



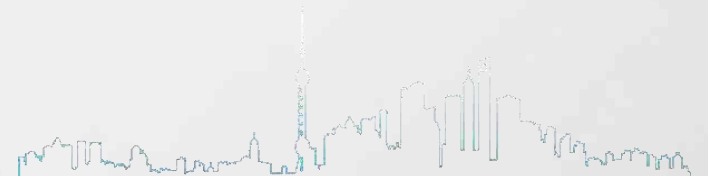
天津中新瑞阳能源科技有限公司 Tianjin Sinogas Repower Energy Co., Ltd

2019. TIANJIN





Create more value with innovation !



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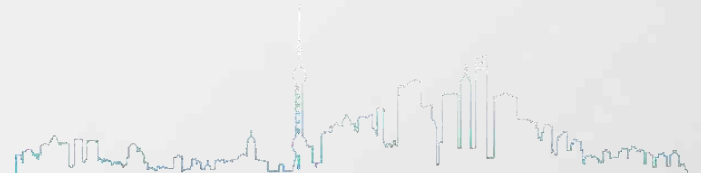
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Part 1. Company Introduction

- ✓ Tianjin Sinogas Repower Energy Co., Ltd was established in 2009, is located in Tianjin, China. We are a professional natural gas and hydrogen gas industry equipment supplier and full value chain technical solution provider, accredited 5A customer by China Merchant Bank since 2012.
- ✓ We are specialist to supply full value chain high pressure or cryogenic equipment & technical solution for natural gas industry, mainly includes: upstream gas treatment solution, midstream gas storage and transportation solutions, downstream utilization solutions.
- ✓ Our company mission is to offer best quality products, satisfactory services to create more value for our customers !

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- ✓ Our company has long term cooperation with several national level well known engineering institution and large equipment manufacturer, which offers innovative technology, high quality product and world wide after service, for more than ten years, we offer our equipment and services to near 30 countries around the world.
 - ✓ Our major products and services include: Mini LNG liquefaction plant, Mini LNG carrier, LNG tank trailer, LNG ISO tank container, LNG refilling stations, LNG regasification stations, gas power plant; CNG compression station, city gas gate station, marine CNG carrier, CNG transportation tube trailers, CNG regulation station, refilling daughter station, L-CNG refilling station, etc.
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Part 2. Manufacturing capabilities



Our manufacturing workshop are located in Hebei, Shandong, Sichuan, Tianjin, these factories represent the most professional, advanced and powerful production capability for natural gas industry.

The workshops produce all the major LNG, CNG gas equipment, including: LNG liquefaction plant skids, LNG transportation trailers, LNG refilling station skids; CNG compressors, CNG tube trailers, CNG refilling station equipment, pressure regulation unit, LNG regasification unit, etc.



Our advanced production lines adopts innovative and highly automatic production equipment and technology, thus we have largely increased the efficiency and meanwhile increase the quality control ability.

For LNG liquefaction plant, our workshop ables to assemble all treatment skids in one workshop, for LNG tank trailer, CNG tube trailer, we have mutipl assembling and testing lines, able to assemble 100 units LNG tank trailers monthly, and 100 units CNG tube trailers monthly.

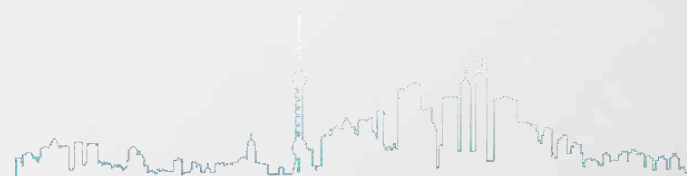


Our production base for LNG liquefaction skid equipment occupies an area of 75000.0M³ of workshop, has a R&D team with more than 215 technicians, able to design and produce LNG liquefaction plant from 1-30X10⁴ M³ capacity per day, our team have experience to design and give start-up test for more than 40 plants in China.




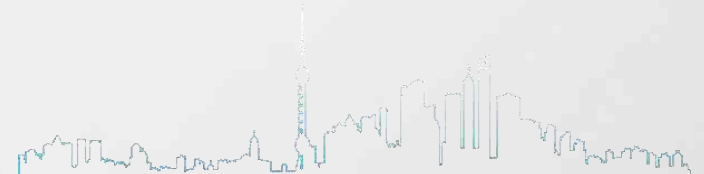
We also have skid mounted equipment assembling workshop for assembling of customized equipment, such as: integrated LNG storage & regasification skid, integrated CNG storage & mobile refilling skids, CNG regulation units, LNG regasification units, city gas gate stations, etc.

