NATURAL GAS INDUSTRY COOPERATION OPPORTUNITIES BETWEEN CHINA AND USA

YOUR RELIABLE BUSINESS PARTNER

www.keruigroup.com
1. Who we are
2. Cooperation in the oil and gas field
3. Cooperation in the environment protection field
WHO WE ARE

Oil & Gas Value Chain Solution Provider
WHO WE ARE

We Provide End-to-end Technology and Engineering Solutions To Our Global Customers Throughout Oil & Gas Value Chain.
## SERVICE

<table>
<thead>
<tr>
<th>Engineering</th>
<th>Procurement</th>
<th>Construction</th>
<th>Operation &amp; Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Feasibility study</td>
<td>• Procurement management</td>
<td>• Local construction management</td>
<td>• O&amp;M for worldwide facilities</td>
</tr>
<tr>
<td>• Conceptual engineering</td>
<td>• Global sourcing</td>
<td>• Civil construction</td>
<td>• Experienced O&amp;M teams</td>
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<tr>
<td>• Project budgeting</td>
<td>• KERUI international logistics</td>
<td>• Installation</td>
<td>• Global spare parts warehouses</td>
</tr>
<tr>
<td>• FEED/Basic engineering</td>
<td>• KERUI process modules manufacture</td>
<td>• Commissioning &amp; startup</td>
<td></td>
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<tr>
<td>• Detail engineering</td>
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</tbody>
</table>

- **Speed**
- **Efficiency**
- **Cost**
- **Integration**
More Efficient in Oil & Gas Extraction

WORLDWIDE MARKETING & SERVICE NETWORK

- Suppliers and partners: 1800+
- The global customer group: 5000+
- Global branches: 57
- Local service centers worldwide: 33
- Technical support centers: 7
- Revenue from overseas market: 70%

Locations:
- Canada
- U.S.A
- Colombia
- UAE
- Russia
- China
- Singapore
BUSINESS STREAMS

Natural Gas Processing
- Gas Processing Facility
- LPG/NGL/CNG/LNG
- Gas to Liquid
- Gas to Chemicals
- Gas to Power
- L-CNG Retail Station

Oil & Gas Gathering, Transportation & Storage
- EPF and Gathering System
- Pipeline
- Compressing Station
- Pumping Station
- Metering Station
- Terminal and Storage Tank Farm

Crude Oil Processing & Utility Plants
- Refinery
- Petrochemical Plant
- Fertilizer Plant
- Power Plant
- Water Treatment Plant
AWARDS

2015 “Top 250 International Contractor”
Rank 196

2015 “
Top 225 International Design Firms”
Rank 100

2016 “Top 250 International Contractor”
Rank 230

Project Managers 60%
Technical Engineers 20%
Senior Managers 15%
Others 10%
WORLD CLASS FACTORY

2.4MMm²
High-end petroleum equipment industrial park

Drilling equipment production base
Natural gas compressor production base
Oil & Gas Stimulation equipment production base
Oil recovery machinery production base
Wellhead and well control production base
Oil & Gas process production base
Houston coiled tubing equipment production base
Based on engineering ability and fabricating facilities, Kerui and partnership manufacturers fabricate extensive range of process modules for oilfield/gas-field production facilities, gas processing plants and petrochemical plants. Most equipment are skid mounted and modularized.

**MODULAR MANUFACTURE**

Modular Equipment

LNG pretreatment modules  Natural gas gathering module  Three-phase separator module  Sulfur recovery unit

Glycol regeneration module  Amine sweetening unit  TEG dehydration unit  Molecular sieve dehydration unit
MODULAR MANUFACTURE

Advantage of Modularization

01. Easy and fast installation and commissioning
02. Better cost control
03. Compact design, less cover space
04. Shorten time table
05. Promote project quality
ACHIEVEMENTS

Cost reduction **10%~30%**

<table>
<thead>
<tr>
<th>Modular (Cost)</th>
<th>Stick Built Plant (Cost)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor Cost</td>
<td>Engineering Cost</td>
</tr>
<tr>
<td>Shipping Cost</td>
<td>Const.Mngmt Cost</td>
</tr>
<tr>
<td>Installation Cost</td>
<td>Camp Cost</td>
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</table>

Shorten the construction period **20%~40%**

**Schedule of Modular Project**
- Modules Fabrication
- Engineering
- Civil Work

**Schedule of Stick Built Project**
- Engineering
- Civil Work
- Commissioning
- Site Installation
INTEGRATED INVESTMENT AND FINANCIAL SERVICE PLATFORM

