



# Company Profile

2024. 01.

· Company Vision and Values	3
· History	4
· Business Areas	5
· Organization	6
· LPG Market Size and Alpha Energy M/S	7
· Major Customers	9
· Hydrogen industry development direction by stage	10
· Israel JV Establishment and Cooperation Model	11
· Cooperation with Israeli companies	12
· References Material: Fuel conversion business / Implementation site	13-26

# 1. Vision and Values

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## ☐ Vision

We advise companies to use eco-friendly and clean fuels by following these steps:

1. Fuel Conversion(LPG)
2. Fuel cell
3. Energy efficiency
4. Hydrogen

By using eco-friendly and clean fuels step by step, we will induce carbon neutrality to preserve the environment and ultimately contribute to human development.

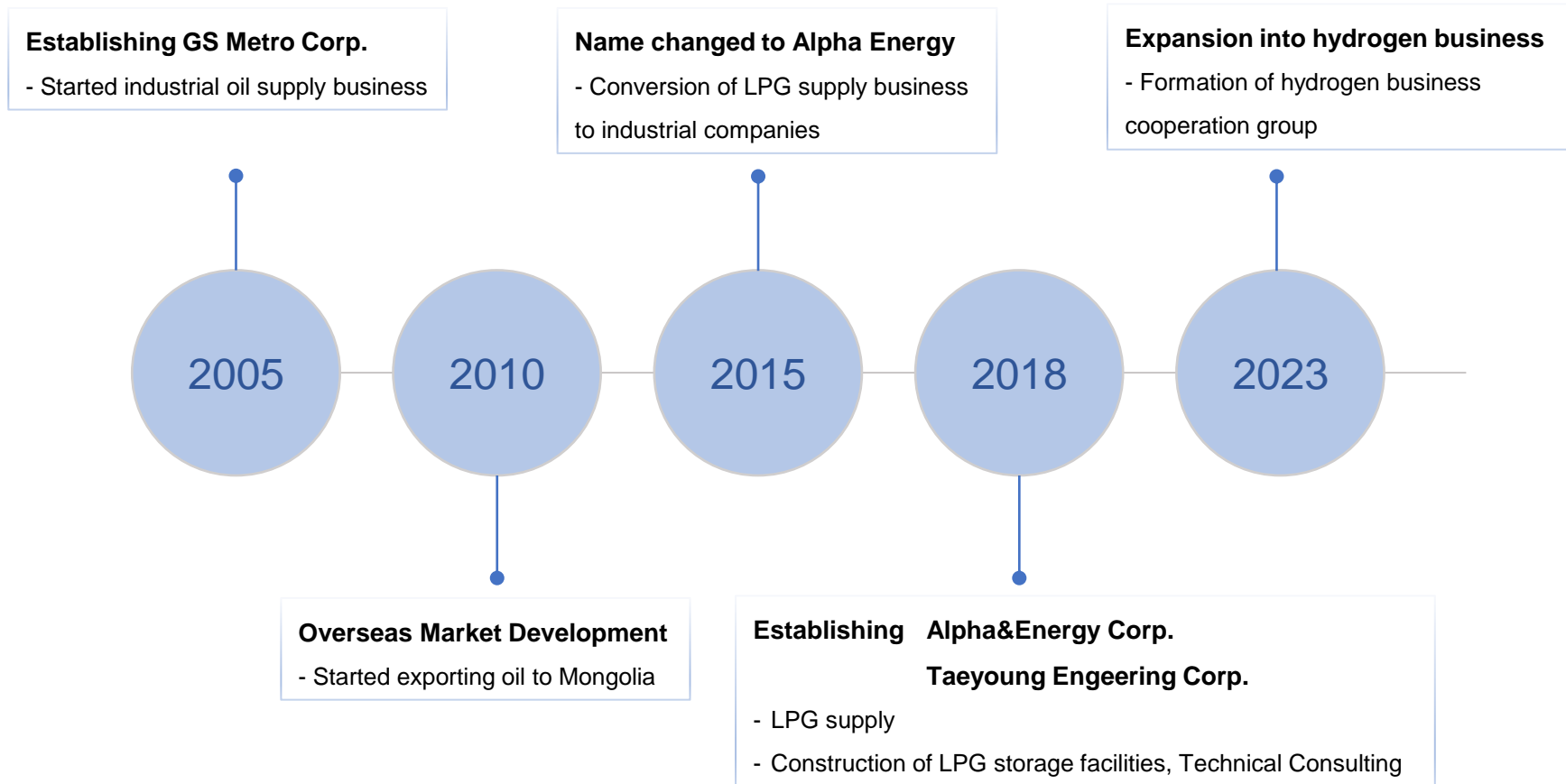
## ☐ Values

- Customer satisfaction : Realizing customer satisfaction through : Low cost (Cost reduction) and low-carbon fuel supply
- Win-Win Management : Win-win orientation through optimal effect between business partners
- Transparent Business : Transparent business operation based on trust and honesty
- Social Responsibility : Realizing social responsibility to continuously help the socially disadvantaged