- ✓ For all equipment we supply, our factory have relative production license, qualification and inspection certificate; For LNG equipment manufacturing and EPC contracting, our factory has Level A, Level B license for oil and city gas industry engineering; For CNG section, our factories own GA, GB, GC type license for pressure vessel construction and installation, B1, B3 Pressure Vessel Manufacturing License, and C3 Tube Skid Container Assembly License,
- ✓ We are certified by ISO14001, ISO16949, Quality Management System, CE TPED approval, ISO11120 approval, ASME, ADR, DOT, etc. We also have close cooperation with third party inspection company like ABS, BV, DNV, ITS, SGS, TUV, etc for in-house inspection.





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- ✓ In order to guarantee the high quality and reliable performance of our product, all our gas equipment, we design, produce, supply as per relative quality standard, and all products shall be inspected by independent third party qualification company like BV, TUV with inspection report or certificate.
 - ✓ Besides of strict quality control, we also offer direct quality warranty for min two years for all our products around the world, technician team from factory shall give direct after service when customer need, and circuit inspection for important project is also our service policy.



After service

Technician team
available for life time
after service

Quality Guarantee

Quality guarantee from
authorized manufacturer
only

Third party

inspection by
nominated agency
like BV, TUV,
SGS, DNV, etc

Quality warranty

for all equipment
min two years time quality
warranty time

Our competitive strength

✓ 01. Stronge Production Ability

- ✓ All our branch workshop have large production ability with advance production line and technology, with international standard of quality control.

✓ 02. Professional Engineering team

- ✓ We have experienced engineering team that works for globe gas project, we able to give best customized solution according to different requirements.

✓ 03. One-stop package solution & EPC ability

- ✓ We offere engineering, supply of equipment, and EPC service with one package proposal for gas utilization project.

Part 3. Our product & services

1. MINI NATURAL GAS LIQUEFACTION PLANT

2. LNG STORAGE & GAS SUPPLY EQUIPMENT

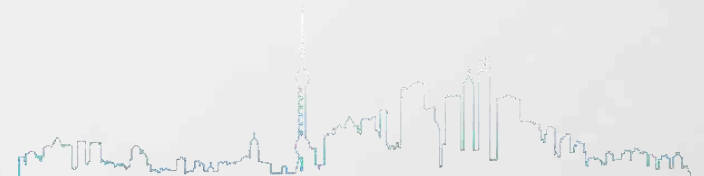
3. CNG & HP GAS VIRTUAL PIPELINE EQUIPMENT

4. GAS REFILLING STATION AND SOLUTIONS

5. GAS POWER GENERATOR & POWER GENERATION SOLUTIONS



MINI NATURAL GAS LIQUEFACTION PLANT



Mini natural gas liquefaction plant



- ✓ We have engineering team with 450 technicians, and manufacturing workshop in Chengdu and Tieleng city, for A1, A2 grade pressure vessel design, manufacturing, assembling for gas purification, treatment skid mounted equipment.
- ✓ For skid-mounted Mini LNG plant, we able to supply gas flow capacity from $2 \sim 15 \times 10^4 \text{Nm}^3/\text{D}$ plant. Gas source from pipeline gas, flare gas, pilot well gas, oilfield associated gas can be gas source for this type of LNG plant, the entire production plant are consisted of several skid-mounted equipment, patent technology for high reliability & efficiency.
- ✓ We also able to offer LNG plant in EPC form.





Treatment Capacity	Skid quantity	Occupied area	Start-up time
$2 \times 10^4 \text{Nm}^3/\text{d}$	4	300m ²	5h
$3 \times 10^4 \text{Nm}^3/\text{d}$	4	350m ²	5h
$5 \times 10^4 \text{Nm}^3/\text{d}$	5	550m ²	5h
$10 \times 10^4 \text{Nm}^3/\text{d}$	12	700m ²	5h
$30 \times 10^4 \text{Nm}^3/\text{d}$	12	2300m ²	5h

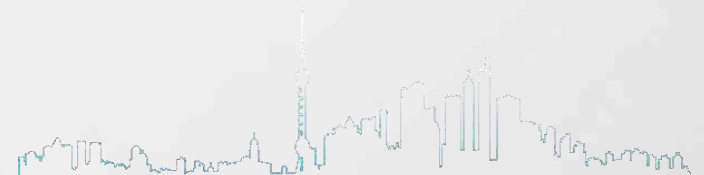
* According to customer conditions.



