
Investor Presentation

Korea Gas Corporation

Results of 1Q FY 2019 (May 2019)



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1. Results of 1Q FY 2019

Sales

● Sales Volume decreased by 10.3% (1.28MMton) YoY to 11.14MMton

- **City Gas (7.016MMton)** : drop by 494 Thousands ton YoY

Decreased demand in housing due to the higher average temperature YoY(Avg.2.5 °C up in Jan&Feb)

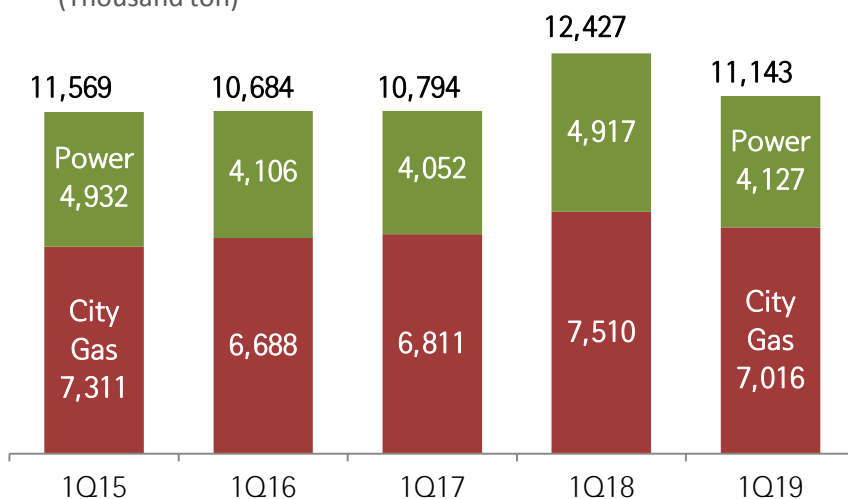
- **Power Sector (4.127MMton)** : fall by 790 Thousands ton YoY

Reduced total power generation by 2.3% due to the higher average temperature YoY

Despite Gov. policies to mitigate fine dust, the base-load power increased due to rising of nuclear plant utilization rate

Sales Volume Trend

(Thousand ton)



Sales Volume Breakdown

(Thousand Ton)	1Q'19 (A)	1Q'18((B)	YoY (A-B)	YoY% (A-B)/B
City Gas	7,016	7,510	-494	-6.6%
Residential	3,777	4,053	-276	-6.8%
Industrial	1,773	1,881	-108	-5.7%
General	524	539	-15	-2.8%
Others	942	1,037	-95	-9.2%
Power	4,127	4,917	-790	-16.1%
TOTAL	11,143	12,427	-1,284	-10.3%

Consolidated Statements of Comprehensive Income

- **Revenue** was 8,701 billion won, fall by 70.2billion won YoY
 - Drop in sales volume (1.28 MM Ton)
- **Operating Profit(OP)** drop by 94 billion won YoY to 869.5 billion won
 - Although overseas projects(ex. Aus GLNG: 20.8bn KRW) showed better performance, the valid fair cost and the guaranteed Return was not reflected because Year 2019 Unit Supply Cost adjustment had not been approved by the Government
 - No tax reimbursement(1Q'18 31.6bn KRW) associated with vapor return gas YoY
- **Net Income(NI)** posted 532.3 billion won, a decrease of 248.8billion won YoY
 - Decreased equity method gains from Associates such as Surgil, DSLNG
 - Reduction in corporate tax reimbursement amount(70.7bn KRW) YoY

(In billion won)	1Q'19(Jan-Mar, A)	1Q'18(Jan-Mar, B)	YoY(A-B)	YoY%{(A-B)/B}
Revenue	8,701.3	8,771.5	-70.2	-0.8%
Cost of sales	7,728.4	7,723.5	4.9	0.06%
SG&A Expense	103.4	84.5	18.9	22.4%
Operating Profit	869.5	963.5	-94	-9.8%
Others	2.8	22.8	-20	-87.7%
Financial gains(losses)	-202.6	-163.9	-38.7	-23.6%
Equity Method gains(losses)	46	64.7	-18.7	-28.9%
Income Tax	183.4	106	77.4	73.0%
Net Income(losses)	532.3	781.1	-248.8	-31.9%

Consolidated Statements of Financial Position

- **Assets** : posted 39,098.1 billion won, a decrease of 591.6 billion won from end of 2018
 - Decrease in Inventory Asset due to reduction in inventory volume(-2.17MM Ton)
- **Liabilities** : 30,205.9 billion won, fall by 985.8 billion won from end of 2018.
 - Drop in accounts payable with reduced procurement volume, etc.
 - Decrease in Interest Bearing Debt as a result of dwindling working capital, etc.
- **Shareholders' equity** : was 8,892.2 billion won, an increase of 394.2 billion won from end of 2018.
 - Reflected NI(KRW 532.3bn) and recognized payable for dividends(KRW -119.2bn), etc.

(In billion won)	End of 1Q'19(A)	End of '18(B)	Difference	Difference(%) (A-B)/(B)
Assets	39,098.1	39,689.7	-591.6	-1.5%
Liabilities	30,205.9	31,191.7	-985.8	-3.2%
Equity	8,892.2	8,498.0	394.2	4.6%
Debt to Equity Ratio	339.7%	367.0%		-27.3%p



2. Investment Highlights

Paradigm Shift of Rising Natural Gas Demands

• Energy policy paradigm shift from cost driven to safety and environmental driven

- Early shutdown of ten aged coal-fired power plants('22), Suspended construction of new coal-fired power plants
- The operation of aged plants will halt during Spring, and The upper limit (80%) of operation rates for coal-fired power plants was introduced to be activated when serious fine dust are forecasting
- Shutdown of aged nuclear power plant(Wolsung#1), cancelled plans to build new nuclear power plants

• A gradual increase in demand for natural gas with eco-friendly energy policies

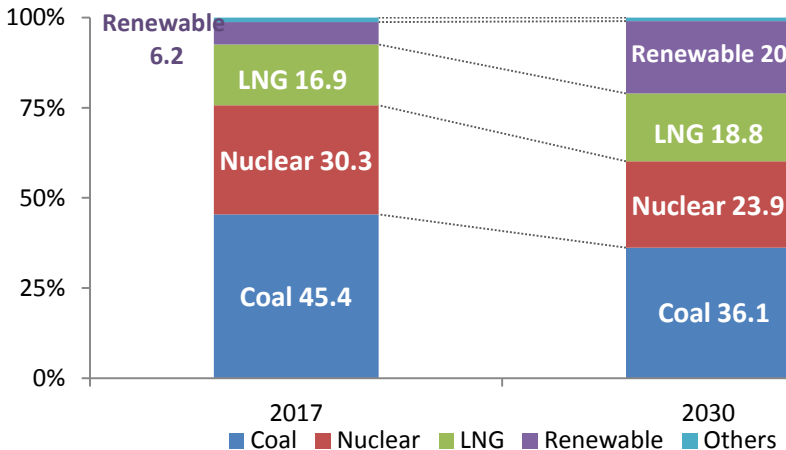
- Gain a higher price competitiveness of natural gas over other fuels such as Coal and Bunker C through energy tax adjustment
- LNG demand will rise according to 'The 13th LT natural gas supply and demand plan' (2018: 36.46mn tons→ 2031: 40.49mn tons)