## 2. History of the company

### □ History

Started the industrial oil supply business in 2005 and has continued to develop into a full-fledged energy company in 2015.

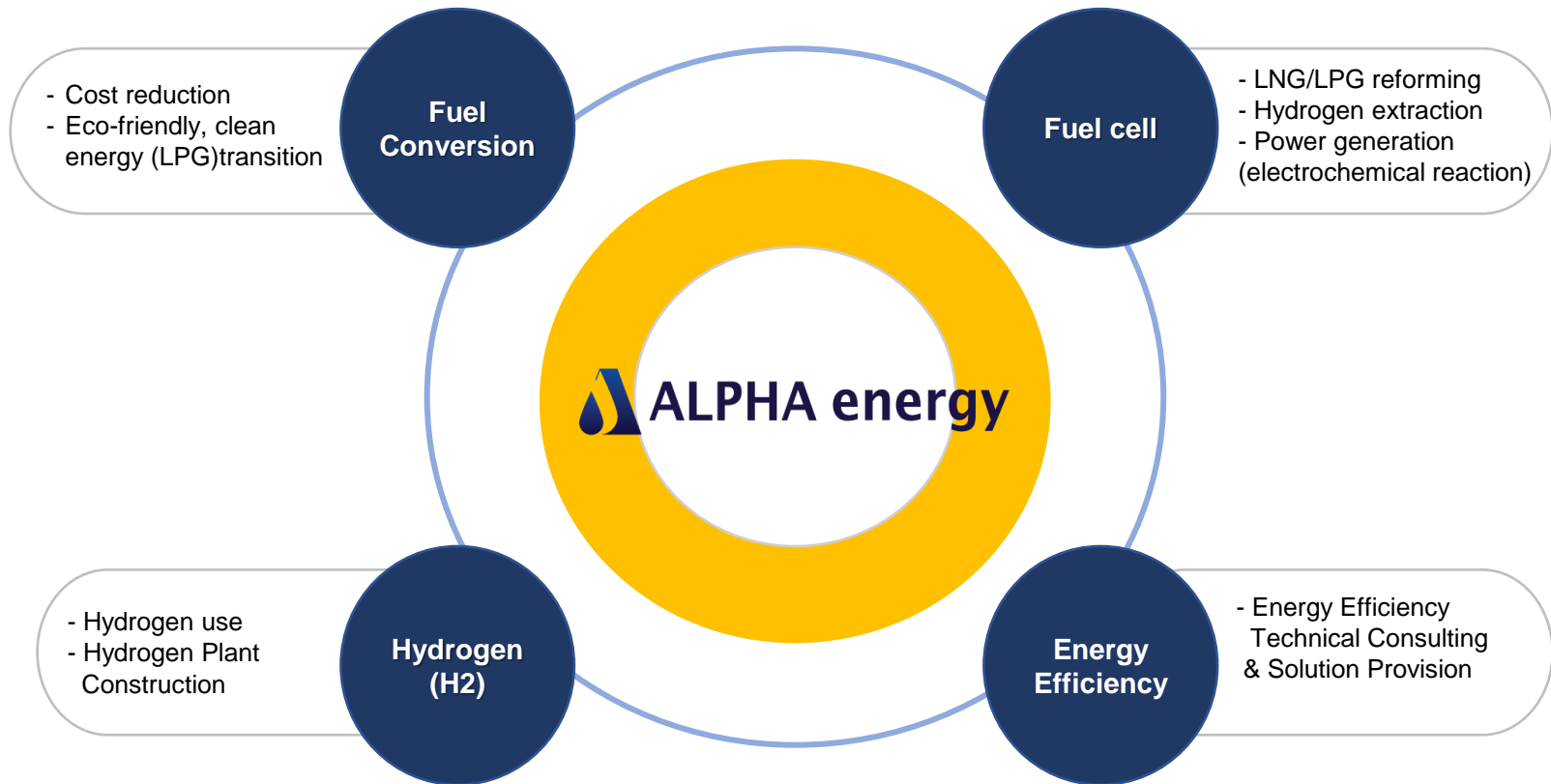


### 3. Business Areas

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Usage of Oil → Fuel conversion (LPG) → Fuel cells → Energy efficiency → Hydrogen (H<sub>2</sub>)

The business area is underway in four stages.



