Oilfield energy saving and storage

What is the energy consumption in oilfields?
The energy consumption in oilfields is relatively high,except for the drilling,energy is required for crude oil transport,acid gas treatment,and gas dehydration. However,with the low level of energy management strategy in some of the oilfields,the energy utilisation efficiency has great potential to be improved.

Can oilfield production management reduce energy consumption for Tahe oil field?
With the increase of water content and the number of shutdown wells in old areas,the existing gathering and transportation mode can no longer meet the energy saving demands of oilfield production for Tahe oil field. Therefore,it is an urgent need of oilfield production management to reduce energy consumption.

What is oil & gas transport & storage?
The oil &gas transport and storage (OGTS) engineering,from the upstream of gathering and processing in the oil &gas fields,to the midstream long-distance pipelines,and the downstream tanks and LNG terminals,while using supply chains to connect each part,is exploring its way to reduce energy consumption and carbon footprints.

How can oil and gas processing reduce energy consumption?
In terms of oil and gas processing, there are also many studies to achieve energy conservation and consumption reduction. This kind of research focuses on improving the recovery rate of energy, especially the recovery efficiency of heat energy.

Which is the most energy saving gathering mode for China's oilfields?
The energy consumption and operation cost were calculated,and the comparative analysis results showed that,for these four wells,the most energy saving gathering mode was the branch connection form of pipe network. 1. Introduction China's oilfields are mostly composed of waxy crude oil.

Is oil and gas transport and storage engineering entering a new era?
Conclusions and Future Directions With the fast development of low-carbon and sustainable measures implemented in oil and gas transport and storage engineering,this industry is entering a new era.

Based on the analysis of the production and operation situation of the crude oil gathering and transportation system in a certain oilfield: (1) the main problems of the ...

Established objectives of the building of the energy saving information platform are as follow: Firstly, to meet the needs of every oil-gas field enterprise by using the unified information platform, we can carry out energy saving monitoring, energy efficiency benchmarking and expert system aided decision-making tasks according to their own business characteristics.

Realizing the benefits of energy saving that waste heat utilization can bring to the oil field, this article first

describes a novel integrated water separation and treatment process ...

In this paper, the temperature drop and pressure drop models of oil-gas-water three-phase flow were deduced theoretically, and for four wells in a block in Tahe oilfield, ...

In 2023, through full-chain energy-saving and carbon-reduction management, it achieved an 89 percent year-on-year increase in carbon reduction. At Huizhou Petrochemicals, the largest energy-saving low-temperature heat utilization project in China"s petrochemical industry was successfully implemented.

Facing with declining reserves, increasing operation cost, volatile oil prices and green energy trend, oil and gas companies started to explore and utilize oilfield geothermal energy from existing assets, seeking for solutions to reduce operation cost, extend economic life of aging fields and achieve environmental and social benefits (Wang et al., 2016).

The system"s annual energy savings, total energy-saving costs, and other performance benefits were evaluated. The research results will help the development of oilfield solar multi-energy complementary heating technology ...

Advantages of Oilfield Energy-saving System. 1. Energy Saving Advantage. Stores excess energy, achieving a 40% - 50% electricity saving rate, reducing energy consumption. 2. Intelligent Control Feature. Equipped with a frequency converter, adjusts the speed according to the load, enhancing equipment efficiency. 3. Stable Operation Guarantee

The researchers proposed a new geothermal-assisted compressed-air energy storage system that makes use of depleted oil and gas wells -- the Environmental Protection ...

Furthermore, an automated supervisory control system was implemented which automated the starting and stopping of generator sets to achieve efficient operation and simultaneously provide a long ...

The largest energy saving is for S9, which reaches 74 tce, of which 76 % is contributed by rail. In Area B (Fig. 12 b), the energy savings for S1 ~ S3 range from 54 ~ 75 tce from rail. The energy savings of S4 ~ S9 are jointly determined by rail and ship, with a maximum reduction of 150 tce from rail (S6) and 125 tce from ship

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The oilfield facility provides a sufficient supply of self-produced natural gas and has an obvious price advantage. However, China"s oilfield facilities are supplied with electricity and heat from the external grid and ...

