ASIA PETROCHEMICAL INDUSTRY CONFERENCE

MAY 2023
INDIA

DELEGATION OF THAILAND

Contents

I. Report on the Thai Petrochemical Industry

Thai Petrochemical Industry – Current State and Issues

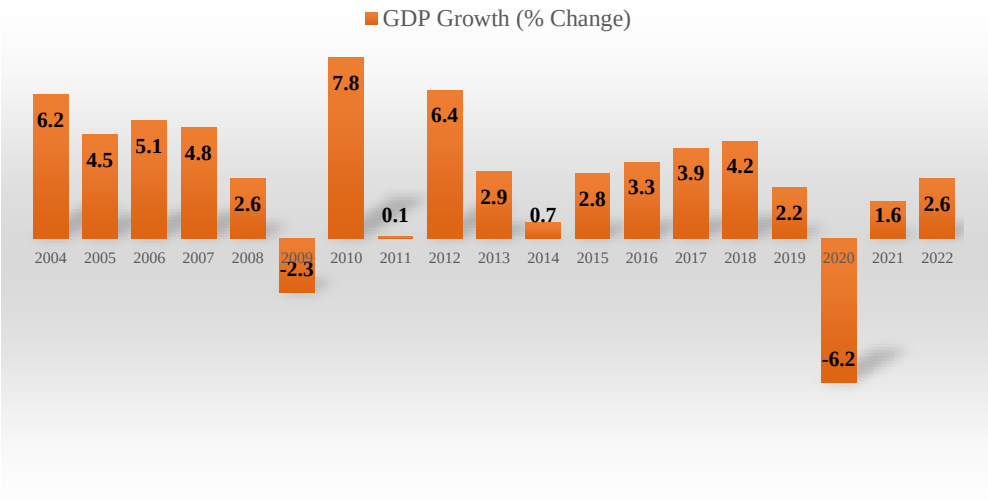
I-1. Business Environment

In January 2023, the IMF projected a global economic growth rate of 3.2% for 2022, down from 6.0% in 2021. The slow growth can be attributed to the ongoing conflict between Russia and Ukraine as well as the cost-of-living crisis in many countries. The IMF also predicts a 2.9% global GDP growth rate for 2023. The recent drop in energy and food prices is a major factor contributing to this trend. However, the reopening of China's economy is expected to have a positive impact on global activity and could lead to a boost in international tourism.

I-2. Present Situation and Future Prospect of the Thai Economy

The National Economic and Social Development Board (NESDB) reported that Thailand's Gross Domestic Product (GDP) grew by 2.6% in 2022, compared to the 1.6% growth in the previous year, as seen in Figure-1. The growth was primarily driven by a robust recovery in tourism and domestic demand, including private consumption and investment.

Figure-1: Thailand's GDP Growth in 2004-2022



Source: NESDB and BOT

Thailand's economy is expected to see a growth rate ranging from 2.7%-3.7% in 2023 (Table-1), driven by the recovery of the tourism sector due to the return of Chinese tourists, as well as the expansion of both private and public investment. The continued growth of private consumption and domestic demand are also expected to stimulate the economy prior to the upcoming election on May 14th.

Table 1: Thailand's Economic Projection for 2023

(%YOY)	2021	2022	2023 (p)
GDP	1.5	2.6	2.7-3.7
Private Investment	3.0	5.1	2.1
Public Investment	3.4	-4.9	2.7
Private Consumption	0.6	6.3	3.2
Government Consumption	3.7	0.0	-1.5
Export	19.2	5.5	-1.6
Import	27.7	2.0	0.4
Inflation	1.2	6.1	2.5-3.5

Source: NESDB

I-3. Present Situation and Future Prospect of the Thai Petrochemical Industry

The year 2022 presented several challenges, including the ongoing Russia-Ukraine war which resulted in sanctions on Russia, leading to an energy supply crisis and a spike in energy prices and inflation rates. These factors have had a negative impact on economic growth and consumption. Additionally, China's zero-Covid policy has also had a significant impact on its domestic manufacturing sector and global supply chains. These events have resulted in a slowdown in demand for petrochemical and chemical products, while feedstock and energy costs have increased.

The gradual lifting of travel restrictions by Thailand and other countries, leading to a steady recovery of the tourism industry and related sectors such as food packaging, personal hygiene, and medical equipment, among others, many petrochemical producers have had to scale back their operating rates due to reduced profit margins.

Several petrochemical producers have implemented circular economy practices and sustainable waste management initiatives, such as GC's 'YOUTURN' project and SCGC's 'Won' projects, which involve waste collection and recycling. Moreover, companies are increasingly focusing on high-value specialty products, green chemicals, and low-carbon businesses. The industry is also aware of the impact of climate change and the need to comply with emissions reduction targets and trade barriers related to greenhouse gases. As a result, petrochemical companies are taking significant steps to address climate action and environmental concerns.

The overview of petrochemical production and consumption is as follows (Table-2):

Ethylene: In 2022, weaker economic conditions and demand, along with higher prices of crude oil and naphtha, resulted in a 10% decline in ethylene consumption. Additionally, the maintenance shutdowns towards the end of the year also contributed to the decrease in ethylene production.

Propylene: The propylene market in 2022 was marked by significant uncertainty, mainly due to ongoing economic concerns and slow demand recovery in China, which was impacted by strict COVID-19 policies. In addition, the market faced challenges from surging energy and feedstock costs. These factors, along with higher production costs, led to a decrease in propylene demand and a shift in market sentiment.

Polymers: Converters are facing major concerns such as geopolitical uncertainties, global recession, and high inflation rates. Consumers limit their spending, further weakening the demand for end-use sectors.

Table 2: Production, consumption, and import/ export of 5 Major Products in 2016-2022

Products	2019	2020	2021	2022
Ethylene				
Production	4,883	4,516	5,045	4,530
Import	48	163	43	87
Export	146	44	99	63
Consumption by derivative product(1)	4,785	4,635	4,989	4,530
Propylene				
Production	2,950	2,876	3,216	2,885
Import	37	58	33	72
Export	160	176	240	132
Consumption by derivative product(2)	2,827	2,759	2,876	3,230
PTA				
Production	2,226	2,179	2,364	2,599
Import	0	9	16	1
Export	958	897	1,089	1,073
Consumption by derivative product(3)	1,268	1,291	1,292	1,527
PE (including EVA)				
Production	4,111	4,000	4,287	3,923
Import	569	570	524	535
Export	3,136	2,839	2,942	2,626
Consumption (4)	1,544	1,730	1,869	1,833
PP				
Production	2,247	2,196	2,276	2,030
Import	243	228	288	315
Export	1,250	1,126	1,150	952
Consumption (4)	1,240	1,299	1,414	1,663

Note: Data shown as “0” means less than 0.5 ton.

(1) Consumption netbacked from PE, VCM, EG and SM production.
(2) Consumption netbacked from PP, Cumene and PO production.
(3) Consumption netbacked from polyester polymer (PET) production.
(4) Consumption figure is different from calculation (Production + Import – Export) due to inventory change

Table-3: Capacity of Major Petrochemicals 2022 (as of Mar 2023)

Ethylene

(Unit:'000 T/Y)

Company	Capacity
▪ GC	2,876
▪ IRPC	433
▪ MOC	1,200
▪ ROC	900
Total	**5,409**

Source: PTIT Industrial Survey, Mar 2023

Polyethylene

(Unit:'000 T/Y)

Company	Capacity			
	LDPE/EVA	LLDPE	HDPE	Total
▪ GC	300	800	850	1,950
▪ IRPC			140	140
▪ Siam Polyethylene		650		650
▪ SSLC		330		330
▪ TPE	150	140	980	1,270
▪ TPI	156			156
Total	**606**	**1,920**	**1,970**	**4,496**

Source: PTIT Industrial Survey, Mar 2023

Polyvinyl Chloride (PVC)

(Unit:'000 T/Y)

Company	Capacity
▪ TPC	530
▪ TPC Paste Resin	36
▪ VNT	400
Total	**966**

Source: PTIT Industrial Survey, Mar 2023

Propylene

(Unit:'000 T/Y)

Company	Capacity
▪ GC	762
▪ HMC	300
▪ IRPC	732
▪ MOC	850
▪ ROC	450
▪ SPRC	155
Total	**3,249**

Source: PTIT Industrial Survey, Mar 2023

Polypropylene

(Unit:'000 T/Y)

Company	Capacity
▪ HMC	810
▪ IRPC	775
▪ TPE	860
Total	**2,445**

Source: PTIT Industrial Survey, Mar 2023

Styrene Monomer

(Unit:'000 T/Y)

Company	Capacity
▪ IRPC	260
▪ SSMC	320
Total	**580**

Source: PTIT Industrial Survey, Mar 2023

Polystyrene (PS)

(Unit:'000 T/Y)

Company	Capacity
▪ GC Styrenic	90
▪ IRPC	48
▪ Siam Polystyrene	150
Total	**288**

Source: PTIT Industrial Survey, Mar 2023

Butadiene

(Unit:'000 T/Y)

Company	Capacity
▪ BST	220
▪ IRPC	56
▪ PTTGC	75
Total	**351**

Source: PTIT Industrial Survey, Mar 2023

Synthetic Rubber

(Unit:'000 T/Y)

Company	Capacity			
	SBL	**SBR**	**BR**	**Total**
▪ **BST Elastomer**		72		72
▪ **BST ENEOS Elastomer**		100		100
▪ **SSL**	25			25
▪ **Thai Synthetic Rubber**			72	72
Total	**25**	**172**	**72**	**269**

