

Hydrogen Hubs Market by Industry (Automotive, Aviation, Marine), Supply Technique (SMR, Electrolysis), End Use (Liquid Hydrogen, Hydrogen Fuel Cell) & Region (North America, Europe, APAC, MEA, & Latin America) - Global Forecast to 2030

Market Report | 2024-01-12 | 241 pages | MarketsandMarkets

AVAILABLE LICENSES:

- Single User \$4950.00
- Multi User \$6650.00
- Corporate License \$8150.00
- Enterprise Site License \$10000.00

Report description:

The hydrogen hubs market is valued at USD 1.8 billion in 2023 and is projected to reach USD 5.9 billion by 2030, at a CAGR of 18.6% from 2023 to 2030. The hydrogen hub market is witnessing substantial growth driven by the emergence of vertically integrated hydrogen infrastructure. These facilities, encompassing production, storage, and distribution, optimize the hydrogen supply chain. Increased spending on hydrogen infrastructure further fuels market expansion, positioning hydrogen hubs as pivotal players in the evolving landscape of clean energy solutions.

Based on industry, the automotive segment will register the highest growth during the forecast period.

Based on industry, the hydrogen hubs market is segmented into automotive, aviation, marine, and others, which includes defense and space. The automotive industry is expected to be a key demand area for hub based hydrogen as the adoption of fuel cells in mobility continues to accelerate. The automotive segment is expected to grow from USD 1.05 billion in 2023 and is projected to reach USD 3.9 billion by 2030, at a CAGR of 20.6% during the forecast period.

Based on supply technique, the electrolysis segment will register the highest growth during the forecast period.

Based on supply technique, the hydrogen hub market is segmented into steam methane reforming (SMR) and electrolysis segments. Of these segments, electrolysis is expected to have the highest growth from USD 1.1 billion in 2023 to USD 3.7 billion in 2030, registering a CAGR of 18.7%. Steam methane reforming (SMR) and electrolysis stand out as the two primary methods for hydrogen production within hydrogen hubs, particularly in the context of blue and green hydrogen. SMR, commonly associated with blue hydrogen, involves the reaction of natural gas with steam to produce hydrogen and carbon dioxide. Although it is a well-established and cost-effective process, the associated carbon emissions necessitate carbon capture and storage (CCS) for

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

environmental sustainability. On the other hand, electrolysis, linked to green hydrogen, utilizes renewable energy to split water into hydrogen and oxygen. While offering a cleaner alternative, electrolysis faces challenges related to high energy costs and the need for significant renewable energy infrastructure. The choice between these methods reflects the ongoing industry debate regarding trade-offs between cost efficiency and environmental impact in the pursuit of a sustainable hydrogen economy. Based on end use form, liquid hydrogen and fuel cells are the primary products that hydrogen hubs are expected to produce as more hydrogen hubs are developed.

Based in end-use, hydrogen hubs market are segmented into liquid hydrogen and hydrogen fuel cells, which are the primary products from these hubs. Both of these end products-hydrogen fuel cells and liquid hydrogen - have diverse applications within the clean energy sector. Hydrogen fuel cells play a crucial role in powering various transport modes, including automobiles, buses, and trains, as well as providing backup power for industries. The fuel cells' efficiency and environmental benefits make them a key driver for the adoption of hydrogen as a clean energy source. Simultaneously, the production of liquid hydrogen is integral for efficient storage and transportation, especially for long-distance supply chains and applications in industries such as aerospace. The strategic integration of these end products from regional hydrogen hubs reflects the comprehensive approach to harnessing hydrogen's potential across different sectors, contributing to a more sustainable and integrated energy ecosystem.

Based on regions, the Asia Pacific region is estimated to have the highest growth during the forecast period.