To continue to make significant strides toward delivering lower-cost and lower-carbon energy, Schlumberger embraces the production journey with its customers by working with a new mindset.

Wang X H et al. [13] proposed a comprehensive solution strategy for the integrated process of distillation membrane separation, which has outstanding advantages in energy saving. In order to meet the energy-saving demand, Cui Z et al. [14] established the optimization method of pipe network with the goal of minimizing the total annual cost ...

the energy saving potential, and to achieve the target of energy consumption reduction. It is crucial to analyse how current technologies contribute to sustainable OGTS engi- neering.

The article presents the results of the analysis of energy generation and consumption systems at the oil field facilities. The assessment of the state of the energy supply systems of the...

Its energy consumption accounts for about 70% of the total energy consumption of the heavy oil field gathering and transportation system (Zhao et al., 2018). Hence, energy-saving and consumption reduction has become the core issue in the process of heavy oil field development and production.

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Energy Storage and Saving (ENSS) is an interdisciplinary, open access journal that disseminates original research articles in the field of energy storage and energy saving. The aim of ENSS is to present new research results that are focused on promoting sustainable energy utilisation, improving energy efficiency, and achieving energy conservation and pollution reduction.

Energy & Fuels 2016, 30 (4): 2751-2759. 2. Evaluation for CO2 Geo-storage Potential and Suitability in Dagang Oilfield. Energy Procedia,2016,30(2016)41-46 3. Feasibility Study for IGCC-CCS-EOR Project in Jing-Jin-Ji Economic Circle. GHGT-13.Lonsan Swiss

Based on the analysis of the production and operation situation of the crude oil gathering and transportation system in a certain oilfield: (1) the main problems of the completed gathering system under the current production and operation situation can be found; (2) the main factors that affect the energy consumption of the gathering and ...

For DES without wind power access, by introducing waste heat recovery devices and energy storage devices to optimize the design, the annual total cost optimization result of the energy system can achieve an economic reduction of 22.31% and carbon emission reduced by about 16.63%, achieving better economic results and energy saving and ...

For the specific oil and gas transport and storage (OGTS) sector, many process-wide, site-side, and system-wide measures are taken to analyse the carbon emission situation ...

The energy generation device, conversion device, and storage device of each energy are considered as an

energy system. With the minimum annual total cost of the energy system as the objective function, a new robust model was established. Three energy system structures are developed by controlling input parameters,

Presently, research on multi-energy complementary systems mainly focus on the modelling and optimal regulation. In the static model of multi energy complementary system, its modeling method is relatively mature.For example, from the earlier energy hub model [5] and the joint power flow model based on network topology [6, 7], to the electric, gas and heat multi ...

By finding the restriction point of high energy consumption, it provides the basis for each profession to make targeted measures of energy saving and consumption reduction, thus ...

This paper summarizes the important progress in the field of oil and gas production engineering during the "Thirteenth Five-Year Plan" period of China, analyzes the challenges faced by the current oil and gas production engineering in terms of technological adaptability, digital construction, energy-saving and emission reduction, and points out the future development ...

3.1 Test Purpose. In order to solve the key technical problems affecting the further improvement of oilfield economic benefits, such as low efficiency and high energy consumption of the gathering and transportation system in the process of oil and gas gathering and transportation [] is necessary to quantitatively test and analyze the energy consumption and equipment operation ...

of distributed energy system in oilfield united stations[J].,2019,38 ... [15] CAI G X, XU K, MA M. Composition of distributed energy system for oil & gas gathering and its energy saving effect[J]. Oil & Gas Storage and Transportation ...

To accomplish profound decarbonization, exemplified by the ambitious Net-Zero Emissions (NZE) goal [3], extensive adoption of renewable energy sources necessitates ...

Based on the above considerations, a solar-GSHP coupled heating system with both short-term heat storage and long-term heat replenishment is proposed to solve the problems of discontinuity of solar energy and instability of geothermal energy in the industrial process of oil field replaced by clean energy.

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