



# The Introduction of

# LPG Market in Taiwan

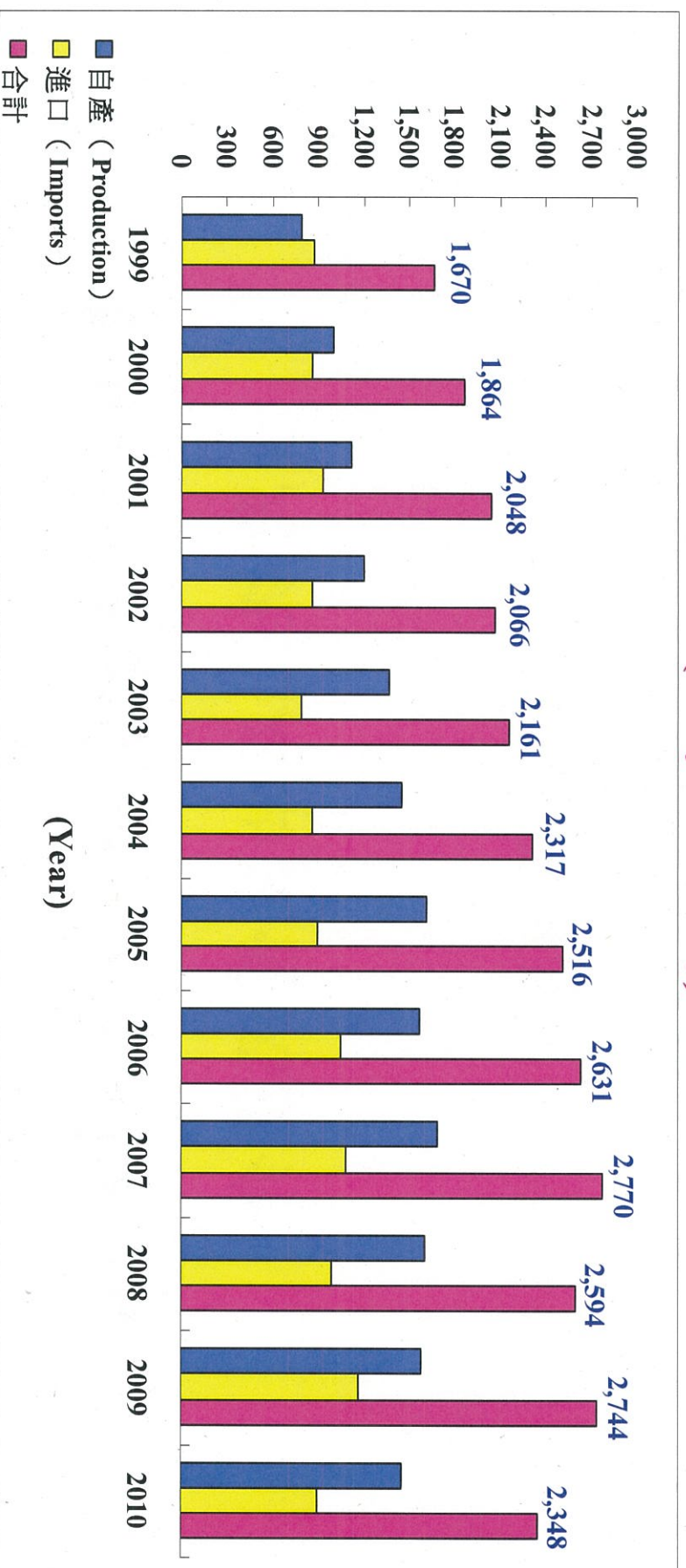
## 台灣液化石油氣情況簡介

2011年10月

# The Supply of LPG in Taiwan

(台灣LPG供應)

(Unit : ,000's tons/Year)



※Taiwan LPG Supply is from refinery and imported. The household gas is mostly supplied by refinery LPG, and the industrial gas and autogas are supplied by imported LPG.

