The key to economic diversification

KOREA'S PETROCHEMICAL INDUSTRY

Success Story
Fahad A. Al-Sahali
Representative Director
Aramco Asia Korea Limited

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**Foreign Direct Investment**

The FSC has eased requirements to be registered as professional investors, who are allowed to make riskier investment than general investors. It aims to encourage professional investors to play an active role in funding innovative startups and SMEs.

The Financial Services Commission (FSC) announced that amendments to the Enforcement Decree of the Financial Investment Services and Capital Markets Act (FSCMA) were approved at a cabinet meeting on August 13.

Notably, to be registered as professional investors, investors are required to maintain a financial investment account with a "minimum balance of KRW 50 million except for ultra-low risk products" from a previously minimum balance of KRW 500 million. Ultra-low risk products refer to national bonds and Repurchase Agreement (RP).

FSC expects the number of professional investors to increase from 1,950 as of end-2018 to 370,000-390,000.

**Trade & Commerce**

South Korea’s outbound shipments of agricultural and fishery products moved up 1.5 percent in the first half of 2019 from a year earlier, data showed on August 4, although shipments to Japan, the biggest export partner in the area, fell slightly.

The combined outbound shipments of agricultural and fishery products reached USD 4.72 billion in the January-June period, according to the Ministry of Trade, Industry, and Energy.

**FSC EASES REQUIREMENTS FOR INDIVIDUAL INVESTORS TO BE REGISTERED AS PROFESSIONAL INVESTORS**

South Korea’s trade ministry said August 16 it plans to clinch new free trade agreements (FTAs) this year, including those with three Southeast Asian countries, in the near future to boost its exports to cope with the growing protectionism around the globe.

Asia’s No. 4 economy is currently seeking to clinch FTAs with Indonesia, Malaysia and the Philippines within this year in time for South Korea’s summit with the Association of Southeast Asian Nations (ASEAN) in November, according to the Ministry of Trade, Industry, and Energy.

South Korea and Israel have also have made significant progress in their FTA negotiations, with the deal expected to be reached in the near future, the ministry said.

"It is important to actively penetrate into emerging markets amid growing external uncertainties, such as Japan’s export restriction (against South Korea) and the trade talks between Washington and Beijing," Trade Minister Yoo Myung-hee said during a meeting held in Seoul.

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**FITCH REAFFIRMS S. KOREA’S RATING AT AA- WITH STABLE OUTLOOK**

Fitch Ratings Inc. on August 9 kept South Korea's sovereign credit rating and stable outlook unchanged at AA-, fourth highest on its scale, although the country’s growth is expected to slow to 2.0 percent and uncertainties linger for next year on mounting trade woes.

Despite the slow-motion economy, Asia's fourth largest economy remains relatively "sound and broadly" compared to its peers in the same investment-grade group.

Fitch forecast that growth will slow to 2.0 percent this year and 2.3 percent next year, with intensified downturn in the semiconductor sector that drives a contraction in exports and facility investment. The escalating U.S.-China trade war and rising uncertainties from trade tensions with Japan weighs on exports and investor sentiment, it added.

Given rising uncertainty from escalating trade tensions and subdued inflationary pressure, Fitch expected another 25 basis points cut in the policy rate by the end of the year. The Bank of Korea delivered its first rate cut by 25 basis points to 1.5 percent in more than three years on July 18.

**EXPORTS OF AGRICULTURAL, FISHERY GOODS UP 1.5 PCT IN H1**

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**KOREA’S FTA WITH 5 CENTRAL AMERICAN COUNTRIES TO TAKE EFFECT IN OCT.**

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**S. KOREA TO CLINCH NEW FTAS THIS YEAR**

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MOF HOLDS EXPORT CONSULTATIONS WORTH KRW 26.6 BN IN VIETNAM

On August 8, the Ministry of Oceans and Fisheries (MOF) announced that it held trade consultations for fishery products in Ho Chi Minh, Vietnam on the previous day, resulting in the signing of export contracts worth KRW 26.6 billion.

The event was participated by 70 importing companies from Vietnam, Laos and Cambodia, among others. From Korea, 21 exporting companies participated to have one-on-one export consultations, promoting dried laver, abalone, plaice, and pollack processed foods. At the consultations, three exporting companies signed letters of intent worth KRW 1.93 billion.

An official from MOF said, "The export market for fishery products, which previously relied on the U.S., Japan and China, will be diversified to other regions including ASEAN countries to increase Korea's exports."

Industry

S. KOREA’S 5G MOBILE SUBSCRIPTIONS TOP 2 MN IN JUST 4 MONTHS OF LAUNCH

The number of 5G network subscriptions in South Korea has breached a milestone figure of 2 million in just four months since commercial service launch, proliferating at twice faster than projected by the industry and authorities.

As of August 6, the number of mobile users subscribed to 5G service in Korea reached 2.01 million, according to telecom industry sources.

Korea became the first country in the world to commercially launch 5G service on April 3. The 1 million milestone was reached on June 10 and the 2 million two months later.

S. KOREA TOPS SHIPBUILDING ORDERS FOR 3RD MONTH IN JULY

South Korea retained the top spot in global shipbuilding orders for the third straight month last month, industry data showed August 13.

In July, local shipyards won orders totaling 270,000 compensated gross tons (CGTs) to build 10 ships, accounting for half of the orders placed around the globe, according to London-based Clarkson Research Services Ltd., the world's leading provider of data for the shipping and shipbuilding industries.

In the first seven months of the year, South Korean shipbuilders secured orders totaling 3.74 million CGTs to construct 92 vessels for a 32 percent market share, the data showed.

Government & Policy

S. KOREA TO SPEND 7.8 TLN WON FOR STABLE SUPPLY OF 100 KEY STRATEGIC ITEMS

South Korea said August 5 it will spend KRW 7.8 trillion (USD 6.47 billion) over the next five years to nurture its materials, parts and equipment sectors and trim its dependence on Japanese imports in the latest move to cope with the neighbor’s economic retaliation.