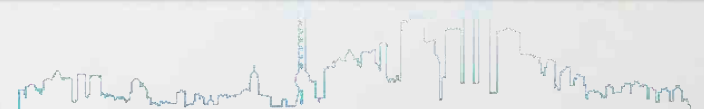
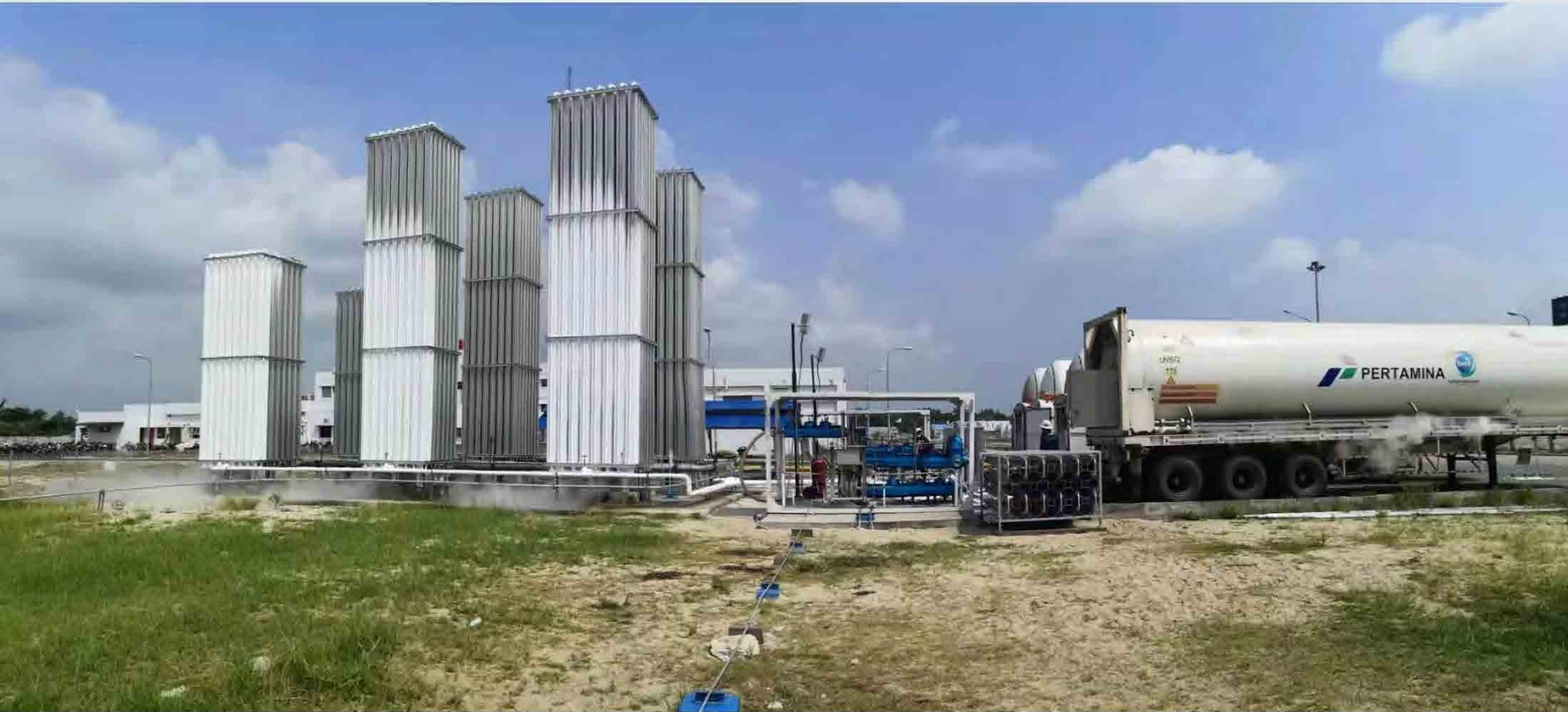


All these mini LNG plant are skid-mounted design, so that project owner able to transport equipment to new gas well when gas flow and pressure runing low.

LNG STORAGE & GAS SUPPLY EQUIPMENT



✓ LNG storage & gas supply equipments





- ✓ **LNG storage tank & trailer**

- ✓ LNG storage tank for LNG plant, LNG stationary storage, LNG receiving terminals, storage media: Liquid Natural Gas, with working temperature at -162C, ASME approval, and water capacity from 20.0-150.0M3 are available.
- ✓ Besides of LNG storage tank, we also supply transportation trailers and ISO tank containers, for LNG transportation, marine container-chain LNG shipment, etc.



