

Track Records for Business

KOGAS-Tech

KOREA GAS TECHNOLOGY CORPORATION



ENGINEERING FOR LNG STORAGE TANKS

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	#2 Ulsan North Port LNG Terminal	Korea	SK GAS	2019 -2024	Detail Engineering	- 215,000kℓ LNG tank x 1 unit - Full Containment - 9% Ni type
2	#1,2,3,4,5,6,7 & 8 Al-zour LNG Terminal	Kuwait	Kuwait National Petroleum Co.	2016 -2021	Basic & Detail Engineering, Procurement	- 245,000 kℓ LNG tank x 8 units - Full Containment - 9% Ni type
3	#1 Colon LNG Terminal	Panama	AES Panama	2016 -2019	Basic & Detail Engineering	- 195,000 kℓ LNG tank x 1 unit - Full Containment - 9% Ni type * PGA : SSE 0.54g(Mw8.0), OBE 0.33g(Mw4.8)
4	#5,6,7 Boryeong LNG Terminal	Korea	Boryeong LNG Co.	2016 -2023	Basic & Detail Engineering	- 200,000kℓ LNG tank x 3 units - Full Containment - 9% Ni type
5	#1,2 Jeju Aewol LNG Terminal	Korea	KOGAS	2015 -2018	Basic & Detail Engineering, Construction Supervision	- 45,000kℓ LNG tank x 2 units - Full Containment - Membrane type
6	#21,22 & 23 Incheon LNG Terminal	Korea	KOGAS	2014 -2019	Basic & Detail Engineering, Construction Supervision	- 200,000kℓ LNG tank x 3 units - Full Containment - 9% Ni type
7	#4 Jurong LNG Terminal	Singapore	SLNG	2014 -2019	Detail Engineering	- 280,000kℓ LNG tank x 1 unit - Full Containment - 9% Ni type
8	#1,2,3 & 4 Boryeong LNG Terminal	Korea	Boryeong LNG Co.	2012 -2019	Basic & Detail Engineering, Construction Supervision	- 200,000kℓ LNG tank x 4 units - Full Containment - 9% Ni type
9	#1 Hangzhou LNG Terminal	China	Hangzhou Hangyang Cryogenic Vessel Co., Ltd	2012 -2015	Basic & Detail Engineering	- 11,700kℓ LNG tank x 1 unit - Full Containment - 9% Ni type
10	#10,11 & 12 Samcheok LNG Terminal	Korea	KOGAS	2011 -2017	Detail Engineering(for Piping, Instrument, Electrical and etc.), Construction Supervision	- 270,000kℓ LNG tank x 3 units - Full Containment - 9% Ni type
11	#1,2 & 3 Jurong LNG Terminal	Singapore	SLNG	2010 -2014	Basic & Detail Engineering	- 197,300kℓ LNG tank x 3 units - Full Containment - 9% Ni type
12	#4 Kwangyang LNG Terminal	Korea	POSCO	2010 -2013	Basic & Detail Engineering	- 165,000kℓ LNG tank x 1 unit - Full Containment - 9% Ni type
13	#5,6,7,8 & 9 Samcheok LNG Terminal	Korea	KOGAS	2009 -2016	Basic & Detail Engineering, Construction Supervision	- 200,000kℓ LNG tank x 5 units - Full Containment - 9% Ni type
14	#1,2,3 & 4 Samcheok LNG Terminal	Korea	KOGAS	2009 -2015	Basic & Detail Engineering, Construction Supervision	- 200,000kℓ LNG tank x 4 units - Full Containment - 9% Ni type
15	#1 & 2 Map Ta Phut LNG Terminal	Thailand	PTT LNG Co.	2008 -2011	Basic & Detail Engineering	- 173,000kℓ LNG tank x 2 units - Full Containment - 9% Ni type
16	#1 & 2 Manzanillo LNG Terminal	Mexico	CFE (Comisión Federal de Electricidad)	2008 -2012	Basic & Detail Engineering	- 167,500kℓ LNG tank x 2 units - Full Containment - 9% Ni type * PGA : SSE 0.6g(Mw8.4), OBE 0.5g(Mw7.8)
17	#17 Tongyeong LNG Terminal	Korea	KOGAS	2007 -2012	Basic & Detail Engineering, Construction Supervision	- 140,000kℓ LNG tank x 1 unit - Full Containment - 9% Ni type
18	#22 & 23 Pyeongtaek LNG Terminal	Korea	KOGAS	2007 -2012	Basic & Detail Engineering, Construction Supervision	- 200,000kℓ LNG tank x 2 units - Full Containment - 9% Ni type
19	#15 & 16 Tongyeong LNG Terminal	Korea	KOGAS	2006 -2011	Basic & Detail Engineering, Construction Supervision	- 200,000kℓ LNG tank x 2 units - Full Containment - 9% Ni type
20	#18,19,20 & 21 Pyeongtaek LNG Terminal	Korea	KOGAS	2006 -2011	Basic & Detail Engineering, Construction Supervision	- 200,000kℓ LNG tank x 4 units - Full Containment - 9% Ni type

21	#15,16 & 17 Pyeongtaek LNG Terminal	Korea	KOGAS	2005 -2010	Basic & Detail Engineering, Construction Supervision	- 200,000kℓ LNG tank x 3 units - Full Containment - 9% Ni type
22	#13 & 14 Tongyeong, Korea	Korea	KOGAS	2005 -2010	Basic & Detail Engineering, Construction Supervision	- 200,000kℓ LNG tank x 2 units - Full Containment - 9% Ni type
23	#11 & 12 Tongyeong LNG Terminal	Korea	KOGAS	2005 -2009	Basic & Detail Engineering, Construction Supervision	- 140,000kℓ LNG tank x 2 units - Full Containment - 9% Ni type
24	Engineering Localization of Large Scale LNG Storage Tank	Korea	KOGAS	2004 -2005	Basic & Detail Engineering	- 200,000kℓ LNG tank (KOGAS standard) - Full Containment - 9% Ni type + Membrane type
25	#11,12,13 & 14 Pyeongtaek LNG Terminal	Korea	KOGAS	2002 -2008	Basic & Detail Engineering, Construction Supervision	- 140,000kℓ LNG tank x 4 units - Full Containment - 9% Ni type
26	#8,9 & 10 Tongyeong LNG Terminal	Korea	KOGAS	2002 -2006	Basic & Detail Engineering, Construction Supervision	- 140,000kℓ LNG tank x 3 units - Full Containment - 9% Ni type
27	#1 & 2 Kwangyang LNG Terminal	Korea	POSCO	2002 -2005	Basic & Detail Engineering(Civil, Elec. & Instrument), Construction Supervision	- 100,000kℓ LNG tank x 2 units - Full Containment - 9% Ni type
28	#6 & 7 Tongyeong LNG Terminal	Korea	KOGAS	2001 -2005	Basic & Detail Engineering, Construction Supervision	- 140,000kℓ LNG tank x 2 units - Full Containment - 9% Ni type
29	Pilot Tank Incheon LNG Terminal	Korea	KOGAS	1997 -2001	Basic & Detail Engineering, Construction Supervision	- 1,310kℓ LNG tank (Pilot) - Membrane type
30	Engineering Localization of Standard LNG Storage Tank	Korea	KOGAS	1997 -2001	Basic & Detail Engineering	- 158,100kℓ LNG tank (KOGAS standard) - Full Containment - 9% Ni type + Membrane type

ENGINEERING FOR LNG TERMINALS

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	Small Scale LNG Refilling Terminal, Indonesia	Indonesia	LNG Korea	2018 -2020	Basic Engineering & Technical Support	- Send-Out : 2,380 m3/hr - 15,000kℓ LNG tank x 1 unit
2	LNG Reloading System, Samcheok LNG Terminal	Korea	KOGAS	2018 -2020	Technical Review & Detail Engineering	
3	BC Oil Facility Remodeling	Korea	KOGAS	2018 -2019	Technical Review & Detail Engineering	
4	Ulsan North Port Liquid Gas & Petroleum Product Terminal	Korea	SK GAS	2019	FEED	- 215,000kℓ LNG tank x 1 unit
5	Northeast Asia LNG Hub Terminal	Korea	Hanyang	2019	Basic Engineering	- Send-out : Max 950 ton/hr (4MTPA per year) - 200,000kℓ LNG tank x 4 units
6	Process & Utility, Boryeong LNG Terminal Phase 2-2	Korea	Boryeong LNG Co.	2018 -2021	Engineering Supervision	- Send-out : 1,400 ton/hr - Process & Utilities for 2(two) 200,000kℓ LNG tanks
7	Production Facility Improvement, Tongyeong, Incheon LNG Terminal	Korea	KOGAS	2018 -2019	Detail Engineering	- Process & Utilities for Tongyeong, Incheon LNG Terminal
8	Production Facility Improvement, Tongyeong, Incheon and Pyeongtaek LNG Terminal	Korea	KOGAS	2018 -2019	Detail Engineering	- Process & Utilities for Tongyeong, Incheon and Pyeongtaek LNG Terminal
9	Process Separation & Optimization, Pyeongtaek LNG Terminal	Korea	KOGAS	2016 -2019	Detail Engineering	- Send-out : 4,636 ton/hr - Process & Utilities for 3,360,000m ³ total storage capacity
10	BOG Compressor EPC, Pyeongtaek LNG Terminal	Korea	KOGAS	2016 -2018	Detail Engineering	- Build additional BOG Compressor in Pyeongtaek LNG Terminal
11	Process & Utility Separation, Incheon LNG Terminal	Korea	KOGAS	2015 -2019	Detail Engineering	- Send-out : 5,070 ton/hr - Process & Utilities for 2,880,000m ³ total storage capacity
12	Process Diagnosis & Separation (for Plant 1,2 and Trains), Pyeongtaek LNG Terminal	Korea	KOGAS	2015 - 2016	Conceptual & Basic Engineering	- Send-out : 4,306 ton/hr - Process & Utilities for 2,960,000m ³ total storage capacity
13	Process Diagnosis & Separation (for Plant 1,2,3 and Trains), Incheon LNG Terminal	Korea	KOGAS	2014 - 2015	Conceptual & Basic Engineering	- Send-out : 4,830 ton/hr - Process & Utilities for 2,880,000m ³ total storage capacity
14	Process & Utility, Boryeong LNG Terminal	Korea	GS Energy	2013 -2016	Basic & Detail Engineering, PMC	- Send-out : 490 ton/hr - Process & Utilities for 4(four) 200,000kℓ LNG tanks
15	Process & Utility, Samcheok LNG Terminal	Korea	KOGAS	2009 -2016	Basic & Detail Engineering	- Send-out : 2,340 ton/hr - Process & Utilities for 9(nine) 200,000kℓ LNG tanks
16	Process & Utility (2nd Factory), Pyeongtaek LNG Terminal	Korea	KOGAS	2003 -2015	Basic & Detail Engineering, Construction Supervision	- Send-out : 1,620 ton/hr - Process & Utilities for 4(four) 158,100kℓ and 7(seven) 200,000kℓ LNG tanks
17	Process & Utility, Tongyeong LNG Terminal	Korea	KOGAS	1999 -2015	Basic & Detail Engineering, Construction Supervision	- Send-out : 2,150 ton/hr - Process & Utilities for 13(thirteen) 158,100kℓ and 4(four) 200,000kℓ LNG tanks