The massive spending is also aimed at promoting R&D activities for 100 key strategic items, according to the industry ministry.

"We will upgrade the competitiveness of the materials, parts and equipment industries," Hong Nam-ki, minister of economy and finance, said in a meeting with officials in Seoul.

In July, Japan also imposed tighter regulations on exports to South Korea of three materials – resist, etching gas and fluorinated polyimide – that are critical for the production of microprocessors and flexible displays.

Of the 100 key strategic items, the industry ministry said it plans to secure supplies of 20 items within a year by reaching out to suppliers in other countries, including the United States and China.

South Korea will expedite state-sponsored infrastructure projects worth KRW 16.5 trillion (USD 13.6 billion) in the latter half to prop up the sluggish economy that is headed for the smallest growth in a decade.

Hong Nam-ki, deputy prime minister and finance minister, said August 14 that KRW 5.1 trillion would go to adding public rental housing, KRW 5.9 trillion for roads and KRW 5.2 trillion for railways.

“We plan to pour an additional KRW 360 billion into research of smart construction technologies, with an aim to boost the productivity and safety of the construction sector by 50 percent by 2025,” Hong said.

Red tapes in the construction industry would be removed to reduce unnecessary costs and improve business conditions, he said. He vowed to take action against 26 regulations, including those to simplify the administrative process and rationalize the company assessment system.

Source: www.investkorea.org, Yonhap News Agency, Pulse by Maeil Business News Korea
Definition and Characteristics of the Petrochemical Industry

The petrochemical industry involves the process of manufacturing basic petrochemical feedstock (ethylene, propylene, benzene, toluene, etc.) with petroleum products (naphtha, etc.) or natural gas, which are used as raw materials to produce synthetic resins (plastic), synthetic fiber (polyester and nylon), synthetic rubber, and specialty chemicals and intermediate materials of fine chemicals.

The industry supplies essentials to everyday life, as 70 percent of personal belongings such as clothing, mobile phones, and bags are made of petrochemical products. It also leads environmental protection by adopting less expensive natural materials such as natural fibers and woods.

Also, the petrochemical industry is a capital-and technology-intensive equipment and plant industry, valuing economies of scale. Based on Naphtha Cracking Center (NCC) producing basic fractions, plants producing related derivatives are integrated and form a complex. It is a typical kombinat (combine)-type industry, requiring large-scale capital investment. Depending on external factors such as the global economic condition, supply and demand, and changes in oil prices, the industry goes through boom and recession. Even in the boom cycle, it should be prepared for a possible upcoming recession with capital investments and R&D.

Status of Korea’s Petrochemical Industry

The petrochemical industry is a key industry, playing a vital role in national production and exports, accounting for 6.1 percent of total production, 4.4 percent of added-value, and 8.2 percent of exports in Korea’s manufacturing sector, contributing immensely to achieving a trade surplus.

By the nature of the process industry characterized by an automated production process, the industry requires only minimal workforce in factory operation and safety management when new investment is made, resulting in less job creation compared to other industries. However, it creates quality jobs, and contributes to revitalizing the economy considering the impact on forward industries in such ways as the hiring of construction workforce during the factory construction and operational phases.

The industry is called “a rice of industry,” supplying essential materials to major industries including automobiles and electronics. In the case of the automobile industry, all auto parts – except for steel, aluminum and glass – are made of petrochemical products. Considering increasing need for light-weight vehicles driven by the transition to electric vehicles, a significant portion of interior as well as exterior materials and components are adopting high-performance plastics. Also, in the electronics and electrics industry, petrochemical products are widely used, due to the excellent insulating properties of petrochemical products.
First of all, electricity can be supplied thanks to the insulating properties of PE and PVC wrapping copper and aluminum. In all electronics products such as refrigerators, washing machines, televisions, air conditioners, audio, computers, laptops, and mobile phones, most parts and exteriors – except for metal parts required for electrification – are made of petrochemical products.

The development of high-tech industries including IT, BT, and NT is not possible without support from the petrochemical industry. The more high-tech industries become, the more vital the role of the petrochemical industry becomes. Moreover, the petrochemical industry has been utilized for materials of drones and 3D printers since the emergence of the Fourth Industrial Revolution, leading the transition of forward industries toward high-tech industries.

**Trends and Prospects of Korea’s Petrochemical Industry**

Korea’s petrochemical industry has continued to record great performance in the past four years thanks to growing global demand and low oil prices, despite heightened trade protectionism and slowing growth in China, which is Korea’s main export destination. The production capacity of Korea’s petrochemical industry has continued to rise thanks to the improvement of process efficiency and facility expansion, building on the world’s 4th largest production capability. In response to the shortage in global supply, it has operated facilities at maximum capacity, continuously increasing production of products across-the-board.

However, the industry has been slowing down due to the recent increase in oil prices, slowing global demand stemming from the prolonged U.S.-China trade dispute, and growing supply by competitors like the U.S. and China. The growth of Korea’s petrochemical industry has been led by exports due to sluggish domestic demand. However, an increased self-sufficiency rate and slowing growth in China, which is a main export market, and intensified competition due to increased supply from the Middle East and the U.S. have weighted on the industry’s growth momentum.

The U.S. has pushed for the creation and expansion of natural gas (ethane) facilities based on low-price shale gas since 2008, affecting global markets including Korea based on price competitiveness. Also, China’s government has fostered the petrochemical industry intensively since 2011 to improve global competitiveness and self-sufficiency rate. It has moved towards qualitative growth with large-scale restructuring, M&A, and the Manufacturing 2025 strategy.

When it comes to global supply and demand of the world’s petrochemical products, the growth of supply is expected to surpass that of demand up until 2023, driven by facility expansion in the U.S. and China, inevitably decreasing the operation ratio and profitability. The most important variable in the competitiveness of Korea’s petrochemical industry is likely be oil prices.

