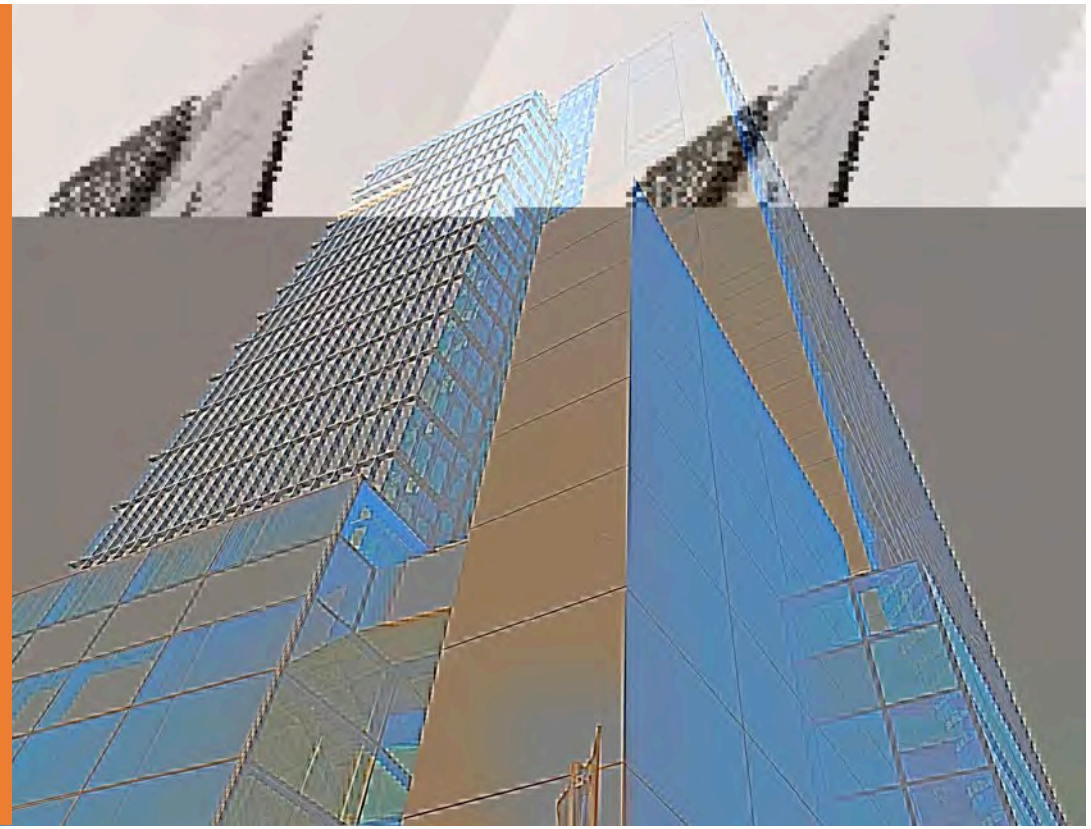
Natural Gas Treatment
Raw Natural Gas to LNG
0One Stop Solution

1, Company Introduction

2, What we do……

3, Potential Cooperations

Eascoo Solution



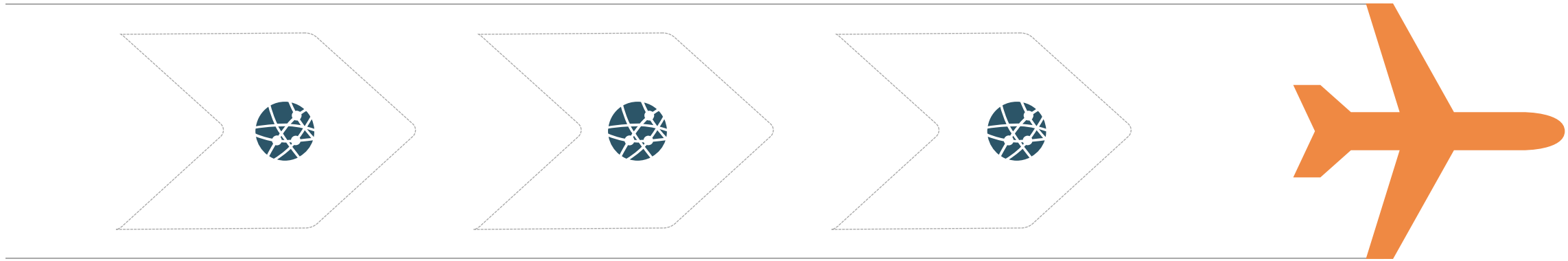
Our gas processing team specializes in the developing technologies of natural gas processing, gas purification and separation, providing one-stop solutions for natural gas processing and gas purification separation.

The team members are all from well-known engineering design institutes and natural gas equipment manufacturers in China, with rich know-how and engineering experience.

Eascoo Solution

Raw natural gas to LNG

Exhaust treatment H2S, CO2, NOx



Natural Gas Purification

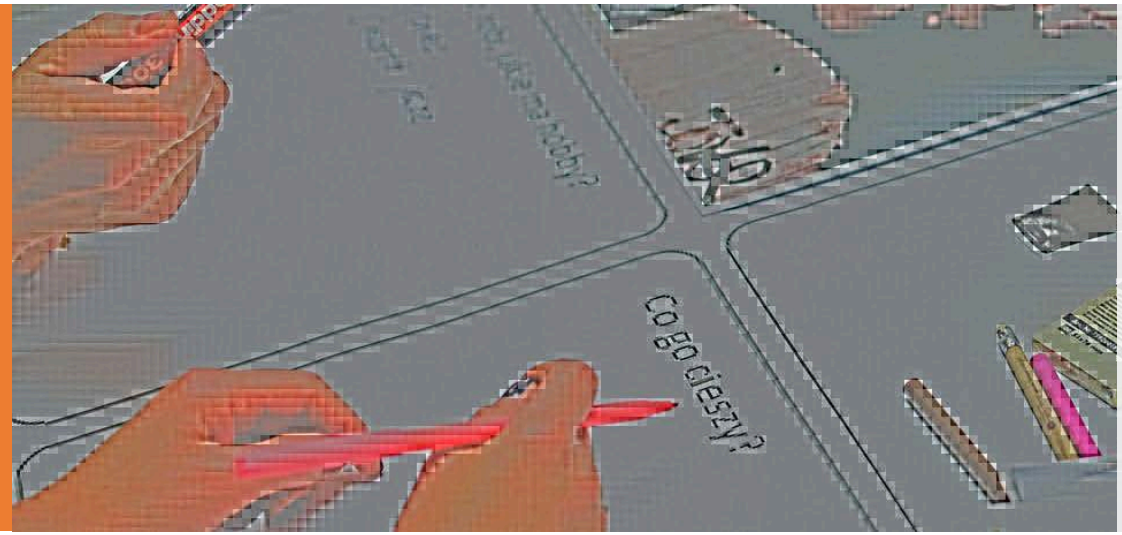
1, Company Introduction

2, What we do…

3, Potential Cooperations

What we do...

Eascoo Solution



Scheme design&detailed design

Technical consulting&service

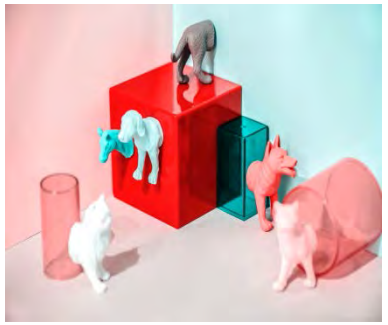
EPC

New technology research &development

What we do...

Eascoo Solution

I



LNG plant

Natural gas to LNG

LNG filling station

LNG gasification

II

Gas Dehydration

Triethylene glycol dehydration, molecular sieve dehydration, J-T dehydration, ethylene glycol dehydration.

III

Gas desulfuration

MDEA Desulfurization, Dry desulfurization, Chelated iron desulfurization.

IV

Hydrogen

Natural gas to hydrogen Methanol cracking Water electrolysis to hydrogen

V

Exhaust Desulfurization Denitrification CO_2 Capture

Calcium&ammonia methods. SCR/SNCR CO_2 Capture

- What we do...
- Case study & Reference projects
  - Chelated iron desulfurization
  - Natural Gas Dehydration
  - LNG Plants and facilities
  - Other Skidded Equipment
- Potential Cooperations

Technical principle

The composite desulfurizer reacts with organic sulfur such as hydrogen sulfide and thiols in the absorption tower to form sulfides (desulfurizer rich solution). After entering the regeneration tower, the rich solution is fully mixed with air and rapidly reacts under the action of the composite catalyst to regenerate and generate sulfur. Then the lean solution is circulated to the absorption tower for another circle.

