

Global Thin-Film Solar Cell Market Size study & Forecast, by Type (Cadmium Telluride, Amorphous Thin-film Silicon, Copper Indium Gallium Selenide, Microcrystalline Tandem Cells, Thin-film Polycrystalline Silicon, Others), by Technology (On-grid, Off-grid), by Application (Residential, Commercial, Utility) and Regional Analysis, 2023-2030

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Abstracts

Global Thin-Film Solar Cell Market is valued at approximately USD 14.7 billion in 2022 and is anticipated to grow with a healthy growth rate of more than 10% over the forecast period 2023-2030. A thin-film solar cell is designed to convert light energy into electrical energy and consists of thin layers of light-absorbing material deposited on a flexible substrate. These solar cells are combined to create solar panels, forming a photovoltaic system that generates solar power by harnessing sunlight. The Thin-Film Solar Cell market is expanding because of factors such as high electricity demand and rising adoption of renewable energy. Moreover, the thin film solar cells market is expected to experience accelerated growth due to the rising demand for electricity, particularly from rural areas in developing countries. Additionally, regulatory measures aimed at energy conservation may further drive the market forward. Its importance has progressively increased during the forecast period of 2022-2030.

According to the Statista in 2023, Global electricity consumption has steadily increased over the past 50 years, reaching around 25,300 terawatt-hours in 2021. China stands out as the largest consumer of electricity worldwide, with consumption exceeding 7.8 terawatt hours in 2021. The global thin film solar cells market is being driven by factors such as growing awareness, emphasis on promoting green energy, and an increase in energy consumption. As per The International Energy Agency's 2021 report, the

utilization of renewable energy usage witnessed a 3% increase in 2020, primarily driven by a nearly 7% growth in electricity generation from renewable sources. Furthermore, it is projected that renewable electricity generation will expand by over 8% in 2021, reaching a total of 8,300 TWh. In addition, increasing environmental awareness and technological advancement in thin film solar cells would create lucrative growth opportunities. However, Lower productivity and high initial costs stifle market growth throughout the forecast period of 2023-2030.

The key regions considered for the Global Thin-Film Solar Cell Market study includes Asia Pacific, North America, Europe, Latin America, and Middle East & Africa. The Asia-Pacific dominated the market in 2021, due to increased investments from both public and private sectors. This rise in demand can be attributed to the region's rapid urbanization and industrialization, prompting the need for reliable and sufficient power infrastructure. The Asia-Pacific region is also the fastest-growing region during the forecast period owing to the factors such as growing emphasis on renewable energy adoption, favorable government policies and incentives, rising demand for electricity in emerging economies, technological advancements, and increased investments in research and development.

Major market player included in this report are:

First Solar Inc.

Kaneka Corporation

Solar Frontier K.K.

Solo Power Systems, Inc.

Fujikura Europe Ltd.

Pecell Technologies, Inc.

Sharp Corporation

Sony Corporation

SunPower Corporation

Tata Power Solar Systems Ltd.

Recent Developments in the Market:

In February 2023, IIT Madras Research Park and First Solar, a manufacturer based in the United States, have formed a research and development agreement. The primary focus of this agreement is to localize thin-film solar technology and promote the adoption of advanced photovoltaic (PV) technology arrays in India. The collaboration aims to facilitate the delivery of next-generation PV technology solutions specifically tailored for the Indian market.

In February 2023, at their Tal Tech laboratory, Thin Films Chemical Technologies launched the 5GSolar Project, aimed at advancing the manufacturing of next-generation photovoltaic systems within Europe. The project aims to foster the production of advanced photovoltaic technologies in the European region.

Global Thin-Film Solar Cell Market Report Scope:

Historical Data – 2020 - 2021

Base Year for Estimation – 2022

Forecast period - 2023-2030

Report Coverage - Revenue forecast, Company Ranking, Competitive Landscape, Growth factors, and Trends

Segments Covered – Type, Technology, Application, Region

Regional Scope - North America; Europe; Asia Pacific; Latin America; Middle East & Africa

Customization Scope - Free report customization (equivalent up to 8 analyst's working hours) with purchase. Addition or alteration to country, regional & segment scope*

The objective of the study is to define market sizes of different segments & countries in recent years and to forecast the values to the coming years. The report is designed to incorporate both qualitative and quantitative aspects of the industry within countries involved in the study.

