

## **VIETNAM PETROCHEMICAL INDUSTRY REPORT Q2/2018**



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## Table of abbreviation

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CIS Commonwealth of Independent States

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EU European Union

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FDI Foreign Direct Investment

---

GSO General Statistics Office

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GDVC General Department of Vietnam Customs

---

IEA International Energy Agency

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LNG Liquefied natural gas

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LPG Liquefied petroleum gas

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MOIT Ministry of Industry and Trade

---

NAFTA North American Free Trade Agreement

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OPEC Organization of the Petroleum Exporting Countries

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PVN Petro Vietnam

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Vinachem Vietnam Chemical Group

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Vinacomin Vietnam Coal and Mineral Industries Group

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VIRAC Vietnam Industry Research and Consultant JSC

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VPAS Vietnam Plastics Association

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Petrochemicals and refineries are two areas in the oil industry.

Petrochemical inputs are products of the oil industry, in particular refinery products and natural gas processing plants.

In the 2012-2022 period, production of primary petrochemical products is estimated to grow at a CAGR of 4.29%. In 2018, the output of primary petrochemical products reached about 520.4 million tons

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Demand for petrochemical products tends to increase over the years

Generally, according to PGPI of Platts, in 2018 prices of petrochemical products increased from January to March, then decreased from April to July, and increased from August to the end of year.

At present, almost all petrochemical refineries in the country are supplied by Dung Quat oil refinery of PVN, with the rest from Ba Ria - Vung Tau oil refinery with a capacity of 2,000 barrels per day.

Demand for petrochemical products is high, but domestic production capacity can not be met.

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**1. Business environment**

1.1 Macroeconomic situation

1.2 Legal Framework

1.3 Impacts of Free Trade Agreement

Gross domestic product in 2018 is estimated to increase by 6.81% over 2016,

GDP growth rate by quarter, 2015 - 2017

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Source: VIRAC, GSO

GDP by current price and GDP per capita, 2013 - 2018

VND Trillion



VND/USD exchange rates, 2015 – 2018

In 2018, the VND / USD exchange rate was quite stable around VND 22,400.

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*Source: VIRAC, GSO*

VND/CNY exchange rates, 2/2016 - 12/2017

*Source: VIRAC, FIA*

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## 1. Business Environment

### 1.1 Macroeconomic Situation

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**Crude oil and natural gas are indirect materials of the petrochemical industry. Therefore, the price of crude oil and natural gas is closely related to the prices of petrochemical products.**

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**World natural gas prices, 2012 – 2018**

*USD/million BTU*

**1. Business environment**

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1.1 Macroeconomic situation

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1.2 Legal Framework

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1.3 Impacts of Free Trade Agreement

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Thus, **the increase of preferential import tax of Vietnam has brought benefits for PP plastic producers for countries in ASEAN, South Korea and China, while Vietnamese enterprises import plastic resin which suffers from increased input costs due to import prices increase corresponding with the import tax.**

## 1. Business Environment

### 1.2 Legal Framework

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- **The Government issued Decree No. 122/2016 / ND-CP on Export Tariff, Preferential Import Tariff, List of Goods and Absolute Tariff, Mixed Tax, Import Tax for Quotas Outside Tariff, taking effect from 1 September 2016.**

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**1. Business environment**

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1.1 Macroeconomic situation

---

1.2 Legal Framework

---

1.3 Impacts of Free Trade Agreement

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- **Impact of the ASEAN Economic Community (AEC)**

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- **Impact of Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)**

- **Impact of the Free Trade Agreement Vietnam - Eurasian Economic Union (EAEU)**

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- **Impact of the Regional Comprehensive Economic Partnership Agreement (RCEP)**

**2. Global petrochemical industry**

2.1 Introduction of petrochemicals

2.2 Process and production technology

2.3 Input materials

2.4 Production

2.5 Consumption

2.6 Import – Export

2.7 Price Movement

2.8 Situation in some typical countries

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**2. Global petrochemical industry**

---

2.1 Introduction of petrochemicals

---

2.2 Process and production technology

---

2.3 Input materials

---

2.4 Production

---

2.5 Consumption

---

2.6 Import – Export

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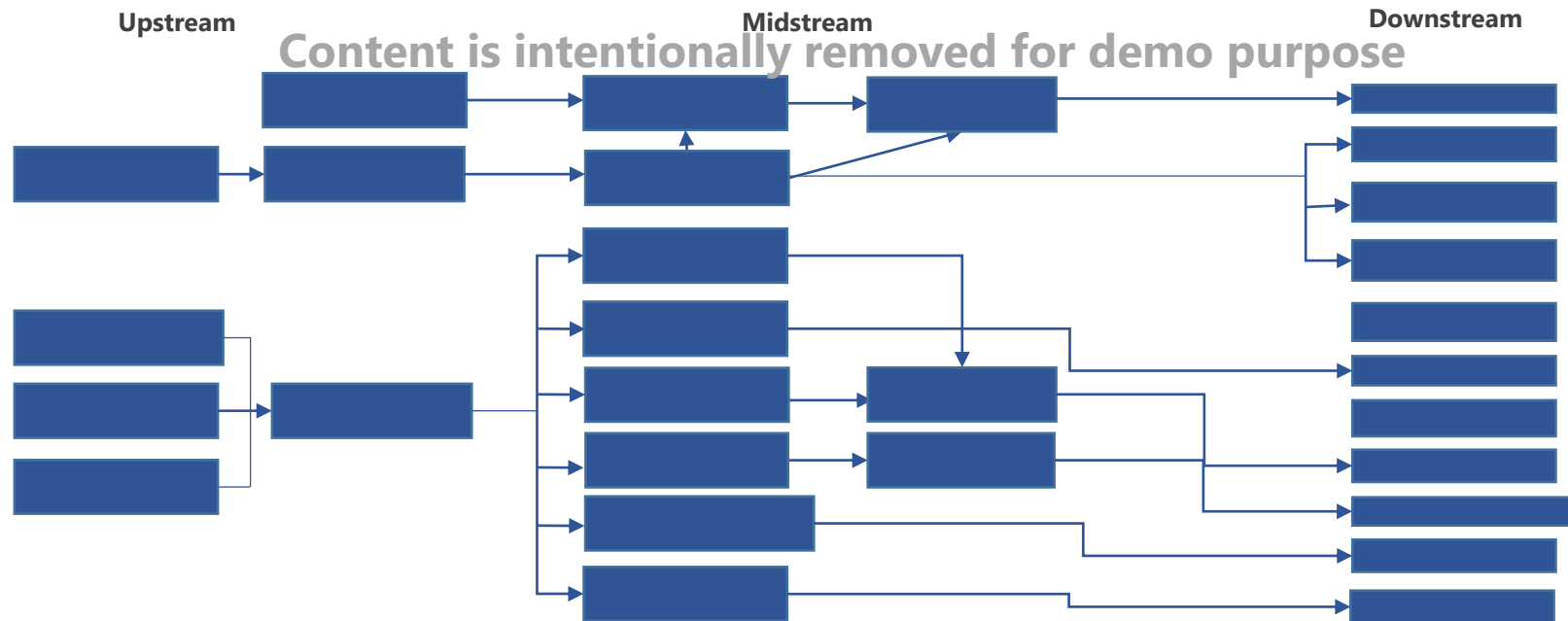
2.7 Price Movement

