The Petrochemical Industry in Taiwan, ROC

2015 Global Economy Outlook

Global economic growth declined in the first half of 2015, reflecting a further slowdown in emerging markets and a weaker recovery in advanced economies. It's now projected at 3.1% for 2015 as a whole. Slightly lower than 2014 and 0.2% below than last forecast. Though, IMF has forecasted a better global economy in 2016 (except China) than 2015, most countries' GDP growths were revised down in January this year for 2016/2017, as illustrated in Table 1. Commodity prices have declined sharply during the past two years and output growth has slowed considerably among those emerging markets and developing economies that are net exporters of commodities.

Table 1. Economic Growth Rate (%) in Selected Regions & Countries

	2013	2014	2015(EST)	2016(EST)	2017(EST)
World	3.28	3.4	3.1	3.2	3.5
USA	2.22	2.4	2.5	2.4	2.5
Euro Area	-0.43	0.9	1.5	1.7	1.7
Japan	1.52	0.0	0.6	0.5	0.1
China	7.70	7.3	6.9	6.5	6.2
Taiwan	2.09	3.8	0.7	1.5	2.2
India	5.02	7.3	7.3	7.5	7.5
Thailand	2.89	0.9	2.8	3.0	3.2
Indonesia	5.78	5.0	4.8	4.9	5.3

Source: IMF Jan./Apr., 2016

The 2015 Petrochemical Industry Situation in Taiwan- Overview

The production of six raw materials and twenty-four major petrochemical intermediates totaled 29,438,437 MT, an increase of 2.3% over the previous year, according to PIAT statistics, as indicated in Table 2. The total import was down by 4.5% whereas the total demand was up by1.0% in 2015, compared with 2014.

Table 2 also indicates supply & demand of the 24 petrochemical intermediates in 2014/2015. Production & export all increased to certain extent in 2015.

Table 2. Supply and Demand for Major Petrochemicals in Taiwan

Unit: Metric Ton

		2014	2015	Growth (%)
Raw Materials	Production	12,198,930	12,323,315	1.0
	Import	2,531,824	2,451,774	-3.2
	Export	2,976,383	2,898,470	-2.6
	Demand	11,754,371	11,876,619	1.0
Intermediates	Production	16,551,267	17,115,122	3.4
	Import	3,470,466	3,280,005	-5.5
	Export	7,769,443	8,030,165	3.4
	Demand	12,252,290	12,364,962	0.9
Total	Production	28,750,197	29,438,437	2.4
	Import	6,002,290	5,731,779	-4.5
	Export	10,745,826	10,928,635	1.7
	Demand	24,006,661	24,241,581	1.0

Demand (Apparent) = Production + Import – Export

Raw Materials

The supply & demand statistics of petrochemical raw materials are illustrated in Table 3. Production of ethylene, propylene, toluene and xylenes increased to certain extents in 2015. With the balance of butadiene and benzene at a minor setback, 2015 apparent domestic demand for ethylene, propylene and xylenes registered positive growth, while negative growth was noticed for butadiene and benzene. There're two major petrochemical systems in Taiwan, CPC & FPC. generally speaking, CPC system is short of light olefins & benzene and FPC system is short of aromatics. If you combine these two systems together, it will be a net importer for benzene in Taiwan.

Table 3. Supply and Demand for Petrochemical Raw Materials in Taiwan

Unit: Metric Ton

		2014	2015	Growth (%)
Ethylene	Production	4,182,340	4,228,848	1.1
	Import	130,877	211,840	61.9
	Export	199,211	322,945	62.1
	Demand	4,114,006	4,117,743	0.1
Propylene	Production	3,237,323	3,273,962	1.1
	Import	144,305	159,152	10.3
	Export	829,598	707,460	-14.7
	Demand	2,552,030	2,725,654	6.8
Butadiene	Production	585,097	583,470	-0.3
	Import	127,705	107,252	-16
	Export	107,787	100,909	-6.4
	Demand	605,015	589,813	-2.5
Benzene	Production	1,755,741	1,740,389	-0.9
	Import	760,183	707,293	-7.0
	Export	68,000	35,500	-47.8
	Demand	2,447,924	2,412,182	-1.5
Toluene	Production	285,659	335,072	17.3
	Import	241,307	116,478	-51.7
	Export	281,620	311,899	10.8
	Demand	245,346	139,651	-43.1
Xylene	Production	2,152,770	2,161,574	0.4
	Import	1,127,447	1,149,759	2.0
	Export	1,490,167	1,419,757	-4.7
	Demand	1,790,050	1,891,576	5.7
Total	Production	12,198,930	12,323,315	1.0
	Import	2,531,824	2,451,774	-3.2
	Export	2,976,383	2,898,470	-2.6
	Demand	11,754,371	11,876,619	1.0

Demand (Apparent) = Production + Import – Export

Petrochemical Intermediates

Thermoplastic Resins

Supply & demand statistics for 5 major thermoplastic resins are summarized in Table 4. Production of the six commodity plastics all showed positive growth in 2015 over the previous year.

Table 4. Supply and Demand for Plastics in Taiwan

Unit: Metric Ton

		2014	2015	Growth (%)
LDPE/LLDPE /EVA	Production	576,430	610,608	5.9
	Import	290,637	291,565	0.3
	Export	416,823	475,131	14.0
	Demand	450,244	427,042	-5.2
HDPE	Production	524,555	585,977	11.7
	Import	78,261	68,946	-11.9
	Export	303,446	331,083	9.1
	Demand	299,370	323,840	8.2
PVC	Production	1,514,893	1,608,264	6.2
	Import	26,643	27,265	2.3
	Export	975,206	1,115,057	14.3
	Demand	566,330	520,472	-8.1
PP	Production	1,042,198	1,127,891	8.2
	Import	175,081	207,035	18.3
	Export	660,063	697,391	5.7
	Demand	557,216	637,535	14.4
PS	Production	775,105	797,198	2.9
	Import	7,743	4,084	-47.3
	Export	723,916	764,784	5.6
	Demand	58,932	36,498	-38.1
ABS	Production	1,201,685	1,225,677	2
	Import	13,167	12,408	-5.8
	Export	1,046,874	1,060,626	1.3
	Demand	167,978	177,459	5.6

Demand (Apparent) = Production + Import – Export

Fiber Intermediates

Supply & demand balance of fiber intermediates is depicted in Table 5. Intermediates AN/MEG showed positive sign in production / export of 2015. CPL continued to be in far short supply in 2014/2015 and relied heavily on import. Due to PTA substantial expansion projects in China within past three years and import tax difference between Taiwan & ASEAN, Taiwan PTA producers slashed export volume in 2014/ 2015.

