

## CASE STUDIES

### SULPHUR PLANT REFRIGERATION PACKAGE, KAZAKHSTAN

- ▶ Process water chilling sulphur pastillation plant
- ▶ Design ambient: -36°C to +45°C
- ▶ 3 x 3.8 MW chillers
- ▶ R134a refrigerant
- ▶ Hazardous area installation
- ▶ API 619 cast steel Howden compressors
- ▶ API 661 air cooled condensers with full API winterisation kit
- ▶ Control suite: separate control and safeguarding PLC's/chiller. All PLC's dual redundant/hot standby

### TYPICAL PACKAGE, SAUDI ARABIA

- ▶ Process glycol chilling (site utility cooling)
- ▶ 1 x 1500 kW with 3 x 50% screw compressors
- ▶ Design ambient: -5°C to +50°C. Highly corrosive environment
- ▶ R134a refrigerant
- ▶ Hazardous area installation
- ▶ HallScrew compressors
- ▶ Shell & tube evaporators and condensers
- ▶ J & E Hall FW4000 controller, complete with SCADA
- ▶ Motor controller suite



## CONTACT US

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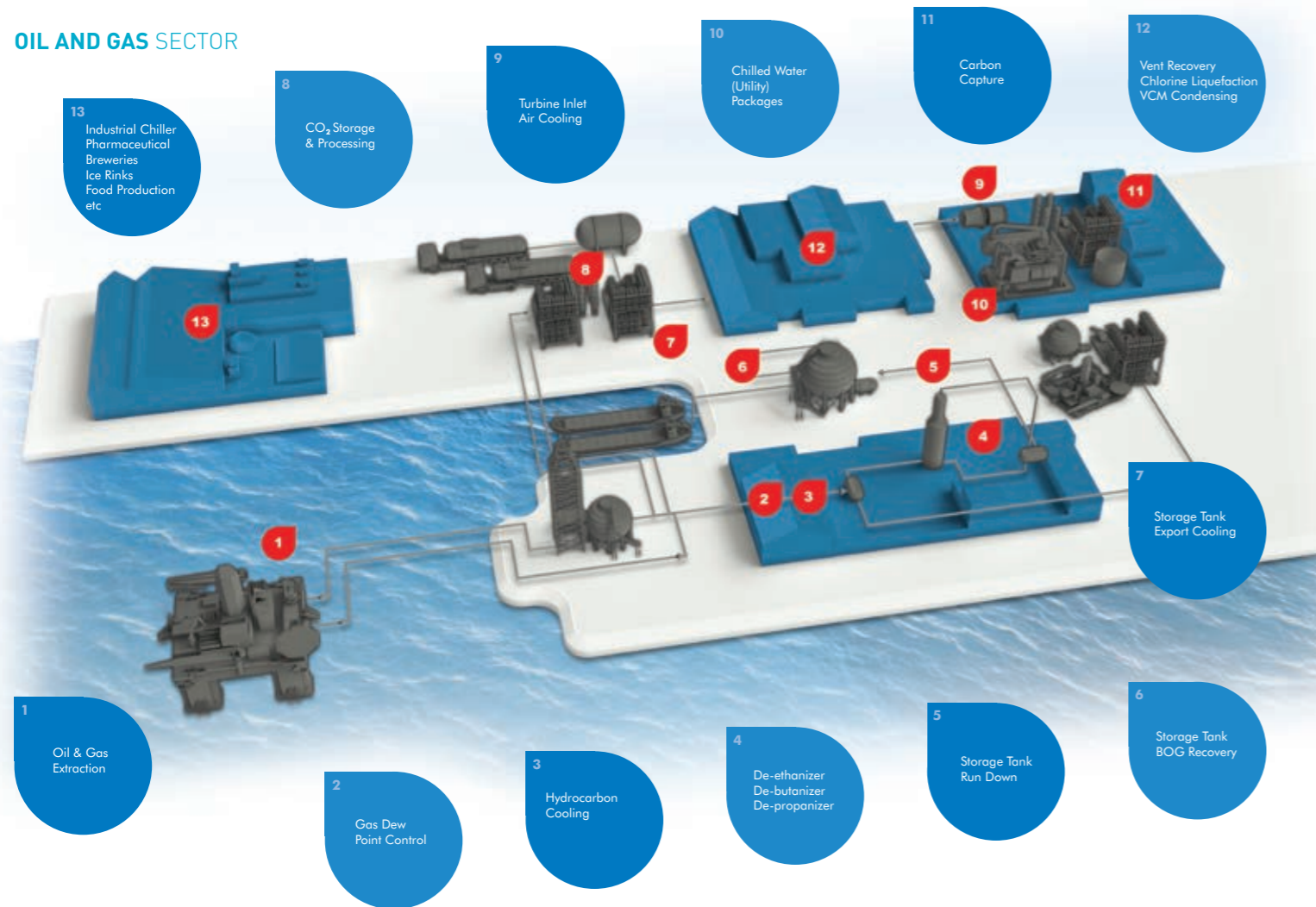


**J&E Hall**  
International



# J & E Hall REFRIGERATION PROCESS SYSTEMS

## OIL AND GAS SECTOR



## TAILOR MADE REFRIGERATION SOLUTIONS

J & E Hall is one of the most experienced suppliers of specialist refrigeration packages in the world with a long standing history dating back to 1785.