The Asia Pacific region is estimated to account for the largest share of the hydrogen hubs market in 2023. The growth of the region is attributed to the rapid developments in alternative energy and fuel technologies to wean away from fossil fuel based energy consumption. This is enhanced by the development of renewable energy propulsion systems for automobiles, ships and aviation segments, which are expected to use hydrogen or hydrogen based fuel sources as a primary propellant.

The break-up of the profile of primary participants in the H2H market:

-□By Company Type: Tier 1 - 35%, Tier 2 - 45%, and Tier 3 - 20%

-□By Designation: C Level - 35%, Director Level - 25%, and Others - 40%

-□By Region: North America - 25%, Europe - 15%, Asia Pacific - 45%, Middle East& Africa- 10%, Latin America - 5%

Major companies profiled in the report include ARAMCO (Saudi Arabia), AIRBUS (Netherlands), Linde plc (UK), Shell plc(UK) and Sinopec(China), among others.

Research Coverage:

This market study covers the hydrogen hub market across various segments and subsegments. It aims to estimate this market's size and growth potential across different parts based on size, operational orbits, application, component, end user, and region. This study also includes an in-depth competitive analysis of the key players in the market, their company profiles, key observations related to their product and business offerings, recent developments, and key market strategies they adopted.

Reasons to buy this report:

The report will help the market leaders/new entrants with information on the closest approximations of the revenue numbers for the overall hydrogen hubs market. This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies. The report also helps stakeholders understand the market pulse and provides information on key market drivers, restraints, challenges, and opportunities. The hydrogen hubs market is experiencing substantial growth, primarily driven by the exchange of real-time information. The increasing trend toward international cooperation and joint operations among nations is fostering demand for hydrogen hubs, contributing to regional and global stability. The report provides insights on the following pointers:

-□Market Drivers: Market Drivers such as increasing public and private investments in hydrogen and hydrogen fuel cell technologies among other drivers covered in the report.

-□Market Penetration: Comprehensive information on hydrogen hubs offered by the top players in the market

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- **Product Development/Innovation:** Detailed insights on upcoming technologies, research & development activities, and new product launches in the hydrogen hubs market
- **Market Development:** Comprehensive information about lucrative markets - the report analyses the hydrogen hubs market across varied regions.
- **Market Diversification:** Exhaustive information about new products, untapped geographies, recent developments, and investments in the hydrogen hubs market
- **Competitive Assessment:** In-depth assessment of market shares, growth strategies, products, and manufacturing capabilities of leading players in the hydrogen hubs market

Table of Contents:

1	INTRODUCTION	23
1.1	STUDY OBJECTIVES	23
1.2	MARKET DEFINITION	23
1.3	MARKET SCOPE	24
	FIGURE 1 HYDROGEN HUBS MARKET SEGMENTATION	24
1.3.1	REGIONAL SCOPE	24
1.4	YEARS CONSIDERED	25
1.5	INCLUSIONS AND EXCLUSIONS	25
	TABLE 1 INCLUSIONS AND EXCLUSIONS	25
1.6	CURRENCY CONSIDERED	25
	TABLE 2 USD EXCHANGE RATES	26
1.7	STAKEHOLDERS	26
2	RESEARCH METHODOLOGY	27
2.1	INTRODUCTION	27
	FIGURE 2 REPORT PROCESS FLOW	27
	FIGURE 3 RESEARCH DESIGN	28
2.1.1	SECONDARY DATA	28
2.1.1.1	Key data from secondary sources	29
2.1.2	PRIMARY DATA	29
2.1.2.1	Key data from primary sources	30
	FIGURE 4 BREAKDOWN OF PRIMARY INTERVIEWS: BY COMPANY TYPE, DESIGNATION, AND REGION	30
2.2	FACTOR ANALYSIS	31
2.2.1	INTRODUCTION	31
2.2.2	DEMAND-SIDE INDICATORS	31
2.2.3	SUPPLY-SIDE INDICATORS	32
2.3	MARKET SIZE ESTIMATION AND METHODOLOGY	32
2.3.1	BOTTOM-UP APPROACH	32
	FIGURE 5 BOTTOM-UP APPROACH	33
2.3.2	TOP-DOWN APPROACH	33
	FIGURE 6 TOP-DOWN APPROACH	33
2.4	DATA TRIANGULATION	34
	FIGURE 7 DATA TRIANGULATION	34
2.5	RESEARCH ASSUMPTIONS	35

