

Solid Oxide Fuel Cell Market by Type (Planar, Tubular), Component (Stack, BOP), Application (Stationary, Portable, Transport), End User (Commercial & Industrial, Data Centers, Military & Defense, Residential) & Region - Global Trends & Forecasts to 2028

<https://marketpublishers.com/r/SD06B7D1908EN.html>

Date: October 2023

Pages: 232

Price: US\$ 4,950.00 (Single User License)

ID: SD06B7D1908EN

Abstracts

The global solid oxide fuel cell market is estimated to grow from USD 1.4 Billion in 2023 to USD 5.4 Billion by 2028; it is expected to record a CAGR of 31.0% during the forecast period. The growth of the solid oxide fuel cell market is attributed to the increasing demand for reliable and uninterrupted power supply serves as a significant driver for solid oxide fuel cell. Also, increasing demand for decentralized power generation in industries such as data centers, manufacturing, and grid support requires higher power capacities that can be efficiently met by large-scale fuel cell systems.

“Planar Solid oxide fuel cell: The largest segment of the solid oxide fuel cell market, by type “

Based on type, the solid oxide fuel cell market has been split into two types: planar and tubular. The planar solid oxide fuel cell segment is expected to be the largest segment during the forecast period. Planar solid oxide fuel cellers account for a greater share of the total solid oxide fuel cell market due to use of simple geometry and relatively easier construction process. The growth in the planar solid oxide fuel cell market is attributed to the low cost and the wide area of its application. Japan is the major residential industry in terms of production and deployment of solid oxide fuel cell, thus there is significant demand of planar solid oxide fuel cell.

“Transport segment is expected to be the fastest growing segment during forecast period based on portability”

By application, the solid oxide fuel cell market has been segmented into stationary, transport and portable. The stationary segment is expected to lead the solid oxide fuel cell market during the forecast period owing to increasing demand for primary power sources from data centers and commercial & industrial sector. Additionally, Hydrogen solid oxide fuel cells produce electricity through the electrochemical reaction of hydrogen and oxygen, with the only byproduct being water vapor. Hydrogen solid oxide fuel cells have zero greenhouse gas emissions and do not contribute to air pollution, making them a clean and environmentally friendly energy source.

“By end user, the commercial & industrial segment is expected to be the largest segment during the forecast period.”

Based on end user, the solid oxide fuel cell market is segmented into commercial & industrial, residential, data centers and military & defense. The residential segment is expected to be the second largest segment the solid oxide fuel cell market during the forecast period owing to the rising need for energy reduction and energy efficiency in residential areas. Electricity demand in the residential sector tends to be highest on hot summer afternoons due to increased use of air conditioners, followed by evenings when lights are turned on. SOFCs are generally used for power generation in homes.

North America is expected to be the second-largest region in the solid oxide fuel cell market

North America is expected to be the second-largest solid oxide fuel cell market during the forecast period. The region has been at the forefront of sustainability initiatives, with strong commitments to reducing greenhouse gas emissions and transitioning to clean energy sources. Solid Oxide Fuel Cell, offering low-emission and zero-pollution power generation, align perfectly with these environmental goals. Additionally, North America has established a favorable policy and regulatory framework to promote the development and deployment of fuel cell technology. Supportive measures such as financial incentives, grants, and research funding have spurred innovation and investments in the fuel cell sector.

Breakdown of Primaries:

In-depth interviews have been conducted with various key industry participants, subject-

matter experts, C-level executives of key market players, and industry consultants, among other experts, to obtain and verify critical qualitative and quantitative information and assess future market prospects. The distribution of primary interviews is as follows:

By Company Type: Tier 1- 65%, Tier 2- 24%, and Tier 3- 11%

By Designation: C-Level- 30%, Director Levels- 25%, and Others- 45%

By Region: North America- 27%, Europe- 20%, Asia-Pacific - 53%

Note: Others include sales managers, engineers, and regional managers.

Note: The tiers of the companies are defined on the basis of their total revenues as of 2022. Tier 1: > USD 1 billion, Tier 2: From USD 500 million to USD 1 billion, and Tier 3: The solid oxide fuel cell market is dominated by a few major players that have a wide regional presence. The leading players in the solid oxide fuel cell market are Bloom Energy (US), AISIN CORPORATION (Japan), KYOCERA Corporation (Japan), MITSUBISHI HEAVY INDUSTRIES, LTD. (Japan), and MIURA CO., LTD. (Japan). The major strategy adopted by the players includes new product launches, contracts & agreements and, investments & expansions.

Research Coverage:

The report defines, describes, and forecasts the global solid oxide fuel cell market by type, portability, application, and region. It also offers a detailed qualitative and quantitative analysis of the market. The report comprehensively reviews the major market drivers, restraints, opportunities, and challenges. It also covers various important aspects of the market. These include an analysis of the competitive landscape, market dynamics, market estimates in terms of value, and future trends in the solid oxide fuel cell market.

Key Benefits of Buying the Report

The solid oxide fuel cell market has experienced significant development and growth in recent years. The increasing demand for portable power solutions, driven by factors such as outdoor recreational activities, emergency preparedness, and the need for reliable off-grid power, has propelled the market forward. Key market players have been actively engaged in product development, introducing innovative features such as higher power capacities,

improved portability, faster charging, integration with renewable energy sources, advanced control systems, connectivity options, and enhanced safety features. Additionally, the market has witnessed the expansion of product offerings with varying size, catering to different end-use requirements.

Product Development/ Innovation: Manufacturers in the solid oxide fuel cell market actively engage in product development and innovation to enhance the capabilities of their offerings. They focus on increasing power capacity through advancements in battery technology, improving portability by reducing weight and refining the form factor, and enabling faster charging through enhanced charging efficiency. Integration of renewable energy sources, such as solar panels, is a key area of innovation, along with the development of advanced control and monitoring systems for better user control and visibility.

