

Transforming
Resources
into **Value**



LNG

KBR



Gas Monetization

Liquefied Natural Gas (LNG)

A World Leader in LNG Liquefaction

We continue to be the leading international contractor for natural gas liquefaction plants, as evidenced by our unparalleled success in the design, engineering and construction of large projects in challenging locations. Alone or with our joint venture partners, we have designed and built over half the global LNG liquefaction capacity in operation between 1976 and 2006.

KBR, along with our joint venture partners, provided project management, engineering, procurement, construction and commissioning for Nigeria LNG, one of the world's largest capacity LNG facilities.

A History of Technological Innovation and Schedule Optimization

Through our "process technology neutral" approach, we have developed expertise with many of the commercially proven liquefaction processes. Our history of design innovations allows us to consistently challenge technical limitations while managing the typical risks of industry evolution. These innovations translate to optimum plant performance with the lowest life-cycle cost. Our liquefaction projects are designed with sustained, long-term operability in mind.

As demonstrated in our record-setting SEGAS project, schedule optimization and early purchase commitments of long-lead items ensure timely project completion and first LNG shipment.

Expertise Across the Entire LNG Value Chain

Our tradition of technical innovation extends to LNG terminals, where we have developed a history of leading-edge designs for safety and efficiency including cold energy integration, efficient liquid/vapor handling systems and the KBR Natural Gas Recondenser.

The KBR recondenser was the first vessel ever designed to fully condense boil-off gas for a terminal. The co-current liquid/vapor design has the longest operating experience of any available in the industry. To date, 14 KBR-designed recondensers are operating in ten terminals worldwide.



KBR's record-setting SEGAS project, located in Egypt, achieved one of the shortest project development schedules for a grassroots LNG facility.

Ing

KBR Liquefaction Complexes (1976-Present)

| Client, Project | Location | LNG Production Capacity (MPTA) | LNG Storage Capacity (MPTA) | KBR Scope of Work | Notes |
|--|-------------------------------------|--------------------------------|-----------------------------|---|---------|
| ANGOLA LNG One-Train Grassroots | Soyo, Angola | 5.0 | 2 x 150,000 | FEED in JV with JGC, Technip | 2, 5, 6 |
| GASSI TOUIL LNG One-Train Grassroots | Arzew, Algeria | 4.0 | 2 x 160,000 | FEED in JV with JGC | 2, 5, 6 |
| GORGON LNG Two-Train Grassroots | Barrow Island, Western Australia | 10.0 | 2 x 160,000 | FEED in JV with JGC, Clough, Hatch | 2, 5, 6 |
| MALAYSIA LNG SATU Three-Train Grassroots | Bintulu, Malaysia | 7.8 | 4 x 65,000 | EPC in Joint Venture (JV) with JGC | 2 |
| MALAYSIA LNG DUA Three-Train Expansion | Bintulu, Malaysia | 7.8 | 1 x 65,000 | FEED, EPC in JV with JGC, Sime | 2, 6, 7 |
| MALAYSIA LNG TIGA Two-Train Expansion | Bintulu, Malaysia | 7.8 | 1 x 120,000 | EPC in JV with JGC, Sime | 2, 5, 6 |
| NIGERIA LNG Two-Train Grassroots | Bonny Island, Nigeria | 5.9 | 2 x 84,200 | FEED, EPC in JV with Technip, Snamprogetti, JGC | 2, 6, 8 |
| NIGERIA LNG Two-Train Grassroots | Bonny Island, Nigeria | 4.5 | 2 x 84,200 | FEED in JV with Technip | 3, 6, 8 |
| NIGERIA LNG One-Train Expansion | Bonny Island, Nigeria | 2.9 | 1 x 84,200 | FEED, EPC in JV with Technip, Snamprogetti, JGC | 2, 6, 8 |
| NIGERIA LNG (PLUS) Two-Train Expansion | Bonny Island, Nigeria | 8.0 | 1 x 84,200 | FEED, EPC in JV with Technip, Snamprogetti, JGC | 2, 5, 6 |
| NIGERIA LNG (NLNGSix) One-Train Expansion | Bonny Island, Nigeria | 4.0 | – | FEED, EPC in JV with Technip, Snamprogetti, JGC | 2, 5, 6 |
| NIGERIA LNG (SevenPLUS) Two-Train Expansion | Bonny Island, Nigeria | 17.0 | – | FEED in JV with Technip, Snamprogetti, JGC | |
| OK LNG Two-Train Grassroots | Olokola, Nigeria | 11.0 | 2 x 165,000 | FEED in JV with JGC | 2, 5, 6 |
| OMAN LNG Two-Train Grassroots | Al Ghalilah, Oman | 6.6 | 2 x 134,000 | FEED in JV with JGC | 2, 6 |
| PERU LNG One-Train Grassroots | Pampa Melchorita, Peru | 4.3 | 2 x 130,000 | FEED | 2, 5, 6 |
| PT. BADAQ H One-Train Expansion | Bontang, Indonesia | 2.95 | 1 x 127,200 | FEED, EPC in JV with IKPT and PTGC | 2 |
| QATARGAS LNG Two-Train Grassroots | Ras Laffan, Qatar | 4.5 | 3 x 85,000 | FEED in JV with JGC | 2, 6 |

