Indian Petrochemical Industry

Review of 2010 & Outlook for 2011

APIC 2011

Country Paper from India

Prepared by
Chemicals & Petrochemicals Manufacturers' Association
44D Himalaya House (4th Floor),
23, Kasturba Gandhi Marg,
New Delhi – 110001, INDIA
Phone: 91-11-43598337, Fax: 91-11-43598338,
Website: www.cpmai.net

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The Indian Economy

The Indian Economy: Review of 2010 & Outlook for 2011

The Indian Economy Snapshot

The world economy, led by the buoyant economic activity in emerging economies, is gradually recovering from the crisis. The risks however remain, as advanced economies face large fiscal deficit, high public debt and unemployment levels and tepid aggregate demand, leading to subdued growth. The sovereign debt crisis in the peripheral euro-zone countries is contributing to the uncertainty. At the same time, large capital flows to emerging economies, rising oil and agricultural prices are fueling inflationary pressures that may affect the nascent global recovery. In the backdrop of these developments, the Indian economy continues to exhibit resilience, moving steadily towards the pre-crisis growth path.

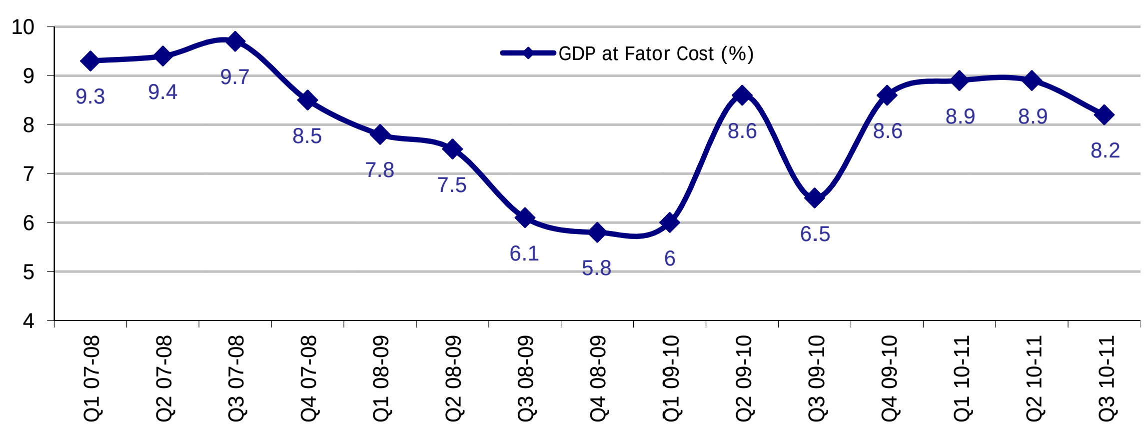
The Indian economy has successfully withstood collapse of world growth, finances and trade and a period of negative growth in agriculture and allied sectors in 2008-09, erratic monsoon resulted in severe drought and unseasonal late rains affecting the winter season crops in 2010-11. This period of economic stress had severely tested citizens and the policy makers alike.

With inflation now shifting to manufacturing items, the RBI will continue with its tight monetary policy stance. The central bank has hiked its key policy rates eight times since March, 2010, to tackle inflationary pressure.

2010 – Broad Based Growth

The growth in real GDP and its broad based nature indicates that economic recovery that begun in 2009-10 has gathered momentum and is at a robust level.

Figure 1: Quarterly GDP growth rate at constant 2004-05 prices



A delayed and severely subnormal monsoon added to the overall uncertainty. The continued recession in the developed world, for the better part of 2009-10, meant a sluggish export recovery and a slowdown in financial flows into the economy. Yet the economy posted a remarkable recovery, not only in terms of overall growth figures but, more importantly, in terms of certain fundamentals, which justify optimism for the Indian economy in the medium to long term.