✓ LNG stationary storage tank



Storage liquid	LNG
Working temperature	-196℃
Design standard	ASME or equivalent standard
Water volume for LNG tank	20.0~150.0M3 available for stationary storage
Water volume for LNG cylinder	150L, 275L, 450L, 500L, 995L.
Purpose	For LNG storage at station, for vehicle, etc.

✓ LNG transportation trailer & ISO container



40ft LNG semi-trailer	40ft LNG semi-trailer	40ft LNG semi-trailer
52.02m ³	52.6m ³	57.0m ³
37,700.0KG with LNG	37,536.0 with LNG	42,153.0 with LNG
High vacuum multi-layer		
ASME standard design and approval		





20ft LNG ISO tank container	40ft LNG ISO tank container
21.0m ³	42.0m ³
WP -162°C	WP -162°C
net 9200kgs	net 15300kgs
6058*2438*2591mm	12192*2438*2591mm
ADR, IMDG	ADE, IMDG



The 40ft LNG ISO containers able to do stacking in port or in power peak-shaving station, thus it is a convenient transportation unit for marine and land purposes.



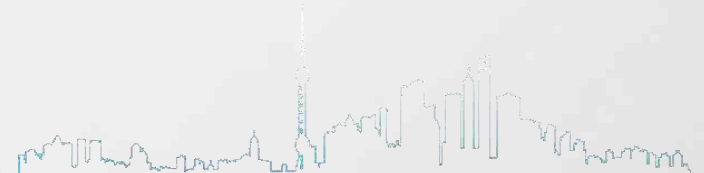
M/V Funchalense 5 sails to Madeira Island

To use 40ft ISO LNG tank containers to transport LNG in short distance could be a perfect solution for island, remote coastal region residence, it is a unique way to deliver LNG fuel from liquefaction plant by land and by sea as chain.



✓ **LNG regasification station**

- ✓ The function of LNG regasification station is to transfer from LNG into normal pressure and normal temperature natural gas flow, input into gas pipeline of satellite gas station or power plant gas engines.
- ✓ It is widely used for LNG site supply for industrial customer, commercial customers, with flow capacity 1000NM³/h to 20000NM³/h in single skids; we offer both ambient temperature vaporizer solution, and gas-boiler regasification skid solution with large flow capacity.





It is a ambient temperature LNG regasification station build in Indonesia, with flow capacity 4600Nm³/H, it uses two units of working lines evaporizers and two stand-by lines evaporizers; For customers with consistent gas consumption flow, mid capacity, this is a perfect soltion.



Flow capacity range	100-10000Nm³/H
LNG storage tank	Option from 20-1000M ³ capacity
Heat exchange type	Ambient temperature
Installation time	7-15 days
Design type	Skid-mounted design
Quality standard	ASME or equivalent standard



This is a 5000Nm³/h LNG fast supply system in North China, it uses one 40ft regasification skids for gas supply from one LNG trailer, this project use one skid only and take very few time for installation on site; it could supply gas to industrial plant, power plant in fast and stable flow.

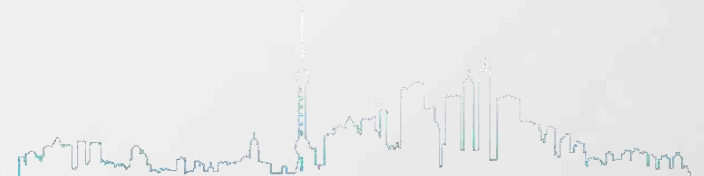
✓ LNG quick supply system



LNG quick supply system is able to supply natural gas with flow 10000Nm³/H in single skid, it is perfect solution for satellite station, power plant peak-shaving.

It is skid-mounted design with fast deployment time, quick coupling connection with LNG trailers.

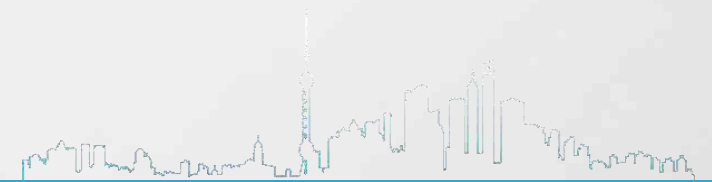
GAS REFILLING STATION AND SOLUTIONS



✓ LNG refilling trailer and LNG refilling station



- ✓ A 40ft mobile LNG refilling container is designed to give LNG refilling for NGV in remote region, it has water volume from 18.0M3 to 57.0M3, with ambient temp boosters, Emerson flow meters, 5 meters LNG hose and its nozzle, it could give LNG refilling for LNG fuel truck fleet, bus fleet, container ship, etc.
- ✓ Besides of mobile LNG refilling trailers, we also have LNG refilling station with skid-mounted design, that able to integrated into current LPG, gasoline station with limited space for LNG refilling services, all these equipments are package solution and with quality warranty, life time after services.