## 4. Organization

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### ☐ Organization



Executive CEO



Sales & Marketing  
(CSO)



technique(CTO)



Purchasing,  
Accounting(CFO)

### ☐ Alpha Energy Group

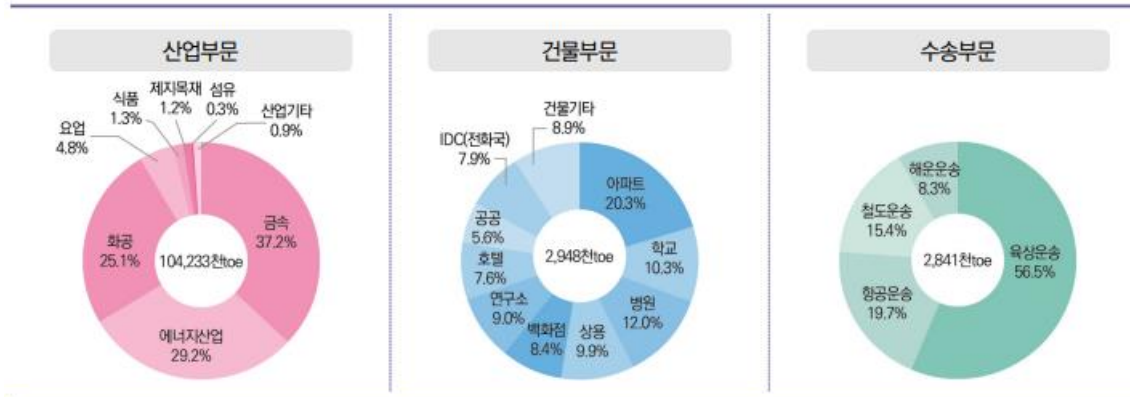
- Alpha Energy Corp. , Alpha&Energy Corp. : Fuel Conversion, fuel cell, Hydrogen Business
- Taeyoung Engineering Corp. : Gas equipment construction (LNG,LPG, Hydrogen Tank equipment), Energy Efficiency Business

## 5. LPG Market Size and Alpha Energy Market Share

### □ Domestic Energy Usage Status

Fuel use in the industrial sector in 2021 is 104m. ton, an average annual increase of 4.3% over the past 10 years

### □ Energy usage by industry



### □ Energy use by energy source in the industrial sector

[단위 : 천toe]

구분	석유류		가스류		석탄류		전기		계	
		비중(%)		비중(%)		비중(%)		비중(%)		비중(%)
2000	12,938	26.0	12,088	24.3	17,249	34.7	7,462	15.0	49,737	100.0
2010	7,580	11.1	23,382	34.1	24,453	35.6	13,179	19.2	68,594	100.0
2019	5,604	5.4	45,965	44.2	34,739	33.4	17,708	17.0	104,014	100.0
2020	5,073	5.1	43,738	44.3	32,988	33.4	16,945	17.2	98,744	100.0
2021	4,847	4.7	45,912	44.0	35,775	34.3	17,699	17.0	104,233	100.0

주) 산업부문 에너지소비량 중 증기, 온수, 신탄, 기타에너지원을 제외한 값임

- Strengthening environmental regulations
- Energy saving needs



- Reduction in the use of petroleum
- Increased gases

## 5. LPG Market Size and Alpha Energy Market Share

### ☐ Domestic LPG Market

- LPG market size in 2021: 5,700,000 ton (estimation)

