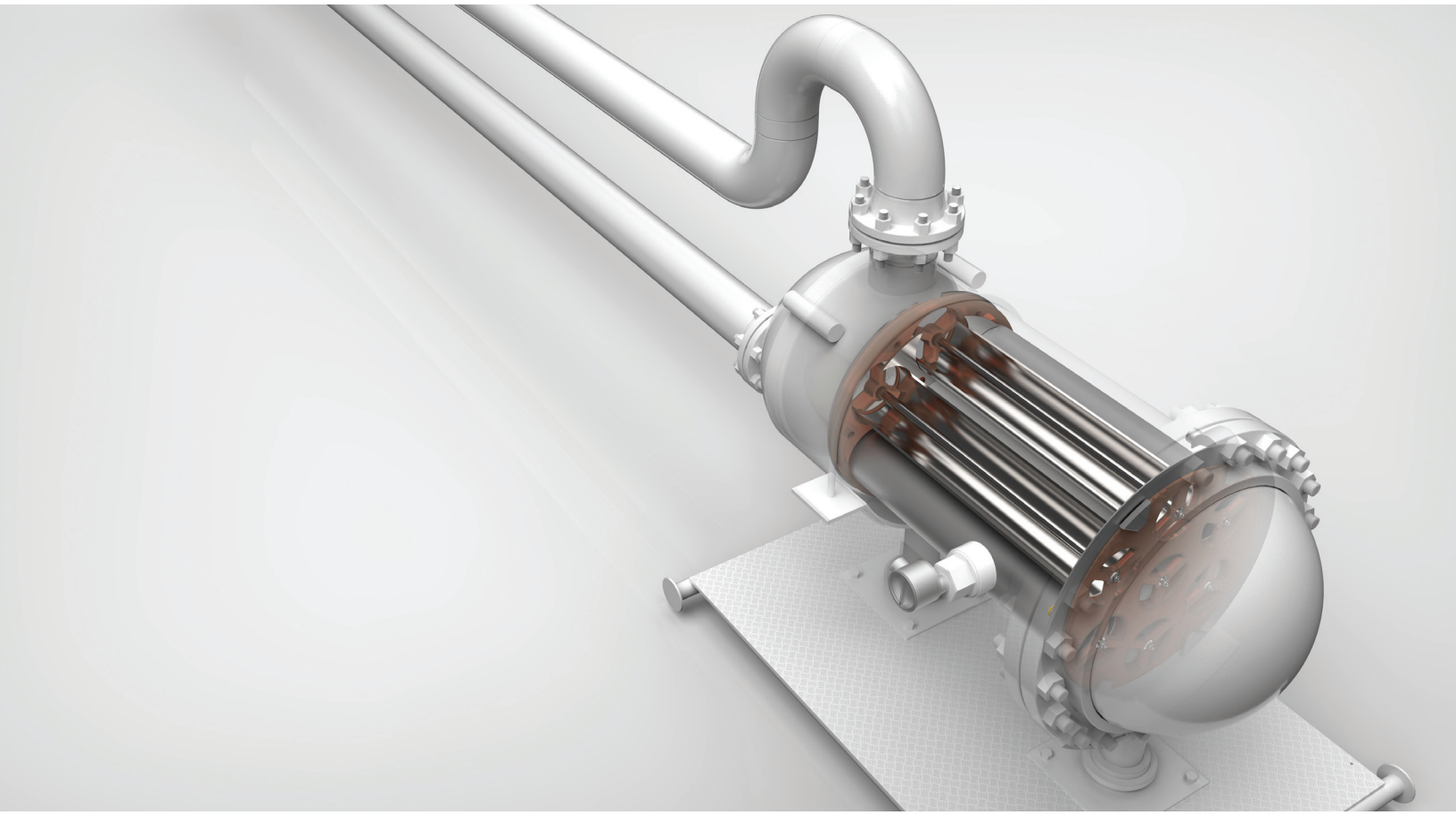
QS Energy

JOULE HEAT

Direct Heat System for Crude Oil Pipelines



JOULE HEAT: BETTER PERFORMANCE, GREATER EFFICIENCIES AND LOWER OPERATING COSTS

Due to a variety of factors such as high viscosity, density, poor mobility and cold ambient temperatures, the energy industry invests heavily in trace heating and other electrical and natural gas powered systems to ensure the safe, reliable and cost effective transport of crude oil.