ENGINEERING FOR LOW TEMPERATURE STORAGE TANKS

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	[Ethylene Storage Tank] Ulsan KPIC ONE Project	Korea	KDM Tech	2016 -2016	Basic & Detail Engineering	- 5,000kl Ethylene tank x 1 unit
2	[LPG Storage Tank] Daesan Terminal	Korea	E1 Co.	2014 -2015	Preliminary Engineering	- 74,000kl Propane tank x 1 unit
3	[LPG Storage Tank] #1 Boryeong LNG Terminal	Korea	GS E&C	2014 -2016	Basic & Detail Engineering	- 77,000kl Propane tank x 1 unit - Single Containment(DWT)
4	[Ethylene / Propylene Storage Tank] #1 & 2 Jubail SADARA Crogenic Tank Farm Project	Saudi Arabia	SADARA JV (Aramco/Dow)	2012 -2014	Basic & Detail Engineering	- 30,000kl Ethylene tank x 1 unit (Full Containment/DWT/9% Ni type) - 12,000kl Propylene tank x 1 unit (Full Containment/DWT)
5	[LPG Storage Tank] #1,2,3,4,5,6,7,8,9 & 10 Mina Al-Ahmadi Refinery Project	Kuwait	Kuwait National Petroleum Co.	2011 -2016	Basic & Detail Engineering, Procurement	- 73,500kl Propane tank x 5 units (Full Containment/DWT) - 73,500kl Butane tank x 5 units (Full Containment/DWT)

ENGINEERING FOR NATURAL GAS PIPELINES & DISTRIBUTION STATIONS

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	Metering facility EPC project, Ulsan	Korea	SK E&S	2019	Engineering, Procurement, Construction	- Metering facility : 4 Line - Additional facility & Building etc.
2	Main pipeline network and Compressor station, Boryeong	Korea	Boryeong LNG Co.	2019	EPC Cost & Schedule Calculation Datasheet, Plot Plan Making & Area Calculation Review for Operation Example	
3	Main pipeline route study, Boryeong	Korea	Boryeong LNG Co.	2019	Main Pipe Route Study	- Pipe size : 30", 36" 2units (for 6 Sections)
4	LNG pipeline relocation, Yeosu	Korea	GS Caltex Co.	2019	Engineering	- 20" x 110M
5	GS/BV facility reinforcement	Korea	KOGAS	2019 -2021	Engineering	- GS/BV
6	[DISTRIBUTION STATION] Yeosu power plant pressure facility	Korea	Valmax	2019 -2022	Detail Engineering	- Pressure facility
7	[LPG PIPELINE] LPG pipeline, Wando	Korea	Korea LPG Pipelines Institute	2019 -2020	Detail Engineering	- LPG storage facility & Main pipe
8	[LPG PIPELINE] LPG pipeline, Ulleung	Korea	Korea LPG Pipelines Institute	2019 -2020	Detail Engineering	- PE pipe : Φ 63 ~ 400 mm - Distribution station - Small-size storage tanks x 5 units
9	[PIPELINE] Y-Project	Korea	SK E&C	2018 -2019	Site Inspection	- 20" pipe x 44 km
10	[PIPELINE] Tema Heavy Industrial Area, Ghana	Ghana	Quantum (Newstar Terminals Limited)	2018 -2019	FEED	- Underground NG pipeline : 3.5Km - Distribution stations (GS x 1 unit)
11	[PIPELINE] Yeosu project	Korea	KDHEC	2018 -2019	Basic Engineering	- Distribution stations (GS x1 unit)
12	[PIPELINE] Pyeongchang project	Korea	KOGAS	2018 -2019	Detail Engineering	- Metering system x 4 units
13	[PIPELINE] H-project Gas supply facility	Korea	KDHEC	2018 -2019	Basic Engineering	- Fuel gas main pipeline and Supply station for Power generation
14	[PIPELINE] Sinpyeongtaek power plant	Korea	POSCO E&C	2017 -2019	Basic & Detail Engineering	- 20" pipe x 1.1km
15	[DISTRIBUTION STATION] Poseung, Gansung station extension	Korea	KOGAS	2017 -2019	Detail Engineering	- Poseung station : Gas heater, Constant pressure facility, Measuring facility extension - Gansung station : Measuring facility extension
16	[PIPELINE] H-project Gas supply facility	Korea	KDHEC (SK E&S)	2018 -2019	Basic Engineering Technical Assistance	- 20" pipe x 13 km - 2 Distribution stations
17	[LPG PIPELINE] LPG pipeline, Hwacheon	Korea	Korea LPG Pipelines Institute	2016 -2018	Detail Engineering Construction Supervision	- 12" pipe x 2 km - 1 Distribution station
18	[PIPELINE] Anyang CHP Plant, Anyang	Korea	GS E&C Co., Ltd.	2016 -2018	Engineering, Procurement, Construction	- Connection pipeline (14" x 150m), Gas stripper, Cathodic protection
19	[PIPELINE] Wirye project	Korea	SK E&S (SK E&C)	2015 -2016	Basic & Detail Engineering	- Distribution stations (G/S - 1)
20	[PIPELINE] Wirye project	Korea	SK E&S	2015 -2016	Basic & Detail Engineering	- 20" pipe x 13.2 km (B/V - 2)

21	[PIPELINE] Jangmun project	Korea	SK E&C	2014 -2016	Basic & Detail Engineering	- Connection pipeline (20" x 2.6 km) (G/S-1, B/V-1)
22	[PIPELINE] Kangwon project	Korea	KOGAS	2012 -2015	Basic & Detail Engineering, Construction Supervision	- 20" pipe x 74.3 km - 8 Distribution stations
23	[PIPELINE] Metropolitan area	Korea	KOGAS	1997 -2005	Basic & Detail Engineering, Construction Supervision	- 30" pipe x 99 km - 18 Distribution stations
24	[PIPELINE] New airport and Yeongjong- Kyungseo project	Korea	KOGAS	1997 -2003	Basic & Detail Engineering, Construction Supervision	- 30" pipe x 27 km (Incl. Subsea Pipeline 3km) - 2 Distribution stations
25	[PIPELINE] Hanhwa, Busan power plant	Korea	KOGAS	1997 -2002	Basic & Detail Engineering, Construction Supervision	- 2 Distribution stations - Connection pipeline : 8 km
26	[PIPELINE] Ilsan-Euijeongbu project	Korea	KOGAS	1996 -2002	Basic & Detail Engineering, Construction Supervision	- 30" pipe x 47 km - 5 Distribution stations
27	[DISTRIBUTION STATION] Dongnae extension project	Korea	KOGAS	2016 -2018	Detail Engineering	- 1 Distribution station (Gas heater : 2units / Constant pressure facility : 4units / Measuring facility : 4units)
28	[DISTRIBUTION STATION] Pyeongchon extension project	Korea	KOGAS	2016 -2018	Detail Engineering	- 1 Distribution station (Gas filter, Measuring facility extension)
29	[DISTRIBUTION STATION] Dangjin #4 project	Korea	GS E&C Co., Ltd.	2014 -2017	Basic & Detail Engineering	- 1 Distribution station - Connection pipeline : 0.25 km
30	[DISTRIBUTION STATION] Osan-Segyo project	Korea	KOGAS	2013 -2015	Basic & Detail Engineering, Construction Supervision	- 1 Distribution station - Connection pipeline : 2.2 km
31	[DISTRIBUTION STATION] Hanam-Misa & Sinpyeongtaek project	Korea	KOGAS	2012 -2014	Basic & Detail Engineering, Construction Supervision	- 2 Distribution stations - Connection pipeline : 6.2 km
32	[DISTRIBUTION STATION] Chilseo project	Korea	KOGAS	2008 -2010	Basic & Detail Engineering, Construction Supervision	- 1 Distribution station - Connection pipeline : 0.1 km
33	[BOOSTER STATION] Sakhalin II Phase 2, Russia	Russia	SEIC Russia	2006 -2008	Basic & Detail Engineering for Compressor / Turbines	- Compressor Design flow rate : NG 1,930 MMSCFD - Pressure : 75 barg(Suction), 97 barg(Design)
34	[DISTRIBUTION STATION] Oedong & Hongcheon project	Korea	KOGAS	2007 -2008	Basic & Detail Engineering, Construction Supervision	- 2 Distribution stations - Connection pipeline : 0.2 km
35	[DISTRIBUTION STATION] Naju & Bia project	Korea	KOGAS	2005 -2008	Basic & Detail Engineering, Construction Supervision	- 1 Governor Station (Extension) - 1 Valve Station (Relocation) - Pipeline reinforcement : 1.6km
36	[DISTRIBUTION STATION] Sanggye & Kunja extension project	Korea	KOGAS	1999 -2001	Basic & Detail Engineering, Construction Supervision	- Compact type facilities & Office buildings - Design pressure : 2MPa(for Primary), 0.9MPa(for Secondary)
37	[DISTRIBUTION STATION] Keryong G/S project	Korea	Samsung Engineering/ Solar Turbine	1999 -2000	Basic Engineering, Package Installation Detail Engineering	- Compressor design flow rate : NG 500ton/hr - Pressure : 45kg/㎡(Suction), 60kg/㎡(Design)
38	[DISTRIBUTION STATION] Flowmeter calibration facility	Korea	KOGAS	1998 -1999	Basic & Detail Engineering, Procurement, Construction Supervision	- Orifice, Turbine & Ultrasonic meters - Design pressure : 0.9~2.5 MPa - Design flow rate : 6,500 m3/hr
39	[DISTRIBUTION STATION] Ildo, Ilsan & Bundang extension project	Korea	KOGAS	1994 -2002	Basic & Detail Engineering, Construction Supervision	- Extension of gas supply capacity - Tie-in of new gas pipelines - Design pressure : 7MPa(for Primary), 3MPa/0.9MPa(for Secondary)

ENGINEERING FOR CNG/LCNG REFUELING STATIONS

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	Performance evaluation facility for LNG bunkering equipment	Korea	KOMERI	2018-2020	Detail Engineering	- Performance evaluation facility for equipment
2	Performance evaluation facility for LNG fuel propulsion equipment	Korea	KOMERI	2017-2019	Detail Engineering	- LNG storage tank - LNG pump(LP,HP) - Vaporizer & etc.
3	[CNG Refueling Station] HCNG refueling facilities	Korea	KOGAS R&D	2013-2014	Engineering	- Mixed ratio : Hydrogen : CNG = 30 : 70 - Gas pressure : Above 200 barg
4	[CNG Refueling Station] Incheon	Korea	Incheon City Gas/ SUDOKWON Landfill Site Management Corp.	2003-2004	Basic & Detail Engineering, Procurement, Construction & Supervision	- Compressor capacity - Incheon 1 : 800 Nm ³ /h x 2 sets - Incheon 2 : 800 Nm ³ /h x 2 sets
5	[CNG/LCNG Refueling Station] Daejeon station	Korea	KOGAS	2003-2004	Basic & Detail Engineering, Procurement, Construction & Supervision	- Compressor capacity : 3,800 Nm ³ /hr - LNG storage tank : 55.77 m ³ x 1 set - LCNG vaporizer : 2,700 Nm ³ x 2 sets
6	[CNG Refueling Station] Mother station	Korea	KOGAS	2001-2003	Basic & Detail Engineering, Procurement, Construction & Supervision	- Compressor capacity - Incheon : 1,000 Nm ³ /h x 1 set - Pyeongtaek etc. : 2,000 Nm ³ /h x 2 sets