Source: PTIT Industrial Survey, Mar 2023

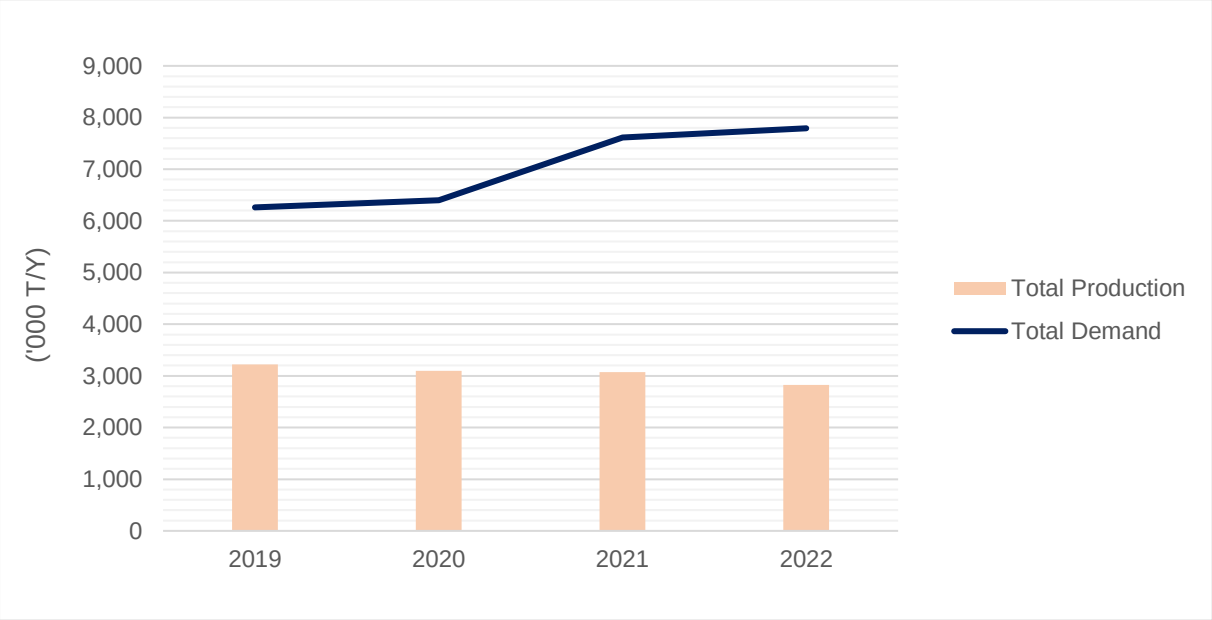
II. Committee Meetings

II-1. General Matters & Raw Materials Committee

Light Naphtha

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Production**	3,223	3,099	3,070	2,828
▪ **Feedstock**	6,129	6,189	7,514	7,772
▪ **Solvents**	132	208	100	20
▪ **Total Demand**	6,261	6,397	7,614	7,792



- **Review of 2022**

  The production of light naphtha in Thailand decreased by 8% in 2022 compared to the previous year due to the highly volatile crude oil market, which was influenced by the war between Russia-Ukraine. Additionally, some ethylene crackers underwent maintenance shutdown during the last quarter of the year.

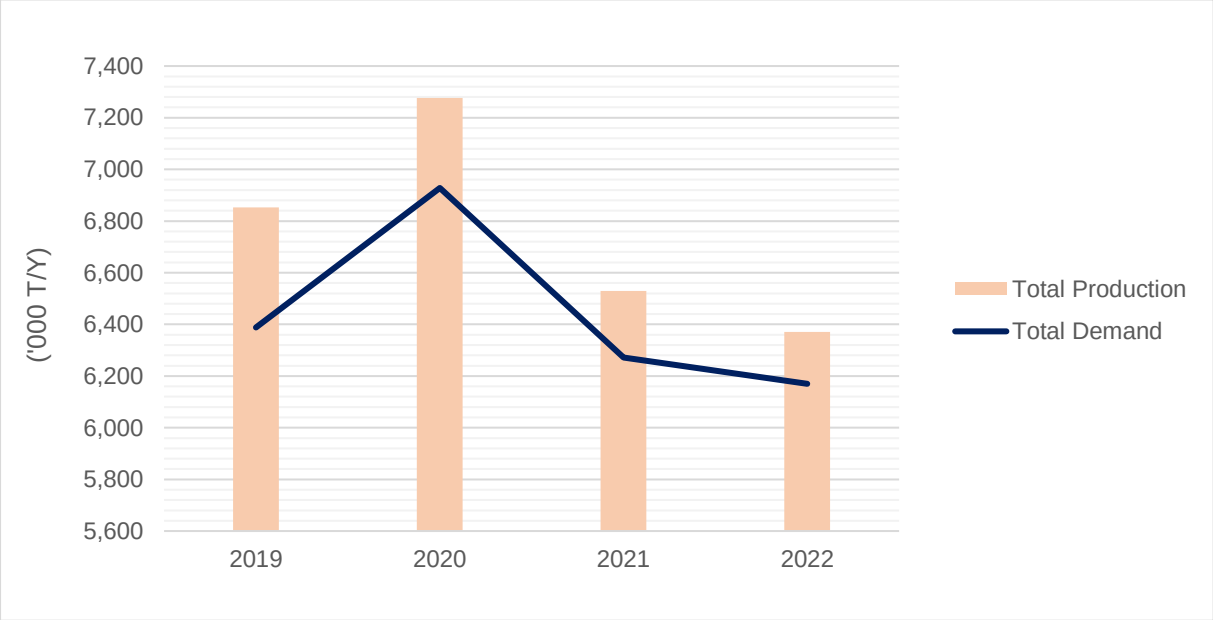
- **Outlook for 2023**

  The current state of the economy and inflation rate has led to projections of a decrease in domestic consumption of light naphtha. However, the upcoming election in May could potentially provide a stimulus to the economy.

Heavy Naphtha

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ Total Production	6,853	7,277	6,529	6,371
▪ Feedstock	6,388	6,928	6,272	6,170
▪ Total Demand	6,388	6,928	6,272	6,170



- **Review of 2022**
  The domestic production of heavy naphtha production saw a slight decline of 2% in the last quarter of 2022, primarily attributed to maintenance shutdowns in some aromatic producers. In addition, the self-sufficiency policy adopted by China led to new capacities of its derivative products, resulting in reduced demand for heavy naphtha and its derivatives.

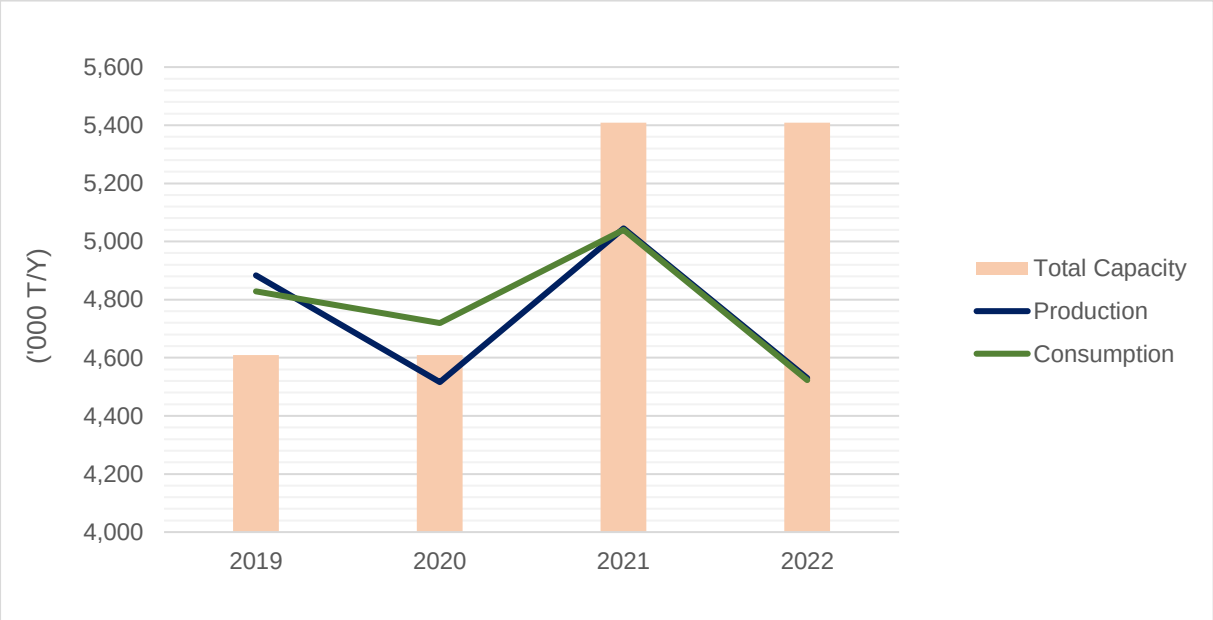
- **Outlook for 2023**
  In 2023, the naphtha market is expected to face challenges due to fragile demand and volatility in the oil sector. Moreover, Thailand's domestic consumption of heavy naphtha is expected to decrease due to the slow economy, as China's new supply in PTA and PET downstream business is likely to compete with local downstream producers.

Olefins: Ethylene

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	4,609	4,609	5,409	5,409
▪ **Production**	4,883	4,516	5,045	4,530
▪ **Consumption by Derivative Product**	4,828	4,719	5,040	4,523
▪ **Export**	146	44	99	63
▪ **Import**	48	163	43	87

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: Consumption netbacked from PE, EDC/VCM, EG and SM production.



- **Review of 2022**

  In 2020, the weaker economic conditions and demand, coupled with higher prices of crude oil and naphtha, led to a 10% decrease in ethylene consumption. The maintenance shutdowns at the end of the year also contributed to the decrease in ethylene production.

- **Outlook for 2023**

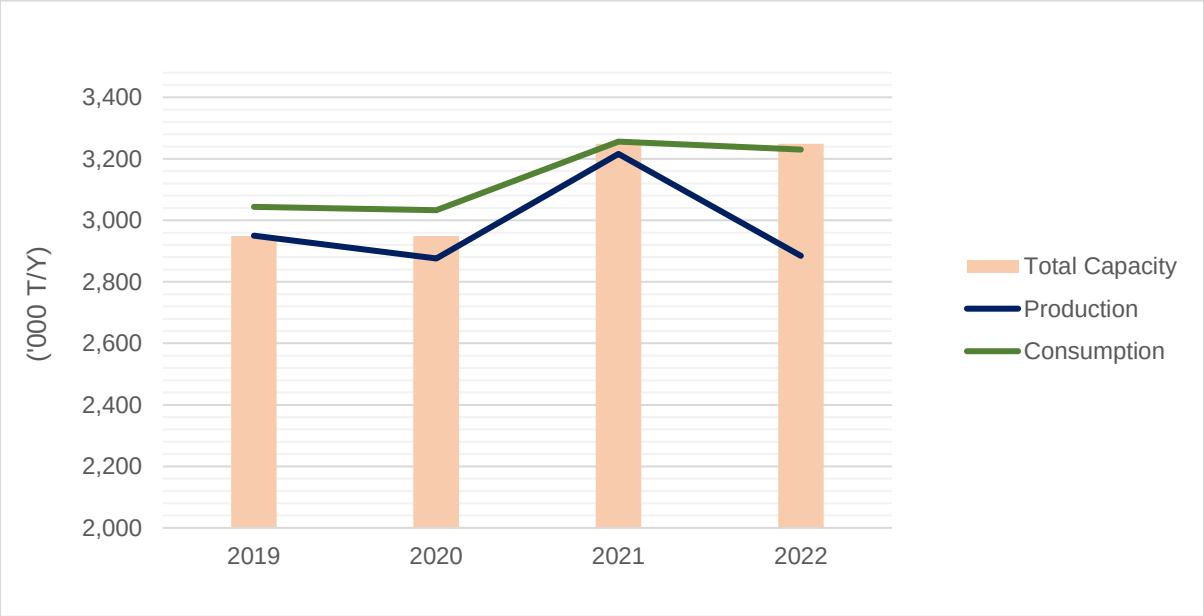
  The demand for ethylene is expected to remain under pressure due to feedstock volatility and weak derivative demand. The upcoming new capacity from China, Southeast Asia, and the US, where producers have more capacity for exports as a result of less downstream domestic demand, is likely to further impact ethylene prices.

