



Creating Value **Beyond Energy**

Striving for sustainability!

**2017**  
Korea National Oil Corporation





# CREATING VALUE BEYOND ENERGY

Korea National Oil Corporation (KNOC) has lofted Korea into becoming the world's 95<sup>th</sup> oil-producing country.

Leading national energy security with oil development and stockpiling projects in Korea and overseas,

KNOC will be reborn in 2017 with the energy of hope and assured survival.

Undertaking valued efforts for the future!

By ensuring internal stability based on efficient asset management and integrated global management,  
we will strive for sustainable growth.

Watch the future of KNOC as it creates value beyond energy.

## Objective of foundation

To seek stability in the supply and demand of oil by efficiently conducting projects related to development of oil resources, stockpiling of oil, and improvement of the oil distribution structure, while also contributing to the national economy.

## Mission

To provide hope and comfort for the nation through stable supply of oil

## Vision

Creating value beyond energy

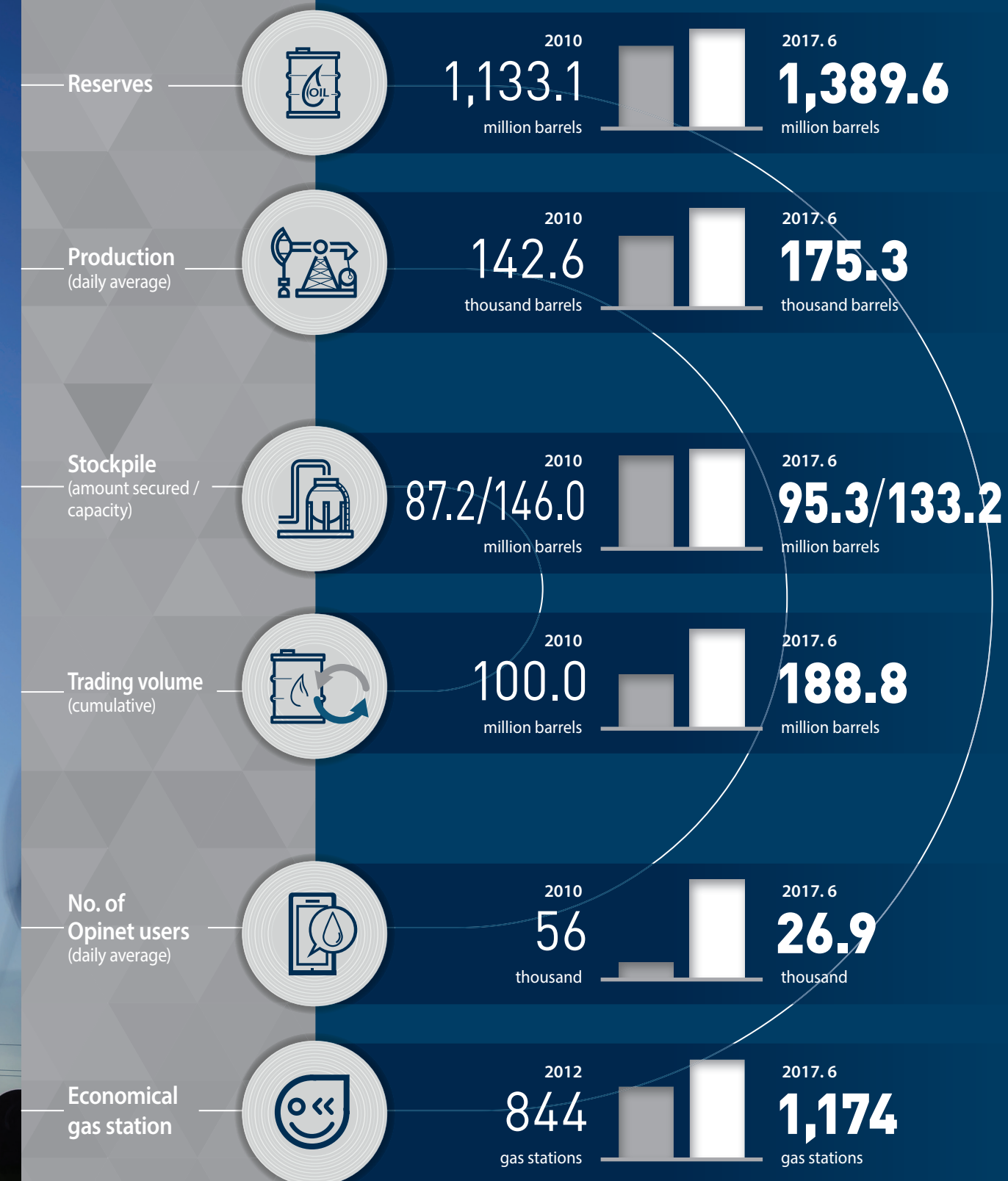
## Strategic goal

Qualitative growth through enhancement of internal stability



# KNOC's CHALLENGE

KNOC is constantly taking on new challenges to deliver better 'future' for the nation through a stable supply of oil.





# Another World Another Lucky


As KNOC turned Korea into the world's 95<sup>th</sup> oil-producing country based on our technological skills, another world for KNOC is to bring 'national happiness' by leading Korea's energy independence.



## OIL DEVELOPMENT PROJECTS

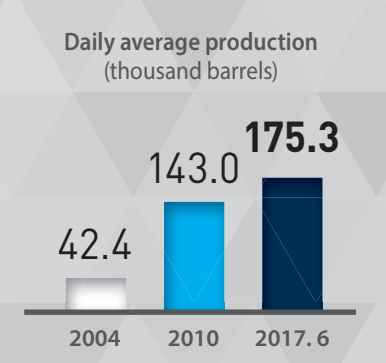
KNOC is in charge of supplying oil resources, the major national energy source, and is actively participating in local and global oil development projects to consistently and stably secure sourcing of oil supply.

\* Participated in 26 projects of exploration and production in 17 countries as of the end of June 2017



