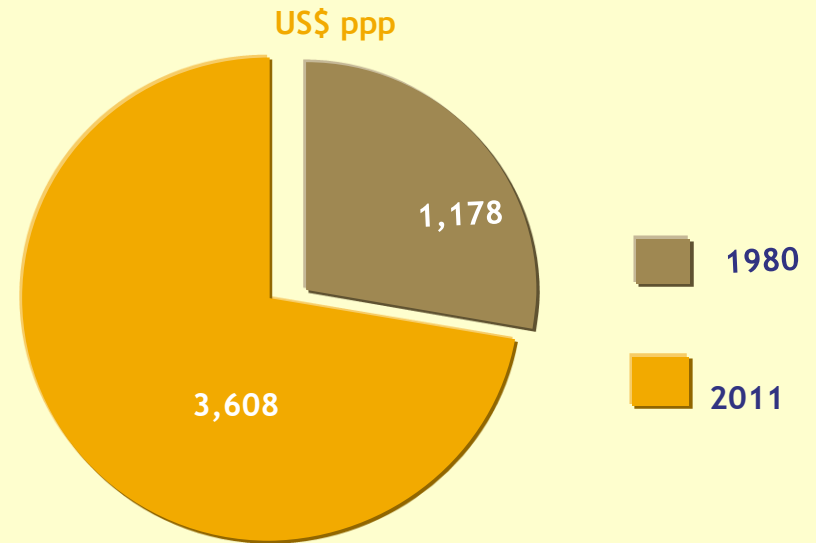
Source : International Monetary Fund, World Economic Outlook Database, April 2011

* *Purchasing Power Parity*

30 years of high growth

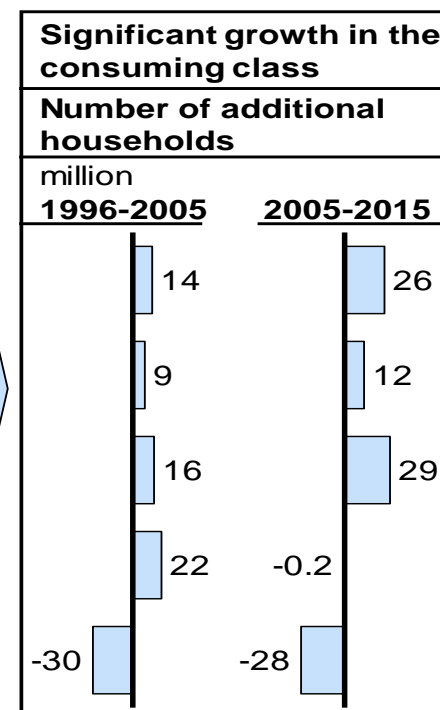
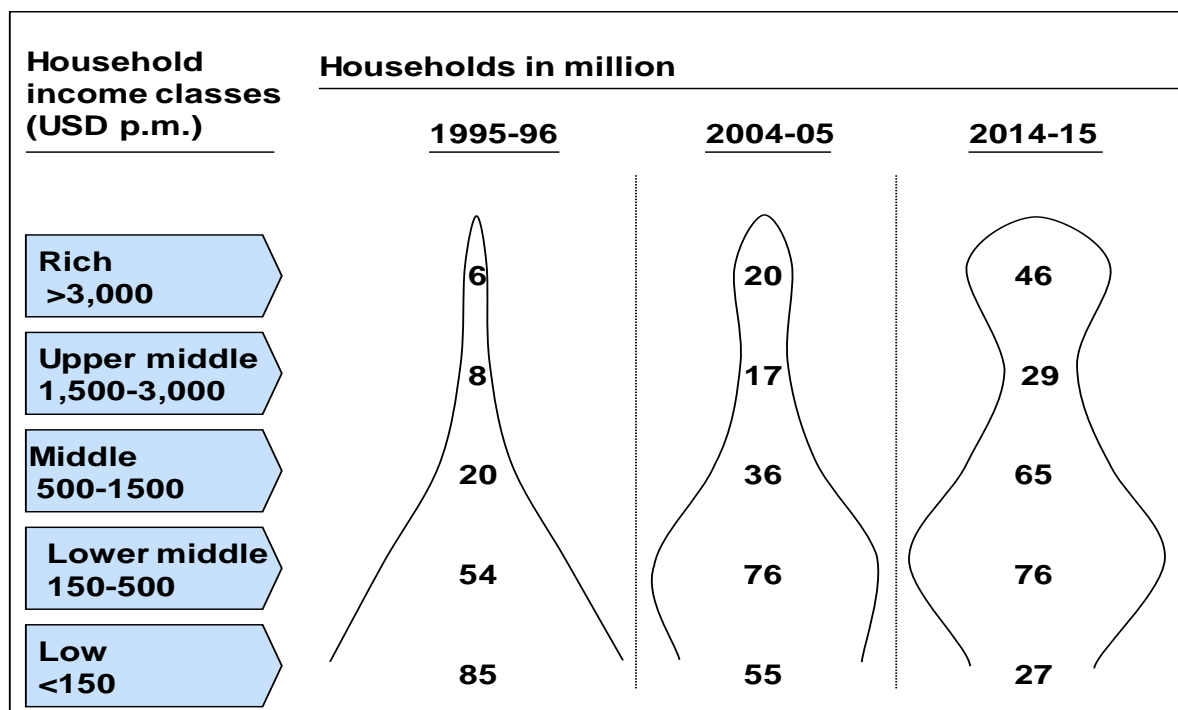