Olefins: Propylene

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	2,949	2,949	3,249	3,249
▪ **Production**	2,950	2,876	3,216	2,885
▪ **Consumption by Derivative Product**	3,044	3,033	3,256	3,230
▪ **Export**	160	176	240	132
▪ **Import**	37	58	33	72

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: Consumption netbacked from PP, Cumene and PO production.



- **Review of 2022**

  The propylene market in 2022 was characterized by significant uncertainty, primarily due to the ongoing economic concerns and the slow demand recovery in China, which was impacted by strict zero COVID-19 policies. In addition, the market faced challenges from surging energy and feedstock costs. These factors, combined with higher production costs, resulted in a decrease in propylene demand and a shift in sentiment towards the market.

- **Outlook for 2023**

  Despite an expected economic slowdown, the easing of COVID-19 concerns and economic stimulus measures in various countries are expected to positively influence propylene demand. Additionally, the potential end to the semiconductor shortage in 2023 is expected to boost the overall propylene derivatives market. However, a surplus of supply is anticipated in China, as five PDH plants with a total nameplate capacity of 2.85 million metric tons are scheduled to come online in 2023.

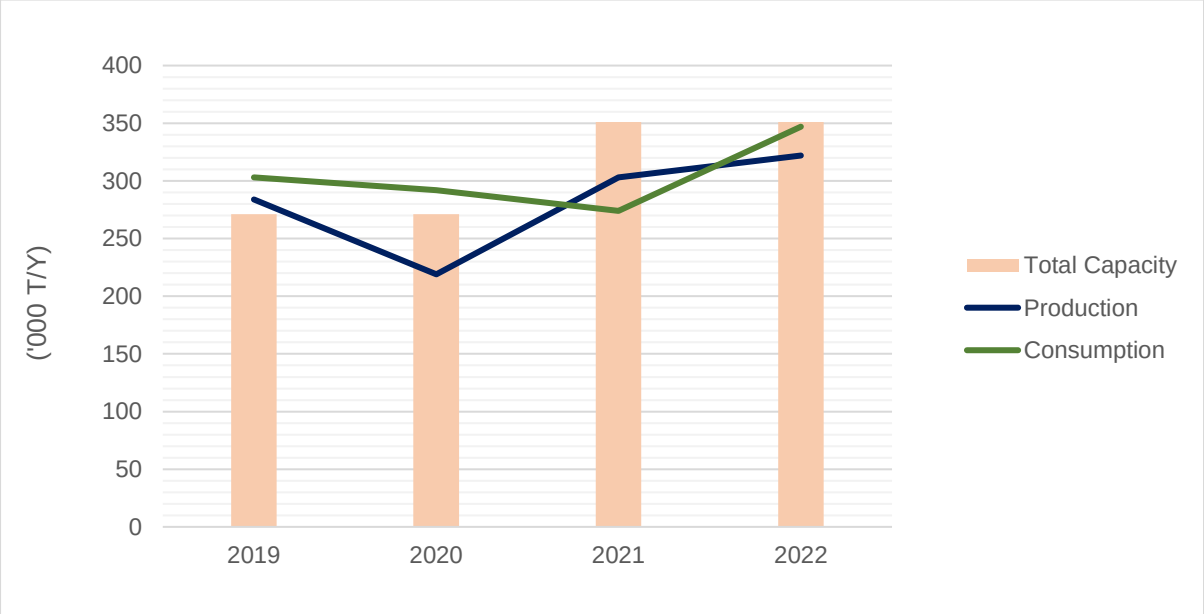
Olefins : Butadiene

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	271	271	351	351
▪ **Production**	284	219	303	322
▪ **Consumption by Derivative Product**	303	292	322	347
▪ **Export**	58	36	51	43
▪ **Import**	13	15	4	2

Source: PTIT Industrial Survey and The Customs Department, Mar 2023

Note: Consumption netbacked from SBL, ESBR, BR, NBL and ABS/SAN production.



- **Review of 2022**

  In 2022, the consumption of butadiene saw an increase of 8% as a result of strong demand from Styrene-Butadiene Rubber (SBR) production. This increase in demand was largely driven by the higher domestic demand for rubber industries in the automotive sector.

- **Outlook for 2023**

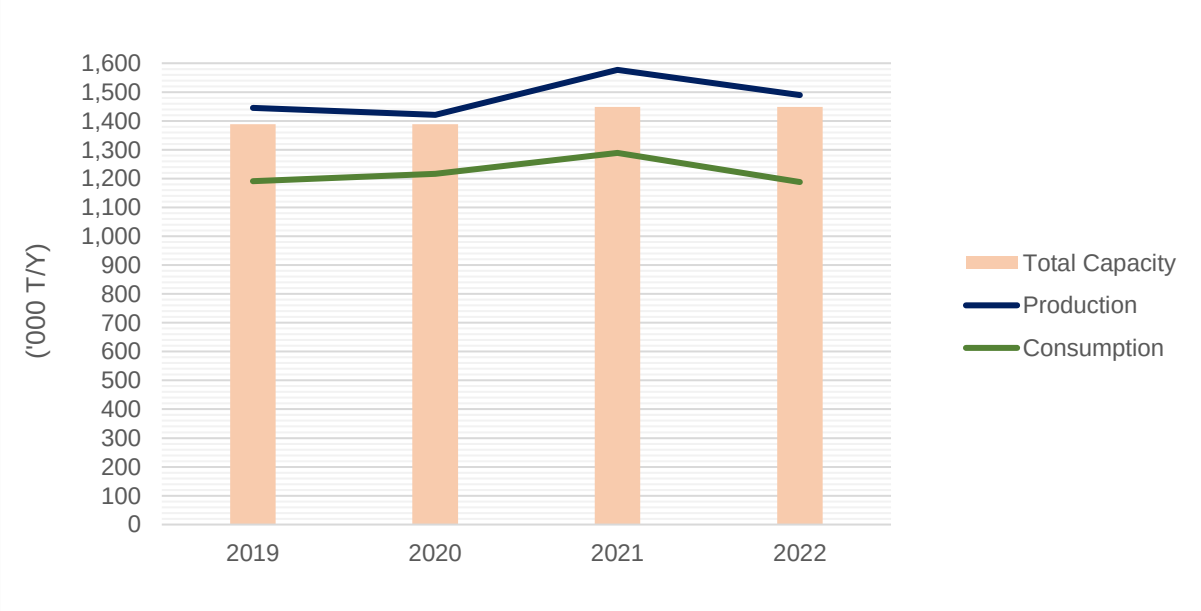
  Butadiene market is expected to face extended periods of supply limitations in 2023, as operations at Asian crackers remain sub-optimal. However, weak derivative demand may counter-balance the market. Butadiene consumption is expected to increase slightly, driven by the projected increase in car production.

Aromatic : Benzene

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	1,388	1,388	1,448	1,448
▪ **Production**	1,445	1,421	1,577	1,490
▪ **Consumption by Derivative Product**	1,191	1,216	1,289	1,188
▪ **Export**	509	511	621	421
▪ **Import**	3	0	0	0

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: Consumption netbacked from SM, cumene and cyclohexane production.
'0' means below 500T/Y



- **Review of 2022**

  Demand for benzene derivatives was affected by the economic slowdown, due to a drop in demand for electric appliances and electronics such as air conditioners, refrigerators and construction and automotive products.

- **Outlook for 2023**

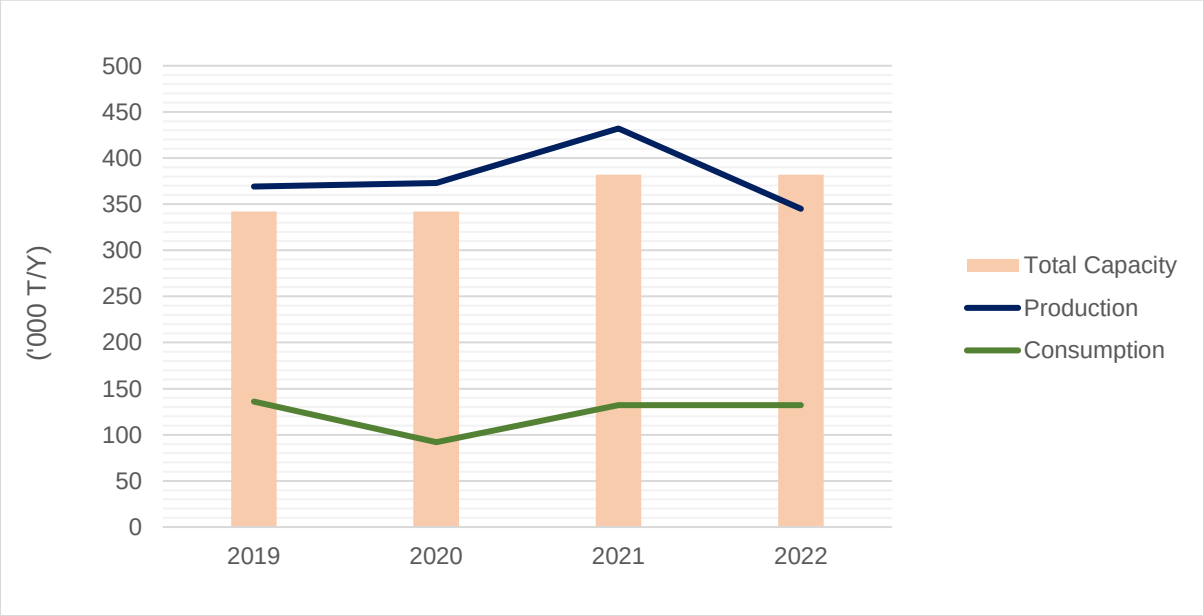
  Benzene consumption will continue to be affected by inflation rates, which are causing consumers to limit their spending.

Aromatic : Toluene

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	342	342	382	382
▪ **Production**	369	373	432	345
▪ **Consumption**	136	92	132	132
▪ **Export**	239	281	303	213
▪ **Import**	3	0	3	0

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: '0' means below 500 T/Y



- **Review of 2022**

  The toluene market in 2022 was similarly impacted as the benzene market.