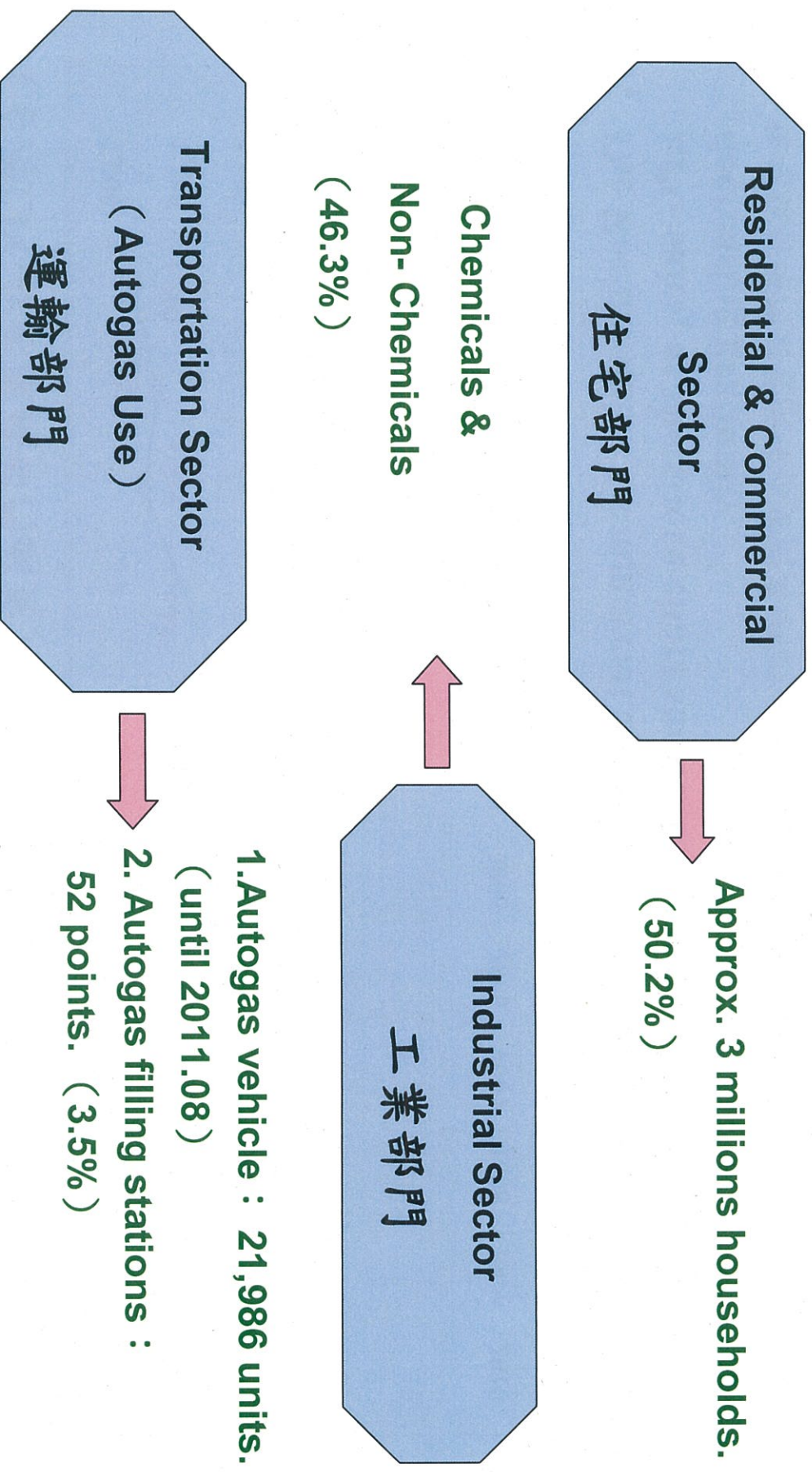
台灣LPG供應有自產氣與進口氣；家用氣主要以自產氣供應，而工業氣與車用氣則以進口氣供應。

Data sources : Bureau of Energy, Moea (經濟部能源局)

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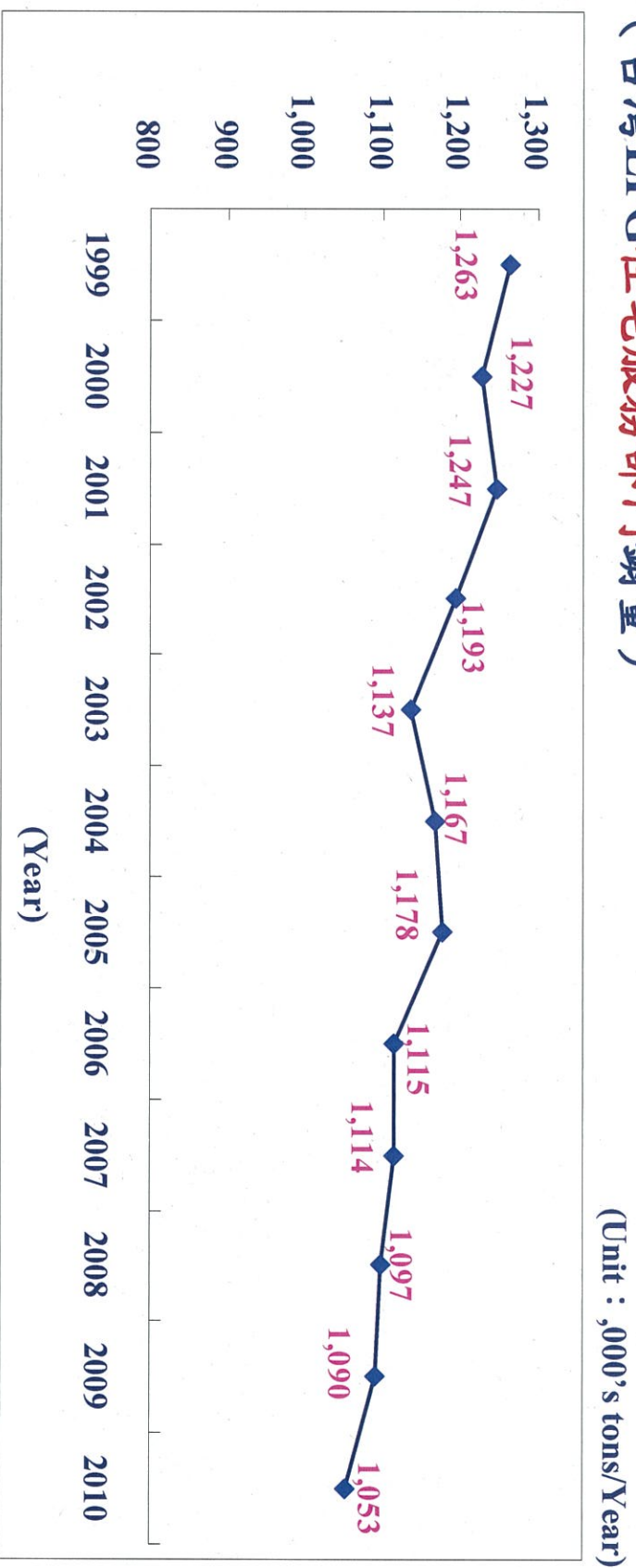
# LPG Domestic Consumption in Taiwan