LNG加气站解决方案 LNG Refueling Station Solution



LNG 加气站
LNG Refueling Station



LNG 罐车
LNG Tanker



LNG 液化工厂或接收站
LNG Liquefaction Factory or
LNG Receiving Terminal



潜液泵
Immersed Pump



微机控制系统
Control System of Microcomputer

报警系统
Alarm System

LNG 加气机
LNG Dispenser



LNG 燃料汽车
LNG Fueled Vehicle

L-CNG加气站解决方案

L-CNG Refueling Station Solution



L-CNG加气站
L-CNG Refueling Station



LNG 罐车 LNG Tanker



LNG 液化工厂或接收站
LNG Liquefaction Factory or
LNG Receiving Terminal



柱塞泵
Plunger Pump



微机控制系统
Control System of Microcomputer

报警系统
Alarm System



CNG 燃料车
CNG Fueled Vehicle

高压 LNG 进入气化器
High Pressure LNG flow
into Vaporizer



高压气化器
High Pressure Vaporizer

优先控制顺序
Sequence Control Panel



储气瓶组
Storage Cylinders



CNG 加气机
CNG Dispenser

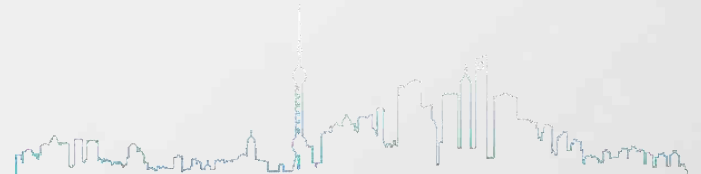


For refilling section, we offer package solution for LNG station, CNG station, L-CNG station depend on customer technical requirements, we also able to give EPC offer in some countries.



In order to save diesel fuel cost and protect our environment, it is a good idea to convert our diesel bus, truck, boat into LNG fuel by giving a new gas engine, sinogas repower ables to offer package solutions for you.

CNG & HP GAS VIRTUAL PIPELINE EQUIPMENT



CNG & HP gas virtual pipeline equipment



CNG & HP gas virtual pipeline equipment



ISO11119:2015	ISO11120:2012	ISO11119:2015
20ft, 30FT, 40FT, 45FT	20FT, 40FT	10FT, 15FT, 20FT,30FT
250BAR	200/250BAR	250BAR
CNG	CNG	CNG
BV, TUV	BV	BV, TUV
28.6~39.0M ³	13.2~29.4M ³	4.80~23.4M ³

CNG & H2 gas storage equipment



ISO11120 standard	ISO9809 standard	ISO11120 standard (H2)
2210~26520Litres	125~190Litres	2210~26520Litres
CNG 250Bar	CNG 250Bar	H2 250Bar
CNG, H2, He, etc	CNG, H2, He, etc	CNG, H2, He, etc



In order to enable our customer transport CNG in large volume and longer distance, we design max capacity CNG cascade skid containers, with water capacity up to 39000Litres in single 40ft modular container, WP250Bar, that assists adquant natural gas supply in mining, power generation project; we also design 10ft, 15ft, and 20ft skid container large capacity for urban gas delivery.

Marine CNG transportation solutions



CNG compression and transportation carrier with 2784M3 to 19500M3 water volume, could collect near marine natural gas and transport to nearby pipeline or power plant, it is an economical way to get cheap, clean, flexible energy in short distance.