**Future Plans of Korea’s Petrochemical Industry**

The petrochemical industry is a large-scale process industry to which economies of scale apply. The higher the production capacity, the higher the reduction in fixed costs, including costs required for infrastructure construction, facility operation, and labor. In addition, it becomes possible to produce various products utilizing small-scale by-products, resulting in the generation of added-value. As such, the synergy effect and price competitiveness can be improved. To maintain competitiveness in the global market, Korea’s petrochemical companies have acknowledged that they need to respond through scale and connectivity by possessing the largest production capability possible. Based on such judgement, they have made a series of investment plan announcements building on positive performance in the past few years, upping the forecast of domestic ethylene productive capacity from 9.255 million tons in 2018 to 14.03 million tons by 2023.
The petrochemical industry already announced their plans to make large-scale investments worth KRW 14.5 trillion and create more than 1,600 jobs by 2023 to build or expand large-scale petrochemical equipment and plants including NCC in December last year. At the same time, they suggested to the government that they are willing to make further investments if problems like sites for investment and lack of infrastructure are resolved. The Ministry of Trade, Industry and Energy (MOTIE), understanding the industry’s difficulties, established a “Petrochemical Investment TF”, a joint body of the government and private sector, to resolve the difficulties raised throughout the investment phase and check on the implementation status. This cooperation between the private sector and the government is expected to facilitate the resolution of problems the industry is faced with.

Also, petrochemical companies are aggressive in expanding R&D to turn general-purpose basic materials of petrochemicals into high value-added materials. The share of R&D in revenues of LG Chem, Korea’s leading petrochemical company, is similar to that of major global companies. Other petrochemical companies are also active in making R&D investment based on good performance in the past few years. In line with the industry’s efforts, the government has been stepping up support for the development of high-performance chemical materials. It also pushes for attracting global companies possessing core technologies and securing advanced technologies in cooperation with foreign research centers. It also endeavors to improve the government’s standards on certification of products made of chemical materials, thereby facilitating commercialization and expansion of high-performance specialized products.

The attractiveness of Korea’s petrochemical industry as an investment destination is likely to increase by taking on a two-track strategy: increasing production capacity through the enlargement of facilities; and expanding R&D on high-value chemical materials.

By Choi Hong-jun
General Manager
Industrial Research Division/ Korea Petrochemical Industry Association
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**Table 3. Forecast of Korea’s Ethylene Production Capacity**

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Investment Amount</th>
<th>Main Contents</th>
<th>Location</th>
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<tbody>
<tr>
<td>LG Chem</td>
<td>1.03 million tons (KRW 2.9 trillion)</td>
<td>NCC</td>
<td>Ulsan</td>
<td>2019-2023</td>
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<td>Lotte Chemical</td>
<td>2.33 million tons (KRW 2.7 trillion)</td>
<td>NCC</td>
<td>Daesan</td>
<td>2018-2021</td>
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<td>Yeocheon NCC</td>
<td>1.95 million tons (KRW 2.7 trillion)</td>
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<td>Yeosu</td>
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<td>SK Global Chemical</td>
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<tr>
<td>S-Oil</td>
<td>1.5 million tons (KRW 5 trillion)</td>
<td>Synthetic resins, intermediate materials</td>
<td>Yeosu, Ulsan</td>
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<td>GS Caltex</td>
<td>750,000 tons (KRW 2.7 trillion)</td>
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<td>700,000 tons (KRW 2.7 trillion)</td>
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<td>Jan 2018-2021</td>
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<td>Total</td>
<td>11 million tons (KRW 2.9 trillion)</td>
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* Based on total investment amount: ( ) refers to investment since 2019

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**Table 4. Investment Plans by Major Korean Petrochemical Companies** (unit: KRW trillion, No.)

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Invest Korea Market Place

Invest Korea Market Place (IKMP) is an online business matching platform available on Invest KOREA’s website with information on over 280 Korean companies seeking to partner with foreign investors. This month, KOTRA Express introduces some outstanding companies in Korea's petrochemical industry.

### COMPANY A

- **Investment Requirement**
  - Amount: USD 3 million
  - Patents and certificates: Applied for two patents for coated separators for EV and ESS secondary batteries and a manufacturing method

- **Investment Structure**
  - Minority (Financial investment), Joint venture, M&A

- **Major Clients**
  - Samsung SDI, LG, SK, Hyundai Motor Company (mass production in 2020)

- **Investment Highlights**
  - The company has 2 key technologies. ① Uniform coating layer: each particle maintains its form which ensures the uniformity of coating thickness ② Heat resistance: In the comparison of heat shrinkage at 180°C for 60 min., the competitor’s product showed a shrinkage ratio of 50% or more, while ours boasts less than 3%
  - The company can develop slurries according to customer needs. Moreover, it can produce coating separators for secondary batteries that are used for the development of an electric vehicle that can drive at least 500 km once charged.

### COMPANY B

- **Investment Requirement**
  - Amount: USD 2 million
  - Patents and certificates: Applied for two patents related to equipment for exfoliating car bumper protection and acquired the certificate of green technology

- **Investment Structure**
  - Equity investment

- **Financial Performance**
  - (Sales) KRW 5,769 million (in 2016)
  - (R&D) 3.9% (to sales ratio, in 2015).

- **Investment Highlights**
  - The company manufactures recyclable polypropylene composites by collecting waste bumpers, exfoliating their film, and cleaning resulting bumpers. The process is as follows: ① Break bumpers into shatters ② Remove paint coated on the shatters with special chemicals and processing them as recyclable materials ③ Recycled bumper shatters are used to manufacture plastic products that require high strength.
  - The product boasts higher exfoliation than existing chemicals by 20-40%, thus used as new materials for cars.

### COMPANY C

- **Investment Requirement**
  - Amount: USD 6.5 million
  - Patents and certificates: 4 patent rights for a temperature-sensitive color change composition and a temperature-sensitive color change and anti-slip composition related to smart road pavement material technologies

- **Investment Structure**
  - Minority (Financial investment), Joint venture

- **Major and Potential Clients**
  - Malaysian Highway Authority, Vietnam Expressway Corporation, ViaCon (Finland), etc.