India's Per capita income gains



Source: World Bank

India - Consumption Boom Driven By Rising Income Levels...

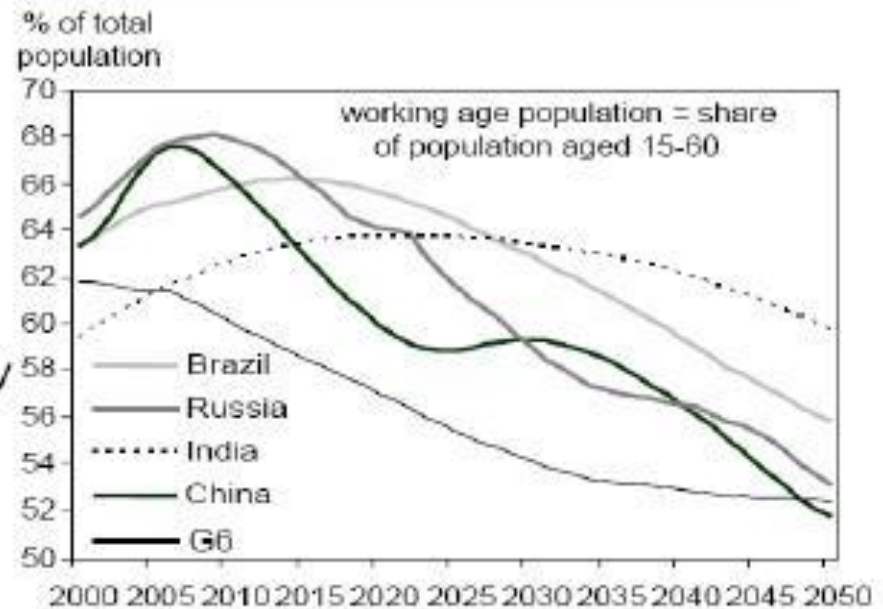


Source: NCAER survey The 'Great Indian Market', 2005; team analysis

Promising Fundamentals.....

India fundamentals are promising...

- Domestic market potential
 - High GDP growth
 - Growth in infrastructure
- Largest democracy
 - Political stability
- Government support to industry
- Large skill pool
 - Technical
 - Managerial
- Capex advantage



POTENTIAL TO BECOME HIGH QUALITY, EFFICIENT MANUFACTURING HUB



- Global Trends
- Reflections - India
- **Market Drivers/Trends/Challenges**
- Petrochemicals in India
- IndianOil's Vision
- IndianOil's Petrochem Investments
- Conclusion

Polymer Market Drivers Trends and Challenges

India - Market Drivers

- Age demographic - Young working age population
- Thriving Middle Class with increasing consumption demand
- Growing urbanization