## 台灣LPG之國內銷售（使用）





## ※ LPG sales in the Residential & Commercial Sector in Taiwan (台灣LPG住宅服務部門銷量)



1. The Residential & Commercial Sector accounts for 50.2% of total LPG sales; as the above chart shows, the sales of this part is decreasing gradually.

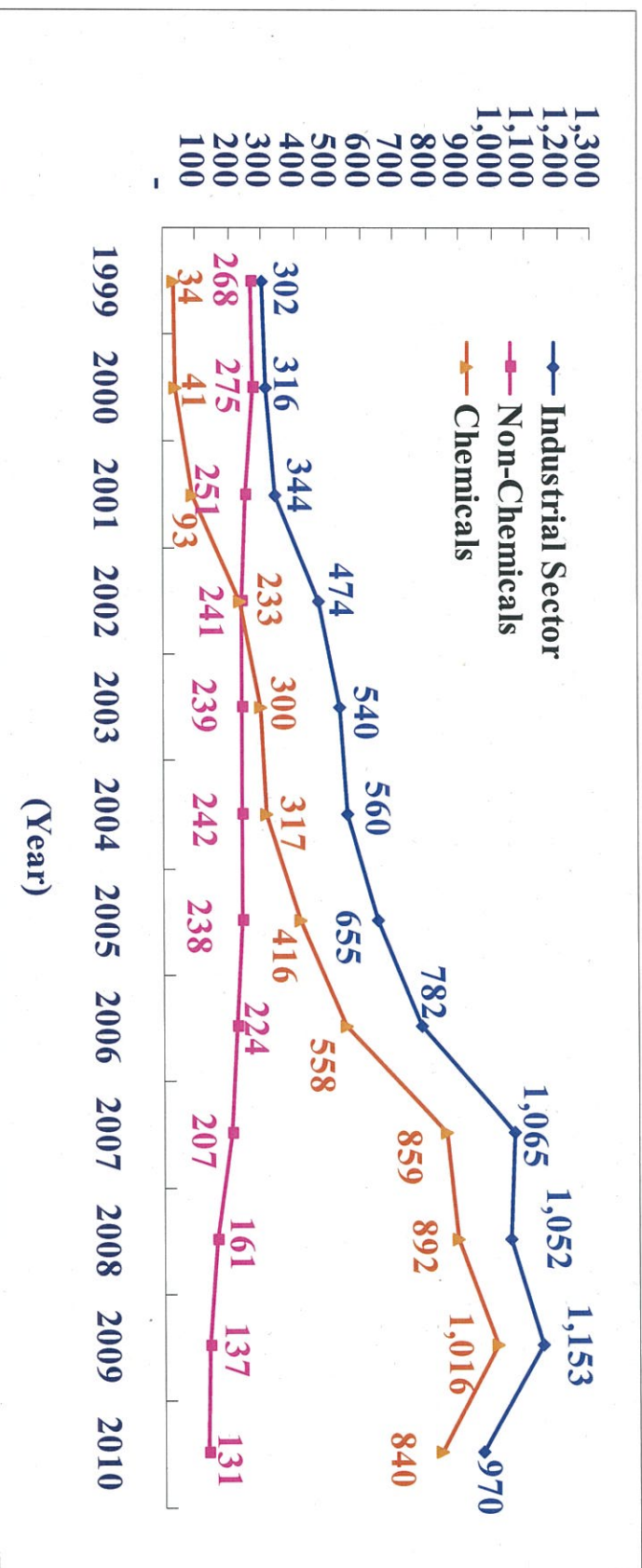
住宅服務部門銷量所佔比重約為50.2%；由上圖顯示，銷量為逐年遞減。

2. The reasons of decrease are the competition of the other resources and the impact of climate warming.

銷量遞減主要應與改用其他替代能源（如：LNG、太陽能、電力等）、氣候暖化等因素有關。

## ※ LPG sales in the Industrial Sector in Taiwan (台灣LPG工業部門銷量/使用量)

(Unit : ,000's tons/Year)