Market Development: The solid oxide fuel cell market offers substantial growth opportunities driven by several factors. Primarily, the increasing global focus on sustainability and the transition towards cleaner energy sources have created a favorable environment for fuel cell technology. Solid oxide fuel cell offer low-emission and zero-pollution power generation, aligning with environmental goals and regulations. Secondly, advancements in fuel cell technology, such as improved efficiency, durability, and cost-effectiveness, have enhanced their performance and made them more attractive for various applications. These technological developments have expanded the market potential for solid oxide fuel cell in sectors such as transportation, residential, commercial, and industrial. Additionally, government support through incentives, policies, and funding programs further accelerates the adoption of solid oxide fuel cell.

Market Diversification: Doosan Fuel Cell and the government of South Australia have entered into an agreement that encompasses several key areas of collaboration. The agreement involves the exchange of equipment and expertise to facilitate the production of environmentally friendly hydrogen and its derivatives.

Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players like Bloom Energy (US), AISIN CORPORATION (Japan), KYOCERA Corporation (Japan), MITSUBISHI HEAVY INDUSTRIES, LTD. (Japan), and MIURA CO., LTD. (Japan) among others in the solid oxide fuel cell market.

Contents

1 INTRODUCTION

1.1 STUDY OBJECTIVES

1.2 MARKET DEFINITION

1.3 STUDY SCOPE

1.3.1 INCLUSIONS AND EXCLUSIONS

1.3.2 MARKETS COVERED

FIGURE 1 SOLID OXIDE FUEL CELL MARKET SEGMENTATION

1.3.3 REGIONAL SCOPE

1.3.4 YEARS CONSIDERED

1.3.5 CURRENCY CONSIDERED

1.4 LIMITATIONS

1.5 STAKEHOLDERS

1.6 SUMMARY OF CHANGES

1.7 IMPACT OF RECESSION

2 RESEARCH METHODOLOGY

2.1 RESEARCH DATA

FIGURE 2 SOLID OXIDE FUEL CELL MARKET: RESEARCH DESIGN

2.1.1 PRIMARY AND SECONDARY RESEARCH

2.1.1.1 Primary data

2.1.1.1.1 Key data from primary sources

2.1.1.1.2 Breakdown of primaries

2.1.1.2 Secondary data

2.1.1.2.1 Key data from secondary sources

2.2 MARKET BREAKDOWN AND DATA TRIANGULATION

FIGURE 3 SOLID OXIDE FUEL CELL MARKET: DATA TRIANGULATION

2.3 MARKET SIZE ESTIMATION METHODOLOGY

2.3.1 BOTTOM-UP APPROACH

FIGURE 4 SOLID OXIDE FUEL CELL MARKET: BOTTOM-UP ANALYSIS

2.3.2 TOP-DOWN APPROACH

FIGURE 5 SOLID OXIDE FUEL CELL MARKET: TOP-DOWN ANALYSIS

2.3.3 DEMAND-SIDE ANALYSIS

FIGURE 6 KEY METRICS CONSIDERED TO ANALYZE DEMAND FOR SOLID OXIDE FUEL CELLS

2.3.3.1 Regional analysis

- 2.3.3.2 Country analysis
- 2.3.3.3 Demand-side assumptions
- 2.3.3.4 Demand-side calculations

