

This paper proposed a solar-coupled mine water-source heat pump combined heating and cooling (SMWHP-CHC) system, which utilizes both solar energy and waste heat from mine water for building space heating and annual domestic hot water supply, while also utilizing the cold energy from mine water for building space cooling. Taking the ...

Sustainable coal mining and transport system proposed for a coal mine in China. Base system comprises a 100 % powered solar PV system. Investigation includes technical, economic, environmental, and social feasibilities. Base system records an LCOE of \$0.136/kWh and LCOH of \$12.14/kg.

This paper examines a novel integration mechanism of solar energy into a 300 MW coal-fired power plant to improve the performance and techno-economic feasibility of the proposed system while decreasing pollutant emissions by coal consumption reduction.

In this report, we explore challenges, opportunities, and enabling approaches to integrate renewable energy technologies into mining operations. The mining industry, as defined herein, spans activities across exploration, extraction, beneficiation and processing, and refining.

In this paper, coal mine reclamation using solar photovoltaic power generation is studied using ...

The Gross Domestic Product per capita in India reaches an all-time high of 1750.60 USD in 2015 indirectly shows that per person energy consumption also increases. To conquer the electricity shortage, power generation should also increase in a similar way as utilization increases. Coal will remain the major source of energy and its production quadruple ...

In order to reduce solar cell heat loss, parallel radiation systems must be coupled concurrently since they produce less heat than serial designs and boost solar cell performance. The Metravi Lux metre 1332 was utilised for illumination at two iron ore mines and Odisha.

This paper proposed a solar-coupled mine water-source heat pump combined ...

The application of systems engineering approach and optimization techniques enables the possibility in combining sustainability and controlling factors with design of coal mine. In accordance to the utilization of the tools of GIS, both graphical and mathematical methods enables in producing useful and harmful effects of coal mining ...

2.1 Coal Mine Safety Production Specifications. Several studies on coal mine safety specifications already

exist. For example, Feng et al. [1] investigated the effect of safety regulations on cost and technology in China's coal industry by constructing a profit maximization model, and Haixia et al. [2] explored the safety effects of the "three laws and one regulation" on coal production in ...

Accurately assessing the photovoltaic (PV) power generation potential in coal mining subsiding regions is of great significance for the transformation of a resource-based city and the goal of...

In this paper, the off-design dynamic performance simulation model of a solar aided coal-fired power plant is established. A 330 MW subcritical coal-fired power plant is taken as a case...

A massive solar farm is in the works at the site of one of the largest coal mines in southern Appalachia. BrightNight, the developer behind the planned farm at the decades-old Starfire coal mine near Hazard, Kentucky, says the project could help reinvigorate a region where thousands of mining jobs have been lost. Construction on the first ...

The paper is organized with Section 1 briefing about the present and past research conducted in the coal mine planning and sustainability development, and the limitations of existing approaches in controlling the sustainability, Section 2 precisely discussing the methodology of present research focused on optimizations of mine planning locations through ...

Sustainable mining practices is a concept that embeds the principles of sustainable development into the whole mine life-cycle, from exploration, extraction and processing through to mine closure. The optimization of coal mine planning and the developing a standardized design for its sustainable development is very challenging and requires more ...

Building an 800MW utility-scale solar project on a former coal mine. IPP BrightNight unveiled in July 2023 that it was to develop an 800MW solar PV plant located at a former coal mine in the state ...

Web: <https://nakhsolarandelectric.co.za>