The growth of agriculture and allied sectors is still a critical factor in the overall performance of the Indian economy. As per the 2010-11 advance estimates released by the Central Statistics Office (CSO) on 07.02.2011, the agriculture and allied sector accounted for 14.2% of the gross domestic product (GDP), at constant 2004-05 prices.

Manufacturing output growth has dipped from a peak of 18% in April 2010 to 1.0% in December 2010, as a result of which IIP growth has also come down from 16.6% in April 2010 to 1.6% in December 2010. However, this slowdown is in a large part driven by the base effect. Despite wide fluctuations, the April–December 2010 cumulative growth rate has remained at a robust 9.1% for the manufacturing sector and 8.6% for the IIP.

Equity inflows have risen nearly thirteen-fold, from US$ 2.23 billion in 2003-04 to US$ 27.31 in 2008-09 and US$ 25.89 billion in 2009-10. Total FDI inflow into India since the onset of the liberalization process (August 1991-May 2010) is nearly US$ 136.86 billion. Under international practices of reporting, i.e. including equity capital, reinvested earnings, and intra-company loans, the figure comes to US$ 168.94 billion as against US$ 35.18 billion in 2008-09 and US$ 37.19 billion in 2009-10. While the FDI inflows have somewhat flattened out over the course of the last three years, the pace of inflows has been stable.

Table 1: Estimated Growth of the Indian Economy in 2010-11

Unit: Percentage	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Year-on Year Growth Rates				**PE**	**QE**	**AE**
Agriculture & Allied Activities	5.1	4.2	5.8	-0.1	0.4	5.4
Mining & Quarrying	1.3	7.5	3.7	1.3	6.9	6.2
Manufacturing	10.1	14.3	10.3	4.2	8.8	8.8
Electricity, gas & water supply	7.1	9.3	8.3	4.9	6.4	5.1
Construction	12.4	10.3	10.7	5.4	7.0	8.0
Trade, Hotels, Transport & Communication	12.1	11.7	10.7	7.6	9.7	11.0
Finance, Insurance, Real Estate & Business Services	12.7	14.0	11.9	12.5	9.2	10.6
Community, Social & Personal Services	7.0	2.9	6.9	12.7	11.8	5.7
GDP at factor Cost	**9.5**	**9.6**	**9.3**	**6.8**	**8.0**	**8.6**
IIP	8.	11.9	8.7	3.2	10.5	
Inflation CPI	4.4	6.7	6.2	9.1	13.4	11.0
Foreign Exchange Reserves (US$)	151.6	199.2	309.7	252	279.1	297.3
Exchange Rate ~ Rs/US$	44.27	45.25	40.26	45.99	47.42	45.68
Source: CSO						

In 2009-10, services growth was 10.1% and in 2010-11 (Advance Estimates) it was 9.6%. India's services GDP growth has been continuously above overall GDP growth, pulling up the latter since 1997- 98. It has also been more stable.

Even during the crisis year, annual services growth was around the 10% mark, which it has maintained since 2005-06. This is in contrast to the overall GDP growth which fell to 6.8% in 2008-09 from 9.3% in 2007-08. Thus the resilience of the services sector has greatly contributed to the resilience of the economy.

Trade and Balance of payment

Balance of Payment developments during 2010-11. As per the latest data available, the highlights of BoP developments during the first half (H1 – April- September 2010) of 2010-11 were higher trade and current account deficits as well as capital flows visa- vis the first half of 2009-10.

On a BoP basis, India's merchandise exports of US$ 182.2 billion during 2009-10 posted a decline of 3.6%, as against US$ 189.0 billion in 2008-09, which recorded a positive growth of 13.7% over the exports of US$ 166.2 billion in 2007-08. Similarly, import payments of US$ 300.6 billion also recorded a decline of 2.6% in 2009-10, as compared to US$ 308.5 billion in 2008-09, which was 19.8% higher than the imports of US$ 257.6 billion in 2007-08. Though the decline in exports was relatively higher than that in imports, the merchandise trade deficit in absolute terms decreased marginally to US$ 118.4 billion (8.6% of GDP) during 2009-10 from US$ 119.5 billion (9.8% of GDP) in 2008-09.