Table 5. Supply and Demand for Synthetic Fibers in Taiwan

Unit: Metric Ton

		2014	2015	Growth (%)
CPL	Production	227,200	233,100	2.6
	Import	442,950	404,649	-8.6
	Export	0	0	0
	Demand	670,150	637,749	-4.8
AN	Production	464,511	469,794	1.1
	Import	110,181	97,440	-11.6
	Export	184,852	192,307	4.0
	Demand	389,840	374,927	-3.8
PTA	Production	2,596,260	2,626,500	1.2
	Import	0	0	0
	Export	208,724	154,498	-26.0
	Demand	2,387,536	2,472,002	3.5
EG	Production	2,298,600	2,348,696	2.2
	Import	204,556	168,349	-17.7
	Export	1,482,794	1,413,509	-4.7
	Demand	1,020,362	1,103,536	8.2

Demand (Apparent) = Production + Import – Export

Synthetic Rubbers

Table 6 summarized supply & demand for synthetic rubbers in 2014/2015. In 2015, production of the SBR amounted to 79,571 MT, down by 18.8% over the previous year and production of the PBR decreased by 13.7% to 54,812 MT. Domestic demand of SBR decreased by 7.6% and that of PBR expanded to a heavily extent of 213.8%

Table 6. Supply and Demand for Synthetic Rubbers in Taiwan

Unit: Metric Ton

		2014	2015	Growth (%)
SBR	Production	97,945	79,571	-18.8
	Import	38,377	46,089	20.1
	Export	64,969	59,751	-8.0
	Demand	71,353	65,909	-7.6
PBR	Production	63,540	54,812	-13.7
	Import	27,276	26,415	-3.2
	Export	88,185	72,971	-17.3
	Demand	2,631	8,256	213.8
CB	Production	93,163	83,971	-9.9
	Import	81,544	80,033	-1.9
	Export	40,338	35,002	-13.2
	Demand	134,369	129,002	-4.0

Demand (Apparent) = Production + Import – Export

2016 Prospects

As 2016 Q1 crude hit the bottom, so did the petrochemical prices. Buyers re-entered the market to replenish their stock after Chinese New Year. Escalation of in petrochemical prices and business confidence triggered the whole region's restocking, as well as Asian crackers heavy maintenance schedule for March - May 2016. Of course, cracker suffered mechanical problem in Singapore Jurong Island also contributed to the shortage of petrochemical raw materials. The outlook of petrochemical industry depends on many factors, such as global economy development, stability of crude oil prices and supply and demand situation of each different raw materials & derivatives… etc. Based on the latest IMF forecast, global economic growth rate will hit 3.2% this year. The USA and Euro Area are projected to expand to 2.4% and to 1.7% respectively this year. But growth will slow down in the world's second largest economy in China in 2016. China reached 6.9% GDP growth last year, but is forecasting only 6.5% this year. A sharper-than-expected slowdown in China could spill over to adjacent countries in Asia through effects on trade, asset, commodity price and waning confidence. Central Bank of China kept reducing domestic interest rate to loosen monetary policy and expand infrastructure to stimulate the manufacturing sector that will improve the petrochemicals' demand. Besides, China also needs to face oversupply situation in many petrochemical sectors,

after over build-up facilities in past few years. Thanks to low oil prices, Asian petrochemical producers can enjoy feedstocks (naphtha & LPG) on the cheap and diminish production cost, comparing with ME producers. However, we should keep an eye on US shale gas development, as it will affect Asian petrochemical market in the next two years. The US competitors will take advantage of their low cost ethane feedstock and export ethylene derivatives to every corner of the world.

Conclusion

Emerging market and developing economies are now confronting a new reality of lower growth, with cyclical and structural forces undermining the traditional growth paradigm. India and parts of emerging Asia are bright spots, projected to grow at a robust pace. However, crashing commodity price and waning confidence made China's government cut supply side from the 13th five year plan and develop "One belt, one Road" strategy in order to export China's production's capacity from areas of overproduction such as steel manufacturing.

2016 should be a better year for the petrochemical industry worldwide as a whole, as oil price decreased and seemed to hit the bottom in Q1 this year. All petrochemical producers in Asia will make profit due to low cost feedstock. Demand will grow in line with a recovery in global GDP, especially in India. However, with China's setbacks in GDP growth this year, there's no powerful engine to support a strong upturn in Asia, therefore the pace of improvement might be moderate. With more & more new derivatives capacity coming on stream, China will change its character from a net petrochemicals importer to a net exporter in many different derivatives (PTA、SBR、CPL…etc.).

The renaissance of the USA petrochemical industry (thanks to the shale gas) will certainly globally reform this industry's landscape. The competition of Asian petrochemical producers in two years will be fierce under a surplus scenario (especially PE). Diversified feedstock slates、upgraded production facilities、integrated local utilities / logistics to minimize production cost and innovate high performance / high value- added products, will be major factors to survive in the next decade .

Taiwan, Republic of China
Chemicals Committee

ALKYLBENZENE

Unit: MT

Item \ Year		2014	2015	2016 (Est)
Supply	Production	90,800	94,000	92,000
	Import	0	0	0
	Total	90,800	94,000	92,000
Demand	Domestic	20,500	20,000	20,000
	Direct Export	72,000	75,000	73,000
	Total	92,500	95,000	93,000
Capacity (as end of the year)		125,000	125,000	125,000

- **Review of 2015**

The synthetic detergent production in Taiwan was 172,020 MT in 2014 and is 180,540 MT in 2015. The synthetic detergent production was stable, thereby allowing Taiwan domestic alkyl benzene consumption to remain steady.

The alkyl benzene export quantity increased due to other alkyl benzene suppliers' production problems in 2015.

- **Prospects for 2016**

The alkyl benzene competition will be fiercer due to the demand of alkyl benzene in the world will remaining forecasted the same as 2015 and a new capacity coming out. Producers will do their best to maintain domestic sales quantity and the export volume as in 2014.

MALEIC ANHYDRIDE

Unit: MT

Item \ Year		2012	2013	2014	2015	2016 (Est)
Supply	Production	57,000	68,333	30,000	78,100	81,400
	Import	173	207	0	190	150
	Total	57,173	68,540	30,000	78,290	81,550
Demand	Domestic	16,608	17,208	2,370	15,089	16,000
	Direct Export	38,302	47,600	27,000	60,356	62,000
	Total	54,910	64,808	29,370	75,445	78,000
Capacity (as end of the year)		60,000	130,000	40,000	110,000	110,000

- **Review of 2015**

The MA capacity was around 2.8 million metric tons in the world, but the production of MA was around 1.6 million metric tons in 2015. Meaning 2015 operating rate is only 57% and 72% supply from Asia. UPR is still in demand. In Taiwan, domestic demand was limited, so the producers have been relying on exports.