1. The industrial sector accounts for 46.3%. Chemicals is about 40.1%; non-chemicals is about 6.2%.

工業部門銷量/使用量所佔比重約為46.3%；而46.3%中化工業約占40.1%，非化工業約占6.2%。

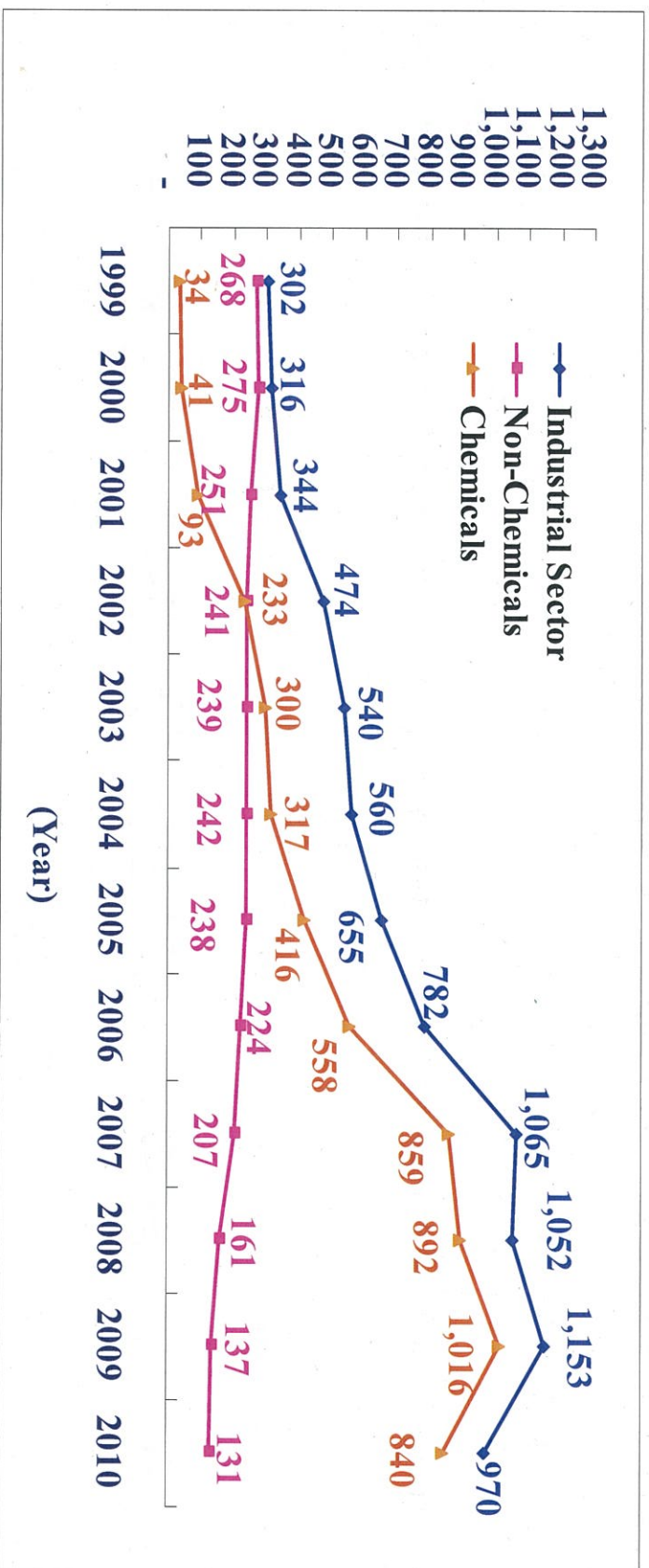
2. The LPG use of Chemicals mostly is consumed by refineries; the consumption is increasing. Non-chemicals sales is sold to conventional industrial customers, and the sales volume is decreasing.

Data sources : Bureau of Energy ,Moea (經濟部能源局)



## ※ LPG sales in the Industrial Sector in Taiwan (台灣LPG工業部門銷量/使用量)

(Unit : ,000's tons/Year)



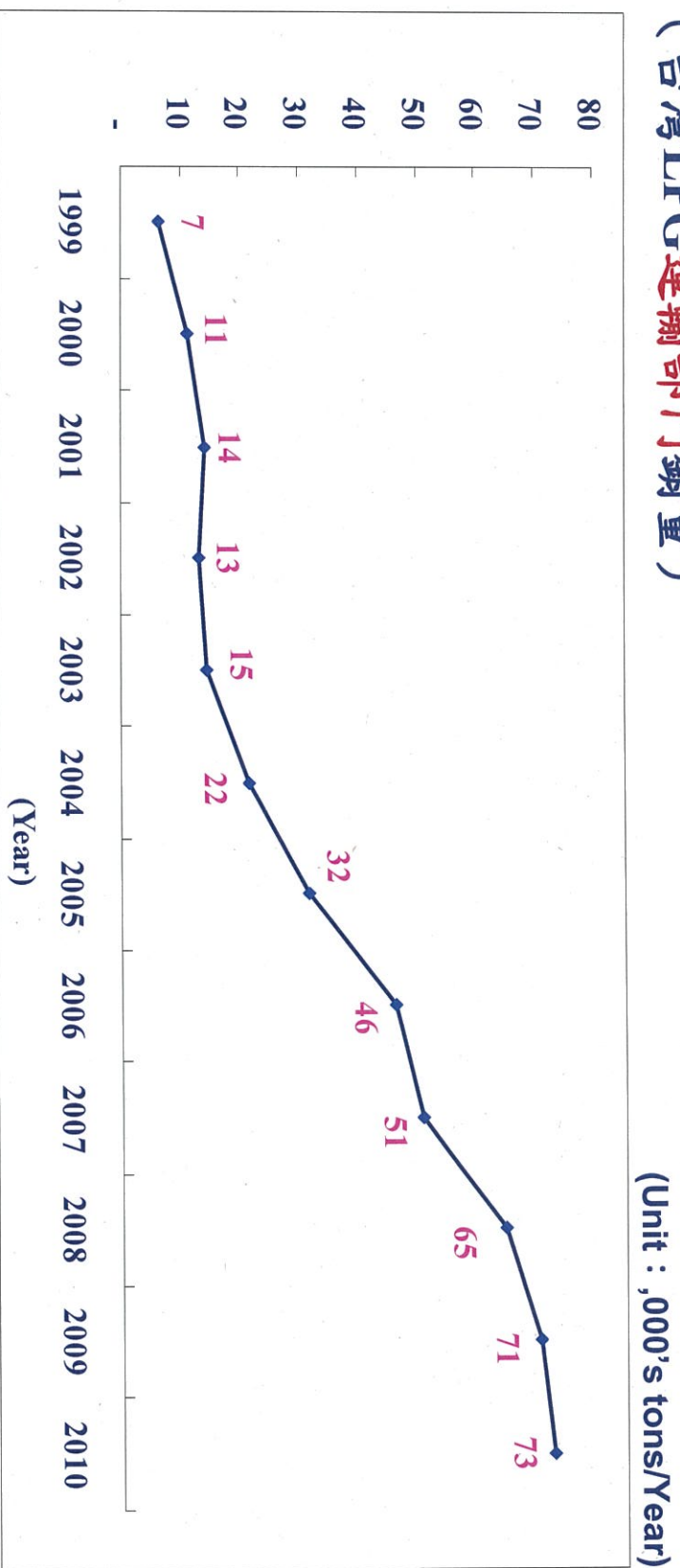
化工業之使用量多為工廠自用，呈遞增趨勢；非化工業為銷售予一般工業客戶，銷量呈遞減趨勢。