In the current fiscal 2010-11, on month-on-month basis, ***foreign exchange reserves*** have shown an increasing trend. The reserves increased by US$ 18.2 billion from US$ 279.1 billion at the end of March, 2010 to US$ 297.3 at the end of December. This level of reserves provides about 10 months of import cover.

The US dollar ***exchange rate*** marginally appreciated by 0.7% to 44.81 per dollar between 31 March 2010 and 31 December 2010. Over the same period, the rupee has experienced depreciation of 2.5% against the Pound Sterling and 12.1% against the Japanese yen, while it appreciated by 1.2% against the euro.

Table 2: Balance of Payments Summary

Unit: US$ billion	2005-06	2006-07	2007-08	2008-09	2009-10	10-11 H1	10-11 H2	10-11 (E)	11-12 (F)
Merchandise Exports	105.2	128.9	166.2	189.0	182.2	110.5	119.8	230.3	271.9
Merchandise Imports	157.1	190.7	257.6	308.5	300.6	177.5	184.9	362.3	423.4
Merchandise Trade Balance	-51.9	-61.8	-91.5	-119.5	-118.4	-66.9	-65.1	-132.0	-151.5
Net Invisibles	42.0	52.2	75.7	89.9	80.0	39.1	42.2	81.3	95.7
Current Account Balance	-9.9	-9.6	-15.7	-27.9	-38.4	-27.9	-22.9	-50.8	-55.8
Foreign Investment	15.5	14.8	45.0	3.5	51.8	29.1	19.0	48.1	45.0

O/W FDI (net)	3.0	7.7	15.4	19.8	19.5	5.3	4.0	**9.3**	**20.0**
Portfolio (net)	12.5	7.1	29.6	-14.0	32.3	23.8	15.0	**38.8**	**25.0**
Loans	7.9	24.5	41.9	8.3	6.5	17.4	10.4	**27.8**	**30.0**
Banking Capital	1.4	1.9	11.8	-3.2	2.1	0.8	1.1	**1.9**	**6.0**
Other Capital	1.2	4.2	9.5	-4.0	-12.1	-9.0	-2.5	**-11.5**	**-5.0**
Capital Account Balance	**25.5**	**45.2**	**106.6**	**6.8**	**47.8**	**36.7**	**27.9**	**64.6**	**76**
Overall Balance	**15.1**	**36.6**	**92.2**	**-20.1**	**13.4**	**7.0**	**5.0**	**12.1**	**20.2**
Source: Reserve Bank of India									

The periodic surge in capital flows could lead to problem of absorptive capacity in the economy, fuelling asset price bubbles, currency appreciation and stoking inflation. The challenge is in managing such surge in capital flows. The FDI inflows that are stable and productive in nature, have declined from US$ 37.7 billion in 2008-09 to US$ 33.1 billion in 2009-10 and US$ 19.0 billion in the current fiscal (up to November 2010). Moreover, the majority of the capital inflow is in the form of FIIs, which are volatile in nature. Steps have to be taken to encourage FDI inflows vis-à-vis other forms of capital.

India's trade growth (USD) has been robust at 20% plus since 2002-03. The global recession only slightly jolted the continued upward growth in India's export sector, with exports rising at a reasonable rate of 13.6% in 2008-09. However, in 2009-10 export growth was negative at (-)3.5%, partly reflecting the effect of global recession and partly the higher base effect due to lagged export data of 2008-09.

Though ***export growth*** decelerated from July to November 2010 after high spurts from February 2010 to June 2010, cumulative export growth in April- December 2010-11 was good at 29.5% with cumulative exports reaching US $ 164.7 billion during this period. Current indications are that India will not only achieve the target of US$ 200 billion but surpass it in 2010-11.