- **Investment Highlights**
  - The key technologies of CHAMELROAD demonstrate safety and cost reduction.
  - Temperature visualization technology is intended to visualize hydroplaning that occurs after road freezing or rain to actively prevent traffic accidents caused by slippery roads.
  - Radiant heat–blocking technology is meant to relieve the urban heat island phenomenon, thereby reducing energy consumption rates. It also increases the durability and life span of road pavements, thus saving costs.

For more information, please visit the IKMP page on www.investkorea.org.
At the center of the “Miracle of the Han River” that caught the world by surprise through rapid economic growth lies the petrochemical industry. The foundation of Korea’s petrochemical industry was laid down in line with the growth of forward-looking industries utilizing petrochemical products as raw materials including textiles, shoes, and plastics in the 1960s. Since then, it has continued to grow on the back of the growth of related industries including automobiles, electronics and shipbuilding.

In fostering the petrochemical industry, the Korean government created petrochemical industrial complexes in Ulsan, Yeosu and Daesan, which are still playing the roles as the hubs of Korea’s petrochemical production. The companies involved in oil refinery, Naphta Cracking Center (NCC) and derivatives factories are pushing for the vertical integration of production, while jointly using support facilities such as ports, industrial water and utilities. This month, KOTRA Express will focus on Yeosu, the most productive region in ethylene production capacity among Korea’s three largest petrochemical complexes.

**Yeosu accounts for half of Korea’s petrochemicals**

Yeosu National Industrial Complex began operation in 1979, which now has 283 companies on a site spanning 23.502 million sq. meters. Major companies in the complex include Korea’s leading petrochemical companies including GS Caltex, Lotte Chemical, LG Chem, and Hanwha Chemical. Foreign companies such as Lotte Versalis Elastomers (LVE), Kumho Mitsui Chemical, and BASF Korea are also located in the complex. By 2023, companies producing NCC Butadiene and synthetic resin plan to execute investment worth KRW 7 trillion.

It’s not an exaggeration to say that Yeosu accounts for a half of Korea’s petrochemicals. Led by Lotte Chemical, Yeosu produces a large quantity of ethylene, which amounted to 4,360 KTA as of 2019, the largest among Ulsan, Yeosu and Daesan. In 2018, 4,140 KTA of ethylene was produced in Yeosu, accounting for 46 percent of Korea’s total ethylene production. Moreover, Yeosu’s crude oil refining capability is 790,000 B/day, accounting for 25 percent of the domestic oil refining capacity. Its fertilizer production capacity is about 1.32 million tons per year, accounting for 32 percent of total domestic production.

This superior production capacity is attributable to outstanding infrastructure. The industrial water of Yeosu National Industrial Complex is about 540,000 tons per day, enough to cover the actual daily usage of 400,000 tons per day. In addition, electricity supply is 835,000 kW, way over the electricity demand of 580,000 kW. There are also 14 ports available for 36 berthing simultaneously, allowing for berthing capacity of up to 2,000-300,000 tons.
In 2013, an access road to the National Industrial Complex was constructed as part of SOC expansion, resulting in an improved business environment.

The production and sales of Yeosu National Industrial Complex have been on the steady rise. As of 2018, its production reached KRW 83,658.1 trillion, up 20.6 percent from 2015, while the export amount recording USD 31.08 billion, up 3.1 percent from 2015. The number of employees has continued to rise as well, reaching 23,363 as of 2018.

Taking the infrastructure Yeosu Gwangyang Ports as a stepping stone to go beyond Korea to the world

Yeosu is not only connected to Korea’s capital area in three hours by highway, but also connected to the world through its outstanding infrastructure. Yeosu Gwangyang Ports recorded a total cargo volume of 303 million tons as of 2018 thanks to its infrastructure including an efficient straight-type port, wide opening yard (600 meters in width), and 100% On-Deck container port system. Also, proving its reputation as Korea’s largest export and import port, it handled 270 million tons of imports and exports. Breaking it down by continent, Asia topped the list (83.1%), followed by the Americas (6.2%).

<table>
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<th>Cargo Handling Capability of Yeosu Gwangyang Ports</th>
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<tr>
<td>Container</td>
</tr>
<tr>
<td>3.48 million TEU</td>
</tr>
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<td>12 ships</td>
</tr>
</tbody>
</table>

The latest technology is also available in the Yeosu Gwangyang Ports. Gwangyang Port Free Net (GP FreeNet) has been the first to provide wireless internet service in ports in Korea, allowing all ships going through Yeosu Gwangyang Ports to use Wi-Fi based internet for free.

Yeosu continues to develop

The Yeosu Gwangyang Port Authority recently signed an agreement to develop “Gwangyang Port 3rd-Phase Dredged Spoil Disposal Area.” This project was initiated by petrochemical companies in Yeosu, requesting the provision of a site to invest in future new industries. The purpose is to turn the existing dredged spoil disposal area into a convergence logistical center capable of creating new added-value. It will be created in the vicinity of Yeosu Industrial Complex and will be implemented speedily, having been selected as the core project of the government.

The total project budget of KRW 456.2 billion will be put in to create 3.18 million sq. meters of land over the next ten years from 2019 to 2029. Future new materials (chemicals, oil refinery, metal industries, etc.), complex high-tech industries (electronics, medical, precision machinery, etc.), and complex logistical manufacturing (warehouse and transport industries) will be located there. A number of companies have already showed intention to move in. Construction is scheduled to commence in early 2021, followed by the provision of land and construction of factories in late 2022. In addition, the government-support infrastructure such as a gateway bridge, sewage treatment facilities, and sewage treatment plant will be provided to help companies run their businesses on a more stable basis.

Source: Korea Petrochemical Industry Association, Yeosu City, Yeosu Gwangyang Port Authority, Yeosu Regional Office of Oceans and Fisheries, Gwangyang Bay Area Free Economic Zone Authority

By SoHyun Kim
Manager
Korea Trade-Investment Promotion Agency (KOTRA)
shsh1224@kotra.or.kr
Saudi Aramco is the national petroleum and natural gas company of the Kingdom of Saudi Arabia based in Dhahran, Saudi Arabia. Through its 80-year history, it has become one of the largest companies in the world by revenue.

