

VIETNAM PETROCHEMICAL INDUSTRY REPORT Q2/2018



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Table of abbreviation

CIS Commonwealth of Independent States

EU European Union

FDI Foreign Direct Investment

GSO General Statistics Office

GDVC General Department of Vietnam Customs

IEA International Energy Agency

LNG Liquefied natural gas

LPG Liquefied petroleum gas

MOIT Ministry of Industry and Trade

NAFTA North American Free Trade Agreement

OPEC Organization of the Petroleum Exporting Countries

PVN Petro Vietnam

Vinachem Vietnam Chemical Group

Vinacomin Vietnam Coal and Mineral Industries Group

VIRAC Vietnam Industry Research and Consultant JSC

VPAS Vietnam Plastics Association

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 2017, 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 2017 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. Business Environment

1.1 Macroeconomic Situation

Gross domestic product in 2017 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 - 2017

VND Trillion

Source: VIRAC, GSO

VND/USD exchange rates, 2015 – 2017

In 2017, 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

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 – 2017

USD/million BTU

1. Business environment

1.1 Macroeconomic situation

1.2 Legal Framework

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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

- **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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2. Global petrochemical industry

2.1 Introduction of petrochemicals

2.2 Production

2.3 Consumption

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2. Global petrochemical industry

2.1 Introduction of petrochemicals

2.2 Production

2.3 Consumption

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Million tons

World production of petrochemicals, 2012 - 2022e

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

Million tons

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Global ethylene production capacity, 2010 - 2016

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Source: VIRAC, ICIS

Global ethylene production capacity by region, 2016e

Source: VIRAC

2. Global petrochemical industry

2.2 Production– 2.2.1 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 production by region, 2016

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

Million tons

Source: VIRAC, ICIS

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Butadiene production structure by country, 2015

Source: VIRAC, ICIS

2. Global petrochemical industry

2.2 Production– 2.2.1 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

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Source: VIRAC, ICIS

Global polymer production, 2009 – 2016e

Million tons

Structure of polymer production by country 2016

Source: VIRAC, Europe Plastic
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Source: VIRAC, Europe Plastic

2. Global petrochemical industry

2.2 Production– 2.2.2 Secondary product

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

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2. Global petrochemical industry

2.1 Introduction of petrochemicals

2.2 Production

2.3 Consumption

2. Global petrochemical industry

2.3 Consumption– 2.3.1 Primary product

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

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

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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, 2017

Structure of global consumption of SBR by region, 2016

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Sources: VIRAC, American Chemical Society

Sources: VIRAC, IHS

Content is intentionally removed for demo purpose

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

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Source: VIRAC, ICIS

Demand of Polymer consumption by region 2016

Source: VIRAC, ICIS

2. Global petrochemical industry

2.3 Consumption– 2.3.2 Secondary product

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

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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

3. Vietnam petrochemical industry

3.1 History of Vietnam petrochemical industry

3.2 Position of Vietnam petrochemical industry

3.3 Production

3.4 Consumption

3.5 Import- Export

3.6 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

3.1 History of Vietnam petrochemical industry

3.2 Position of Vietnam petrochemical industry

3.3 Production

3.4 Consumption

3.5 Import- Export

3.6 Price movement

- **Facilitate the development of many other industries**

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3. Vietnam petrochemical industry