-Fuel : 1,200,000 ton

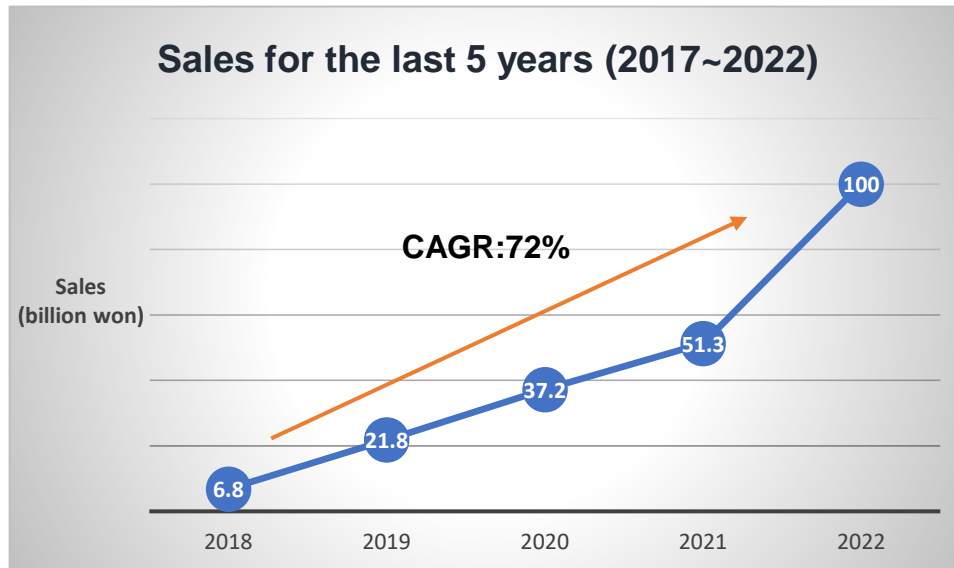
-Raw material : 4,500,000 ton



- Lack of response to raw material demand

- Alpha Energy supplied 100,000 tons in 2021 (LPG Fuel MS: 8.3%)

### ☐ Alpha Energy Group Sales Growth Trend



- Procurement Cost Down
- Investment in storage terminal facilities



## 6. Major Customers

Customer Group : Power plant, Chemistry, Steel, Paper, Glass, Cement, Tire, Food, etc.

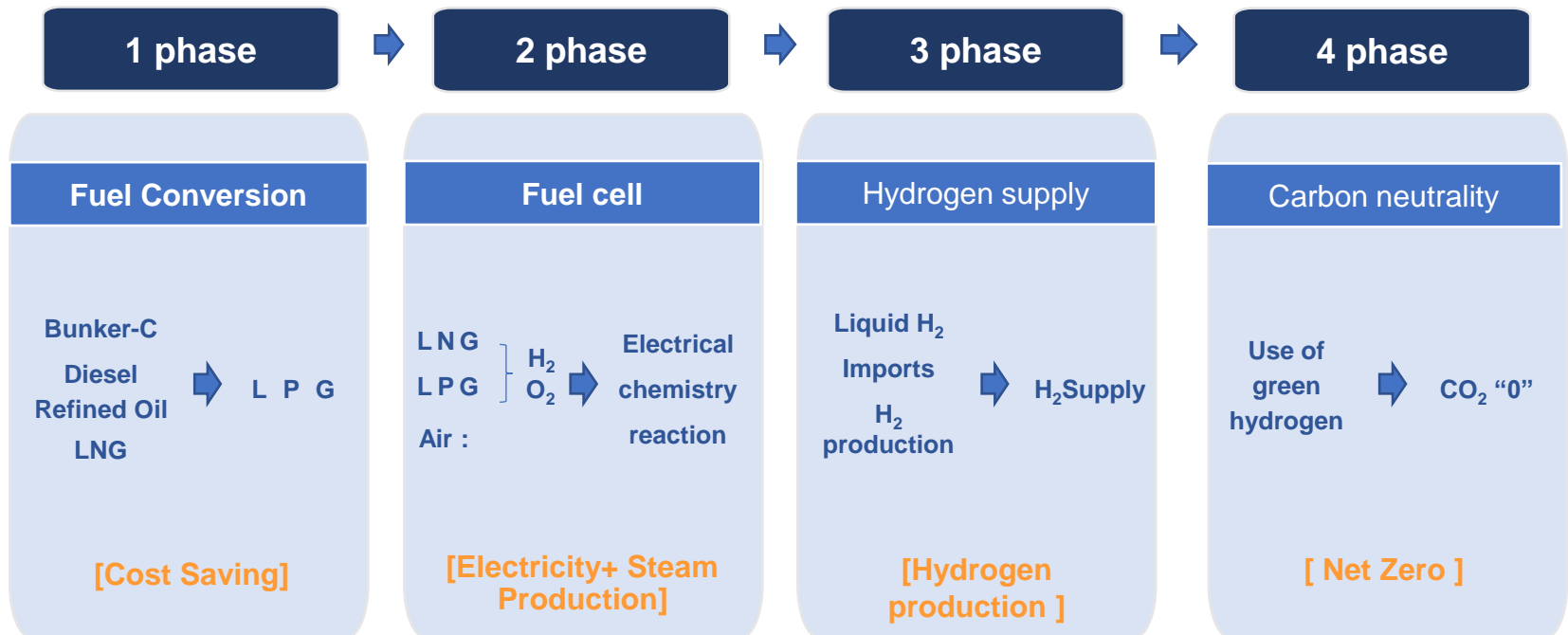
## 7. Hydrogen industry development direction by stage

### ☐ Strengthening ESG (Environment/ Social / Governance) management

Recently, global companies have a philosophy that they can sustainable development by considering eco-friendly, socially responsible management and governance improvement.