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

2.5.1	GROWTH RATE ASSUMPTIONS	35
2.5.2	PARAMETRIC ASSUMPTIONS FOR MARKET FORECAST	35
2.6	RESEARCH LIMITATIONS	36
2.7	RISK ASSESSMENT	36
3	EXECUTIVE SUMMARY	37
FIGURE 8	ELECTROLYSIS SEGMENT TO HOLD LARGEST MARKET SHARE DURING FORECAST PERIOD	37
FIGURE 9	AUTOMOTIVE TO BE FASTEST-GROWING SEGMENT DURING FORECAST PERIOD	38
FIGURE 10	ASIA PACIFIC TO REGISTER HIGHEST CAGR DURING FORECAST PERIOD	38
4	PREMIUM INSIGHTS	40
4.1	ATTRACTIVE OPPORTUNITIES FOR PLAYERS IN HYDROGEN HUBS MARKET	40
FIGURE 11	INCREASED FOCUS ON GREEN AND CLEAN ENERGY SOLUTIONS TO DRIVE MARKET	40
4.2	HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE	40
FIGURE 12	ELECTROLYSIS SEGMENT DOMINATED MARKET IN 2023	40
4.3	HYDROGEN HUBS MARKET, BY INDUSTRY	41
FIGURE 13	AUTOMOTIVE INDUSTRY TO LEAD MARKET DURING FORECAST PERIOD	41
5	MARKET OVERVIEW	42
5.1	INTRODUCTION	42
5.2	MARKET DYNAMICS	42
FIGURE 14	HYDROGEN HUBS MARKET: DRIVERS, RESTRAINTS, OPPORTUNITIES, AND CHALLENGES	42
5.2.1	DRIVERS	43
5.2.1.1	Increasing vertical integration of hydrogen production facilities	43
5.2.1.2	Rising public and private investments in hydrogen and associated fuel cell technologies	43
5.2.1.3	Growing development of regional green hydrogen hubs	44
5.2.2	RESTRAINTS	45
5.2.2.1	Infrastructure and production limitations	45
5.2.3	OPPORTUNITIES	45
5.2.3.1	Industrial transition toward green hydrogen	45
5.2.3.2	Widespread adoption of hydrogen-based mobility	45
5.2.4	CHALLENGES	46
5.2.4.1	High production cost and complex storage and transportation	46
5.2.4.2	Low power density of hydrogen fuel cell stacks	46
5.3	RECESSION IMPACT ANALYSIS	47
5.4	INDICATIVE PRICING ANALYSIS	47
FIGURE 15	NUMBER OF ACTIVE HYDROGEN FUELING STATIONS, BY TOP 10 COUNTRIES	48
FIGURE 16	NUMBER OF HYDROGEN-ENABLED MARINE PORTS COMMISSIONED AS OF 2023, BY REGION	48
FIGURE 17	NUMBER OF HYDROGEN-ENABLED AIRPORTS COMMISSIONED AS OF 2023, BY REGION	49
?		
5.5	VALUE CHAIN ANALYSIS	49
FIGURE 18	VALUE CHAIN ANALYSIS	49
5.5.1	R&D	50
5.5.2	INFRASTRUCTURE DEVELOPMENT	50
5.5.3	OPERATIONS	50
5.5.4	POST-PRODUCTION SERVICES	50
5.6	TRENDS/DISRUPTIONS IMPACTING CUSTOMER BUSINESS	50
FIGURE 19	REVENUE SHIFT AND NEW REVENUE POCKETS FOR PLAYERS IN HYDROGEN HUBS MARKET	50
5.7	ECOSYSTEM ANALYSIS	51
5.7.1	PROMINENT COMPANIES	51