※ Reason for energy tax adjustment : Rational adjustment by considering environmental impact by each fuels(Coal/LNG)

Generation Mix Forecast*

Energy Tax Adjustment('19.4.1)

(Unit: %)



(unit : won)	Before (B)	After(A)	Differnece (A-B), %
consumption tax	60/KG	12/KG	-48(-80%)
Import Tax	24.2/KG	3.8/KG	-20.4(-84%)
Tariff	7.2/KG	Same as the left	Tariff withdrawal under review

*Source : 8th Basic Plan for long term electricity supply and demand

Guaranteed Operating Profit from Tariff Structure

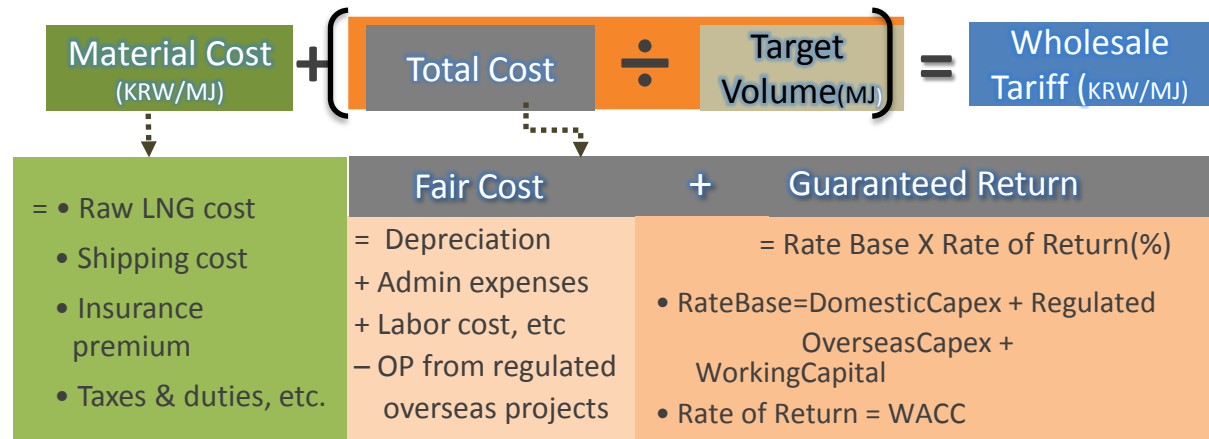
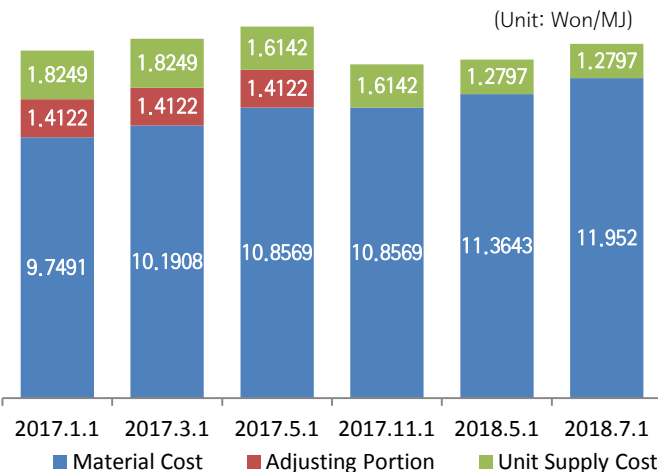
● Stabilized core business with risk-free tariff structure

<Gas tariff : Material cost + Fair cost + Guaranteed Return>





- **Material cost** is reflected in the wholesale tariff through the cost pass-through system (No impact on OP and NI)
☞ risk-free from oil price, forex, interest rate
- **Fair Cost** is the direct and indirect costs incurred in relation to production and supply of natural gas
- **Guaranteed Return** is the reasonable opportunity cost on the truthful and effective assets contributed to the natural gas business

※ Operating Profit from gas sales : Guaranteed Return + Income tax + α (Cost Saving, Non-regulated overseas profit, and etc.)

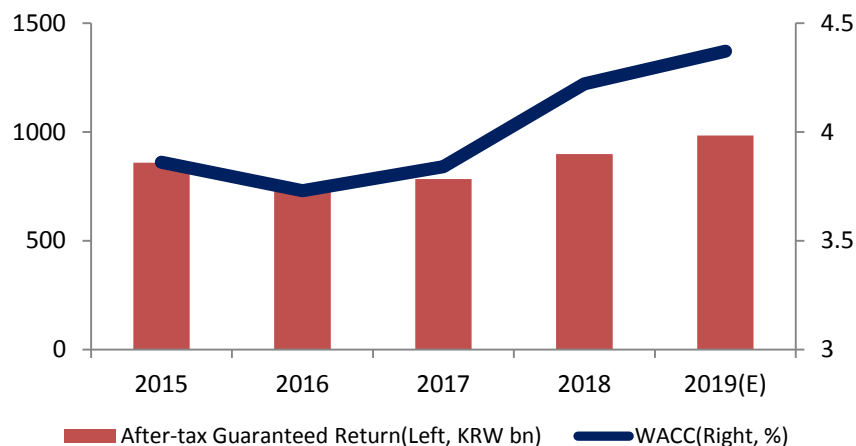
City Gas Sales Price Trend



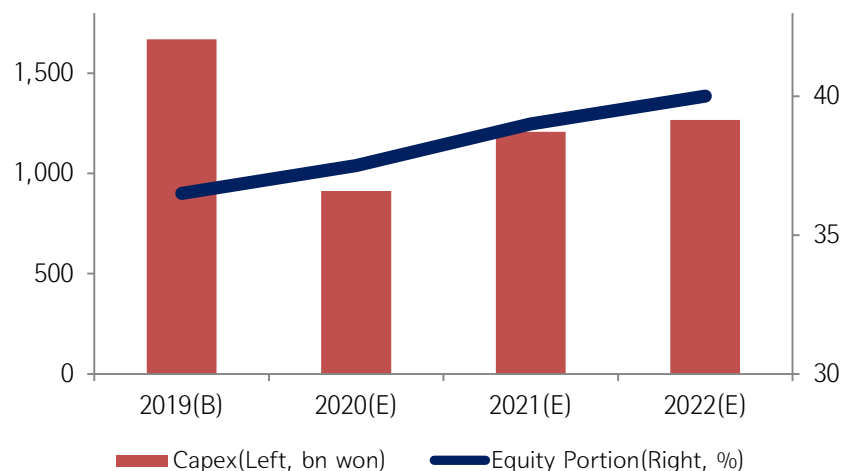
Wholesale Gas Sales Return to Rise Gradually

- **Guaranteed return(2019)** is likely to increase due to rise in Rate Base and WACC
 - Rise in rate base reflected investment in facilities and higher working capital
 - Rate of return increased due to rise in interest rate(2.0%→2.31%) and beta(0.816→0.835)
 - **Expectation for operating virtuous cycle from improved Wholesale Gas earnings**
 - **Rate Base** will increase due to higher working capital and reflect of investment in 5th storage terminal etc.
 - **Rate of Return** is likely to go up thanks to a higher equity portion and beta
- * Structure of virtuous cycle : Guaranteed Return  → Net Income  → Equity Portion  → Rate of return 

