

Introduction to the Energy Internet



Overview

Energy Internet integrates small-scale renewable energy systems, electric loads, storage devices, and electric vehicles for effective transaction of power backed by emerging technologies such as Internet of Things, vehicle-to-grid, and blockchain. The Internet of Energy (IoE) or Energy Internet is a futuristic evolution of the electricity system, conceptualized as an energy-sharing network. Since it was proposed, EI has been discussed and applied to many technical works in power and energy areas. Its features, such as plug-and-play mechanism, real-time bidirectional flow of energy, information, and money can lead to significant benefits and innovation in electricity production and. This chapter presents the development of the Energy Internet throughout the history as an evolutionary solution based on modern technological development and needs, with the respect of its architecture, key features, and key concepts, such as energy router, prosumer, and virtual power plant.



Article Content

Mar 30, 2026

Energy Internet

As an integration of energy technology and information communication technology, "Energy Internet" is the new driving force for global development of clean and efficient energy

Jan 16, 2026

Energy Internet: Redefinition and categories

1 INTRODUCTION After it was proposed nearly two decades ago, 1, 2 Energy Internet (EI) was consistently analysed, studied, and applied by many

May 03, 2026

Energy Internet: The business perspective

Energy Internet is the innovative representation of energy systems in the fourth development stage. We also introduce some key concepts in Energy Internet, including prosumer,

Dec 05, 2025

Energy internet

INTRODUCTION Energy Internet, sponsored by Chinese Society for Electrical Engineering (CSEE), and published by China Electric Power Research Institute

Aug 13, 2025

The Energy Internet

Integrating renewable energy with Internet connectivity can help to sustain economic development and reduce poverty without fueling a climate catastrophe.

Nov 24, 2025

What is Energy Internet? Concepts, Technologies, and Future Directions

The climate change crisis, exacerbated by the global dependency of fossil fuels, has brought significant challenges. In the medium to long term, extensive renewable-energy-based electrification is

Jan 01, 2026

Overview of Energy Internet | Springer Nature Link

In the 1970s, the concept of Energy Internet began to emerge. In 1986, Peter Meisen founded the Global Energy Network Institute, aiming to fully utilize renewable resources on a global

Dec 18, 2025

A comprehensive review of Energy Internet: basic concept ...

In this paper, the basic concept and characteristics of the Energy Internet are summarized, and its basic structural framework is analyzed in detail.

Oct 27, 2025

Energy Internet: Architecture, Emerging Technologies, and Security ...

This chapter aims to present an overview of recent research related to the concept of Energy Internet, to assess their maturity for implementation in real networks, and to identify gaps and directions for

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Construction of energy internet technology architecture based on ...

Based on electrical power systems, leveraging renewable energy generation technology, and information technology, the energy internet fuses power grids, gas networks, heat/cold supply

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The basics of internet of energy (IoE) Global electricity consumption as well as demand is increasing day by day due to the rapid pace of urbanization

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This article deals with a thorough investigation of the energy internet towards future emerging technologies for energy distribution and management to

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Energy Internet: Redefinition and categories

In this paper, we propose the redefinition of EI, based on a comprehensive literature review, some latest trends and driving forces in the global energy industry, as well as its development in the past decade.

Mar 21, 2026

Energy Internet: Redefinition and categories | Energy Internet

The concept of "Energy Internet" (EI) has been widely accepted by both academic and industry experts after more than a decade of development. Since it was proposed, EI has been discussed and applied

Nov 20, 2025

Internet of Energy

The use of the IoT devices, such as the smart sensors and communication technologies in the energy industry, is to create the Internet of Energy to manage energy generation and energy resources.

May 16, 2026

What is Energy Internet? Concepts, Technologies, and

To realize renewable-energy-based electrification goals, a new concept-the Energy Internet (EI)-has been proposed, inspired by the most recent advances in information and

May 24, 2026

Energy Internet, the Future Electricity System:

First, a comprehensive overview of Energy Internet is presented along with its aptness as a future evolution of electricity system. Second,

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Energy Internet: Systems and Applications | Springer

This textbook provides an ideal resource for students in advanced graduate-level courses and special topics in energy, information and control systems. It

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Development and Prospect of Key Technologies of Energy Internet ...

Firstly, the essential concept and main features of the energy Internet are expounded. Secondly, according to the basic framework of the Energy Internet and the key technologies of the

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Energy Internet, the Future Electricity System:

Energy Internet, a futuristic evolution of electricity system, is conceptualized as an energy sharing network. Its features, such as plug-and-play

Apr 08, 2026

A comprehensive review of Energy Internet: basic concept, operation

With the intensifying energy crisis and environmental pollution, the Energy Internet and corresponding patterns of energy use have been attracting more and more attention. In this paper, the basic

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Energy Internet: A Novel Green Roadmap for Meeting the Global Energy ...

Energy Internet has caught an attention of the global academic community, and it is being implemented actively. This paper describes the basic features and the key structure of Energy Internet, proposes a

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