5.7.2	PRIVATE AND SMALL ENTERPRISES	51
5.7.3	END USERS	51
FIGURE 20	ECOSYSTEM MAPPING	51
TABLE 3	ROLE OF PLAYERS IN ECOSYSTEM	52
FIGURE 21	HUB OPERATORS AND DEVELOPERS	53
FIGURE 22	SOLUTION PROVIDERS	53
5.8	TECHNOLOGY ANALYSIS	53
5.8.1	ELECTROLYSIS	53
5.8.2	HYDROGEN STORAGE TECHNOLOGIES	53
5.8.3	CARBON CAPTURE, UTILIZATION, AND STORAGE	54
5.9	TECHNOLOGICAL ROADMAP	54
FIGURE 23	EVOLUTION OF HYDROGEN HUBS MARKET: A ROADMAP FROM 2000 TO 2030	54
5.10	ANALYSIS OF NEW BUSINESS MODELS	55
5.10.1	AUTOMOTIVE INDUSTRY: FUEL CELL STACKS AND HYDROGEN REFUELING STATIONS	55
FIGURE 24	NEW BUSINESS MODELS FOR AUTOMOTIVE INDUSTRY BASED ON HYDROGEN HUBS	55
5.10.2	AVIATION INDUSTRY: HYDROGEN FUEL AND FUEL CELL-POWERED AIRCRAFT	56
FIGURE 25	NEW BUSINESS MODELS FOR AVIATION INDUSTRY BASED ON HYDROGEN HUBS	56
5.11	PORTER'S FIVE FORCES ANALYSIS	56
TABLE 4	IMPACT OF PORTER'S FIVE FORCES	57
5.11.1	THREAT OF NEW ENTRANTS	57
5.11.2	THREAT OF SUBSTITUTES	57
5.11.3	BARGAINING POWER OF SUPPLIERS	57
5.11.4	BARGAINING POWER OF BUYERS	57
5.11.5	INTENSITY OF COMPETITIVE RIVALRY	57
5.12	KEY STAKEHOLDERS AND BUYING CRITERIA	58
5.12.1	KEY STAKEHOLDERS IN BUYING PROCESS	58
FIGURE 26	INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS, BY INDUSTRY	58
TABLE 5	INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS, BY INDUSTRY (%)	58
5.12.2	BUYING CRITERIA	58
FIGURE 27	KEY BUYING CRITERIA, BY SUPPLY TECHNIQUE	58
TABLE 6	KEY BUYING CRITERIA, BY SUPPLY TECHNIQUE	59
5.13	KEY CONFERENCES AND EVENTS, 2023-2024	59
TABLE 7	KEY CONFERENCES AND EVENTS, 2023-2024	59
5.14	USE CASE ANALYSIS	60
5.14.1	HAMBURG GREEN HYDROGEN HUB	60
5.14.2	IMPROVED HYDROGEN MOBILITY	60
6	INDUSTRY TRENDS	61
6.1	INTRODUCTION	61
6.2	TECHNOLOGY TRENDS	61
6.2.1	HYDROGEN STORAGE	62
6.2.2	AMMONIA CRACKING	62
6.3	IMPACT OF MEGATRENDS	62
6.3.1	ELECTROLYSIS	62
6.3.2	ARTIFICIAL INTELLIGENCE	63
6.3.3	DECARBONIZATION OF SUPPLY CHAIN AND INFRASTRUCTURE	63
6.4	SUPPLY CHAIN ANALYSIS	64
FIGURE 28	SUPPLY CHAIN ANALYSIS	64