India's ***merchandise imports***, also affected by global recession, fell to US$288.4 billion with a negative growth of -5.0% in 2009-10. This was due to the fall in growth of petroleum, oil and lubricant (POL) imports by 7.0% and non- POL imports by 4.2%. POL import growth was low mainly due to decline in import price of the Indian crude oil import basket by 16.5% despite the increase in quantity by 7.7%.

During 2010-11 (April-December) import growth was at 19% accompanied by an increase in both ***POL and non- POL imports*** at 17.7% and 19.6% respectively. Gold and silver imports registered a growth of 8.7%. Non-POL non-bullion imports increased by 21.2% due to recovery in industrial activity and exports.

Performance of Six Core Industries

Overall production of the six core industries has gone up but there is a huge gap in terms of the required capacity addition needed to catch up with the projected demand in some sectors. There has not been significant capacity addition in some of the core industries. Likewise slow rate of capacity addition in physical infrastructure sectors is constricting industrial sector growth. Capacity addition in core sectors and removal of infrastructure bottlenecks would spur industrial sector output in the medium to long term.

A. The production of **Electricity Generation** at 735610.3 Million kwh for Apr’10-Feb’11 is 5.4% higher than the 698235 Million kwh for the corresponding period of the previous year.

B. The production of **Coal** at 466.62 MMT for Apr’10-Feb’11 is 0.1% higher than the 466.03 MMT for the corresponding period of the previous year.

C. The production of **Finished Steel** at 56.03 MMT for Apr’10-Feb’11 is 8.1% higher than the 51.84 MMT for the corresponding period of the previous year.

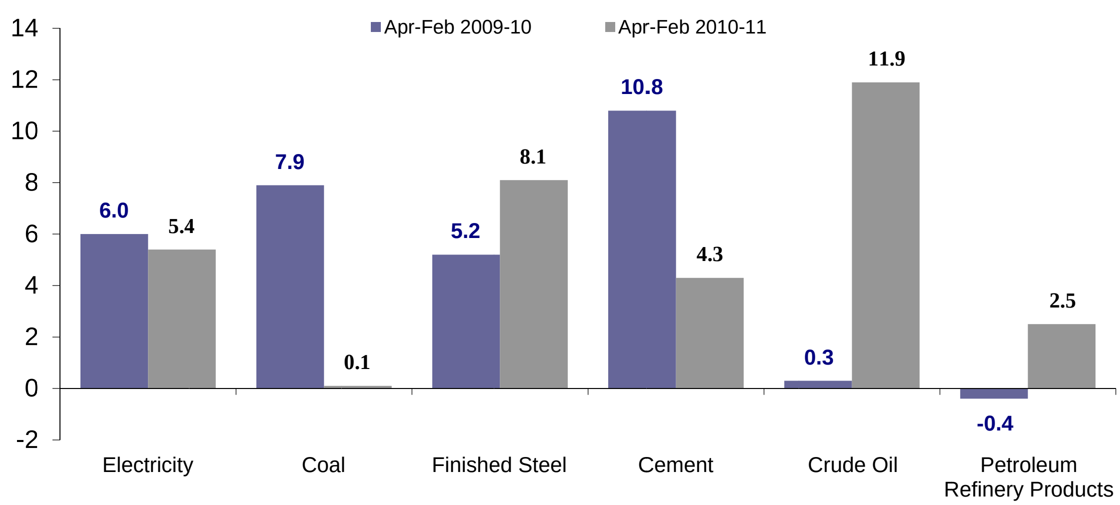
D. The production of **Cement** at 194.61 MMT for Apr’10-Feb’11 is 4.3% higher than the 186.570 MMT for the corresponding period of the previous year.

E. The production of **Crude Oil** at 34.4 MMT for Apr’10-Feb’11 is 11.9% higher than the 30.73 MMT for the corresponding period of the previous year.

F. The production of **Petroleum Refinery Products** at 139.33 MMT for Apr’10-Feb’11 is 2.5% higher than the 135.97 MMT for the corresponding period of the previous year.