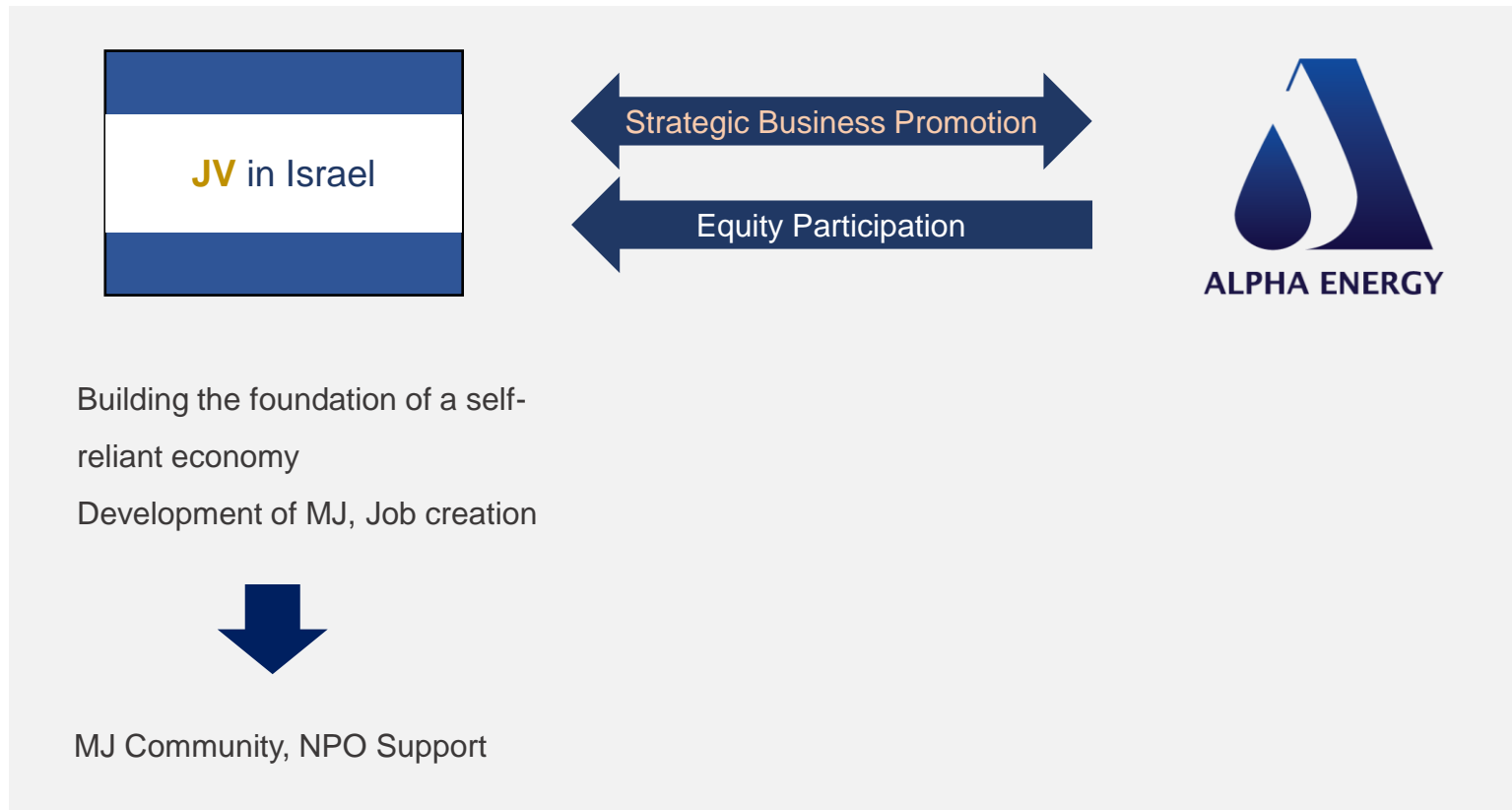
ESG management has emerged as a keyword that determines the success or failure of the capital market and country.