- **Prospects for 2016**

Material price is recovering since February, the demand for MA remains strong and stable. Producers are willing to raise operating rate because the demand is expected to remain strong for the next months.

PHENOL

Unit: MT

Item \ Year		2012	2013	2014	2015	2016 (Est)
Supply	Production	1,054,595	1,098,679	1,011,019	1,019,911	1,010,000
	Import	10,084	26,138	65,676	83,555	85,000
	Total	1,064,679	1,124,817	1,076,695	1,103,466	1,095,000
Demand	Domestic	908,501	989,409	978,954	1,003,686	1,020,000
	Direct Export	156,178	135,408	98,101	99,780	100,000
	Total	1,064,679	1,124,817	1,076,695	1,103,466	1,120,000
Capacity (as end of the year)		1,080,000	1,080,000	1,080,000	1,080,000	1,080,000

- **Review of 2015**

Taiwan's production has maintained constant with no major fluctuations compared with the previous year. Import volume has sharply increased due to the low operation rate and the increased of new demand.

- **Prospect for 2016**

CCP has increased its captive use due to the DTBE plant started up in Q1 2016. Besides, due to CCP's and TPCC's annual maintenance, Taiwan's producers will keep the operating at a reasonable rate to satisfy the increased demand of phenol consumption. However, new capacities in Thai and Korea will come out in Q2 2016, the entire market will still be oversupplied.

ACETIC ACID

unit: MT

Item \ Year		2012	2013	2014	2015	2016 (Est)
Supply	Production	720,000	883,000	950,000	903,500	999,000
	Import	28,000	6,400	1,100	2,200	2,000
	Total	748,000	889,400	951,100	905,700	1,001,000
Demand	Domestic	679,300	582,400	603,600	560,250	675,800
	Direct Export	68,700	301,000	347,500	345,450	325,200
	Total	748,000	889,400	951,100	905,700	1,001,000
Capacity (as end of the year)		1,180,000	1,180,000	1,180,000	1,180,000	1,180,000

- **Review of 2015**

The total domestic demand for acetic acid has decreased 4.8% over 2014, due mainly to reduced VAM production with regular maintenance that consumed around 8.5% less acetic acid. However, the market situation of PTA and solvent was still not improved in Taiwan, and the operational rate remained undesirable, at an estimated rate of only 50~60%

- **Prospect for 2016**

The consumption of acetic acid will increase and the total domestic demand is expected to boost to 675,800 MT in 2016 approximately. The main reasons are as follows: The producer of VAM, DCC had finished the regular two-year maintenance in 2015; further, the new capacity of Oriental Petrochemical Taiwan Co (OPTC) will come out in 2016/Q3. Taiwan's PTA and VAM production would be increased as anticipated and the consumption of acetic acid will also raise at the same time.

However, the economic situation is not clarified and the demands downstream don't recover, acetic acid demand for solvent can only remain in flat over last year.

Besides, the market price of acetic acid in Asia, including Taiwan will rebound before Q2 2016, due to rising feedstock prices and increasing demand of acetic acid.

METHANOL

Unit: MT

Item \ Year		2012	2013	2014	2015	2016 (EST)
Supply	Production	0	0	0	0	0
	Import	1,150,822	1,168,934	1,340,936	1,284,322	1,300,000
	Total	1,150,822	1,168,934	1,340,936	1,284,322	1,300,000
Demand	Domestic	1,150,822	1,168,934	1,340,936	1,282,437	1,298,000
	Direct Export	0	0	0	1,885	2,000
	Total	1,150,822	1,168,934	1,340,936	1,284,322	1,300,000
Capacity (as end of the year)		0	0	0	0	0

- **Review of 2015**

  The global economy was facing challenges in 2015 since China growth rate seemed decelerated. But compared with that of other basic chemical, the price trend of Methanol did not have wide fluctuations in 2015. The price range in Taiwan in 2015 was between around USD250/MT and around USD200/MT.
  Overall, its derivatives in Taiwan, such as formaldehyde, MMA, MTBE and POM, were in stable condition. However, because of the sharp drop of crude oil price, the quantities of Methanol import slightly reflected the concern of global economy.

- **Prospect for 2016**

  Because of active MTO/MTP in China, it is foreseeable that the methanol price shall be in parity with crude series, such as Naphtha, Propane and LPG. The MTO/MTP operation rate will decide the global Methanol Price and consumption in 2016. The methanol market sentiment in Taiwan is mostly likely to remain stable if no other factor plays a role.

  Some methanol devices in North and South America will be on stream in the coming 2016 and 2017. This Methanol may be exported and head to Asia. These new participants were expected to impact the supply and demand condition in Asia, including China, Taiwan….

PHTHALIC ANHYDRIDE

Unit: MT

Item \ Year		2012	2013	2014	2015	2016 (EST)
Supply	Production	212,145	200,752	175,105	220,047	210,000
	Import	301	0	0	0	0
	Total	212,446	200,752	175,105	220,047	210,000
Demand	Domestic	133,387	126,120	90,854	161,617	140,000
	Direct Export	79,059	74,632	84,251	58,430	65,000
	Total	212,446	200,752	175,105	220,047	205,000
Capacity (as end of the year)		285,000	285,000	285,000	285,000	285,000

- **Review of 2015**

  Compared to year 2014, Phthalic Anhydride production has increased by 25.6% in 2015 due to the increase of phthalates plasticizer production and exportation to keep high usage rate of the facility.

- **Prospect for 2016**

  PA total production in year 2016 is forecasted to be reduced 5% due to scheduled catalyst repacking in April in one of the major local producers' facility. The demand in major markets such as China and India are expected to remain weak in year 2016.

DIOCTYL PHTHALATE

Unit: MT

Item \ Year		2012	2013	2014	2015	2016 (EST)
Supply	Production	134,741	124,939	65,528	217,718	202,000
	Import	165	0	0	0	0
	Total	134,906	124,939	65,528	217,718	202,000
Demand	Domestic	42,554	39,964	25,088	27,204	23,000
	Direct Export	92,346	84,975	40,440	190,514	195,000
	Total	134,900	124,939	65,528	217,718	218,000
Capacity (as end of the year)		470,000	470,000	470,000	470,000	470,000

- **Review of 2015**

  DOP production and exportation increased significantly in year 2015. Huge quantity of DOP was moved into the China market due to the advantage on import duty exemption. However, domestic demand still remained weak.