Guaranteed Return and WACC Trend



Forecast of Risk-free rate and Equity portion



Improving Operating Profit from Overseas E&P

- **Business portfolio reorganization for core business by restructuring overseas projects**

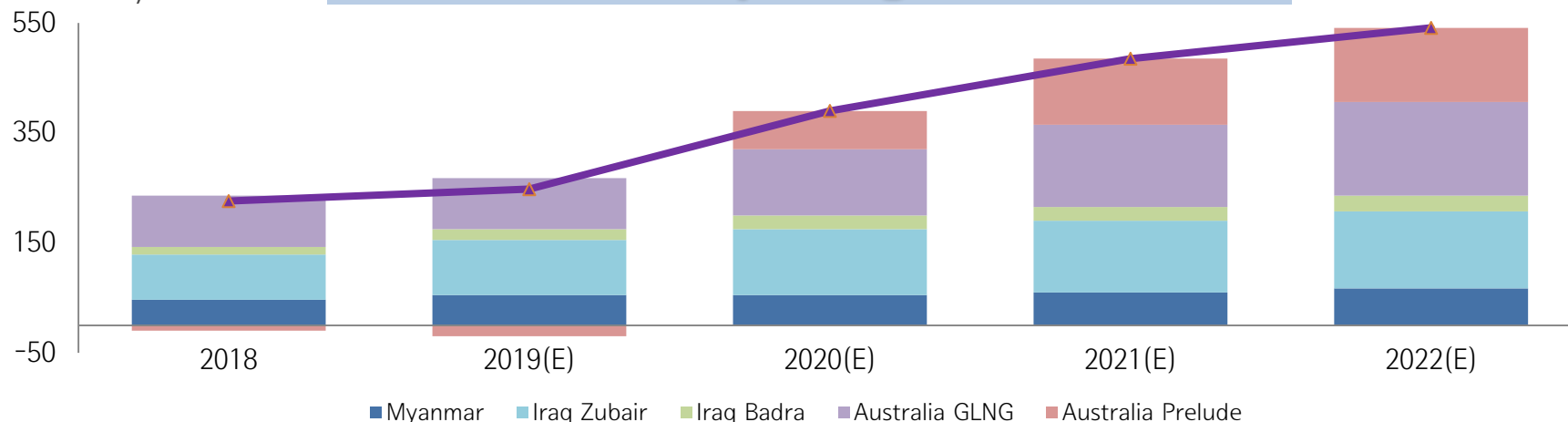
- Canada West Cut Bank : withdrew the business(Dec '18) due to uncertainties about economic efficiency
- LNG Canada : Sold 10% out of KOGAS's 15% equity to Petronas(Jul '18, Recovering sales price, minimizing future CAPEX)
- Iraq Akkas : down-sizing the project step by step by selling equity stakes

- **Expect to generate gradual increase in O.P from overseas projects entering a stabilized production stage**

- GLNG : is likely to generate OP of 90bn KRW in 2019 given increasing oil prices, decreasing production cost
- Myanmar : will be generating OP of 55bn KRW in 2019 resulting from bigger sales volume and oil prices hikes, etc
- Zubair : maintains stable profits with the rising daily production volume (FY2019 OP : 100bn)

Overseas E&P Operating Profit Forecast

(Unit : KRW bn)



● Source : Mid-long term financial management plan approved by the government in Sep 2018

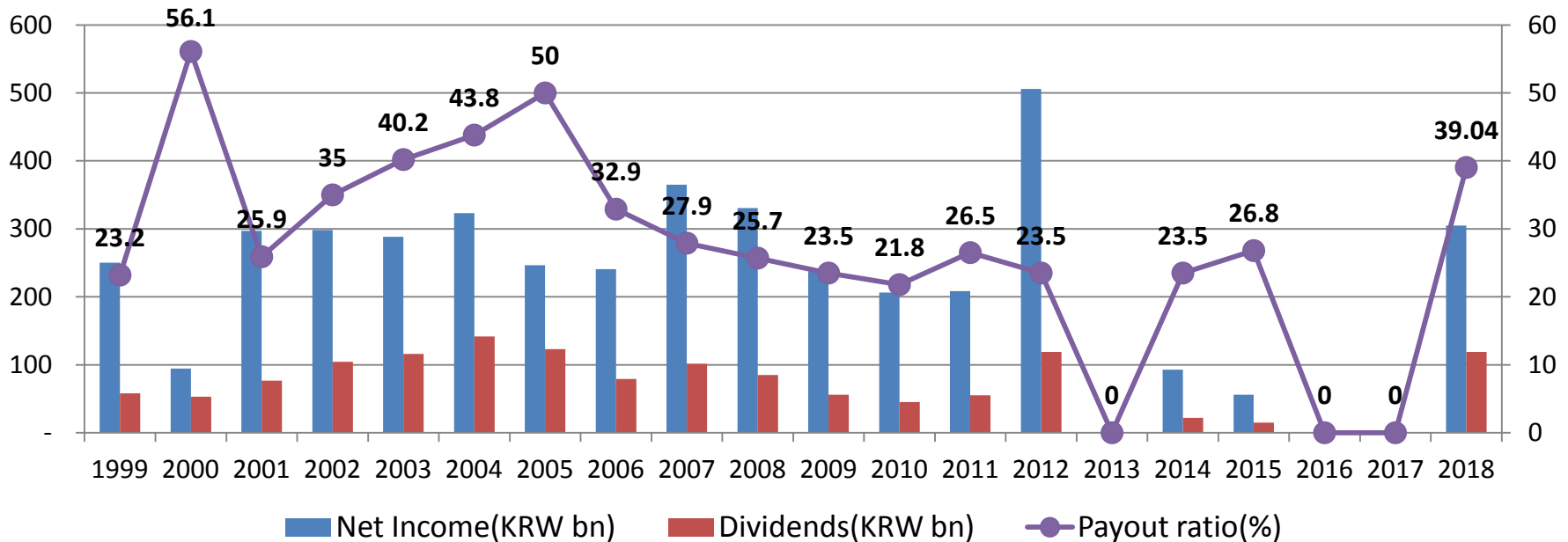
● Assumed Dubai oil price : '19 \$62/bbl, '20 \$72/bbl, '21년 \$74/bbl, '22년 \$75/bbl

Increasing Dividend Payout Ratio

- **KOGAS will gradually increase payout ratio to create shareholders' value and interest**

- Since listed in 1999 , KOGAS has maintained payout ratio above 25% on average
- According to the government dividend policy('14), the dividend payout ratio will increase to 40% by 2020.