2.3.4 SUPPLY-SIDE ANALYSIS

FIGURE 7 KEY METRICS CONSIDERED TO ANALYZE SUPPLY OF SOLID OXIDE FUEL CELLS

FIGURE 8 SOLID OXIDE FUEL CELL MARKET: SUPPLY-SIDE ANALYSIS

- 2.3.4.1 Supply-side calculations
- 2.3.4.2 Supply-side assumptions

FIGURE 9 SOLID OXIDE FUEL CELL MARKET: MARKET SHARE ANALYSIS, 2022

2.4 FORECAST

2.5 RECESSION IMPACT

3 EXECUTIVE SUMMARY

TABLE 1 SOLID OXIDE FUEL CELL MARKET SNAPSHOT

FIGURE 10 ASIA PACIFIC HELD LARGEST SHARE OF SOLID OXIDE FUEL CELL MARKET IN 2022

FIGURE 11 PLANAR SEGMENT TO DOMINATE SOLID OXIDE FUEL CELL MARKET DURING FORECAST PERIOD

FIGURE 12 BALANCE OF PLANT (BOP) SEGMENT TO ACCOUNT FOR LARGER MARKET SHARE IN 2028

FIGURE 13 STATIONARY SEGMENT TO DEPICT HIGHEST CAGR IN SOLID OXIDE FUEL CELL MARKET FROM 2023 TO 2028

FIGURE 14 COMMERCIAL & INDUSTRIAL SEGMENT TO HOLD LARGEST SHARE OF SOLID OXIDE FUEL CELL MARKET IN 2023

4 PREMIUM INSIGHTS

4.1 ATTRACTIVE OPPORTUNITIES FOR PLAYERS IN SOLID OXIDE FUEL CELL MARKET

FIGURE 15 INCREASING FOCUS ON CLEAN POWER GENERATION TO BOOST MARKET GROWTH FROM 2023 TO 2028

4.2 SOLID OXIDE FUEL CELL MARKET, BY REGION

FIGURE 16 ASIA PACIFIC SOLID OXIDE FUEL CELL MARKET TO EXHIBIT HIGHEST CAGR DURING FORECAST PERIOD

4.3 ASIA PACIFIC SOLID OXIDE FUEL CELL MARKET, BY APPLICATION AND COUNTRY

FIGURE 17 STATIONARY SEGMENT AND CHINA HELD LARGEST SHARES OF

SOLID OXIDE FUEL CELL MARKET IN ASIA PACIFIC IN 2022

4.4 SOLID OXIDE FUEL CELL MARKET, BY TYPE

FIGURE 18 PLANAR SEGMENT TO HOLD LARGER MARKET SHARE IN 2028

4.5 SOLID OXIDE FUEL CELL MARKET, BY END USER

FIGURE 19 COMMERCIAL & INDUSTRIAL SEGMENT TO ACCOUNT FOR LARGEST MARKET SHARE IN 2028

4.6 SOLID OXIDE FUEL CELL MARKET, BY APPLICATION

FIGURE 20 STATIONARY SEGMENT TO HOLD LARGEST SHARE OF SOLID OXIDE FUEL CELL MARKET IN 2028

4.7 SOLID OXIDE FUEL CELL MARKET, BY COMPONENT

FIGURE 21 BALANCE OF PLANT (BOP) SEGMENT TO ACCOUNT FOR LARGEST MARKET SHARE IN 2028

5 MARKET OVERVIEW

5.1 INTRODUCTION

5.2 MARKET DYNAMICS

FIGURE 22 SOLID OXIDE FUEL CELL MARKET: DRIVERS, RESTRAINTS, OPPORTUNITIES, AND CHALLENGES

5.2.1 DRIVERS

5.2.1.1 Federal investments in fuel cell installation projects

FIGURE 23 CLEAN ENERGY INVESTMENTS IN ADVANCED ECONOMIES VS. EMERGING ECONOMIES, 2015–2021

5.2.1.2 Higher energy efficiency of solid oxide fuel cells than reciprocating engines

5.2.1.3 Introduction of stringent carbon emission norms

FIGURE 24 CO₂ EMISSIONS FROM ENERGY COMBUSTION AND INDUSTRIAL PROCESS, 2000–2022 (GT CO₂)

FIGURE 25 ENERGY-RELATED CO₂ EMISSIONS, BY SECTOR, 2019–2022 (GT CO₂)

5.2.2 RESTRAINTS

5.2.2.1 High fuel cell installation and manufacturing costs

5.2.2.2 Availability of alternatives

5.2.3 OPPORTUNITIES

5.2.3.1 Rising adoption of efficient electrochemical devices for combined heat and power generations

TABLE 2 COMPARISON BETWEEN FUEL CELLS AND OTHER DISTRIBUTED POWER GENERATION SOURCES

5.2.3.2 Increasing electricity consumption in data centers

5.2.4 CHALLENGES

5.2.4.1 Long start-up time and high operational temperature

5.2.4.2 Limitations of hydrogen storage systems

5.2.4.3 High spending on alternative clean energy technologies

FIGURE 26 GLOBAL INVESTMENTS IN RENEWABLE ENERGY

5.2.4.4 Fuel cell degradation and carbon dusting

5.3 TRENDS/DISRUPTIONS IMPACTING CUSTOMERS' BUSINESSES

5.3.1 REVENUE SHIFTS AND NEW REVENUE POCKETS FOR PLAYERS IN SOLID OXIDE FUEL CELL MARKET

FIGURE 27 REVENUE SHIFTS AND NEW REVENUE POCKETS FOR PLAYERS IN SOLID OXIDE FUEL CELL MARKET

5.4 MARKET MAPPING

FIGURE 28 SOLID OXIDE FUEL CELL MARKET: MARKET MAPPING

5.5 SUPPLY CHAIN ANALYSIS

FIGURE 29 SOLID OXIDE FUEL CELL MARKET: SUPPLY CHAIN ANALYSIS

5.5.1 RAW MATERIAL SUPPLY

5.5.2 COMPONENT MANUFACTURING

5.5.3 HARDWARE ASSEMBLY

5.5.4 DISTRIBUTION/END USERS

TABLE 3 COMPANIES AND THEIR ROLES IN SOLID OXIDE FUEL CELL ECOSYSTEM

5.6 PRICING ANALYSIS

5.6.1 AVERAGE SELLING PRICING TREND, BY COMPONENT

TABLE 4 SOLID OXIDE FUEL CELL MARKET: COST BREAK-UP, BY STACK COMPONENT

TABLE 5 SOLID OXIDE FUEL CELL MARKET: COST BREAK-UP, BY BALANCE OF PLANT (BOP) COMPONENT

FIGURE 30 SOLID OXIDE FUEL CELL MARKET: STACK MANUFACTURING COST PER KW

5.6.2 AVERAGE SELLING PRICE OF SOLID OXIDE FUEL CELLS OFFERED BY 3 KEY PLAYERS

TABLE 6 AVERAGE SELLING PRICE OF SOLID OXIDE FUEL CELLS OFFERED BY 3 KEY PLAYERS

5.6.3 AVERAGE SELLING PRICE TREND, BY REGION

TABLE 7 AVERAGE SELLING PRICE TREND, BY REGION

5.7 REGULATORY LANDSCAPE

5.7.1 REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

TABLE 8 NORTH AMERICA: LIST OF REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

TABLE 9 EUROPE: LIST OF REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

TABLE 10 ASIA PACIFIC: LIST OF REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