- **Prospect for 2016**

  DOP annual production in year 2016 is forecasted to reduce 5% due to maintenance schedules in both raw materials, 2-EH and PA facilities. Exportation to China is expected to remain the same as year 2015.

Taiwan, Republic of China
General Matters & Raw Materials Committee

1. Olefins (Ethylene, Propylene, Butadiene)

Ethylene

Unit: MT

	Year	2012	2013	2014	2015	2016 (Est)
Supply	Production	3,478,448	3,925,325	4,182,340	4,228,848	4,200,000
	Import	348,415	254,440	130,877	211,840	200,000
	Total	3,826,863	4,179,765	4,313,217	4,440,688	4,400,000
Demand	Domestic	3,703,734	3,986,122	4,114,006	4,117,743	4,100,000
	Export	123,129	193,643	199,211	322,945	300,000
	Total	3,826,863	4,179,765	4,313,217	4,440,688	4,400,000
	Year End Capacity	3,820,000	4,420,000	4,005,000	4,005,000	4,005,000

2015 Review

International crude oil price declined gradually after reaching highs in June 2014, while upstream petrochemical feedstock price decreased at the same time. It affected buyers' sentiment and the demand shrunk for intermediate materials and final products. Year 2015 Taiwan's petrochemicals output slid, due primarily to falling raw material prices, although earnings performance was better than year 2014. The main importing country, China, is currently carrying out industrial restructuring which upgrades petrochemical industry supply chain and will threaten our domestic petrochemical industry. But upstream feedstock naphtha and product pricing spreads have widened improving petrochemical industry profits significantly.

Total production of ethylene last year in Taiwan was 4,228,848 MT, a growth of 1.1% over the previous year. The slight increase was attributed to CPC and FPCC crackers were running on high operational rate except turnaround schedule. The domestic demand was 4,117,743 MT, almost the same as the previous year; But, export of 322,945 MT was a record historical high.

2016 Prospect

Asian crackers turnaround schedule has been heavier than last year and began in March. Moreover Japan has closed a cracker in February. We can expect the supply to be much tighter than last year and predict price increases. They also provide incentive for crackers to maintain high operation rate and maximize the profits due to low

naphtha cost.

Propylene

Unit: MT

	Year	2012	2013	2014	2015	2016 (Est)
Supply	Production	2,696,817	3,047,400	3,237,323	3,273,962	3,370,000
	Import	388,646	245,872	144,305	159,152	160,000
	Total	3,085,463	3,293,272	3,381,628	3,433,114	3,530,000
Demand	Domestic	2,584,228	2,771,001	2,552,030	2,725,654	2,780,000
	Export	501,235	522,271	829,598	707,460	750,000
	Total	3,085,463	3,293,272	3,381,628	3,433,114	3,530,000
	Year End Capacity	3,468,000	3,818,000	3,568,000	3,568,000	3,568,000

2015 Review

Total production of propylene last year in Taiwan was 3,273,962 MT, a growth of 1.1% over the previous year. But domestic demand was 2,725,654 MT, an increase of 6.8% over the previous year. The main reason was that downstream plants consumed more propylene which decreased price sharply from 2014 when China PDH plants started up. Even though China's domestic supply increased, imported volume stayed same. The volume exported to China as the main exported country remained high.

2016 Prospect

Total demand of propylene will significantly depend on the world economic recovery, since 60% of Taiwan PP production (the largest propylene derivative) goes to foreign markets. The global economy is forecasted to become more conservative in 2016. The demand growth rate for propylene derivatives will slow down; however, expanding capacity will not halt, including propylene and its derivatives, Especially for the on purpose propylene in China, Korea and Southeast Asia. Propylene will become ample as by-product for naphtha crackers. Producers may deal with the surplus even at the low price to avoid the cracker reducing run rate.

Butadiene

Unit: MT

	Year	2012	2013	2014	2015	2016 (Est)
Supply	Production	481,880	545,953	585,097	583,470	569,000
	Import	165,642	128,426	127,705	107,252	120,000
	Total	647,522	674,379	712,802	690,722	689,000
Demand	Domestic	561,139	582,154	605,015	589,813	584,000
	Export	86,383	92,225	107,787	100,909	105,000
	Total	647,522	674,379	712,802	690,722	689,000
	Year End Capacity	580,000	670,000	600,000	600,000	600,000

2015 Review

In recent years, butadiene price has changed drastically, leading to very poor supply and demand balance in 2015, domestic demand was 589,813 MT decreased 2.5% over the previous year. The stagnant butadiene consumption reflected from the negative growth rate of major butadiene derivatives, such as SBR and BR. Major Taiwanese butadiene derivatives producers have relocated their plants to China. This will cause an impact to Taiwan butadiene producers.

2. Aromatics (Benzene, Toluene, Xylenes)

Benzene

Unit: MT

	Year	2012	2013	2014	2015	2016 (Est)
Supply	Production	1,683,578	1,725,922	1,755,741	1,740,389	1,750,000
	Import	603,524	708,956	760,183	707,293	720,000
	Total	2,287,102	2,434,878	2,515,924	2,447,682	2,470,000
Demand	Domestic	2,257,102	2,434,878	2,447,924	2,412,182	2,470,000
	Export	30,000	0	68,000	35,500	0
	Total	2,287,102	2,434,878	2,515,924	2,447,682	2,470,000
	Year End Capacity	1,615,000	1,823,000	1,685,000	1,685,000	1,685,000

2015 Review

Total benzene production last year amounted to 1,740,389 MT, down 3% over the previous year. This was due largely to domestic consumption except 35 KT for export. Basically Taiwan's benzene market is always in a deficit situation. In recent years more than 700 KT per year is required to make up the supply-demand balance. Total benzene demand was 2,447,682 MT in 2015. The majority of it were consumed in the production of SM, Phenol, and alkyl benzene. Benzene price stayed low during 2015 and kept consumers in a wait and see situation. This certainly had negative effects to benzene downstream demand, especially in SM.

2016 Prospect

In view of the improvement of the supply-demand situation and the recovery of downstream markets. Taiwan benzene business should be more stable this year. Supply from CPC is expected to decline due to the shutdown of No.5 NC, which turns out less pygas available for the feedstock of benzene production.