KBR Liquefaction Complexes (1976-Present) Cont'd.

| Client, Project | Location | LNG Production Capacity (MPTA) | LNG Storage Capacity (MPTA) | KBR Scope of Work | Notes |
|---|-----------------------|--------------------------------|-----------------------------|--|---------|
| QATARGAS LNG Three-Train Debottleneck | Ras Laffan, Qatar | 9.7 | 4 x 85,000 | FEED | 2, 6 |
| RAS LAFFAN LNG Two-Train Grassroots | Ras Laffan, Qatar | 5.0 | 2 x 140,000 | EPC in JV with JGC | 2, 6 |
| SEGAS LNG One-Train Grassroots | Damietta Port, Egypt | 5.0 | 2 x 150,000 | FEED, EPC in JV with JGC, Tecnicas Reunidas SA | 2, 5, 6 |
| SONATRACH GL 2.Z Six-Train Grassroots | Arzew, Algeria | 9.6 | 3 x 100,000 | FEED, EPC for grassroots and later for capacity increase | 1, 2 |
| SONATRACH GL1.K Three Trains | Skikda, Algeria | 3.5 | 3 x 56,000 | EPC Completion & Renovation | 4 |
| SONATRACH NEW TRAIN One Train Grassroots | Skikda, Algeria | 4.5 | 1 x 150,000 | FEED, EPC | 2, 5, 6 |
| TANGGUH LNG Two-Train Grassroots | West Papua, Indonesia | 7.6 | 2 x 132,000 | FEED, EPC Early Works Program in JV with JGC | 2, 5, 6 |
| WOODSIDE NW SHELF Two-Train Grassroots | Karratha, Australia | 4.2 | – | FEED in JV with JGC, Kaiser | 2 |
| WOODSIDE NW SHELF Two-Train Grassroots | Karratha, Australia | 4.3 | 4 x 65,000 | FEED, EPC in JV with JGC, Kaiser | 2, 5, 6 |
| WOODSIDE NW SHELF One-Train Expansion | Karratha, Australia | 2.2 | – | EPC in JV with JGC, Kaiser | 2, 5, 6 |
| WOODSIDE NW SHELF One-Train Expansion | Karratha, Australia | 4.2 | – | FEED, EPC in JV with JGC, Hatch-Kaiser, Clough | 2, 5, 6 |
| WOODSIDE NW SHELF One-Train Expansion | Karratha, Australia | 4.2 | – | FEED in JV with JGC, Hatch-Kaiser, Clough | 2, 5, 6 |
| YEMEN LNG Two-Train Grassroots | Balhaf, Yemen | 6.7 | 2 x 140,000 | FEED, EPC in JV with JGC, Technip | 2, 6 |

- NOTES
1. Grassroots capacity was originally 8.4 MTPA and later renovated to increase capacity to 9.6 MTPA
 2. Propane pre-cooled mixed-refrigerant process
 3. Dual mixed-refrigerant process
 4. Single mixed-refrigerant process
 5. Air cooled plant
 6. Gas turbine compressor drivers
 7. Hybrid Air cooling/Seawater cooling
 8. Closed loop, fresh water, with cooling towers

Gas-to-Liquids (GTL)

Gas to liquids (GTL) is a rapidly emerging technology that converts natural gas into premium liquid hydrocarbons. KBR brings to this market our differentiated, global capabilities to complete extremely large, complex, technically challenging projects on schedule under the most rigorous conditions. We have established ourselves in the GTL market and are involved in both of the GTL projects in development globally. GTL facilities are now in progress or being considered in gas-rich countries such as Algeria, Australia, Colombia, Nigeria, Qatar and Russia.