- **Outlook for 2023**

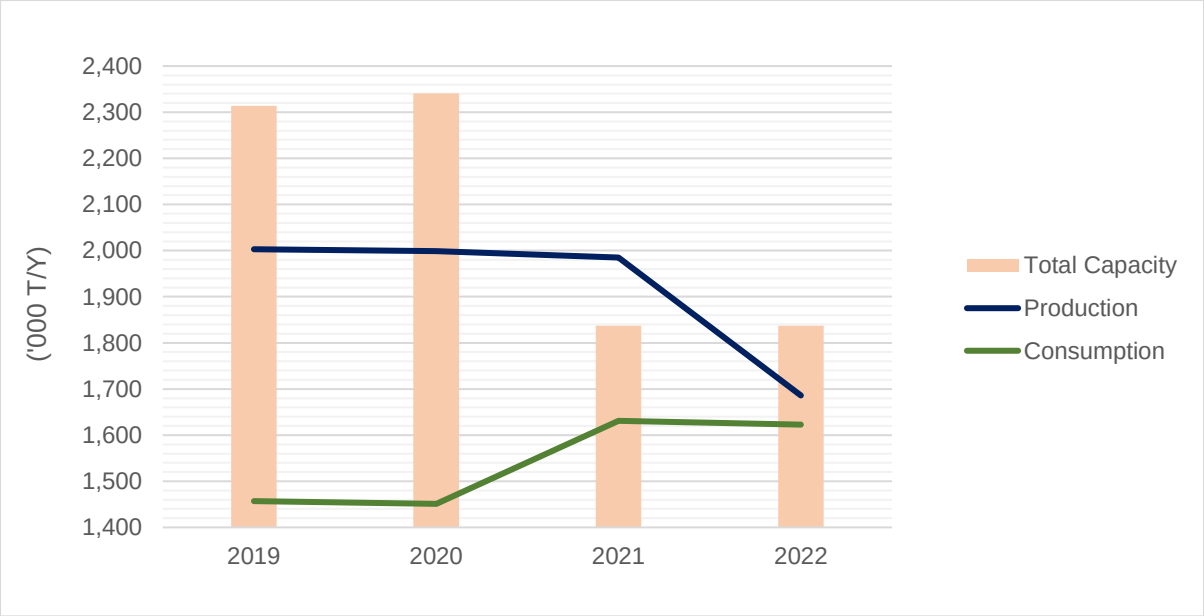
  The production of toluene in 2023 is expected to follow a similar trend as benzene, with a potential decrease compared to 2022 due to the ongoing economic slowdown.

Aromatic : P-Xylene

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	2,341	2,341	1,837	1,837
▪ **Production**	2,003	1,999	1,985	1,686
▪ **Consumption**	1,457	1,451	1,631	1,623
▪ **Export**	660	691	459	117
▪ **Import**	142	142	105	54

Source: PTIT Industrial Survey and The Customs Department, Mar 2023



- **Review of 2022**

  The p-xylene market has been affected by high energy prices. The demand for p-xylene derivatives, especially in the textile industry, has been impacted by the economic slowdown. On the other hand, there has been an increase in demand for PET resin, driven by the production of single-use food and beverage packaging. Local p-xylene production has decreased, in part due to Esso's switch from p-xylene to gasoline production in April 2021

- **Outlook for 2023**

  The reopening of China has led to an increase in travel and social activities, which is expected to boost demand this year. However, the p-xylene market faces pressures from a recession, the ongoing Russia-Ukraine conflict, and new p-xylene capacities mainly in China, while new PTA capacities are significantly less than the p-xylene supply increase. These factors are expected to create downward pressure on the p-xylene market.

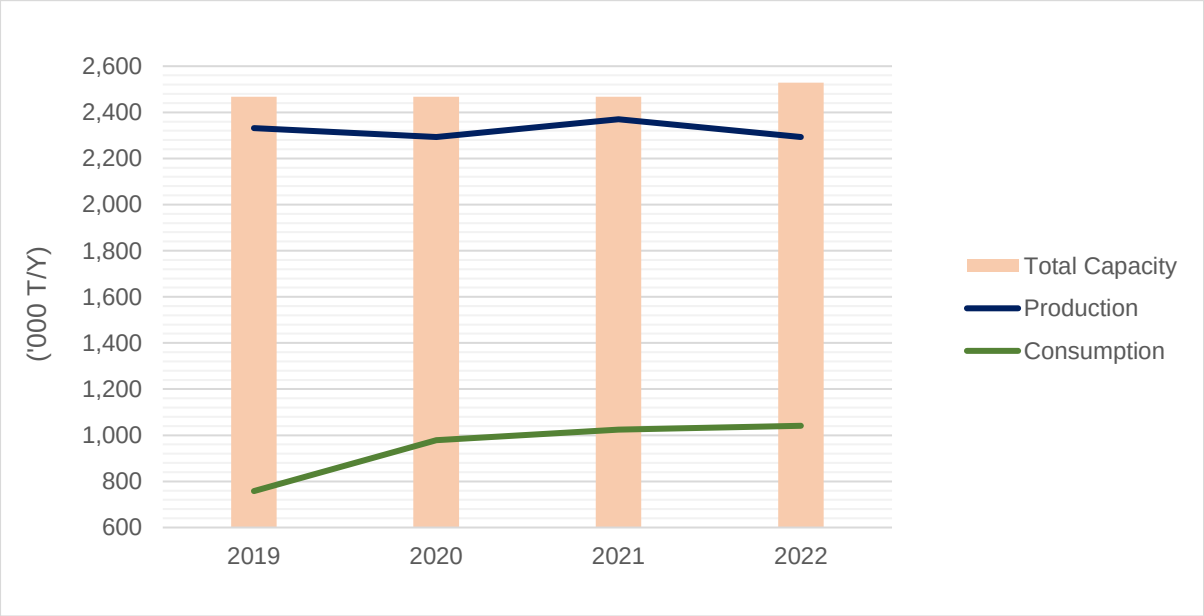
II-2. Polyolefins Committee

LDPE/LLDPE/EVA

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	2,468	2,468	2,468	2,528
▪ **Production**	2,332	2,293	2,370	2,293
▪ **Consumption**	758	979	1,025	1,041
▪ **Export**	1,982	1,736	1,739	1,661
▪ **Import**	408	421	393	408

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: Consumption figures deviate from normal calculation (Production + Import – Export).

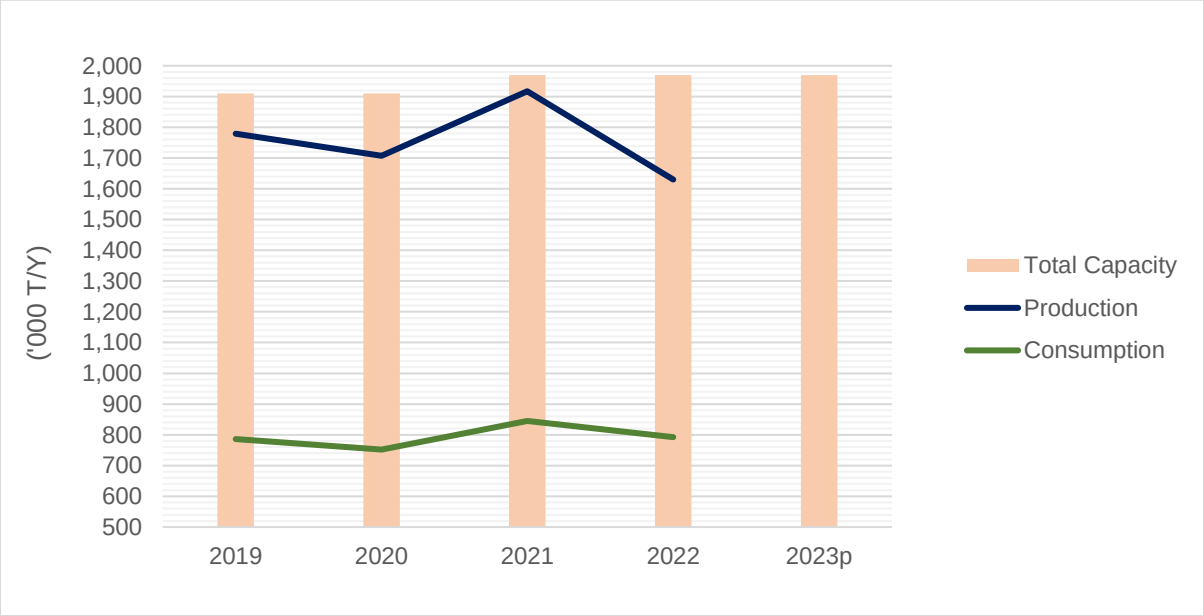


HDPE

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	1,910	1,910	1,970	1,970
▪ **Production**	1,779	1,707	1,917	1,630
▪ **Consumption**	786	752	845	792
▪ **Export**	1,153	1,103	1,203	965
▪ **Import**	160	148	131	127

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: Consumption figures deviate from normal calculation (Production + Import – Export).



- **Review of 2022**

  PE consumption decreased in 2022 compared to 2021, PE exports still accounted for around 50% of total production, with China and ASEAN as the largest markets. In order to maintain their domestic base, PE producers are exploring new markets for high value products such as flexible packaging, construction, and automotive products.

- **Outlook for 2023**

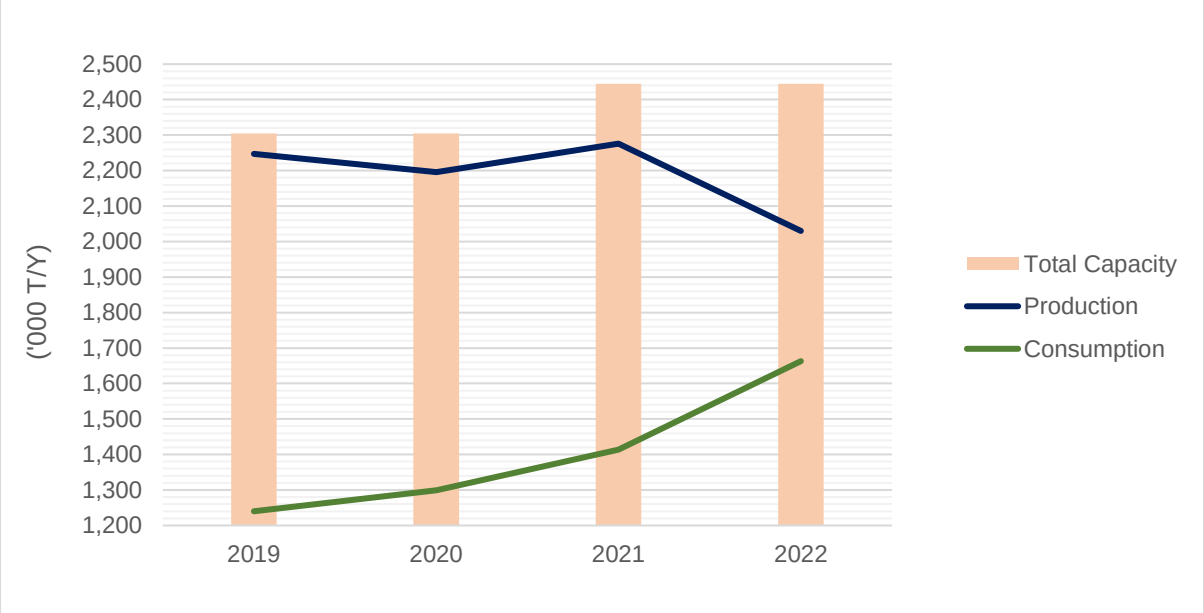
  PE consumption is expected to increase as China's demand recovers following the lifting of COVID-19 restrictions and the Thai economy implements stimulus measures. However, converters are facing major concerns such as geopolitical uncertainties, global recession, and high inflation rates. While market prices may increase following demand recovery, they are also expected to be pressured by upcoming PE capacities.