Toluene

Unit: MT

	Year	2012	2013	2014	2015	2016 (Est)
Supply	Production	26,731	76,019	285,659	335,072	330,000
	Import	242,956	372,106	241,307	116,478	130,000
	Total	269,687	448,125	526,966	451,550	460,000
Demand	Domestic	251,196	378,898	245,346	139,651	150,000
	Export	18,491	69,227	281,620	311,899	310,000
	Total	269,687	448,125	526,966	451,550	460,000
	Year End Capacity	93,000	93,000	384,000	384,000	384,000

2015 Review

Total toluene production last year was 335,072 MT which increased by 17.3% over the previous year. The apparent consumption was 139,651 MT. Export constituted 93% of production. Import accounted for more than 83% of local market consumption. two major aromatics produces, CPC and FCFC, utilized different strategies last year. FCFC did not take toluene as a major product rather than transformed them into benzene and xylenes through TDP units. On the other hand, CPC treated toluene as a product that they sold to domestic and export markets.

2016 Prospect

Due to economical unattractiveness in the CPC xylenes separation system, more toluene will be exported from CPC this year. Total local toluene consumption seems to be decreasing along with the continued out-move of industrial investments to foreign countries.

Xylenes

Unit: MT

	Year	2012	2013	2014	2015	2016 (Est)
Supply	Production	2,594,550	2,477,974	2,152,770	2,161,574	2,520,000
	Import	1,357,938	1,329,369	1,127,447	1,149,759	1,200,000
	Total	3,952,488	3,807,343	3,280,217	3,311,333	3,720,000
Demand	Domestic	3,113,525	2,063,643	1,790,050	1,891,576	2,270,000
	Export	838,963	1,743,700	1,490,167	1,419,757	1,450,000
	Total	3,952,488	3,807,343	3,280,217	3,311,333	3,720,000
	Year End Capacity	3,002,000	3,180,000	3,180,000	3,180,000	3,180,000

2015 Review

Total Xylenes production last year was 2,161,574 MT which improved from the low of 2014. Total domestic consumption was 1,891,576MT which also bottomed from 2014. Para-xylene accounted for the vast majority of xylenes output. However; booming new PTA capacities in China plus differential import tax to China from ASEAN countries made Taiwan PTA producers to slash PTA units' utilization.

2016 Prospect

Taiwan PTA industry has been in a difficult situation due to overcapacity. Profits have been eroded seriously and some producers have idled their facilities indefinitely. Under such circumstance, xylenes price will keep up with oil and gasoline seasonal demands.

Taiwan, Republic of China
Polyolefin Committee

LD/LLD/EVA

Unit: 1,000MT

LDPE/LLDPE/EVA	2013	2014	2015	Change	2016 (Est.)	Change
Production	588	576	611	6.1%	662	8.3%
Imports	271	291	292	0.3%	294	0.7%
Exports	464	416	475	14.2%	516	8.6%
Demand	395	450	428	-4.9%	440	2.8%
Capacity	794	794	794	-	884	-
Operating Rate	74.1%	72.5%	77.0%	-	74.9%	-

2015 Review

1. Three producers in Taiwan

Formosa Plastics Corp.	LLDPE	264kt
	EVA/LDPE	240kt
USI Corp.	LLDPE	40kt
	EVA/LDPE	140kt
Asia Polymer Corp.	EVA/LDPE	110kt
Total capacity		794kt

2. In 2015, total production was 611kt which increased by 6.1% over 2014. The operating rate was 77%, which was better than in 2014.
3. Exports was 475kt, which increased by 14.2% over 2014¸ but domestic demand decreased by 4.9%.
4. Due to the oil fell to a very low level, the margins of LD/LL were better than in 2014. Taiwan's producers raised operating rate in 2015.

2016 Outlook

1. Two new production lines are scheduled to be start-up in Q2, each with the capacity of 45,000MT/year in terms of EVA products.
2. The demand of EVA for photovoltaic will be increasing in Taiwan, due to the government's new solar power project. The production and export expect to increase, due to additional capacity of EVA, but the operating rate may be reduced.

HDPE

Unit: 1,000MT

HDPE	2013	2014	2015	Change	2016 (Est.)	Change
Production	560.0	524.6	586.0	11.7%	594	1.4%
Imports	76.9	78.3	68.9	-12.0%	70	1.6%
Exports	329.0	303.4	331.1	9.1%	339	2.4%
Demand	307.9	299.5	323.8	8.1%	325	0.4%
Capacity	630.0	630.0	630.0	-	630	-
Operating Rate	88.9%	83.3	93.0%	9.7%	94.3%	1.3%

2015 Review

1. Two producers in Taiwan
   Formosa Plastics Corp. 530kt
   USI Corp. 100kt
   Total capacity 630kt
2. Total production was 586kt, which increased by 11.7% over 2014.
3. Domestic demand was 324kt which increased by 8.1% and exports increased by 9.1% over 2014.
4. Operating rate raised to 93.0% from 83.3% in 2015, because the margins of HDPE were better than in 2014.

2016 Outlook

1. No new projects or additional capacity for HDPE in Taiwan.
2. Although economic growth slowed in Asia, the current oil price is still low. HDPE will be kept at stable level. Taiwan producers will keep high operating rate in 2016.

Polypropylene

Unit: 1,000MT

PP	2014	2015	Change	2016 (Est.)	Change
Production	1042	1128	+8.3%	1189	+5.3%
Import	175	207	+18.3%	195	-5.8%
Export	660	697	+5.6%	735	+5.5%
Demand	557	639	14.7%	649	+1.6%
Capacity	1310	1310	-	1310	-
Operating Rate	79.5%	86.2%	-	90.8%	-

2015 Review

1. Three PP producers in Taiwan

Formosa Plastics Corp.	400kt
Formosa Chemicals & Fiber Corp.	510kt
LCY Chemical Corp.	400kt
Total capacity	1,310kt

2. The Asia polypropylene prices gently went to a high point in the middle of the year. However, the prices gradually went down to a relatively low point, due to the oil and propylene prices' decline. The polypropylene prices' decline, month by month made end-users passively buy PP by the end of the year.
3. LCY Chemical Corp. PP plant has got recovered from the propylene pipeline explosion in Q3'15. Gradually, starting-up its plant by the end of the year, made the PP production increased by 8.3%.