6.5	INNOVATIONS AND PATENT ANALYSIS	65
FIGURE 29	LIST OF MAJOR PATENTS RELATED TO HYDROGEN HUBS MARKET	65
TABLE 8	LIST OF PATENTS FOR HYDROGEN HUBS MARKET, 2019-2023	66
6.5.1	TYPES OF HYDROGEN PRODUCED AT HUB FACILITY	71
FIGURE 30	PRODUCTION AND STORAGE OF GREEN AND BLUE HYDROGEN	71
6.5.1.1	Green hydrogen	71
6.5.1.2	Blue hydrogen	72
6.5.2	ON-SITE INFRASTRUCTURE FOR HYDROGEN HUBS	72
FIGURE 31	VERTICALLY INTEGRATED HYDROGEN HUB FACILITIES	72
6.5.2.1	On-site hydrogen production	72
6.5.2.2	On-site hydrogen storage	73
6.5.2.3	On-site hydrogen distribution network	73
6.5.2.4	Hydrogen conversion equipment	73
6.5.3	PRIMARY ENERGY SOURCE FOR HYDROGEN HUBS	73
6.5.3.1	Renewables	73
6.5.3.2	Natural gas	73
6.5.3.3	Others	74
7	HYDROGEN HUBS MARKET, BY INDUSTRY	75
7.1	INTRODUCTION	76
FIGURE 32	HYDROGEN HUBS MARKET, BY INDUSTRY, 2023-2030 (USD MILLION)	76
TABLE 9	HYDROGEN HUBS MARKET, BY INDUSTRY, 2021-2022 (USD MILLION)	76
TABLE 10	HYDROGEN HUBS MARKET, BY INDUSTRY, 2023-2030 (USD MILLION)	76
7.2	AUTOMOTIVE	77
7.2.1	RIISING ADOPTION OF FUEL CELL ELECTRIC VEHICLES TO DRIVE MARKET	77
7.3	MARINE	77
7.3.1	ACCESS TO PORT-BASED HYDROGEN SUPPLY FROM COASTAL HUBS TO DRIVE MARKET	77
7.4	AVIATION	78
7.4.1	SEAMLESS INTEGRATION OF HYDROGEN IN EXISTING AIRPORT INFRASTRUCTURE TO DRIVE MARKET	78
7.5	OTHER INDUSTRIES	78
7.5.1	DEFENSE	78
7.5.2	SPACE	79
8	HYDROGEN HUBS MARKET, BY END USE	80
8.1	INTRODUCTION	81
8.2	HYDROGEN FUEL CELLS	81
8.2.1	URGENT NEED FOR CLEAN ENERGY SOLUTIONS TO DRIVE MARKET	81
8.3	LIQUID HYDROGEN	81
8.3.1	COST-EFFECTIVE PRODUCTION PROCESS TO DRIVE MARKET	81
9	HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE	83
9.1	INTRODUCTION	84
FIGURE 33	HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE, 2023-2030 (USD MILLION)	84
TABLE 11	HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE, 2021-2022 (USD MILLION)	84
TABLE 12	HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE, 2023-2030 (USD MILLION)	84
9.2	STEAM METHANE REFORMING	85
9.2.1	SUSTAINABLE PRODUCTION AND STRATEGIC DISTRIBUTION TO DRIVE MARKET	85
9.3	ELECTROLYSIS	85
9.3.1	GLOBAL FOCUS ON GREEN HYDROGEN TO DRIVE MARKET	85