High crude oil prices in recent years and technological advances in processing have made GTL an attractive option for monetizing stranded gas. Trillions of cubic feet of stranded natural gas are located in remote areas across the globe, and we have the expertise in building complex plants in remote locations.

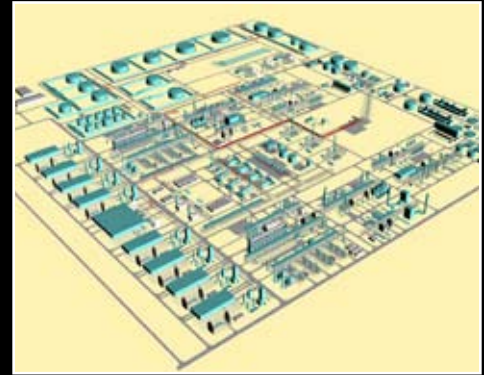
GTL can be used directly as diesel fuel or blended with lower quality fuel to bring it into compliance with environmental and performance specifications.

Gas Processing

We offer sixty years of unrivaled gas processing expertise and have been instrumental in building hundreds of gas treatment and recovery units, ranging from small units to some of the world's largest facilities. We pioneered the use of gas treatment technology in enhanced oil recovery and can provide the best solutions for our client's process needs.

Gas Monetization Studies

We have executed many gas monetization studies to assist our clients in evaluating appropriate options for utilization of offshore and onshore gas during the early field development phase. We are in a unique position to execute these studies as a result of our wide experience with gas monetization projects.



Following on the heels of the successful completion of the basis of design/basic design package and subsequent front-end engineering design (FEED) provided by the KBR/JGC joint venture, the award of the Pearl project execution cements KBR's leadership status in the GTL industry.



Building upon our history of successful project execution in Nigeria, KBR along with our JV partners, JGC Corporation and Snamprogetti, are providing engineering, procurement and construction for the Chevron Nigeria Limited/Nigeria National Petroleum Corporation Escravos GTL facility in Escravos, Nigeria.



KBR and JGC provided conceptual engineering, FEED and EPC services for the In Salah Gas Field Development.