Market Trends

- Volatile Feedstock Prices
- China remains the centre of Consumption
- Feedstock Cost advantages of ME, US
- Additional low-cost manufacturing and R&D locations, e.g., India, East Europe
- New sources of feedstock
 - Gas to olefins
 - Coal to olefins
 - Biotech
- Plastic substitution

Challenges

- CO₂ taxation
- Potential for new trade restrictions
- Geo-political instability
- Infrastructure support



- Global Trends
- Reflections - India
- Market Drivers/Trends/Challenges
- **Petrochemicals in India**
- IndianOil's Vision
- IndianOil's Petrochem Investments
- Conclusion

PTA and LAB

PTA Domestic (TMT)

YEAR	DEMAND	<u>CAPACITY</u>
2010-11	3784	3933*
2016-17	5642	5083
2021-22	7200	5083

*MCPI new plant operating @ 60%

CAGR : ~ 7.5% till 2016-17 ; ~ 5.0 % till 2021-22

PTA Global (TMT)

YEAR	DEMAND	CAPACITY
2010-11	42328	42618
2016-17	61660	69430
2021-22	78700	85880

CAGR : ~ 6% till 2016-17 ~ 5.0 % till 2021-22

LAB Domestic (TMT)

YEAR	DEMAND	<u>CAPACITY</u>
2010-11	438	497
2016-17	620	539
2021-22	772	539

CAGR : ~ 6.1% till 2016-17
~ 4.5% till 2021-22

LAB Global (TMT)

YEAR	DEMAND	CAPACITY
2010-11	2864	3400
2016-17	3350	3680
2021-22	3700	3680

CAGR : ~ 3% till 2016-17
~ 2% till 2021-22

Polymers and Glycols

Polymer Domestic (TMT)

YEAR	DEMAND	<u>CAPACITY</u>
2010-11	6040	6140
2016-17	10072	10455
2021-22	10974	10974

CAGR - Pol - 9% (Till 2016-17)
CAGR - Pol - 9% (Till 2021-22)

Polymer Global (TMT)

YEAR	DEMAND	<u>CAPACITY</u>
2010-11	126440	157712
2016-17	163683	181794
2021-22	212982	212429

Source: CMAI - 2011

Glycols Domestic (TMT)

YEAR	DEMAND	<u>CAPACITY</u>
2010-11	1367	1100
2016-17	2176	1920
2021-22	2583	1920

CAGR : ~ 7.5% till 2016-17 ~ 5.0 % till 2021-22

Glycols Global (TMT)

YEAR	DEMAND	CAPACITY
2010-11	19977	27747
2016-17	28940	33071
2021-22	33300	40600

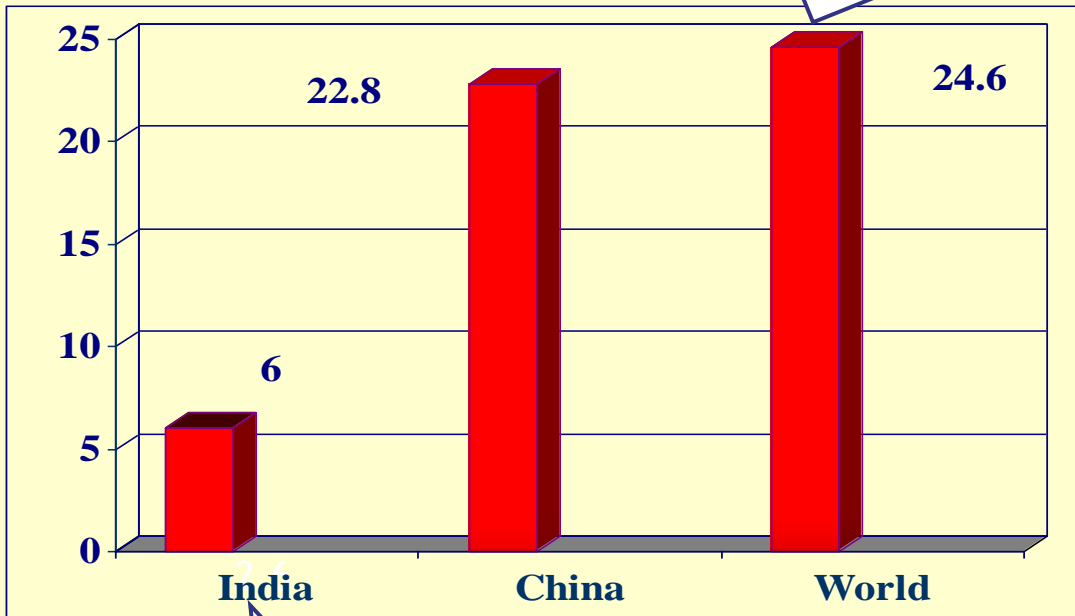
CAGR : ~6.0 % till 2016-17 ~3.0 % till 2021-22