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2.8 Situation in some typical countries

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Petrochemical production process



**Petrochemical refinery:**

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**Content is intentionally removed for demo purpose**



**2. Global petrochemical industry**

---

2.1 Introduction of petrochemicals

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2.2 Process and production technology

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2.3 Input materials

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2.4 Production

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2.5 Consumption

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2.6 Import – Export

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2.7 Price Movement

---

2.8 Situation in some typical countries

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- In the period of 2013 - 2016, world oil supply fluctuates little, and supply from non-OPEC countries is on the upward trend.

World oil supply, 2006 – 2018e

Million barrel/day

Content is intentionally removed for demo purpose

Sources: VIRAC, OPEC

Oil supply 2017e by region

Sources: VIRAC, OPEC

- **The United States** remains a leader in non-OPEC countries,

Content is intentionally removed for demo purpose

**Natural gas production, 2010 – Q3/2017e**

*Million barrel/day*

**Nội dung được xóa nhằm mục đích demo**

*Sources: VIRAC, IEA*

**Structure of natural gas production in the world, 2016**

*Sources: VIRAC, BP*

**World coal production, 2011 – 2016e**

*Million tons*

**Content is intentionally removed for demo purpose**

*Source: VIRAC, BP Statistical Review*

**World coal reserves up to 2015**

*Million tons*

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Source: VIRAC, IHS

Content is intentionally removed for demo purpose

Source: VIRAC, IHS

Products obtained from naphtha distillation, 2015

Source: VIRAC, ICIS

**Ethane consumption structure by region, 2016e**

**Content is intentionally removed for demo purpose**

*Source: VIRAC, IHS*

**Product obtained from Ethane distillation, 2015**

*Source: VIRAC, ICIS*



**2. Global petrochemical industry**

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2.1 Introduction of petrochemicals

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2.2 Process and production technology

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2.3 Input materials

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2.4 Production

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2.5 Consumption

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2.6 Import – Export

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2.7 Price Movement

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2.8 Situation in some typical countries

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**Content is intentionally removed for demo purpose**

*Million tons*

**World production of petrochemicals, 2012 - 2022e**

**Production capacity of some basic\* petrochemical products by region, 2015 – 2020e**

*Million tons*

**Content is intentionally removed for demo purpose**

**Global ethylene production capacity, 2010 - 2016**

**Content is intentionally removed for demo purpose**

*Source: VIRAC, ICIS*

**Global ethylene production capacity by region, 2016e**

*Source: VIRAC*

## 2. Global petrochemical industry

### 2.4 Production– 2.4.1 Primary product

- **Propylene is the second largest organic molecule after ethylene produced in the world,**

### Global Propylene production, 2010 - 2016

*Million tons*

Nội dung được xóa nhằm mục đích demo

*Sources: VIRAC, ICIS*

### Structure of Propylene by region, 2016

**Global Butadiene capacity and production, 2011  
- 2015**

*Million tons*

*Source: VIRAC, ICIS*

**Content is intentionally removed for demo purpose**

**Butadiene production structure by country, 2015**

*Source: VIRAC, ICIS*

## 2. Global petrochemical industry

### 2.4 Production– 2.4.1 Primary product

Butadiene production capacity of some companies in the world

No	Company	Country	Capacity (ton/year)	Time of operation
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12	Content is intentionally removed for demo purpose			
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

**Global benzene supply- demand, 2012 – 2017f**

*Million tons*

*Million tons*

**Global benzene production capacity, 2016 - 2019e**

*Source: VIRAC, IHS*

**Content is intentionally removed for demo purpose**

*Source: VIRAC, ICIS*



**Global polymer production, 2009 – 2016e**

Million tons

**Structure of polymer production by country 2016**

*Source: VIRAC, Europe Plastic*  
**Content is intentionally removed for demo purpose**

*Source: VIRAC, Europe Plastic*

## 2. Global petrochemical industry

### 2.4 Production– 2.4.2 Secondary product

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- In 2015, China had more factories producing polypropylene (PP) from coal into operation.

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**2. Global petrochemical industry**

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2.1 Introduction of petrochemicals

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2.2 Process and production technology

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2.3 Input materials

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2.4 Production

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2.5 Consumption

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2.6 Import – Export

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2.7 Price Movement

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2.8 Situation in some typical countries

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## 2. Global petrochemical industry

### 2.5 Consumption– 2.5.1 Primary product

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Million tons **Global Ethylene demand, 2010 – 2016**

Source: VIRAC, ICIS  
**Content is intentionally removed for demo purpose**

**Production capacity and demand of ethylene by regions  
2015**

Million tons

**Application structure of ethylene in the production of plastic materials, 2016**

## 2. Global petrochemical industry

### 2.5 Consumption– 2.5.1 Primary product

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Ethylene dichloride accounts for about 9% of global ethylene application in 2016.