Over the years, Saudi Aramco has maintained a base for longstanding commercial and industrial ties with Korean companies with businesses in Saudi Arabia. With the mission to support these ties and signify its global importance at the heart of some of the world’s largest and fastest growing economies, the company established operations in South Korea in 2012 as Aramco Asia Korea Limited (hereinafter referred to as Aramco Korea).

Fahad A. Al-Sahali is currently representative director of Aramco Korea. With a degree in chemical engineering, his previous career experience consists of working as a Ras Tanura Refinery process engineer, and then as a Ras Tanura Refinery operations coordinator managing the manufacturing planning and economics in the refinery. Later on, he was nominated to be a part of the setup and commercial team in the Saudi Aramco & TOTAL Refining and Petrochemical project (SATORP). As a joint venture manager, he has handled various Saudi Aramco investments with international partners such as TOTAL, Exxon Mobil, Sinopec and Shell, focusing on the best interest and alignment between stakeholders. He contributed significantly in increasing the refining capacity of Saudi Aramco and the growth of its joint ventures domestically and internationally. Throughout his career, Al-Sahali has led many cross functional teams in business development and commercial discussions especially during his appointment as director of Aramco Asia Portfolio Management.

KOTRA Express sat down with Al-Sahali to hear more about Korea’s oil industry and his experience doing business here.

Please tell us about the business Saudi Aramco operates.

Over the past eight decades, Saudi Aramco has evolved to become the world’s largest integrated oil and gas company. We manage Saudi Arabia’s proved reserves of 257 billion barrels of oil equivalent as of 2018.

In upstream, our goal is to maintain our position as a world-leading crude oil producer and the lowest-cost producer, while providing reliable crude oil supply to customers. We are producing approximately one in every eight barrels of crude oil globally. In the first half of 2019, we maintained our total hydrocarbon production of 13.2 million barrels of oil equivalent per day and an average daily crude production of 10 million barrels per day (bpd).

In downstream, our aim is to further diversify our operations, growing and optimizing the performance of our business and increasing the proportion of petrochemicals production, capturing incremental margin in the hydrocarbon value chain. The Company’s refining gross throughput stood at 4.6 million bpd in the first half of 2019.

What made Saudi Aramco establish a branch in Asia and particularly, in Korea? What are the advantages of doing business here?
The Asian economies represent one of the fastest growing regions for our products. Our expansion in Asia demonstrates our long-term commitment to the region’s energy security taking into account the world’s need for more adequate, reliable, affordable and cleaner energy. Bearing that in mind, we are actively taking steps to create a fully integrated business across the entire hydrocarbon value chain.

Korea in particular is an attractive investment location for us because of its thriving business ecosystem, excellent scientific R&D and infrastructure, and a highly educated and talented workforce. Over the past few decades, Korea has played an important role in the development and growth of Saudi Arabia and Saudi Aramco. Considering the importance of Korea, it’s natural that we stand by Korea as a reliable source of energy to fuel its rapid growth.

**What are some of the main business sectors of Korea that Aramco Korea focuses on?**

We have been a growing force in the local energy services market by providing a wide range of services for both Saudi Aramco and its Korean partner companies. Our role is to bolster Saudi Aramco’s long-term commitment to the Korean crude oil and liquefied petroleum gas (LPG) markets.

Our activities include strengthening the relationship between Saudi Aramco and its Korean customers and partners, searching for new technologies and business opportunities, and capitalizing on Korea’s manufacturing competitiveness to achieve Saudi Aramco’s strategic sourcing objectives.

With Aramco Overseas Company being a major shareholder in S-OIL which is South Korea’s third-largest refiner, Saudi Aramco just celebrated the inauguration of a new Residue Upgrading Complex and Olefin Downstream Complex in addition to signing an MOU to collaborate on a USD 6 billion Steam Cracker & Olefin Downstream Project.

Our focus is well manifested on the recent various MOUs and agreements worth billions of dollars that Saudi Aramco signed during the royal visit of HRH Prince Mohammed bin Salman, Crown Prince, Deputy Prime Minister, and Minister of Defense of Saudi Arabia in June 2019 with major partners including Hyundai Motor Company, Hyundai Heavy Industries Holdings, Hyundai Oilbank, Korea National Oil Corporation, Hyosung Group, GS Holdings and Daelim Industrial.

"Korea in particular is an attractive investment location for us because of its thriving business ecosystem, excellent scientific R&D and infrastructure, and a highly educated and talented workforce."

**What are the growth strategies that Saudi Aramco has when it comes to doing business globally and in Korea?**

While strengthening its position as one of the world’s leading energy companies, Saudi Aramco also spared no efforts in elevating the downstream business to the level we have created for upstream. Our ultimate target of 8-10 million bpd of integrated refining and marketing capacity will create a better balance between upstream and downstream segments. An even more exciting part of our downstream strategy is our future chemicals business, which we believe will enhance our position as a leading integrated energy company.

We hold an ambitious downstream growth strategy in Asia, particularly the Korean market. Out of many, the share purchase agreement between Saudi Aramco and Hyundai Heavy Industries Holdings to acquire stakes in Hyundai Oilbank as well as the aforementioned expansion of S-OIL and the various MOUs and agreements signed with major Korean companies are recent examples of alignment with our global downstream strategy.
We also have plans to attract Korean companies to invest in Saudi Arabia through our in-Kingdom Total Value Add (IKTVA) program which is aligned with “Saudi Vision 2030” aiming to increase foreign direct investment into the Kingdom. Examples are our efforts with Hyundai Heavy Industries and other partners to establish a world-class maritime yard within the King Salman International Complex for Maritime Industries and Services in Saudi Arabia, as well as the recent MOU signed with the SeAH group for collaboration in specialty steel value chain developments in the Kingdom of Saudi Arabia.