3. The reasons of the decreasing of Non-chemicals are the LNG competition, conventional industrial relocation from Taiwan, and the slow recovery of economic. 一般工業客戶銷量遞減主要影響因素如：工廠改用LNG、傳統產業外移或景氣恢復緩慢等。

Data sources : Bureau of Energy, Moea (經濟部能源局)

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## ※ LPG sales in the Transportation Sector in Taiwan (台灣LPG運輸部門銷量)



1. The autogas sales volume accounts for 3.5%; as the above chart, the sales volume is increasing year by year.

車用氣銷量所佔比重約為3.5%；由上圖顯示，銷量為逐年增加。

2. Recently due to the slower growth of LPG engine cars and autogas station, the autogas sales expansion volume is also slack.

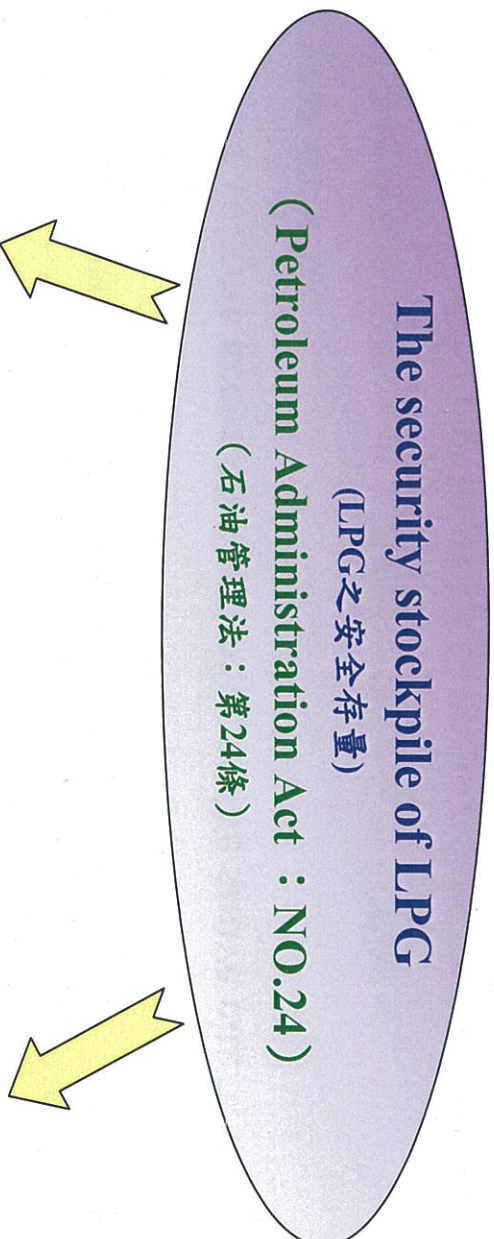
近年因改裝車輛數與加氣站成長趨緩，故車用氣銷量成長亦隨之減緩。

Data sources : Bureau of Energy, Moea (經濟部能源局)



# Stockpiling of LPG for Stable Supplies

(保證穩定供應之液化石油氣儲備)



## Private Sector

The security stockpile of LPG must amount to no less than twenty-five days of supply. The supply amount will be based on the average domestic sales and private consumption of the past twelve months.  
液化石油氣，應儲備前十二個月平均銷售量及使用量不低於二十五日之安全存量。

## National Stockpiling

(政府儲油)