Source: Ministry of Statistics and Programme Implementation, Government of India.

Figure 2: Infrastructure Performance (% Growth)



Outlook for 2011: Sustained and Stable Growth

The growth of agriculture and allied sectors continues to be a critical factor in the overall performance of the Indian economy. The agriculture sector in India is at crossroads with rising demand for food items and relatively slower supply response in many commodities resulting in frequent spikes in food inflation. There is need to significantly step up both private and public investment in the agriculture sector to ensure sustained growth.

Growth in the industrial sector was buoyant during first half of the FY 2010-11. Within the manufacturing sector, the capital goods segment has been the main driver of growth. Rapid reduction of the infrastructure deficit holds the key to competitiveness in an increasingly globalised economic environment.

In 2007-08, a surge in capital flows far in excess of the absorptive capacity and with implications for competitiveness had complicated monetary management on account of trade-offs involving the impossible trinity objectives of open capital account, exchange rate facility, and monetary policy independence. However, with recovery in 2009-10 and 2010-11, the external sector broadly remained supportive as the elevated levels of current account deficits were easily financed by rising capital flow; though concerns of sustainability had emerged.

Based on the performance of the economy over the last five years and analysis of the underlying trends of critical variables, India's real GDP is expected to grow by 9% (+/- 0.25) in 2011-12. The economy is expected to revert to pre-crisis growth levels. It is known that once the economy begins to operate close to its capacity, the growth then depends much more on skill development and innovative activity in the country. There are also initiatives to bolster India's higher education system. It is expected that these initiatives will gather steam and more than make up for eventually waning power of the savings rate as a driver of economic growth. As a consequence, the next two decades should see the Indian economy growing faster than it has done any time in the past and also faster than the growth in the next two years.

Table 3: India's GDP Growth Forecast- March 2011

	2011	2012
World Bank- GEP Jan 2011	7.5%	8.0%
IMF-WEO Apr 2011	8.2%	7.8%
ADO 2011 (ADB)- Apr 2011	8.2%	8.2%
Economic Survey (GOI)	9.0%	
PMEAC (Prime Minister's Economic Advisory Council)	9.0%	

Section 2

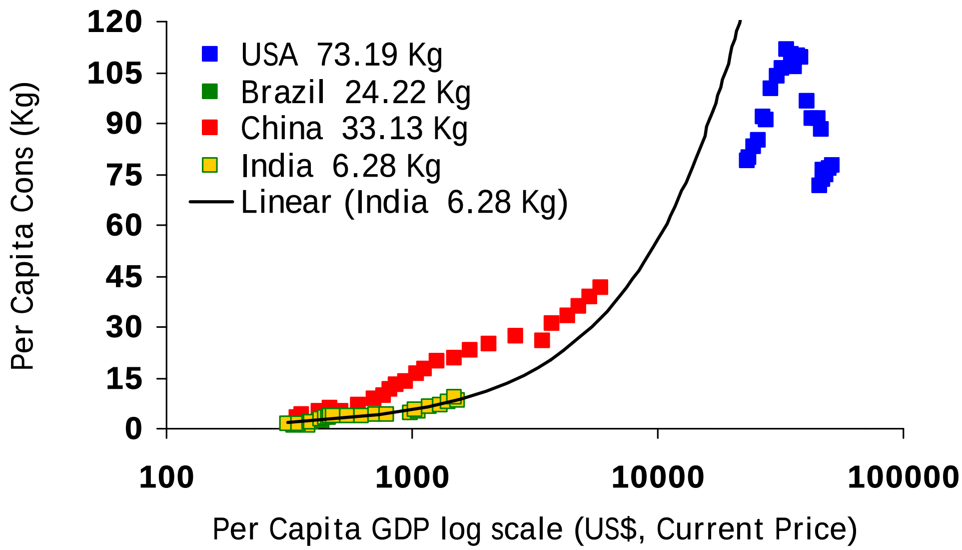
Indian Petrochemical Industry

Petrochemical Industry in India

Petrochemicals include synthetic fibres, polymers, elastomers, synthetic detergents, and performance plastics, apart from their intermediates such as synthetic fibre intermediates, synthetic detergent intermediates, olefins, and aromatics. The main sources of feedstock and fuel for petrochemicals are natural gas and naphtha. Petrochemical products cover the entire spectrum of daily use items ranging from clothing, housing, construction, furniture, automobiles, household items, toys, agriculture, horticulture, irrigation, and packaging to medical appliances.