### ☐ Step-by-step business development direction



## 8. Israel JV Establishment and Cooperation Model

- Joint investment between Alpha Energy and Israeli investment company to establish a JV in Israel
- Implementation Strategic business based on mutual synergy between Israel JV and Alpha Energy
- Supporting MJ economic revitalization through Israel JV



## 9. How to work with Israeli companies

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### ☐ Step 1    LPG Gas Imports

- Status:        Procurement of LPG from U.S. through the Singapore futures market, 100,000tons per year
- Requests:     Long-term supply of Israeli LPG below international market rates  
                  200,000 ~ 1,000,000 tons or more can be purchased per year (Including substitution of imports from domestic partners)

### ☐ Step 2    Introduction of hydrogen production technology

- Status:        Domestic companies –Fuel cell business dependent on overseas technologies  
                  (FuelCell Energy Corp. ,Bloom Energy Corp. , etc.)
- Requests:     1) Introduction of Israeli fuel cell and hydrogen production technology and facilities  
                  2) Review of possible financing of Israeli capital's investment in LPG storage tank facilities

### ☐ Step 3    Introduction and investment in excellent industrial technologies

- Status:        Small exchanges in the form of imports of defense, cosmetics, and raw materials
- Prospect:     With the entry into force of the FTA between Korea and Israel,  
                  trade in various areas is expected to expand.
- Requests:     1) Introduction of energy, medical devices, and advanced technologies  
                  2) Investing in Israeli start-up companies

☐ Introduction to Fuel Conversion Business

☐ Supply site

# 1. Fuel Conversion

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## 1.1 Industrial Fuel Conversion Business

- **Cost Saving**

With the government's strengthening of environmental policies, we are contributing to the realization of cost reduction for customers by stably and economically supplying LPG, an eco-friendly and clean fuel, at a unit price linked to city gas to businesses that use fuels such as bunker C, recycled oil, ionic refined oil, and diesel oil that generate harmful substances to the environment, as well as to chemical companies that reform LNG and use it as raw materials.

- **Technical Support**

In order to maximize the energy efficiency of each industrial facility, based on our professional technology and know-how, E.P.C.(Design, Purchase, Construction) to support LPG supply facilities and provide system guarantees to customers.

## 1.2 LPG Competitiveness

- With global environmental policies such as restrictions on the operation of coal power plants and restrictions on the generation of environmentally hazardous substances, domestic and international LNG demand continues to decline
- International LNG prices are also increasing rapidly.
- Global LNG demand will double by 2040, while supply will decline from 2025, making future LNG price increases essential [ Royal Dutch Shell Report 2020.02]
- Alpha Energy purchases LPG futures (usually 2-year notes) in the international futures market and supplies them stably and economically to the site, and always stockpiles more than 100,000 tons of LPG.