Structure of ethylene dichloride consumption market, 2016

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Sources: VIRAC, IHS

**Global propylene demand, 2010 – 2016**

*Million tons*

Content is intentionally removed for demo purpose

**Structure of propylene uses, 2015**

*Source: VIRAC, ICIS*

**Global consumption of propylene is on the upward trend**

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**Structure of global propylene consumption, 2013**

**Structure of propylene consumption, 2023e**

**Structure of butadiene consumption by product, 2018**

**Structure of global consumption of SBR by region, 2016**

**Content is intentionally removed for demo purpose**

*Sources: VIRAC, American Chemical Society*

*Sources: VIRAC, IHS*



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Source: VIRAC, IHS

- Over the past decade, global demand for benzene has grown at a slow pace and most of the growth comes from the Asia Pacific region.

Structure of VCM consumption by region, 2016e

Source: VIRAC, IHS

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**Demand of Polymer consumption in the world, 2010 – 2016e**

*Million tons*

**Content is intentionally removed for demo purpose**

*Source: VIRAC, ICIS*

**Demand of Polymer consumption by region 2016**

*Source: VIRAC, ICIS*

## 2. Global petrochemical industry

### 2.5 Consumption– 2.5.2 Secondary product

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**Demand for PP and PE accounts for two thirds of the total worldwide demand for polymer in the segments of packaging and spare parts of the automobile.**

**Structure of Polymer consumption by type, 2016**

**Content is intentionally removed for demo purpose**

*Source: VIRAC, ICIS*

**PP global consumption structure by country 2015**

**PE demand structure by region 2016**

Structure Polymer consumption by field, 2015

Source: VIRAC, VPA

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*Kg/person*

Consumption of plastic per capita, 2015

**2. Global petrochemical industry**

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2.1 Introduction of petrochemicals

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2.8 Situation in some typical countries

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**Global ethylene trade, 2011 - 2016e**

*Million tons*

*USD billion*

**Content is intentionally removed for demo purpose**

*Source: VIRAC, Uncomtrade*

**The global ethylene export structure, 2016e**

**The global ethylene import structure, 2016e**

## 2. Global petrochemical industry

### 2.6 Import & Export– 2.6.1 Primary product

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#### Global propylene exports, 2011 – 2016e

Million tons

USD billion

Content is intentionally removed for demo purpose

Source: VIRAC, ICIS

#### Global benzene exports, 2010 - 2020e

Million tons



Structure of polymer export markets, 2016e

Structure of polymer import markets, 2016e

Content is intentionally removed for demo purpose

Source: VIRAC, UN Comtrade

Source: VIRAC, UN Comtrade

USD billion

Global polymer export, 2012 - 2016e

**2. Global petrochemical industry**

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2.1 Introduction of petrochemicals

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2.3 Input materials

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2.5 Consumption

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2.8 Situation in some typical countries

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PGPI World Index, 11/2016 - 11/2017

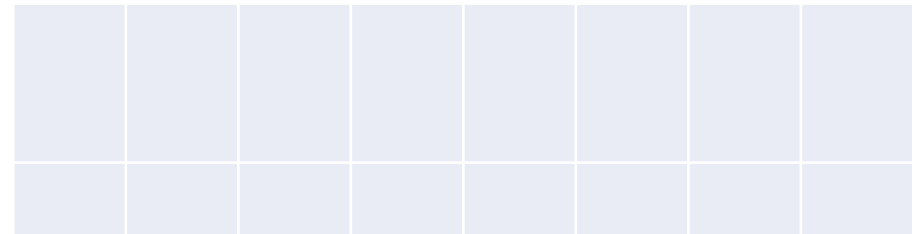
USD/ton

Nội dung được xóa nhằm mục đích demo

Sources: VIRAC, Platts

Average monthly PGPI, 7/2017 – 11/2017

Đơn vị: USD/tấn



Sources: VIRAC, Platts

Content is intentionally removed for demo purpose

Source: VIRAC, ICIS

## 2. Global petrochemical industry

### 2.7 Price movement

#### Monomer price movement, 2/2016 - 1/2017

Euro/ton

Content is intentionally removed for demo purpose

Sources: VIRAC, Plastic Europe

#### Price movement of some of the global petrochemical products, 1/2017 – 11/2017

Products	% change compared to 10/2017	% change compared to the same period in 2016	11/2017	10/2017	9/2017	8/2017	7/2017	6/2017	5/2017	3/2017	2/2017	1/2017

## 2. Global petrochemical industry

### 2.7 Price movement

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#### Global ethylene price, 11/2016 – 12/2017

USD/ton

Content is intentionally removed for demo purpose

Source: VIRAC, Platts

#### Global propylene price, 11/2016 – 11/2017

USD/ton

#### Toluene price movement, 11/2016 – 11/2017

USD/ton

**Benzene price movement, 11/2016 – 11/2017**

USD/ton

**Content is intentionally removed for demo purpose**

Source: VIRAC, Platts

**LDPE price movement, 11/2016 – 11/2017**

USD/ton

**Paraxylene price movement, 11/2016 – 11/2017**

**Butadiene price movement, 1/2011 – 1/2017**

USD/ton

**Content is intentionally removed for demo purpose**



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**Polymer price movement, 5/2015 – 9/2017**

*USD/ton*

**2. Global petrochemical industry**

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2.1 Introduction of petrochemicals

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2.8 Situation in some typical countries

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**Polymer production output of Europe, 2011 – 2017f**

*Million tons*

**Content is intentionally removed for demo purpose**

*Source: VIRAC, Europe Plastic*

**European Polymer industry is facing great difficulties in the costs of petrochemical materials and energy**

**Content is intentionally removed for demo purpose** Source: VIRAC, Europe Plastic

**Structure of polymer usage in Europe by sector, 2016**

**Structure of polymer usage in Europe by type, 2016e**

## 2. Global petrochemical industry

### 2.8 Situations in some typical regions in the world – North America

#### Polymer production in the United States, 2008 - 2016

Million pounds

#### Cost of ethylene production in the United State, 7/2015 – 1/2016

¢/lb (cent/pound)