Working Condition

1, Capacity：

0.1~30×$10^4$$Nm^3$/d

2, Gaspressure ：

1~10MPa

3, Gas temperature

： 10~50 ℃

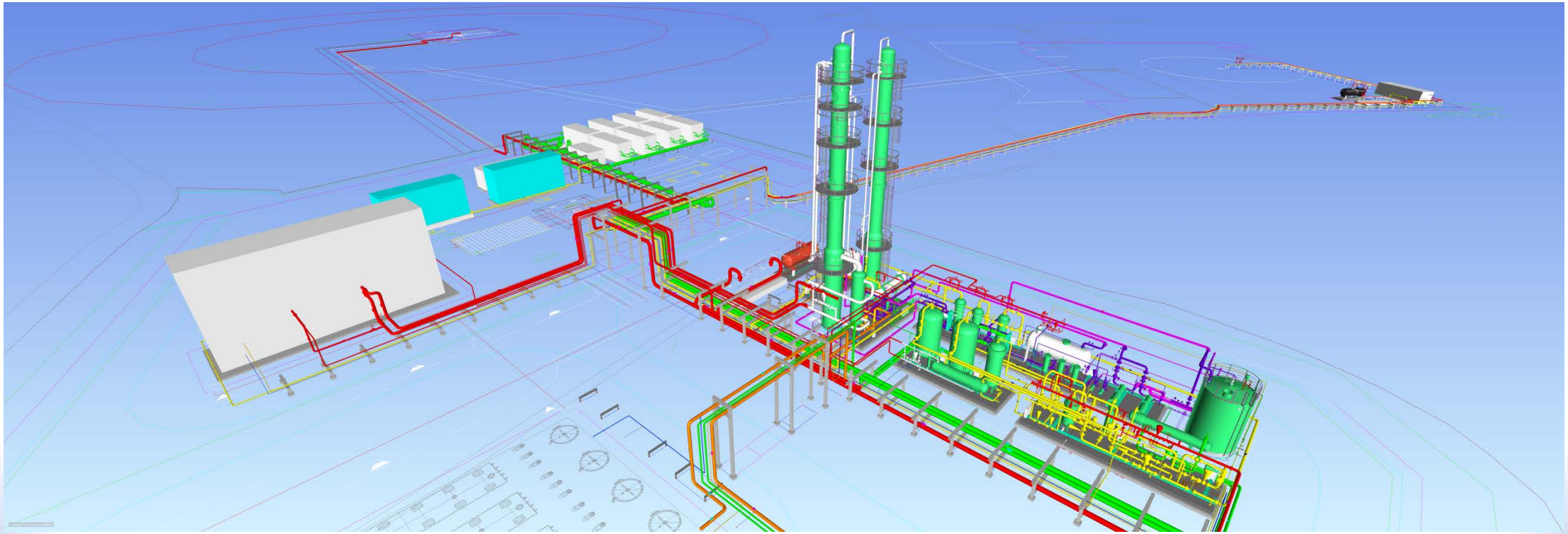
Industries

1, Oil&gas field natural gas desulfurization

2, Coal bed gas desulfurization

3, Exhaust desulfurization

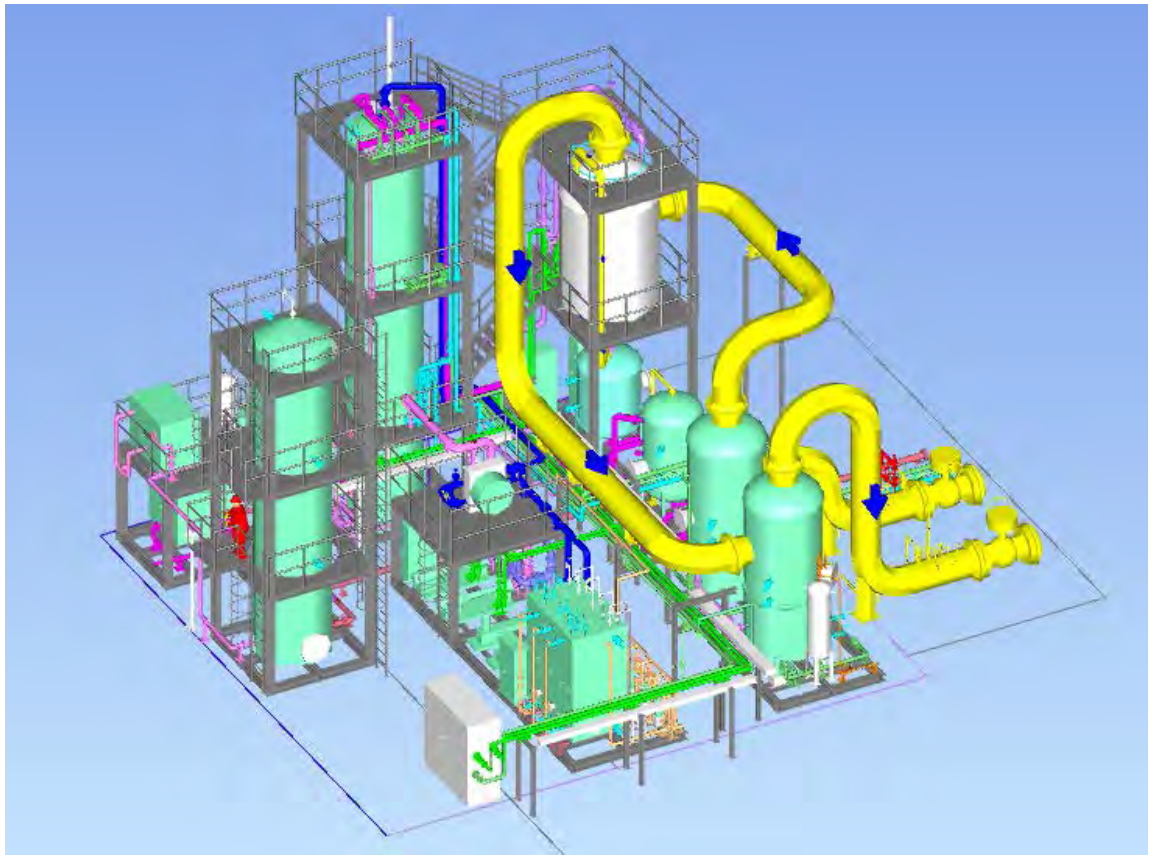
Heshen Well No.5 （$50\times10^4Nm^3/d$ Desulfurization & dehydration）

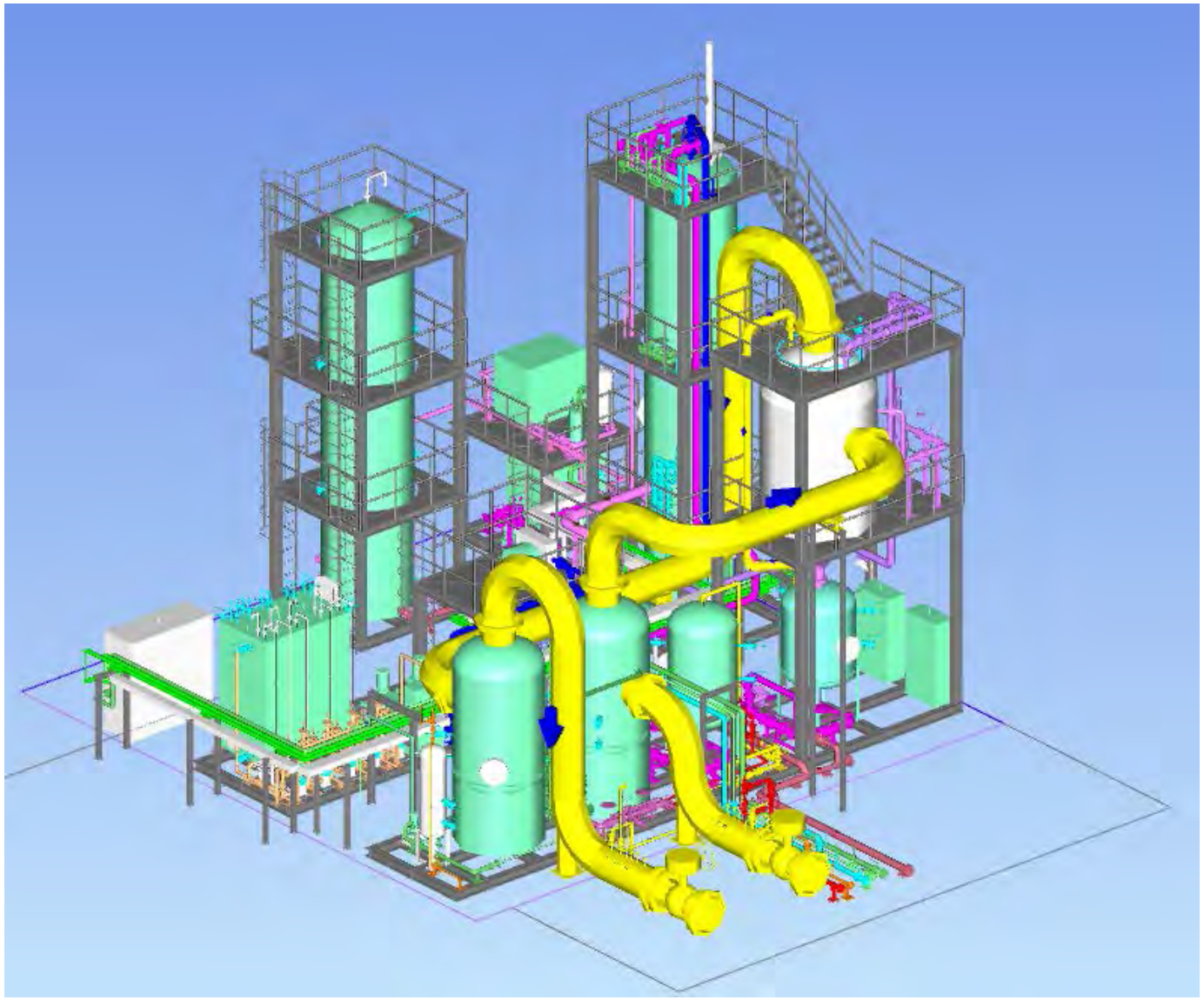


Desulfurization & dehydration

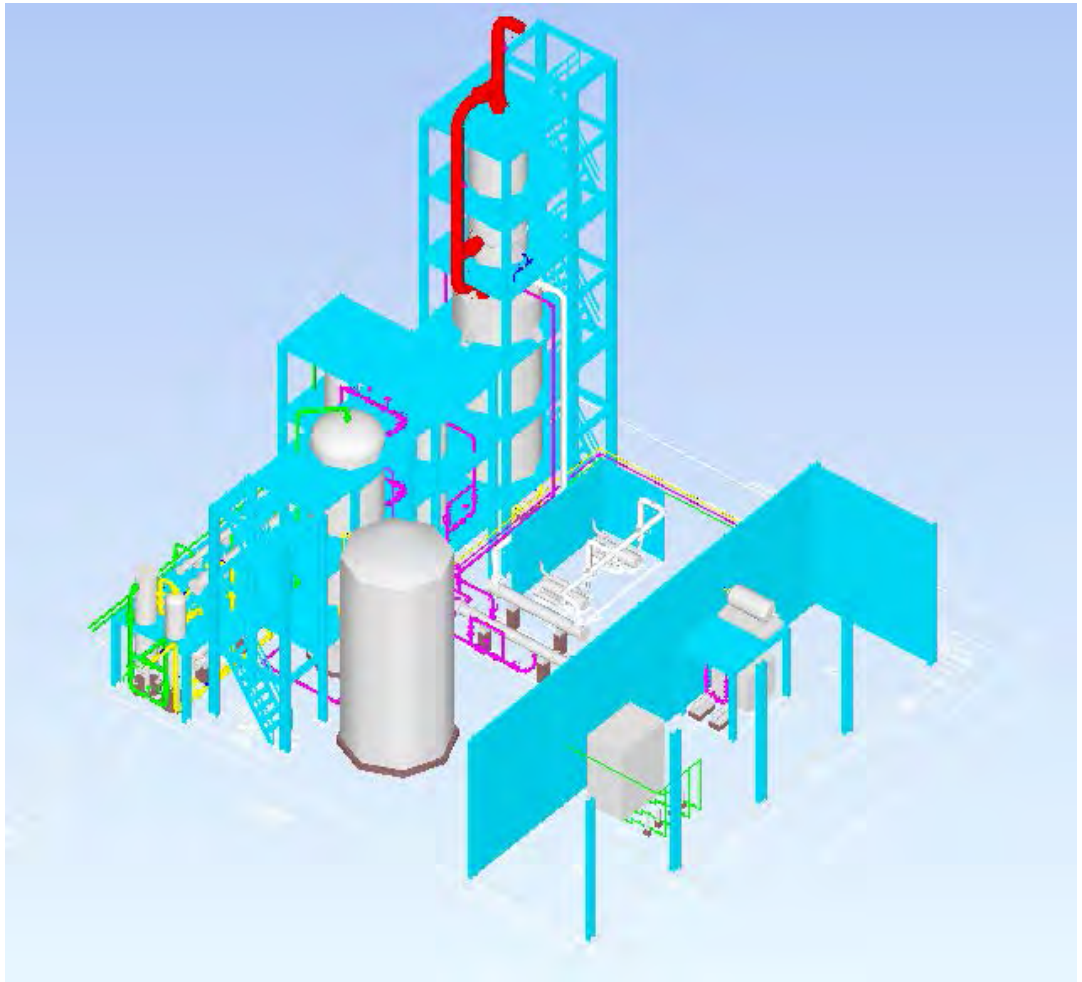
Eascoo Solution

CNPC North Oil Field Coal Bed Gas Desulfurization Project ($650\times10^4Nm^3/d$, H_2S $46.5mg/m^3$)

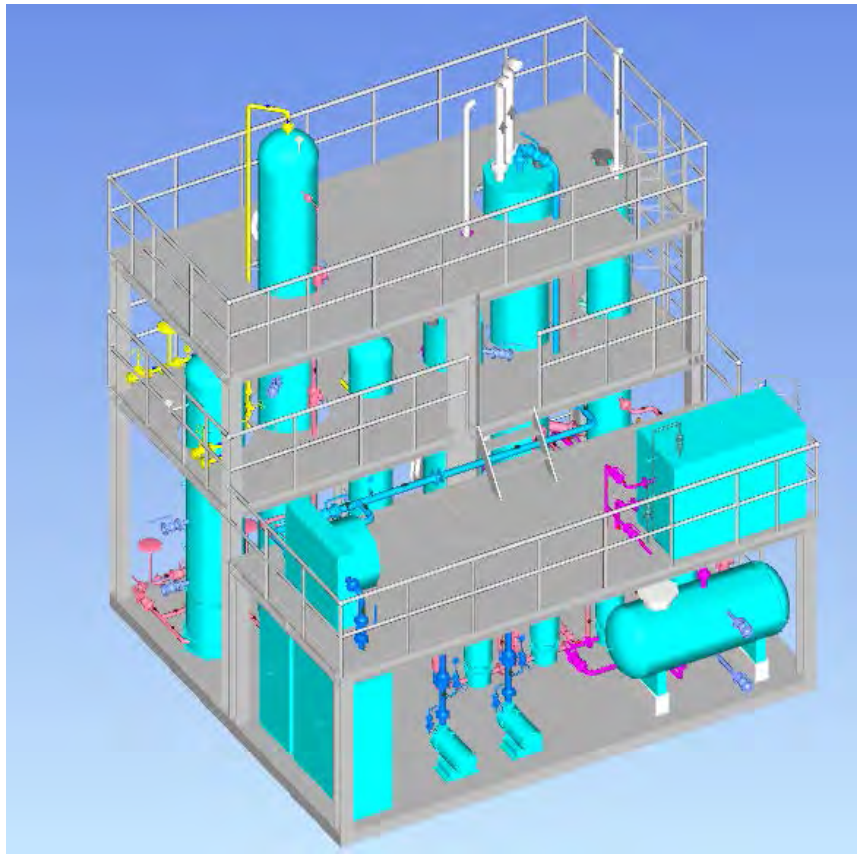




Jiaotan No.1 Well Desulfurization ($30\times10^4Nm^3/d$, H_2S $5g/m^3$)



Zhangla Well No. 2 Associated gas desulfurization (2000Nm³/d， H_2S 5000ppm)



What we do...