FEASIBILITY STUDIES

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	LNG Terminal	Korea	SK Gas	2018	Feasibility Study	- LNG Storage Tank (100,000kℓx 2 units or 200,000 kℓx 1 unit) - Process & Utility Facilities
2	Distribution Station	Korea	GS Energy/ Hanwha Chemical	2018	Feasibility Study	- Process & Utility Facilities
3	LNG Bunkering Terminal	Korea	Institute for Research & Industry Cooperation, Chungwoon University	2018	Feasibility Study	- Process & Utility Facilities
4	Modification for LNG Bunkering Facility	Korea	KOGAS	2016 -2019	Feasibility Study for LNG Bunkering Terminal	- Process & Utility Facilities
5	Busan LNG Bunkering	Korea	BLNG Co.	2015 -2019	Feasibility Study for LNG Bunkering	- LNG Storage Tank 200,000 kℓx 2 units - Process & Utility Facilities
6	#2, An Yang Distribution Station	Korea	GS Power Co., Ltd.	2015 -2016	Feasibility Study for Optimized LNG Supply Plan	-
7	Ethane Terminal, Thailand	Thailand	PTT PLC	2014 -2015	Feasibility Study for Ethane Tank & Utilities	- Ethane Storage tank : 91,000kℓx 2 units - Process & Utility Facilities
8	Domestic HP Distribution Station	Korea	KOGAS	2014 -2015	Feasibility Study for Optimized HP LNG Supply Plan for Power Plant	- National Distribution Stations Combined Power Plant
9	LNG Terminal Modification	Thailand	PTT PLC	2014 -2014	Feasibility Study for LNG Terminal (Phase 1) Modification to accommodate Ethane	- LNG Storage tank : 160,000kℓx 2 units - Process & Utility Facilities
10	Irkutsk PNG Project	Russia	KOGAS	1996 -2000	Preliminary & Main Feasibility Study	- Route : Russia - China - Korea - Supply : 34 bcm/year x 30 year - Pipe : (1) 39" x 536 km, (2) 44" x 567 km
11	Sakha Gas(PNG) Project	Russia	Korea Petroleum Corp. (KPC)	1994 -1995	Preliminary Feasibility Study	- Route : Russia - N. Korea - Korea - Supply : 14.2 bcm/year - Pipe : 48" x 5,643 km

ENGINEERING FOR NEW ENERGIES

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	[K-DME(Di-Methyle Ether)] Commercial Plant, Saudi Arabia	Korea	KOGAS	2010 -2011	Basic Engineering	-Productivity : 300,000 ton DME / year -Source Gas : Natural Gas + CO2(10%) -Purity : 99.9%
2	[DME(Di-Methyle Ether)] Demo Plant Incheon, Korea	Korea	KOGAS	2003 -2008	Conceptual, Basic & Detail Engineering, Construction Supervision	-Productivity : 10 ton DME / day -Source Gas : Natural Gas + CO2(10%) -Purity : 99.9%
3	[GTL(Gas to Liquid)] Pilot plant Incheon, Korea	Korea	KOGAS	2010 -2011	Detail Engineering	-Plant size : 1 BPD pilot plant -Source Gas : Natural Gas + CO2 -Production : Wax / Oil
4	[CBM(Coal Bed Methane)] Demo plant, Indonesia	Korea	KOGAS	2010 -2011	Preliminary Engineering	-Plant size : 600 Nm3/hr CBM Demo plant -Source Gas : Coal Bed Methane Gas -Production : CBM
5	[Hydrogen Filling Station] Incheon, Korea	Korea	KOGAS	2006 -2006	Basic& Detail Engineering, Procurement, Construction & Supervision	-Filling Capacity : 30 Nm3/h (720 Nm3/day) -Charging Pressure : 46 MPa -Dispenser : 140 Liter/min x 1set

PLANT ENGINEERING, PROCUREMENT & CONSTRUCTION

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	Boryeong LNG Terminal Project Natural Gas Pipeline Construction BLT~Daecheon G/S, Korea	Korea	Boryeong LNG Co.	2019	Engineering, Procurement & Construction	-Natural Gas Pipeline(30"×16km ×1 Units)
2	SK ENERGY ULSAN CLX Metering System EPC Project	Korea	SK ENERGY	2019.6 -2020.6	Engineering, Procurement & Construction	-Metering System 1 Set -Ball Valve & MOV 1 Set -Insulation Joint 4 Units
3	SAMSUNG HEAVY INDUSTRIES LNG SYSTEM TEST FACILITY	Korea	SUNBO UNITECH	2019 -2020	Engineering, Procurement & Construction	-Gas Combustion Unit 1 Unit -Cooling Water Chiller Unit 1 Unit -Air Cooling Tower 2 Units -Fresh Water Expansion Tank 1 Unit -Air Dryer Package 1 Unit
4	KOMERI LNG Fuel Gas Supply System Test, Evaluation and Certification Equipment 2nd Project Busan, Korea	Korea	KOMERI	2018.12 -2020.10	Engineering, Procurement & Construction	-Mist Separator 1 Unit -Re-Liquefaction 1 Unit -Air Package 1 Unit -Glycol Water System Package 1 Unit -Silencer 2 Units -Pneumatic Test PKG 1 Unit -Overhead Crane 1 Unit
5	Gapyeong Seorak myun LPG Pipeline Construction Gapyeong, Korea	Korea	Korea LPG Pipelines Institute	2018	Construction	-LPG Pipeline : PE 63mm~315mm x 10km(for 870 houses) -LPG Storage Facility 2 Units(15Ton) -Small LPG Storage Tank 1 Unit(0.25~2.9Ton)
6	EUGENE Refrigeration Distribution and Logistics Center EPC Project Pyeong- taek, Korea	Korea	Eugene Superfreeze	2017.12 -2018.12	Engineering, Procurement & Construction	-LNG Storage Tanks 4 Units -LNG Pumps 2 Units -LNG Refrigerant Heat Exchanger 3 Units -LNG Liquefaction Package 1 Unit -LNG Refrigerant Heat Exchanger 2 Units -LNG Vaporizer 2 Units
7	Hadong Natural Gas Pipeline Construction Hadong, Korea	Korea	KOGAS	2017.11 -2018.12	Construction	-Natural Gas Pipeline(30"×1.2km ×2 Units)
8	SPPC PowerPlant EPC Project Pyeong-taek, Korea	Korea	POSCO E&C	2017.8 -2019.1	Engineering, Procurement & Construction	-Power Plant Gas Pipeline -Gas Pipeline 12"× 845M Pipeline, Valve Installation Industrial Water Pipeline -D450 × 500M
9	Incheon LNG Terminal Phase 3, 360T/H Send-Out Facility Construction Incheon, Korea	Korea	KOGAS	2015.6 -2018.6	Construction	-SMV : 120T/H x 3 Units
10	Anyang CHP PLANT Fuel Gas Supply System EPC Project Anyang, Korea	Korea	GS Power Co., Ltd.	2016.2 -2018.8	Engineering, Procurement & Construction	-Combined Heat Power Plant Fuel Gas Supply System(Natural Gas : 3,300 ton/day)
11	High quality biogas production facility engineering	Korea	Leebcor Co., Ltd.	2016 -2016	Detail Engineering	-High quality biogas production facility
12	GTL FPSO Basic engineering	Korea	KOGAS	2016.3 -2016.9	Basic Engineering	-Plant size : 20,000 bbl/day GTL production plant
13	SEC Fuel Oil Jetty #2 Saudi Arabia	Saudi Arabia	Saudi Electricity Co.	2012 -2014	Fuel Oil Unloading Jetty Detail engineering	-Plant size : Four of Fuel Oil Unloading Arm, 300m of Oil Pipe etc.
14	Small LNG / Power plant Package, Indonesia	Indonesia	Hanyang Co., Ltd.	2012 -2013	LNG Terminal Conceptual / Cost Engineering	-Plant size : 40MW Small LNG / Power plant LNG storage tank : one 10,000 kℓ
15	Ammonia Terminal Ambatoby, Madagascar	Madagascar	Dynatec Madagascar S.A	2008 -2009	Basic & Detail Engineering, Construction & Pre-commission Supervision	-One 33,000kℓ Ammonia tank -Process, Utilities, Pipelines etc.