5.7.2 SOLID OXIDE FUEL CELL MARKET: REGULATORY FRAMEWORK

5.7.2.1 Regulatory frameworks in North America

5.7.2.2 Regulatory frameworks in Europe

5.7.2.3 Regulatory frameworks in Asia Pacific

5.8 PATENT ANALYSIS

FIGURE 31 SOLID OXIDE FUEL CELL MARKET: PATENT REGISTRATIONS, 2012–2022

5.8.1 LIST OF MAJOR PATENTS

TABLE 11 SOLID OXIDE FUEL CELL: PATENT REGISTRATIONS, 2018–2022

5.9 CASE STUDY ANALYSIS

5.9.1 IKEA LEVERAGED BLOOM ENERGY'S FUEL CELLS FOR ON-SITE POWER GENERATION

5.9.1.1 Challenges

5.9.1.2 Solution

5.9.2 SAMSUNG HEAVY INDUSTRIES AND BLOOM ENERGY PARTNERED TO DEVELOP EFFICIENT FUEL-CELL SHIPS

5.9.2.1 Challenges

5.9.2.2 Solution

5.9.3 CONVION DEPLOYED ELCOGEN'S SOFC AND STACK TECHNOLOGY FOR EFFICIENT POWER GENERATION

5.9.3.1 Challenges

5.9.3.2 Solution

5.10 TECHNOLOGY ANALYSIS

5.10.1 HYBRID SOFCS

5.10.2 INTEGRATED BIOMASS GASIFIERS

5.11 KEY CONFERENCES AND EVENTS, 2023–2024

TABLE 12 SOLID OXIDE FUEL CELL MARKET: LIST OF CONFERENCES AND EVENTS, 2023–2024

5.12 TRADE ANALYSIS

5.12.1 HS CODE 280410

5.12.2 EXPORT SCENARIO

TABLE 13 EXPORT DATA FOR HS CODE: 280410, BY COUNTRY, 2020–2022 (USD THOUSAND)

FIGURE 32 EXPORT DATA FOR TOP 5 COUNTRIES, 2020–2022 (USD THOUSAND)

5.12.3 IMPORT SCENARIO

TABLE 14 IMPORT DATA FOR HS CODE: 280410, BY COUNTRY, 2020–2022 (USD THOUSAND)

FIGURE 33 IMPORT DATA FOR TOP 5 COUNTRIES, 2020–2022 (USD THOUSAND)

5.13 PORTER'S FIVE FORCES ANALYSIS

FIGURE 34 SOLID OXIDE FUEL CELL MARKET: PORTER'S FIVE FORCES ANALYSIS

TABLE 15 SOLID OXIDE FUEL CELL MARKET: PORTER'S FIVE FORCES ANALYSIS

5.13.1 THREAT OF SUBSTITUTES

5.13.2 BARGAINING POWER OF SUPPLIERS

5.13.3 BARGAINING POWER OF BUYERS

5.13.4 THREAT OF NEW ENTRANTS

5.13.5 INTENSITY OF COMPETITIVE RIVALRY

5.14 KEY STAKEHOLDERS AND BUYING CRITERIA

5.14.1 KEY STAKEHOLDERS IN BUYING PROCESS

FIGURE 35 SOLID OXIDE FUEL CELL MARKET: INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS FOR TOP 3 END USERS

TABLE 16 SOLID OXIDE FUEL CELL MARKET: INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS FOR TOP 3 END USERS (%)

5.14.2 BUYING CRITERIA

FIGURE 36 SOLID OXIDE FUEL CELL MARKET: KEY BUYING CRITERIA, BY END USER

TABLE 17 SOLID OXIDE FUEL CELL MARKET: KEY BUYING CRITERIA, BY END USER

6 SOLID OXIDE FUEL CELL MARKET, BY TYPE

6.1 INTRODUCTION

FIGURE 37 SOLID OXIDE FUEL CELL MARKET SHARE, BY TYPE, 2022

TABLE 18 SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD MILLION)

6.2 PLANAR

6.2.1 USE OF PLANAR SOFCS IN STATIONARY POWER APPLICATIONS TO FUEL SEGMENTAL GROWTH

TABLE 19 PLANAR: SOLID OXIDE FUEL CELL MARKET, BY REGION, 2020–2028 (USD MILLION)

6.3 TUBULAR

6.3.1 ADOPTION OF ENERGY-HUNGRY PORTABLE DEVICES TO DRIVE MARKET

TABLE 20 TUBULAR: SOLID OXIDE FUEL CELL MARKET, BY REGION, 2020–2028 (USD MILLION)

7 SOLID OXIDE FUEL CELL MARKET, BY COMPONENT

7.1 INTRODUCTION

FIGURE 38 SOLID OXIDE FUEL CELL MARKET SHARE, BY COMPONENT, 2022

TABLE 21 SOLID OXIDE FUEL CELL MARKET, BY COMPONENT, 2020–2028 (USD MILLION)

7.2 STACK

7.2.1 ENFORCEMENT OF EMISSION REGULATIONS TO BOOST SOLID OXIDE FUEL CELL STACK MANUFACTURING

TABLE 22 STACK: SOLID OXIDE FUEL CELL MARKET, BY COMPONENT, 2020–2028 (USD MILLION)

7.2.1.1 Cells

7.2.1.2 Interconnects

7.2.1.3 End plates

7.2.1.4 Sealants

7.2.1.5 Other stack components

7.3 BALANCE OF PLANT (BOP)

7.3.1 USE OF BOP COMPONENTS FOR EFFICIENT POWER GENERATION TO CONTRIBUTE TO MARKET GROWTH

TABLE 23 BALANCE OF PLANT (BOP): SOLID OXIDE FUEL CELL MARKET, BY COMPONENT, 2020–2028 (USD MILLION)

7.3.1.1 Heat transfer components

7.3.1.2 Power electronics & control systems

7.3.1.3 Instruments & sensors

7.3.1.4 Fuel reformers/Desulfurizers

7.3.1.5 Other BoP components

8 SOLID OXIDE FUEL CELL MARKET, BY APPLICATION

8.1 INTRODUCTION

FIGURE 39 SOLID OXIDE FUEL CELL MARKET SHARE, BY APPLICATION, 2022

TABLE 24 SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD MILLION)

8.2 PORTABLE

8.2.1 HIGH PREFERENCE FOR MOBILE ENERGY STORAGE SYSTEMS TO BOOST SEGMENTAL GROWTH

TABLE 25 PORTABLE: SOLID OXIDE FUEL CELL MARKET, BY REGION, 2020–2028 (USD MILLION)

8.3 STATIONARY

8.3.1 INSTALLATION OF PRIMARY POWER SOURCES IN RESIDENTIAL BUILDINGS TO ACCELERATE SEGMENTAL GROWTH

TABLE 26 STATIONARY: SOLID OXIDE FUEL CELL MARKET, BY REGION, 2020–2028 (USD MILLION)