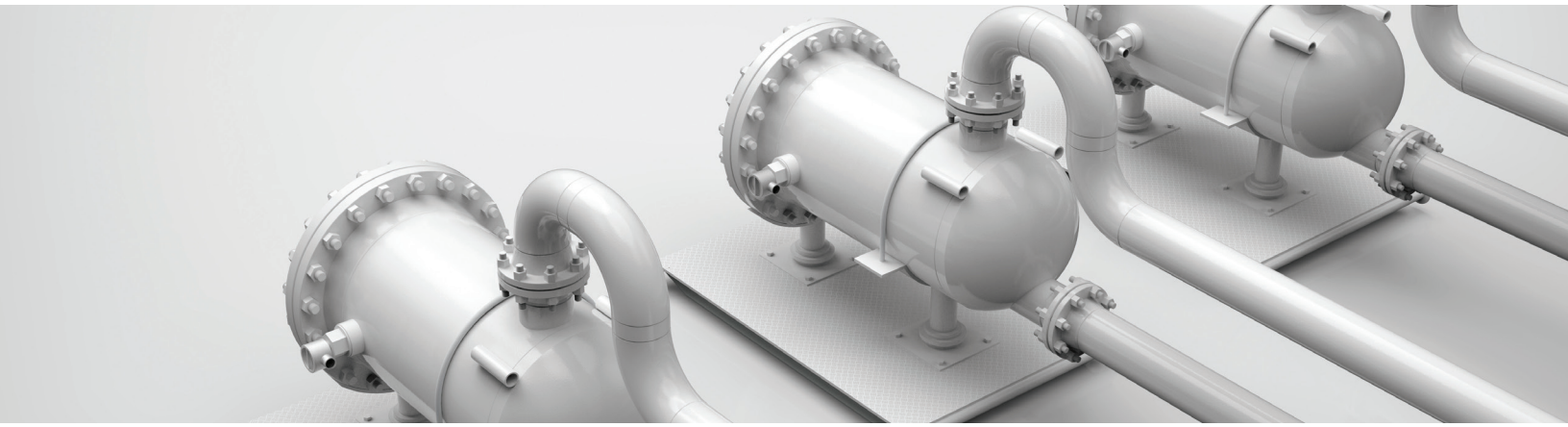
The use of heat is common throughout the energy sector but has traditionally been extremely inefficient and therefore costly. Existing trace heating systems rely on using an electrical resistor to heat the oil, which results in inefficiencies and loss of heat into the pipeline material. Despite the obvious need for a highly energy-efficient heating system designed to deliver optimal heat conductivity, there have not been significant technological innovations in crude oil heating technologies for many years. Until now.

An Inside-Out Approach to Industrial Heating

Developed by QS Energy and fabricated and assembled entirely in the United States, Joule Heat is a highly energy-efficient feedstock heating system that delivers optimal heat conductivity and performance using less power than other traditional heat systems.

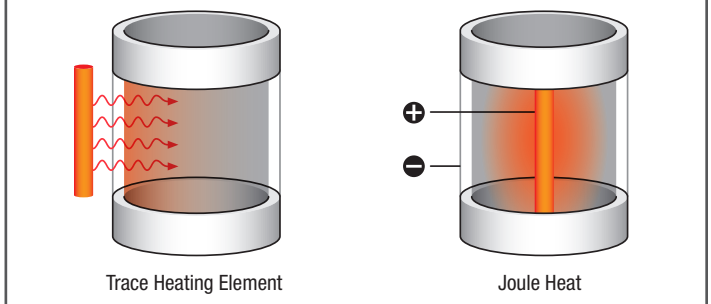
Specifically developed to treat a wide spectrum of feedstock and designed to withstand extreme weather conditions, Joule Heat is electrically powered, compact and adaptable to a variety of environments, from pipelines and oil fields to marine, rail and truck offloading facilities.

Unlike traditional trace heat systems, Joule Heat is configured to deliver maximum heat conductivity by making direct contact with feedstock within the apparatus, an ASME-code pressure vessel, providing better performance at a lower operating cost.



How Joule Heat Works

Joule Heat is an electrically powered crude oil heating technology specifically developed for use on pipelines and within offloading facilities and refineries. Joule Heat subjects the oil to a direct and intense electric field that increases oil temperature uniformly without interrupting flow. Preliminary testing of Joule Heat suggests efficiencies of over 60% when converting electrical energy into internal energy in oil, compared to efficiencies of approximately 30% typical in trace heat systems.



Traditional trace heating generates heat via a resistive trace heating element which transfers energy into the oil. Joule heating applies an electrical charge directly to the oil, generating heat within the flow itself.

Innovative Heat Solutions for Today's Leaner, Sustainable Energy Industry

Joule Heat provides E&P entities, pipeline operators and rail, marine and truck offload facilities with a new class of heat treatment options. With a smaller form factor than trace heating systems, offering virtually unlimited configuration options, Joule Heat is a plug and deploy system, requiring only in-flow and out-flow piping and access to a standard electrical wall outlet.

Joule Heat is highly configurable to a variety of applications and can be modified to your exacting specifications.

CONTACT INFORMATION

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COMPANY PROFILE

QS Energy, Inc. (OTCQX: QSEP) provides the global energy industry with patent-protected industrial equipment designed to deliver measurable performance improvements to crude oil pipelines. Developed in partnership with leading crude oil production and transportation entities, QS Energy's high-value solutions address the enormous capacity inadequacies of domestic and overseas pipeline infrastructures that were designed and constructed prior to the current worldwide surge in oil production. In support of our clients' commitment to the responsible sourcing of energy and environmental stewardship, QS Energy combines scientific research with inventive problem solving to provide energy efficiency 'clean tech' solutions to bring new efficiencies and lower operational costs to the upstream, midstream and gathering sectors. More information is available at: www.QSEnergy.com.