The report also caters detailed information about the crucial aspects such as driving factors & challenges which will define the future growth of the market. Additionally, it also incorporates potential opportunities in micro markets for stakeholders to invest along with the detailed analysis of competitive landscape and product offerings of key players. The detailed segments and sub-segment of the market are explained below:

By Type:

Cadmium Telluride

Amorphous Thin-film Silicon

Copper Indium Gallium Selenide

Microcrystalline Tandem Cells

Thin-film Polycrystalline Silicon

Others

By Technology:

On-grid

Off-grid

By Application:

Residential
Commercial
Utility

By Region:

North America
U.S.
Canada

Europe
UK
Germany
France
Spain
Italy
ROE

Asia Pacific
China
India
Japan
Australia
South Korea
RoAPAC

Latin America
Brazil
Mexico

Middle East & Africa
Saudi Arabia
South Africa
Rest of Middle East & Africa

Contents

CHAPTER 1. EXECUTIVE SUMMARY

- 1.1. Market Snapshot
- 1.2. Global & Segmental Market Estimates & Forecasts, 2020-2030 (USD Billion)
 - 1.2.1. Thin-Film Solar Cell Market, by Region, 2020-2030 (USD Billion)
 - 1.2.2. Thin-Film Solar Cell Market, by Type, 2020-2030 (USD Billion)
 - 1.2.3. Thin-Film Solar Cell Market, by Technology, 2020-2030 (USD Billion)
 - 1.2.4. Thin-Film Solar Cell Market, by Application, 2020-2030 (USD Billion)
- 1.3. Key Trends
- 1.4. Estimation Methodology
- 1.5. Research Assumption

CHAPTER 2. GLOBAL THIN-FILM SOLAR CELL MARKET DEFINITION AND SCOPE

- 2.1. Objective of the Study
- 2.2. Market Definition & Scope
 - 2.2.1. Industry Evolution
 - 2.2.2. Scope of the Study
- 2.3. Years Considered for the Study
- 2.4. Currency Conversion Rates

CHAPTER 3. GLOBAL THIN-FILM SOLAR CELL MARKET DYNAMICS

- 3.1. Thin-Film Solar Cell Market Impact Analysis (2020-2030)
 - 3.1.1. Market Drivers
 - 3.1.1.1. High electricity demand
 - 3.1.1.2. Rising adoption of renewable energy
 - 3.1.2. Market Challenges
 - 3.1.2.1. Lower productivity
 - 3.1.2.2. High initial cost of Thin-Film Solar Cell
 - 3.1.3. Market Opportunities
 - 3.1.3.1. Increasing environmental awareness
 - 3.1.3.2. Technological advancement in thin film solar cell

CHAPTER 4. GLOBAL THIN-FILM SOLAR CELL MARKET INDUSTRY ANALYSIS

- 4.1. Porter's 5 Force Model
 - 4.1.1. Bargaining Power of Suppliers
 - 4.1.2. Bargaining Power of Buyers
 - 4.1.3. Threat of New Entrants
 - 4.1.4. Threat of Substitutes
 - 4.1.5. Competitive Rivalry
- 4.2. Porter's 5 Force Impact Analysis
- 4.3. PEST Analysis
 - 4.3.1. Political
 - 4.3.2. Economical
 - 4.3.3. Social
 - 4.3.4. Technological
 - 4.3.5. Environmental
 - 4.3.6. Legal
- 4.4. Top investment opportunity
- 4.5. Top winning strategies
- 4.6. COVID-19 Impact Analysis
- 4.7. Disruptive Trends
- 4.8. Industry Expert Perspective
- 4.9. Analyst Recommendation & Conclusion

CHAPTER 5. GLOBAL THIN-FILM SOLAR CELL MARKET, BY TYPE

- 5.1. Market Snapshot
- 5.2. Global Thin-Film Solar Cell Market by Type, Performance - Potential Analysis
- 5.3. Global Thin-Film Solar Cell Market Estimates & Forecasts by Type 2020-2030 (USD Billion)
- 5.4. Thin-Film Solar Cell Market, Sub Segment Analysis
 - 5.4.1. Cadmium Telluride
 - 5.4.2. Amorphous Thin-film Silicon
 - 5.4.3. Copper Indium Gallium Selenide
 - 5.4.4. Microcrystalline Tandem Cells
 - 5.4.5. Thin-film Polycrystalline Silicon
 - 5.4.6. Others

CHAPTER 6. GLOBAL THIN-FILM SOLAR CELL MARKET, BY TECHNOLOGY

- 6.1. Market Snapshot
- 6.2. Global Thin-Film Solar Cell Market by Technology, Performance - Potential