	Ethane	Propane	N-Butane	Naphtas

Source: VIRAC, Statista

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Source: VIRAC, Oil&Gas Journal

**China**

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China

Content is intentionally removed for demo purpose

*Thousand tons*

**Production and consumption of PVC in China, 2010 – 2025f**

**Asian countries (except China) - Potential demand**

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**Production and consumption of Polyolefin of Malaysia, 2009 - 2013**

*thousand tons*

**Production and consumption of Polyolefin of Thailand, 2009 - 2013**

*thousand tons*



## 2. Global petrochemical industry

### 2.8 Situations in some typical regions in the world – *Asia*

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- **Southeast Asian countries have a great potential for development**

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- **India is the market behind China in terms of volume demand.**

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**3. Vietnam petrochemical industry**

3.1 History of Vietnam petrochemical industry

3.2 Position of Vietnam petrochemical industry

3.3 Input materials

3.4 Production

3.5 Consumption

3.6 Import- Export

3.7 Price movement

### **3. Vietnam petrochemical industry**

#### 3.1 History of Vietnam petrochemical industry

---

**In Vietnam, the petrochemical refining sector began in 1982 with simple, small-scale factories**

**Petrochemical technology and products in Vietnam in the future is also not out of the world trend.**

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**3. Vietnam petrochemical industry**

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3.1 History of Vietnam petrochemical industry

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3.2 Position of Vietnam petrochemical industry

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3.3 Input materials

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3.4 Production

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3.6 Import- Export

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3.7 Price movement

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- Facilitate the development of many other industries

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### 3. Vietnam petrochemical industry

#### 3.2 Position of Vietnam petrochemical industry

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- **Save foreign currency**
  
  
  
  
  
  
  
  
  
  
- **Increase the content of the local value of the product**

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- **Save and improve the efficiency of natural resource use**

**3. Vietnam petrochemical industry**

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3.1 History of Vietnam petrochemical industry

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3.2 Position of Vietnam petrochemical industry

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3.3 Input materials

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3.4 Production

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3.5 Consumption

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3.6 Import- Export

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3.7 Price movement

---



**Forecast of coal supply and demand, 2015 - 2030**

*Million tons*

**Content is intentionally removed for demo purpose**

*Source: VIRAC, Vinacomin*

The reserves of apatite ore are plentiful and meet the demand

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Exploration ore reserves in 2014

*thousand tons*

Forecast of ore demand for fertilizer, 2015 - 2030

*thousand tons*

### 3. Vietnam petrochemical industry

#### 3.3 Input materials

##### Crude oil

Petrochemical refining projects are underway in Vietnam

Project	Place	Investment capital (USD billion)	Capacity (Million tons/year)

Content is intentionally removed for demo purpose

##### Natural gas

Source: VIRAC

---

**Crude oil consumption of Vietnam, 2010 – 2017e**

Million tons

VND Trillion

Content is intentionally removed for demo purpose

**Natural gas consumption of Vietnam, 2010 – 2018**

Billion m<sup>3</sup>

VND Trillion

Source: VIRAC, GSO

**Natural gas use structure, 2016e**

---

**Currently, LPG production in Vietnam only meets nearly 40% of domestic demand, the rest still depends on imports.**

**Production and demand of LPG, 2009 - 2018**

*thousand tons*

**Content is intentionally removed for demo purpose**

*Source: VIRAC, PVN*

**Structure of LPG consumption, 2016**

### 3. Vietnam petrochemical industry

#### 3.3 Input materials

---

Currently, LPG production in Vietnam only meets nearly 40% of domestic demand, the rest still depends on imports.

LPG domestic supplier

Dung Quat

Dinh Co

Content is intentionally removed for demo purpose

Source: VIRAC, PVN

**3. Vietnam petrochemical industry**

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3.1 History of Vietnam petrochemical industry

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3.2 Position of Vietnam petrochemical industry

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3.7 Price movement

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### 3. Vietnam petrochemical industry

#### 3.4 Production

Petrochemical projects are expected to come into operation, 2018 - 2018

Product	Capacity (thousand tons/year)	Factory	Expected operation
Propylene			
Polypropylene			
Paraxylene			
Benzene			
Polypropylene			
Mixed xylene			
Benzene			
Toluene			