✎ **2018 Dividend per Share : KRW 1,360 (payout ratio for 2018 : 39.04%)**



* The dividend was unpaid in 2013, 2016 and 2017 because KOGAS recorded net loss

Revaluation of Mozambique Gas Field

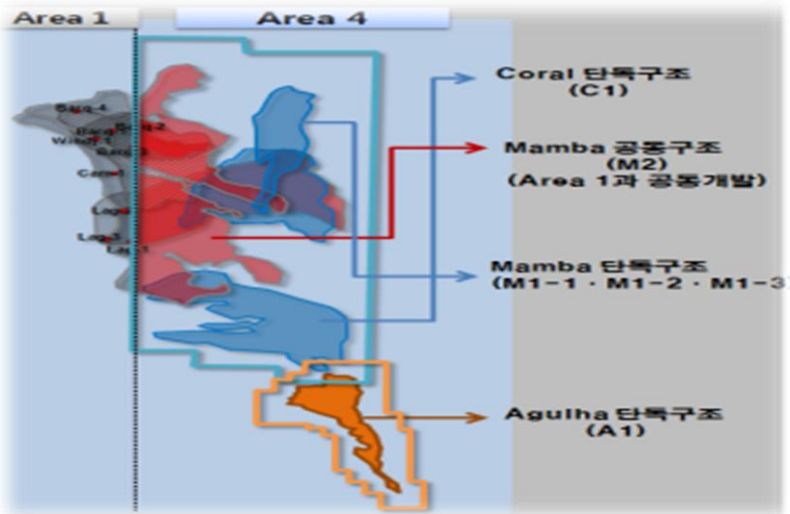
- **Develop step by step for commercializing 85 Tcf gas field**

- (Coral FLNG) Made a final investment decision at June'17, Start commercial production from 2022 (3.3MMton/year)
- (Mamba LNG) Working on FID in Jul '19, expect to enter a commercial production stage by '24 (15MMton/year)

- **Reevaluate in project value considering oil price forecast and stage of development**

- ENI(Area 4 operator) : Sold 25% stake to Exxon Mobile at US\$2.8 bn(Oil level : \$53)
- ENI : Sold 20% stake to CNPC at US\$4.2bn (Oil level : \$105)

Mozambique Gas field



Initial Reserves

	Name	Type	Reserves
1	Coral	non-straddling	16 Tcf
2	Mamba	straddling	51 Tcf
3	Mamba(M1-1)	non-straddling	11 Tcf
4	Mamba(M1-2)	non-straddling	3 Tcf
5	Mamba(M1-3)	non-straddling	1 Tcf
6	Agulha	non-straddling	3 Tcf
TOTAL			85 Tcf

- Found 75 Tcf gas at Area 1 where near Area 4
- Participants: MRV(Operator)*70%, KOGAS/Galp/ENH 10% respectively

* Mozambique Rovuma Venture :Eni/ExxonMobile 35.715% respectively, CNPC 28.57%

Identify Future Growth Engines

● Foster LNG bunkering Business

- Goal : Pioneering the early stage of Bunkering Business by investing the relevant infrastructure
- Target : Construct 1 loading facilities and build 1 LNG Bunkering Ship by 2019(LNG Demand for Bunkering by '30:1.36MM Ton)

● Lay the groundwork for hydrogen Infra Business

- Goal : Lead the hydrogen economy by producing hydrogen and operating H2 distribution centers
- Plan : Deployment Phase(~'22) Construction of 9 production plants, 100km Pipeline, 100 HRS and 140 of T/T
Expansion Phase('23~'30) Construction of 16 production plants, 640km Pipeline, 10 HRS and 360 of T/T

* HRS : Hydrogen Refueling Station , T/T : Tube Trailer

KOGAS' Goal for Hydrogen Biz

비전	수소 생산·유통망 구축을 통한 수소경제 활성화 견인		
목표 [국가수요]	국가 전체 수요의 60% 이상 공급		
	준비기(~ '22)	확산기(~ '30)	선도기(~ '40)
	[47만톤] → 47만톤 (100%) ■ 모빌리티 : 100% ■ 에너지 : 100% - 건물·가정 : 100% - 발전 : 100%	[194만톤] → 173만톤 (89%) ■ 모빌리티 : 100% ■ 에너지 : 85.71% - 건물·가정 : 50% - 발전 : 100%	[526만톤] → 345만톤 (65.75%) ■ 모빌리티 : 100% ■ 에너지 : 57.55% - 건물·가정 : 50% - 발전 : 60%

Hydrogen Infra. Construction Plan

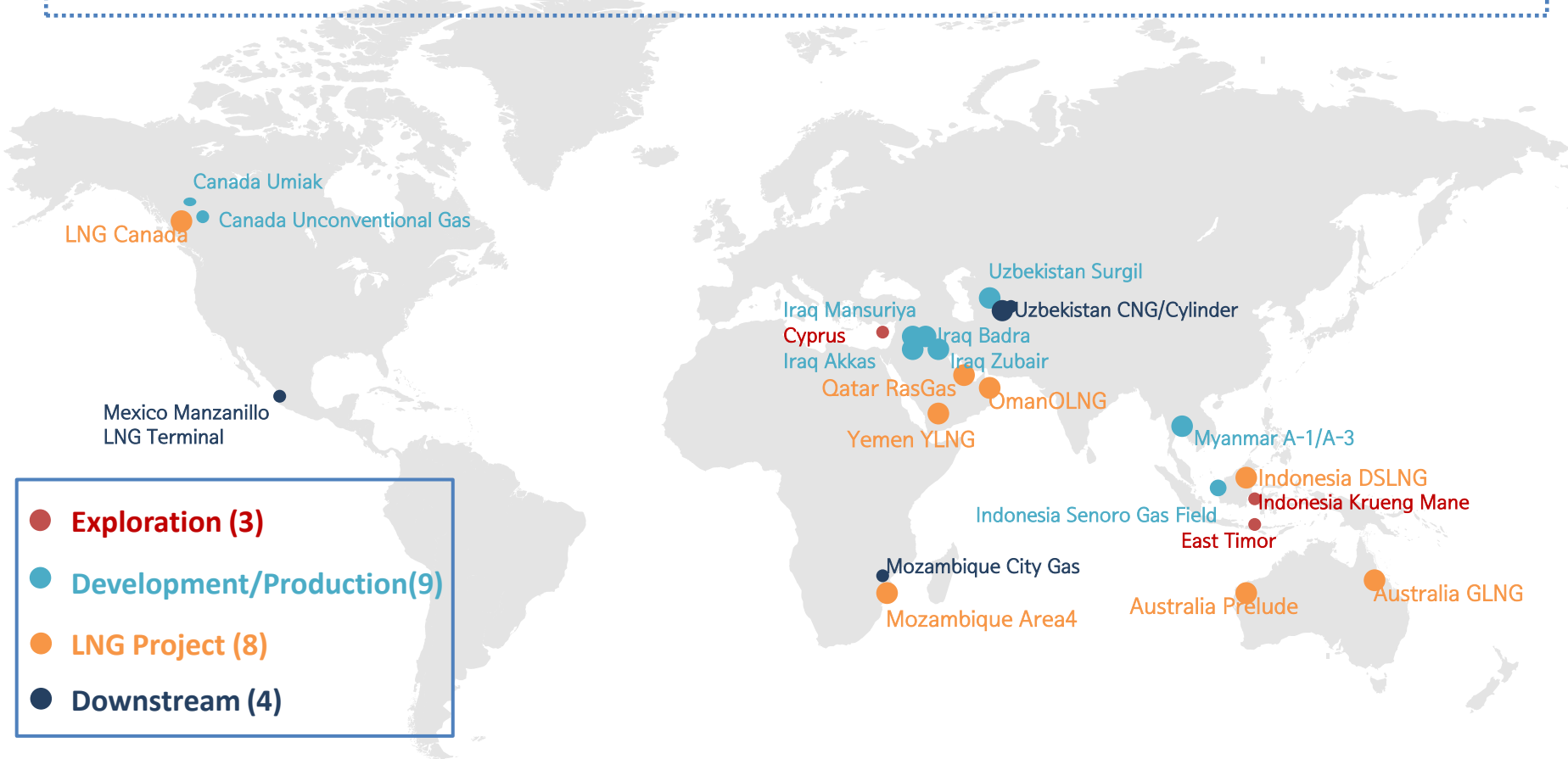
방식	거점형 생산·공급(Off-site충전소)		분산형 생산·공급(On-site충전소)
	배관운송	T/T 운송	
개요			
특징	수소배관은 수소 이송 통로이면서 저장 기능이 있어 도심지 공급에 적합	초기 소용량 운송에 적합하며, 도심지 운송에는 곤란	충전소가 외곽에 위치하여 일반 승용차 충전에 비효율적