PP

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	2,305	2,305	2,445	2,445
▪ **Production**	2,247	2,196	2,276	2,030
▪ **Consumption**	1,240	1,299	1,414	1,663
▪ **Export**	1,250	1,126	1,150	952
▪ **Import**	243	228	288	315

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: Consumption figures deviate from normal calculation (Production + Import – Export).



- **Review of 2022**

  In 2022, the polypropylene (PP) market experienced a downturn due to several economic factors, including a surge in capacity in China that led to an oversupply in Asia. This, along with various uncertainties, caused PP prices to be highly unstable. Furthermore, the cost of the main feedstock was pushed up by the escalation of crude oil and energy prices. As a result, the average PP-naphtha spread was significantly lower compared to the previous year. Despite the increase in local consumption by 18%, these factors caused challenges for the PP market.

- **Outlook for 2023**

  New supplies of polypropylene from China are expected to enter the market in 2023, which could lead to increased competition between producers worldwide. However, downstream margins are currently weak. On a positive note, global demand for polypropylene is expected to recover as China reopens and slowly returns to normalcy within this year. Additionally, the potential end to the semiconductor (chip) shortage in 2023 is expected to boost the overall polypropylene market.

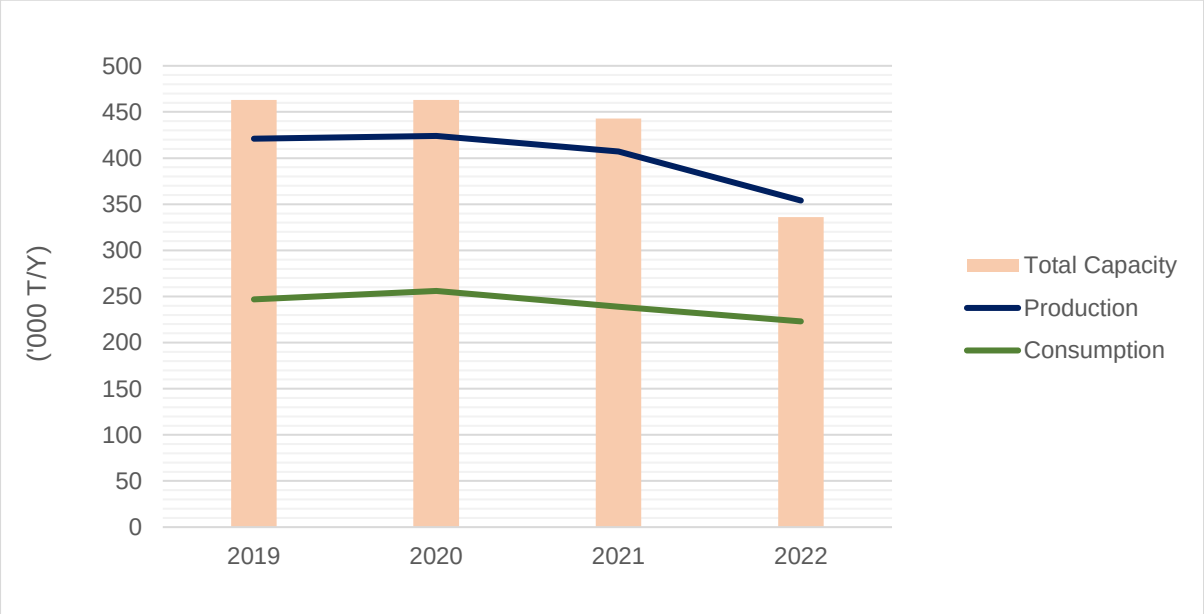
II-3. Styrenics Committee

PS/EPS

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	463	463	443	336
▪ **Production**	421	424	407	354
▪ **Consumption**	247	256	239	223
▪ **Export**	271	262	281	201
▪ **Import**	98	94	112	113

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: Consumption figures deviate from normal calculation (Production + Import – Export).



- **Review of 2022**

  The consumption of EPS has been sluggish, with a 7% decline attributed to concerns over weakening demand in the end-use manufacturing sector. Additionally, the closure of Ming Dih Chemical's EPS production plant since the incident in 2021 has caused a decrease in local EPS production.

- **Outlook for 2023**

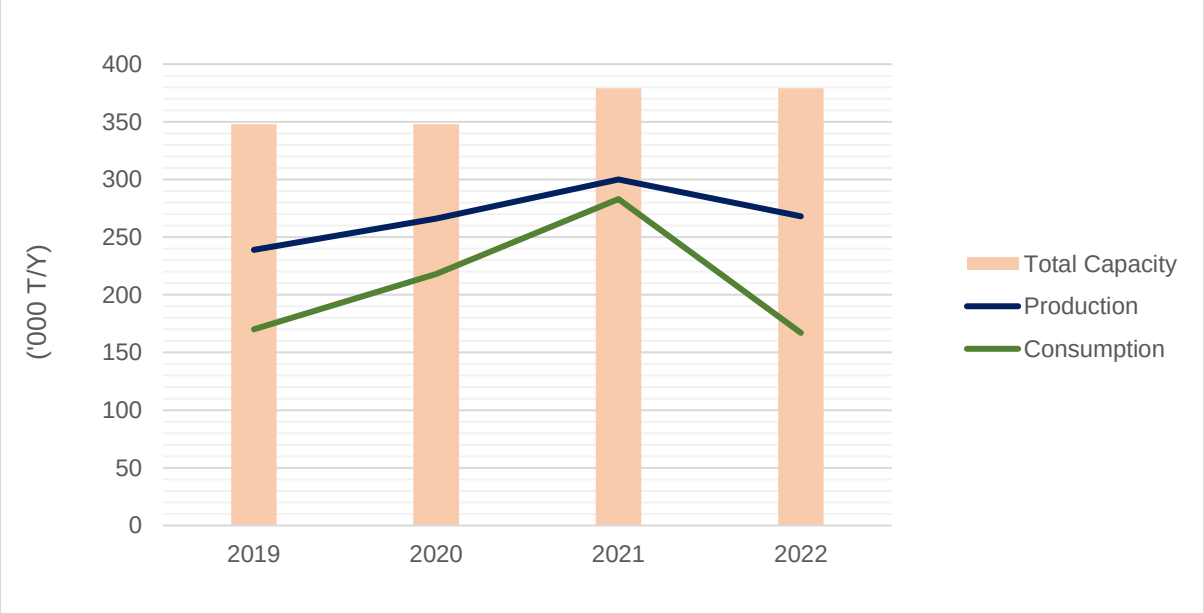
  The demand for PS and EPS is expected to remain weak due to high inflation rates, which limit consumer spending and weaken demand for end-use sectors.

ABS/SAN

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	348	348	379	379
▪ **Production**	239	266	300	268
▪ **Consumption**	170	218	283	167
▪ **Export**	213	199	189	141
▪ **Import**	144	152	173	153

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: Consumption figures deviate from normal calculation (Production + Import – Export).



- **Review of 2022**

  The consumption of ABS/SAN has slowed down significantly, declining by 50%, primarily due to the impact of rising inflation rates that also effect the electrical appliance sector. This has led to higher production costs. Additionally, the import of electrical appliances in Thailand, such as refrigerators, fans, and air conditioners, has further limited the local demand.

- **Outlook for 2023**

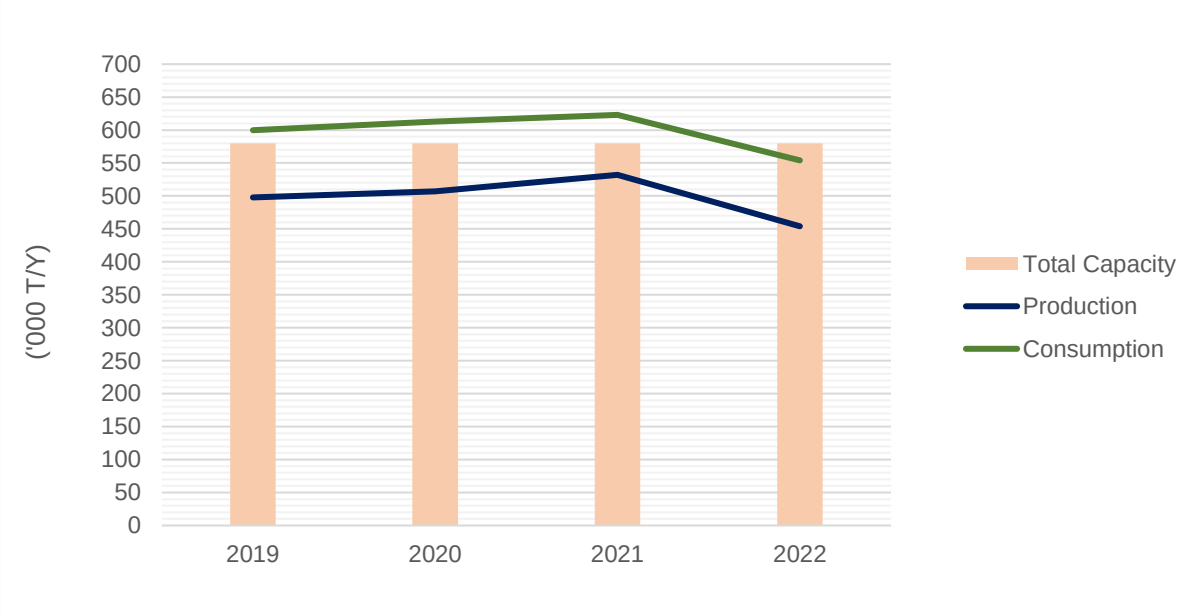
  Demand will continue to be affected by inflation rates, which are causing consumers to limit their spending. This is further weakening the demand for end-use sectors.