### Active oil development for energy independence

Since discovering massive oil reserves in Vietnam's Block 15-1 in 2000, KNOC has been making constant efforts to secure oil resources in Kazakhstan, Indonesia and Peru, etc. In particular, it has been actively spearheading oil development since 2008 by establishing subsidiaries through aggressive M&A in the US, Canada, UK and Kazakhstan, which are the major hubs of world oil development. Also, KNOC has already entered Middle East countries including UAE and Iraq. KNOC is striving to achieve Korea's energy independence by producing a daily average of 175.3 thousand barrels as of the end of June 2017.






### Oil exploration for sustainable growth

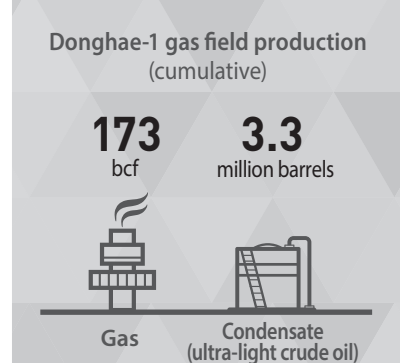
KNOC must consistently secure growth engines, reserves, in order to achieve constant growth. Investments in global oil exploration decreased worldwide due to the recently low price of oil, but KNOC minimized additional investment by conducting a comprehensive reevaluation of the current exploration assets and secured massive new exploration reserves in 2016 (crude oil 257.4 million barrels, gas 1,538 bcf). KNOC will continue to reinforce its financial soundness based on efforts to reduce exploration investments, and make efforts for survival and growth by maximizing efficiency through investment based on choice and focus.





### Local oil development that achieved the dream of becoming an oil-producing country

KNOC has constantly strived to explore oil in Korea since its foundation. As a result, it succeeded in discovering and developing high-quality natural gas layer (Donghae-1 gas field) on the continental shelf on the southeast of Ulsan in 1998, and has secured the status as an oil-producing country by producing gas since 2004. Recently, KNOC also developed the Donghae-2 gas field of the neighboring structure of the Donghae-1 gas field, thereby sustaining its status as an oil-producing country by initiating gas production at the Donghae-2 gas field since 2016. Moreover, three ongoing exploration projects in Korea are being carried out actively with the hope of discovering more oil resources.