TECHNICAL CONSULTING & TRAINING

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	[Technical Consulting] Boryeong LNG terminal extension phase #2	Korea	Boryeong LNG Co./ Woori Bank	2019 -2022	Technical Consulting for Construction status and payment Consulting	
2	[Technical Consulting] Dunkerque LNG Terminal Project, France	France	IPM Korea	2018	Technical Consulting Dunkerque LNG Terminal facilities	-LNG Off-Loading: 267,000kl -LNG Tank : 200,000kl x 3 units -Send-Out Facility : 1.9million M3/h -Terminal Capacity : 13 BCMA
3	[Technical Consulting] Power System Analysis, Protective Relay for LNG Terminal, Incheon (#14)	Korea	Joowang Industry	2018	Technical Consulting for Power System Analysis, Protective Relay	-Power System Analysis, Protective Relay for LNG Terminal, Incheon (#14)
4	[Technical Consulting] Protective Relay for LNG Terminal, Incheon (#16, 16E)	Korea	SJEC	2018	Technical Consulting for Power System Analysis, Protective Relay	-Power System Analysis, Protective Relay for LNG Terminal, Incheon (#16)
5	[Technical Consulting] Boryeong LNG Terminal Landfill	Korea	Boryeong LNG Co.	2018 -2019	Technical Consulting for Boryeong LNG Terminal Landfill	-LNG Terminal Process & Utility Facilities
6	[Technical Consulting] Process & Utility Phase 2-2 Review for PF Boryeong, Korea	Korea	Korea Ratings	2018 -2019	Technical Consulting for Phase 2-2 Review for Project Financing (No.5,6 Tank)	-LNG Storage Tank 200,000kl x 2 units -Process & Utility Facilities
7	[Technical Consulting] Relay Coordination Incheon, Korea	Korea	KD Power	2018	Technical Consulting for Relay Coordination	-Switch Gear (#12Substation) facility of Incheon LNG receiving terminal
8	[Technical Consulting] Boryeong LNG terminal extension phase #1	Korea	Boryeong LNG Co./ Woori Bank	2016 -2019	Technical Consulting for Construction status and payment Consulting	-LNG Storage Tank 200,000kl x 1, ORV 1 unit, Pump 2 units, Metering 1 unit
9	[Technical Consulting] Relay Coordination for Switch Gear (#13Substation) Incheon, Korea	Korea	KwangMyung Electric	2016	Technical Consulting for Relay Coordination for Switch Gear (#13Substation)	-Switch Gear (#13Substation) facility of Incheon LNG receiving terminal
10	[Technical Consulting] Optimization of High Pressure NG supply for Dongducheon complex	Korea	Dongducheon dreampower Co.,Ltd	2016	Technical Consulting for optimized facility composition and arrangement	-KOGAS Dongducheon management office, Dongducheon combined cycle power plant
11	[Engineering Consulting] LPG terminal Engineering consulting, Thailand	Thailand	Samsung C&T	2016	LPG Terminal Engineering Consulting	-Unloading Arm, BOG Compressor, Propane/Butane vapouriser -Propane/Butane storage tank
12	[Technical Consulting] Process & Utility during Construction Incheon, Korea	Korea	KwangMyung Electric	2016	Technical Consulting	-Switchgear at #3,5 Substation
13	[Technical Consulting] Process & Utility during Construction Boryeong, Korea	Korea	Boryeong LNG Co./ Woori Bank	2015 -2016	Technical Consulting, Cost Review for Construction Management	-Process & Utility Facilities (Send out : 490ton/hr)
14	[Technical Consulting] Process & Utility Phase 2 Review for PF Boryeong, Korea	Korea	Boryeong LNG Co./ Woori Bank	2015 -2016	Technical Consulting, Phase 2 Review for Project Financing (No.4 Tank)	-LNG Storage Tank 200,000kl x 1 unit -Process & Utility Facilities
15	[Training] Process & Utility Operating Education Boryeong, Korea	Korea	SK E&C/ GS E&C	2015 -2016	Commissioning Education Himeji TML Education in Japan	-Process & Utility Facilities
16	[Technical Consulting] Process & Utility Phase 1 Review for PF Boryeong, Korea	Korea	MACQUARIE	2013 -2014	Technical Propriety Review for Project Financing	-Process & Utility Facilities (Send out : 490ton/hr)
17	[PIPELINE] Consultancy for Pipeline Construction, Vietnam	Vietnam	GPPMB	2003 -2009	Consultancy for Pipeline Construction	-Route : Phu My – Hochimin City -Pipe : 22" x 50 km, 12" x 11 km

CONSTRUCTION FOR CNG/LCNG STATION

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	CNG Bus Fuel Injection Facilities Expansion Work	Korea	Jeil Transportation	2012.2 -2012.9	Construction	-Compressor : 1,350 Nm ³ × 1 unit
2	Jangyang-ri CNG Station Expansion & Commissioning Work	Korea	Charmvit Wonju Citygas	2010.6 -2010.7	Construction	-Compressor : 860Nm ³ × 1 unit
3	Donghae LCNG Complex Station Construction Work	Korea	KOGAS	2009.3 -2009.11	Construction	-Compressor : 1,500Nm ³ × 2 units
4	Inchen International Airport LNG Station Construction Work	Korea	KOGAS	2009.2 -2012.12	Construction	-Compressor : 9.3ton(LNG) × 3 units
5	Mirae Transportation Sibjeong-dong CNG Station Construction Work	Korea	Kangin Industry	2008.8 -2009.10	Construction	-Compressor : 990m ³ × 2 units -Compressor : 852Nm ³ × 1 unit
6	Gwangyang LCNG Station Construction Work	Korea	KOGAS	2008.6 -2009.4	Construction	-Compressor : 1,500Nm ³ × 2 units
7	Gaya ibs Buwon-dong CNG Station Construction Work	Korea	Gaya Energy	2008.6 -2009.3	Construction	-Compressor : 1,192Nm ³ × 3 units
8	Enpyeong New Town CNG Station Construction Work	Korea	Jeil Transportation	2008.2 -2009.9	Construction	-Compressor : 1,390Nm ³ × 2 units
9	Munsan CNG Station Construction Work	Korea	Sinsung Transportation	2008.2 -2009.2	Construction	-Compressor : 1,390Nm ³ × 2 units
10	Charmvit Wonju Citygas Jangyang-ri CNG Station Construction Work	Korea	Charmvit Wonju Citygas	2007.12 -2008.2	Construction	-Compressor : 860m ³ × 1 unit
11	Metropolitan Reclamation CNG Station Expansion Work	Korea	SUDOKWON Landfill Site Management Corp.	2007.10 -2008.1	Construction	-Compressor : 1,490Nm ³ × 1 unit
12	Sewon Transportation Cheongcheon-dong CNG Station Expansion Work	Korea	Sewon Energy	2007.9 -2008.1	Construction	-Compressor : 860m ³ × 1 unit
13	Singil Transportation Sang-dong CNG Station Construction Work	Korea	Singil Transportation	2006.5 -2006.12	Construction	-Compressor : 860m ³ × 2 units -Compressor : 1,490Nm ³ × 1 unit
14	Sinchon Transportation Seolmun-dong CNG Station Construction Work	Korea	Sinchon Transportation	2006.3 -2006.9	Construction	-Compressor : 1,134Nm ³ × 2 units
15	Sewon Transportation Cheongcheon-dong CNG Station Construction Work	Korea	Sewon Energy	2006.4 -2007.5	Construction	-Compressor : 860m ³ × 3 units
16	Donghae Transportation Deahwa-dong CNG Station Construction Work	Korea	Donghae Transportation	2005.6 -2006.3	Construction	-Compressor : 1,134Nm ³ × 2 units
17	Pohang LCNG Complex Station Construction Work	Korea	KOGAS	2005.6 -2006.4	Construction	-Compressor : 1,500Nm ³ × 2 unit
18	Sina Citygas Chojang-dong CNG Station Construction Work	Korea	Sina City Gas Co., Ltd.	2005.4 -2005.11	Construction	-Compressor : 1,030Nm ³ × 2 units
19	Kajwa CNG Station Capacity Expansion Work	Korea	Incheon Citygas	2005.3 -2005.10	Construction	-Compressor : 1,380Nm ³ × 1 unit
20	Charmvit Wonju Citygas Kwanseol-dong CNG Station Construction Work	Korea	Charmvit Wonju Citygas	2004.9 -2005.1	Construction	-Compressor : 816m ³ × 1 unit
21	Metropolitan Reclamation CNG Station Construction Work	Korea	SUDOKWON Landfill Site Management Corp.	2003.12 -2004.5	Construction	-Compressor : 860m ³ × 2 units
22	Kajwa CNG Station New Construction Work	Korea	Incheon Citygas	2003.3 -2003.7	Construction	-Compressor : 939m ³ × 2 units

OPEN INSPECTION & REPAIR WORK FOR LNG STORAGE TANKS

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	Inspection for Equatorial Guinea LNG Vessel	Guinea	Corban Energy Group	2018 -2019	-LNG Vessel Inspection, Test	-LNG Storage Tank (1,228kl) x 12 units
2	Incheon LNG Terminal, Korea	Korea	KOGAS	2017.12 -2018.11	-N2 Purge -Aeration -Perlite Discharge -Renewal Inner Tank -Insulation Maintenance -Perlite Charge -FG Injection -Cool Down -Performance Test -Safety Diagnosis	-TK #205 (100,000kl)(9% Ni)
3	Incheon LNG Terminal, Korea	Korea	KOGAS	2017.7 -2018.11	-N2 Purge -Aeration -Perlite Discharge -Renewal Inner Tank -Insulation Maintenance -Perlite Charge -FG Injection -Cool Down -Performance Test -Safety Diagnosis	-TK #203 (100,000kl)(9% Ni)
4	Incheon LNG Terminal, Korea	Korea	KOGAS	2016.2 -2017.5.	-N2 Purge -Aeration -Perlite Discharge -Renewal Inner Tank -Insulation Maintenance -Perlite Charge -FG Injection -Cool Down -Performance Test -Safety Diagnosis	-TK #201 (100,000kl)(9% Ni)
5	Incheon LNG Terminal, Korea	Korea	KOGAS	2015.8 -2016.12	-N2 Purge -Aeration -Perlite Discharge -Renewal Inner Tank -Insulation Maintenance -Perlite Charge -FG Injection -Cool Down -Performance Test -Safety Diagnosis	-TK #202 (100,000kl)(9% Ni)
6	Pyeongtaek LNG Terminal, Korea	Korea	KOGAS	2014.4 -2016.9	-N2 Purge -Insulation Maintenance -He & NH3 Test -FG Injection -Cool Down -Performance Test -Safety Diagnosis	-TK #3, 6, 9 (100,000kl/each)(Membrane)
7	Pyeongtaek LNG Terminal, Korea	Korea	KOGAS	2013.3 -2014.9	-N2 Purge -Insulation Maintenance -He & NH3 Test -FG Injection -Cool Down -Performance Test	-TK #2, 5 (100,000kl/each)(Membrane)
8	Pyeongtaek LNG Terminal, Korea	Korea	KOGAS	2011.3 -2012.3	-N2 Purge -Insulation Maintenance -He & NH3 Test -FG Injection -Cool Down -Performance Test	-TK #1, 7 (100,000kl/each)(Membrane)
9	Pyeongtaek LNG Terminal, Korea	Korea	KOGAS	2009.12 -2011.3	-N2 Purge -Insulation Maintenance -He & NH3 Test -FG Injection -Cool Down -Performance Test	-TK #4 (100,000kl)(Membrane)