3. Status of Major Overseas Projects

Overseas projects

- 24 Projects in 13 countries (as of Mar, 2019)
(Exploration 3, Development/Production 9, LNG project 8, Downstream 4)
- 2 Projects as an operator(Iraq Akkas, Mozambique Maputo Pipeline), 22 Projects as a non-operator



Overseas Projects

Commercial Operation



Myanmar

- Jul '13 Startup of commercial production
- FY'17 OP : W46bn
- FY'18OP : W46.5bn
- FY'19 1Q OP : W17.9bn



Australia GLNG

- First cargo in Oct '15
- Procurement of 3.5 mtpa contracted by KOGAS
- FY'17 OP : W-21bn
- FY'18 OP : W93.3bn
- FY 1Q '19 OP : W34.8bn



Iraq Zubair

- FY'10 Startup of commercial operation
- FY'17 OP : W152bn
- FY'18 OP : W82.5bn
- FY'19 1Q OP : W20.8bn



Iraq Badra

- Sep '14 Startup of commercial production
- FY'17 OP : W 21 bn
- FY'18 OP : W 13.9 bn
- FY'19 1Q OP : W 12.7bn



Uzbekistan Surgil

- Commercial operation in Feb '16
- FY'17 Equity Method gain : W40.1b
- FY'18 Equity Method gain : W74.5b
- FY'19 1Q Equity Method gain : W10.8bn



Australia Prelude

- (Dec'18) startup of Commercial production

Exploration Project

Cyprus

- FY'13 : Seismic exploration performed
- FY'14~'20 : Drill 5 exploration wells
(2 wells drilled as of the end of '16, remains are expect to drill by '20)

Equity Participation

Ras Laffan Qatar

- Equity participation by 3% in '99
- Dividend Income : W21bn in '16, W62bn in '17
W63bn in '18, W20.1bn in 1Q'19

Oman LNG

- Equity participation by 1.2% in '97
- Dividend Income : W7.6bn in '16, W7.7bn in '17
W12.7bn in '18, W4.9bn in 1Q'19

YLNG

- Equity participation by 8.88% in '05
- Initial dividend of W38.2billion in '14
- Dividend of W31.7billion in 1Q '15
(YLNG W21.8bn, HYLNG W9.9bn)

Indonesia DSLNG

- Equity participation by 14.975% in '11
- FY'18 Equity Method gain : W24.9bn
- 1Q '19 Equity Method gain : W3.7bn

Development/Production



Mozambique FLNG

- Commercial production in '22 (expect)



LNG Canada

- Made a FID (Oct'18)

◆ This slide contains forward-looking statements.

Myanmar A-1/A-3 Gas Field

Project Overview

- Total of 23 exploration wells drilled
- Development of gas field and construction of pipeline
: Aug '09 ~ Jul '13
- Production period : Jul '13 ~ '38

Scope of Business		Stake
Gas field	Production, Marketing, Operation (offshore gas field)	8.5%
Offshore pipeline	Construction and Operation (Approx. 110km)	8.5%
Onshore pipeline	Construction and Operation (Approx. 800km)	4.17%

- Gas Field & offshore pipeline :
Posco Daewoo(51%), OVL(17%), MOGE(15%), GAIL(8.5%)
- Onshore pipeline :
CNPCC(50.9%), Posco Daewoo(25.04%), MOGE(7.37%),
OVL(8.35%), GAIL(4.17%)

Performance

- Nov '13 : Startup of Commercial production
- '18 OP : 46.3 billion won
- 1Q '19 OP : 17.9 billion won

In bn won	1Q'19(A)	2018		Difference (A-B, %)
		1Q(B)	Full Year	
Revenue	28	24.7	71.3	3.3 (13%)
OP	17.9	17.1	46.3	0.8(5%)
NI	15.7	17.3	45.7	-1.6(-9%)



Australia GLNG Project

Project Overview

Gas Field	Arcadia, Fairview, Roma, and Scotia Gas Field in the East Australia
Proven Reserves	5.4 Tcf (101 MMton)
Liquefaction Plant	Design Capacity 7.8MMton/year (3.9MMton/year x 2 Trains)
Participants	KOGAS 15%, Santos 30%(Operator), Petronas 27.5%, Total 27.5%



Performance

- Sep 24, '15 : 1st cargo loaded
- Oct 27 '15 : 1st cargo discharged at Pyeong Tack
- May 27 '16 : Train 2 production started
- '18 OP : 93.3billion won(80 cargos production in '18)
- 1Q '19 OP : 34.8 billion won(23 cargos production in 1Q'19)

In bn won	1Q '19(A)	2018		Difference (A-B)
		1Q(B)	Full Year	
Revenue	169.1	110.4	554.7	58.7(53%)
OP	34.8	14	93.3	20.8(149%)
NI	3.4	-11.4	-68.2	14.8(Turn into Profit)

*Impairment Losses

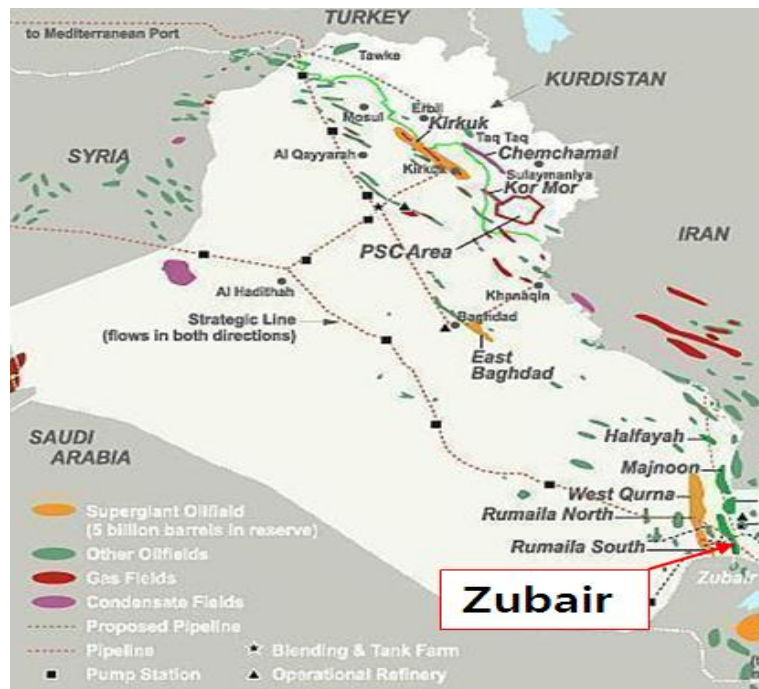
- 2016 : W601bn(Before-tax), W420bn(After -tax)
- 2017 : W1,274(Before-tax), W892bn(After-tax)