# E&P WORLDWIDE

KNOC is in charge of supplying national oil resources and is actively participating in local and global oil development projects amid fierce competition to secure oil resources in order to consistently and stably secure the source of supply. KNOC is currently participating in 26 local and global oil development projects in a total of 17 countries, devoting itself to securing energy resources for Korea.

• Daily Production : 175.3 thousand barrels  
• Reserves : 1,389.6 million barrels  
※ Share of KNOC (As of the end of June 2017)



Daily Production(thousand barrels) Reserves(million barrels)





## OIL STOCKPIILING PROJECTS

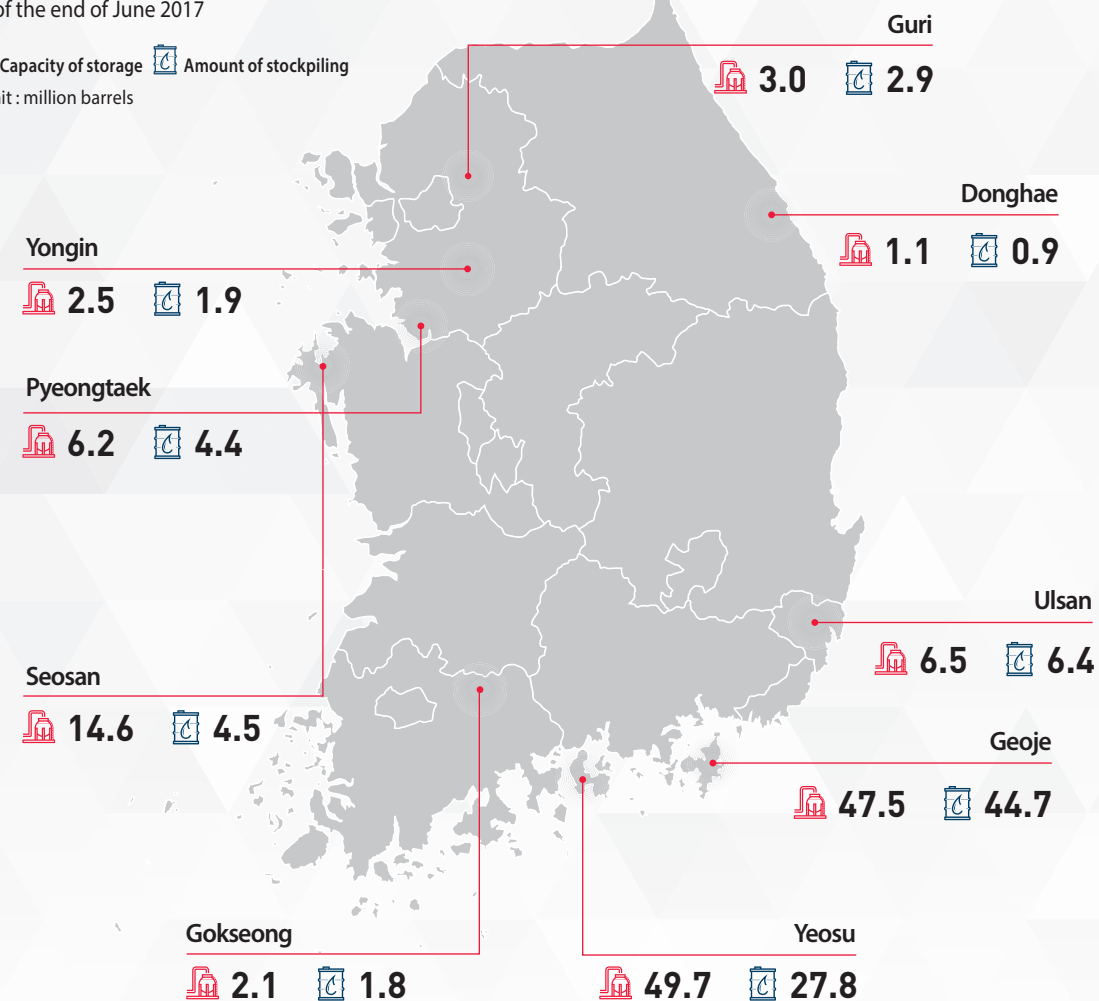
### STRATEGIC OIL STOCKPIILING FOR ENERGY SECURITY

