

A universal ECCR planning optimization model is constructed to maximize annual economic benefits or carbon emission reduction. Using an industrial park in southern China as a case study, genetic algorithms are ...

Solar energy, which is regular in supply and has a minimal impact on the environment, ought to be used more efficiently by means of solar collectors. Sinhmar and Singh (2021) presented the latest indirect (solar collectors) and direct (photovoltaic) methods of capturing solar energy. They discuss types of solar dryers and the issues of heat energy ...

Energy saving and emission reduction efficiency are important ... and emission reduction efficiency of 11 energy-intensive industrial sectors in South Africa. Some scholars have used DEA models to measure and analyze the energy-saving and emission-reduction potential of China's provinces from different perspectives, and found that there are obvious regional ...

Trina Solar actively promotes sustainable manufacturing practices within the solar industry. The company ensures industrial carbon emission reduction by implementing these eco-friendly strategies and optimizing resource utilization.

This was done through industrial and energy innovations, strict norms and regulations, transition to renewable energy, energy conservation programs, participation in international agreements under the Kyoto Protocol, and increased awareness of climate change issues. This resulted in some reduction in the rate of increase in GHG emissions. However, ...

This paper proposes a framework to select and schedule equipment resources for energy-saving in a networked manufacturing environment for different stages of manufacturing. First, to increase energy efficiency in the customer orders demand stage, a fuzzy multi-objective decision-making model is developed. This model considers economy ...

A universal ECCR planning optimization model is constructed to maximize annual economic benefits or carbon emission reduction. Using an industrial park in southern China as a case study, genetic algorithms are utilized to solve the model and validate its feasibility.

The sustainable development and intelligent transformation of the manufacturing industry have become inevitable trends. As a typical example of the intelligent transformation, the networked manufacturing mode has been widely applied through sharing and utilizing manufacturing resources all over the world. Existing research on energy-saving use of ...

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Abstract. Energy audits can identify energy consumptions, energy costs of the facility and evolve to develop measures to maximize efficiency, optimize supply energy, and eliminate waste. This paper ...

To reach emission reduction goals, these policies may indirectly impact the industrial and energy structures. Although several mechanisms are not mutually exclusive, it is still unknown how ETS operates. We use China's CO₂ ETS pilot policy, which has the following benefits, to analyse the impact of the ETS. Encroachment and excessive particulate emissions ...

A "smart energy" approach is now an inevitable link to achieving energy conservation and emission reduction policies and ensuring sustainable development. Compared with traditional single-energy systems, smart energy systems emphasize coupling among heterogeneous energy systems. This high degree of coupling enables smart energy systems to ...

Heat and electricity from solar sources (medium to high-temperature solar thermal and photovoltaics) are two potential solutions for reducing CO₂ emission in the ...

In recent years, the production of renewable energy has increased continuously to reduce fossil fuel consumption and CO₂ emissions and to increase energy efficiency. The challenge of industries is to integrate ...

In order to generate the optimal emission reduction service strategy for the industrial park, this paper takes the solar CCHP system as the research object and focus on the problems of the traditional park energy supply system with large carbon emissions and...

Boosting manufacturing efficiency through energy optimization and renewable energy utilization: Strategic inclusion of energy-efficient equipment, renewable energy, and the electrification of manufacturing fleets--including electric ...

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