CPC : 80,000KL

FPC : 50,000KL

**TOTAL : 130,000KL**



## National Stockpiling

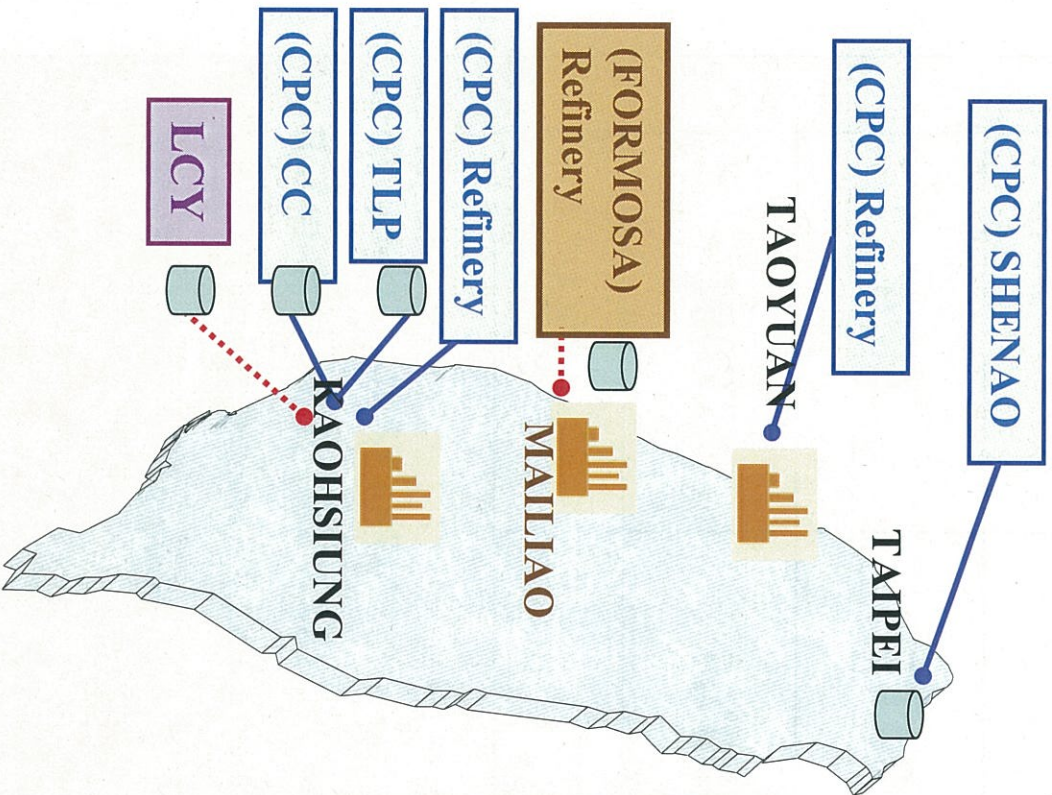
The government should make use of the Petroleum Fund (石油基金) to finance the storage of oil. The amount stored shall be calculated according to thirty days of the average domestic sales and consumption of the previous year.

(Unit : KL)

YEAR	CPC		FPC
2003	50,000	30,000 (2004)	50,000
2007	50,000	30,000 (2008)	50,000
2011	80,000		50,000



# Refinery/Terminal Facilities



	CPC		FORMOSA	
	Shenao	Kaohsiung	Mailiao	
Propane	25,000	55,000	50,000	50,000
Butane	25,000	24,000	50,000	50,000

(Metric Tons)





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# The Maintenance Work and the Colored Refrigerate Tank