Styrene Monomer (SM)

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	580	580	580	580
▪ **Production**	498	507	532	454
▪ **Consumption**	600	613	623	554
▪ **Export**	5	16	3	6
▪ **Import**	93	120	136	79

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: Consumption figures deviate from normal calculation (Production + Import – Export).



- **Review of 2022**

  The SM market in 2022 was similarly impacted as its derivative markets.

- **Outlook for 2023**

  While challenges brought about by the pandemic are still affecting the SM market, a gradual recovery is expected in 2023 as global macroeconomic conditions improve. However, SM producers are projected to reduce operating rates due to weakened demand for derivatives, as a result of economic slowdown and sluggish from derivative exports markets

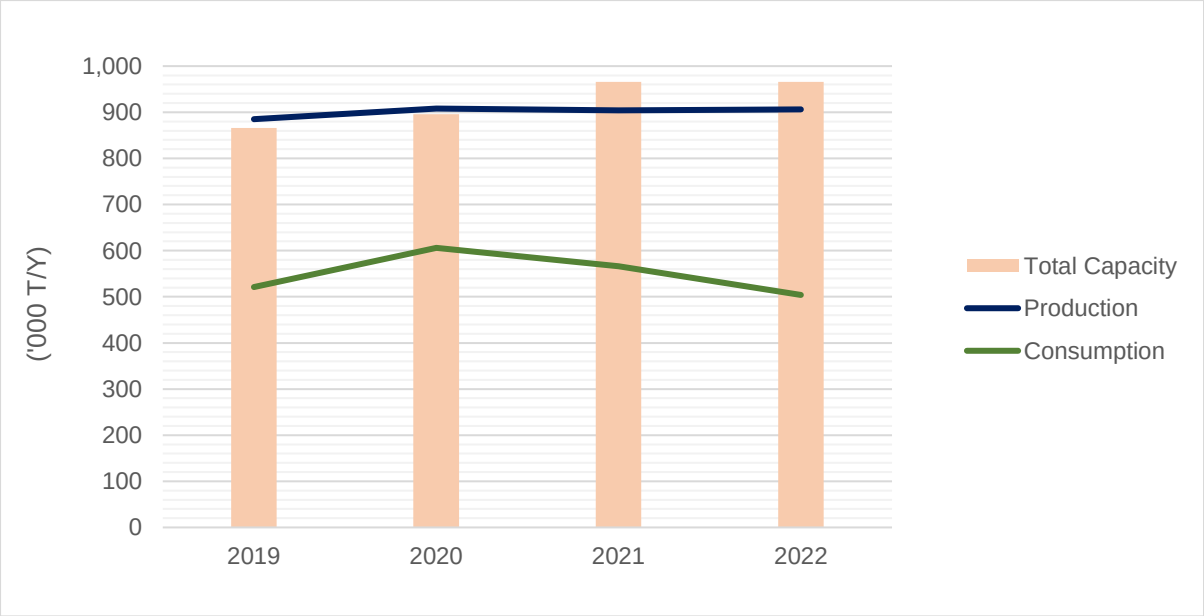
II-4. PVC Committee

PVC

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	866	896	966	966
▪ **Production**	885	908	904	906
▪ **Consumption**	521	606	566	504
▪ **Export**	447	409	437	499
▪ **Import**	83	106	99	97

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: Consumption figures deviate from normal calculation (Production + Import – Export).



- **Review of 2022**

  Local PVC consumption decreased by 11% in 2022, primarily due to economic slowdown, high inflation rates, and high interest rates, which led to weaker demand in the construction sector from both the government and private sectors.

- **Outlook for 2023**

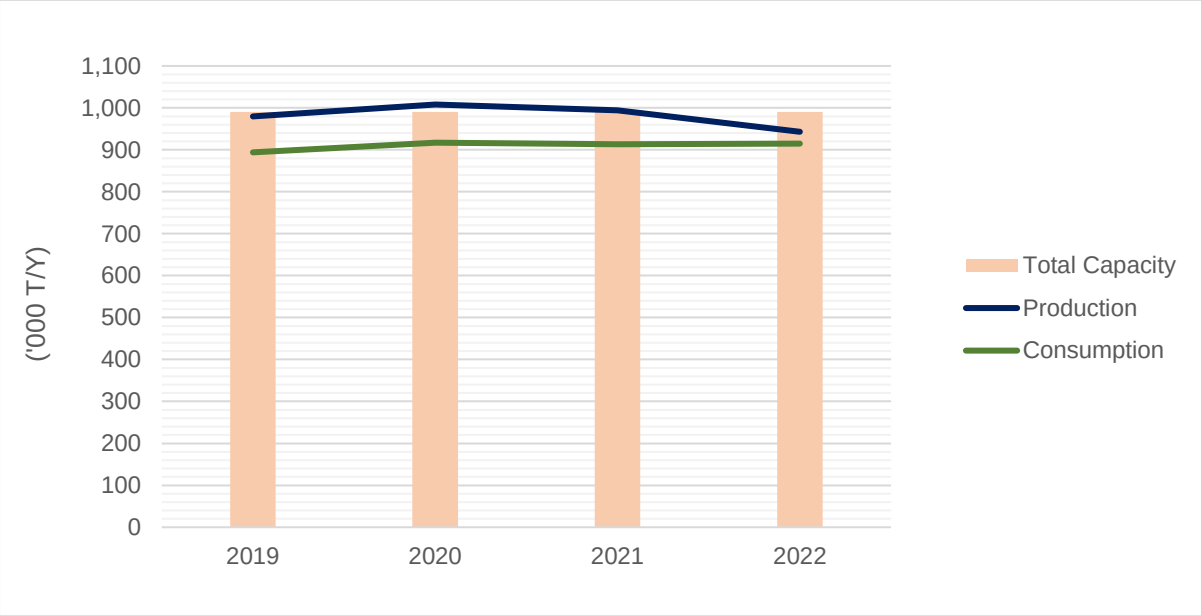
  In 2023, the PVC market is likely to face challenges due to weak domestic demand and oversupply. The slowdown in the economy has resulted in lower demand from the construction sector. Nevertheless, some countries in the region are expected to see growth in their PVC market. Vietnam, Indonesia, and the Philippines are expected to show promising growth, which could boost the demand for PVC despite the challenges.

VCM

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	990	990	990	990
▪ **Production**	980	1,008	994	943
▪ **Consumption by Derivative Product**	894	917	913	915
▪ **Export**	107	95	81	58
▪ **Import**	0	-	-	-

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: *Consumption by derivative netbacked from PVC production.



- **Review of 2022**

  The VCM market in 2022 was similarly impacted as PVC markets.

- **Outlook for 2023**

  The outlook for VCM in 2023 is expected to face similar challenges as the PVC market, with uncertainty in demand and economic recovery being major concerns.

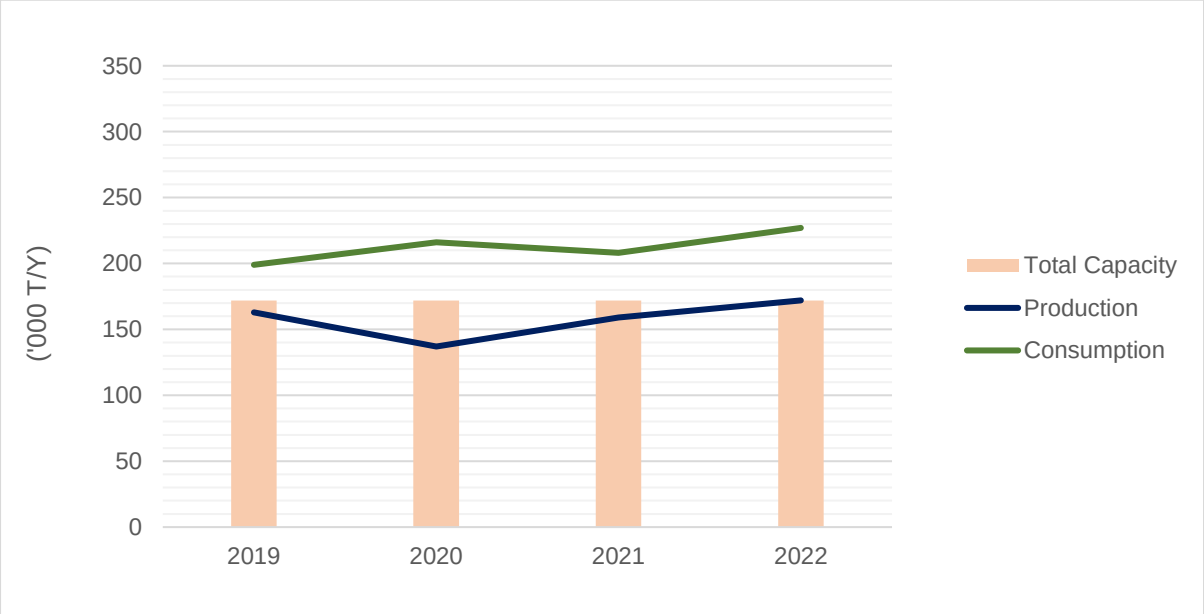
II-5. Synthetic Rubber Committee

SBR

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	172	172	172	172
▪ **Production**	163	137	159	172
▪ **Consumption**	199	216	208	227
▪ **Export**	119	92	99	93
▪ **Import**	155	171	148	148

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: - Consumption figures deviate from normal calculation (Production + Import – Export).
- HS code is 4002.19



- **Review of 2022**

  SBR production increased by 9% compared with the previous year. Domestic consumption increased supported by a strong demand from the automotive sector.