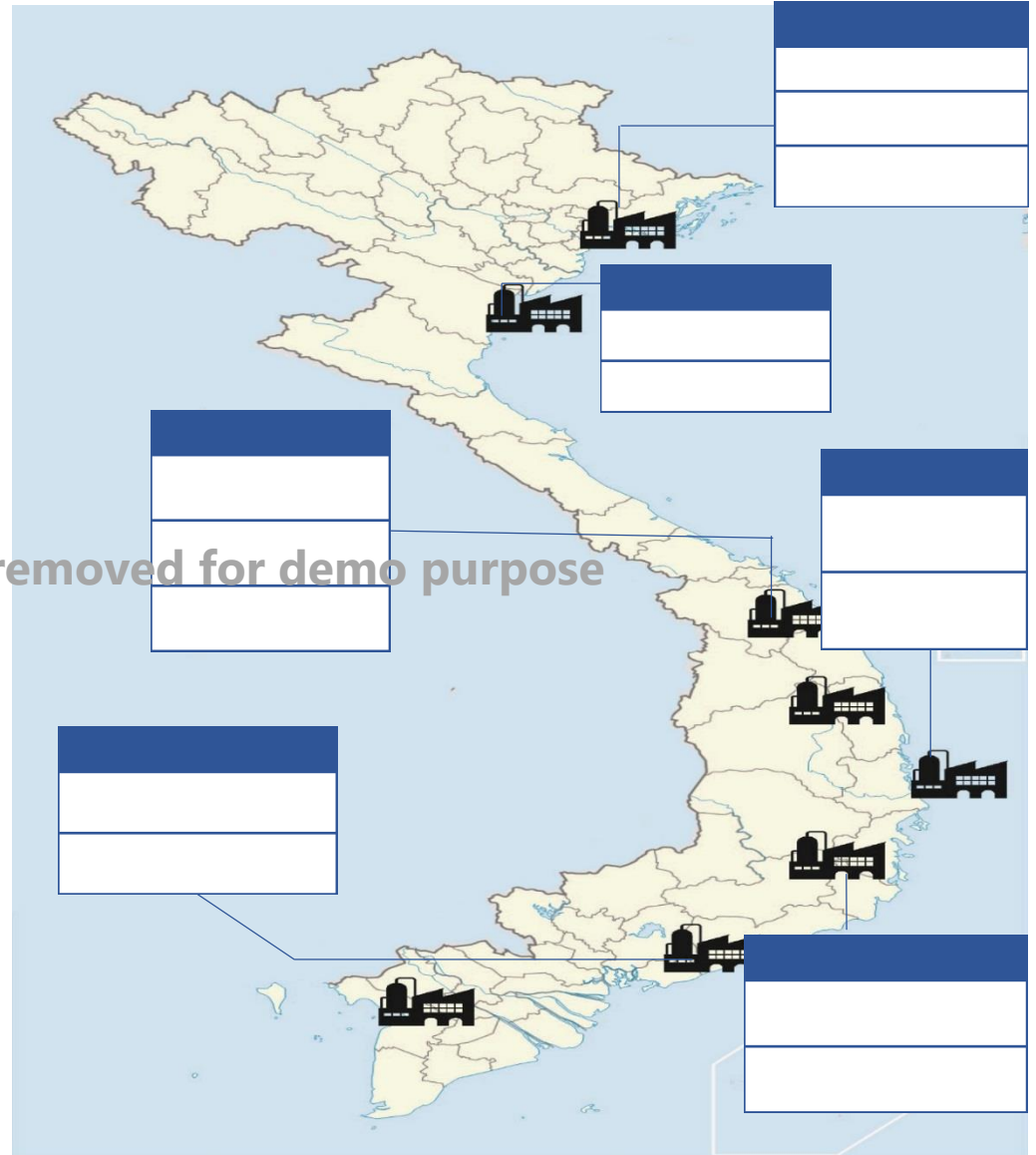
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### 3. Vietnam petrochemical industry

#### 3.4 Production

Distribution of refinery projects in Vietnam



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### 3. Vietnam petrochemical industry

#### 3.4 Production

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Despite receiving many foreign investment projects in the fields of oil petrochemical refining, up to now, only Dung Quat Oil Refinery Plant managed by Binh Son Refining and Petrochemical Company has been put into operation since 2009.

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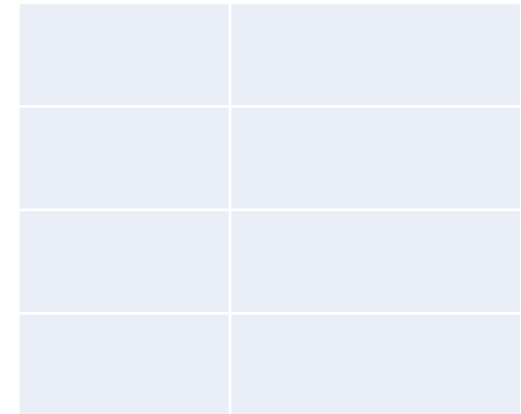
### 3. Vietnam petrochemical industry

#### 3.4 Production

##### Polymer production in Vietnam, 2010 - 2018

thousand tons

Ability to produce domestically meets the needs of some polymers



Content is intentionally removed for demo purpose

Source: VIRAC, MOIT

Source: VIRAC

Polypropylene production outputs, 2010 – 9M/2018

thousand tons

Content is intentionally removed for demo purpose

Production output of some other petrochemical products, 2012 - 2016e

Source: VIRAC, MOIT

Unit: Ton

Product	2012	2013	2014	2015	2016e

**3. Vietnam petrochemical industry**

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3.1 History of Vietnam petrochemical industry

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3.2 Position of Vietnam petrochemical industry

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3.3 Input materials

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3.4 Production

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3.5 Consumption

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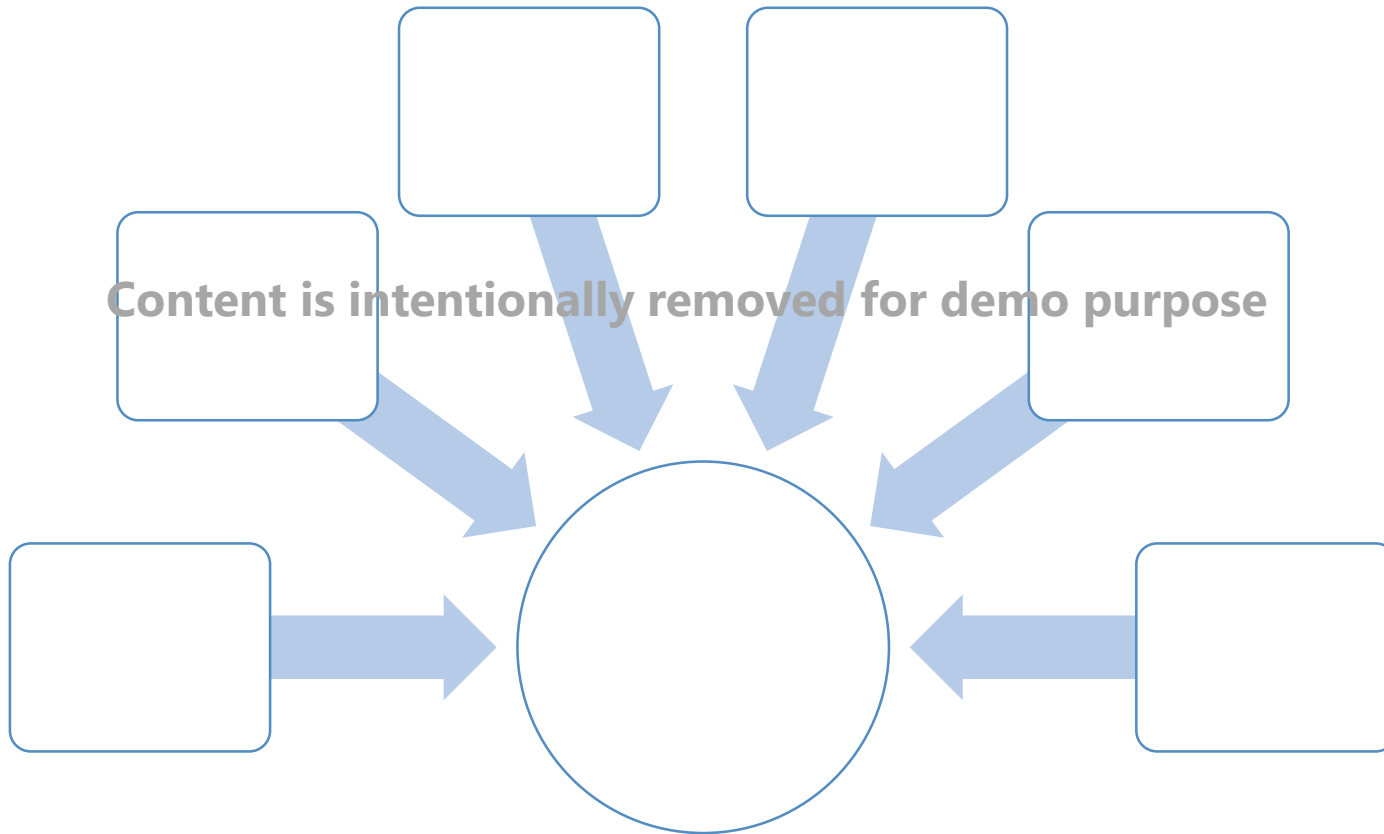
3.6 Import- Export