- Buyer’s Credit
- Chinese Government Concessional Loan
- Chinese Government Preferential Export Buyer’s Credit
- Chinese Government Foreign Aid
- Other Financing Methods
- Deferred Payments/OA/Seller’s Credit
- Financial Leasing
- Operating Leasing
- Outright AR/Factoring/Forfeiting
- Financial Leasing
- Operating Leasing
- Deferred Payments/OA/Seller’s Credit
- Outright AR/Factoring/Forfeiting
- Other Financing Methods

Logos of various financial institutions are also shown on the right side of the diagram, indicating their involvement or support in the integrated investment and financial service platform.
COOPERATION IN THE OIL AND GAS FIELD

Oil & Gas Value Chain Solution Provider
WHAT ASPECTS CAN WE COOPERATE IN THE OIL AND GAS INDUSTRIAL VALUE CHAIN?
WHAT ASPECTS CAN WE COOPERATE IN THE OIL AND GAS INDUSTRIAL VALUE CHAIN?

—Engineering Cooperation

Engineering Cooperation

Complementary of Engineering Market Distribution

Traditional Market And Emerging Market

Complementary of Customer Resources

High-end Customer, Engineering Integration Operability and Maintainability, GE Supplying Material 50% to PETROBRAS Project

Complementary of Engineering Scope

Project Management of US PDP, FEED, PMP and EPCM; Chinese Specific Design, Procurement and EPC Contracting
WHAT ASPECTS CAN WE COOPERATE IN THE OIL AND GAS INDUSTRIAL VALUE CHAIN?
—Technology Cooperation

Technological Revolution of Shale Gas and Shale Oil
(Efficiency and Cost Control)

Oil and Gas Field Standardized Development and Production Technology

Distribute Energy Resource Comprehensive Utilization Technology
GE, ICA, GTUIT, Velocys

Natural Gas Separation and Chemical Technology:
ethane dehydrogenation, propane dehydrogenation

Environmental Protection Technology
Mud, cuttings, fracturing fluid, redrainage and water treatment, sulfur recovery, carbon capture
More Efficient in Oil & Gas Extraction

— China Energy Investment Co., Ltd. invests 83.7 billion USD in the development of US shale gas.

- Carbon emission commitment and coal-to-gas policy
- Ethane and propane import. Shandong Nanshan Group imports ethane of 26 billion USD.

Natural Gas Price Advantage

US LNG Export Average Price: 2.46 USD/MMBtu
Chinese LNG Import Average Price: 7.21 USD/MMBtu

Trade intention to be signed during President visiting China

WHAT ASPECTS CAN WE COOPERATE IN THE OIL AND GAS INDUSTRIAL VALUE CHAIN?

— Trading Cooperation

- Over 60% of oil and gas field cooperation

Investment in Shale Gas Development Field
— China Energy Investment Co., Ltd. invests 83.7 billion USD in the development of US shale gas.

Investment in Block Purchase and Joint Development Field
— Sinopec invests 43 billion USD on LNG of Alaska

Investment in Natural Gas Chemical Field
— Yuhuang Group invests 1.85 billion USD on the methyl project newly built in US.
WHAT COOPERATION MODEL TO CHOOSE?

Win-win Cooperation

The pain-spot according to our excellent relationship with the customers.

Proposing the tailor-made product solutions in optimized economy value

Close partnership with Chinese financial institute and policy banks

Increase overall procurement capacity through integrating vendor resources

World-leading designing technologies

Local resources promote Chinese construction companies

Experienced operating teams.

S

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C

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WIN

Solutions

Financing

EPFC

Modules Manufacture

Installation

Operation
COOPERATION IN THE ENVIRONMENT PROTECTION FIELD

Oil & Gas Value Chain Solution Provider
The strategic consensus that the whole world copes with climate change is bringing a new opportunity for flare gas recovery and utilization projects.
FLARE ELIMINATION

Environment Impact

- Harmful to plants and animals
- Destroying the ozone layer, greenhouse effect
- Hazard substances discharged into the air
- Thermal effect and chemical effect

Amount to 6 billion U.S. dollars

- Pollution
- Wealth loss

5 trillion cubic feet
HOW CAN WE UTILIZE THE FLARE GAS?

Top 20 countries on the associated gas emission country (BCF)

The data source: NOAA

More Efficient in Oil & Gas Extraction
WORKING TOGETHER FOR WIN-WIN FUTURE

KERUI ENGINEERING GROUP