Compared to per capita consumption of PO+PVC in US at 73 Kg, China at 33 Kg and Brazil at 24 Kg, India at 6 Kg is still in nascent stage. US consumption has reached saturation level, china's consumption above industry curve is basically export led. India has the advantage of high population and expected to maintain high economic growth. This should propel the India's consumption in polymer to new levels in coming year.

Figure 3: Per capita Polymer Consumption Vs per capita GDP ~ 2010



The domestic polymer industry (like global industry) is dominated by polyolefin's (PE & PP), representing about 71% of all commodity resins consumed in 2010. Polymers registered demand growth of 21% in 2010 against growth of 22% in 2009. The demand for polymer is likely to grow by 15% approx in 2011 & 2012 and is expected to reach 9732 Kt & 11116 Kt respectively.

Net trade deficit declined marginally in 2010 but is expected to increase from 2010 levels to 1986 Kt and 3147 Kt in 2011 & 2012 respectively. Domestic demand is expected to outpace domestic production. New capacities of Reliance, Essar, OPAL, etc are expected to come in 2013 onwards.

Petrochemical Industry Review of 2011 & Outlook for 2012

Polymers

Polymers registered a robust demand growth of 21% in 2010. Strong domestic demand resulted in heavy imports of polymers in the country. We expect the demand for polymers to grow at 15% -14% in 2011 & 2012.

Table 4: Polymer Demand Supply

Polymers (Kt)	2008 A	2009 A	2010 A	2011 E	2012 E
Capacity	5593	6733	8143	8143	8143
Production	5249	5584	7069	7746	7969
Op Rate (%)	**94%**	**83%**	**87%**	**95%**	**98%**
Import	938	1992	2163	2558	3503
Exports	483	593	774	572	356
Net Trade	**-455**	**-1399**	**-1389**	**-1986**	**-3147**
Demand	5704	6983	8458	9732	11116
Demand Growth %	**3.2%**	**22%**	**21%**	**15%**	**14%**
Source: Industry Estimates. A: Actual, E: Estimate					

In 2010, there was capacity addition of 350 Kt ~ LLDPE , 300 Kt ~ HDPE & 600 Kt of PP by IOCL. Project Supermax undertaken by Haldia in Q1 2010 increased LLDPE capacity by 90 Kt & HDPE by 20 Kt.

In 2011 & 2012, there is no capacity addition. Projects with initial target of 2011-12 have shifted to 2013.

Operating rate is expected to be 95% in 2011 and expected to further rise to 98%.

In 2010 there was net trade deficit of 1389 Kt. Trade deficit is expected to increase from 2010 levels as domestic demand is expected to outpace domestic production. Trade deficit is expected to be 1986 Kt in 2011 and 3147 Kt in 2012.

Polymers are basic materials that support myriad activities in production, handling & distribution of food and agricultural products. With our focus on inclusive growth, the demand for polymers in India would be driven by the basic needs of the 'bottom of the pyramid' populace that is striving for improved quality of life. India is expected to emerge as the fifth-largest consumer market in the world after the USA, Japan, China and the UK, growing at 8% compound annual growth rate over the next two decades.

Polyolefins

Comprising of PE & PP, polyolefins constitute 78% of the total polymer capacity and 79% of total polymer production in India in 2010.

All PE registered demand growth of 28.5% in 2010. It is expected that PE will grow at 16% in 2011 and 2012 respectively. New capacity addition of 650 Kt by IOC in Q1 2010 of which LLDPE is 350 Kt and HDPE is 300 Kt. Production started in Q2 2010.