TABLE 27 STATIONARY: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD MILLION)

8.3.1.1 Primary

8.3.1.1.1 Utilization of fuel cell units to generate primary power to contribute to segmental growth

TABLE 28 PRIMARY: SOLID OXIDE FUEL CELL MARKET FOR STATIONARY APPLICATIONS, BY REGION, 2020–2028 (USD MILLION)

8.3.1.2 Backup

8.3.1.2.1 Adoption of fuel cells for backup power generation in data centers to boost market growth

TABLE 29 BACKUP: SOLID OXIDE FUEL CELL MARKET FOR STATIONARY APPLICATIONS, BY REGION, 2020–2028 (USD MILLION)

8.3.1.3 Combined heat & power

8.3.1.3.1 Increasing number of combined heat & power programs to support segmental growth

TABLE 30 COMBINED HEAT & POWER: SOLID OXIDE FUEL CELL MARKET FOR STATIONARY APPLICATIONS, BY REGION, 2020–2028 (USD MILLION)

8.4 TRANSPORT

8.4.1 DEVELOPMENT OF SOFCS FOR HEAVY-DUTY VEHICLES TO FUEL MARKET GROWTH

TABLE 31 TRANSPORT: SOLID OXIDE FUEL CELL MARKET, BY REGION, 2020–2028 (USD MILLION)

9 SOLID OXIDE FUEL CELL MARKET, BY END USER

9.1 INTRODUCTION

FIGURE 40 SOLID OXIDE FUEL CELL MARKET SHARE, BY END USER, 2022

TABLE 32 SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD MILLION)

9.2 RESIDENTIAL

9.2.1 INCREASING POWER CONSUMPTION BY RESIDENTIAL BUILDINGS TO DRIVE SEGMENTAL GROWTH

TABLE 33 RESIDENTIAL: SOLID OXIDE FUEL CELL MARKET, BY REGION, 2020–2028 (USD MILLION)

9.3 COMMERCIAL & INDUSTRIAL

9.3.1 RISING NEED TO CURB CARBON EMISSIONS FROM COMMERCIAL & INDUSTRIAL BUILDINGS TO PROPEL MARKET

TABLE 34 COMMERCIAL & INDUSTRIAL: SOLID OXIDE FUEL CELL MARKET, BY REGION, 2020–2028 (USD MILLION)

9.4 DATA CENTERS

9.4.1 RELIANCE ON SOFC PLATFORMS AS PRIMARY POWER SOURCE IN DATA CENTERS TO FUEL SEGMENTAL GROWTH

TABLE 35 DATA CENTERS: SOLID OXIDE FUEL CELL MARKET, BY REGION, 2020–2028 (USD MILLION)

9.5 MILITARY & DEFENSE

9.5.1 GROWING DEMAND FOR FUEL-FLEXIBLE POWER SYSTEMS FOR MILITARY & DEFENSE APPLICATIONS TO CONTRIBUTE TO MARKET GROWTH

TABLE 36 MILITARY & DEFENSE: SOLID OXIDE FUEL CELL MARKET, BY REGION, 2020–2028 (USD MILLION)

10 SOLID OXIDE FUEL CELL MARKET, BY REGION

10.1 INTRODUCTION

FIGURE 41 ASIA PACIFIC TO REGISTER HIGHEST CAGR DURING FORECAST PERIOD

FIGURE 42 SOLID OXIDE FUEL CELL MARKET SHARE, BY REGION, 2022

TABLE 37 SOLID OXIDE FUEL CELL MARKET, BY REGION, 2020–2028 (USD MILLION)

TABLE 38 SOLID OXIDE FUEL CELL MARKET, BY REGION, 2020–2028 (MW)

10.2 ASIA PACIFIC

10.2.1 RECESSION IMPACT ON MARKET IN ASIA PACIFIC

FIGURE 43 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET SNAPSHOT

TABLE 39 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 40 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET, BY COUNTRY, 2020–2028 (MW)

TABLE 41 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD MILLION)

TABLE 42 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET FOR PLANAR, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 43 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET FOR TUBULAR, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 44 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION,

2020–2028 (USD MILLION)

TABLE 45 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET FOR PORTABLE APPLICATIONS, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 46 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET FOR STATIONARY APPLICATIONS, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 47 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET FOR TRANSPORT APPLICATIONS, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 48 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD MILLION)

TABLE 49 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET FOR RESIDENTIAL, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 50 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET FOR COMMERCIAL & INDUSTRIAL, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 51 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET FOR DATA CENTERS, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 52 ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET FOR MILITARY & DEFENSE, BY COUNTRY, 2020–2028 (USD MILLION)

10.2.1.1 Japan

10.2.1.1.1 Rising focus on efficient power generation for residential applications to drive market

TABLE 53 JAPAN: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD MILLION)

TABLE 54 JAPAN: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD MILLION)

TABLE 55 JAPAN: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD MILLION)

10.2.1.2 South Korea

10.2.1.2.1 Increasing investments in hydrogen-powered energy servers to propel market

TABLE 56 SOUTH KOREA: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD MILLION)

TABLE 57 SOUTH KOREA: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD MILLION)

TABLE 58 SOUTH KOREA: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD MILLION)

10.2.1.3 China

10.2.1.3.1 Growing focus on mitigating carbon emissions to boost adoption

TABLE 59 CHINA: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD MILLION)

TABLE 60 CHINA: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD MILLION)

TABLE 61 CHINA: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD MILLION)

10.2.1.4 Rest of Asia Pacific

TABLE 62 REST OF ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD MILLION)

TABLE 63 REST OF ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD MILLION)

TABLE 64 REST OF ASIA PACIFIC: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD MILLION)

