

Can CO<sub>2</sub> injection improve oil recovery and oil storage in tight-oil reservoirs?

CO<sub>2</sub> injection development represents a significant method of reservoir production, potentially facilitating enhanced oil recovery (EOR) alongside CO<sub>2</sub> storage. Currently, limited research exists on advanced CO<sub>2</sub> injection and well pattern adjustment aimed at improving the oil recovery and CO<sub>2</sub> storage within tight-oil reservoirs.

Does well pattern adjustment improve oil production efficiency in tight-oil reservoirs?

Well pattern adjustment effectively supplements the formation energy, extends the stable production lives of production wells, and increases both the sweep efficiency and oil recovery. This study provides theoretical support and serves as a reference for CO<sub>2</sub> injection development in tight-oil reservoirs. 1. Introduction

Does injection pressure affect Oil Displacement efficiency?

An analysis suggests that with increasing injection pressure, the oil displacement efficiency shows a linear increase. During this stage, the oil displacement primarily relies on the displacement action of CO<sub>2</sub>, and this pressure range is categorized as non-miscible flooding.

Does pressure adjustment increase CO<sub>2</sub> storage volume?

The quantity of free-state CO<sub>2</sub> remains relatively constant. The discrepancy in total CO<sub>2</sub> storage volume arises from the solid phase of the hydrate. Compared with the base data, all pressure adjustment schemes significantly increase the CO<sub>2</sub> storage volume up to 56.1 % (case 1), 83.4 % (case 2), and 74.6 % (case 3).

How to optimize energy consumption of the oilfield?

The integrated energy-consumption calculation model of the injection-reservoir-production (I-R-P) coupling system is established. Finally, in order to optimize the energy consumption of the oilfield, the production scheme is optimized by combining Particle Swarm Optimization algorithm, I-R-P integration system, and reservoir numerical simulation.

How can pressure control improve secondary CO<sub>2</sub> trapping performance?

Pressure control utilizing the "memory effect" of CO<sub>2</sub> hydrate phase transition can significantly enhance the performance of secondary CO<sub>2</sub> trapping. Without pressure adjustment, the mass transfer coefficient at the gas-hydrate crystallization interface remains in the order of  $10^{-7}$  m/s.

@article{Guo2021ExperimentalIO, title={Experimental investigation on off-design performance and adjustment strategies of the centrifugal compressor in compressed air energy storage system}, author={Wenbin Guo and Zhitao Zuo and Jianting Sun and Hou Hucan and Liang Qi and Haisheng Chen}, journal={Journal of Energy Storage}, year={2021}, url ...

The power smoothing control strategy is verified with the 24 kW energy storage hydraulic wind turbines

semi-physical simulation experimental platform. The proposed control ...

In this paper, a novel energy storage technology of a gravity-enhanced compressed air energy storage system is proposed for the first time, aiming to support the rapid growth of solar and wind ...

With both of my engines, I have had extremely limited success in being able to adjust oil pressure using the regulator screw located below the fuel pump. I frequently have to motor for three or four hours or more at a time (cruising RPM usually between 1800 and 2000, boat speed between 4.5 and 5.5 knots), and my experience is that oil pressure ...

A high proportion of renewable generators are widely integrated into the power system. Due to the output uncertainty of renewable energy, the demand for flexible resources is greatly increased in order to meet the real-time balance of the system. But the investment cost of flexible resources, such as energy storage equipment, is still high. It is necessary to propose a ...

Engine Preservation and Storage ... adjustment and testing of the I0-520-B, -BA, -BB,-C, -CB, -M and -MB engines. Definition Of Terms In this manual, front, rear, left and right refer to the engine as viewed from the accessory end. The accessory end is the rear and the propeller flange

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In recent years, owing to improvements in the economy and quality of life, the consumption of energy in the form of coal and oil has steadily increased, resulting in the gradual depletion of non-renewable resources and rapid increase in CO<sub>2</sub> emissions [6], [7], triggering global warming and environmental pollution. The construction industry has developed into one ...