Analysis

6.3. Global Thin-Film Solar Cell Market Estimates & Forecasts by Technology
2020-2030 (USD Billion)

6.4. Thin-Film Solar Cell Market, Sub Segment Analysis

6.4.1. On-grid

6.4.2. Off-grid

CHAPTER 7. GLOBAL THIN-FILM SOLAR CELL MARKET, BY APPLICATION

7.1. Market Snapshot

7.2. Global Thin-Film Solar Cell Market by Application, Performance - Potential Analysis

7.3. Global Thin-Film Solar Cell Market Estimates & Forecasts by Application
2020-2030 (USD Billion)

7.4. Thin-Film Solar Cell Market, Sub Segment Analysis

7.4.1. Residential

7.4.2. Commercial

7.4.3. Utility

CHAPTER 8. GLOBAL THIN-FILM SOLAR CELL MARKET, REGIONAL ANALYSIS

8.1. Top Leading Countries

8.2. Top Emerging Countries

8.3. Thin-Film Solar Cell Market, Regional Market Snapshot

8.4. North America Thin-Film Solar Cell Market

8.4.1. U.S. Thin-Film Solar Cell Market

8.4.1.1. Type breakdown estimates & forecasts, 2020-2030

8.4.1.2. Technology breakdown estimates & forecasts, 2020-2030

8.4.1.3. Application breakdown estimates & forecasts, 2020-2030

8.4.2. Canada Thin-Film Solar Cell Market

8.5. Europe Thin-Film Solar Cell Market Snapshot

8.5.1. U.K. Thin-Film Solar Cell Market

8.5.2. Germany Thin-Film Solar Cell Market

8.5.3. France Thin-Film Solar Cell Market

8.5.4. Spain Thin-Film Solar Cell Market

8.5.5. Italy Thin-Film Solar Cell Market

8.5.6. Rest of Europe Thin-Film Solar Cell Market

8.6. Asia-Pacific Thin-Film Solar Cell Market Snapshot

8.6.1. China Thin-Film Solar Cell Market

8.6.2. India Thin-Film Solar Cell Market

- 8.6.3. Japan Thin-Film Solar Cell Market
- 8.6.4. Australia Thin-Film Solar Cell Market
- 8.6.5. South Korea Thin-Film Solar Cell Market
- 8.6.6. Rest of Asia Pacific Thin-Film Solar Cell Market
- 8.7. Latin America Thin-Film Solar Cell Market Snapshot
 - 8.7.1. Brazil Thin-Film Solar Cell Market
 - 8.7.2. Mexico Thin-Film Solar Cell Market
- 8.8. Middle East & Africa Thin-Film Solar Cell Market
 - 8.8.1. Saudi Arabia Thin-Film Solar Cell Market
 - 8.8.2. South Africa Thin-Film Solar Cell Market
 - 8.8.3. Rest of Middle East & Africa Thin-Film Solar Cell Market

CHAPTER 9. COMPETITIVE INTELLIGENCE

- 9.1. Key Company SWOT Analysis
 - 9.1.1. Company
 - 9.1.2. Company
 - 9.1.3. Company
- 9.2. Top Market Strategies
- 9.3. Company Profiles
 - 9.3.1. First Solar Inc.
 - 9.3.1.1. Key Information
 - 9.3.1.2. Overview
 - 9.3.1.3. Financial (Subject to Data Availability)
 - 9.3.1.4. Product Summary
 - 9.3.1.5. Recent Developments
 - 9.3.2. Kaneka Corporation
 - 9.3.3. Solar Frontier K.K.
 - 9.3.4. Solo Power Systems, Inc.
 - 9.3.5. Fujikura Europe Ltd.
 - 9.3.6. Peccell Technologies, Inc.
 - 9.3.7. Sharp Corporation
 - 9.3.8. Sony Corporation
 - 9.3.9. SunPower Corporation
 - 9.3.10. Tata Power Solar Systems Ltd.

CHAPTER 10. RESEARCH PROCESS

- 10.1. Research Process

- 10.1.1. Data Mining
- 10.1.2. Analysis
- 10.1.3. Market Estimation
- 10.1.4. Validation
- 10.1.5. Publishing
- 10.2. Research Attributes
- 10.3. Research Assumption

List Of Tables

LIST OF TABLES

TABLE 1. Global Thin-Film Solar Cell Market, report scope

TABLE 2. Global Thin-Film Solar Cell Market estimates & forecasts by Region
2020-2030 (USD Billion)

TABLE 3. Global Thin-Film Solar Cell Market estimates & forecasts by Type 2020-2030
(USD Billion)

TABLE 4. Global Thin-Film Solar Cell Market estimates & forecasts by Technology
2020-2030 (USD Billion)

TABLE 5. Global Thin-Film Solar Cell Market estimates & forecasts by Application
2020-2030 (USD Billion)

TABLE 6. Global Thin-Film Solar Cell Market by segment, estimates & forecasts,
2020-2030 (USD Billion)

TABLE 7. Global Thin-Film Solar Cell Market by region, estimates & forecasts,
2020-2030 (USD Billion)

TABLE 8. Global Thin-Film Solar Cell Market by segment, estimates & forecasts,
2020-2030 (USD Billion)