- **Outlook for 2023**

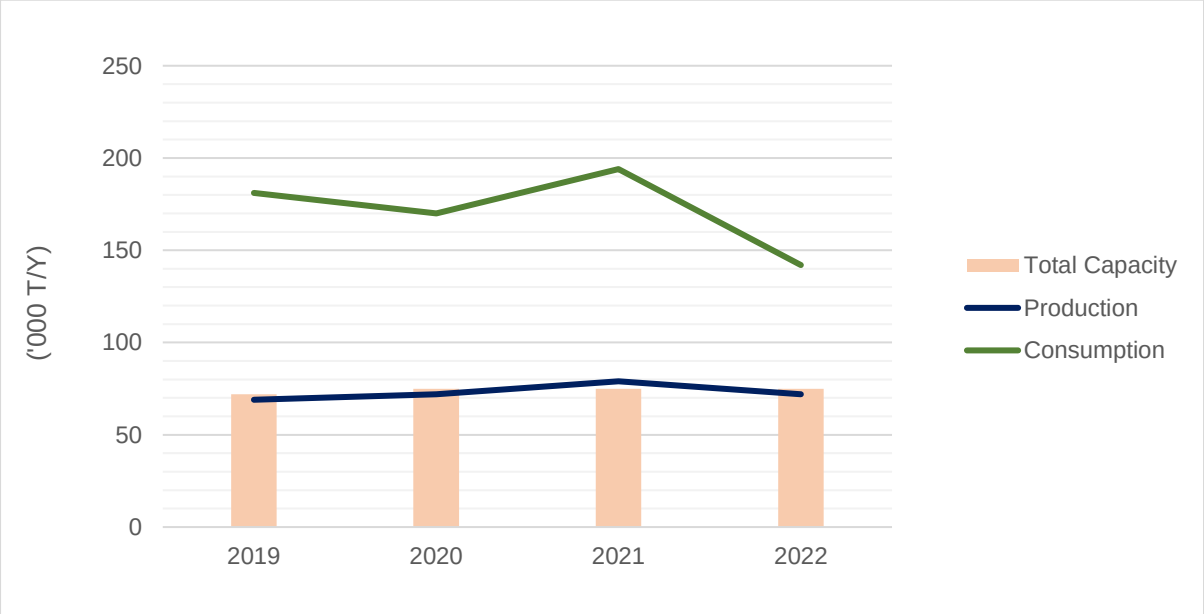
  SBR domestic consumption is expected to slightly increase. Thailand Automotive Institute and Federation of Thai Industries reported that car domestic production rise in Q1 2023.

BR

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	72	75	75	75
▪ **Production**	69	72	79	72
▪ **Consumption**	181	170	194	142
▪ **Export**	35	41	35	38
▪ **Import**	147	140	150	107

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: Consumption figures deviate from normal calculation (Production + Import – Export).



- **Review of 2022**

  BR consumption decreased in the opposite direction of growth car production. The growth of synthetic rubber in tandem with natural rubber helps control production quality well.

- **Outlook for 2023**

  BR domestic consumption is expected to slightly increase. Thailand Automotive Institute and Federation of Thai Industries reported that car domestic production rise in Q1 2023.

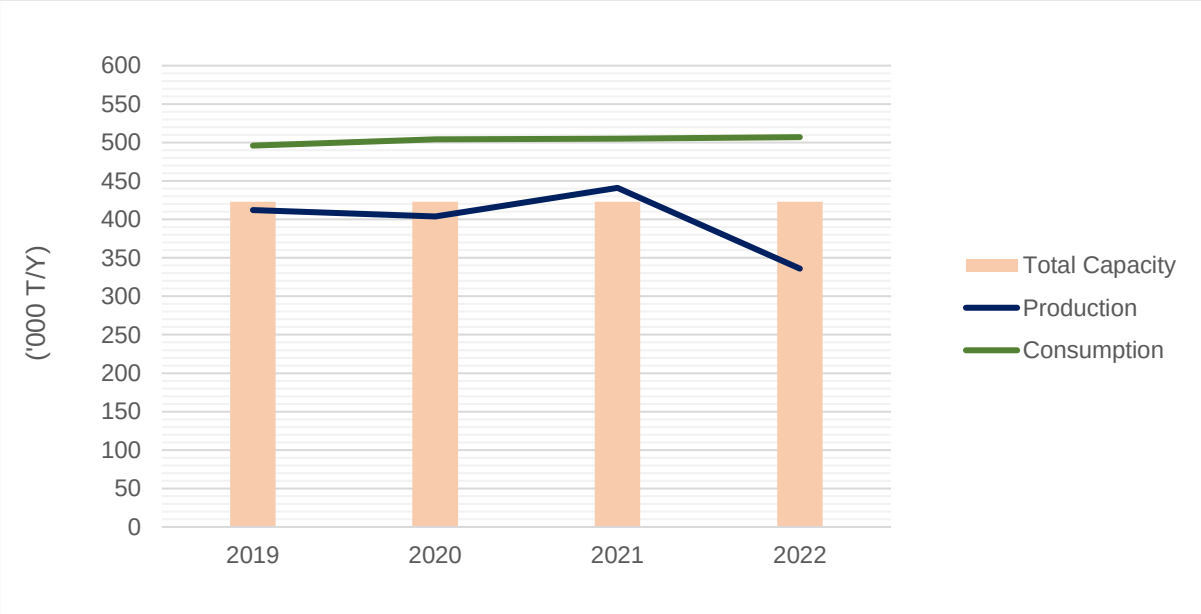
II-6. Synthetic Fiber Raw Materials Committee

Ethylene Glycol (EG)

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	423	423	423	423
▪ **Production**	412	404	441	336
▪ **Consumption by Derivative Product**	496	504	505	507
▪ **Export**	33	34	13	14
▪ **Import**	124	140	168	236

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: *Consumption netbacked from polyester polymer production.



- **Review of 2022**

  In 2022, local EG consumption remained stable due to demand from textile and PET resin production. However, exports were limited as China tightened lockdown measures to control the pandemic.

- **Outlook for 2023**

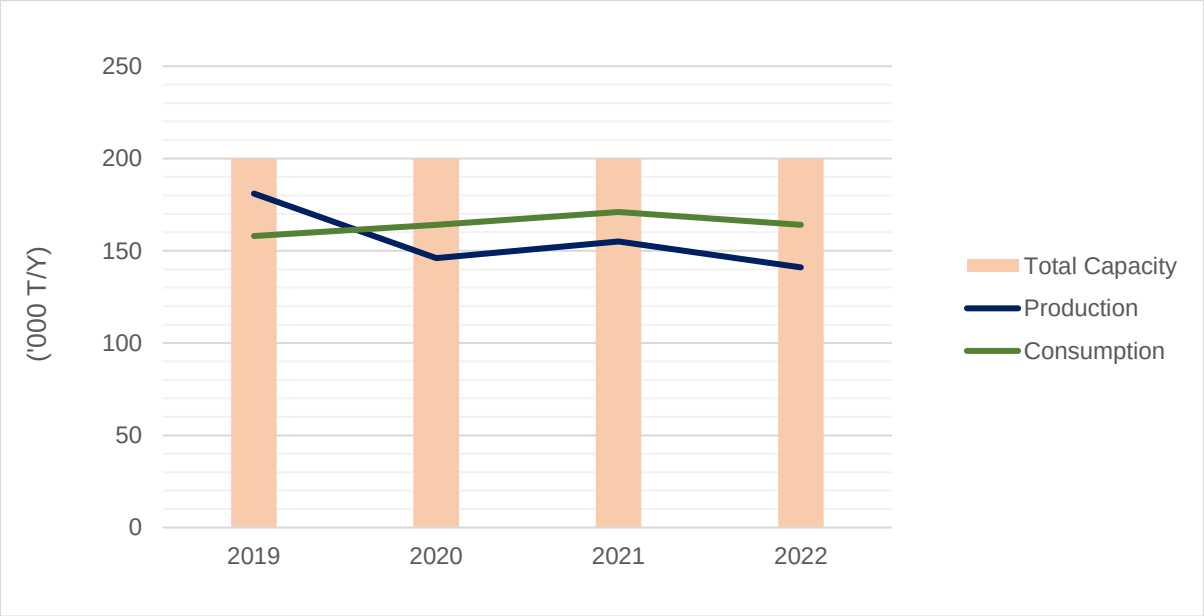
  While demand for EG is expected to improve in 2023 with the resume activity of major export markets like China, concerns of a potential recession may limit the recovery. Furthermore, the market is likely to be pressured by the China's start-up of a new 5.7 million tons of new EG capacity planned for 2023.

Acrylonitrile

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	200	200	200	200
▪ **Production**	181	146	155	141
▪ **Consumption by Derivative Product**	158	164	171	164
▪ **Export**	61	23	32	26
▪ **Import**	10	19	19	30

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: *Consumption netbacked from ABS/ SAN and acrylic fibre production.
'0' means below 500T/Y



- **Review of 2022**

  The demand for ABS/SAN saw sluggish growth, causing a 4% decrease in local acrylonitrile consumption in 2022.

- **Outlook for 2023**

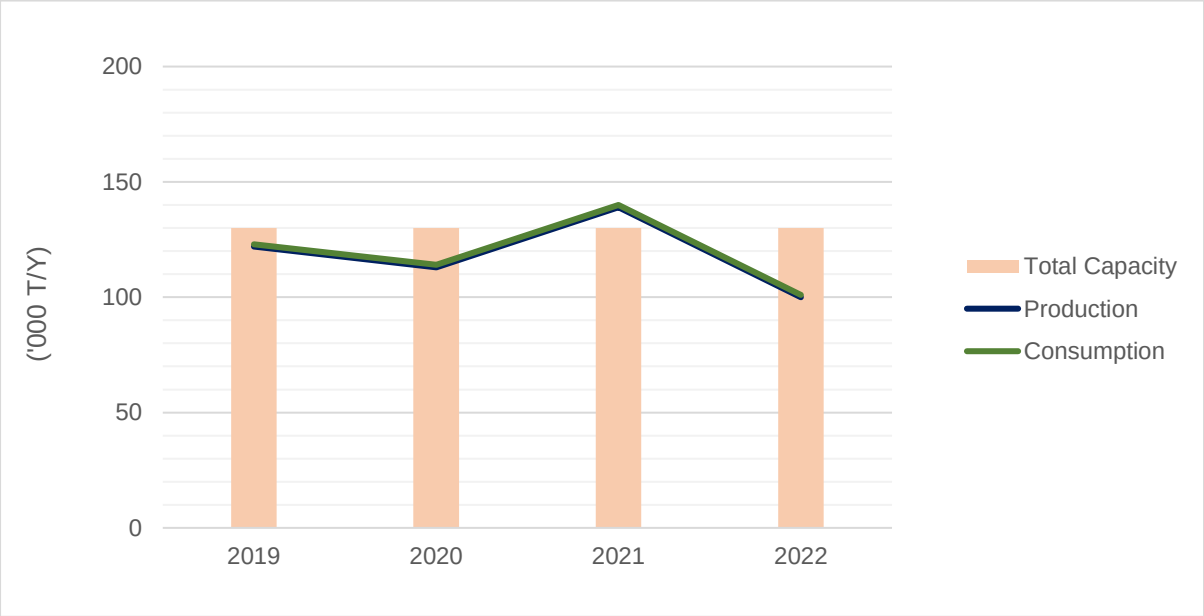
  Acrylonitrile market may face oversupply concerns in 2023, as capacity expansions in China, particularly in the first half of the year, could worsen the issue. Moreover, demand uncertainties could further add to the market's negative sentiment.