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3.7 Price movement

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Petrochemical products are divided into two main categories.



3. Vietnam petrochemical industry

3.5 Consumption

Final product group	Input materials	Main product	Customer
<b>Content is intentionally removed for demo purpose</b>			

Revenue structure of petrochemical consumer groups,  
2016

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Source: VIRAC, GSO

Polypropylene demand, 2010 – 9M/2018

*thousand tons*



**Polymer consumption in Vietnam, 2010 – 2017e**

*thousand tons*

**Structure of polymer consumption by application, Q1/2017e**

**Content is intentionally removed for demo purpose**

*Source: VIRAC, GSO*

*Source: VIRAC, GSO*

### 3. Vietnam petrochemical industry

#### 3.5 Consumption

Consumption of other petrochemical products, 2012 - 2016e

Year	Toluene		Styrene		Polyethylene (PE)		Polyvinyl clorua (PVC)	
	Output (tons)	Value (VND million)	Output (tons)	Value (VND million)	Output (tons)	Value (VND million)	Output (tons)	Value (VND million)
2012								
2013								
2014								
2015	Content is intentionally removed for demo purpose							
2016e								

Source: VIRAC, GSO

Application of some petrochemical products

Product	Application
<b>Content is intentionally removed for demo purpose</b>	

**3. Vietnam petrochemical industry**

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3.1 History of Vietnam petrochemical industry

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3.2 Position of Vietnam petrochemical industry

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### 3. Vietnam petrochemical industry

#### 3.6 Import & Export– Export

##### Polymer export value, 2012 – 2017e

Million USD

##### Export structure of polymer by value, 2018

Sources: VIRAC, GDVC  
**Content is intentionally removed for demo purpose**

According to preliminary statistics, in December 2018, exports of polymers in Vietnam reached the highest turnover since early 2018,

Sources: VIRAC, GDVC

Export structure of polymer by weight, 2018

Export structure of polymer by type, 2018

Export structure of PE by type, 6M/2017e

Sources: VIRAC, GDVC

**Content is intentionally removed for demo purpose**

Export value of PP and PE, 2012 – 2018

Sources: VIRAC, GDVC

Proportion of top 10 exporting enterprises of plastic materials 9M / 2018

Million USD

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**Structure of PE export market, 6M/2017e**

**Structure of PP export market, 6M/2017e**

Content is intentionally removed for demo purpose

*Source: VIRAC, GDVC*

**Top exporting enterprises of PE, 6M/2017e**

*Source: VIRAC, GDVC*

**Top exporting enterprises of PP, 6M/2017e**

*Source: VIRAC, GDVC*

*Source: VIRAC, GDVC*

### 3. Vietnam petrochemical industry

#### 3.6 Import & Export– Import

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##### Import of some monomers, 2012 – 6M/2017e

*USD thousand*

##### Polymer import, 2012 - 2017e

*thousand tons*

*USD million*

Content is intentionally removed for demo purpose

*Source: VIRAC, GDVC*

*Source: VIRAC, GDVC*



**Import of some aromatic compounds, 2013 – 6M/2017e**

*USD thousand*

**Content is intentionally removed for demo purpose**

*Source: VIRAC, GDVC*

### 3. Vietnam petrochemical industry

#### 3.6 Import & Export– Import

Import of some polymers, 2012 – 2017e

Type of polymer	2012		2013		2014		2015		2016		2017e	
	Quantity (tons)	Value (USD thousand)	Quantity (tons)	Value (USD thousand)	Quantity (tons)	Value (USD thousand)	Quantity (tons)	Value (USD thousand)	Quantity (tons)	Value (USD thousand)	Quantity (tons)	Value (USD thousand)
PE												
PP												
PVC												
PET												
EVA												
PS												

Content is intentionally removed for demo purpose

Source: VIRAC, GDVC

Proportion of top importing enterprises of plastic raw materials, 9M/2018

Import structure of polymer by type, 2018

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Sources: VIRAC, GDVC

Sources: VIRAC, GDVC

- PE and PP continue to be the most imported types in 2018.