MAINTENANCE & TRAINING FOR LNG TERMINAL

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	Safety Diagnosis for Mechanical Facilities in LNG Terminal (Mexico Manzanillo LNG Terminal)	Mexico	KMS	2019.10 ~2019.11	Safety Diagnosis for Mechanical Facilities in LNG Terminal	-LNG Tank x 2 units (Total 300,000kℓ) -Unloading Facility : 1 unit -Low Pressure Pump : 4 units -High Pressure Pump : 4 units -Vaporizer : 5 units -Capacity : 159 ton/hour -Other Terminal Facilities
2	Overhaul for BOG Compressor (Mexico Manzanillo LNG Terminal)	Mexico	KMS	2019.5 ~2019.7	Overhaul for BOG Compressor	BOG Compressor : 2 Units
3	Complete Overhaul & Maintenance Work for unloading arms in Incheon, Korea	Korea	KOGAS	2015.3 ~2015.10	Complete Overhaul & Maintenance	-Unloading Arm : 5 units
4	Samcheok LNG Terminal, Korea	Korea	KOGAS	2014 -Present	Maintenance	-LNG Tank x 3 units (Total 600,000kℓ) -Unloading Facility : 5 units -Low Pressure Pump : 9 units -High Pressure Pump : 10 units -Vaporizer : 5 units -Capacity : 780 ton/hour -Other Terminal Facilities
5	Mexico Manzanillo LNG Terminal (Manzanillo City, Colima State, Mexico)	Mexico	CFE (Comisión Federal de Electricidad)	2011 -Present	Maintenance & Training	-LNG Tank x 2 units (Total 300,000kℓ) -Unloading Facility : 1 unit -Low Pressure Pump : 4 units -High Pressure Pump : 4 units -Vaporizer : 5 units -Capacity : 159 ton/hour -Other Terminal Facilities
6	POSCO Gwangyang LNG Terminal (Gwangyang, Korea)	Korea	POSCO	2005 -2011	Maintenance	-LNG Tank x 3 units (Total 365,000kℓ) -Unloading Facility : 1 unit -Low Pressure Pump : 6 units -High Pressure Pump : 4 units -Vaporizer : 3 units -Capacity : 280 ton/hour -Other Terminal Facilities
7	Tongyeong LNG Terminal, Korea	Korea	KOGAS	2002 -Present	Maintenance	-LNG Tank x 17 units (Total 2,620,000kℓ) -Unloading Facility : 2 units -Low Pressure Pump : 41 units -High Pressure Pump : 22 units -Vaporizer : 14 units -Capacity : 2,130 ton/hour -Other Terminal Facilities
8	Incheon LNG Terminal, Korea	Korea	KOGAS	1996 -Present	Maintenance	-LNG Tank x 20 units (Total 3,280,000kℓ) -Unloading Facility : 2 units -Low Pressure Pump : 53 units -High Pressure Pump : 40 units -Vaporizer : 38 units -Capacity : 4,470 ton/hour -Other Terminal Facilities
9	Pyeongtaek LNG Terminal, Korea	Korea	KOGAS	1993 -Present	Maintenance	-LNG Tank x 23 units (Total 3,360,000kℓ) -Unloading Facility : 2 units -Low Pressure Pump : 59 units -High Pressure Pump : 40 units -Vaporizer : 31 units -Capacity : 4,036 ton/hour -Other Terminal Facilities

OVERSEAS PRE-COMMISSIONING, COMMISSIONING, O&M & TRAINING FOR GAS TERMINAL/CHEMICAL & PETROLEUM PLANT

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	Kuwait KNPC Al-zour LNG Terminal	Kuwait	KOGAS	2019.11 -2021.4	Commissioning	-245,000 kl LNG Tank x 8 units -3,000 BBTU LNG Terminal
2	Tanjung Sekong LPG Terminal, Indonesia	Indonesia	POSCO E&C	2019.9 ~2019.12	Commissioning	-44,000 LPG Tank x 2 units -Terminal Facilities
3	Kuwait KNPC Al-zour LNG Terminal	Kuwait	KOGAS	2018.6 -2019.3	O&M Manual	-245,000 kl LNG Tank x 8 units -3,000 BBTU LNG Terminal
4	Panama Colon LNG Terminal, Panama	Panama	AES Panama	2017.7 -2019.11	O&M Manual, Training, Commissioning	-195,000kl LNG Tank x 1 unit -Full Containment LNG Tank
5	Singapore Jurong LNG Terminal, Singapore	Singapore	SLNG	2016.10 -2017.11	Pre-commissioning	-280,000kl LNG Tank x 1 unit -4.5MMTPA LNG Terminal
6	China Guangxi LNG Terminal	China	SINOPEC Guangxi LNG	2016.1 -2016.6	Pre-commissioning, Commissioning	-160,000kl LNG Tank x 4 units -3MMTPA LNG Terminal
7	China Qingdao LNG Terminal	China	SINOPEC Qingdao LNG	2014.6 -2015.4	Pre-commissioning, Commissioning	-160,000kl LNG Tank x 3 units -Terminal Facilities
8	Singapore Jurong LNG Terminal CMS Implementation	Singapore	SLNG	2012.1 -2013.8	CMS Implementation, Commissioning, Instrument Technical Service	-180,000kl LNG Tank x 3 units -Jetty & Terminal Facilities
9	China Zhejiang LNG Terminal	China	CNOOC	2012.7 -2012.12	Commissioning	-160,000kl LNG Tank x 3 units -Jetty & Terminal Facilities
10	Mexico Manzanillo LNG Terminal	Mexico	MGT (Manzanillo Gastech)	2011 -Present	Maintenance, Training	-150,000kl LNG Tank x 2 units -Jetty & Terminal Facilities
11	China Dalian LNG Terminal	China	PetroChina LNG Dalian	2011 -2012.2	Pre-com., Commissioning, Operation	-160,000kl LNG Tank x 3 units -Jetty & Terminal Facilities
12	China Jiangsu LNG Terminal	China	PetroChina LNG Jiangsu	2010.7 -2011.7	Pre-com., Commissioning, Operation	-160,000kl LNG Tank x 2 units -Jetty & Terminal Facilities
13	Thailand Jetty Development and LNG receiving Terminal	Thailand	PTT	2010.6 -2011.8	Pre-com., Commissioning, CMS Implementation, Operation	-160,000kl LNG Tank x 2units -Jetty & Terminal Facilities
14	Thailand Chonburi LPG Terminal, Thailand	Thailand	PTT	2016.7 -2017.11	Pre-commissioning, Commissioning	-Propane Storage tank : 25,000klx 1 unit -Butane Storage tank : 25,000klx 1 unit -Process & Utility Facilities, LPG Terminal
15	HOUT Onshore Gas Facility SaudiArabia	SaudiArabia	Al Khafji Joint Operation(KJO)	2015 -2016	Pre-commissioning Support, Site Training	-Gas Dehydration Package -LP&HP Recovered Gas Compressor -Instrument Air Package
16	Iraq West Qurna 2nd Phase	Iraq	Lukoil	2013.9 -2014.10	Pre-commissioning, Commissioning, Operation, Training	-Gas Dehydration Package -LP&HP Recovered Gas Compressor -Instrument Air PackageCPF(Oil&Gas Process Facilities, Train x 9 units, Well x 67 units), Water-Slug Catcher, Oil Separator, AG Compressor, Dehydration Package, Booster Compressor, Metering System, Gas & Oil Processing Facilities etc. including Remote Stations(Well)
17	Nigeria Gbaran-Ubie Integrated Oil & Gas	Nigeria	SPDC (Shell)	2008.1 -2011.12	FAT, Pre-commissioning, Commissioning, Operation, Training	
18	Qatar Petroleum LPG Plant	Qatar	QP Qatar	2003.11 -2005.5	Pre-commissioning, Commissioning, Operation	-100,000kl LPG Tank x 3 units
19	Nigeria Cawthorne Channel AG Gathering (CCAGG)	Nigeria	SPDC (Shell)	2002.6 -2006.9	Pre-commissioning, Commissioning, CMS Implementation, Operation	-Gas Flow Station x 5 units -Compression System -Send-out Facilities

R&D

No.	PROJECT	PERIOD	RESEARCH OBJECTIVE
1	Development of Big Data server and data analysis system for improved stable and reliable LNG plants	2017 -2021	-Build Big Data base for Reliability Centered Maintenance(RCM) application of natural gas facilities and equipment life prediction technology
2	Development of engineering package and empirical technology for mobile type small onshore LNG plant	2017 -2020	-Development of engineering package& demonstration technology for modularized LNG Plant design and manufacturing (15ton/day)
3	Enhancement of mobile nitrogen supply system based on membrane purification for gas replacement	2017 -2020	-Enhancement of mobile nitrogen supply system based on optimized highly efficient membrane purification
4	Program Development for Performance Evaluation of Rotating Machines based on Operation Data and Prediction of Performance Improvement of Modified Impeller	2017 -2019	-Development of Performance Evaluation and Impeller Performance-Improvement Prediction Program about the Acquisition Operation Data of Rotating Machinery Installed on Plant Site
5	Development of structural calculation VBA for LNG Storage Tank in the civil Engineering	2017	-Improving business efficiency and reliability by development of structural calculation VBA
6	Fitness for Service of PTT Gas Pipeline 28"	2016	-Assessment of dent pipeline -Dent Assessment using FEA -Fatigue life analysis
7	Upgrading of measuring equipment for static electricity in body and establishing plan of safety management.	2016 -2017	-Development of static electricity measurement equipment with improved speed and reliability
8	Development of double plugging head for block off the high-pressure gas pipeline	2016 -2018	-Development of 20inch Double Plugging Head for block off the high-pressure gas pipeline
9	Development of BOM(Bill of Material) software for LNG storage tank	2016	-Building of the basis database for standardized BOM calculation of LNG storage tank and the development of BOM calculation software
10	2016 Boil-off-gas compressor diagnosis	2016	-Evaluation of remanent life and integrity by diagnosing lifespan Boil-off-gas compressor
11	Development of integrated biogas-powered high temperature fuel cell system	2015 -2018	-Performance evaluation of integrated biogas-powered 5kW high temperature fuel cell system to prepare engineering database for 100kW scale-up plant process design
12	Development of chip removal equipment using by differential pressure for Hot Tapping work	2015	-Development of chip removal equipment using by differential pressure between piping inside and outside
13	Development of measuring equipment for static electricity in body for enhancing on-site safety	2015	-Development of measuring and analyzing equipment for static electricity in body
14	Process design of CO2 transportation by subsea pipeline	2015	-Process design of CO2 transportation by subsea pipeline
15	Process design of CO2 temporary storage facility	2015	-Process design of CO2 temporary storage facility
16	Process design of CO2 injection system	2015	-Process design of CO2 injection system
17	Development of performance evaluation and analysis technology for large rotating machinery in LNG terminal	2015 -2017	-Performance evaluation for large rotating machinery in LNG terminal and development of analytic technique
18	Development of small scale natural gas liquefaction technology	2015 -2016	-Development of a small scale LNG liquefaction technology
19	Development of technology for floating offshore LNG bunkering system	2014 -2019	-Development of topside design for floating LNG bunkering terminal and boil of gas(BOG) re-liquefaction pilot plant
20	Development of remnant life prediction system for high-pressure LNG facility safety	2014 -2017	-Development of remnant life prediction system for high-pressure LNG facility safety and reliability