Maximum and minimum current and flow rate absorbed by the pump during oil transfers under different pressure: (a) Variation curve of the supply current absorbed by the pump during oil transfers ...

Adiabatic compressed air energy storage (A-CAES) is a promising massive energy storage to eliminate the fluctuation nature of renewable energy. In a traditional A-CAES system, a throttle valve is installed in front of air storage tank to reduce the unstable effect of pressure change in air storage tank on compression train. This

Adding a Battery. FervoFlex requires changing the analogy used to explain how the company's technology works. Rather than steadily pumping the maximum amount of water through the system, like a waterflood, this adds the option of using pressure pumping to build downhole pressure which becomes energy storage that can be released later.

In recent years, the impact of renewable energy generation such as wind power which is safe and stable has become increasingly significant. Wind power is intermittent, random and has the character of anti-peak

regulation, while the rapid growth of wind power and other renewable energy lead to the increasing pressure of peak regulation of power grid [1,2,3].

In addition, it can also control the inverter for energy storage battery charging and discharging management to realize the data measurement, alarm protection as well as "three-remote" functions. ... Energy Controller applies 32-bit microprocessor technology, realizing the functions of precise measurement, fixed value adjustment, timing and ...

If your pressure switch has a separate adjustment screw for cut-out pressure, repeat the process with the "cut-out" adjustment screw. Turn it clockwise to increase the cut-out pressure or counterclockwise to decrease it. Set the Differential (if applicable): Some pressure switches allow you to adjust the differential pressure.

CAES, a long-duration energy storage technology, is a key technology that can eliminate the intermittence and fluctuation in renewable energy systems used for generating electric power, which is expected to accelerate renewable energy penetration [7], [11], [12], [13], [14]. The concept of CAES is derived from the gas-turbine cycle, in which the compressor ...

Grid-level large-scale electrical energy storage (GLEES) is an essential approach for balancing the supply-demand of electricity generation, distribution, and usage. Compared with conventional energy storage methods, battery technologies are desirable energy storage devices for GLEES due to their easy modularization, rapid response, flexible installation, and short ...

Simulation results show that, compared to composition-fixed TI-PTES, the energy storage efficiency of TI-PTES could be enhanced by the absolute value of 4.4-18.3% by introducing composition adjustment method under various boundary conditions.

In the case of external disturbance, hybrid energy storage system using D control scheme, the frequency variation of the hybrid energy storage under step perturbation  $D_f$  compared with that when thermal power units participate in frequency modulation alone, they are reduced by 40.47 %, 34.06 %, and 34.09 %, respectively, the power fluctuation ...

Global tight-oil reserves are abundant, but the depletion development of numerous tight-oil reservoirs remains unsatisfactory. CO<sub>2</sub> injection development represents a significant method of reservoir production, potentially facilitating enhanced oil recovery (EOR) alongside CO<sub>2</sub> storage. Currently, limited research exists on advanced CO<sub>2</sub> injection and well ...

Various configurations and control strategies are proposed to solve the pressure adjustment and control precisely and quickly, and decrease the energy loss through this adjustment. ... Performance analysis of an adiabatic compressed air energy storage system with a pressure regulation inverter-driven compressor. J. Energy Storage, 43 (2021) ...

It would be effective to use such high-pressure membrane-less electrolyser as an energy storage system element of an energy complex that receives electricity from the renewable energy sources (sun, wind). ... hydrogen or oxygen were released through fine adjustment valves (10, 11) under the pressure reduced to the near-atmospheric one into ...

Energy storage is one of the most effective solutions to address this issue. Under this background, this paper proposes a novel multi-objective optimization model to determine ...

Analyzing the changing characteristics of the temperature, pressure, and flow of superheated steam under rapid load regulations makes it possible to calculate the instantaneous energy storage ...

Different energy storage utilization methods of thermal power units vary in terms of time response scale, economic impact, and load regulation depth. ... the feedwater bypass can alter the steam side pressure inside the feedwater heater by adjusting the flow rate. Then, the pressure difference can be modified with the extraction of the steam ...

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