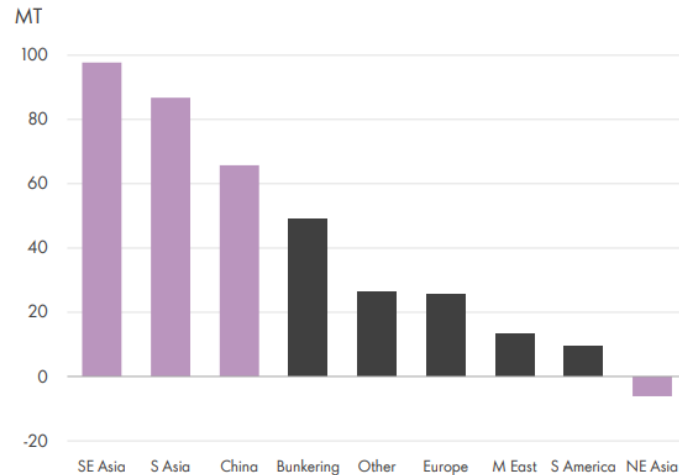
# 1. Fuel Conversion

## 1.3 LNG long-term outlook – Royal Dutch Shell (LNG Outlook 2022)

### Expected rising demand for LNG in Asia requires investment in new supply

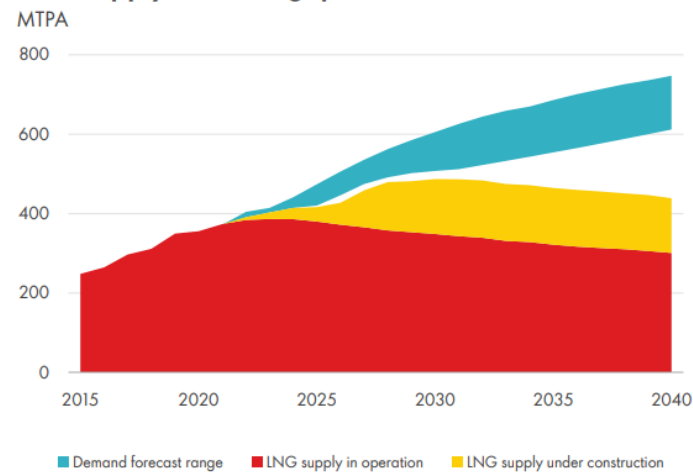
Shell  
LNG Outlook 2022

Incremental LNG demand 2020-2040



Source: Shell interpretation of IHS Markit, Wood Mackenzie, FGE and Poten & Partners 2021 and 2022 data

LNG supply-demand gap



- (1) LNG demand will more than double by 2040, while supply will decline by 2028  
→ International LNG prices are expected to rise in the future
- (2) Korea Gas Corporation has accumulated about 5.4 trillion won in receivables as of June 2022, and it is expected that it will be difficult to reduce the price of city gas within 2~3 years.

# 1. Fuel Conversion

## 1.4 LNG long-term outlook (Competitive Fuels)

The long-term outlook for LNG, a competitive fuel for LPG, is expected to double by 2040 due to increased demand, mainly in China and India, while supply is expected to increase prices due to a gradual decline from 2025 ('SHELL' report, February 2020)

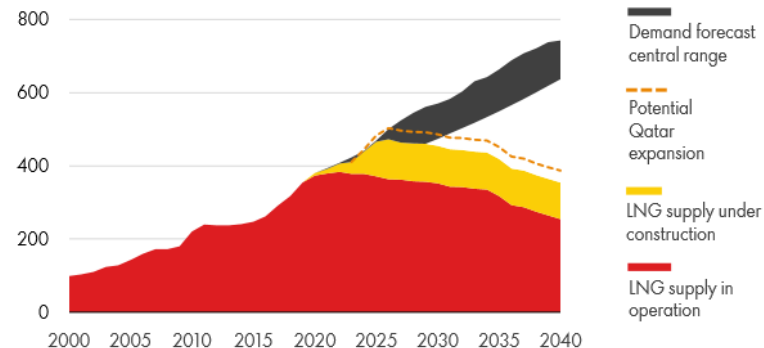
### Record FIDs delay expected supply-demand gap