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PE import market, 6M/2017e

Import structure of PE by type, 6M/2017e

Source: VIRAC, GDVC

Source: VIRAC, GDVC

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PP import market, 6M/2017e

**Growth in beverage and food packaging, 2013 - 2020f**

**Content is intentionally removed for demo purpose**

*Source: VIRAC, EuroMonitor*

**Top of PE importing enterprises, 6M/2017e**

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**Top of PP importing enterprises, 6M/2017e**

*Source: VIRAC, GDVC*

*Source: VIRAC, GDVC*

**3. Vietnam petrochemical industry**

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3.1 History of Vietnam petrochemical industry

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3.2 Position of Vietnam petrochemical industry

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3.3 Input materials

---

3.4 Production

---

3.5 Consumption

---

3.6 Import- Export

---

3.7 Price movement

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**Polymer domestic price movement, 7/2016 – 6/2017**

USD/ton

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Source: VIRAC, ChemOrbis Price Wizard



**4. Risk analysis**

4.1 Industry risk

4.2 SWOT analysis

## 4. Risk analysis

### 4.1 Industry risk

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#### Risk of policy and law

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#### Risk of exchange rate and interest rate

## 4. Risk analysis

### 4.1 Industry risk

---

**Risk of environmental pollution**

**Risk of input material price**

**Risk of economic integration** Content is intentionally removed for demo purpose

**Economical risk**

## 4. Risk analysis

### 4.1 Industry risk

---

#### Risk of competition

#### Risk of product supply and demand

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**4. Risk analysis**

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4.1 Industry risk

---

4.2 SWOT analysis

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**5. Industry planning**

5.1 Oil & gas industry planning

5.2 Petrochemical industry planning

5.3 Chemical industry planning

## 5. Industry planning

### 5.1 Oil & gas industry planning

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in terms of sector development, including the development of petrochemicals to develop oil consumption market.

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**5. Industry planning**

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5.1 Oil & gas industry planning

---

5.2 Petrochemical industry planning

---

5.3 Chemical industry planning

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## 5. Industry planning

### 5.1 Petrochemical industry planning

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According to Decision No. 1621 / QD-TTg of the Prime Minister promulgated on September 18, 2013 approving the development plan of chemical industry of Vietnam to 2020, by 2030,

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5. Industry planning

5.1 Petrochemical industry planning

**Oil refinery projects, 2011 - 2020**

No	Project	Place	Investment information		
			Capacity (1.000 ton/year)	Investment capital (USD million)	Time of investment
Content is intentionally removed for demo purpose					

**5. Industry planning**

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5.1 Oil & gas industry planning

---

5.2 Petrochemical industry planning

---

5.3 Chemical industry planning

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## 5. Industry planning

### 5.3 Chemical industry planning

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**According to Decision No. 1621 / QĐ-TTg of the Prime Minister promulgated on September 18, 2013 approving the development plan of chemical industry of Vietnam to 2020, by 2030.**

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**Content is intentionally removed for demo purpose**

**Content is intentionally removed for demo purpose**

## 5. Industry planning

### 5.3 Chemical industry planning

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Ministry of Industry and Trade promulgated Decision No. 8989 / QD-BCT dated 25/08/2015 approving the project of restructuring Vietnam's chemical industry,

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## 5. Industry planning

### 5.3 Chemical industry planning

No	Project	Place	Investment information		
			Capacity ('000)	Investment capital (USD million)	Time of investment (ton/year)
<b>Fertilizer group production projects</b>					
1					
2					
3					
<b>Projects producing group of plant protection chemicals</b>					
1					
2					
3					
4					
<b>Petrochemical group production projects</b>					
1					
2					
3					
4					
5					
6					
7					
<b>Factory of cleaning products production group</b>					
1					
2					
<b>Paint and ink group production projects</b>					
1					

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**6. Outlooks and forecasts**

6.1 Outlooks

6.2 Forecasts

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- **Petrochemical products are useful materials but also dangerous and toxic chemicals for humans and ecosystems.**

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**Over the next 20 to 30 years, the world's petrochemical refining industry will develop with particular trends.**

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Forecasts for GDP growth and some industries, 2014 - 2018f

%

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Source: VIRAC, World Bank GSO

## 6. Outlooks and forecasts

### 6.1 Outlooks – Vietnam petrochemical industry

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Forecast of demand for tires in Vietnam, 2013 – 2018f

Unit: million tire

	2013	2014	2015	2016e	2017f	2018f	CAGR
Heavy truck tires							
Radial							
Bias							
Growth rate of Radial tires							
Declining rate of Bias tires							

**6. Outlooks and forecasts**

---

6.1 Outlooks

---

6.2 Forecasts

---

**Growth of global PP and PE consumption demand, 2014 - 2019**

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## 6. Outlooks and forecasts

### 6.2 Forecasts – *Global chemical industry*

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- **Petrochemical projects beginning in the period 2015-2017 in the United States, China, Russia and the Middle East will significantly increase the capacity of polymer production.**

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Capacity to produce some basic chemicals (Ethylene, Propylene, Methanol, Benzene, Paraxylene, Chlorine)

Region	2015	2025f	Change
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Source: VIRAC, IHS

Some petrochemical refining projects are being implemented in Vietnam, 2010 - 2020

Project	Phase	Investment (CapEx)	Capacity of petrochemical refining (Million tons/year)

Source: VIRAC tổng hợp

**Forecast of production capacity of PP and PVC, 2016 – 2021f**

*thousand tons/year*

**Content is intentionally removed for demo purpose**

*Source: VIRAC*

**7. Enterprises analysis**

7.1 Enterprises introduction

7.2 Financial analysis

## 7. Enterprises analysis

### 7.1 Enterprises introduction

#### Top of large company in Vietnam petrochemical industry

No	Company	Main product	Capacity (ton/year)	Net revenue in 2016 (VND billion)	Total asset in 2016 (VND billion)
1					
2					
3					
4					
5					

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Source: VIRAC, VPAS

**Binh Son Refining and Petrochemical Company Limited**



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Content is intentionally removed for demo purpose



TPC VINA Plastics and Chemicals Company Limited



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# AGC

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**7. Enterprises analysis**

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7.1 Enterprises introduction