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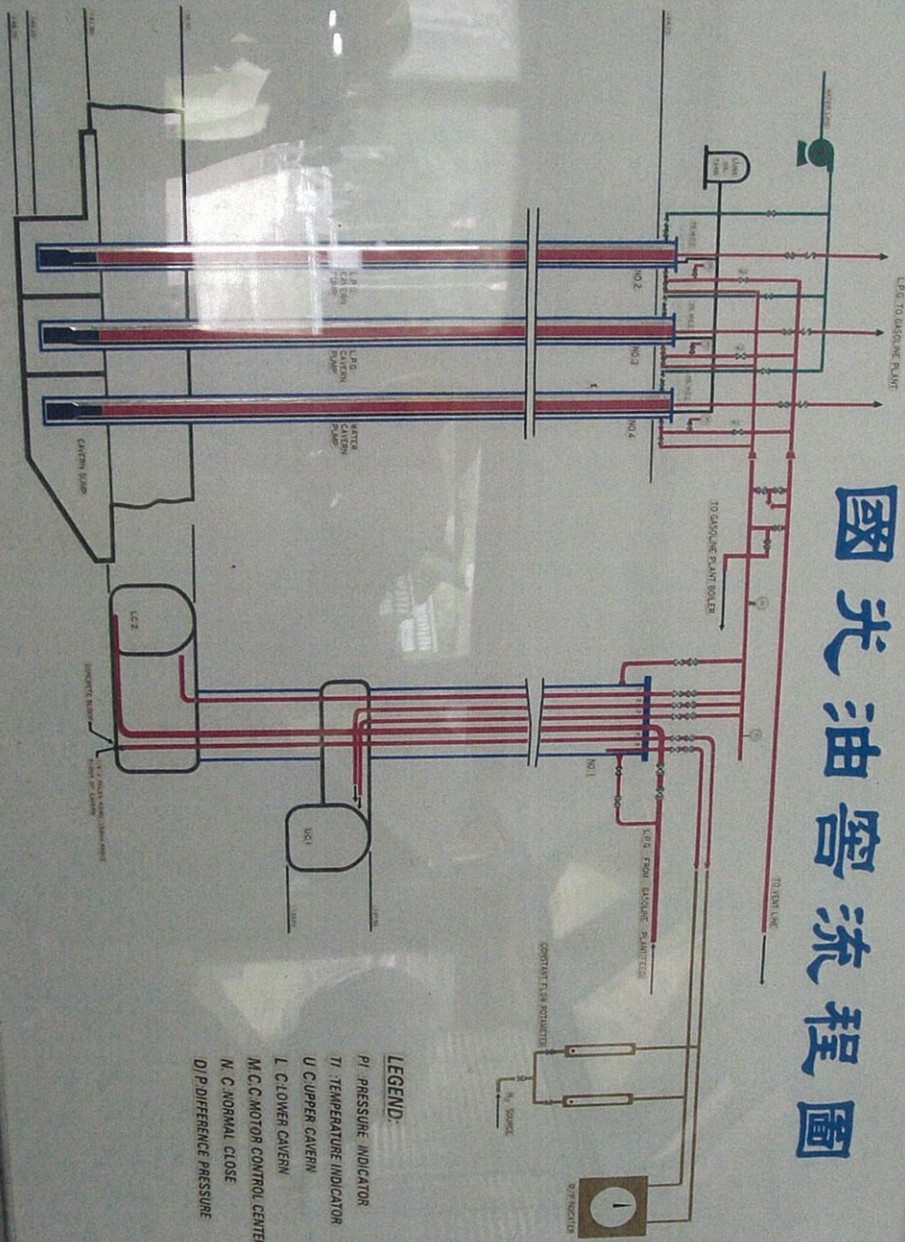


## The Colored LPG Pressurized Tank

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# 國光油窖流程圖



- LEGEND:**
- PI PRESSURE INDICATOR
  - TI TEMPERATURE INDICATOR
  - U C UPPER CAVERN
  - L C LOWER CAVERN
  - M.C.MOTOR CONTROL CENTER
  - N.C. NORMAL CLOSE
  - D/P DIFFERENCE PRESSURE

2010/09/24

## The Underground Storage (國光地窖)

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# The Underground Storage(Outlet)

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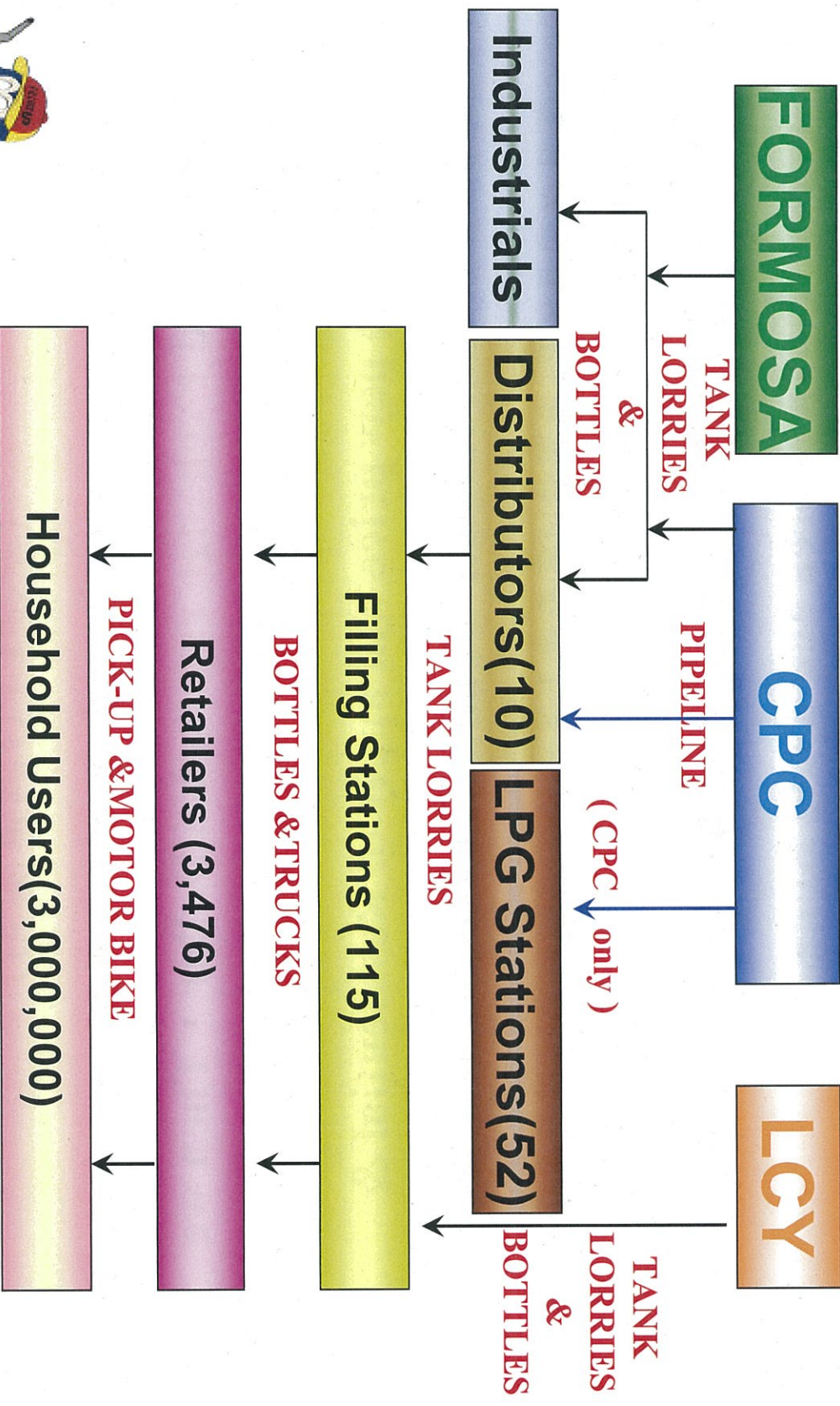