Case study & Reference projects

- Chelated iron desulfurization
- Natural Gas Dehydration
- LNG Plants and facilities
- Other Skidded Equipment

Cooperation

Gas Dehydration

Eascoo Solution

Technical principle

Triethylene glycol(TEG), belongs to solvent absorption dehydration technology. It uses triethylene glycol to absorb water from natural gas under high pressure and low temperature conditions, and then releases the water from triethylene glycol through a pressure reduction and temperature rise process. The triethylene glycol is renewed and reused.

Working Condition

1,Capacity:

20~500×$10^4$$Nm^3$/d

2,H2O dew point drop needed:

30~70℃

3,Gaspressure:

1~10MPa

4 ,Gas temperature:

10~50 ℃

Industries

1, Traditional Oil & Gas

2, Shale Gas

3, Coal Bed Methan

4, Coal to natural gas

Triethylene Glycol Dehydration Process

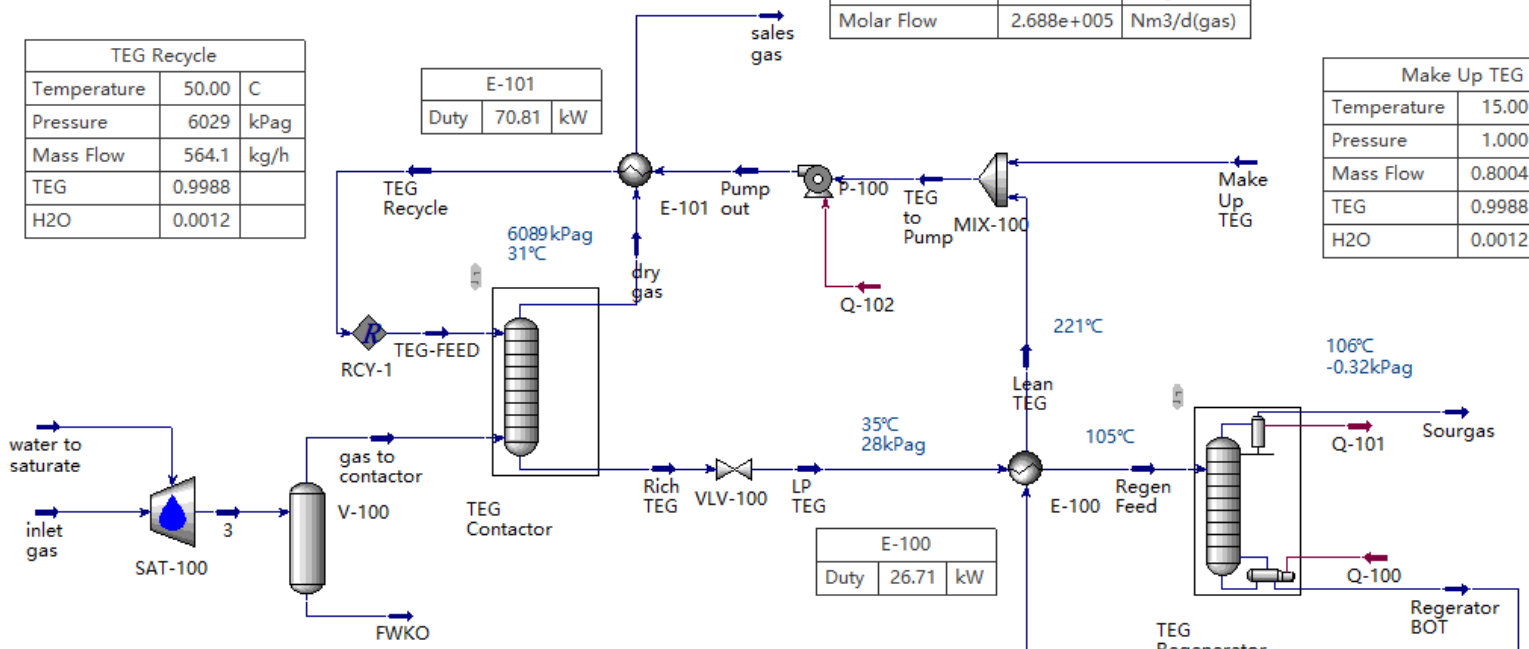
gas to contactor		
Water Dew Point	30.00	C
Temperature	30.00	C
Pressure	6200	kPag
Molar Flow	2.692e+005	Nm3/d(gas)
C1	0.8981	
C2	0.0310	
C3	0.0148	
iC4	0.0059	
nC4	0.0030	
iC5	0.0010	
nC5	0.0005	
CO2	0.0284	
N2	0.0010	
H2S	0.0155	
H2O	0.0009	

TEG Recycle		
Temperature	50.00	C
Pressure	6029	kPag
Mass Flow	564.1	kg/h
TEG	0.9988	
H2O	0.0012	

E-101		
Duty	70.81	kW

sales gas		
Water Dew Point	-32.52	C
Temperature	42.22	C
Pressure	6054	kPag
Molar Flow	2.688e+005	Nm3/d(gas)

Make Up TEG		
Temperature	15.00	C
Pressure	1.000	kPag
Mass Flow	0.8004	kg/h
TEG	0.9988	
H2O	0.0012	



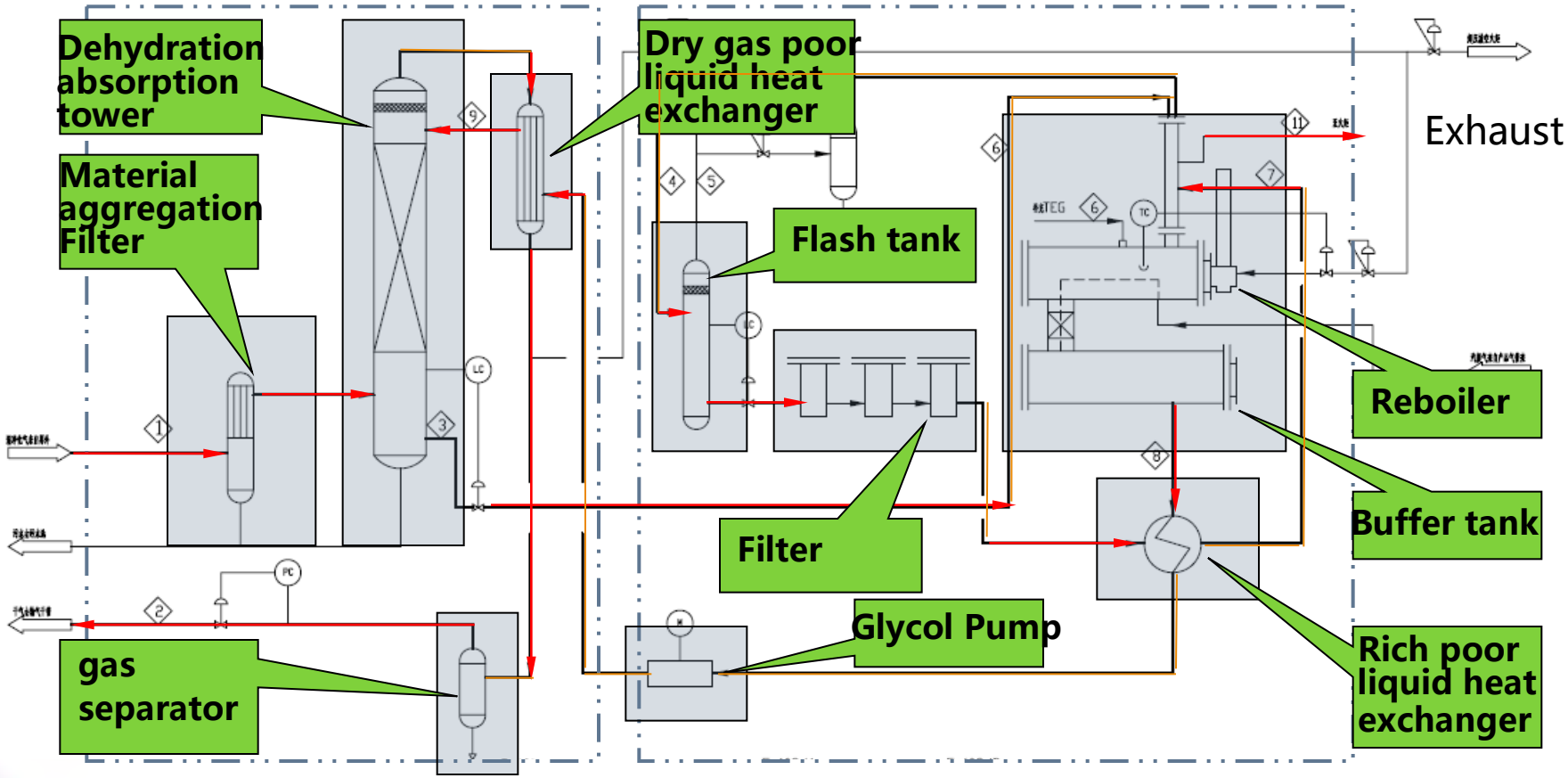
E-100		
Duty	26.71	kW

Q-101		
Heat Flow	23.80	kW

Q-100		
Heat Flow	106.4	kW

Sourgas		
Temperature	106.4	C
Pressure	-0.3250	kPag
Molar Flow	365.8	Nm3/d(gas)
H2O	0.6472	
H2S	0.1338	
N2	0.0008	
C1	0.1276	
C2	0.0129	
C3	0.0104	
iC4	0.0019	
nC4	0.0011	
CO2	0.0563	
iC5	0.0003	
nC5	0.0002	