Source: PCI/IDS - 2011

High Potential for Growth....

Polymer consumption/capita (Kg per annum)

World Average 24.6



National Average 6

Emerging Sectors in the Polymers Industry

- Water Management
- Micro-irrigation
- Plasticulture
- Construction
- Healthcare
- Packaging

India has low per capita consumption of Polymer



- Global Trends
- Reflections - India
- Market Drivers/Trends/Challenges
- Petrochemicals in India
- **IndianOil's Vision**
- IndianOil's Petrochem Investments
- Conclusion

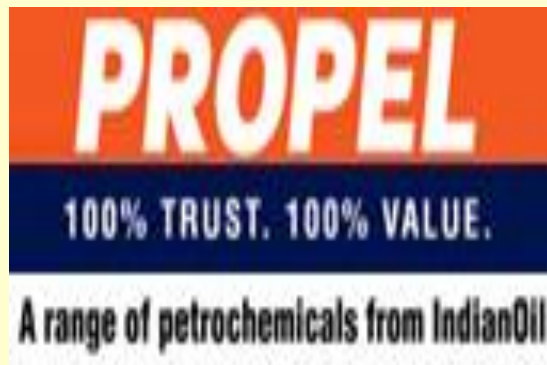
Spotlights – IndianOil 2011

Turnover of US\$ 73 Billion (2010-2011)

Largest Refiner of the Country - 65.7 MMTPA

Only Indian Company in the Top 100 of Fortune 500 List with a rank of 98 in 2011

Integrated End to End in Pet chem Production



Range of Petrochemicals joins Indian Oil's list of top Brands

Vision Statement: Petrochemicals Business

To be a dominant petrochemical player in India with footprints in international markets, consolidation of existing business and diversification into niche, specialty chemicals & elastomer product segments.

Approach: *Petrochemical Business*

Refinery Synergy and augment Petchem capacity

To achieve
economies of scale

Pooling of feed
stock from
refineries

Integration with
refinery for Capex/
Opex optimization

Product Expansion and Consolidation

Consolidation in
commodity
products

Exploit potential in
niche products

Exploit potential in
Specialty Products

Technology Adoption

Adoption of the
state of the art
technologies

Guarded Petchem
technology
collaboration
through JV

Key drivers

+

Utilization of surplus naphtha and stranded propylene from refineries

+

Utilization of other potential molecules from refineries such as n-paraffins, pet coke etc

+

No specialty chemicals producers in the country.
Opportunity for offering full chain of petrochemicals

+

Opportunity for import substitution



- Global Trends
- Reflections - India
- Market Drivers/Trends/Challenges
- Petrochemicals in India
- IndianOil's Vision
- **IndianOil's Petrochem Investments**
- Conclusion

PTA and LAB Plant

LAB	CAPACITY (in TMT)		LICENSOR
FEEDSTOCK	KEROSENE	100	UOP (DETAL)
PRODUCTS	N-Paraffin	100	
	LAB	120	
COMMISSIONED	2004		
CAP EX (Rs Crs)	1248		

PTA	CAPACITY (in TMT)		LICENSOR
FEEDSTOCK	NAPHTHA	500	PX: UOP
PRODUCTS	PX	100	
	PTA	120	PTA: DuPont
	BENZENE	25	
COMMISSIONED	2006		
CAP EX (Rs Crs)	5100		