2016 Outlook

1. LCY Chemical Corp. will recover the capacity step by step in this year. Polypropylene market will gradually reach a new balance. The import volume will go down and the export volume go up, will due to the recovery of capacity from LCY Chemical Corporation. That can predict the PP production will increase about 5.3%.
2. The Asia propylene prices furiously went up in Q1'16, as the cracker turnaround season made the propylene supply tight. However, the increased cost of propylene brought up the price of PP in Q1'16. It is predictable, that the PP prices will get high in the following months, if the oil prices would go up in the future.

Taiwan, Republic of China
PVC Committee

1. Market review of PVC in 2015

- In 2015 PVC production was 1,608 KMT in Taiwan, accounting for 91.1% of operating rate and 6.1% of annual increase, due to crude oil and ethylene price was much lower than in 2014.
- PVC demand in 2015 amounted 522 KMT, with a decrease of 0.5% from previous year, because of less competitive PVC finished goods from China.
- In 2015, PVC exported 1,114 KMT with an increase of 14.2% due to lower price of crude oil and ethylene, that caused competitive ethylene-based PVC.
- Taiwan imported 27 KMT PVC in 2015.

2. Market review of VCM in 2015

- In 2015 VCM production was 1,949 KMT in Taiwan, accounting for 6.9% of annual increase which was caused by good ethylene based PVC competition.
- 2015 VCM demand was 1,607 KMT, with 5.1% of annual increase.
- 2015 VCM export was recorded at 407 KMT and the major volume was shipped to FPC's Ninbo plant.
- Taiwan imported 51 KMT VCM in 2015.

2. Prospects for 2016

Following the past year, China is suffering in sluggish economic growth continuously in the meantime, Europe, Japan and most of developing countries are facing the pressure of deflation, that contributed to the slowdown of global PVC demand growth. As a result, global PVC is still kept in a serious surplus situation, especially in China and USA.

However, the price of crude oil has plunged, due to the global oversupply and is now floating at US$40/bbl., even though Asian ethylene price is still standing in apparent high level, resulted from shortage of supply and largely collective turn around. It will probably remain till the expansion commencement of Olefin in USA and China.

Other than that, the comparative cost of PVC materials – natural gas ethylene, carbide acetylene and naphtha ethylene – carbide acetylene PVC is increasing, due to expansive lower mercury contained catalyst conversion, strict environmental protection issue and rising domestic logistics cost. Asian naphtha ethylene PVC shall keep in high level, caused by high cost of ethylene.

Yet, the over-capacity of PVC in Asia, especially in China, is still in a critical condition and it'll take at least another two years to be consumed. Sources said, about 1.2million tone of carbide PVC plants in China had shut down in 2015, due to harsh competition and trust, that will keep going in the next year.

As for the future Asian PVC market, the new developing countries, including India, south east Asia and so

on, are striving to prosper their economy, the demands of PVC for infrastructures are huge, which is considered as a main power of PVC growth. In this vision, accompanied by a relatively low crude oil price and phase out the high cost capacity in China, we can expect a rather optimistic and healthy PVC market in the near future.

Table 1. Nameplate Capacity of PVC in Taiwan

Unit：KMT/YR

Producer	Location	2009	2010	2011	2012	2013	2014	2015
FPC	Kaohsiung	40	40	40	40	40	40	--
	Jenwu	580	580	580	580	580	580	580
	Linyuan	187	187	187	187	187	187	187
	Mailiao	494	494	494	494	494	494	498
	Total	**1,301**	**1,301**	**1,301**	**1,301**	**1,301**	**1,301**	**1,265**
CGPC CGPPC	Toufen	180	180	180	180	180	180	180
	Linyuan	--	--	170	170	170	170	170
	Total	**180**	**180**	**350**	**350**	**350**	**350**	**350**
OPC	Taoyuan	150	150	150	150	150	150	150
Grand Total		**1,631**	**1,631**	**1,631**	**1,801**	**1,801**	**1,801**	**1,765**

Table 2. PVC Supply/Demand in Taiwan

Unit：MT/YR

Year	Production (1)		Import (2)	Export (3)	Demand (1) + (2) - (3)	
	MT	Growth	MT	MT	MT	Growth
2009	1,415,914	2.1%	22,964	910,239	528,639	-11.6%
2010	1,432,356	1.2%	29,100	830,357	631,099	19.4%
2011	1,410,642	-1.5%	24,345	854,056	580,931	-8.0%
2012	1,510,378	7.1%	20,199	988,555	542,022	-6.7%
2013	1,621,111	7.3%	22,522	1,068,876	574,757	6.0%
2014	1,514,893	-6.6%	26,643	975,206	566,330	-1.5%
2015	1,608,264	6.2%	27,265	1115,057	520,472	-8.1%

Table 3. Nameplate Capacity of VCM in Taiwan

Unit：KMT/YR

Producer	Location	2009	2010	2011	2012	2013	2014	2015
FPC	Jenwu	540	540	540	540	540	540	*584
	Linyuan	240	240	240	240	240	240	*260
	Mailiao	800	800	800	800	800	800	800
	Total	**1,580**	**1,580**	**1,580**	**1,580**	**1,580**	**1,580**	**1,644**
TVCMC	Linyuan	300	300	385	385	400	420	420
Grand Total		**1,820**	**1,880**	**1,880**	**1,965**	**1,965**	**2,000**	**2,064**

- Improve the EDC cracker fuel system

Table 4. VCM Supply/Demand in Taiwan

Unit：MT/YR

Year	Production		Net Export	Demand	
	MT	Growth	MT	MT	Growth
2009	1,772,586	8.6%	340,619	1,431,967	3.8%
2010	1,758,189	-0.8%	343,790	1,414,399	-1.2%
2011	1,684,720	-4.2%	274,714	1,410,006	-0.3%
2012	1,817,398	7.9%	305,059	1,512,339	7.3%
2013	1,900,197	4.6%	266,142	1,634,055	8.0%
2014	1,822,013	-4.1%	292,635	1,529,378	-6.4%
2015	1,948,576	7.0%	356,737	1,591,839	4.1%

Taiwan, Republic of China
Styrenics Committee

STYRENE

Unit: MT

	Year	2013	2014	2015	2016 (Est)
Supply	Production	2,044,325	1,974,323	2,020,355	2050,660
	Import	393,855	384,808	335,965	341,004
	Total	2,438,180	2,359,131	2,356,320	2,391,664
Demand	Domestic	1,924,233	1,794,666	1,863,540	1,874,245
	Export	513,947	564,465	492,780	517,419
	Total	2,438,180	2,359,131	2,356,320	2,391,664
Year End Capacity		1,910,000	2,030,000	2,030,000	2,030,000

2015 Market Review

1) The export volume of SM was 492KT. The total import volume was less than the in 2014, the supply/demand balance was still net short in Taiwan.
2) The first half of the year 2015, LG Chemical, Lotte chemical, Samsung Total PC, YNCC, NIHON Oxirane et al. was a turnaround. The second half of the year, the crude oil and Chinese stock market was under shock and other external environment, the Asian styrene market was weak.
3) The oil prices continue to add uncertainly and volatility to styrene price in 2015, but the crude oil price began to move back towards a more sustainable level than in 2014. The current oil prices are the result of several large suppliers fighting for market shares.

