Full text of the mine pumping energy storage management measures

How to choose a mine pump?
The selection and optimization of pumping systems is mainly concerned with relating a mine pump to its proposed duty. Various factors which are taken into account for the detailed design of mine dewatering systems are the quantity of mine water inflow, ground water quality, mine layout and developments.

What is part 2 of energy management in mining?
Part 2 of energy management in mining is integrating energy management into management systems. This involves establishing a policy and plan,developing an effective energy information system,and regularly tracking and reporting energy performance.

What is pumped Energy Storage?
In comparison to electrochemical energy storage and compressed air energy storage,pumped storage is one of the most mature energy storage technologywith the largest use worldwide .

What factors should be taken into consideration when designing mine pumping systems?
Various factors which are taken into account for designing mine pumping systems are the varia- tion of head requirements, mine water inflow quantities and quality in relation to mine layout and developments.

What is the traditional approach to energy management in mining?
Traditionally,energy management in mining focuses on energy audits that are undertaken every few years. Formalised management systems such as the ISO 50001 Energy management systems series may be pursued in some mining operations,but it is important to ensure a focus on performance as well as compliance.

What is a mining practice handbook?
A mining practice handbook is a guide designed to provide essential informationto mine operators,communities,and regulators. It contains case studies to assist all sectors of the mining industry,going beyond legislative requirements. These handbooks are recommended for their practical use.

DSM was first introduced during the 1970s energy crises with the aim to deliberately influence customer appliance selections and energy usage patterns to achieve a ...

Pumped Storage Hydropower (PSH) is the most mature and widely used technology for large-scale energy storage. It accounts for 99% of the current storage capacity. ...

The implementation of an underground Pumped Storage Hydropower project using coal mines facilities is an appealing option for energy storage, particularly in Spain where the underground mining is ...

The ultra-deep sustained water injection of 100 m 3 ·h -1 in a single well would not rupture the

formation or cause water leakage, and 7.87 × 10 5 t of mine water could be ...

Underground pumped storage hydroelectricity plants using abandoned coal mines can be used to store excess electricity, supporting the advancement of renewable energy ...

The cessation of mine water pumping would expose neighboring mines and lower lying areas to flooding. The pumping stations have some containment, but a prolonged ...

These handbooks are designed to provide mine operators, communities and regulators with essential information. They contain case studies to assist all sectors of the ...

The methodology developed includes three solutions: (1) the use of a water turbine in pipe systems where pressures are higher than necessary and pressure-reducing valves are ...

Presently, the pumping of the infiltrated waters is considered an important cost for the mines, with an average flow of 40 Mm3 per year. Before this, to optimize the use of the ...

The purpose of this paper is to examine the current practice of selection and optimization of mine pumping systems in order to achieve cost effective ground water control ...

The successful implementation of these strategies in daily operations should promote the coordinated and optimized management of available resources in real-time. ...

Purpose is to develop a unified mathematical model to assess energy efficiency of a water inflow-drainage process as the real variant of stochastic method for water pumping from underground ...

Full-text available . Jan 2015; A. Romero ... deferred pumping strategies if enough storage and pumping capacity is available ([3,6]). ... utility costs for the mine [65]. Complete energy ...

Request PDF | Cost-effective methods for automisation of a mine pumping systems to realise energy cost savings | The electricity supply constraints in South Africa necessitated ...

More than 150 GW of PSP capacity is installed worldwide in 2014. Other energy storage systems usually have less profitable business models or less mature technologies, but ...

Approximately 1.7 × 10 9 people live in regions where groundwater is being overexploited (Gleeson et al., 2012) and an estimated 4 × 10 9 people live in regions that are ...

The Demand Side Management initiative of Eskom has inspired Energy Service Companies in South Africa to launch energy management projects on large scale. The mi

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Full text access. Highlights o Energy storage systems are required to increase the share of renewable energy. ... Innovative technologies for sustainable post-mining solutions ...

The novelty of the paper is the analysis of the possibilities of reducing the operating costs of a mine water pumping station in an abandoned coal mine. To meet the energy needs of the ...

Full text access. Highlights o Optimal pumping reduces up to 25% of the energy consumption and carbon emissions. ... (storage risk management). This highly influences the ...

The review explores that pumped storage is the most suitable technology for small autonomous island grids and massive energy storage, where the energy efficiency of pumped storage ...

[Show full abstract] Pumping Hydro energy Storage (PHES) based on Pump-as-Turbines. The algorithm computes the optimal energy generation scheduling of the micro-grid, ...

The development of underground pumped storage plant using abandoned coal mine (UPSP-ACM) has a significance to abandoned coal mine resources utilization and ...

Underground spaces in coal mines can be used for water storage, energy storage and power generation and renewable energy development. In addition, the Chinese ...

The problem of heat damage in mines is becoming increasingly prominent, and the high-temperature environment underground, which seriously endangers the occupational health of miners, is highly ...

On May 14, 1968, the first PSPS in China was put into operation in Gangnan, Pingshan County, Hebei Province. It is a mixed PSPS. There is a pumped storage unit with the installed capacity ...

The possible energy savings for a pumping system is estimated through energy assessment and modelling of pumping system under different operating conditions [66,69]. In ...

The Asturian Central Coal Basin in northern Spain has been an exploited coal mining area for many decades and its network of tunnels extends among more than 30 mines.

the tailings storage perimeter as they are raised, making high facilities too costly. As a result, facility heights are limited, and tailings storage footprints grow ever larger. Source: ...

The purpose of this study was to do an energy cost optimisation on a specific complex mine pumping system by means of load shift. A Real-Time Energy Management System (REMS) ...

Full text of the mine pumping energy storage management measures

It was clear that the topic of energy consumption with 318 articles, had the largest number of articles under energy management, The articles were focused upon a wide range of ...

Recently, the NDRC and the NEA"s Opinions on Improving the System, Mechanism and Policy Measures for the Green and Low-carbon Energy Transformation clearly pointed out ...

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