Table 5: Polyolefin Demand in India Actual & Projected

(Kt)	Actual		Projected		% Change year on year		
	2009	2010	2011	2012	2010	2011	2012
LDPE	323	358	378	398	11%	5.5%	5.3%
LLDPE	1252	1509	1730	1990	21%	15%	15%
HDPE	1279	1800	2152	2540	41%	20%	18%
PP	2212	2679	3143	3621	21%	17%	15%
Total PO	**5066**	**6347**	**7403**	**8549**	**25%**	**17%**	**15%**
Source: Industry Estimates. A: Actual, E: Estimate							

PP registered demand growth of 21% in 2010 and is expected to grow at a healthy rate of 17% & 15% in 2011 & 2012. IOC'S 600 Kt PP capacity came on-stream in Q2 2010.

Polyolefins registered demand growth of 25%in 2010. It is expected to grow at 17% & 15% in 2011 & 2012 respectively.

Vinyl's: PVC

The demand for PVC increased by 10% in 2010 and is expected to grow at 10% in 2011 and 2012 to reach 2065 Kt & 2271 Kt respectively. As the economy is expected to perform well and register strong growth, PVC demand is also expected to be robust in coming years.

Table 6: PVC Demand Supply

(Kt)	2008 A	2009 A	2010 A	2011 E	2012 E
Capacity	1101	1321	1321	1321	1321
Production	1029	1013	1216	1285	1295
Imports	322	694	659	780	976
Exports	0.4	0.0	0.0	0.0	0.0
Apparent Demand	1351	1707	1875	2065	2271
Demand Growth%	**1.8%**	**26%**	**10%**	**10%**	**10%**
Source: Industry Estimates. A: Actual, E: Estimate					

There was no new capacity addition in 2010. PVC capacity is expected to remain at 1321 Kt level till 2012. PVC import was 694 Kt in 2009 and 659 Kt in 2010 and is expected to increase further to 780 Kt in 2011 & 976 Kt in 2012.

Styrenics

A. Polystyrene

In 2010, demand for PS increased by 12% to reach 236 Kt, as shown in table 7. Demand for PS is expected to keep increasing at 12% to touch 264 Kt in 2011 and 296 Kt in 2012.

Table 7: Polystyrene Demand Supply

(Kt)	2008 A	2009 A	2010 A	2011 E	2012 E
Capacity	452	452	452	452	452
Production	244	258	260	260	275
Imports	20	22	24	28	32
Exports	75	70	49	24	11
Apparent Demand	188	210	236	264	296
Demand Growth%	**-15%**	**12%**	**12%**	**12%**	**12%**
Source: Industry Estimates. A: Actual, E: Estimate					

PS import was 24 Kt in 2010 and is likely to increase to 28 Kt & 32 Kt in 2011 & 2012 respectively. Export declined from 70 Kt in 2009 to 49 Kt in 2010 and is likely to further decrease to 24 Kt & 11 Kt in 2011 & 2012.

B. Acrylonitrile-Butadiene-Styrene (ABS)

The status of the ABS production in India is shown in table 8. Demand for ABS registered a growth of 10% in 2010. As shown in the table below, demand for ABS is expected to grow at the rate of 10% in 2011 & 2012. Industry capacity is likely to remain unaltered at 87 KT till 2012.

Table 8: ABS Demand Supply

(Kt)	2008 A	2009 A	2010 A	2011 E	2012 E
Capacity	66	87	87	87	87
Production	68	83	85	85	85
Imports	19	27	35	46	59
Exports	0.1	1.8	1.0	0.5	0.0
Apparent Demand	87	108	119	131	144
Demand Growth%	**-5.5%**	**25%**	**10%**	**10%**	**10%**
Source: Industry Estimates. A: Actual, E: Estimate					

C. Styrene-Acrylonitrile (SAN)