2016 Outlook

1) Demand growth is inevitably concentrated in China throughout the forecast years. However, some things' growth is also expected in Taiwan, mainly into ABS for export. Forecast annual growth rates in Northeast Asia are expected to be slower at around 1.5%.
2) A combination of feedstock, low oil price, technical, economic, logistical and commercial factors will causes the supply's increase, the forecast is predicted 1.5% increase in comparison with last year.
3) In spite of these predicted higher oil prices, we also see a global economy, which will continue to improve and do better than most forecasts currently suggest, although some of the sheen has recently came off the Chinese economy miraculously. It is still growing at an impressive clip and this is combined with better the expected performance.

Polystyrene

Unit: MT

Year	2013	2014	2015	2016 (Est)
Production	828,031	775,105	797,198	837,058
Import	8,508	7,743	4,084	4,900
Export	760,927	723,916	764,784	780,079
Domestic Demand	75,612	58,932	36,498	61,879

Export Comparison

Unit: MT

Year	2014	2015	Change of 2015
Hong Kong	63,618	64120	502
China	229,041	223,136	-5,905
Other	431,281	477,526	46,245
Total	723,940	764,782	40,842

2015 Market Review

1) Total export volume increased by 5.6% or 40.8 KT, resulting from demand increase from outside of China's and HK market, for which export volume increased by 10.7% in comparison with last year. HK and China's markets occupied 37.5% of total PS export volume of Taiwan. The other areas like USA or South East Asian demand increased in comparison with last year.
2) In 2015, the crude oil prices have continued to move lower, PS market in China also continued to decline.

2016 Outlook

1) PS market in China forecasted to keep declining in 2016 because of the slowdown of its GDP growth and self-sufficiency in all things. PS production in Taiwan is forecasted for little increase comparing with the year 2015 because the raw materials would be cheaper and economy will recover.
2) PS manufactures in Taiwan keep making their effort to cautiously expand export markets in developing countries, particularly in the Middle East, outside of the HK and China's area.

ABS

Year	2013	2014	2015	2016 (Est)
Production	1,210,159	1,201,685	1,225,677	1,227,677
Import	10,231	13,167	12,408	11,231
Export	1,095,372	1,046,874	1,060,626	1,061,626
Domestic Demand	125,018	167,978	177,459	177,282

Export Comparison

Year	2014	2015	Change of 2015
Hong Kong	296,445	287,072	-9,373
China	523,932	528,066	4,134
Other	226,506	245,488	18,982
Total	1,046,883	1,062,642	15,758

2015 Market Review

1) ABS export volume from Taiwan increased by 1.3% or 13.7KT in comparison with 2014 nearly the same.
2) China's economic growth rate slowed to a 25-year low of 6.9% in 2015, as the world's second-largest economy continues to shift away from its manufacturing roots.

2016 Outlook

1) GDP of China is forecasted by 6.8% this year. While there is an evidence that the old growth engine, powered by manufacturing, investment and exports, has started to stutter, we find far fewer indicators that point to a pickup in consumption.
2) Over the next years, operating rate percentages are expected to improve to over 80% as global demand will improve and the excessive capacity will be absorbed based upon the lower oil price.
3) Domestic ABS demand in Taiwan in 2016 is forecasted the same as 2015.

Taiwan, Republic of China
Synthetic Fiber Raw Material Committee

Production and Trade of Major Synthetic Fiber Raw Materials

Unit: MT

		2012	2013	2014	2015	2016 (Est)	2014/2015 increase (+%) or Decrease (-%)	2015/2016 increase (+%) or Decrease (-%)
AN	Production	443,105	458,211	464,511	469,764	465,000	1.1%	-1.0%
	Import	107,432	97,820	110,180	97,440	100,000	-11.6%	2.6%
	Export	155,337	175,752	184,852	192,307	185,000	4.0%	-3.8%
	Domestic Demand	395,200	380,279	389,840	374,927	380,000	-3.8%	5.4%
CPL	Production	288,256	272,700	227,200	233,100	301,000	2.6%	29.1%
	Import	390,116	444,515	442,950	404,649	340,000	-8.7%	-16.0%
	Export	7,452	8,704	0	0	0	N/A	N/A
	Domestic Demand	670,920	708,511	670,150	637,749	641,000	-4.9%	0.5%
EG	Production	1,944,305	2,112,419	2,298,600	2,348,696	2,400,000	2.2%	2.2%
	Import	273,159	311,130	204,556	168,349	250,000	-17.7%	48.5%
	Export	1,237,193	1,323,431	1,482,794	1,413,509	1,500,000	-4.7%	6.1%
	Domestic Demand	980,271	1,100,118	1,020,362	1,103,536	1,150,000	8.2%	4.2%
PTA	Production	4,388,262	2,929,805	2,596,260	2,626,500	2,700,000	1.2%	2.8%
	Import	2,543	21	0	0	0	N/A	N/A
	Export	1,938,284	497,718	208,724	154,498	150,000	-26.0%	-2.9%
	Domestic Demand	2,452,521	2,432,108	2,387,536	2,472,002	2,550,000	3.5%	3.2%
Total	Production	7,063,928	5,773,135	5,586,571	5,678,090	5,866,000	1.6%	3.3%
	Import	773,250	853,486	757,687	670,438	690,000	-11.5%	2.9%
	Export	3,338,266	2,005,605	1,876,370	1,760,314	1,835,000	-6.2%	4.2%
	Domestic Demand	4,798,912	4,621,016	4,467,888	4,588,214	4,721,000	2.7%	2.9%

Supply & Demand of AN

Unit: MT

		2011	2012	2013	2014	2015	2016 (Est)
Supply	Production	416,262	443,105	458,211	464,511	469,794	465,000
	Import	107,834	107,432	97,820	110,181	97,440	100,000
	Total	524,096	550,537	556,031	574,692	567,234	565,000
Demand	Domestic	410,658	395,200	380,279	389,840	374,927	380,000
	Direct Export	113,438	155,337	175,752	184,852	192,307	185,000
	Total	524,096	550,537	556,031	574,692	567,234	565,000
Capacity (as of the end of each year)		495,000	520,000	520,000	520,000	520,000	520,000