Iraq Zubair Oil Project

Project Overview

Additional Well and More Production

- Production Volume : Total 4.7 billion barrels for 25 years
- Partners : KOGAS and 3 other companies
- Contract Type : TSC (Technical Service Contract)



Performance

- '10 : Startup of commercial operation
- '18 OP : 82.5billion won(Avg.444,000bbl/d)
- 1Q '19 OP : 20.8billion won(Avg.451,000bbl/d)

In bn won	1Q19(A)	2018		Difference (A-B, %)
		1Q(B)	Full Year	
Revenue	88.7	80.1	409.3	8.6(10.7%)
OP	20.8	22.4	82.5	-1.6(-7.1%)
NI	16.9	18.1	65.5	-1.2(-6.6%)

Iraq Badra Oil Project

Project Overview

- Production Volume : Total 670 million barrels for 20 years
- Partners : KOGAS and 4 other companies
- Contract Type : TSC(Technical Service Contract)



Performance

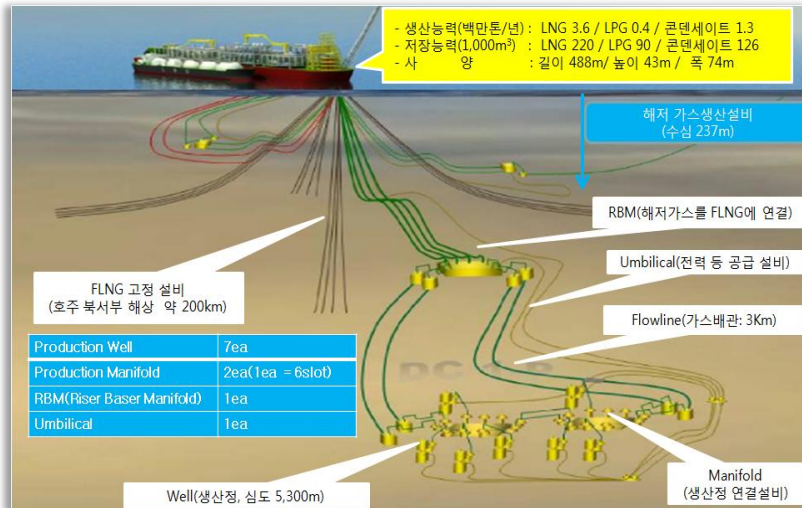
- Sep '14 : Startup of commercial operation (production : 15,000bbl/d)
- '18 OP : 13.9 billion won
- 1Q '19 OP : 12.7 billion won

(In bn won)	1Q19 (A)	2018		Difference (A-B, %)
		1Q(B)	Full Year	
Revenue	70.8	85.1	382.2	-14.3(-16.8%)
OP	12.7	5.1	13.9	7.6(149%)
NI	13.3	5.6	19.3	7.7(138%)

Australia Prelude FLNG Project

Project overview

Gas Field	Browse Basin, 475km offshore of Broome, Western Australia
Production	LNG 3.6MMton/year Condensate 1.3MMton/year LPG 0.4MMton/year
Participants	KOGAS 10%, Shell 67.5%(Operator), Inpex 17.5%, CPC 5%



Performance

- Made a Final Investment Decision in May 2011
 - Develop Prelude/Concerto gas into a floating LNG facility
- World's first FLNG development project
- Made an SPA regarding 360,000 tons of LNG in Jan 2018
- Startup of commercial production from Dec 2018

* CAPEX status

(Unit : KRWbn)

Form	~2018	1Q'19	Total
Debt	1,058	30	1,088
Equity	1,155	43	1,198
Total	2,213	73	2,286

Uzbekistan Surgil

Project Overview

- Development of Surgil Gas Field, and Sales of Gas and Chemical Products
- Products : HDPE* 0.38Mtpa, PP 0.08Mtpa, Methane 2.5Mtpa
 - * HDPE(High Density Polyethylene), PP(poly propylene)
- Reserves : Surgil gas field 97BCM(71MMton)
- Partners : UNG 50%, Kor-Uz Gas Chemical Investment *50%
 - * KOGAS 22.5%, Lotte Chemical 24.5%, GS E&R 3%

* BCM (Billion Cubic Meter) : 1BCM=0.73MMton of LNG



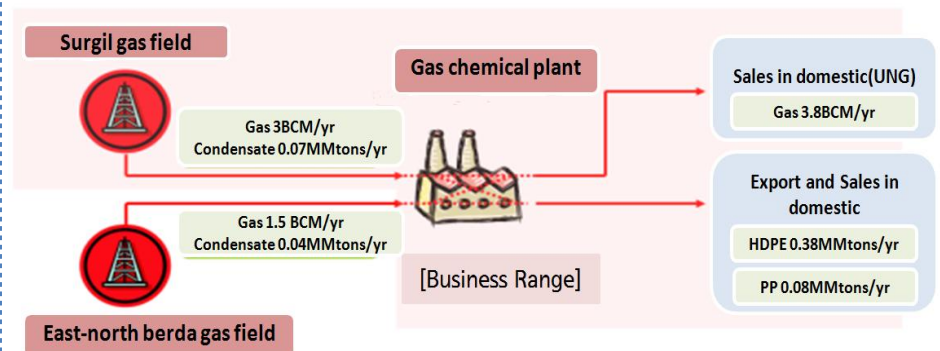
Plan

- Oct '15 : Construction of Chemical Plant Completed
- Feb'16 : Startup of commercial operation
- Equity Method gains of ₩74.5bn in '18
- Equity Method gains of ₩10.8bn in 1Q '19

“We expect to make annual average earnings of 60 billion won in this project until 2041”