KNOC has persistently carried out oil stockpiling projects since its foundation in order to stably supply oil resources and support storage facilities during a crisis. As of the end of June 2017, KNOC has secured storage facilities to handle 133.2 million barrels, and will be able to secure facilities that can store a total of 146 million barrels by 2020. Furthermore, according to the government's oil stockpiling plan and goal, KNOC has been able to secure the government's oil reserves every year, worth a collective total of 95.3 million barrels, at 9 oil stockpiling bases in Korea such as Geoje, Yeosu and Seosan. This is an amount that can be used for approximately 109 days in Korea according to the IEA standard, and prevents anxiety factors regarding oil supply in Korea in case of an emergency.

- Total capacity of storage : 133.2 million barrels
- Total amount of stockpiling : 95.3 million barrels

As of the end of June 2017

 Capacity of storage  Amount of stockpiling  
※Unit : million barrels



### Accident-free and disaster-free storage facility management

KNOC has achieved the goal of zero accidents and zero disasters for 16 consecutive years thanks to systematic safety control and culture based on the improvement of its process safety management system (PSM). In particular, it has enhanced its ability to handle crises by establishing a response system for earthquakes and fires and improving facilities, and is also promoting safety management by putting some of the deteriorated storage tanks underground cavern.



### Generating profit petroleum marketing projects.

KNOC is reinforcing its competitiveness in oil stockpiling projects by rationally managing the reserved assets while adhering to the original purpose. It is enhancing its ability to handle crises by generating profit based on efficient management of oil reserves and facilities through an analysis of local and global oil market conditions.

### Oil trading


Since 1999, KNOC has been actively trading crude oil, petroleum and LPG by capitalizing on price volatility (by month/by season) of the global oil market. Profits generated here are used to finance the increase in oil reserves for economic national oil stockpiling projects.

### International joint stockpiling

Since 1999, KNOC has been attracting and storing crude oil from oil-producing countries using the extra space of KNOC's storage facilities. This enables oil-producing countries to use KNOC's storage facilities and secure the logistics base of Northeast Asia, while KNOC can increase profits and enhance the level of oil stockpiling.

### Supporting of stockpiled oil and facilities

Since 1982, KNOC has been providing timely support for oil companies in Korea by offering its oil reserves and storage facilities when there is a crisis concerning supply and demand for oil in Korea. This project enables KNOC to promote stabilization of the supply of oil as well as prices in Korea, while also upholding public interest and profitability of oil stockpiling projects.