Review of 2015

In 2015, the demand side from varied fields of ABS was as follow: AF remained "roll-over", while NBR posed a strong demand. ABS was with a slight growth; AF was with a slight shrink; NBR was kept stable as usual for the medical use. The price trend differed totally, compared with the previous few years, mainly for the fluctuating crude oil price. Since the crude oil price trend kept downward for the whole year in 2015, all the related raw material prices posed the same downward trend. Further, 2 new capacities in China joined AN market during 2015, making AN S/D unbalanced and leading to the AN profit shrinking much. Besides, Chinese authority made a protective policy for domestic AN industry from 2015, severely reducing the import volume in China and posing a big threat to Asian AN producers. Overall, for the demand with a slight growth or even roll- over and new capacity joined market, the profit and operation performance was weaker than in 2014.

Prospect for 2016

In 2016, the economic development in China will slow down, since Chinese government now has to adjust its economic structure. "Stableness and de-capacity, de-leverage, de-inventory" seems to be highest principle. In 2016, as Chi-Mei, the biggest ABS plant in the world, estimates ABS global growth rate will only be 2%, with a conservative viewpoint. As for the AF business, Tonghua is facing challenges from Chinese and Thailand’s AF producers. NBR still seems to be strong in 2016, for the medical use. Overall, it is believed that the demand for 2016 will rollover or a bit grow, compared with 2015. However, 1 new capacity joined AN market from the beginning in 2016, making Chinese AN S/D really in the status of "over-supply" and posing a bigger threat to Asian AN producers. Overall, we expect a worse performance for Asian producers on profit and operation.

Supply & Demand of CPL

		2011	2012	2013	2014	2015	2016 (Est)
Supply	Production	271,215	288,256	272,700	227,200	233,100	301,000
	Import	410,634	390,116	444,515	442,950	404,649	340,000
	Total	681,849	678,372	717,215	670,150	637,749	641,000
Demand	Domestic	681,480	670,920	708,511	670,149	637,749	641,000
	Direct Export	369	7,452	8,704	0	0	0
	Total	681,849	678,372	717,215	670,150	637,749	641,000
Capacity (as of the end of each year)		300,000	300,000	400,000	400,000	400,000	400,000

Review of 2015

CPL capacity increased smoothly, around 300 KMTA in Asia and total capacity reached 3,700 KMTA level. Demand in Taiwan was stable in 1H, 2015, but uncertain crude oil and China's economy impacted demand for nylon chain in 2H, 2015. Total CPL demand in Taiwan was 637 KMT, decreased of 32 KMT in 2015. Production volume for local CPL producer, CPDC, was 233 KMT, increased of 6 KMT, but import column was 404 KMT, decreased of 38 KMT in 2015.

PA6 demand was stable in Taiwan's Domestic market, but export volume was squeezed, around 330 KMTA and 30 KMTA less in 2015. China's new PA6 capacity kept to replace import cargo and this issue will continue in the future.

Prospect for 2016

Raw material price will increase gradually, due to the lower base of crude oil in the beginning of 2016. New CPL capacities will still be on stream in China, but not on schedule. 400 KMTA capacities will start to operate in market view and will be less than new coming PA6 capacities. CPL producers will still suffer and try to get reasonable margin by self-controlled production in 2016. PA6 producers will face a challenge for less profit, due to the oversupply in Asia, especially in China and Taiwan. Growth of nylon downstream will be over 6%, but still will not catch up the growth of upstream. Uncertain China's economic situation will still be an issue, which will impact supply and demand in Asia.

Supply & Demand of EG

		2011	2012	2013	2014	2015	2016 (Est)
Supply	Production	1,993,615	1,944,305	2,112,419	2,298,600	2,348,696	2,400,000
	Import	278,893	273,159	311,130	204,556	168,349	250,000
	Total	2,272,508	2,217,464	2,423,549	2,503,156	2,517,045	2,650,000
Demand	Domestic	1,038,400	980,271	1,100,118	1,020,362	1,103,536	1,150,000
	Direct Export	1,234,108	1,237,193	1,323,431	1,482,794	1,413,509	1,500,000
	Total	2,272,508	2,217,464	2,423,549	2,503,156	2,517,045	2,650,000
Capacity (as of the end of each year)		2,380,000	2,380,000	2,380,000	2,380,000	2,580,000	2,630,000

Review of 2015

In 2015, domestic production increased by 2.2% to 2,348KT and demand also went up by 8.2% to 1,103KT.

MEG price was steadily improved with crude oil bounced and recovery of polyester demand in the first 5 months. However, since June, the series global economic issues, including Greek debt crisis, Iran's sanctions lift and global stock market crash, have impacted the market's demand.

Meanwhile, the expensive ethylene raw materials eroded margins of ethylene glycol manufacturers in that period.

Prospect for 2016

The current price of Brent oil has recovered to $40 from the 13 years' historic lows, but continued worry in particularly Chinese economy have pressured all commodity.

MEG demand is expected to increase in the second quarter due to the traditional turnaround period and PET consuming peak season.

Domestic polyester market is expected to consume around 1.1-1.2 MMT as that of 2015.

Supply & Demand of PTA

		2011	2012	2013	2014	2015	2016 (Est)
Supply	Production	5,302,900	4,388,262	2,929,805	2,596,260	2,626,500	2,700,000
	Import	1,008	2,543	21	0	0	0
	Total	5,303,908	4,390,805	2,929,826	2,596,260	2,626,500	2,700,000
Demand	Domestic	2,342,925	2,452,521	2,432,108	2,387,536	2,472,002	2,550,000
	Direct Export	2,960,983	1,938,284	497,718	208,724	154,498	150,000
	Total	5,303,908	4,390,805	2,929,826	2,596,260	2,626,500	2,700,000
Capacity (as of the end of each year)		5,470,000	5,470,000	5,220,000	3,900,000	3,250,000	3,250,000

Review of 2015

In 2015, one domestic PTA facility has been shut down and left the market, the total capacity decreased to 3.3MMT as the major market is still oversupplied.

The squeezed spread showed below $100/MT. Domestic production has slightly increased of 1.2% YoY.

Prospect for 2016

Although some Asian PTA makers were out of the market in the past few years, the critically competitive conditions still need more time to return to the balance.

Comparing to 2015, the domestic demand and production are expected to increase by 2-3% at the same period in 2016.