LNG demand estimated to double by 2040

**Shell LNG**  
Outlook 2020

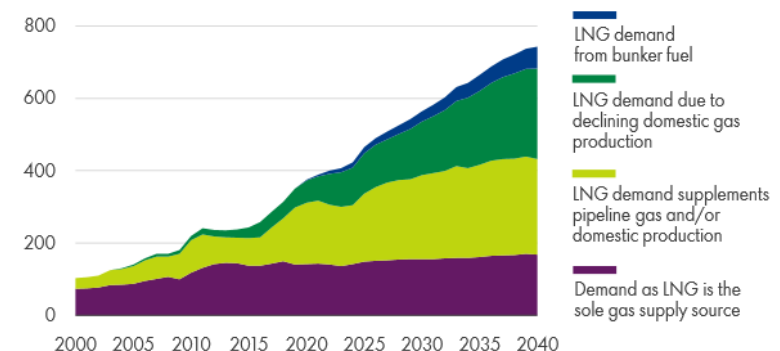
#### Emerging LNG supply-demand gap

MTPA



#### Demand drivers for LNG

MTPA

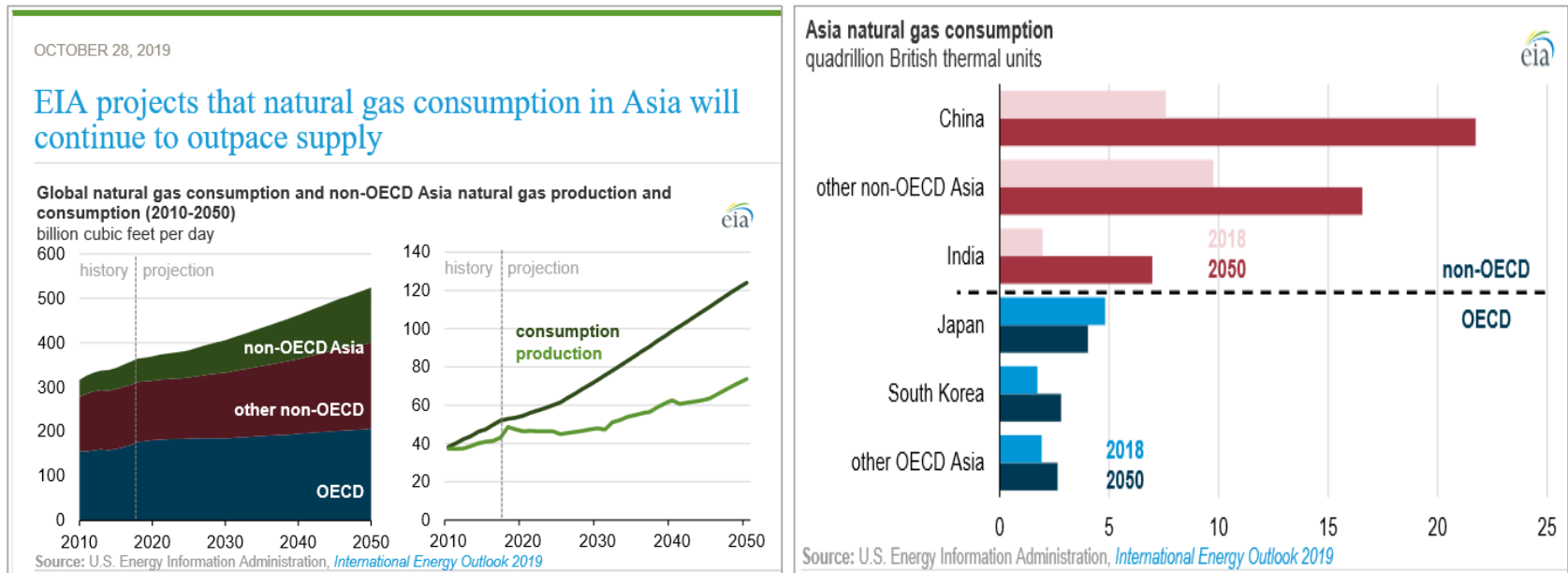


Source: Shell interpretation of IHS Markit, Wood Mackenzie, FGE and Poten & Partners Q4 2019 data



# 1. Fuel Conversion

## 1.5 LNG long-term outlook - EIA (Oct. 2019)



- (1) The U.S. Energy Information Administration (EIA) predicts that China's LNG demand will triple in 2050 compared to 2018.  
→ Demand for electricity in China and LNG substitution of coal fuel in power plants quadrupled in 2018
- (2) After 2040, LNG demand in India's steel and other manufacturing industries is expected to surpass that of China's industrial sector, and LNG demand is expected to increase by more than 30% due to the increase in manufacturing in non-OECD countries.  
→ LNG price increase expected due to supply and demand imbalance due to increased demand

## 2. Supply site

### 2.1 GS E&R Power Plant



#### GS E&R Power Plant

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Established	1990
Major Products	Cogeneration Plant
Power Generation Capacity	674GWH/year supply 220 companies
contract date	28 Dec 2016
Date of obtaining license	28 Aug 2018
Supply start month	May 2019

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## 2. Supply site

### 2.2 SeAH CSS (Changwon)



#### SeAH CSS

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Established	1966
Major Products	Stainless steel, tool steel, Carbon alloy steel, etc.

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Contract date	5 Dec 2016
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Supply start month	May 2017
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## 2. Supply site

### 2.3 Cosmo Chemical (Onsan)



#### COSMO CHEMICAL, Ulsan

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Established 1968

Major Products Titanium dioxide (the only one in Korea)

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Contract date 16 Dec 2019

Date of obtaining license 12 Dec 2019

Supply start month May 2020

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## 2. Supply site

### 2.4 Hanil Cement (Yeoju)



#### Hanil Cement , Yeoju

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**Established** 1961

**Major Products** cement, special cement, Ready-mixed concrete, remittal, etc.

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**Contract date** 16 Dec 2019

**Date of obtaining license** 17 Jan 2020

**Supply start month** Mar 2020

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## 2. Supply site

### 2.7 Harim (Iksan)



#### Harim

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**Established** 1978

**Major Products** Tea, Fresh Up, Partial Meat

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**contract date** Jan 28, 2022

**Supply start month** May 2022

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# End of documents