3.2 Position of Vietnam petrochemical industry

- **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

3.1 History of Vietnam petrochemical industry

3.2 Position of Vietnam petrochemical industry

3.3 Production

3.4 Consumption

3.5 Import- Export

3.6 Price movement

3. Vietnam petrochemical industry

3.3 Production

Petrochemical projects are expected to come into operation, 2017 - 2018

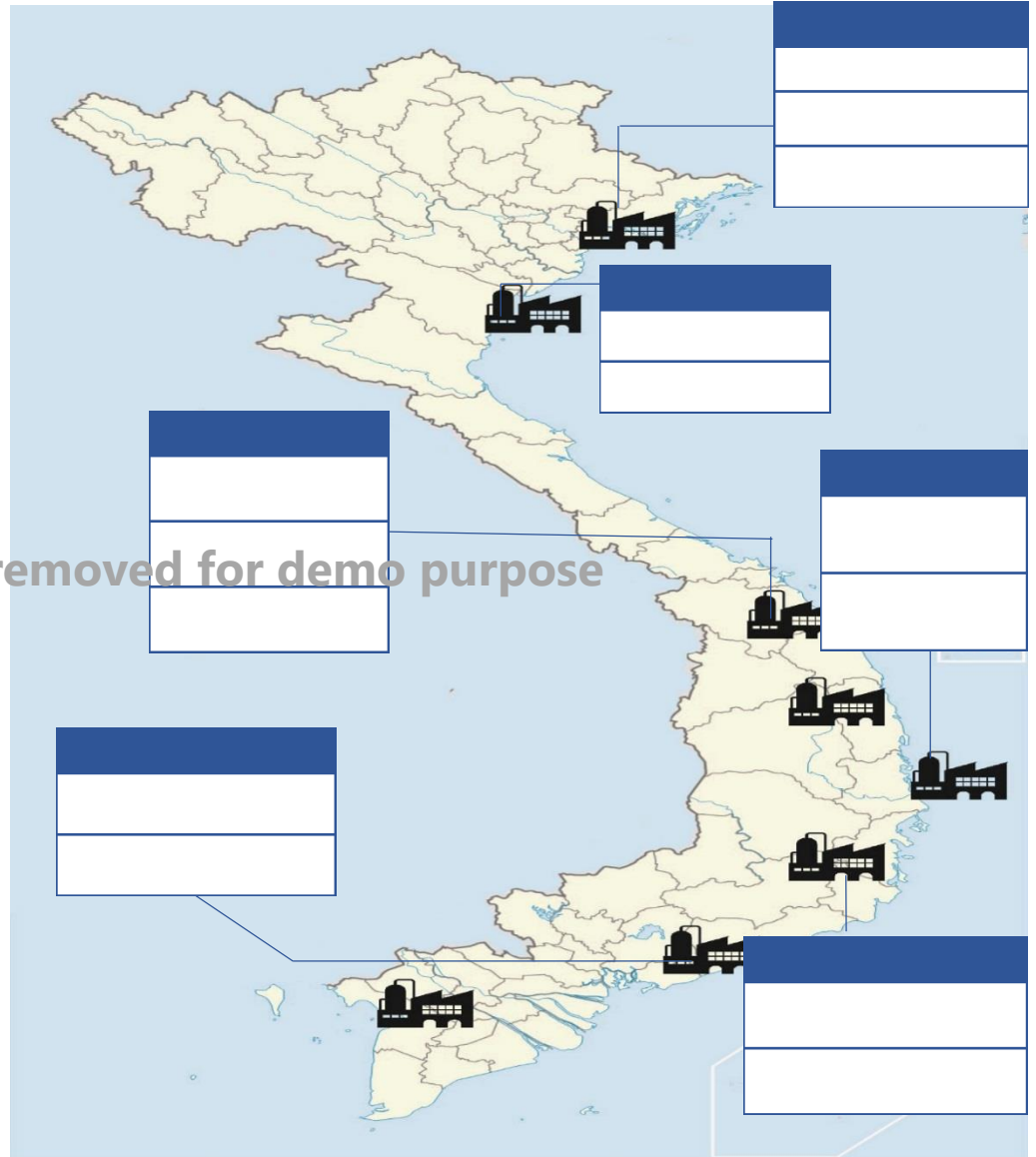
Product	Capacity (thousand tons/year)	Factory	Expected operation
Propylene			
Polypropylene			
Paraxylene			
Benzene			
Polypropylene			
Mixed xylene			
Benzene			
Toluene			