Some of our recent endeavors include support for a wide range of citizenship activities, including scholarships for talented university students with disabilities majoring in engineering, science and technology; full support for the design and construction work for a renewable energy themed playground at the Seoul Energy Dream Center; support for the installation of Aramco Hope Tree, the solar-powered street lights; and donation for the installation of solar power generation systems at local welfare facilities. Giving back to communities where we operate is in our DNA.

It’s well known that Aramco Korea is active in conducting citizenship programs in Korea. Could you please elaborate on the rationale of your philanthropic programs?

For us, being a good corporate citizen means more than just doing well. Instead, it means acting with a purpose in mobilizing our resources to generate opportunities that help make a positive impact on the environment, people and their communities.

By Grace Park  
Executive Consultant  
Korea Trade-Investment Promotion Agency (KOTRA)  
gracepark@kotra.or.kr
Immediately after the G20 Osaka Summit meeting, a number of Japanese media outlets began reporting on the Japanese government’s plan to change its export regulation policy against Korea. The core of the policy change is to remove Korea from its white list of 27 countries, which has been allowing preferential treatment on exports and technology transfer licenses. The news was rather shocking in two respects; first, it was just one day after the G20 summit meeting where Japanese Prime Minister (PM) Shinzo Abe vowed to “lead global economic growth by promoting free trade” and “to realize and promote a free and open, inclusive and sustainable, human-centered future society.” His announcement to the world actually proved to be vacuous slogans in less than 24 hours. It was also a shock that Korea was the only country to be omitted from the white list, on which countries like Poland, Argentina and Greece, among others, are included. This makes people suspect that Japan’s action was all but retaliatory.

Why? Although Japanese government officials reiterated numerous times that this was a matter of security precaution, the real intention was quite evident; it was a lurking political antagonism against South Korean President Moon Jae-in and his government. President Moon and his cabinet members were conceived by Japanese leaders as very adamant on the reclamation of cruelty and exploitation during the colonization period in 1910-1945. Although the Japanese government and PM Abe believe that everything was settled in its entirety when Korea and Japan signed the treaty on the basic relations in 1965, after which Korea and Japan normalized diplomatic relations, they were severely angered and agitated when the Korean supreme court ruled last October that Japanese firms should offer compensation for their belated unlawful damages committed more than a half century ago.

No matter what the real intention behind Japan’s initial action was, the consequences and/or reactions in Korea were beyond anyone’s imagination. Hundreds of thousands of people joined various boycott movements, and vacations to Japan were almost completely annihilated. Major Japanese products such as beers, cars and apparel are being openly denied by Korean consumers. Cultural activities between schools and local governments of the two countries are being cancelled by Korean counterparts and there have been massive anti-Abe demonstrations on the streets across the country.

All these actions are, however, personal and filled with emotion, which would likely return to normality sooner or later.

Nonetheless, significant and non-transitory movements broke out from this Korea-Japan turmoil. It brought realization to Korean people of how deeply Korean industries have been subjigated by Japanese industrial advancement. Most of the products made in Korea were found to be using crucial Japanese parts and materials without which manufacturing was almost impossible. Semiconductors, mobile phones, cosmetics, pharmaceuticals and automobile production all require a certain portion of Japanese materials. Korean people as well as the government has now begun to realize the immense technological gap or dependence on Japan in many industries.

With this recognition, the Korean government hurriedly prepared and announced a set of comprehensive programs to enhance technological development in the parts, material and equipment industries. The programs’ longer term objective was set to establish strong competitiveness in these industries, but the immediate goal is to provide a sufficient supply of 100 strategically crucial commodities. The 100 products were picked according to industrial importance, substitutability, dependence on a particular country, and its positive effect on leading industries. Those include 6 major categories: semiconductors, display, automobiles, electric and electronic products, machineries and metals, and basic chemical products. Of these 100 products, the government believes 20 items could be sufficiently supplied with 1 year, and the rest could be readily provided in 5 years. Import diversification is the prime strategy for the 20 quick items, and massive R&D investments are required for the 80 5-year items. The government plans to put KRW 7.8 trillion in a 7-year period for domestic substitution, as well as an additional KRW 2.5 trillion in encouraging M&A of technologically advanced companies. Also, the government plans to provide preferential support to technology transfer and direct investment from abroad.

No one can deny that the program is needless, but at the same time, no one would agree that it will be enough, either. Not that KRW 10 trillion involved is too little. Not that the government-picked 100 strategic items miss the real target. The most important element in the program should be that the real initiative should be given to the private sector, namely the corporations involved. They are the ones who know what to produce here, and they are the ones who know how to produce them here. So, the private sector should take the helm of technological development. They would try to produce here if they think it desirable and possible. It can be successful only when the private sector can take control of the destiny of technological development. Some must be supplied internally, but it is not necessary for all 100 items to be produced here. It is true liberation when Korea does not need to depend or rely on Japanese parts, materials or equipment, and PM Abe has awakened the Korean people to hurriedly do so.

By Professor Se Don Shin
Dean, Sookmyung Women’s University
seshin@sm.ac.kr

* The opinions expressed in this article are the author’s own and do not reflect the views of KOTRA.
INVEST HERE

Saemangeum Project Summary

- **Purpose:** Develop saemangeum project area into a central global free trade area
- **Size:** 409㎢ (land development 291㎢, fresh water lake 118㎢)
- **Location:** Buan-gun, Gimje, Gunsan Jeollabuk-do
- **Project Cost:** Approx. KRW 22.19 trillion
- **Plans for each sites:** Industrial research site, International cooperation site, Tour and leisure site, Agriculture site, Environment and ecology site, Rear city site

The best R&D Support Center will stand alongside the enterprises.

- **Public Research Institute:** 38 institutes, 1,360 people
  (National Research Institute, Regional Cooperation Research Center, Regional Technology Innovation Center)
- **University:** 20 universities, 5,255 people (University research centers)
- **Enterprise:** 240 enterprises, 2,556 people

**Enterprises will be able to recruit excellent and capable industrial manpower.**

Training and providing 30,000 professionals every year.