10.3 NORTH AMERICA

FIGURE 44 NORTH AMERICA: SOLID OXIDE FUEL CELL MARKET SNAPSHOT

10.3.1 RECESSION IMPACT ON MARKET IN NORTH AMERICA

TABLE 65 NORTH AMERICA: SOLID OXIDE FUEL CELL, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 66 NORTH AMERICA: SOLID OXIDE FUEL CELL, BY COUNTRY, 2020–2028 (MW)

TABLE 67 NORTH AMERICA: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD MILLION)

TABLE 68 NORTH AMERICA: SOLID OXIDE FUEL CELL MARKET FOR PLANAR, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 69 NORTH AMERICA: SOLID OXIDE FUEL CELL MARKET FOR TUBULAR, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 70 NORTH AMERICA: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD MILLION)

TABLE 71 NORTH AMERICA: SOLID OXIDE FUEL CELL MARKET FOR PORTABLE, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 72 NORTH AMERICA: SOLID OXIDE FUEL CELL MARKET FOR STATIONARY, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 73 NORTH AMERICA: SOLID OXIDE FUEL CELL MARKET FOR TRANSPORT, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 74 NORTH AMERICA: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD MILLION)

TABLE 75 NORTH AMERICA: SOLID OXIDE FUEL CELL MARKET FOR RESIDENTIAL, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 76 NORTH AMERICA: SOLID OXIDE FUEL CELL MARKET FOR COMMERCIAL & INDUSTRIAL, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 77 NORTH AMERICA: SOLID OXIDE FUEL CELL MARKET FOR DATA

CENTERS, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 78 NORTH AMERICA: SOLID OXIDE FUEL CELL MARKET FOR MILITARY & DEFENSE, BY COUNTRY, 2020–2028 (USD MILLION)

10.3.1.1 US

10.3.1.1.1 Rising emphasis on clean energy generation to fuel market growth

TABLE 79 US: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD MILLION)

TABLE 80 US: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD MILLION)

TABLE 81 US: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD MILLION)

10.3.1.2 Canada

10.3.1.2.1 Growing energy demand from industrial facilities to drive market

TABLE 82 CANADA: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD MILLION)

TABLE 83 CANADA: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD MILLION)

TABLE 84 CANADA: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD MILLION)

10.4 EUROPE

10.4.1 RECESSION IMPACT ON MARKET IN EUROPE

TABLE 85 EUROPE: SOLID OXIDE FUEL CELL MARKET, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 86 EUROPE: SOLID OXIDE FUEL CELL MARKET, BY COUNTRY, 2020–2028 (MW)

TABLE 87 EUROPE: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD MILLION)

TABLE 88 EUROPE: SOLID OXIDE FUEL CELL MARKET FOR PLANAR, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 89 EUROPE: SOLID OXIDE FUEL CELL MARKET FOR TUBULAR, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 90 EUROPE: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD MILLION)

TABLE 91 EUROPE: SOLID OXIDE FUEL CELL MARKET FOR PORTABLE, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 92 EUROPE: SOLID OXIDE FUEL CELL MARKET FOR STATIONARY, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 93 EUROPE: SOLID OXIDE FUEL CELL MARKET FOR TRANSPORT, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 94 EUROPE: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD THOUSAND)

TABLE 95 EUROPE: SOLID OXIDE FUEL CELL MARKET FOR RESIDENTIAL, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 96 EUROPE: SOLID OXIDE FUEL CELL MARKET FOR COMMERCIAL & INDUSTRIAL, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 97 EUROPE: SOLID OXIDE FUEL CELL MARKET FOR DATA CENTERS, BY COUNTRY, 2020–2028 (USD MILLION)

TABLE 98 EUROPE: SOLID OXIDE FUEL CELL MARKET FOR MILITARY & DEFENSE, BY COUNTRY, 2020–2028 (USD MILLION)

10.4.1.1 Germany

10.4.1.1.1 Growing investments in fuel cell technology projects to boost market growth

TABLE 99 GERMANY: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD MILLION)

TABLE 100 GERMANY: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD MILLION)

TABLE 101 GERMANY: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD MILLION)

10.4.1.2 UK

10.4.1.2.1 Rising implementation of emission reduction rules to propel market

TABLE 102 UK: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD MILLION)

TABLE 103 UK: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD MILLION)

TABLE 104 UK: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD MILLION)

10.4.1.3 Italy

10.4.1.3.1 High preference for clean transportation to accelerate market growth

TABLE 105 ITALY: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD THOUSAND)

TABLE 106 ITALY: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD THOUSAND)

TABLE 107 ITALY: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD THOUSAND)

10.4.1.4 Rest of Europe

TABLE 108 REST OF EUROPE: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD THOUSAND)

TABLE 109 REST OF EUROPE: SOLID OXIDE FUEL CELL MARKET, BY

APPLICATION, 2020–2028 (USD THOUSAND)

TABLE 110 REST OF EUROPE: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD THOUSAND)

10.5 ROW

10.5.1 RECESSION IMPACT ON MARKET IN ROW

TABLE 111 ROW: SOLID OXIDE FUEL CELL MARKET, BY TYPE, 2020–2028 (USD MILLION)

TABLE 112 ROW: SOLID OXIDE FUEL CELL MARKET, BY APPLICATION, 2020–2028 (USD MILLION)

TABLE 113 ROW: SOLID OXIDE FUEL CELL MARKET, BY END USER, 2020–2028 (USD MILLION)