Triethylene glycol dehydration - Process diagram



SINOPEC Puguang Gas field Qingxi No.1 Well TEC Gas Station Dehydration Facility

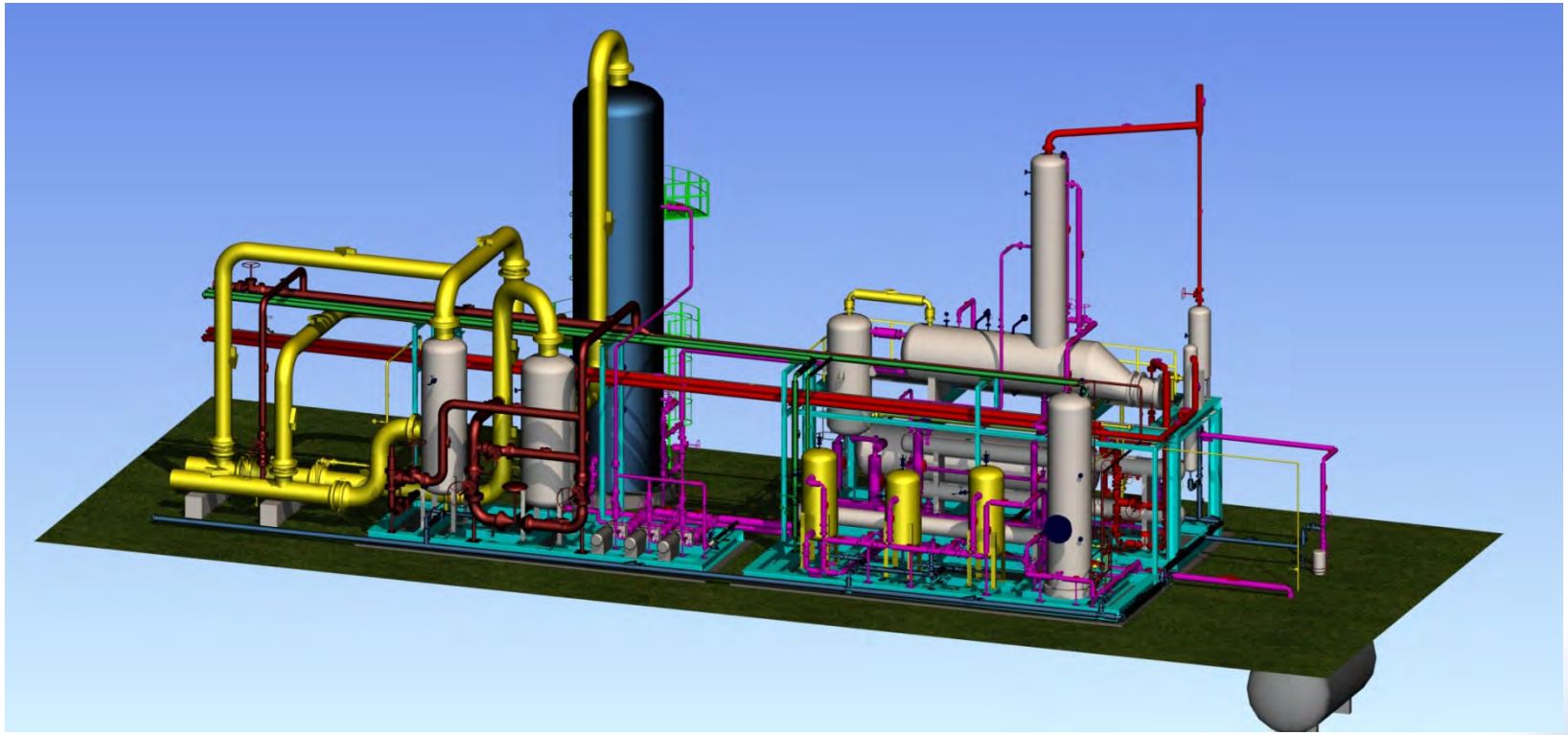
Edong Gas Field Coal Bed Gas Treatment Facility-1 Billion cm3/y capacity.

NW Sichuan Gas Field Jiulongshan Dehydration

Zhongjiang Gas Station-Longjinshan Natural TEG Dehydration skidded Package. Capacity 50×10⁴Nm³/d

Huangjinba Gas Dehydration
500 Million cm3/y

Yili Xintian Coal to natural gas TEG Dehydration facility.
2 Billion cm3/y



Technical principle

Molecular sieve dehydration utilizes the equilibrium adsorption capacity of adsorbents decreasing with increasing temperature, using room temperature for adsorption and temperature rise desorption to achieve the separation of different gases. Molecular sieve dehydration is mainly used for gas drying, raw material gas purification, removal or recovery of low concentration solvents from waste gas, and application in environmental protection for waste gas and liquid treatment

Working Condition

1,Capacity:

1~500×$10^4$$Nm^3$/d

2,H2O dew point drop needed:

Above 70℃

3,Gaspressure:

0.2~25MPa

4,Gas temperature:

10~50 ℃

Industries

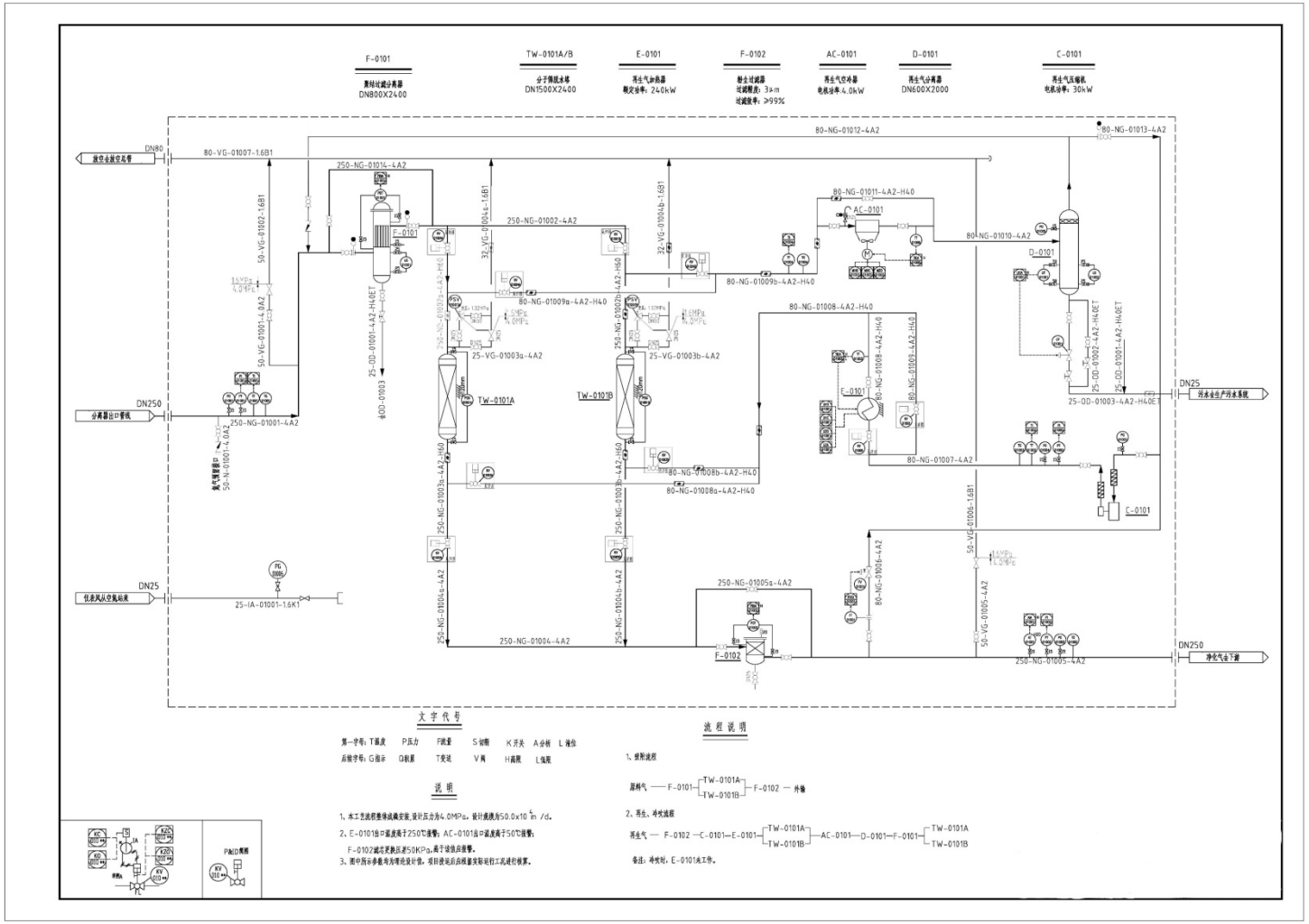
1, Natural Gad, Syngas, H_2, CO etc. Dehydration

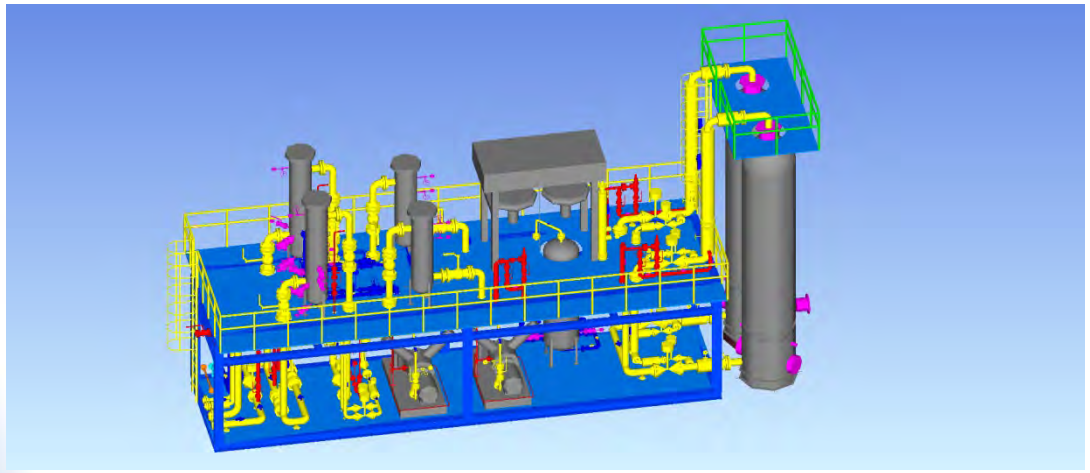
2, Natural gas dehydrogenation

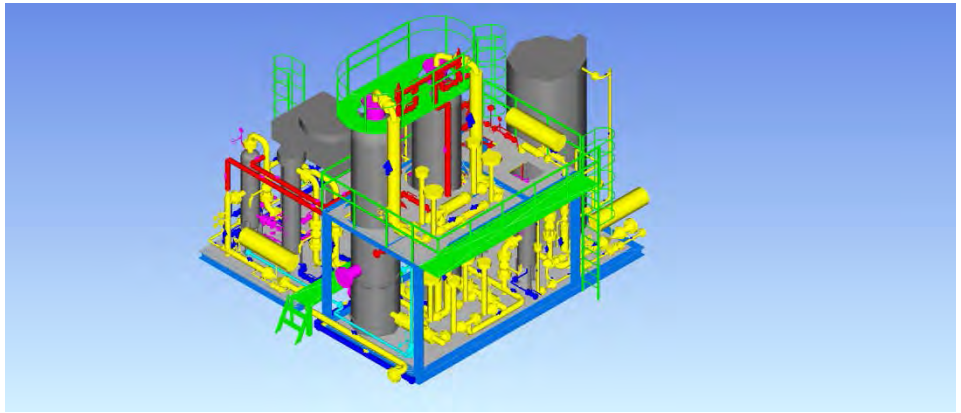
3, Pre treatment of coke oven gas

4, Light hydrocarbon recovery

Molecular sieve dehydration - Process diagram

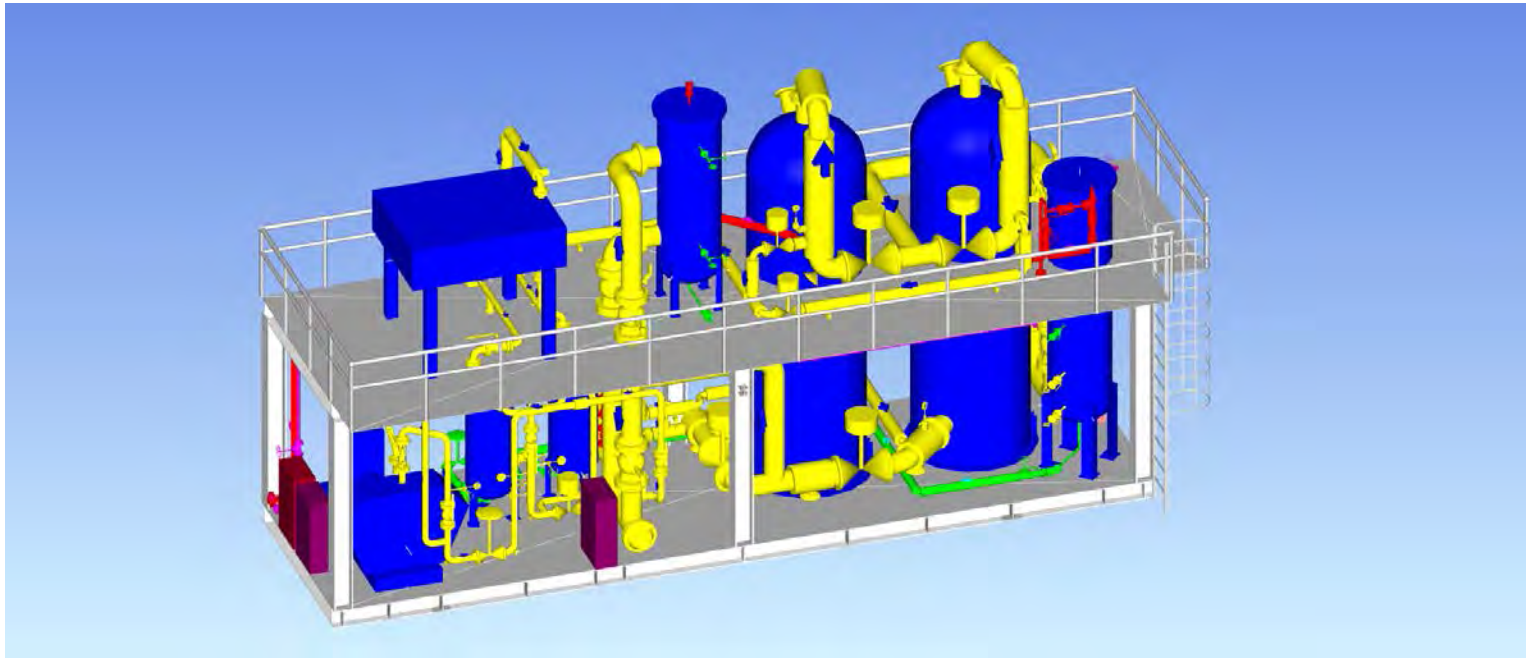






Talimu Oil field Molecular sieve Dehydration Facility-600K cm3

Shengli Oil field Molecular sieve Dehydration Facility-500K cm3



What we do...

