

Can a Chinese solar greenhouse maximize solar energy utilization?

Given the aging of greenhouse facility, there is a need for investigating the transformation of existing greenhouses to maximize solar energy utilization. In this study, Chinese solar greenhouse (CSG) in the Beijing area served as an optimized prototype. A mathematical model was established to determine the range of CSG vertex positions.

Are there solar thermal greenhouses in China?

There are also some other solar thermal greenhouses that have been applied in China's Beijing, Gansu, Xizang, etc. These greenhouses utilize heat-absorbing solar collectors accessed with circulation tubes to heat water for night space heating purpose.

Are China's solar greenhouses a good investment?

A promising prospect is shown by China's modern solar greenhouses at present levels of performances and costs exemplified by the photovoltaic (PV) greenhouses with a practicable payback period of less than 9 years.

What is the economic evaluation of solar greenhouses in China?

3.2. Economic evaluation The economic evaluation including the cost, operating income and the payback time of the combined agriculture and solar system sectors is conducted to assess the potential of the application of modern solar greenhouses in China.

Can Chinese solar greenhouses be repaid in 1.6 years?

The cost of optimizing Chinese solar greenhouse can be repaid in 1.6 years. The proposed framework can be applied to solar greenhouses at any latitude. Given the aging of greenhouse facility, there is a need for investigating the transformation of existing greenhouses to maximize solar energy utilization.

Why is solar greenhouse important in China's protected cultivation history?

Conclusion Modern solar greenhouse is an important initiative in China's protected cultivation history for its benefits in energy saving, pollution reduction, and comprehensive competitiveness of modern agriculture improvement, especially in this low carbon production era.

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The first 100Megawatt solar plant opened in China in December 2018 China has more solar energy capacity than any other country China met its 2020 target for solar energy ...

Meanwhile, energy delivery is a critical input to the effective operation of modern greenhouses. In a literature survey of greenhouses in different countries by Hassanien et al. ...

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