10.5.1.1 Latin America

10.5.1.1.1 Increasing hydrogen and fuel cell research to boost market growth

10.5.1.2 Middle East & Africa

10.5.1.2.1 Rising use of SOFCs as backup power source to accelerate market growth

11 COMPETITIVE LANDSCAPE

11.1 OVERVIEW

11.2 STRATEGIES ADOPTED BY KEY PLAYERS, 2018–2023

TABLE 114 STRATEGIES ADOPTED BY KEY PLAYERS, 2018–2023

11.3 MARKET SHARE ANALYSIS, 2022

TABLE 115 SOLID OXIDE FUEL CELL MARKET: DEGREE OF COMPETITION

FIGURE 45 MARKET SHARE ANALYSIS, 2022

11.4 MARKET EVALUATION FRAMEWORK, 2018–2023

TABLE 116 MARKET EVALUATION FRAMEWORK, 2018–2023

11.5 SEGMENTAL REVENUE ANALYSIS OF KEY PLAYERS, 2018–2022

FIGURE 46 SEGMENTAL REVENUE ANALYSIS, 2018–2022

11.6 COMPETITIVE SCENARIOS AND TRENDS

11.6.1 DEALS

TABLE 117 SOLID OXIDE FUEL CELL MARKET: DEALS, 2018–2023

11.6.2 OTHERS

TABLE 118 SOLID OXIDE FUEL CELL MARKET: OTHERS, 2018–2023

11.7 EVALUATION MATRIX OF KEY PLAYERS, 2022

11.7.1 STARS

11.7.2 EMERGING LEADERS

11.7.3 PERVASIVE PLAYERS

11.7.4 PARTICIPANTS

FIGURE 47 SOLID OXIDE FUEL CELL MARKET: EVALUATION MATRIX OF KEY COMPANIES, 2022

TABLE 119 COMPANY TYPE FOOTPRINT

TABLE 120 COMPANY COMPONENT FOOTPRINT

TABLE 121 COMPANY APPLICATION FOOTPRINT

TABLE 122 COMPANY END USER FOOTPRINT

TABLE 123 COMPANY REGIONAL FOOTPRINT

TABLE 124 COMPANY PRODUCT FOOTPRINT

TABLE 125 COMPANY OVERALL FOOTPRINT

11.8 EVALUATION MATRIX OF START-UPS/SMALL- AND MEDIUM-SIZED ENTERPRISES (SMES), 2022

11.8.1 PROGRESSIVE COMPANIES

11.8.2 RESPONSIVE COMPANIES

11.8.3 DYNAMIC COMPANIES

11.8.4 STARTING BLOCKS

FIGURE 48 SOLID OXIDE FUEL CELL MARKET: EVALUATION MATRIX OF START-UPS/SMES, 2022**11.9 COMPETITIVE BENCHMARKING**

TABLE 126 SOLID OXIDE FUEL CELL MARKET: LIST OF KEY START-UPS/SMES

TABLE 127 COMPANY TYPE FOOTPRINT: COMPETITIVE BENCHMARKING OF KEY START-UPS/SMES

TABLE 128 COMPANY COMPONENT FOOTPRINT: COMPETITIVE BENCHMARKING OF KEY START-UPS/SMES

TABLE 129 COMPANY APPLICATION FOOTPRINT: COMPETITIVE BENCHMARKING OF KEY START-UPS/SMES

TABLE 130 COMPANY END USER FOOTPRINT: COMPETITIVE BENCHMARKING OF KEY START-UPS/SMES

TABLE 131 COMPANY REGIONAL FOOTPRINT: COMPETITIVE BENCHMARKING OF KEY START-UPS/SMES

TABLE 132 COMPANY PRODUCT FOOTPRINT: COMPETITIVE BENCHMARKING OF KEY START-UPS/SMES

12 COMPANY PROFILES

(Business overview, Products/Services/Solutions offered, Recent Developments, MNM view)*

12.1 KEY PLAYERS

12.1.1 BLOOM ENERGY

TABLE 133 BLOOM ENERGY: COMPANY OVERVIEW

FIGURE 49 BLOOM ENERGY: COMPANY SNAPSHOT

TABLE 134 BLOOM ENERGY: PRODUCTS/SERVICES/SOLUTIONS OFFERED

TABLE 135 BLOOM ENERGY: PRODUCT LAUNCHES

TABLE 136 BLOOM ENERGY: DEALS

TABLE 137 BLOOM ENERGY: OTHERS

12.1.2 AISIN CORPORATION

TABLE 138 AISIN CORPORATION: COMPANY OVERVIEW

FIGURE 50 AISIN CORPORATION: COMPANY SNAPSHOT

TABLE 139 AISIN CORPORATION: PRODUCTS/SERVICES/SOLUTIONS OFFERED

TABLE 140 AISIN CORPORATION: DEALS

12.1.3 MITSUBISHI HEAVY INDUSTRIES, LTD.

TABLE 141 MITSUBISHI HEAVY INDUSTRIES, LTD.: COMPANY OVERVIEW

FIGURE 51 MITSUBISHI HEAVY INDUSTRIES, LTD.: COMPANY SNAPSHOT

TABLE 142 MITSUBISHI HEAVY INDUSTRIES, LTD.:

PRODUCTS/SERVICES/SOLUTIONS OFFERED

TABLE 143 MITSUBISHI HEAVY INDUSTRIES, LTD.: DEALS

TABLE 144 MITSUBISHI HEAVY INDUSTRIES, LTD.: OTHERS

12.1.4 KYOCERA CORPORATION

TABLE 145 KYOCERA CORPORATION: COMPANY OVERVIEW

FIGURE 52 KYOCERA CORPORATION: COMPANY SNAPSHOT

TABLE 146 KYOCERA CORPORATION: PRODUCTS/SERVICES/SOLUTIONS OFFERED

TABLE 147 KYOCERA CORPORATION: OTHERS

12.1.5 MIURA CO., LTD.

TABLE 148 MIURA CO., LTD.: COMPANY OVERVIEW

FIGURE 53 MIURA CO., LTD.: COMPANY SNAPSHOT

TABLE 149 MIURA CO., LTD.: PRODUCTS/SERVICES/SOLUTIONS OFFERED

TABLE 150 MIURA CO., LTD.: PRODUCT LAUNCHES

12.1.6 CERES

TABLE 151 CERES: COMPANY OVERVIEW

FIGURE 54 CERES: COMPANY SNAPSHOT

TABLE 152 CERES: PRODUCTS/SERVICES/SOLUTIONS OFFERED

TABLE 153 CERES: DEALS

TABLE 154 CERES: OTHERS

12.1.7 CONVION

TABLE 155 CONVION: COMPANY OVERVIEW

TABLE 156 CONVION: PRODUCTS/SERVICES/SOLUTIONS OFFERED

TABLE 157 CONVION: DEALS

12.1.8 WATT FUEL CELL CORPORATION

TABLE 158 WATT FUEL CELL CORPORATION: COMPANY OVERVIEW

TABLE 159 WATT FUEL CELL CORPORATION:
PRODUCTS/SERVICES/SOLUTIONS OFFERED

TABLE 160 WATT FUEL CELL CORPORATION: DEALS

12.1.9 ELCOGEN AS

TABLE 161 ELCOGEN AS: COMPANY OVERVIEW

TABLE 162 ELCOGEN AS: PRODUCTS/SERVICES/SOLUTIONS OFFERED

TABLE 163 ELCOGEN AS: DEALS

TABLE 164 ELCOGEN AS: OTHERS

12.1.10 SUNFIRE GMBH

TABLE 165 SUNFIRE GMBH: COMPANY OVERVIEW

TABLE 166 SUNFIRE GMBH: PRODUCTS/SERVICES/SOLUTIONS OFFERED

TABLE 167 SUNFIRE GMBH: DEALS

TABLE 168 SUNFIRE GMBH: OTHERS

12.1.11 SOLYDERA SPA

TABLE 169 SOLYDERA SPA: COMPANY OVERVIEW

TABLE 170 SOLYDERA SPA: PRODUCTS/SERVICES/SOLUTIONS OFFERED

TABLE 171 SOLYDERA SPA: DEALS

TABLE 172 SOLYDERA SPA: OTHERS

12.1.12 H2E POWER

TABLE 173 H2E POWER: COMPANY OVERVIEW

TABLE 174 H2E POWER: PRODUCTS/SERVICES/SOLUTIONS OFFERED

TABLE 175 H2E POWER: DEALS

12.1.13 UPSTART POWER, INC.

TABLE 176 UPSTART POWER, INC.: COMPANY OVERVIEW

TABLE 177 UPSTART POWER, INC.: PRODUCTS/SERVICES/SOLUTIONS
OFFERED

TABLE 178 UPSTART POWER, INC.: DEALS

TABLE 179 UPSTART POWER, INC.: PRODUCT LAUNCHES

12.2 OTHER PLAYERS

12.2.1 ZTEK CORPORATION, INC.

TABLE 180 ZTEK CORPORATION, INC.: COMPANY OVERVIEW

12.2.2 SPECIAL POWER SOURCES

TABLE 181 SPECIAL POWER SOURCES: COMPANY OVERVIEW

12.2.3 ADELAN

TABLE 182 ADELAN: COMPANY OVERVIEW

12.2.4 SOFCMAN

TABLE 183 SOFCMAN: COMPANY OVERVIEW

12.2.5 EDGE AUTONOMY

TABLE 184 EDGE AUTONOMY: COMPANY OVERVIEW**12.3 R&D PLAYERS****12.3.1 FUELCELL ENERGY, INC.****TABLE 185 FUELCELL ENERGY, INC.: COMPANY OVERVIEW****FIGURE 55 FUELCELL ENERGY, INC.: COMPANY SNAPSHOT****TABLE 186 FUELCELL ENERGY, INC.: PRODUCTS/SERVICES/SOLUTIONS OFFERED****TABLE 187 FUELCELL ENERGY, INC.: DEALS****TABLE 188 FUELCELL ENERGY, INC.: OTHERS****12.3.2 DOOSAN FUEL CELL CO., LTD.****TABLE 189 DOOSAN FUEL CELL CO., LTD.: COMPANY OVERVIEW****FIGURE 56 DOOSAN FUEL CELL CO., LTD.: COMPANY SNAPSHOT****TABLE 190 DOOSAN FUEL CELL CO., LTD.: DEALS****12.3.3 ROBERT BOSCH GMBH****TABLE 191 ROBERT BOSCH GMBH: COMPANY OVERVIEW****FIGURE 57 ROBERT BOSCH GMBH: COMPANY SNAPSHOT****TABLE 192 ROBERT BOSCH GMBH: PRODUCTS/SERVICES/SOLUTIONS OFFERED****TABLE 193 ROBERT BOSCH GMBH: DEALS****TABLE 194 ROBERT BOSCH GMBH: OTHERS****12.3.4 POSCOENERGY****TABLE 195 POSCOENERGY: COMPANY OVERVIEW****12.3.5 CLARA VENTURE LABS****TABLE 196 CLARA VENTURE LABS: COMPANY OVERVIEW****12.3.6 CUMMINS INC.****TABLE 197 CUMMINS INC.: COMPANY OVERVIEW**

*Details on Business overview, Products/Services/Solutions offered, Recent Developments, MNM view might not be captured in case of unlisted companies.

13 APPENDIX**13.1 INSIGHTS FROM INDUSTRY EXPERTS****13.2 DISCUSSION GUIDE****13.3 KNOWLEDGESTORE: MARKETSandMARKETS' SUBSCRIPTION PORTAL****13.4 CUSTOMIZATION OPTIONS****13.5 RELATED REPORTS****13.6 AUTHOR DETAILS**

I would like to order

Product name: Solid Oxide Fuel Cell Market by Type (Planar, Tubular), Component (Stack, BOP), Application (Stationary, Portable, Transport), End User (Commercial & Industrial, Data Centers, Military & Defense, Residential) & Region - Global Trends & Forecasts to 2028

Product link: <https://marketpublishers.com/r/SD06B7D1908EN.html>

Price: US\$ 4,950.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/SD06B7D1908EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

****All fields are required**

Customer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below

and fax the completed form to +44 20 7900 3970