Caprolactam

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	130	130	130	130
▪ **Production**	122	124	139	100
▪ **Consumption by Derivative Product**	123	114	140	101
▪ **Export**	36	39	37	37
▪ **Import**	9	2	0	0

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: *Consumption is netbacked from Nylon 6 production.



- **Review of 2022**

  Caprolactam production in Thailand decreased by 28% in 2022, along with a corresponding decline in domestic consumption. This was largely attributed to the economic slowdown in the country.

- **Outlook for 2023**

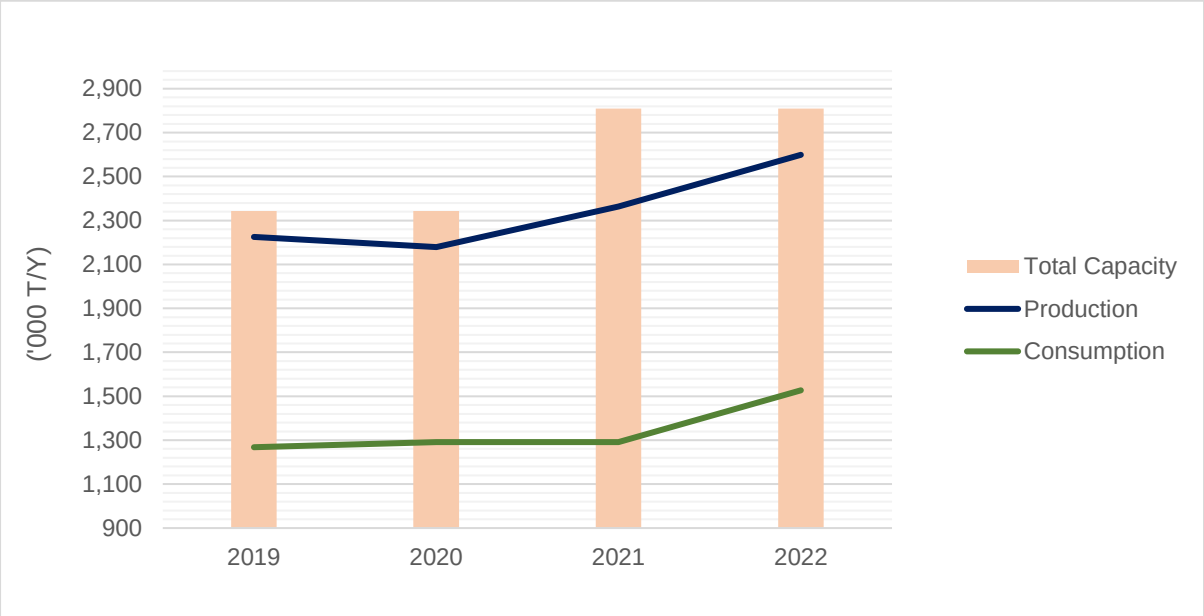
  Slowing economic growth may affect automotive production, which is a major end-use industry for caprolactam derivatives. Additionally, the caprolactam market is expected to see greater self-sufficiency in China in 2023.

Terephthalic Acid (PTA)

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	2,343	2,343	2,809	2,809
▪ **Production**	2,226	2,179	2,364	2,599
▪ **Consumption by Derivative Product**	1,268	1,291	1,292	1,527
▪ **Export**	958	897	1,089	1,073
▪ **Import**	0	9	16	1

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: *Consumption netbacked from polyester polymer production.
'0' means below 500T/Y



- **Review of 2022**

  Domestic demand and supply of PTA has increased recently due to healthy local demand from downstream capacity expansion, and the resumption of operation of an existing PTA plant in early 2Q2021 which had been suspended since 2016. The consumption of PET's single-use plastic has also increased since the start of the pandemic.

- **Outlook for 2023**

  The PTA market is expected to have ample supply in 2023, as expansion plans for new capacity continue. In China, the PTA supply-demand balance is expected to improve with increased demand and the addition of massive new capacities. Meanwhile, Thailand producer is targeting export more to other countries such as Vietnam, India, the Middle East, and Africa.

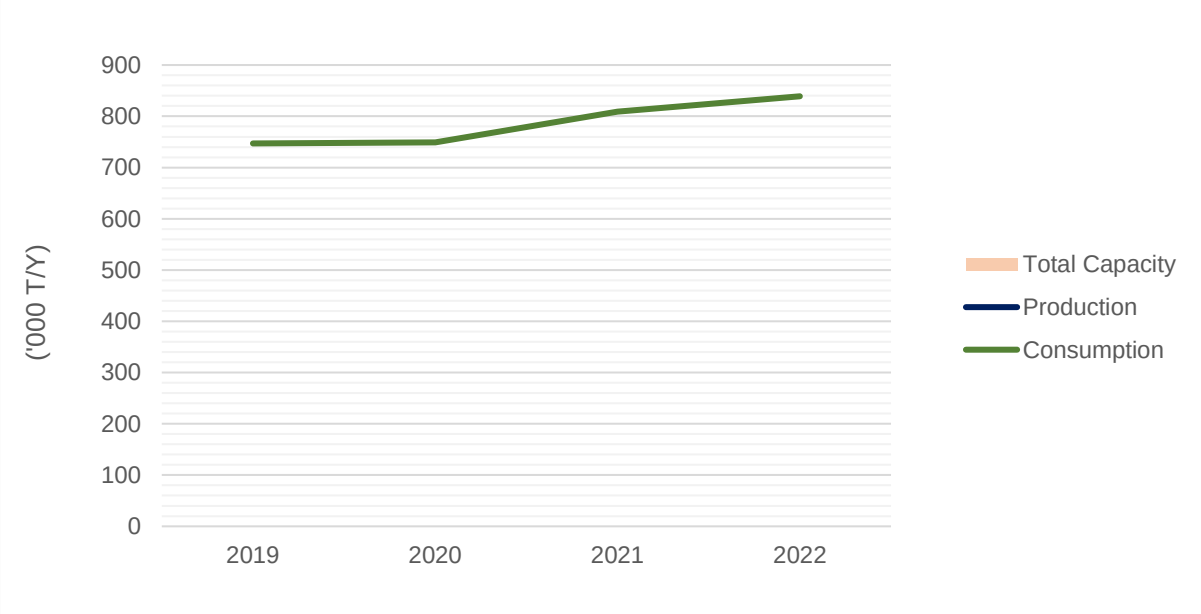
II-7. Chemicals Committee

Methanol

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	-	-	-	-
▪ **Production**	-	-	-	-
▪ **Consumption by Derivative Product**	766	757	835	833
▪ **Export**	0	1	4	4
▪ **Import**	801	794	806	754

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: *Consumption netbacked from MTBE, MMA, POM and formaldehyde and other solvents production.



- **Review of 2022**

  Thailand relies entirely on imported methanol to meet its demand. The country's methanol consumption has remained stable since 2019 with a slight improvement in demand, driven mainly by MMA and POM production. However, the Asian methanol market saw high price volatility in the first half of 2022. Weak macroeconomic performance in China and India led to a drying up of liquidity and stagnant prices in the second half of the year.

- **Outlook for 2023**

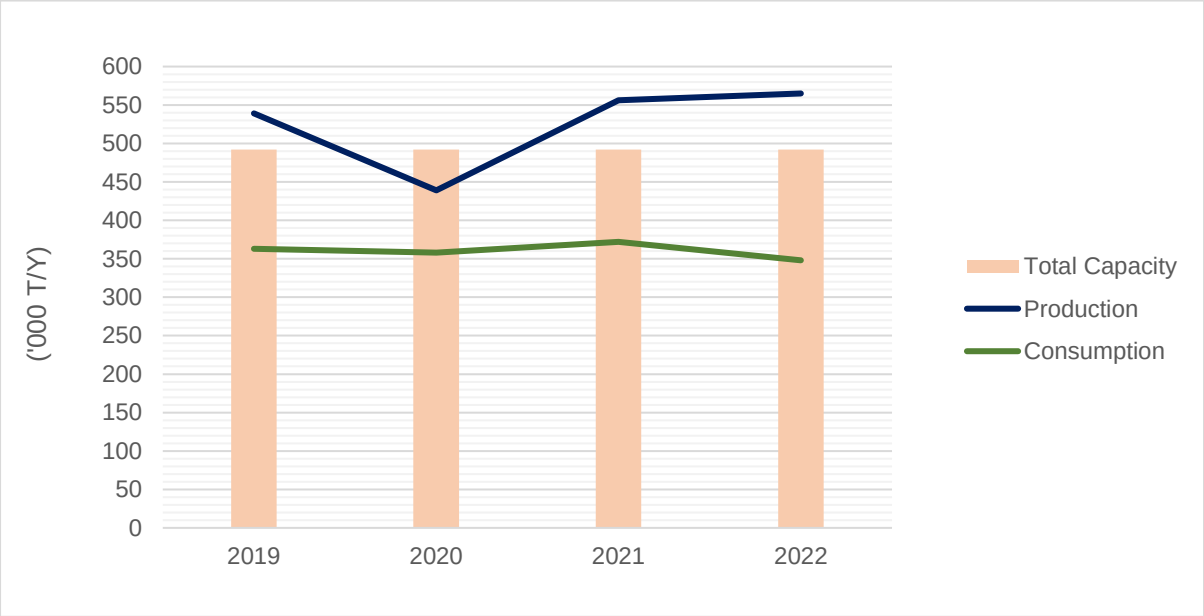
  While methanol consumption in Thailand is expected to remain stable in 2023, the demand for derivative products may be affected by the slowdown in both local and export country demand due to the overall global rise in inflation.

Phenol

(Unit:'000 T/Y)

	2019	2020	2021	2022
▪ **Total Capacity**	492	492	492	492
▪ **Production**	539	439	556	565
▪ **Consumption by Derivative Product**	363	358	372	348
▪ **Export**	196	225	193	191
▪ **Import**	29	40	36	7

Source: PTIT Industrial Survey and The Customs Department, Mar 2023
Note: *Consumption netbacked from Bisphenol A and Phenolic resin production.



- **Review of 2022**

  In 2022, the phenol market was negatively impacted by an economic slump, leading to a decrease in the demand for end-products and lower local prices. As a result, local consumption of phenol derivatives decreased by approximately 6%.

- **Outlook for 2023**

  Phenol producers are bracing to maintain reduced run rates into 2023 in a bid to stem eroded margins amid new supply in China and a downbeat macroeconomic outlook. Despite this, the expected recovery of the economies in China, India, and ASEAN, which are important export markets for phenol, may provide some support to the market. However, the new capacities of 1.8 MTA from China are expected to put further pressure on the phenol market.