Case study & Reference projects

- Chelated iron desulfurization
- Natural Gas Dehydration
- **LNG Plants and facilities**
- Other Skidded Equipment

Cooperation

Technical principle

Natural gas liquefaction: Natural gas becomes liquid after compression, pretreatment, and cooling (-161.5 ℃).

Process:

Natural gas compression, pretreatment (purification), liquefaction, storage, loading, and auxiliary systems.

Working Condition

1,Capacity：

1×10^4 ~ 500×10^4 Nm^3/d

2, Lowest LNG temperature -162℃。

3,Gas pressure ：

0.1~8.0MPa

Industries

1, Wellhead gas recovery

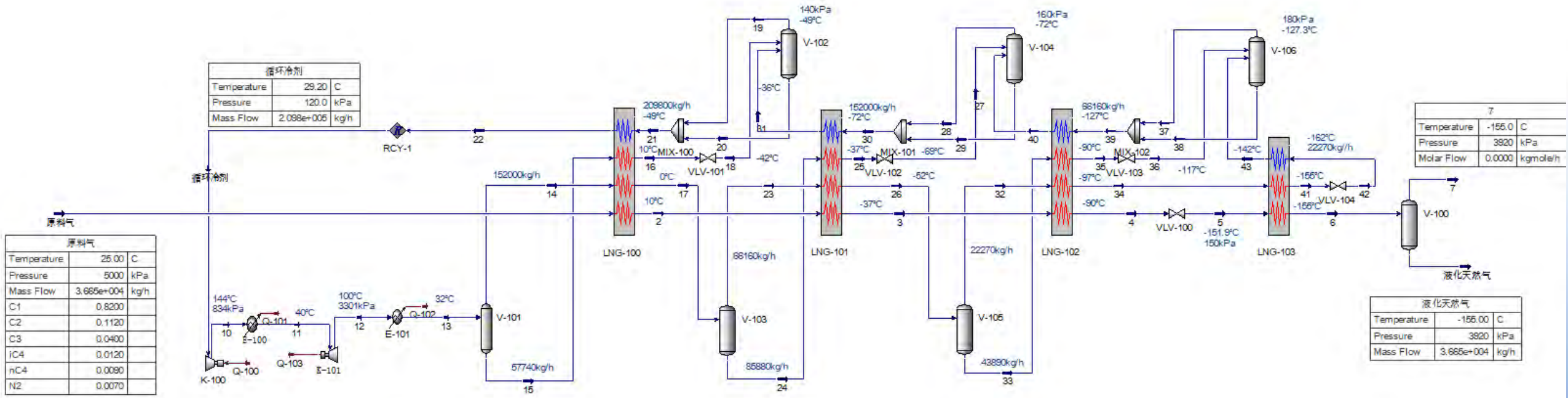
2, Associated gas recovery

3, Shale gas recovery

4, Coal bed methane recovery

5, Artificial gas production

Natural Gas Liquefaction Process

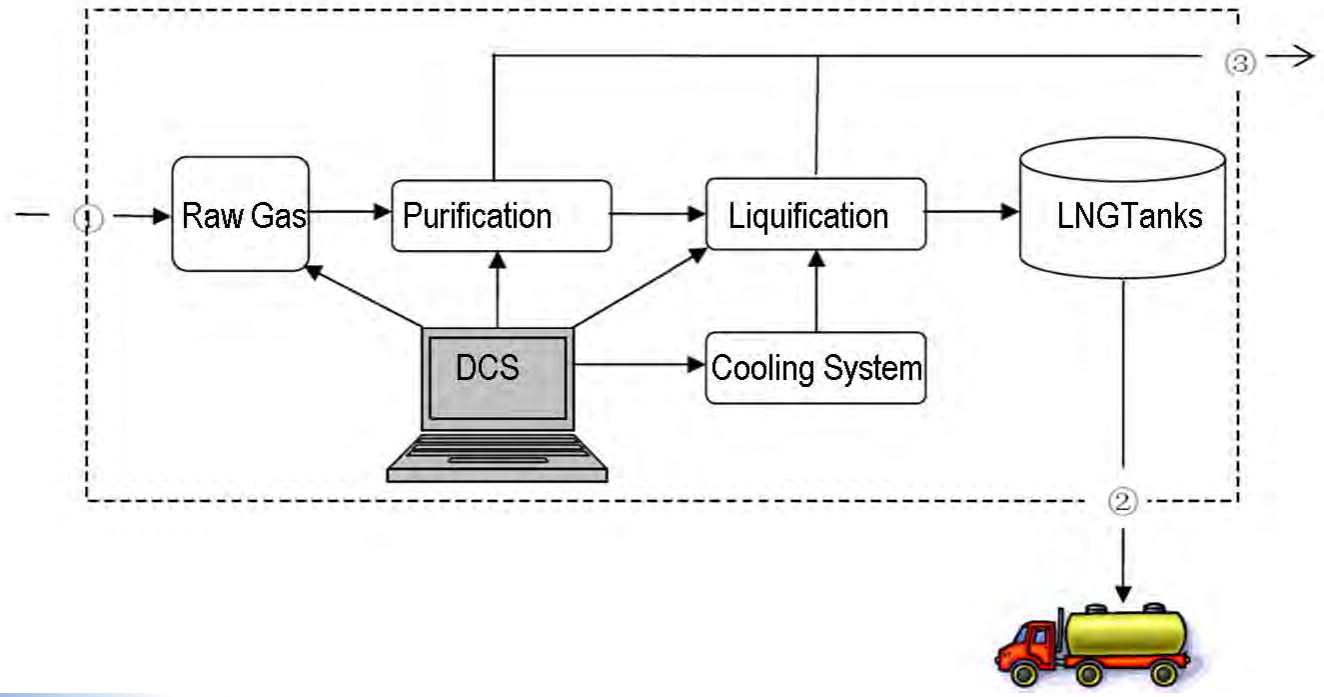


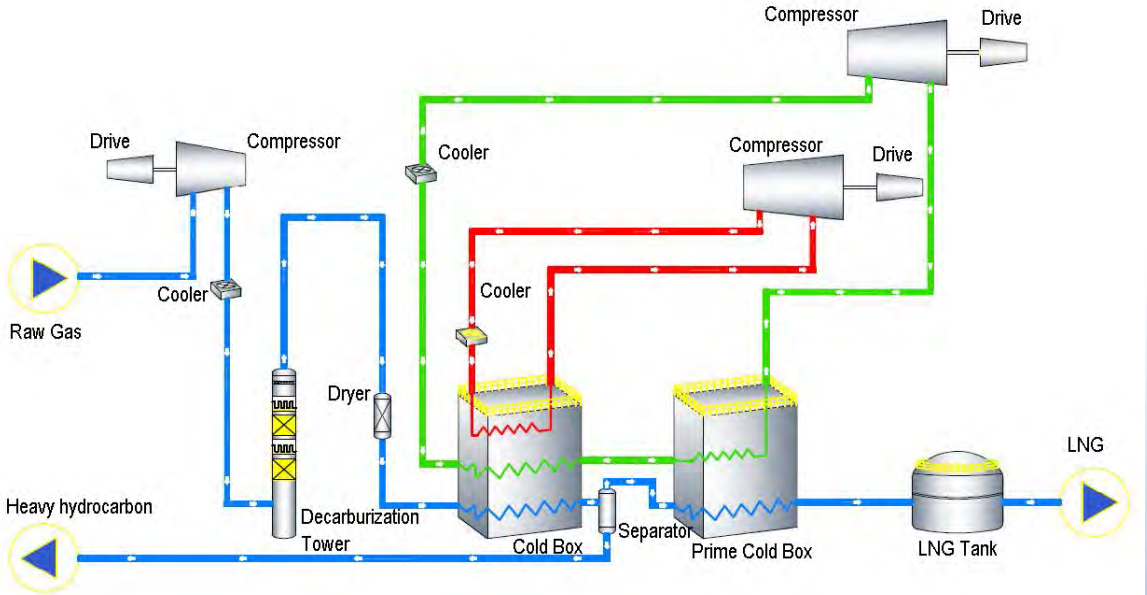
Features

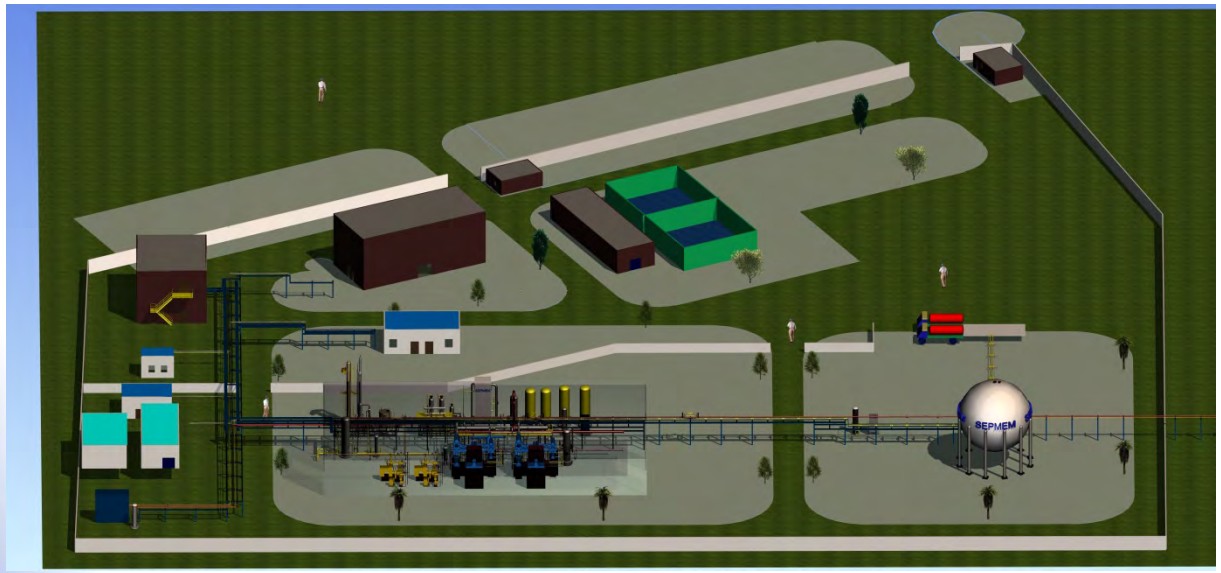
1. High flexibility, can operate stably and efficiently within the range of 50-120%.
2. Proven designs, process and products, fast delivery and short construction period
3. Energy saving, custom processes and design for different gas sources, ensure low-energy operation.
4. Modular skidded mounted, compact and easy mobility
5. Skid installation, fast on-site construction, small footprint, minimal auxiliary materials and on-site construction