21	Development of Multi-Plane Balancing Program and Equipment for High Pressure LNG Secondary Pump	2014 -2017	-Development of balancing equipment for high pressure LNG secondary pump assembly with rotor & shaft
22	Development of the membrane based nitrogen supply modules for gas exchange and pneumatic pressure test	2014 -2016	-Development of 500Nm ³ /hr mobile N ₂ generation system based on membrane
23	Analyzing property of LNG facility lifespan and developing evaluation standard for remanent life of LNG facility	2014 -2016	-Building evaluation standard for remanent life of LNG facility and data base
24	Organization of used oil analysis system for rotational machinery lubrication oil management	2014 -2015	-Organization of used oil analysis and site support system for rotational LNG machinery -Establish of system for lubrication oil analysis and field support
25	Basic design data investigation and Process design of unit processes for IGCC/SNG	2014	-Process analysis and reliability verification for IGCC/SNG process modeling with suitable unit process
26	Process design of CO ₂ pipeline transportation	2014	-Process design of CO ₂ pipeline transportation
27	Development of the technology for biogas upgrading and the recovery & using of carbon dioxide	2013 -2019	-Development of biogas upgrading technology and high efficient CO ₂ liquefaction recovery system
28	Development of pipeline-infrastructure design and evaluation technology in permafrost area	2013 -2018	-Development of pipeline-infrastructure optimization design evaluation, long distance pipeline plan and optimization technology in permafrost area
29	Development and demonstration of LNG supply system for natural gas and diesel dual fuel CHP system	2013 -2018	-Design and construction of optimum LNG supply system in island
30	6 inch natural gas pressure regulator localization and field study of technical assistance	2013 -2017	-6 inch natural gas pressure regulator localization and field study
31	Research and consultation on LNG bunkering in the East Sea	2013	-Present-Condition Investigation of Ship Navigation in the East Sea -Arrangement of infrastructure plan for LNG bunkering in connection with north pole route.
32	The development of technology for ultra large crude oil storage tank	2013	-Design development of external floating roof type LNG storage tank
33	Development of biogas CO ₂ recovery and liquefaction system	2013	-Development of CO ₂ recovery system by using low temperature liquefaction from biogas
34	Development on engineering technology for gas separation process from various associated exhaust gases	2012 -2015	-Validation of membrane based gas separation technology from Tail gas, Flaring gas, etc. by using bench-scale pilot plant to prepare engineering database for a commercialized scale plant process design
35	Development on LNG bunkering engineering technology for natural gas power generation in Islands	2012 -2015	-The demonstration of LNG supply and kW-Class Gas power-generation in islands
36	Development of CNG sampling equipment and oil carry-over analysis	2012 -2014	-Quantitative analysis of oil content in CNG -The establishment of response plans for natural gas enhanced quality standards of transport
37	The design development of domed roof type LNG storage tank	2012 -2013	-Basic design development of 9% Ni dome roof type LNG Tank
38	Development of NGH pilot plant for the middle/small natural gas-field exploitation and the energy source securement	2010 -2012	-NGH pilot plant efficiency enhancement design and optimized operation -Basic research and economic evaluation for commercialization of NGH plant
39	Development of ultra-large scale LNG tank design technology	2009 -2015	-The consulting for LNG Tank design of machine, piping, construction. -Reviewing LNG tank design materials

HOT TAPPING & PLUGGING

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	Hot Tapping & Plugging Work for Piping Shifting through Jochiwon~chung-ju(Suknam Bridge) section	Korea	KOGAS	2019	Hot Tapping & Plugging Work	-20"x600# 2Holes
2	Hot Tapping & Plugging Work for Piping Shifting through Cheongju GS section	Korea	KOGAS	2019	Hot Tapping & Plugging Work	-20"x600# 1Holes -16"x600# 1Holes
3	Hot Tapping & Plugging Work for Piping Shifting through Hamang~Bonghwa (Sukpo Bridge) section	Korea	KOGAS	2019	Hot Tapping & Plugging Work	-20"x600# 4Holes
4	Hot Tapping & Plugging Work for Piping Shifting through Pyeongdong~Naju (Yongbongtown) section	Korea	KOGAS	2018	Hot Tapping & Plugging Work	-30"x600# 2Holes
5	Hot Tapping & Plugging Work through Yang yang station	Korea	KOGAS	2017	Hot Tapping & Plugging Work	-20"x600# 2Holes
6	Hot Tapping & Plugging Work for Piping Shifting through Mokpo~youngam (seokhyundong) section	Korea	KOGAS	2017	Hot Tapping & Plugging Work	-20"x600# 2Holes
7	Hot Tapping & Plugging Work for Piping Shifting through Jochiwon~chung-ju section	Korea	KOGAS	2017	Hot Tapping & Plugging Work	-40"x600# 2Holes
8	Hot Tapping & Plugging Work for Piping Shifting through Jangseong~Gochang (Woonkockgyo) Section	Korea	KOGAS	2016	Hot Tapping & Plugging Work	-20"x600# 2Holes
9	Hot Tapping & Plugging Work through Hotan~Muju (Jinaecheon) Section	Korea	KOGAS	2016	Hot Tapping & Plugging Work	-20"x600# 2Holes
10	Dongchuncheon Station Hot Tapping & Plugging Work for Tie-in	Korea	KOGAS	2016	Hot Tapping & Plugging Work	-30"x600# 2Holes
11	Hot Tapping & Plugging Work through Muju~sulcheon (Entrance of Taekwondowon) Section	Korea	KOGAS	2016	Hot Tapping & Plugging Work	-20"x600# 4Holes
12	Hot Tapping & Plugging Work for Piping Shifting through Muan~Mokpo (Cheonggyeogyo) Section	Korea	KOGAS	2015	Hot Tapping & Plugging Work	-30"x600# 2Holes
13	Maengjin Station Hot Tapping & Plugging Work for Tie-in	Korea	KOGAS	2015	Hot Tapping & Plugging Work	-20"x600# 2Holes
14	Hot Tapping & Plugging Work for Piping Shifting through Muan~Mokpo (Cheonggyeogyo) Section	Korea	KOGAS	2015	Hot Tapping & Plugging Work	-30"x600# 2Holes
15	Hampyeong Station Hot Tapping & Plugging Work for Tie-in	Korea	KOGAS	2014	Hot Tapping & Plugging Work	-30"x600# 2Holes
16	Hot Tapping & Plugging Work for Piping Shifting through East Gimcheon~Gamun Section	Korea	KOGAS	2014	Hot Tapping & Plugging Work	-30"x600# 2Holes
17	Hot Tapping & Plugging Work for Piping Shifting through Cheongnyang~Onsan (Cheongbaekgyo) Section	Korea	KOGAS	2014	Hot Tapping & Plugging Work	-30"x600# 2Holes
18	Hampyeong Governer Station Hot Tapping & Plugging Work for Ball Valve Replacement	Korea	KOGAS	2014	Hot Tapping & Plugging Work	-30"x600# 2Holes
19	Hot Tapping & Plugging Work for Piping Shifting through Jangseong~Gochang (Jooam2gyo) Section (Plus 1 Hole)	Korea	KOGAS	2014	Hot Tapping & Plugging Work	-20"x600# 4Holes
20	Masan Main Piping Hot Tapping & Plugging Work	Korea	KOGAS	2013	Hot Tapping & Plugging Work	-30"x26"x600# 2Holes Tapping, 30"x600# 2Hole
21	Hot Tapping & Plugging Work for Gas Pipe Shifting through Naju~Muan (Sohakgyo) Section	Korea	KOGAS	2013	Hot Tapping & Plugging Work	-30"x600# 2Holes
22	Hot Tapping & Plugging Work through Cheonan~Asan Section	Korea	KOGAS	2013	Hot Tapping & Plugging Work	-20"x600# 2Holes
23	Muan Station Hot Tapping & Plugging Work for Tie-in	Korea	KOGAS	2012	Hot Tapping & Plugging Work	-30"x600# 2Holes
24	Onsan Station Hot Tapping & Plugging Work for Tie-in	Korea	KOGAS	2012	Hot Tapping & Plugging Work	-30"x600# 2Holes
25	Yeongam Governer Station Hot Tapping & Plugging Work for Tie-in	Korea	KOGAS	2012	Hot Tapping & Plugging Work	-20"x150# 1Hole, 20"x600# 3Holes
26	Jochiwon Station Hot Taping & Plugging Work	Korea	KOGAS	2011	Hot Tapping & Plugging Work	-20"x600# 1Hole

27	Jungchon Station Hot Tapping & Plugging Work	Korea	KOGAS	2011	Hot Tapping & Plugging Work	-24"x300# 1Hole, 20"x600# 1Hole
28	Hot Tapping & Plugging Work through Jochiwon~Cheongju (Gungpyeonggyo) Section	Korea	KOGAS	2010	Hot Tapping & Plugging Work	-20"x600# 2Holes
29	Gyeryong and Nonsan Station Hot Tapping & Plugging Work	Korea	KOGAS	2010	Hot Tapping & Plugging Work	-30"x600# 2Holes
30	Jeonju Station Hot Tapping & Plugging Work	Korea	KOGAS	2010	Hot Tapping & Plugging Work	-24"x300# 1Hole
31	Hot Tapping & Plugging Work through Cheonan~Asan (Baebangtaekji) Section	Korea	KOGAS	2010	Hot Tapping & Plugging Work	-20"x150# 2Holes, 20"x600# 2Holes
32	Cheonan Station Hot Tapping & Plugging Work	Korea	KOGAS	2010	Hot Tapping & Plugging Work	-30"x600# 1Hole
33	Hwamyung~Hakjang(Deokcheon R~Hwamyong IC) Hot Tapping & Plugging Work for Piping Shifting	Korea	KOGAS	2009	Hot Tapping & Plugging Work	-30"x600# 4Holes
34	Hwamyung~Hakjang(Guporo) Hot Tapping Work for Piping Shifting	Korea	KOGAS	2009	Hot Tapping Work	-30"x600# 2Holes Tapping
35	Jochiwon Station Hot Tapping & Plugging Work	Korea	KOGAS	2009	Hot Tapping & Plugging Work	-30"x600# 1Hole
36	Sinbang Intersection Hot Tapping & Plugging Work	Korea	KOGAS	2009	Hot Tapping & Plugging Work	-20"x600# 2Holes
37	Hot Tapping & Plugging Work through Sunchon~Yulchon (Daega Tunnel) Section	Korea	KOGAS	2008	Hot Tapping & Plugging Work	-30"x600# 2Holes
38	Naju~Muan(Eomda District) Section Hot Tapping & Plugging Work	Korea	KOGAS	2008	Hot Tapping & Plugging Work	-30"x600# 2Holes
39	Hot Tapping & Plugging Work through Changwon~Masan (Dongseup Detour Deoksangyo) Section	Korea	KOGAS	2008	Hot Tapping & Plugging Work	-30"x600# 2Holes
40	Jinyeong~Changwon(Gyeongjeonseon) Hot Tapping & Plugging Work	Korea	KOGAS	2008	Hot Tapping & Plugging Work	-30"x600# 2Holes
41	Jinyeong~Changwon(Sinhangbaehu Railroad) Hot Tapping & Plugging Work	Korea	KOGAS	2008	Hot Tapping & Plugging Work	-30"x600# 2Holes
42	Hot Tapping & Plugging Work for Piping Shifting through Angang~Pohang Section	Korea	KOGAS	2007	Hot Tapping & Plugging Work	-30"x600# 2Holes
43	Hwamyong Station Hot Tapping & Plugging Work for Tie-in	Korea	KOGAS	2007	Hot Tapping & Plugging Work	-30"x600# 2Holes
44	Iksan Station 14" Hot Tapping & Plugging Work	Korea	KOGAS	2006	Hot Tapping & Plugging Work	-14"x600# 1Hole
45	Hot Tapping & Plugging Work through Jochiwon~Cheongju (Wolgokgyo) Section	Korea	KOGAS	2005	Hot Tapping & Plugging Work	-20"x600# 2Holes
46	Hot Tapping & Plugging Work through Jochiwon~Cheongju (Gungpyeonggyo) Section	Korea	KOGAS	2005	Hot Tapping & Plugging Work	-20"x600# 2Holes
47	ILI Facilities Improvement Work	Korea	KOGAS	2005	Hot Tapping & Plugging Work	-20"x600# 3Holes
48	Jochiwon~Cheongju(Hakcheon Hill) Section Hot Tapping & Plugging Work	Korea	KOGAS	2005	Hot Tapping & Plugging Work	-20"x600# 2Holes
49	Hot Tapping Work for Improvement of ILI facilities	Korea	KOGAS	2005	Hot Tapping & Plugging Work	-20"x600# 2Holes
50	Hot Tapping Work at 750Ax500A Heating Pipeline	Korea	Nara E&C	2018	Hot Tapping Work	-750Ax500Ax150# 2Holes
51	Fuel Gas pipeline Hot Tapping & Plugging Work in the KOGAS Pyeongtaek Station	Korea	Woolim Plant Co., Ltd.	2018	Hot Tapping & Plugging Work	-4"x150# 2Holes
52	Hot Tapping Work using Split Tee(800Ax80A)	Korea	H-plus Eco	2018	Hot Tapping Work	-800Ax80Ax150# 2Holes
53	2018 Hot Tapping & Plugging Work for District Heating Pipelines(2Zone)	Korea	KDHC Corp.	2018	Hot Tapping & Plugging Work	-850Ax150# Plus 139Holes
54	Hot Tapping & Plugging Work at 300A Water Supply Pipeline	Korea	GS Neotek	2018	Hot Tapping & Plugging Work	-300Ax150# 2Holes
55	2018 Heating Pipeline Non Outage Work in Anyang and Bucheon Region	Korea	GS Power Co., Ltd.	2018	Hot Tapping & Plugging Work	-900Ax150# Plus 80Holes
56	Hot Tapping Work at NG Line	Korea	Samchully ES	2018	Hot Tapping Work	-16"x8"x600# 1Hole
57	Hot Tapping work for fuel cell, Sin-boryeong	Korea	Dae sung Co., Ltd.	2017	Hot Tapping & Plugging Work	-18"x2" 1Hole
58	2017 Hot Tapping & Plugging Work for District Heating Pipelines(2 Zone)	Korea	KDHC Corp.	2017	Hot Tapping & Plugging Work	-850Ax150# plus 203Holes
59	Hot Tapping & Plugging Work for Piping Shifting through , Wi-rye~Sang-il IC	Korea	Han yang ENG Co., Ltd.	2017	Hot Tapping & Plugging Work	-20"x600# 2Holes
60	Hot Tapping Equipment(26", 600#) Rental Services	Korea	Daehan Oil Pipeline Corporation	2016	Equipment Rental	-26"x600# (Housing 2, Adapter 1, Sandwich 1) Equipment Rental

