

Can deep fragmented soft coalbed methane improve natural gas supply?

Developing deep fragmented soft coalbed methane (CBM) can significantly enhance domestic natural gas supplies, reduce reliance on imported energy, and bolster national energy security. This manuscript provides a comprehensive review of commonly employed coalbed methane extraction technologies.

Is coalbed methane a free gas or adsorbed gas?

However, there are variations in the occurrence characteristics of coalbed methane across different regions. Bin et al. (2017) found that in the Junggar Basin, deep coalbed methane primarily exists as free gas, followed by adsorbed gas.

How do coalbed methane extraction technologies work?

Currently, mainstream coalbed methane extraction technologies fundamentally rely on permeation. They establish gas production pathways through drilling, completion, and fracturing to enhance gas flow and increase gas well productivity by enlarging the gas drainage area and connecting deeper reservoir fractures.

What is the traditional coalbed methane industry?

The traditional coalbed methane industry includes natural gas produced from surface coalbed methane wells, primarily led by oil and gas companies, which explore and develop coalbed methane as a typical unconventional natural gas resource.

The utilization of coalbed methane (CBM) resources in closed coal mines is crucial for energy transition and green low-carbon development. This study systematically analyzed geological ...

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In this review, we focus on recent progress of solar-energy-mediated methane conversion under mild conditions. We first present the fundamentals of photoactivation of methane from ...

Integrating conventional power plants (PP) with concentrated solar power (CSP) represents a more innovative strategy. To evaluate the feasibility of a gas-CSP hybrid, the North ...

Microbial-enhanced coalbed methane (MECoM) technology presents a sustainable solution to solve several problems arising from increasing coal consumption. This technology ...

Can coalbed methane be extracted? Although the extraction of coalbed methane presents challenges, the favorable physical properties of coal reservoirs, strong adsorption capacity, and multi-source ...

This paper proposes a novel in-situ microwave heating technology for coalbed methane extraction integrated with a photovoltaic-wind hybrid microgrid, aiming to reduce the energy ...

Introduction Methane, the predominant component in natural gas and biogas, has received increasing attention as an alternative and promising resource for chemical commodities ...

Herein, we propose an approach whereby concentrated-solar catalytic methane dry reforming addresses these longstanding issues.

With the integrated development of new energy and oil and gas production, introducing wind-solar-storage microgrids in coalbed methane well screw pump discharge systems enhances ...

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