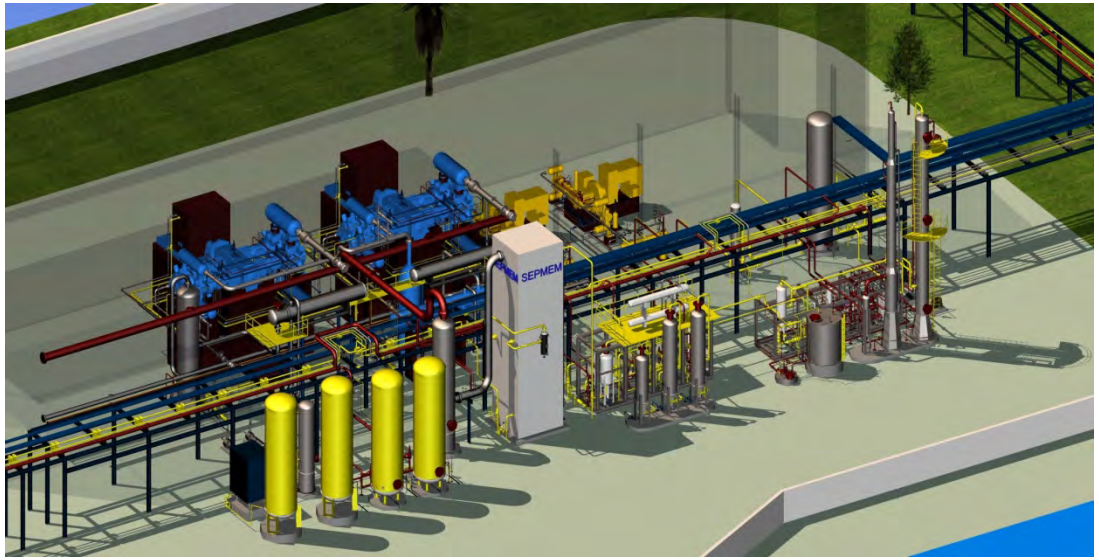
Natural Gas Liquefaction

Eascoo Solution

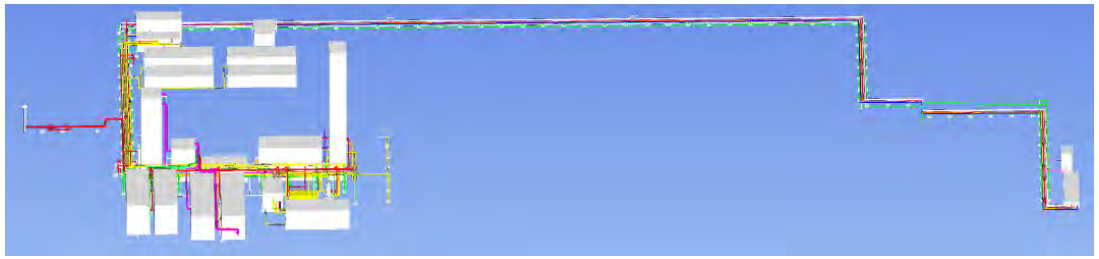




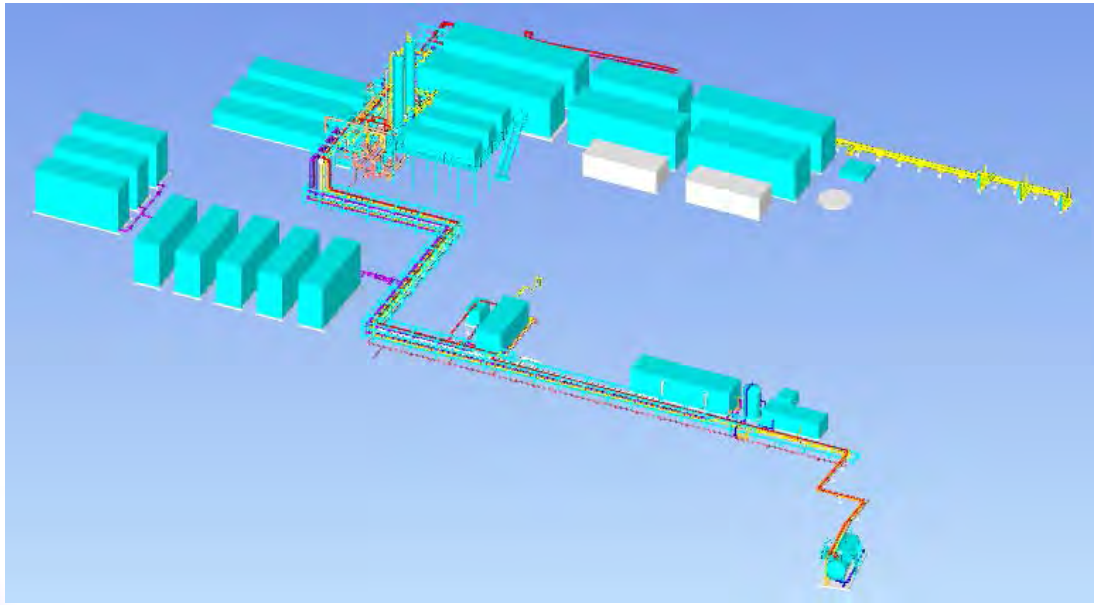




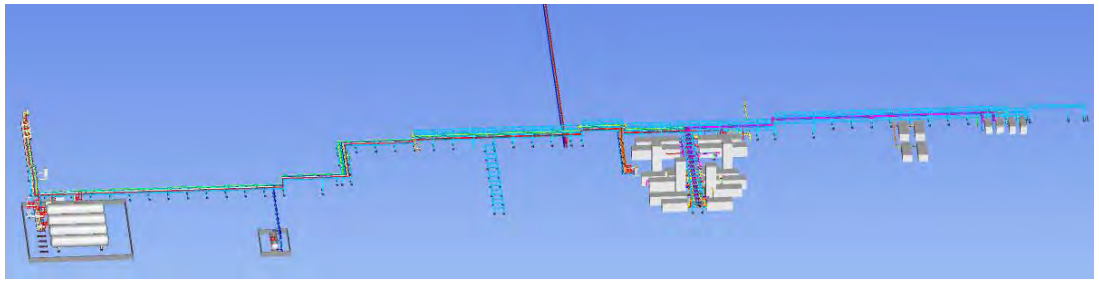
Gansu Yongjing $20\times10^4Nm^3/d$ LNG Design and Photo



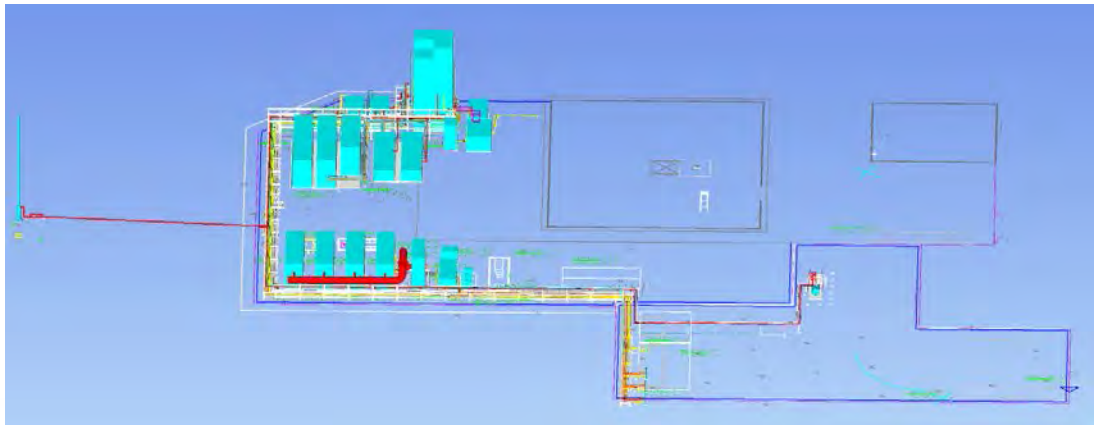
Qiulin 10×10⁴Nm³/d LNG Facility, Design and Photo



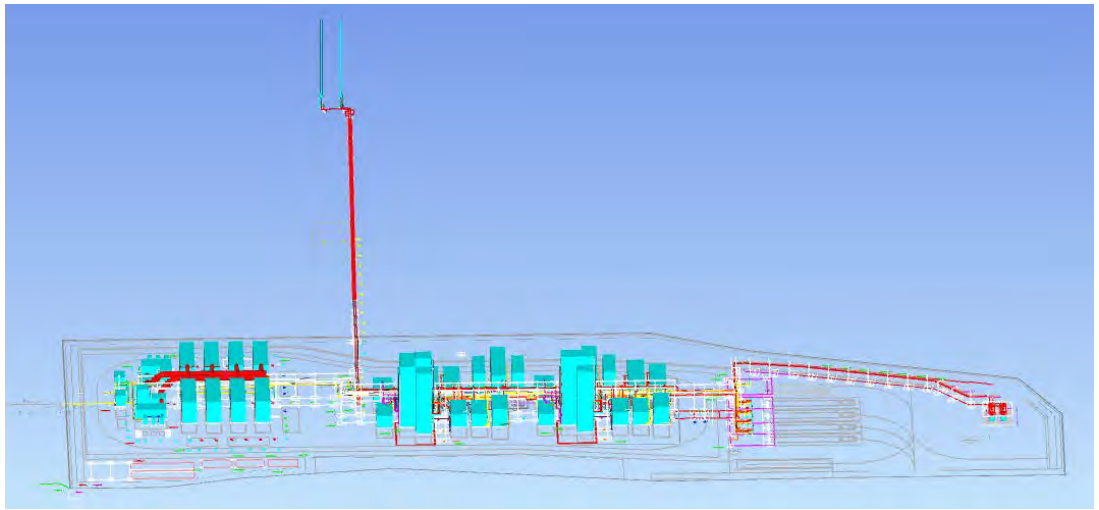
Heshen Phase I, 20×10⁴Nm³/d LNG (H₂S 1%) facility Design and Photo



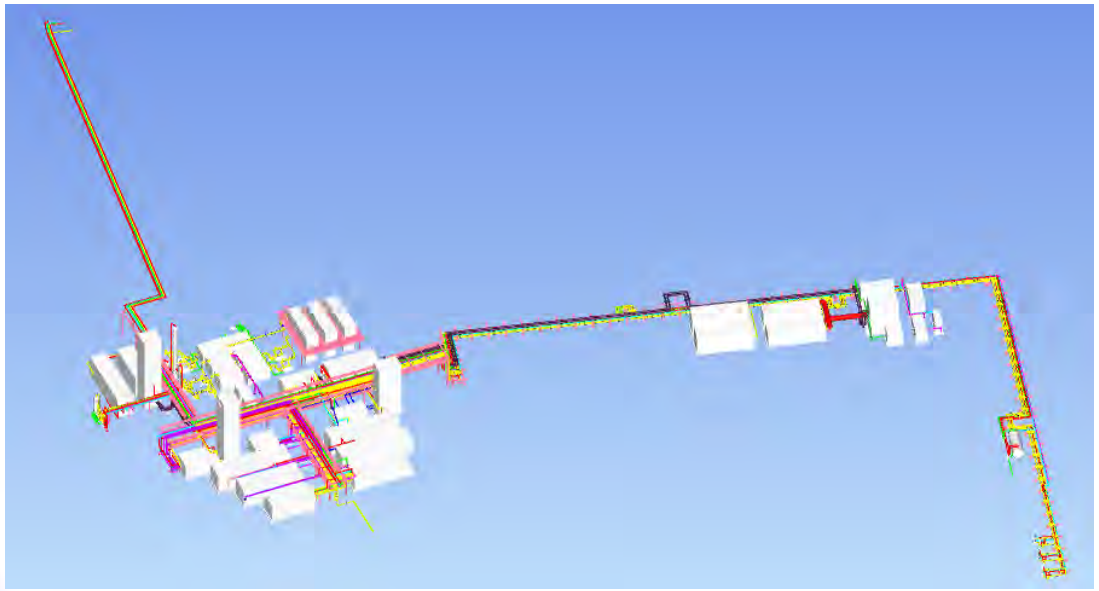
Tudong Well No. 2, Phase I, 2*6×10⁴Nm³/d LNG plant, Design and Photo