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3. Vietnam petrochemical industry

3.3 Production

Distribution of refinery projects in Vietnam



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3. Vietnam petrochemical industry

3.3 Production

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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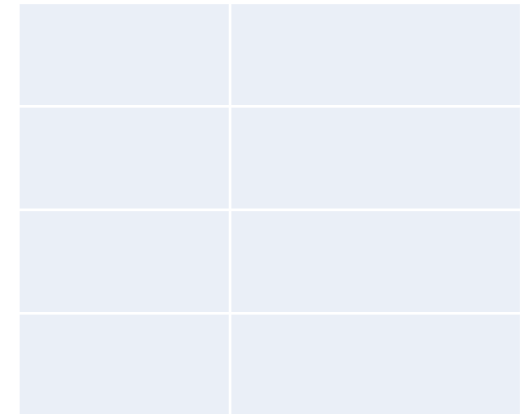
3. Vietnam petrochemical industry

3.3 Production

Polymer production in Vietnam, 2010 - 2017

thousand tons

Ability to produce domestically meets the needs of some polymers



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Source: VIRAC, MOIT

Source: VIRAC

Polypropylene production outputs, 2010 – 9M/2017

thousand tons

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

Source: VIRAC, MOIT

Unit: Ton

Product	2012	2013	2014	2015	2016e

3. Vietnam petrochemical industry

3.1 History of Vietnam petrochemical industry

3.2 Position of Vietnam petrochemical industry

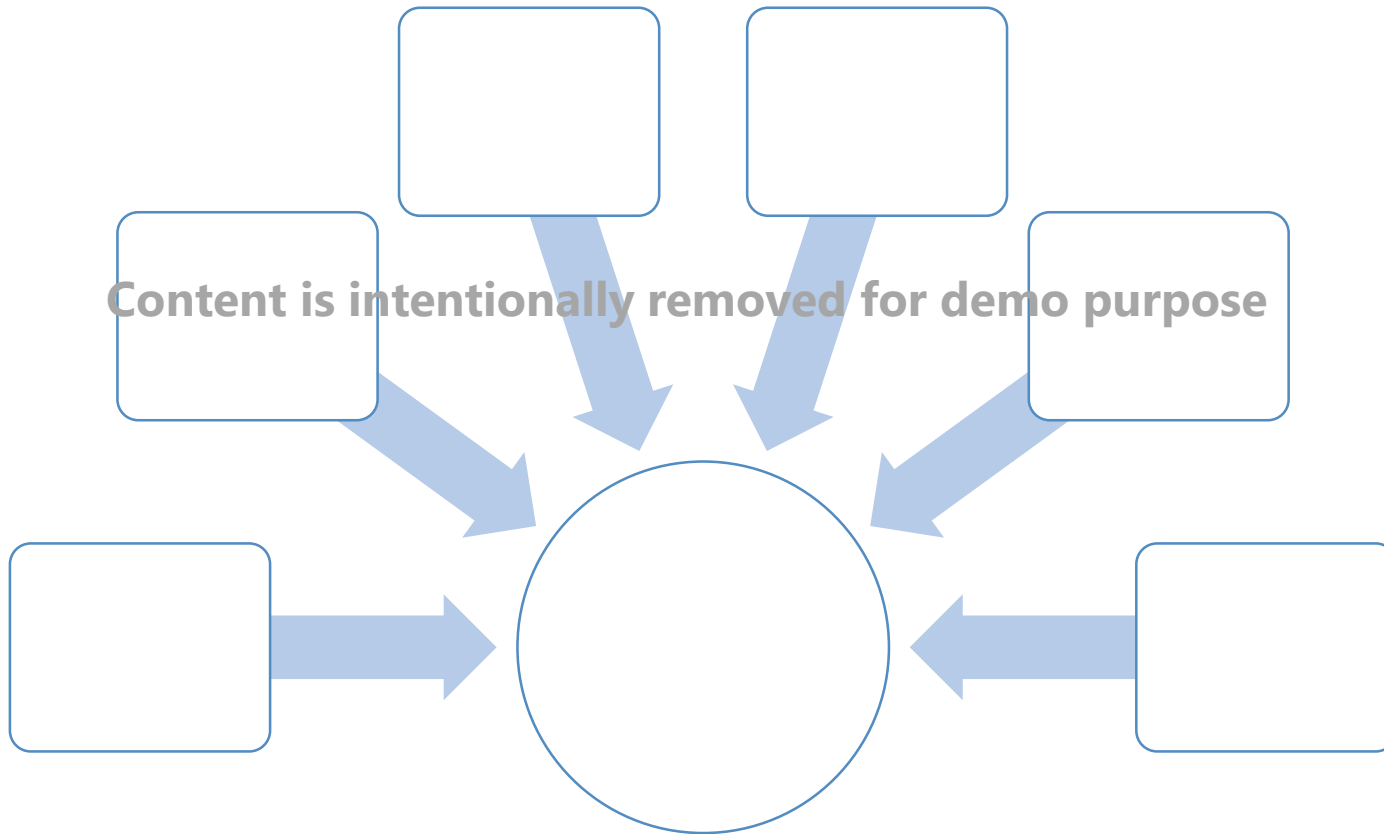
3.3 Production

3.4 Consumption

3.5 Import- Export

3.6 Price movement

Petrochemical products are divided into two main categories.



3. Vietnam petrochemical industry

3.4 Consumption

Final product group	Input materials	Main product	Customer
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Revenue structure of petrochemical consumer groups,
2016

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Source: VIRAC, GSO

Polypropylene demand, 2010 – 9M/2017

thousand tons

Polymer consumption in Vietnam, 2010 – 2017e

thousand tons

Structure of polymer consumption by application, Q1/2017e

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Source: VIRAC, GSO

Source: VIRAC, GSO

3. Vietnam petrochemical industry

3.4 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
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3. Vietnam petrochemical industry

3.1 History of Vietnam petrochemical industry

3.2 Position of Vietnam petrochemical industry

3.3 Production

3.4 Consumption

3.5 Import- Export

3.6 Price movement

3. Vietnam petrochemical industry

3.5 Import & Export– Export

Polymer export value, 2012 – 2017e

Million USD

Export structure of polymer by value, 2017

Sources: VIRAC, GDVC
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According to preliminary statistics, in December 2017, exports of polymers in Vietnam reached the highest turnover since early 2017,

Sources: VIRAC, GDVC

Export structure of polymer by weight, 2017