Naphtha Cracker Complex, Panipat

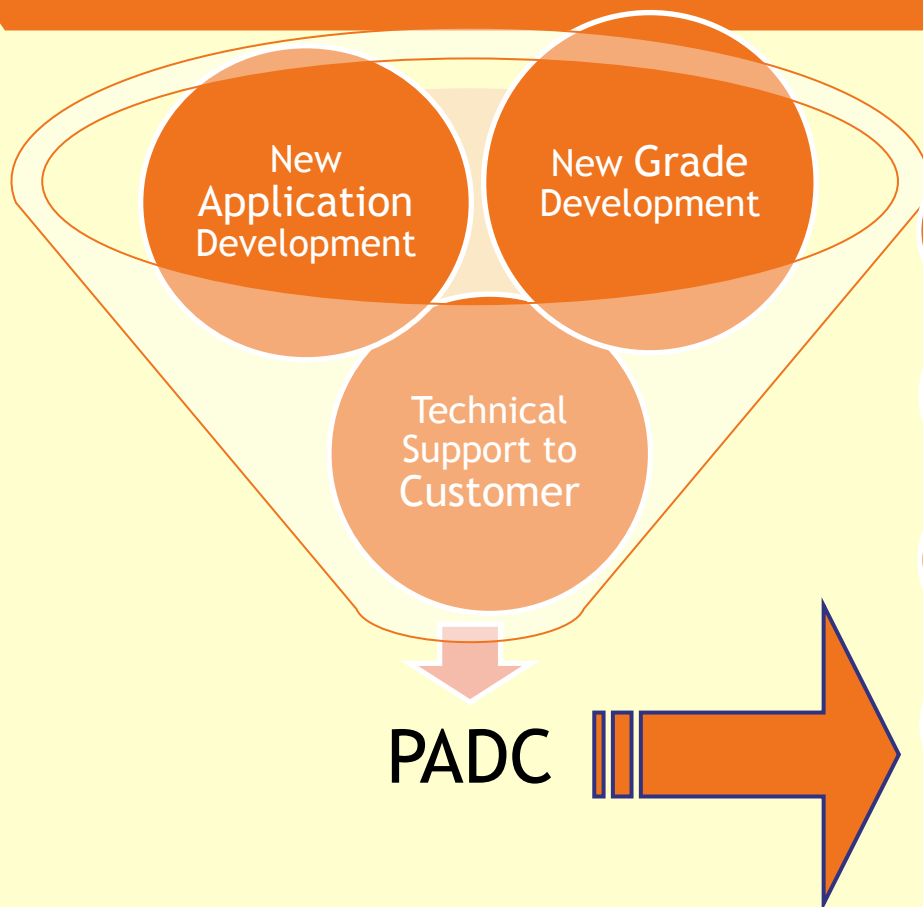
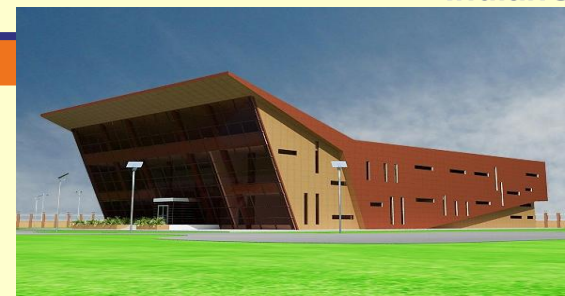
	CAPACITY (in TMT)		LICENSOR
FEEDSTOCK	NAPHTHA	2300	ABB Lummus
PRODUCTS	ETHYLENE	857	
	PROPYLENE	650	
	PP	600	Basell
	HD D	300	Basell
	HD/LL Swing	350	Nova
	BUTADIENE	140	
	GLYCOLS	325	SDC
	BENZENE	130	
	COMMISSIONED	2010	
CAP EX (Rs Crs)	15349		

Product Application & Development Centre - PADAC



IndianOil

PADC is the interface between Plant, Marketing & Customers



- +
- +
- +
- +
- +

Developed and Introduced 2 High Performance Grades 1110MAS, 2120MC

Developed HD Grade for Tarpaulin Application produced from Swing Plant

USFDA Approval obtained for 19 PE/PP Grades for Food Applications and 7 for RoHE (Reduction of Heavy Substance)