* Brent price assumption : \$70/bbl with annual average increase of 1.9%

<Business Flow Chart>

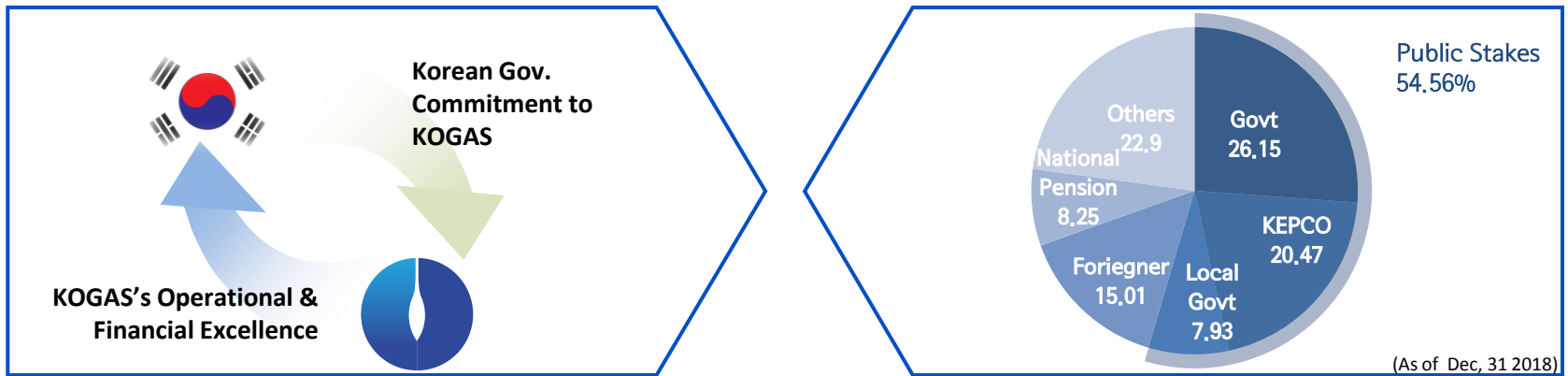




3. KOGAS Overview

KOGAS Overview

- Founded and established in Aug `83, pursuant to 'Korea Gas Corporation Act'
- Major shareholders including Government Ownership account for 54.56%
 - Central Government(26.15%), KEPCO(20.47%) and Local Governments(7.93%)
- Listed on Korea Stock Exchange(KSE) in Dec `99



KOGAS Act

- Founded in August '83, pursuant to the Korea Gas Corporation Act
- Mandates KOGAS the monopolistic position in Korean LNG market

Strong Ties with the Government

- Direct and indirect Gov. ownership 54.56%
- Gov. participated in capital increase (Nov. `13)
- Reinstatement of the Cost Pass-Through System and guaranteed profit by Gov.

Critical Role of KOGAS in Korea

- Korea's only fully-integrated natural gas provider holding monopolistic position
- Imports approximately 86% of Korea's demand for LNG
- Owns and operates nationwide pipeline network and storage tanks
- Secures resources through overseas oil & gas projects

Business Scope of KOGAS

Domestic Business

Stable Profitability



LNG Purchasing

- World 3rd largest LNG buyer



Construction & Operation of LNG Storage Tanks and nationwide pipelines

- Monopoly



Supply of Natural Gas

- City Gas and Power Sector

Overseas Business

Growth Opportunity

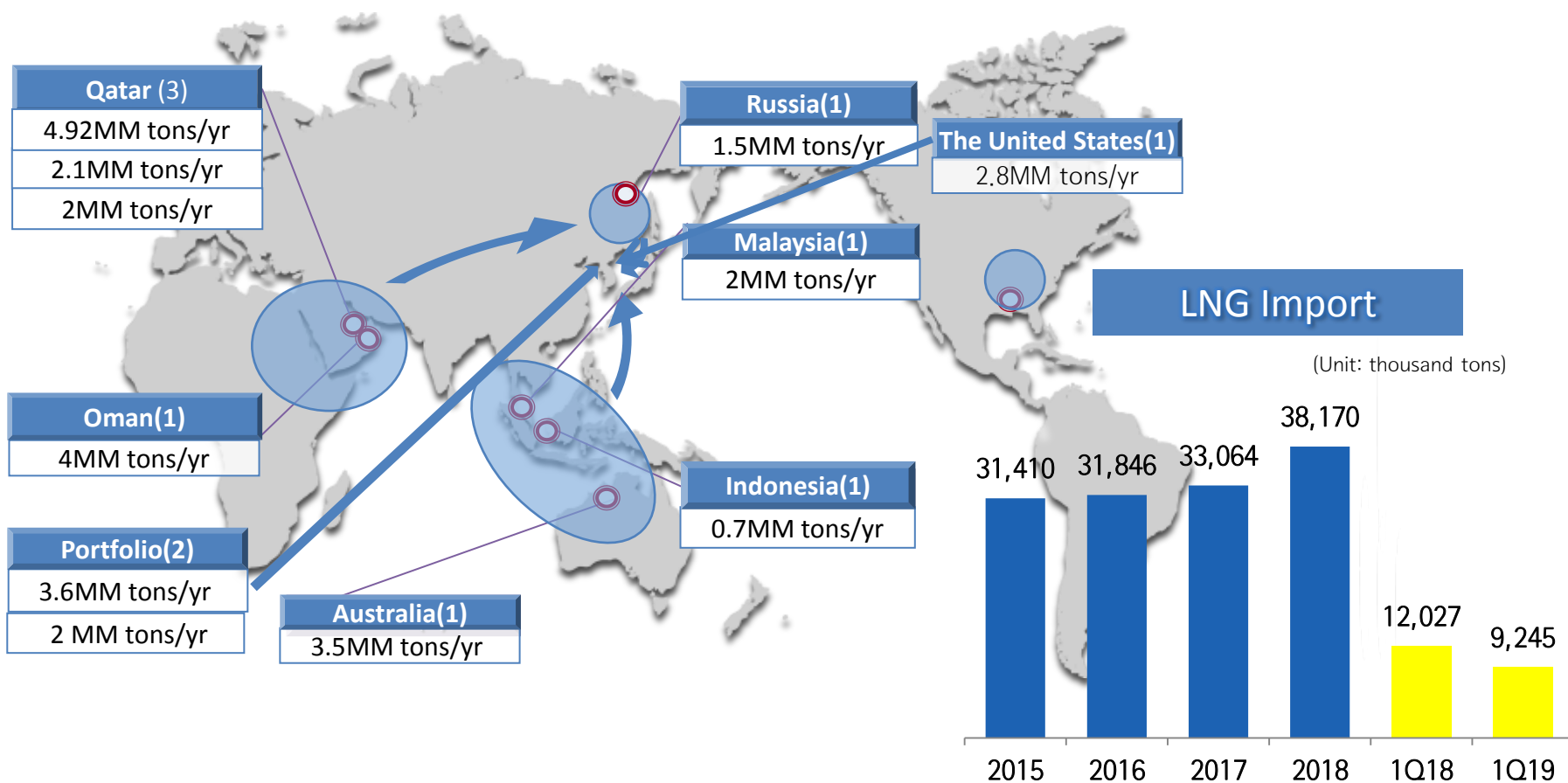


Exploration and Production(E&P) Mozambique, Iraq, Myanmar, etc.

- Engines for Business Expansion & Growth

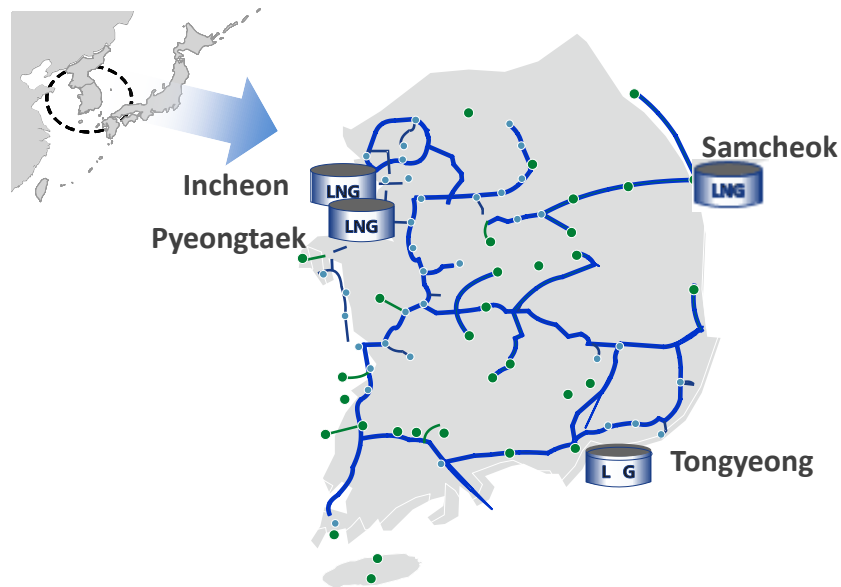
LNG Import Sources

- 11 Long-term(20 to 25 years) contracts in 7 countries around the world



LNG Terminal & Pipeline Network

- Currently operating 72 storage tanks in 4 LNG receiving terminals (storage capacity of 5.23mmton, 11.47mmkl)
- Nationwide pipeline network(4,854km) managed by 403 stations.