 2017. 6(cumulative)  
**505.6** billion KRW

 2017. 6(cumulative)  
**956.4** billion KRW

 2017. 6(cumulative)  
**377.4** billion KRW



## IMPROVEMENT OF PETROLEUM DISTRIBUTION STRUCTURE

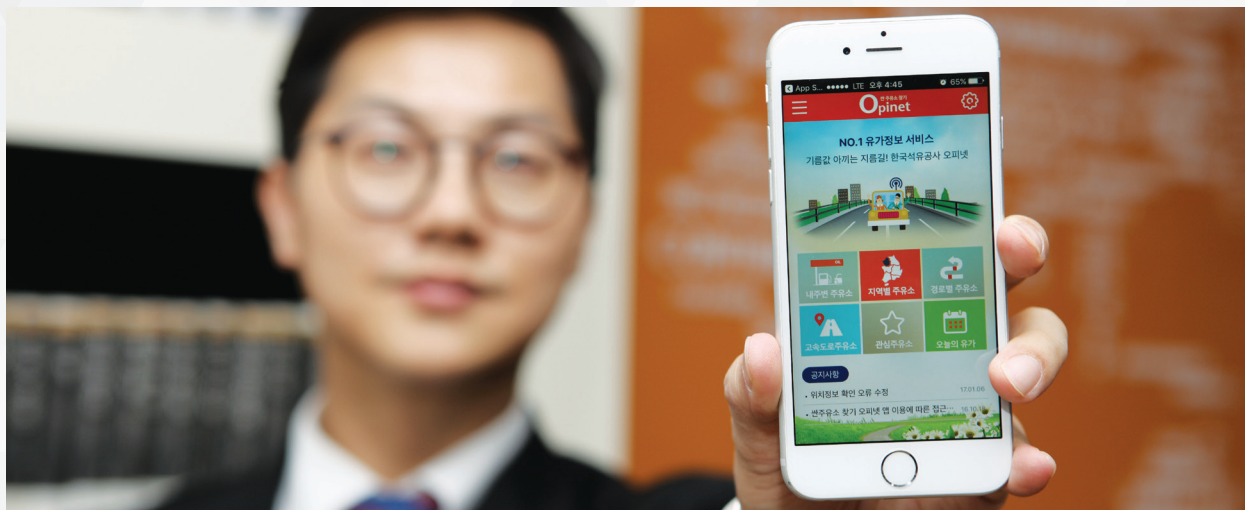


### Economical gas stations

The concept of economical gas stations was first introduced in December 2011 to promote competition and increase transparency in the oligopoly of the incomplete oil distribution market in Korea. Economical gas stations can supply low-priced oil products based on bulk purchasing of products and use of KNOC's storage facilities. They are keeping a lid on price increase of oil products in Korea and contribute to price stabilization. As of the end of June 2017, there are 1,174 (approximately 9.8% of gas stations nationwide) economical gas stations in Korea. This helped to switch to a fairer system of market competition, thereby seeking convenience and benefits for consumers.

### Opinet

KNOC runs 'Opinet,' which provides consumers with oil price information of each gas station on a real-time basis and promotes competition among gas stations. It collects sales price data of over 12,000 gas stations and 2,000 LPG charging stations in Korea, updated 6 times a day, and provides real-time price data via various IT service media such as smartphones and navigations. As of the end of June 2017, a daily average of 269,000 Koreans were using Opinet in 2017 to save on oil expenses. Opinet also constantly seeks to disclose all kinds of information aside from price data, such as announcing gas stations committing illegal acts or disclosing the prices of agricultural tax-free oil.



### Petronet

KNOC is comprehensively collecting, analyzing and evaluating local and global oil data and providing prompt and accurate oil information to various stakeholders, thereby contributing to the government's oil policies and academia's research. The latest local and global oil information is systematically entered into a database and delivered to users through the comprehensive online oil data network, Petronet. Petronet provides daily or weekly data such as petroleum news and oil prices, as well as global oil market information including prices, and trend analysis of supply and demand of oil in Korea.

## R&D

KNOC is establishing and carrying out a mid- to long-term technology plan for technological development and independence. Research on unconventional energy such as oil sands, shale oil and shale gas is actively being conducted using the assets owned by KNOC's subsidiaries of Canada and the US. KNOC is also constantly studying the core technologies of oil engineering for the economic development of oil and gas fields, such as reservoir simulation and EOR(Enhanced Oil Recovery). For such independence in core technology, KNOC has implemented a three-year plan for technological independence from 2014 to 2016, and this resulted in nurturing over 160 technical personnel in core technology. Based on such technological competency, KNOC is also supporting private companies in Korea that relatively lack experience and competency in oil development. KNOC is providing its technological skills and human resources for the development of E&P technology in Korea by dispatching its technical experts to the UAE E&P project in which Korean private companies are participating, in addition to building a pool of consultants to offer consultations upon request.

