First Solar

Challenge Introduction

MIT Energy & Climate Hack
Nov 10-12, 2023

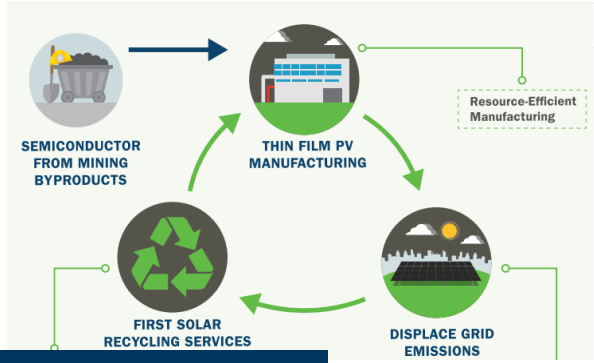
Learn more about
First Solar at firstsolar.com

First Solar

LEADING THE WORLD'S
SUSTAINABLE ENERGY FUTURE

First Solar at a Glance

Leading the World's Sustainable Energy Future

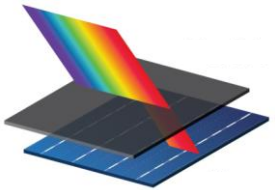


Manufacturing

Sustainable

Thin-Film

Utility-Scale



First Solar Overview

50GW+ PV Deployment since 1999

25GW Annual Production by 2026

40%+ US Utility-Scale Market Share

$1.5B+ Investment in R&D

>45 Countries with First Solar projects

90%+ Recycling Recovery Rate

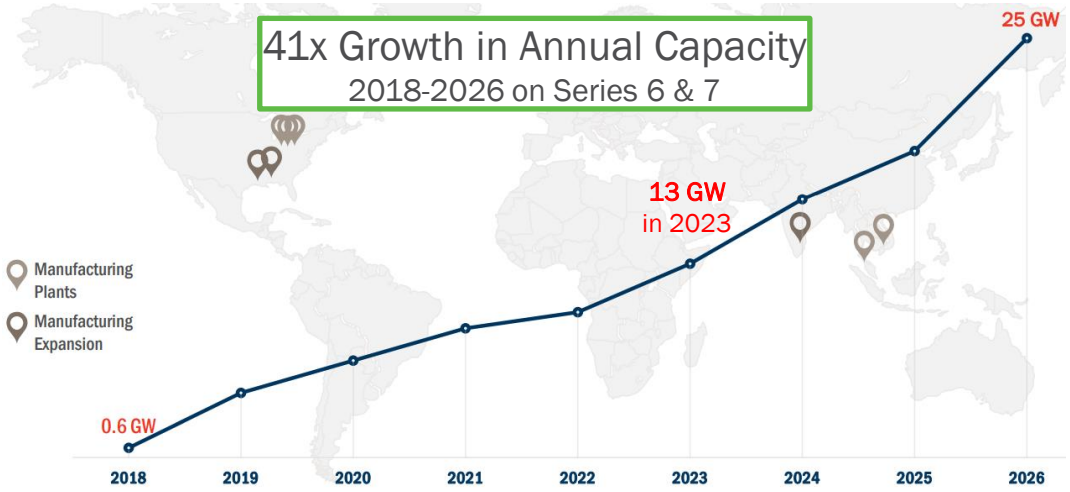
4x Lower Carbon & Water Footprint

3µm CdTe semiconductor thickness

The largest solar manufacturer in the Western Hemisphere
- Committed to 14GW capacity in the US, 25GW globally by '26

Supplying the World's largest PV projects with Responsible Solar
- Semiconductor made from waste products, fully recyclable

Fully vertically-integrated manufacturer of CdTe thin-film panels
- Produced in <4hrs using AI to improve quality & throughput



Trends, Challenges, and Opportunities

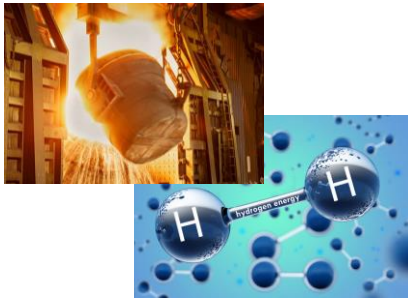
Large-scale solar sits at the nexus of many diverse climate issues

Geopolitics

- National energy security
- Inflation Reduction Act
- US Import Restrictions
  - UFLPA, AD/CVD, S.201
- Domestic manufacturing in the US, India, EU, and other non-China regions

Electrification

- Meeting increased electricity demand
- Cloud Computing
- Artificial Intelligence
- Blockchain/Crypto
- Electric Vehicles
- Electrified Appliances



Industry

- Decarbonizing steel, glass, heavy industry
- Green Hydrogen
- Ammonia & SAFs
- Direct Air Capture
- Water Desalination
- Waste-to-Energy

Additional Areas

- Extreme weather events
- Robotics & automation in solar installation
- Energy equity & justice
- Performance predictions with a changing climate
- Interconnection delays

First Solar Challenge Question

How can AI drive the solar industry forward and help lead a sustainable energy future through analysis of the past, evaluation of the present, and predictions for the future?

First Solar Suggested Topics

- Suggested topics can include, but are not limited to:
  - **Summarization of large amounts of industry data**, commodity costs, and price forecasts to provide dynamic market intelligence insights for improved decision-making
  - **Predicting solar/electricity demand** based on load forecasts & industry/population development
  - **Derive success/failure metrics** of existing & past solar companies based on public financials & reports, investments, capacity expansion, and the background of the global market at the time
  - **Forecasting extreme weather and solar panel degradation risks** to solar asset performance
  - **Review & recommendation of domestic/global policy** to improve solar installations, manufacturing capacity, cost, market demand, and time to deploy.
  - **Ensuring energy equity** and justice at the core of the clean energy transition
  - **Automating interconnection queue evaluation** and approval to enable faster solar deployment
  - **Modeling solar/battery dispatch** to optimize projects based on time-of-day/demand pricing
  - **Additional hardware or software services** that complement the solar panel in a project

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