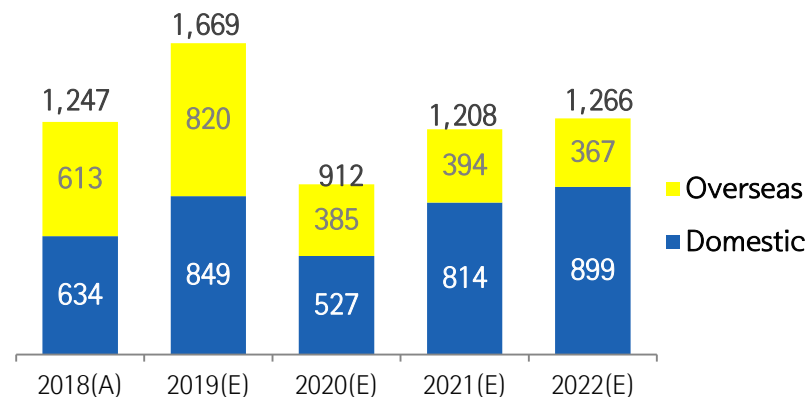
Existing Terminals

(As of Mar '18)

	Incheon	Pyeongtaek	Tongyeong	Samcheok	Total
Start-up	Oct '96	Nov '86	Sep '02	Jul '14	–
No. of Tanks	20	23	17	12	72

CAPEX Forecast*

(in KRW bn)



• Main pipeline

- Additionally will operate 427 km with a total grid of 5,281km(3,281mile)by '22

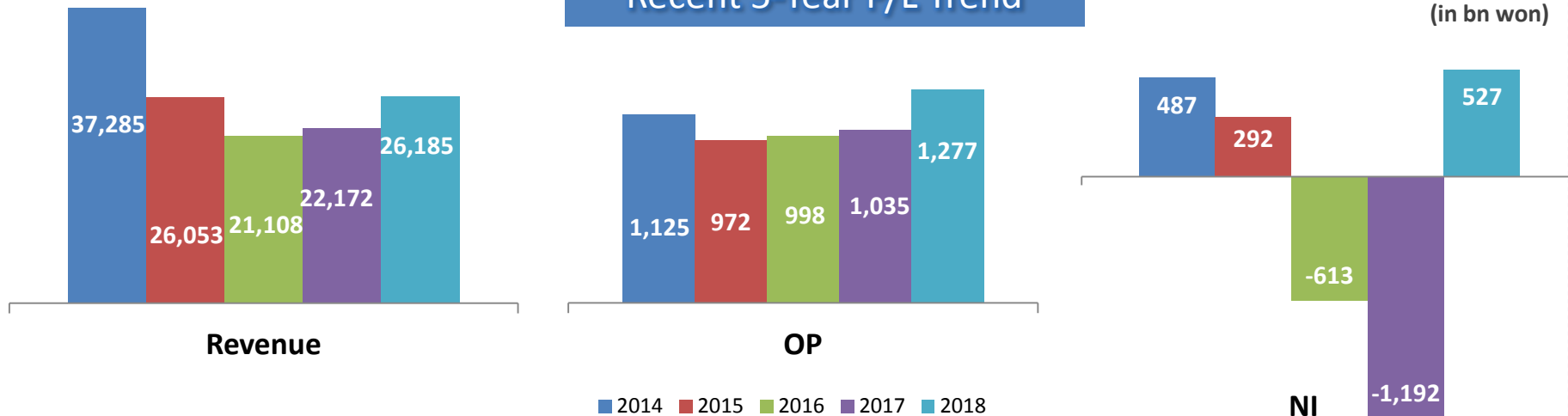
• Terminals

- Incheon expansion(#21~23tanks) : Oct '15 ~ Jul '20 (0.2mmkl x 3)
- Jeju : 2 tanks are under construction(0.045mmkl x 2, Feb. '17 ~ Aug. 19)

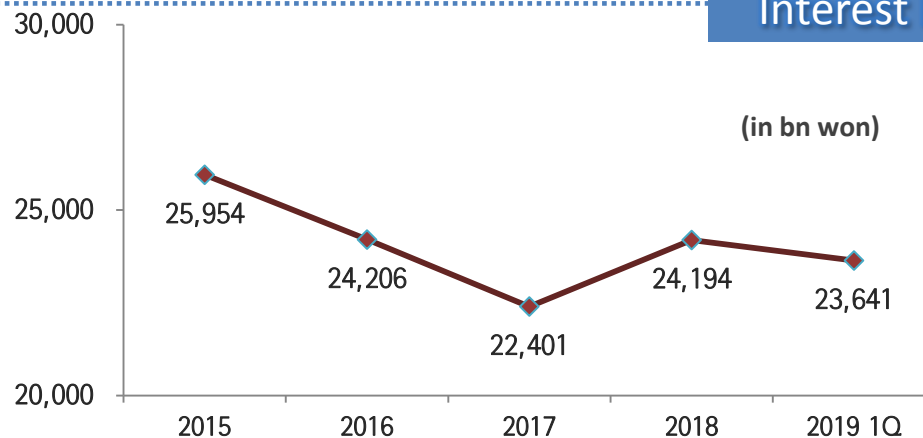
* Source : FY19 ~ 20 based on the mid-long term financial management plan approved by the government in Sep. 2017(total capex)

Major Financial Status

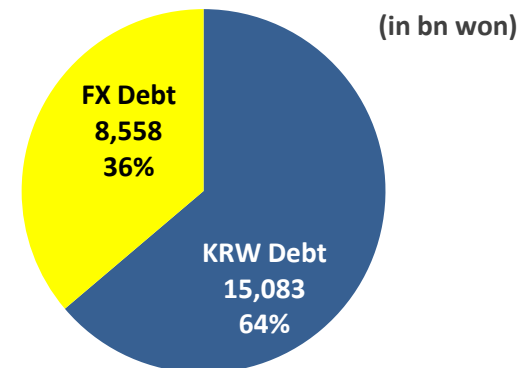
Recent 5-Year P/L Trend



Interest Bearing Debt



Debt by Currency('19 1Q End)



A world map composed of small circles, with the text "THANK YOU !" overlaid in the center. The map is made of light gray circles, with some circles in blue, yellow, and orange. The text "THANK YOU !" is in a bold, blue, sans-serif font with a slight shadow.

THANK YOU !