## The Underground Storage(Inlet)



# Supply Value Chain



# The Principal of LPG price adjustment in CPC (中油LPG調價原則)

- We adjust our price based on **current month CP, Baltic Index, and Exchange rate** to US Dollar , Then we compare with previous month price to decide the new price. The new price will apply to Residential & Commercial, Industrial, and Transportation sectors.

每月以當月(CP+海運費)\*匯率與上月比較之漲跌幅度為調價考量因子(適用家用、工業用、車用價格)。

- The adjusted **Residential price** has to be the **lowest price** among Japan, Korea and Hong Kong.

調整後之家用氣稅前價需維持亞洲鄰近國家(日本、韓國、香港)之最低價。



# The Principal of LPG price adjustment in CPC (中油LPG調價原則)

- CPC announces the new price 1st of every month on CPC website, and the new price sets to be effective from 0000 hours on the 2nd of every month.

**Website :** <http://www.cpc.com.tw/big5/home/index.asp>

每月1日下午於公司網站公告調價結果，次日零時生效。

- In order to stabilize the price of material. CPC was regulated by government to take moderate pricing measure from February 2011. When the international market LPG price hikes, CPC can only raise price about half of the range.

配合政府穩定物價政策，採緩漲緩跌措施(因政府擔心LPG價格巨幅波動會影響物價之穩定，而未全額調足)。

# The Tax of LPG in Taiwan

## (台灣LPG稅賦)

- **Commodity Tax : (貨物稅)**
  - Commodity tax is levied when LPG is produced from refinery or imported to Taiwan.  
貨品出廠或進口之稅賦。
  - Tax rate : **NTD690/MT** ( around **USD22.77/MT** )
  - The government hasn't adjusted the rate for many years.  
政府很多年未調整。
- **Petroleum Fund : (石油基金)**
  - The Petroleum Fund is used for stabilizing energy supply and maintain the order of Taiwan oil market.  
進口油品時繳交一定金額，作為穩定石油供應及維護油品市場秩序用。
  - The rate is **NTD151/MT (USD5/MT)**, and will be reviewed every year according to the total revenue and expenditure.  
視石油基金之收支，每年檢討調整。
- **Business Tax: (營業稅)**
  - The rate is 5% of the LPG sales price.



## The information of LPG price in Taiwan (台灣LPG價格資訊)

- CPC announces the price of current month on the following website.
  - [http://www.cpc.com.tw/big5\\_BD/tmtd/ListPrice/ShowListPrice.asp?pno=52&showtype=R1](http://www.cpc.com.tw/big5_BD/tmtd/ListPrice/ShowListPrice.asp?pno=52&showtype=R1)
  - The price will apply to household wholesale price, industrial price and autogas price.
- The historical price of the above products are also available on the CPC website.
  - [http://www.cpc.com.tw/big5\\_BD/tmtd/ListPrice/ShowHistoryPriceLPG.asp?pno=54](http://www.cpc.com.tw/big5_BD/tmtd/ListPrice/ShowHistoryPriceLPG.asp?pno=54)
- The household retail price is available on the website of Taiwan Bureau of Energy.
  - <http://210.69.152.10/oil102/>

# The Supply of LPG in Taiwan

(台灣LPG之供應)

- Household LPG: (家用氣)
  - is supplied by **refinery gas** and insufficient part is supplied by import LPG.  
主要以煉產氣供應，不夠再以進口氣補足。
  - The ingredients include propane, butane, alkene, etc.  
其成分除丙烷、丁烷外，尚有烯類及其他成分。
  - We add more propane to raise the vapor pressure for convenient usage in winter.  
氣溫低時，添加丙烷以提高蒸氣壓，方便使用。
- Industrial Gas and Autogas: (工業氣及車用氣)
  - are supplied by **imported Ref LPG**. The ingredients include propane and butane.  
以進口氣供應，成分為丙烷、丁烷。



# The ordorant of autogas

(車用LPG臭劑之添加)

- In order to detect the leak LPG, the autogas in Taiwan has to be added minimum **20ppm Ethyl Mercaptin** as per regulation.

為使洩漏時可查覺，依法規需添加20PPM以上 mercaptin (乙硫醇) 臭劑，以策安全。

- However, according to The Merck Index, the minimum detectable concentration is only 1 part in 50 billion parts of air.







*Thank you*