61	Hot Tapping Equipment(20" 600#) Rental Services	Korea	Daehan Oil Pipeline Corporation	2016	Equipment Rental	-20"x600# (Housing 2, Head 2, Sandwich 2) Equipment Rental
62	2016 Heating Pipeline Non Outage Work in Anyang and Bucheon Region	Korea	GS Power Co., Ltd.	2016	Hot Tapping & Plugging Work	-800Ax150# plus 69Holes
63	150A Hot Tapping & Plugging Work in KDHC Corp. Bundang Office	Korea	Sinwoo ENG Co., Ltd	2016	Hot Tapping & Plugging Work	-150Ax150# 2Holes
64	2016 Hot Tapping & Plugging Work for District Heating Pipelines(1Zone)	Korea	KDHC Corp.	2016	Hot Tapping & Plugging Work	-850Ax150# plus 145Holes
65	Hot Tapping Equipment (20" 600#) Rental Services (Incheon north harbor section)	Korea	Daehan Oil Pipeline Corporation	2016	Equipment Rental	-20"x600# (Housing 2, Head 2, Sandwich 2) Equipment Rental
66	Chungcheong Energy Services Co., Ltd. Hot Tapping & Plugging Work	Korea	Chungcheong Energy Services Co., Ltd.	2015	Hot Tapping & Plugging Work	-20"x150# 2Holes
67	Hot Tapping Equipment (26", 600#) Rental Services	Korea	Daehan Oil Pipeline Corporation	2015	Equipment Rental	-26"x600# (Housing 2, Adapter 1, Sandwich 2) Equipment Rental
68	2015 Heating Pipeline Non Outage Work in Bucheon Region	Korea	GS Power Co., Ltd.	2015	Hot Tapping & Plugging Work	-800Ax150# plus 53Holes
69	2015 Hot Tapping & Plugging Work for District Heating Pipelines(1Zone)	Korea	KDHC Corp.	2015	Hot Tapping & Plugging Work	-800Ax150# plus 140Holes
70	Additional Installation Work of Shut-off Valve in Heating Source	Korea	Goyang Branch of KDHC Corp.	2014	Hot Tapping & Plugging Work	-800Ax150# 4Holes, 700A 2Hole/900A 2Holes Butt Installation
71	2014 Heating Pipeline Non Outage Work in Bucheon Region	Korea	GS Power Co., Ltd.	2014	Hot Tapping & Plugging Work	-700Ax150# plus 43Holes
72	2014 Hot Tapping & Plugging Work for District Heating Pipelines(1Zone)	Korea	KDHC Corp.	2014	Hot Tapping & Plugging Work	-850Ax150# plus 82Holes
73	Hot Tapping Work at POSCO COG Line(1600A)	Korea	J CON Co., Ltd.	2013	Hot Tapping Work	-1600Ax150# 1Hole Tapping
74	Heating Pipeline Non Outage Work by Hot Tapping & Plugging	Korea	Seungjaegongyeong Co., Ltd.	2013	Hot Tapping & Plugging Work	-700Ax150# 2Holes
75	2013 Heating Pipeline Non Outage Work in Bucheon Region	Korea	GS Power Co., Ltd.	2013	Hot Tapping & Plugging Work	-800Ax150# plus 68Holes
76	2013 Hot Tapping & Plugging Work for District Heating Pipelines(2Zone)	Korea	KDHC Corp.	2013	Hot Tapping & Plugging Work	-850Ax150# plus 75Holes
77	Anyang Stream Heating Pipeline Non Outage Work in front of Anil Elementary School	Korea	GS Power Co., Ltd.	2012	Hot Tapping & Plugging Work	-400Ax150# 2Holes
78	Yeongsangang Hot Tapping & Plugging Work	Korea	Mokpo City Gas Co., Ltd.	2012	Hot Tapping & Plugging Work	-20"x150# 2Holes, 20"x600# 4Holes
79	GS Square Multi Storey Car Park Hot Tapping & Plugging Work	Korea	GS Power Co., Ltd.	2012	Hot Tapping & Plugging Work	-750Ax150# 4Holes
80	Hot Tapping & Plugging Work for Medium Pressure Pipeline across Munsan Yeongcheon River	Korea	GSE Co., Ltd.	2012	Hot Tapping & Plugging Work	-12"x150# 2Holes
81	2012 Heating Pipeline Non Outage Work in Bucheon Region	Korea	GS Power Co., Ltd.	2012	Hot Tapping & Plugging Work	-800Ax150# plus 38Holes
82	Hot Tapping Work For KNPC NLTF Project	Korea	GS E&C Co., Ltd.	2012	Hot Tapping Work	-10"x150# 1Hole Tapping, 12"x150# 1Hole Tapping
83	2012 Hot Tapping & Plugging Work for District Heating Pipelines(2Zone)	Korea	KDHC Corp.	2012	Hot Tapping & Plugging Work	-850Ax150# plus 56Holes
84	Jeongchon Detour Hot Tapping & Plugging Work for Medium Pressure Pipe Shifting	Korea	GSE Co., Ltd.	2011	Hot Tapping & Plugging Work	-20"x150# 4Holes
85	Non Outage Work for Main Water Pipeline in Bucheon Region	Korea	GS Power Co., Ltd.	2011	Hot Tapping & Plugging Work	-800Ax150# plus 28Holes
86	Daehwa City Gas Hot Tapping & Plugging Work for Medium Pressure Piping(500A-60m 2Hole)	Korea	Daehwa City Gas Co., Ltd.	2011	Hot Tapping & Plugging Work	-20"x150# 2Holes
87	Hot Tapping & Plugging Work with 200A Pipe in front of Yeonsu Jugong Apts.	Korea	Hanyang Co., Ltd.	2011	Hot Tapping & Plugging Work	-200Ax150# 4Holes
88	2011 Hot Tapping & Plugging Work for District Heating Pipelines(1Zone)	Korea	KDHC Corp.	2011	Hot Tapping & Plugging Work	-850Ax150# plus 63Holes
89	Tancheon Hot Tapping & Plugging Work for Heating Pipeline	Korea	Pyeonggang E&C Co., Ltd.	2010	Hot Tapping & Plugging Work	-600Ax150# 2Holes Tapping, 800Ax150# 2Holes
90	Pungdong Hot Tapping & Plugging Work with 850A Pipe	Korea	Sinwang E&C Co., Ltd.	2010	Hot Tapping & Plugging Work	-850Ax150# 4Holes