Developed recipes for sourcing cost effective additives from domestic market for TQPP and LLDPE

Stringent Quality monitoring done to deliver high quality grades

State of Art Technology Centre with sophisticated Plastic Processing & Characterisation equipments

Styrene Butadiene Rubber (SBR) unit at Panipat



Indian Synthetic Rubber Ltd (ISRL)

JV PARTNERS:

IOC;
M/s Taiwan Synthetic Rubber
Corp (TSRC);
M/s Marubeni, Japan

Feedstock:

Styrene and Butadiene

Capacity :

120TMTPA

Expected Completion:

Q4 2012

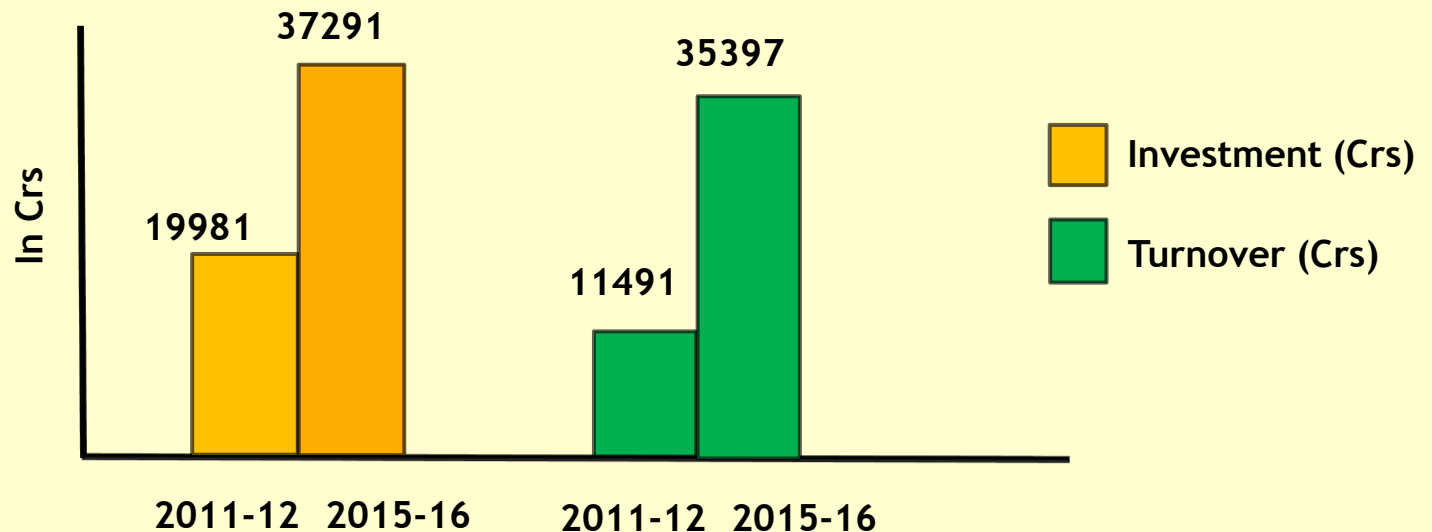
Cap Ex:

Rs 1282 Crs.

No SBR Plant in India, ~ 110 TMTPA being imported

Ongoing projects and Investments

PLANT	LOCATION	CAPACITY	EXPECTED COMPLETION
PP Plant	Paradip	680 TMT	2015-16
Acrylic Acid Plant	Gujarat	180 TMT	2015-16
PX/PTA Plant	Gujarat	570 TMT	2015-16





- Global Trends
- Reflections - India
- Market Drivers/Trends/Challenges
- Petrochemicals in India
- IndianOil's Vision
- IndianOil's Petrochem Investments
- Conclusion

Conclusions

- **Bullish on the India Growth Scenario for Petrochemicals**
- **Establish IndianOil as Integrated Petchem offering full chain of petrochemicals**
- **Continued investment to exploit potentials in niche and specialty products**
- **IOC aim at doubling the Petrochemical turnover in next 5 years**

Thank You!