Jinqian Well No. 3, 10×10⁴Nm³/d LNG Plant Design and Photo



Jinqian Well No. 5, 2*10×10⁴Nm³/d LNG Plant Design and Photo



Heshen Well No. 4, Phase II, 10×10⁴Nm³/d LNG Facility design and photo

Jiangsu No. 215 Well, 6×10⁴Nm³/d LNG

Lian No. 57 well, 6×10⁴Nm³/d LNG

Lian well No. 45, 3×10⁴Nm³/d LNG

Jiangsu well No. 417, 3×10⁴Nm³/d LNG

Wei well No. 213, 2×6×10⁴Nm³/d LNG

Ning well No. 227, 6×10⁴Nm³/d LNG

Changqing Poor well Lian 45 treatment plant

- **Including:**
- **Pretreatment unit**
- **Liquefaction**
- **Refrigerant handling**
- **Storage & loading**
- **BOG recycling**
- **DCS**
- **Ancillaries**


脱水撬
Dehydration Skid


冷箱、阀组橇 Cold Box


低温储罐 LNG Tanks


装车臂 Loading Arm


撞车撬 Loading Skid


冷剂撬
Cryogen Skid


Conduction oil
导热油

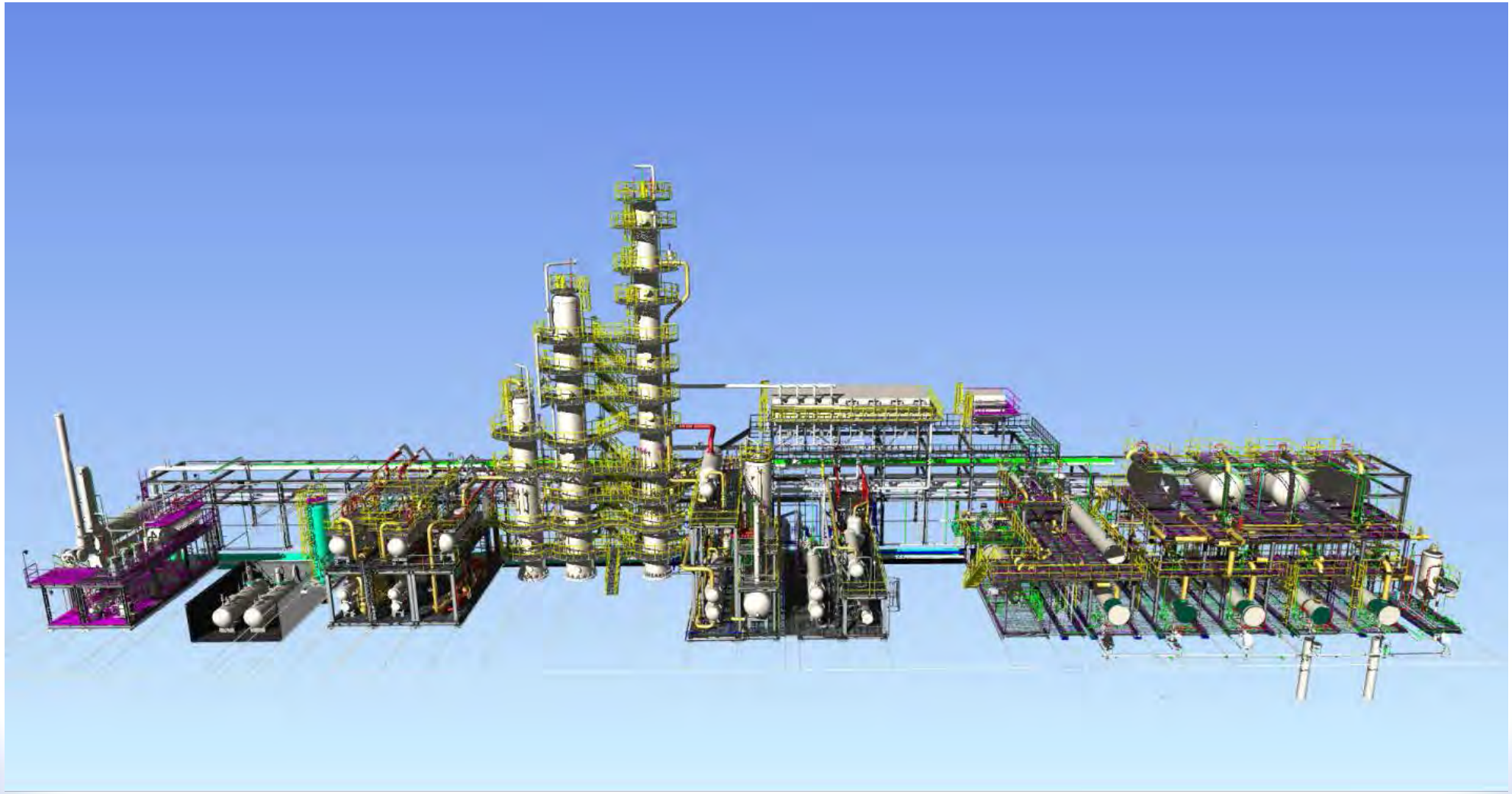
What we do...

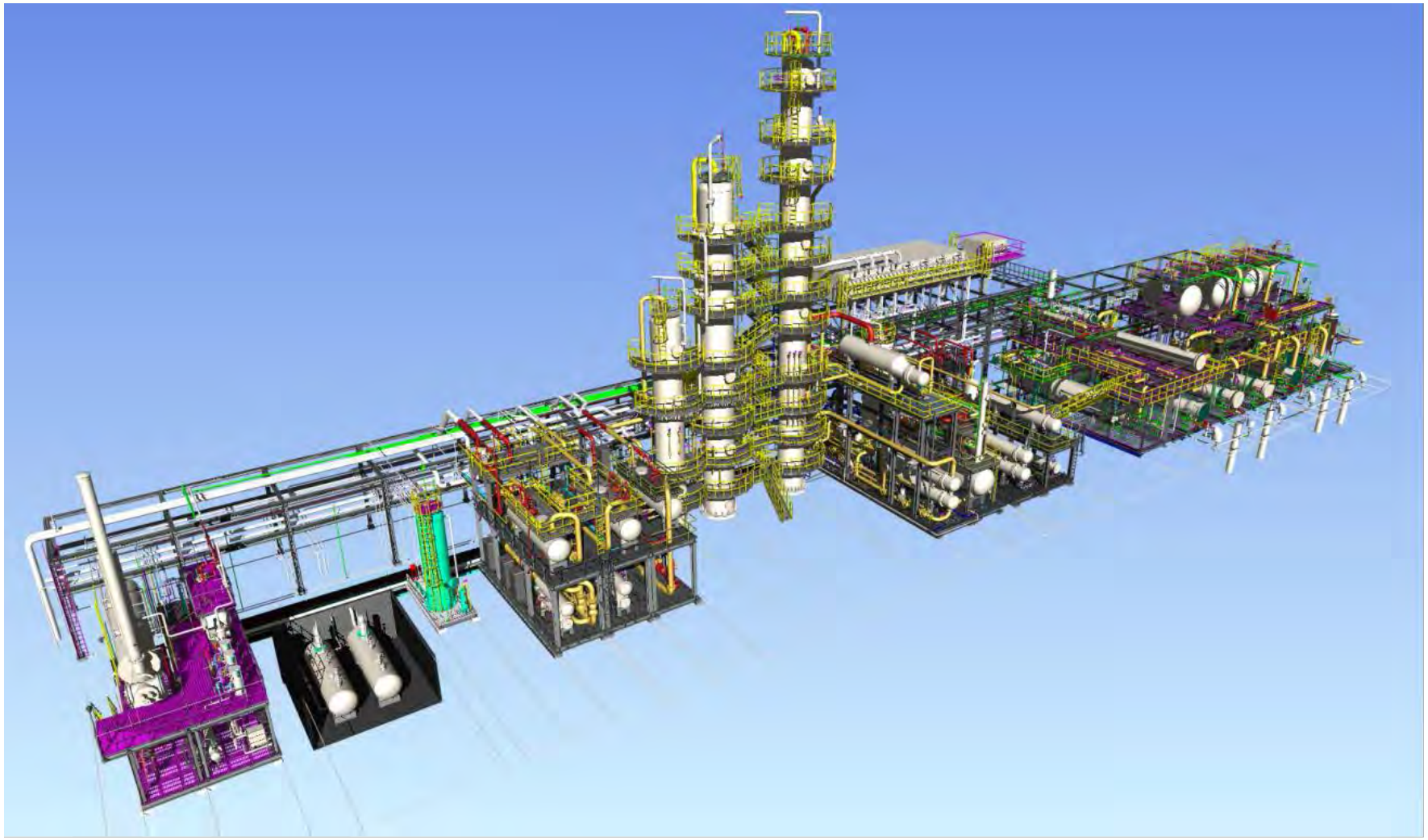
Case study & Reference projects

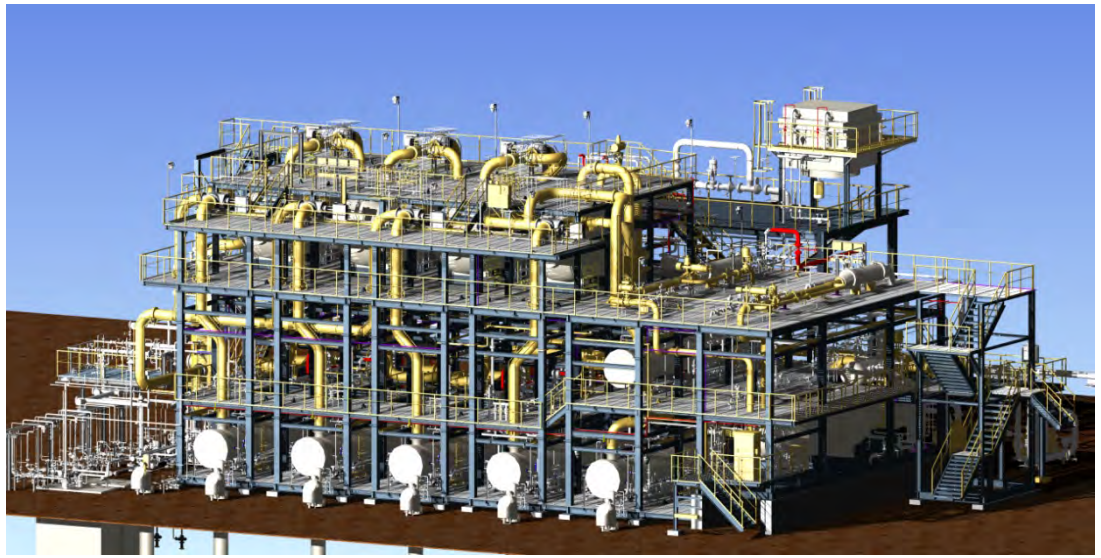
- Chelated iron desulfurization
- Natural Gas Dehydration
- LNG Plants and facilities
- **Other Skidded Equipment**