91	Ilsan WesternDom Hot Tapping & Plugging for Heating Pipe	Korea	Hoil Plant Co., Ltd.	2009	Hot Tapping & Plugging Work	-300Ax150# 1Hole, 750Ax150# 2Holes
92	Pungdeok Cheonbyun Hot Tapping & Plugging Work for Heating Pipe	Korea	Pyeonggang E&C Co., Ltd.	2009	Hot Tapping & Plugging Work	-700Ax150# 2Holes
93	Baekseok Hot Tapping & Plugging Work for 850A Heating Pipe	Korea	Onenine E&C Co., Ltd.	2009	Hot Tapping & Plugging Work	-850Ax150# 4Holes
94	Lotte Department Store Hot Tapping & Plugging Work	Korea	Seungjaegongyeong Co., Ltd.	2009	Hot Tapping & Plugging Work	-600Ax150# 4Holes
95	Suseo Police Office Hot Tapping & Plugging Work for Heating Pipe	Korea	Gwangjin Co., Ltd.	2009	Hot Tapping & Plugging Work	-800Ax150# 4Holes
96	Lotte Hot Tapping & Plugging Work for 700A Pipe	Korea	Hoil Plant Co., Ltd.	2009	Hot Tapping & Plugging Work	-700Ax150# 4Holes
97	Hot Tapping & Plugging Work for Medium Pipe Shifting beside Yeha Elementary School	Korea	GSE Co., Ltd.	2009	Hot Tapping & Plugging Work	-20"x150# 2Holes
98	Goyang Branch Hot Tapping & Plugging Work for 850A Valve Replacement	Korea	Woolim Plant Co., Ltd.	2009	Hot Tapping & Plugging Work	-850Ax150# 4Holes
99	Jangseong Maeul Hot Tapping & Plugging Work for 400A Heating pipe	Korea	Onenine E&C Co., Ltd.	2009	Hot Tapping & Plugging Work	-400Ax150# 4Holes
100	Hugok Maeul Hot Tapping & Plugging Work for 600A Heating Pipe	Korea	Onenine E&C Co., Ltd.	2009	Hot Tapping & Plugging Work	-600Ax150# 4Holes
101	Yonghyeon Taekji Hot Tapping & Plugging Work for Medium Pressure Pipe Shifting	Korea	Seogyong Industries Co., Ltd.	2009	Hot Tapping & Plugging Work	-8"x150# 2Holes
102	Hot Tapping & Plugging Work for Medium Pressure bypass pipe in front of Tongyeong Production Plant	Korea	Geoje/Tongyeong Branch of Gyeongnam Energy Co., Ltd.	2009	Hot Tapping & Plugging Work	-12"x300# 2Holes
103	Hot Tapping & Plugging Work for 600A Tie-in	Korea	Geonjong E&C Co., Ltd.	2008	Hot Tapping & Plugging Work	-600Ax150# 4Holes
104	Gangnam Branch Hot Tapping & Plugging Work for Heating Pipe near Daechi Catholic Church	Korea	Seungjaegongyeong Co., Ltd.	2008	Hot Tapping & Plugging Work	-550Ax150# 4Holes
105	Gangnam Branch Hot Tapping & Plugging Work for 800A Heating Pipe	Korea	Seungjaegongyeong Co., Ltd.	2008	Hot Tapping & Plugging Work	-800Ax150# 2Holes
106	hangang Bridge Hot Tapping & Plugging Work for Heating Pipe	Korea	Hannan Engineering Co., Ltd.	2008	Hot Tapping & Plugging Work	-800Ax150# 2Holes
107	Giryung Hot Tapping & Plugging Work for 600A Heating Pipe	Korea	Giryung Plant Co., Ltd.	2008	Hot Tapping & Plugging Work	-600Ax150# 4Holes
108	Bundang Branch Hot Tapping & Plugging Work for 600A 5Hole	Korea	Dajin ENG Co., Ltd.	2008	Hot Tapping & Plugging Work	-600Ax150# 5Holes
109	Bundang Branch Hot Tapping & Plugging Work for Heating Pipe Maintenance	Korea	Dajin ENG Co., Ltd.	2008	Hot Tapping & Plugging Work	-450Ax150# 1Hole, 600Ax150# 2Holes
110	Hot Tapping & Plugging Work related to Baehu Railroad in Gimhae Busan New Port	Korea	Gimhae Branch of Gyeongnam Energy Co., Ltd.	2008	Hot Tapping & Plugging Work	-16"x150# 1Hole
111	Gajwa Hot Tapping & Plugging Work for Medium Pipe Shifting beside Geyang Pedestrian Overpass	Korea	GSE Co., Ltd.	2008	Hot Tapping & Plugging Work	-20"x150# 2Holes
112	Bundang Hot Tapping & Plugging Work in Jeongjadong	Korea	Dajin ENG Co., Ltd.	2008	Hot Tapping & Plugging Work	-400Ax150# 2Holes, 850Ax150# 1Hole
113	Ilsan Hot Tapping & Plugging Work for 600A, 550A Pipe	Korea	Hoil Plant Co., Ltd.	2008	Hot Tapping & Plugging Work	-550Ax150# 4Holes, 600Ax150# 4Holes
114	Hot Tapping & Plugging Work for 800A Pipe(2Hole)	Korea	Seungjaegongyeong Co., Ltd.	2008	Hot Tapping & Plugging Work	-800Ax150# 2Holes
115	Gajwa 3Taekji Hot Tapping & Plugging Work for Medium Pressure Pipe Shifting	Korea	Seogyong Industries Co., Ltd.	2008	Hot Tapping & Plugging Work	-4"x150# 1Hole, 6"x150# 2Holes
116	Pangyo Hot Tapping & Plugging Work for 600A Pipe Tie-in	Korea	Geonjong E&C Co., Ltd.	2008	Hot Tapping & Plugging Work	-600Ax150# 4Holes
117	KOGAS Hot Tapping & Plugging Work for Onyangjigwan	Korea	Jungbu City Gas	2008	Hot Tapping & Plugging Work	-20"x600# 2Holes
118	Gangnam Branch Hot Tapping & Plugging Work for 700A Pipe	Korea	Ilwon Industries	2007	Hot Tapping & Plugging Work	-700Ax150# 2Holes
119	Pohang Hyeongsan River Hot Tapping & Plugging Work for 16" High Pressure Pipe	Korea	Sungho Engineering Co., Ltd.	2007	Hot Tapping & Plugging Work	-16"x600# 4Holes
120	GS POWER Hot Tapping & Plugging Work for 700A Heating Pipe	Korea	Geonjong E&C Co., Ltd.	2007	Hot Tapping & Plugging Work	-700Ax150# 2Holes

121	KDHC Bundang Branch Hot Tapping & Plugging Work for 850A Pipe	Korea	Woolim Plant Co., Ltd.	2007	Hot Tapping & Plugging Work	-850x300# 8Holes
122	Bundang Branch Hot Tapping & Plugging Work for 600A,550A,350A,200A Heating Pipe	Korea	Geonjong E&C Co., Ltd	2007	Hot Tapping & Plugging Work	-200x150# 4Holes, 350x150# 2Holes, 550x150# 1Hole, 600x150# 4Holes
123	Hot Tapping Work for Installation of GN2 P/L PSV	Korea	Prax Air Korea Corp.	2007	Hot Tapping Work	-6"x4" 1Hole Tapping
124	Hot Tapping & Plugging Work for Medium Pressure Pipe Shifting at Pyeonggeohayong and Pyeonggeohayong 1 Juqong	Korea	GSE Co., Ltd.	2007	Hot Tapping & Plugging Work	-8"x150# 4Holes
125	Hot Tapping & Plugging Work for 600A Heating Pipe	Korea	Jaewon E&C Co., Ltd.	2006	Hot Tapping & Plugging Work	-600x150# 2Holes
126	Hot Tapping & Plugging Work for DCA Cooling Water Pipe	Korea	Giheung Plant of Prax Air Korea Corp.	2006	Hot Tapping & Plugging Work	-6"x3"x150# 2Holes
127	Hot Tapping & Plugging Work for BLNC After Cooler Pipe in Giheung Plant	Korea	Giheung Plant of Prax Air Korea Corp.	2006	Hot Tapping & Plugging Work	-3"x150# 1Hole
128	Hot Tapping & Plugging Work for 400A, 700A Heating Pipe	Korea	Gwangjin Co., Ltd.	2006	Hot Tapping & Plugging Work	-400x150# 2Holes, 700x150# 2Holes
129	Gangnam Branch Hot Tapping & Plugging Work for 600A, 100A Pipe	Korea	Ilwon Industries	2006	Hot Tapping & Plugging Work	-100x150# 2Holes, 600x150# 2Holes
130	Hot Tapping & Plugging Work for 350A Heating Pipe(4Hole)	Korea	Hwacheon Plant Co., Ltd.	2006	Hot Tapping & Plugging Work	-350x150# 4Holes
131	Hot Tapping & Plugging Work for 800A Heating Pipe(2Hole)	Korea	Gwangjin Co., Ltd.	2006	Hot Tapping & Plugging Work	-800x150# 2Holes
132	Seoul Subway Hot Tapping & Plugging Work for Heating Pipe Shifting through 704 Gonggu Wall Mart Section	Korea	Geonjong E&C Co., Ltd	2006	Hot Tapping & Plugging Work	-650x150# 4Holes, 700x150# 2Holes
133	Gajwa Taekji Hot Tapping & Plugging Work for Medium Pressure Pipe Shifting	Korea	Sina City Gas Co., Ltd.	2005	Hot Tapping & Plugging Work	-6"x150# 1Hole, 20"x600# 2Holes
134	KDHC Bundang Branch Hot Tapping & Plugging Work for Heating Pipe	Korea	Jaewon E&C Co., Ltd.	2005	Hot Tapping & Plugging Work	-200x150# 1Hole
135	Hwachidong Hot Tapping & Plugging Work for Medium Pressure City Gas Pipe	Korea	Jinwoong Co., Ltd.	2005	Hot Tapping & Plugging Work	-4"x150# 1Hole
136	Daechuk Hot Tapping & Plugging Work for Medium Pressure Pipe Shifting	Korea	Sina City Gas Co., Ltd.	2005	Hot Tapping & Plugging Work	-20"x600# 2Holes
137	Hot Tapping & Plugging Work for LNG Pipe of Pohang Steel Mill through Namcheon Section	Korea	Seongho Engineering Co., Ltd.	2005	Hot Tapping & Plugging Work	-16"x600# 2Holes
138	Jeongchon JCT Hot Tapping & Plugging Work for Medium Pressure Pipe Shifting	Korea	Sina City Gas Co., Ltd.	2005	Hot Tapping & Plugging Work	-20"x600# 2Holes
139	Hot Tapping & Plugging Work for 600A,500A Pipe (Pohang)	Korea	Seongil E&C Co., Ltd.	2005	Hot Tapping & Plugging Work	-500x150# 2Holes, 600x150# 2Holes
140	Hot Tapping & Plugging Work for LNG Pipe Shifting related to Hyeongsanqanq Business	Korea	Seongho Engineering Co., Ltd.	2005	Hot Tapping & Plugging Work	-16"x600# 4Holes
141	Hot Tapping Work for Installation of N500 Chiller Spare(5Hole)	Korea	Prax Air Korea Corp.	2005	Hot Tapping & Plugging Work	-4" 4Hole, 3" 1Hole
142	Hot Tapping Work for GN2 Pipe Installation in Yeosusandan New Port	Korea	Prax Air Korea Corp.	2005	Hot Tapping Work	-12"x6" Tapping

MUNICIPALITY HYDROGEN STATION CONSTRUCTION WORK

No.	PROJECT DESIGNATION	LOCATION	CLIENT	PERIOD	SERVICES PROVIDED	TYPE OF FACILITIES AND CAPACITY (Gross Capacity)
1	Eumseong County Hydrogen Staion Construction Work	Korea	Kogas-Tech	2019	Hydrogen Staion Construction Work	- Charger : 70Mpa Capacity
2	Pyeongtack City Hydrogen Staion Construction Work	Korea	Kogas-Tech	2019	Hydrogen Staion Construction Work	- Charger : 70Mpa Capacity
3	Chungju City Hydrogen Station Construction Work	Korea	Kogas-Tech	2019	Hydrogen Staion Construction Work	- Charger : 70Mpa Capacity
4	Cheongju City Hydrogen Station Construction Work	Korea	Kogas-Tech	2019	Hydrogen Staion Construction Work	- Charger : 70Mpa Capacity
5	Jinju City Hydrogen Station Construction Work	Korea	Kogas-Tech	2019	Hydrogen Staion Construction Work	- Charger : 70Mpa Capacity