- 36 natural science and engineering universities and vocational high schools train and foster technically capable experts
  - 20 natural science and engineering universities, 25,000 people, 16 vocational high schools, 3,000 people
- **Industry, Education, Government Joint Project:** KRW 3.8 billion invested every year, 1,100 people
  (11 universities, 26 courses)
  - Enterprises and universities cooperate to foster capable personnel for the industrial sites.
- **Small and medium-sized Business Manpower Support Project**
  - Operates a job placement center for employment and recruitment
<Common matters>

A company, who has concluded the preliminary MOU with Jeollabuk-do
A company as a going concern for more than 3 years (Except large-scale investments)
An investment in excess of KRW 1 billion (However, in the case of IT·CT industry and R&D service, carbon company, and returning domestic company, an investment in excess of KRW 100 million)

<Detailed matters>

<table>
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<tr>
<th>Classification</th>
<th>Subject of assistance</th>
<th>Contents of assistance</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishment or transfer</td>
<td>- (Head office, factory) Permanent employment of 20 people and more, investment in excess of KRW 1 billion</td>
<td>Within 10% of investment amount in excess of KRW 1 billion</td>
<td>KRW 5 billion</td>
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<tr>
<td></td>
<td>- (Research institute) Permanent employment of research personnel of 5 people and more, investment in excess of KRW 1 billion</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>- (IT·CT Industry and R&amp;D business, carbon company) Permanent employment of 5 people and more, investment in excess of KRW 100 million</td>
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<tr>
<td>Large-scale investment</td>
<td>- Investment with more than KRW 100 billion or employment of more than 300 people</td>
<td>Within 10% of investment amount in excess of KRW 1 billion</td>
<td>KRW 30 billion</td>
</tr>
<tr>
<td></td>
<td>- Investment with more than KRW 200 billion or employment of more than 500 people</td>
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<td></td>
<td>- Investment with more than KRW 300 billion or employment of more than 1,000 people</td>
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<tr>
<td>Employment subsidy</td>
<td>- Company in excess of the new employment of resident of province for more than 20 (permanent employment)</td>
<td>Excessive personnel of 20 people of new employment from the resident of province - KRW 1 million x 6 months / person</td>
<td>KRW 1 billion</td>
</tr>
<tr>
<td>Education training subsidy</td>
<td>- A company, who implements the education training for the permanent employment after the new recruitment of more than 20 residents of province</td>
<td>Personnel in excess of 20 new recruited residents of province - KRW 100,000- 500,000 x 6 months/person</td>
<td>KRW 500 million</td>
</tr>
</tbody>
</table>

Every month, KOTRA Express provides answers to some frequently asked questions submitted by foreign-invested companies in Korea and potential investors.

**Immigration priority service for foreign investors**

**Q.** Are there special benefits for foreign investors (D-8 visa holders) in the immigration process?

**A.** Yes. D-8 visa holders can use the fast-track immigration lane at the airport without having to present the Immigration Priority Card.

**Additional information**

- Employees and executives of an overseas parent company of a foreign invested company who do not hold a D-8 visa can also enjoy the same benefits through issuance of the Immigration Priority Card.

- An **Immigration Priority Card** is issued by the Ministry of Justice to make the immigration process more convenient. KOTRA is one of the agencies that are delegated to select recipients of the Immigration Priority Card, and the card issuance application can be filed by the foreign investor. Immigration Priority Card holders can use the fast-track immigration lane (the one for flight crew and diplomats) for an expedited immigration process.

- The validity of the Immigration Priority Card is **3 years** (from the date of issuance).

**Eligibility for the Immigration Priority Card**

① Executives and employees of overseas parent companies or Asia regional headquarters that meet the following minimum investment requirements (notification-based FDI amount)

<table>
<thead>
<tr>
<th>Business category</th>
<th>Minimum investment amount (notification-based)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>USD 15 million</td>
</tr>
<tr>
<td>Finance and insurance</td>
<td>USD 50 million</td>
</tr>
<tr>
<td>Wholesale &amp; retail, transport &amp; storage</td>
<td>USD 5 million</td>
</tr>
<tr>
<td>Others</td>
<td>USD 10 million</td>
</tr>
<tr>
<td>Operation of an R&amp;D center</td>
<td>USD 2 million</td>
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<tr>
<td>Businesses accompanying new growth driver industry technology</td>
<td></td>
</tr>
</tbody>
</table>

※ When applying for reissuance after the card’s expiration date, the ratio of FDI on arrival basis to FDI on notification basis should be 50% or more.
FAQ FROM INVESTORS

- Executives and employees of overseas parent companies or Asia regional headquarters of foreign-invested companies with full-time employees of 100 or more
- Executives and employees of foreign economic organizations in Korea
- Members of investment delegations invited by related central administrative organizations or local autonomous bodies

Documents to submit

1. Application form for immigration priority card

2. One of the following documents:
   * Executives and employees of overseas parent companies or Asia regional headquarters of foreign-invested companies: Copy of foreign-invested company registration certificate
   * Executives and employees of foreign economic organizations in Korea: Certified copy of corporate registration
   * Members of investment delegations invited by central administrative organizations or local autonomous bodies: Letter of invitation

3. Certificate of employment at an overseas parent company of a foreign-invested company or Asia regional headquarters (or documents confirming that the applicant for the card belongs to the company or organization eligible for card issuance)

4. One of the following documents:
   * Companies operating an R&D center: Certificate of recognition of a company-affiliated research institute or certificate of recognition of a research & development department (or official letter of designation as a research & development facility by the Ministry of Trade, Industry & Energy)
   * In the case of companies accompanying new growth driver industry technology, an official letter from the Ministry of Strategy and Finance on the decision to grant tax reduction/exemption
   * In the case of companies employing 100 or more full-time employees, a list of the employees insured by the business establishment or a report on status of tax withholding issued by a tax office

5. Copy of applicant’s passport

Issuance Procedure

If you have further questions, please contact +82-1600-7119 or visit www.investkorea.org >> How We Can Help >> Online Consulting.
Art of the Fold, the Design of Handheld Fans

Back in the days when we didn’t have air conditioners, my mother used to fan us to sleep during hot summer nights. With the cooling wind blowing over us like a gentle breeze over the fields, we drifted to sleep before we knew it, the sleepless night turning to dawn. Unlike wind from machines like the electric fan or air conditioners, wind from a handheld fan is made by human hands and contains a touch of softness. There is no worry of catching a cold from a handheld fan. At the core of the fan’s design is the fold, inviting the user to spread it open.