CNG pressure regulation system



Inlet pressure range	Upto 250Bar or 3600Psi
Outlet pressure	4-20Bar for pipeline or boiler (acc to customer requirements)
Flow capacity	100-10000Nm3/H single skid in available
Heating method	Ele-heating or gas heating



✓ CNG refilling hydraulic booster daughter station



Working Pressure	200Bar, 250Bar
Flow capacity	1000Nm ³ /h, 2000Nm ³ /h
Control method	By PLC automatic
CNG dispenser	2~4 units
Power voltage	220V, 440V


✓ CNG Mobile Refilling Unit

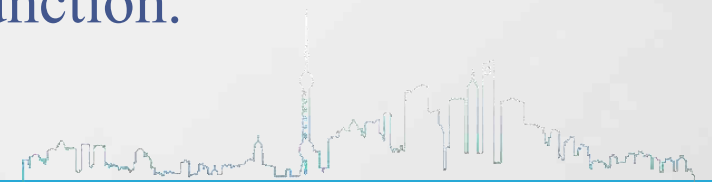
A CNG refilling station with flow capacity 1000Nm³/h, 2000Nm³/h, design to be integrated into a 20ft or 40ft container dimension.

A package solution with hydraulic piston compressor, fast deployment time, easy installation, low noise, and low maintenance cost.





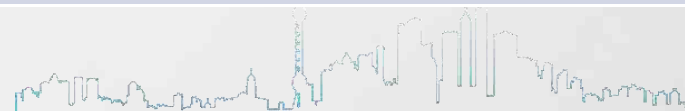
- 
- ✓ Flow capacity range from 500-3000Nm³/h, for a 2000Nm³/h MRU with two dispensers, to refilling 4 units CNG bus at same time, it could finish refilling all buses in 8-10 mins.
 - ✓ Customized design as per customer project requirements, optional gas generator integrated design, optional gas storage package 2600Nm³-5500Nm³ (40ft MRU), optional CNG dispenser quantity (2-4 dispensers).
 - ✓ Explosive-proof PLC and power supply cabinet; Alarm system to monitor all station parameters, with automatically leakage, water level, oil level alarm function.



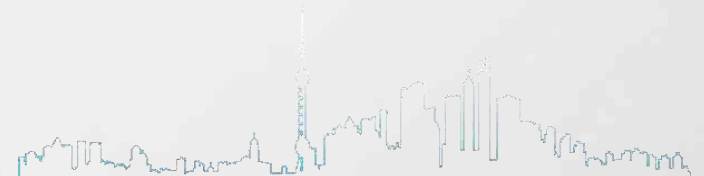
✓ HP Industrial gas transportation unit



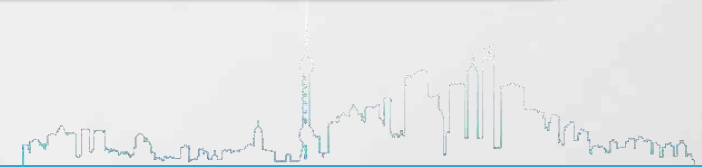
Working Pressure	200Bar, 250Bar
Gas media	H2, He, N2, Air, etc
Water volume	1000L to 12000L per skid
Dimension	10ft, 20ft, 40ft
Approval	BV, TUV.
Standard	ISO9809, ISO11119, ISO11120.



GAS POWER GENERATOR & POWER GENERATION SOLUTIONS



✓ Gas power plant EPC solution





Fuel type	Natural gas, bio-gas, etc
Unit capacity	500KW, 1200KW in single set
Output voltage	440V or 11.5KV or higher
Frequency	50Hz, 60Hz
Dimension	Skid-mounted design
EPC contractor	Yes





Along with state own large manufacturer, we offer EPC or turn key contrac service for gas power plant, from engineering design, supply of equipment and installation and testing service of power plant.

In most of counries, we have local technican give on-time after service, spare parts and local technical advice are available by our technician team.

SERVICE SCOPE & FINANCING SERVICES

Equipment Supply

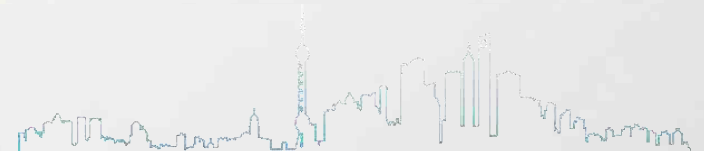
All type of gas
equipment in our
product supply scope.

EPC Contract

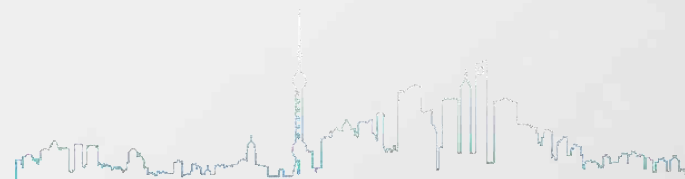
For middle and down
stream gas project
with guarantee.

Project financing

Service for silk and
road countries for
natural gas project.



Part 4. Our Partners



THANK YOU !

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