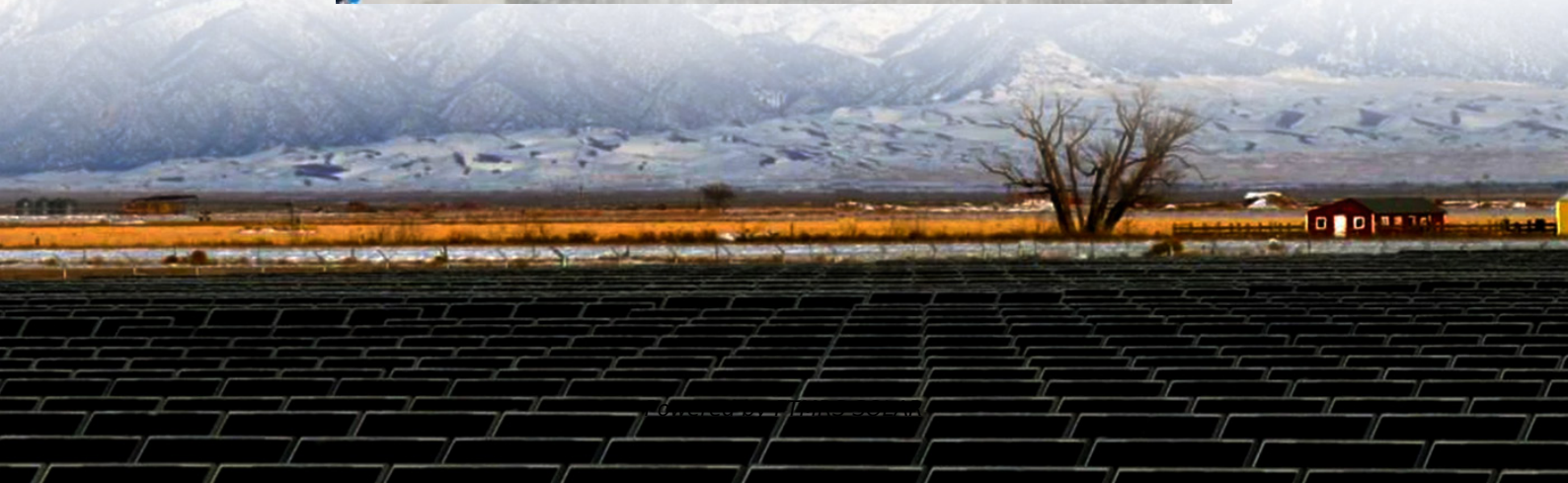


# **Intelligent photovoltaic container for port terminals and terminals**





## Overview

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What is integrated energy system in a sustainable port?

This study focuses on an integrated energy system that involves wind energy, photovoltaic energy, hydrogen energy and energy storage in the sustainable port. The multiple energy sources are used to generate electricity to support container loading and unloading in vessels.

Which energy is used to generate electricity in a port integrated energy system?

In the port integrated energy system, wind energy and photovoltaic energy are used to generate electricity. In addition, wind energy and photovoltaic energy are used to produce hydrogen energy that is further used to generate electricity. Then, we describe the electricity generation from wind energy, photovoltaic energy, and hydrogen energy.

Does a port's energy system integrate wind and photovoltaic?

This paper studies a port's energy system integrating wind, photovoltaic, hydrogen energy. A two-stage model is formulated to incorporate uncertain demand, and electricity storage and sales. An adaptive large neighborhood search based metaheuristic is designed. Experiments are conducted to validate the proposed methodology and derive insights.

Does integrated energy scheduling for port operations consider uncertain container loads?

**Conclusions** This study investigates an integrated energy scheduling for port operations that considers the uncertain container loads in vessels. For the problem, the integrated energy system involving wind, photovoltaic, and hydrogen energy is introduced to generate electricity for the demand from vessels and handling equipment.



## Intelligent photovoltaic container for port terminals and terminals

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Design and operational control methodology for large-scale photovoltaic

May 7, 2024 · Due to the complex-shading and ununiform-corrosion problems caused by the oceanic climate, the working conditions of photovoltaic (PV) system in port are poor. In this ...

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### PT38-15 dd

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