KBR Receiving Terminals

| Client | Location | Import Capacity (MTPA) | Storage Capacity (m3) | Scope |
|-------------------------------------|--------------------------------|------------------------|--|------------------------|
| Port Arthur LNG | Sabine Pass, TX, USA | 11.5 | 3 x 160,000 | FEED |
| Cameron LNG (Expansion) | Hackberry, LA, USA | 8.6 | 3 x 160,000 | FEED |
| Rabaska LNG | Quebec, Canada | 3.6 | 2 x 160,000 | FEED |
| Taranto LNG | Taranto, Italy | 6 | 2 x 150,000 | FEED |
| Zaul LNG | Trieste, Italy | 6 | 2 x 150,000 | FEED |
| Domineon (Expansion) | Cove Point, MD, USA | 13.5 | 2 x 160,000 | FEED |
| Vista del Sol LNG | Ingleside, TX, USA | 7.5 | 3 x 155,000 | FEED |
| Golden Pass LNG | Sabine Pass, TX, USA | 7.5 | 3 x 155,000 | FEED |
| Bear Head LNG | Port Hawkesbury, Canada | 7.5 | 2 x 180,000 | FEED |
| P.T. PLN | Cilegan, Indonesia | 3 | 2 x 120,000 | FEED |
| Sound Energy Solutions (Mitsubishi) | Port of Long Beach, California | 5.2 | 2 x 160,000 | FEED |
| Brindisi LNG | Brindisi, Italy | 6 | 2 x 160,000 | FEED |
| South Hook LNG | Milford Haven, United Kingdom | 7.5 | 3 x 155,000 | FEED |
| Marathon | Baja California, Mexico | 5.6 | 2 x 150,000 | FEED |
| DEPA (Expansion) | Revithoussa, Greece | 4.7 | 2 x 65,000 | FEED |
| Guangdong LNG | Chentoujiao, China | 3 | 2 x 160,000 | FEED |
| BBG (Expansion) | Bilbao, Spain | 5.5 | - | FEED |
| Terminal LNG S.A. | Police, Poland | 3.9 | 1 x 160,000 | FEED |
| Lattice (Conversion of Peakshaver) | Isle of Grain, United Kingdom | 1.5 | Used Existing Tanks | FEED |
| Gopalpar LNG | Orissa, India | 6 | 2 x 160,000 | FEED |
| Union Fenosa LNG | Valencia, Spain | 5.1 | 3 x 150,000 | FEED/Site Selection |
| Phillips | Rosario, Mexico | 5.0 | 2 x 132,000 | FEED |
| Shell | Altamira, Mexico | 5.0 | 3 x 150,000 | FEED |
| Enagás | El Ferrol, Spain | 2.74 | 2 x 105,000 | FEED |
| ENEL | Montalto di Castro, Italy | 6.45 | 4 x 76,500 | FEED |
| Repsol-Enagás (2nd Expansion) | Cartagena, Spain | 2.48 | 1 x 72,000 | FEED/Advisory Services |
| Petronet | Kochi, India | 2.6 | 2 x 110,000 | FEED |
| DEPA | Revithoussa, Greece | 1.97 | 2 x 65,000 | FEED/Advisory Services |
| Repsol-Enagás (2nd Expansion) | Huelva, Spain | 3.1 | 1 x 150,000 | FEED |
| Repsol-Enagás (1st Expansion) | Cartagena, Spain | 2.48 | 1 x 105,000 | FEED/Advisory Services |
| Repsol-Enagás (Expansion) | Barcelona, Spain | 8.47 | 2 x 150,000 | FEED |
| Bahia de Bizkaia (BBG) | Bilbao, Spain | 3.6 | 2 x 150,000 | FEED |
| POSCO | Kwangyang, S. Korea | 1.5 | 2 x 100,000 | FEED/Advisory Services |
| KOGAS (Pilot Plant) | Inchon, S. Korea | | 2 x 1,000 | FEED/Training |
| Enro | Dabhol, India | 5.0 | 2 x 160,000 | FEED |
| KOGAS | Tongyeong, S. Korea | 6 | 3 x 140,000 | FEED |
| KOGAS (Phase 2) | Inchon, S. Korea | 10.0 | 7 x 100,000 2 x 140,000 + 6 Inground | FEED/Advisory Services |
| KOGAS | Inchon, S. Korea | 3.0 | 3 x 100,000 | FEED/Advisory Services |
| BOTAS | Marmara Ereğlisi, Turkey | 3.03 | 3 x 85,000 | FEED |
| Enagás (Expansion) | Huelva, Spain | 3.1 | 1 x 100,000 | FEED/Advisory Services |
| Chinese Petroleum Corp. | Yung-An, Taiwan | 1.5 | 3 x 100,000 | FEED/E/S/CO |
| Enagás | Cartagena, Spain | 0.32 | 1 x 55,000 | FEED/Advisory Services |
| Enagás | Huelva, Spain | 0.83 | 1 x 60,000 | FEED/Advisory Services |
| Distrigaz, S.A. | Zeebrugge, Belgium | 6.42 | 3 x 87,000 | FEED/EPC/Advisory |
| KOGAS | Pyeong Taek, S. Korea | 3.5 | 4 x 100,000 | Technical Consultancy |
| Trunkline LNG Co. | Lake Charles, LA, USA | 5.68 | 3 x 95,400 | FEED/EPC |
| Domineon | Cove Point, MD, USA | 8.07 | 4 x 60,000 | FEED/EPC/Advisory |

LEGEND

FEED – Front End Engineering Design
E – Engineering

P – Procurement
C – Construction

S – Start-up
CO – Commissioning

Transforming Resources into Value

KBR's global engineering, construction and services expertise enables us to execute projects and provide cost-effective solutions for our customers anywhere in the world. Our energy and chemicals capabilities include onshore and offshore oil and gas production facilities, gas monetization facilities, refineries, petrochemical plants and synthesis gas technology. As energy demand continues to rise, KBR is working to meet tomorrow's demands today by providing value to our customers through the right people, technologies and processes.



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