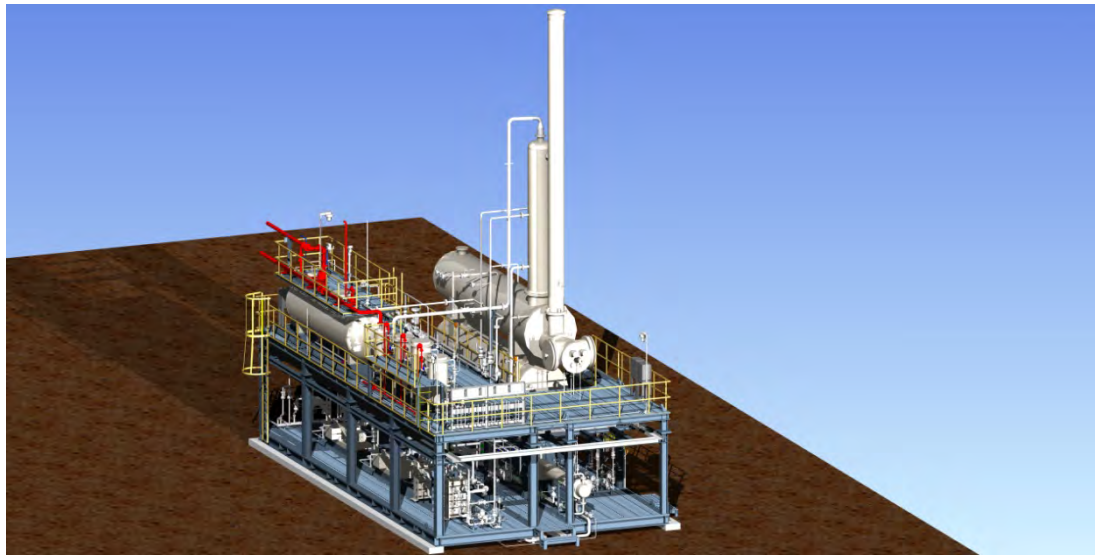
Cooperation

Moxi 300×10⁴Nm³/d gas treatment design

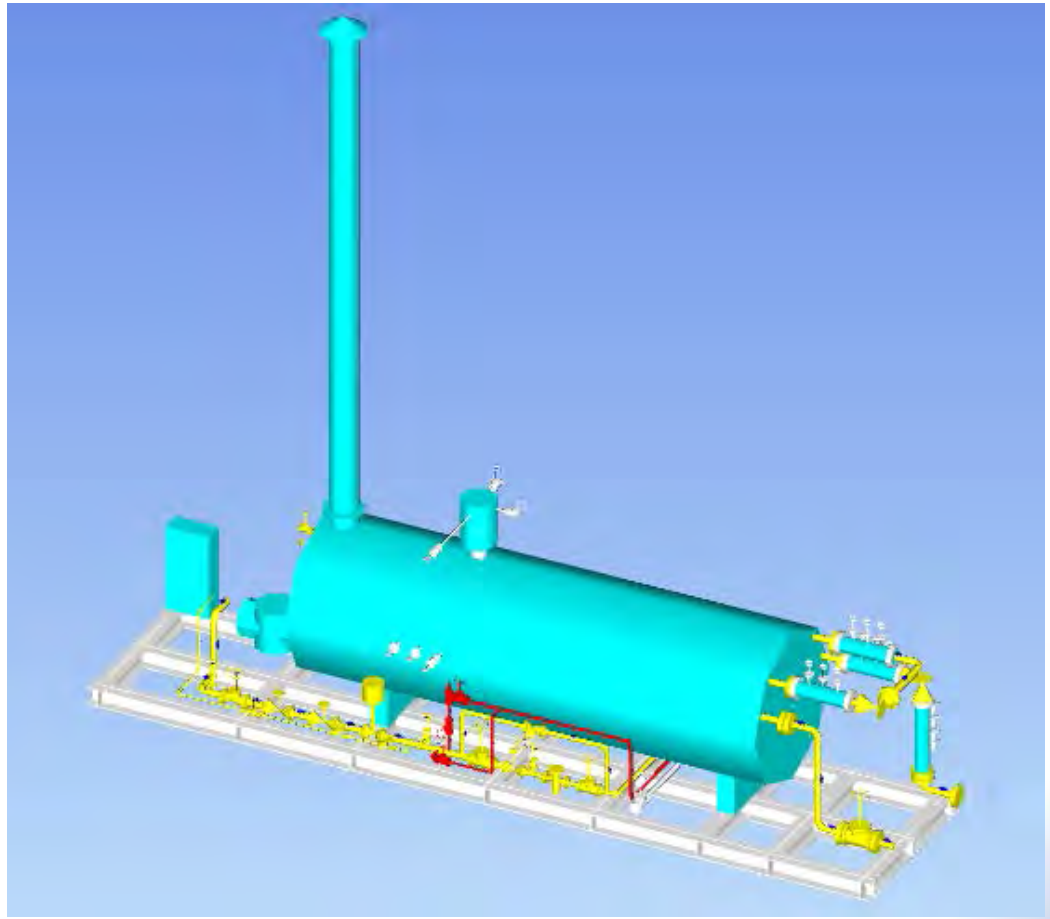




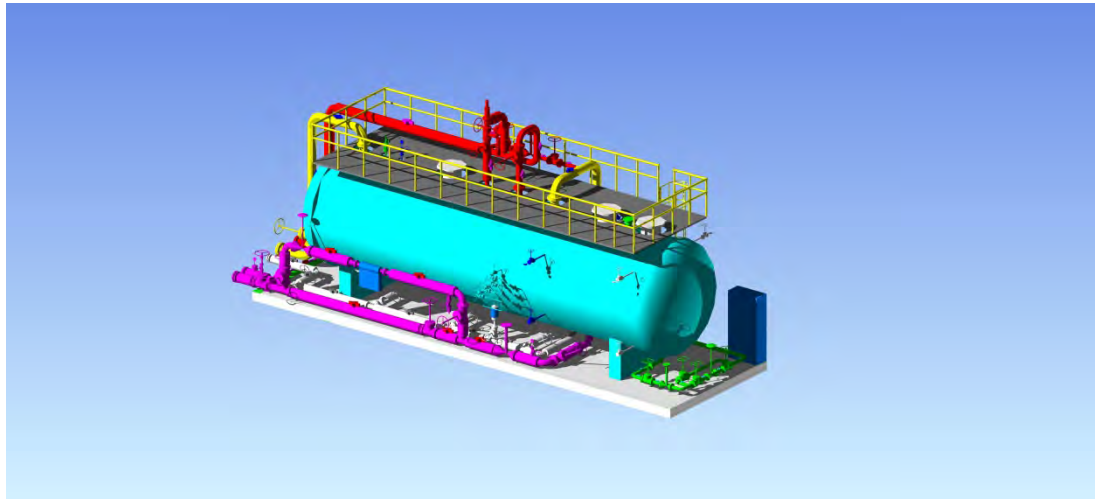




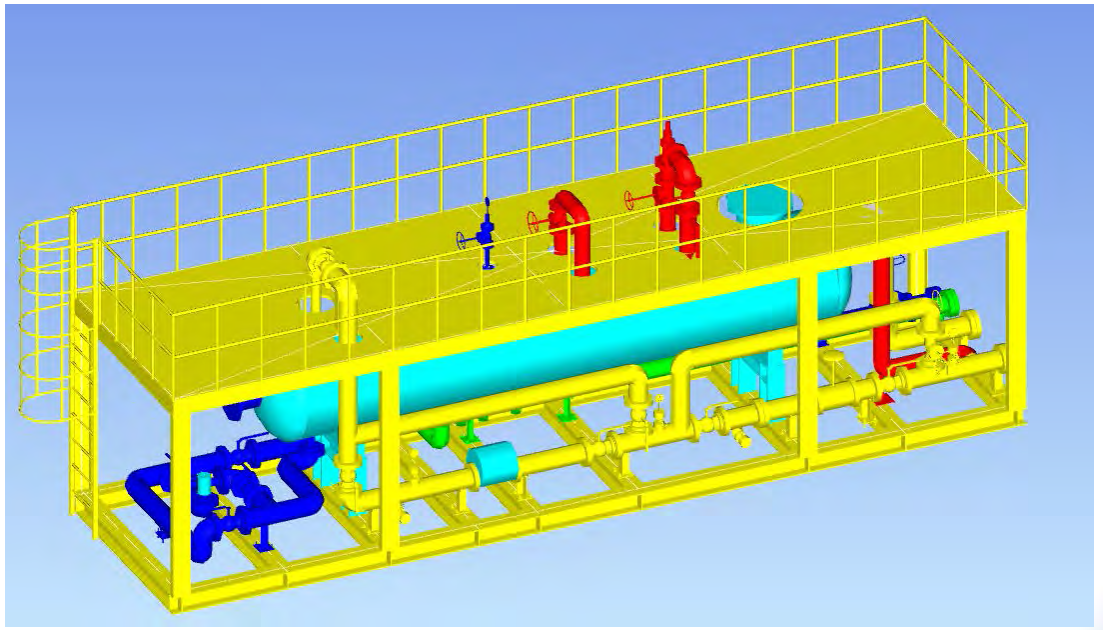
Moxi Gas Field 300×10⁴Nm³/d Triethylene Glycol Regeneration Unit



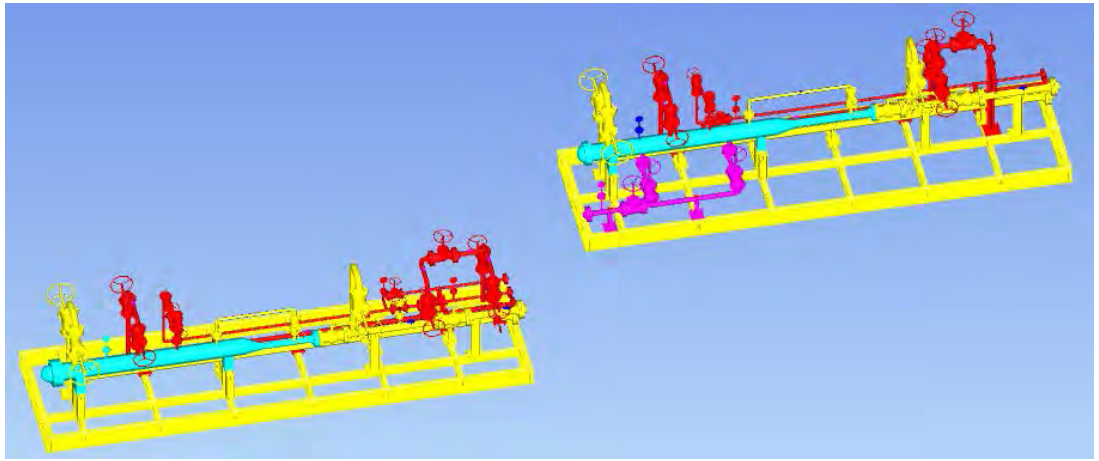
720kW Anti sulfur Heating Unit Design



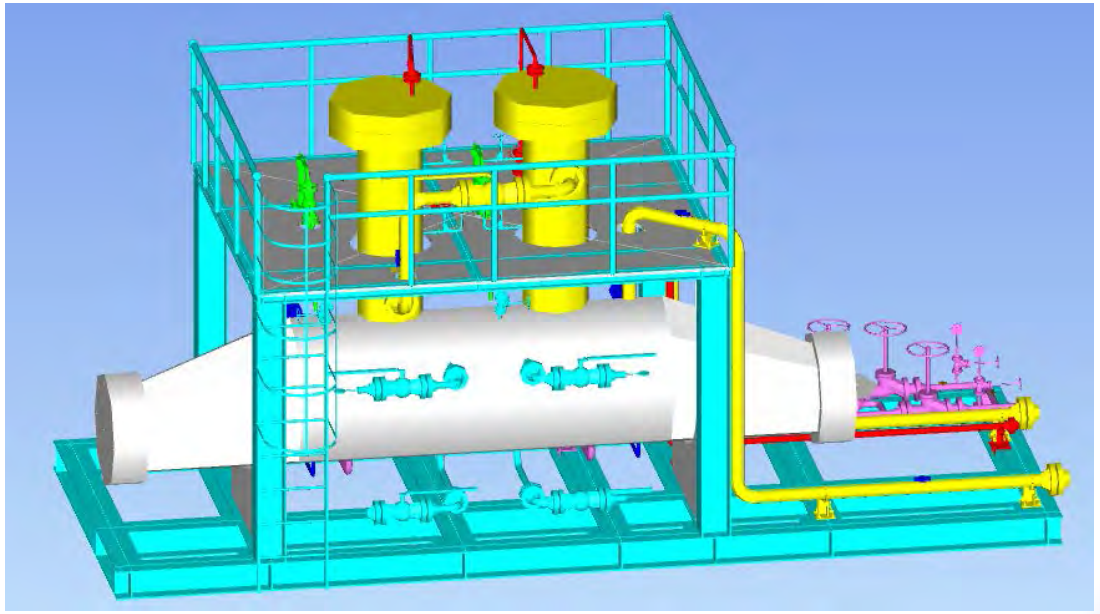
Triphase Separator



High-sulfur Triphase Separator



Pig launcher and receiver skid



Foam Destroyer Skid

Together
Success

Thank You

Contact:
Phone: +86 21 20225257
Email: info@eascoo.com