We design, manufacture and install bespoke refrigeration systems in response to the most challenging refrigeration and air conditioning applications. J & E Hall provide a single source solution, from FEED to commissioning and through-out life cycle maintenance.

We have a proven track record of supplying specialist refrigeration solutions to the oil & gas, petro-chemical, chemical and marine industries globally.

Refrigeration is an integral part of many facilities, and J & E Hall understand the stringent processes involved. Our specialist knowledge is coupled with a detailed understanding of your process and design requirements.

Our experienced sales, project management and design teams are based in the UK and can conduct design and feasibility studies for any new and existing installations across the world.

We develop systems and solutions to meet our clients exacting standards.

### EQUIPMENT IS DESIGNED TO SUIT **YOUR** REQUIREMENTS:

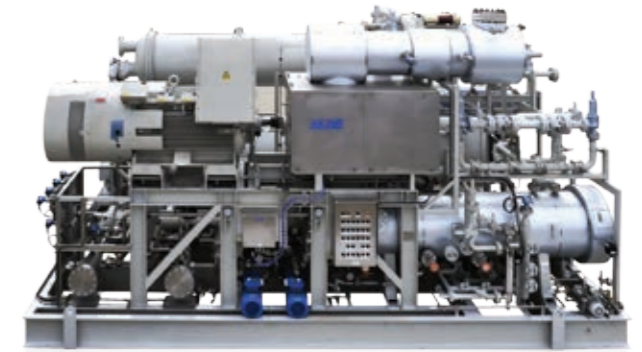
- ▶ DESIGNED IN ACCORDANCE WITH **YOUR** SPECIFICATIONS
- ▶ WE WILL DESIGN AND SUPPLY THE EQUIPMENT THAT **YOU** NEED, ON TIME, TO BUDGET

## OIL AND GAS

Typical applications for J & E Hall refrigeration packages for the oil and gas sector include:

- ▶ GAS PROCESSING & DEW POINT CONTROL
- ▶ DE-ETHANIZERS AND DE-BUTANIZERS
- ▶ PROCESS FLUID STORAGE (COOLING, BOIL OFF & RUN DOWN)
- ▶ UTILITY COOLING (CHILLED WATER, CHILLED GLYCOL)
- ▶ PROCESS STREAM COOLING
- ▶ CHLORINE LIQUEFACTION

- ▶ CHEMICAL REACTION CONTROL
- ▶ GAS TURBINE INLET AIR COOLING (GTIAC)



## PROCESS REFRIGERATION PACKAGES

J & E Hall supply refrigeration packages from 20kW to 6,000kW cooling any type of fluid, no matter how toxic or flammable. Our packages are designed to perform under the most extreme operating conditions, both onshore and offshore.

- ▶ ZONE 1 / 2 INSTALLATIONS
- ▶ FLUID OUTLET TEMPERATURES TO -90°C
- ▶ AMBIENT TEMPERATURES FROM -50°C TO 55°C
- ▶ FULLY INTEGRATED MECHANICAL AND ELECTRICAL SOLUTIONS: HIGH INTEGRITY CONTROL SYSTEMS, MOTOR CONTROL CENTRES AND MACHINERY CONDITIONING MONITORING SUITES
- ▶ ANY REFRIGERANT: HYDROCARBONS, AMMONIA, CO<sub>2</sub>, HFC AND HFO
- ▶ DESIGN TO ANY INTERNATIONAL STANDARD. API, ASME, PED, GOST, NORSOK
- ▶ DESIGN TO **YOUR** STANDARDS

## PROVEN PROJECT PERFORMANCE

COOLING DUTY / TEMP	REFRIGERANT	APPLICATION	INDUSTRY
3.8MW +18°C X 3 Units = 11.4MW	R134a	ATEX zone 2 chillers	Oil field processing
5.2MW -26°C	Propylene	ATEX zone 2 condensing unit	Chemical industry: Process condensing
1.2MW -38°C	Propane	ATEX zone 2 condensing unit	Petro-chemical: De-ethanizer
0.7MW -40°C	Propylene	ATEX zone 2 condensing unit	Petro-chemical: Processing gas recovery
0.5MW -15°C	Ammonia	ATEX zone 2 condensing unit	Petro-chemical: Processing cooling
1.2MW -23°C	R134a	ATEX zone 2 chiller	Chemical industry: Process cooling
0.25MW -48°C	Ammonia/CO <sub>2</sub>	Zone 2 cascade chiller	Chemical Industry: Process cooling
2.1MW -25°C	Ammonia	Zone 2 chiller	Chemical industry: Process cooling
200kW -70°C	R404a + R23	Safe area two stage chiller	Research and development
200kW -60°C	R404a	Safe area condensing	Pharmaceutical