TABLE 9. Global Thin-Film Solar Cell Market by region, estimates & forecasts,
2020-2030 (USD Billion)

TABLE 10. Global Thin-Film Solar Cell Market by segment, estimates & forecasts,
2020-2030 (USD Billion)

TABLE 11. Global Thin-Film Solar Cell Market by region, estimates & forecasts,
2020-2030 (USD Billion)

TABLE 12. Global Thin-Film Solar Cell Market by segment, estimates & forecasts,
2020-2030 (USD Billion)

TABLE 13. Global Thin-Film Solar Cell Market by region, estimates & forecasts,
2020-2030 (USD Billion)

TABLE 14. Global Thin-Film Solar Cell Market by segment, estimates & forecasts,
2020-2030 (USD Billion)

TABLE 15. Global Thin-Film Solar Cell Market by region, estimates & forecasts,
2020-2030 (USD Billion)

TABLE 16. U.S. Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD
Billion)

TABLE 17. U.S. Thin-Film Solar Cell Market estimates & forecasts by segment
2020-2030 (USD Billion)

TABLE 18. U.S. Thin-Film Solar Cell Market estimates & forecasts by segment
2020-2030 (USD Billion)

TABLE 19. Canada Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 20. Canada Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 21. Canada Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 22. UK Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 23. UK Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 24. UK Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 25. Germany Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 26. Germany Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 27. Germany Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 28. France Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 29. France Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 30. France Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 31. Italy Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 32. Italy Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 33. Italy Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 34. Spain Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 35. Spain Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 36. Spain Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 37. RoE Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 38. RoE Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 39. RoE Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 40. China Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 41. China Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 42. China Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 43. India Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 44. India Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 45. India Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 46. Japan Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 47. Japan Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 48. Japan Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 49. South Korea Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 50. South Korea Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 51. South Korea Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 52. Australia Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 53. Australia Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 54. Australia Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 55. RoAPAC Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 56. RoAPAC Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 57. RoAPAC Thin-Film Solar Cell Market estimates & forecasts by segment

2020-2030 (USD Billion)

TABLE 58. Brazil Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 59. Brazil Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 60. Brazil Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 61. Mexico Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 62. Mexico Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 63. Mexico Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 64. RoLA Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 65. RoLA Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 66. RoLA Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 67. Saudi Arabia Thin-Film Solar Cell Market estimates & forecasts, 2020-2030 (USD Billion)

TABLE 68. South Africa Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 69. RoMEA Thin-Film Solar Cell Market estimates & forecasts by segment 2020-2030 (USD Billion)

TABLE 70. List of secondary sources, used in the study of global Thin-Film Solar Cell Market

TABLE 71. List of primary sources, used in the study of global Thin-Film Solar Cell Market

TABLE 72. Years considered for the study

TABLE 73. Exchange rates considered

List of tables and figures are dummy in nature, final lists may vary in the final deliverable

List Of Figures

LIST OF FIGURES

- FIG 1. Global Thin-Film Solar Cell Market, research methodology
 - FIG 2. Global Thin-Film Solar Cell Market, Market estimation techniques
 - FIG 3. Global Market size estimates & forecast methods
 - FIG 4. Global Thin-Film Solar Cell Market, key trends 2022
 - FIG 5. Global Thin-Film Solar Cell Market, growth prospects 2023-2030
 - FIG 6. Global Thin-Film Solar Cell Market, porters 5 force model
 - FIG 7. Global Thin-Film Solar Cell Market, pest analysis
 - FIG 8. Global Thin-Film Solar Cell Market, value chain analysis
 - FIG 9. Global Thin-Film Solar Cell Market by segment, 2020 & 2030 (USD Billion)
 - FIG 10. Global Thin-Film Solar Cell Market by segment, 2020 & 2030 (USD Billion)
 - FIG 11. Global Thin-Film Solar Cell Market by segment, 2020 & 2030 (USD Billion)
 - FIG 12. Global Thin-Film Solar Cell Market by segment, 2020 & 2030 (USD Billion)
 - FIG 13. Global Thin-Film Solar Cell Market by segment, 2020 & 2030 (USD Billion)
 - FIG 14. Global Thin-Film Solar Cell Market, regional snapshot 2020 & 2030
 - FIG 15. North America Thin-Film Solar Cell Market 2020 & 2030 (USD Billion)
 - FIG 16. Europe Thin-Film Solar Cell Market 2020 & 2030 (USD Billion)
 - FIG 17. Asia pacific Thin-Film Solar Cell Market 2020 & 2030 (USD Billion)
 - FIG 18. Latin America Thin-Film Solar Cell Market 2020 & 2030 (USD Billion)
 - FIG 19. Middle East & Africa Thin-Film Solar Cell Market 2020 & 2030 (USD Billion)
- List of tables and figures are dummy in nature, final lists may vary in the final deliverable

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