Export structure of polymer by type, 2017

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

Sources: VIRAC, GDVC

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Export value of PP and PE, 2012 – 2017

Sources: VIRAC, GDVC

Proportion of top 10 exporting enterprises of plastic materials 9M / 2017

Million USD

Structure of PE export market, 6M/2017e

Structure of PP export market, 6M/2017e

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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

3.5 Import & Export– Import

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

3.5 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/2017

Import structure of polymer by type, 2017

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Sources: VIRAC, GDVC

Sources: VIRAC, GDVC

- PE and PP continue to be the most imported types in 2017.

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

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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

3.1 History of Vietnam petrochemical industry

3.2 Position of Vietnam petrochemical industry

3.3 Production

3.4 Consumption

3.5 Import- Export

3.6 Price movement

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

USD/ton

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Source: VIRAC, ChemOrbis Price Wizard

4. SWOT analysis

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5. Industry planning

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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6. Outlooks

- **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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6. Outlooks

6.1 Outlooks – Vietnam petrochemical industry

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

%

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Source: VIRAC, World Bank GSO

6. Outlooks

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							

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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TPC VINA Plastics and Chemicals Company Limited



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AGC

Content is intentionally removed for demo purpose



7. Enterprises analysis

7.1 Enterprises introduction

7.2 Financial analysis

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

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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

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Thank you !