Long History of the Fan

The Korean word for fan is buchae which means “a tool for creating wind.” The history of the fan goes as far back as the history of humanity. It is thought that fans in primitive times were made of leaves, and a feather fan was discovered in King Tutankhamun’s tomb in Egypt dating back 3,000 years. In Korea, a fan spine thought to date back 2,000 years was discovered in Changwon. Although fans were commonplace objects in Korea, China and Japan, they were popularized only later in Europe. Chinese fans were brought to Europe in the 15th or 16th century, to be produced mainly in Paris. Fans became an essential lady’s accessory by the 18th century.

Fans fall into two major categories, rigid fans and folded fans. They are also called danseon and jeobseon in Korean, using traditional Hanja Chinese characters. The rigid fan, or danseon, is made by attaching round paper or silk to the ribs, while a folded fan, or jeobseon, is designed to be folded and opened. Among the folded fans, the jwilbuchae or hapjukseon, was a widely used type of fan made from bamboo in Goryeo (918-1392) and Joseon (1392-1910). The technique for producing these fans was so advanced that it was passed on to craftsmen in Ming China and Tokugawa Japan, as well. The jwilbuchae, which took 108 steps to finish, was such a prized product that it was used exclusively by nobility and in international trade.

Folded Design to be Opened

On Dano, a traditional holiday that occurs on the fifth day of the fifth lunar month and traditionally marks the formal beginning of summer, it used to be the custom in Joseon to give presents of fans inscribed with words or pictures. A Dano fan was a very meaningful gift, a royal gift presented to civil service officials by the ruling monarch. The fan was more than a tool to drive away the heat or “bad energy.” It was a symbol of class, with a greater number of ribs symbolizing a higher social status. A nobleman never left home without his fan, which was easily portable when folded and put in his sleeve.

The fan was also used to cover the face as a form of etiquette, as a percussion instrument by performers of pansori lyrical singing, and as a balancing tool by tightrope walkers. Women used fans to keep the flame going in the ovens and to blow away husks from loose grain. Although the fan is not as commonly used today, the design has remained almost unchanged. Waving a fan to create moving air is to unleash the potential energy within and to change the flow of air as the situation calls for. This is why the fold is at the core of a fan’s design. It calls upon us to spread it open and to spend our energy in the creation of moving air.

Source: “Art of the Fold, the Design of Handheld Fans” by Lee Eun-yi, Designer & Writer, Korean Culture and Information Service (KOCIS)
KOTRA, Amazon Web Service Korea to Offer Cloud Technology Consulting

KOTRA, jointly with Amazon Web Service (AWS) Korea, launched a technology consulting service for startups with the long-term aim to support SMEs in going global by utilizing cloud technology. The service will be provided for one month, signaling its launch with the opening ceremony at KOTRA’s head office in Seoul on Monday, August 12.

KOTRA, in cooperation with AWS, has been supporting Korean startups since last year based on the outlook that cloud computing will lead the Fourth Industrial Revolution in the future. The agency received plans from startups to utilize AWS to go global and selected 10 finalists who will be provided with a technology consulting service and AWS credit worth USD 2,000.

The startups selected this year include “Skylabs,” which develops a ring-type wearable device detecting irregular heart rhythms; “Planet Ops,” a cloud-based reservation and ticketing platform for low cost flights; “BIAEN,” a platform analyzing patents and patent-related disputes through big data and AI; “Orchestra Story,” a service providing personal music lessons worldwide via two-way video; and other high-tech startups.

KOTRA focuses on helping startups expand to the global market and achieve digital innovation. In particular, the agency plans to maximize the benefits of this project by combining AWS’s global infrastructure and cloud computing capability with KOTRA’s experience and knowledge in supporting overseas businesses.

Sun Seok-ki, executive vice president for small and medium enterprise of KOTRA, said, “It has now become possible to expand to the global market by participating in programs at the 129 KOTRA overseas offices and establish local infrastructure through AWS’s cloud computing, without the need to be physically present.”

Invest KOREA’s Services

One-Stop Service for Foreign Investors
The Inbound Investment Consulting Department not only assists foreign investors and foreign-invested companies in the investment review and implementation stage, but also offers customized services to help foreign investors and their families get comfortably settled in Korea.

IKMP is a project aimed at discovering promising Korean SMEs seeking to attract foreign investment and matching them with foreign investors who have compatible needs. Projects looking for investment are posted on our website at www.investkorea.org.

Foreign Investment Ombudsman
The Office of Foreign Investment Ombudsman is an organization established in 1999 to provide close aftercare support and grievance resolution services for foreign-invested companies, and is dedicated to resolving any difficulties that foreign-invested companies face while doing business in Korea.

Job Fair for Foreign-Invested Companies
IK organizes annual job fairs to help foreign-invested companies discover qualified local talent, and job seekers find employment through job consultations, on-site interviews, and more.

Exclusive Online Recruitment Platform for Foreign-Invested Companies
IK operates a recruitment platform for foreign-invested companies to support their on-demand as well as regular hiring processes. (http://kotra.recruit.com)

Invest Korea Plaza (IKP)
Invest Korea Plaza (IKP) is Korea’s first facility dedicated to the incubation and investment of foreign investors. Each year, more than 40 foreign-invested companies rent out offices in the plaza and utilize IK’s one-stop service.
To subscribe to the KOTRA Express, e-mail ikonline@kotra.or.kr