---

7.2 Financial analysis

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**Net revenue, 2015 - 2016**

*VND billion*

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*Source: VIRAC*

**Gross profit, 2015 - 2016**

*VND billion*

**Gross profit margin, 2015 - 2016**

*Source: VIRAC*

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**Solvency, 2015 - 2016**

**Content is intentionally removed for demo purpose**

*Source: VIRAC*

**Ability to repay, 2016**

*Time*

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*Source: VIRAC*

**Total asset turnover, 2015 - 2016**

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**Fixed asset turnover, 2015 - 2016**

Source: VIRAC



VND billion

**Costs of sales, 2015 - 2016**

Nội dung được xóa nhằm mục đích demo

VND billion

**Enterprise cost management, 2015 - 2016**

Source: VIRAC

Profitability ratio, 2015 - 2016

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Source: VIRAC

**Appendix of financial statements**

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**BALANCE SHEET**

Unit: VND	2015	2016
<b>A. CURRENT ASSETS</b>		
I. Cash and cash equivalents		
II. Short-term investments		
III. Short-term receivables		
1. Inventories		
2. Other current assets		
<b>B. NON – CURRENT ASSETS</b>		
I. Fixed assets		
II. Long-term investment		
<b>TOTAL ASSETS</b>		
<b>A. LIABILITIES</b>		
I. Current liabilities		
II. Non – current liabilities		
<b>B. OWNER’S EQUITY</b>		
I. Owner’s equity		
II. Share premium		
III. Undistributed earnings		
<b>TOTAL LIABILITIES AND OWNER’S EQUITY</b>		

**INCOME STATEMENT**

Unit: VND	2015	2016
Net revenue		
Costs of goods sold		
Gross profit		
Financial income		
Financial expenses		
Selling expenses		
General and administrative expenses		
Net profit from operating activities		
Accounting profit before tax		
Net profit after corporate income tax		
Profit after tax for shareholders of the parent company		
Basic earnings per share (VND)		

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**CASH FLOWS STATEMENT**

Unit: VND	2015	2016
I. Cash flows from operating activities		
<b>Net cash flows from operating activities</b>		
II. Cash flows from investing activities		
<b>Net cash flows from investing activities</b>		
III. Cash flows from financing activities		
<b>Net cash flows from financing activities</b>		
Net cash flows in the period		
Cash and cash equivalents at beginning of the year		
Cash and cash equivalents at the end of the year		

## BALANCE SHEET

Unit: VND

	2015	2016
<b>A. CURRENT ASSETS</b>		
I. Cash and cash equivalents		
II. Short-term investments		
III. Short-term receivables		
1. Inventories		
2. Other current assets		
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I. Fixed assets		
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<b>TOTAL ASSETS</b>		
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II. Non – current liabilities		
<b>B. OWNER'S EQUITY</b>		
I. Owner's equity		
II. Share premium		
III. Undistributed earnings		
<b>TOTAL LIABILITIES AND OWNER'S EQUITY</b>		

## A. CURRENT ASSETS

I. Cash and cash equivalents

II. Short-term investments

III. Short-term receivables

1. Inventories

2. Other current assets

## B. NON – CURRENT ASSETS

I. Fixed assets

II. Long-term investment

## TOTAL ASSETS

## A. LIABILITIES

I. Current liabilities

II. Non – current liabilities

## B. OWNER'S EQUITY

I. Owner's equity

II. Share premium

III. Undistributed earnings

## TOTAL LIABILITIES AND OWNER'S EQUITY

## INCOME STATEMENT

Unit: VND

	2015	2016
Net revenue		
Costs of goods sold		
Gross profit		
Financial income		
Financial expenses		
Selling expenses		
General and administrative expenses		
Net profit from operating activities		
Accounting profit before tax		
Net profit after corporate income tax		
Profit after tax for shareholders of the parent company		
Basic earnings per share (VND)		

Net revenue

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Gross profit

Financial income

Financial expenses

Selling expenses

General and administrative expenses

Net profit from operating activities

Accounting profit before tax

Net profit after corporate income tax

Profit after tax for shareholders of the parent company

Basic earnings per share (VND)

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## CASH FLOWS STATEMENT

Unit: VND

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Cash and cash equivalents at beginning of the year		
Cash and cash equivalents at the end of the year		

I. Cash flows from operating activities

**Net cash flows from operating activities**

II. Cash flows from investing activities

**Net cash flows from investing activities**

III. Cash flows from financing activities

**Net cash flows from financing activities**

Net cash flows in the period

Cash and cash equivalents at beginning of the year

Cash and cash equivalents at the end of the year

**BALANCE SHEET**

Unit: VND 2015                      2016

**A. CURRENT ASSETS**

I. Cash and cash equivalents

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III. Short-term receivables

1. Inventories

2. Other current assets

**B. NON – CURRENT ASSETS**

I. Fixed assets

II. Long-term investment

**TOTAL ASSETS**

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Unit: VND 2015                      2016

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Cash and cash equivalents at the end of the year

**BALANCE SHEET**

Unit: VND 2015 2016

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2. Other current assets

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II. Long-term investment

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**CASH FLOWS STATEMENT**

Unit: VND 2015 2016

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**Net cash flows from financing activities**

Net cash flows in the period

Cash and cash equivalents at beginning of the year

Cash and cash equivalents at the end of the year

**Vietnam Polystyrene Limited Company**

**BALANCE SHEET**

Unit: VND 2015                      2016

**A. CURRENT ASSETS**

I. Cash and cash equivalents

II. Short-term investments

III. Short-term receivables

1. Inventories

2. Other current assets

**B. NON – CURRENT ASSETS**

I. Fixed assets

II. Long-term investment

**TOTAL ASSETS**

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**CASH FLOWS STATEMENT**

Unit: VND 2015                      2016

I. Cash flows from operating activities

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III. Cash flows from financing activities

**Net cash flows from financing activities**

Net cash flows in the period

Cash and cash equivalents at beginning of the year

Cash and cash equivalents at the end of the year



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Thank you !