10	HYDROGEN HUBS MARKET, BY REGION	87
10.1	INTRODUCTION	88
	FIGURE 34 HYDROGEN HUBS MARKET, BY REGION, 2023-2030	88
10.2	REGIONAL RECESSION IMPACT ANALYSIS	89
	TABLE 13 HYDROGEN HUBS MARKET, BY REGION, 2021-2022 (USD MILLION)	89
	TABLE 14 HYDROGEN HUBS MARKET, BY REGION, 2023-2030 (USD MILLION)	89
10.3	NORTH AMERICA	90
10.3.1	NORTH AMERICA: PESTLE ANALYSIS	90
10.3.2	NORTH AMERICA: RECESSION IMPACT ANALYSIS	91
	FIGURE 35 NORTH AMERICA: HYDROGEN HUBS MARKET SNAPSHOT	92
	TABLE 15 NORTH AMERICA: HYDROGEN HUBS MARKET, BY INDUSTRY, 2021-2022 (USD MILLION)	92
	TABLE 16 NORTH AMERICA: HYDROGEN HUBS MARKET, BY INDUSTRY, 2023-2030 (USD MILLION)	93
	TABLE 17 NORTH AMERICA: HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE, 2021-2022 (USD MILLION)	93
	TABLE 18 NORTH AMERICA: HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE, 2023-2030 (USD MILLION)	93
10.3.3	US	93
10.3.3.1	Regional Clean Hydrogen Hubs program to drive market	93
10.3.4	CANADA	94
10.3.4.1	Abundant renewable energy resources and government funding to drive market	94
10.4	EUROPE	94
10.4.1	EUROPE: PESTLE ANALYSIS	95
10.4.2	EUROPE: RECESSION IMPACT ANALYSIS	96
	FIGURE 36 EUROPE: HYDROGEN HUBS MARKET SNAPSHOT	96
	TABLE 19 EUROPE: HYDROGEN HUBS MARKET, BY INDUSTRY, 2021-2022 (USD MILLION)	97
	TABLE 20 EUROPE: HYDROGEN HUBS MARKET, BY INDUSTRY, 2023-2030 (USD MILLION)	97
	TABLE 21 EUROPE: HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE, 2021-2022 (USD MILLION)	97
	TABLE 22 EUROPE: HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE, 2023-2030 (USD MILLION)	97
10.4.3	UK	98
10.4.3.1	Investments in hydrogen-based fuel to drive market	98
10.4.4	GERMANY	98
10.4.4.1	Decarbonization strategy to drive market	98
10.4.5	REST OF EUROPE	98
10.5	ASIA PACIFIC	99
10.5.1	ASIA PACIFIC: PESTLE ANALYSIS	99
10.5.2	ASIA PACIFIC: RECESSION IMPACT ANALYSIS	100
	FIGURE 37 ASIA PACIFIC: HYDROGEN HUBS MARKET SNAPSHOT	101
	TABLE 23 ASIA PACIFIC: HYDROGEN HUBS MARKET, BY INDUSTRY, 2021-2022 (USD MILLION)	101
	TABLE 24 ASIA PACIFIC: HYDROGEN HUBS MARKET, BY INDUSTRY, 2023-2030 (USD MILLION)	102
	TABLE 25 ASIA PACIFIC: HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE, 2021-2022 (USD MILLION)	102
	TABLE 26 ASIA PACIFIC: HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE, 2023-2030 (USD MILLION)	102
10.5.3	CHINA	102
10.5.3.1	National Hydrogen Energy Standardization Roadmap to drive market	102
10.5.4	JAPAN	103
10.5.4.1	Industrial decarbonization to drive market	103
10.5.5	REST OF ASIA PACIFIC	103
10.6	MIDDLE EAST & AFRICA	104
	FIGURE 38 MIDDLE EAST & AFRICA: HYDROGEN HUBS MARKET SNAPSHOT	104
10.6.1	MIDDLE EAST & AFRICA: PESTLE ANALYSIS	105

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

10.6.2	MIDDLE EAST & AFRICA: RECESSION IMPACT ANALYSIS	106
TABLE 27	MIDDLE EAST & AFRICA: HYDROGEN HUBS MARKET, BY INDUSTRY, 2021-2022 (USD MILLION)	106
TABLE 28	MIDDLE EAST & AFRICA: HYDROGEN HUBS MARKET, BY INDUSTRY, 2023-2030 (USD MILLION)	106
TABLE 29	MIDDLE EAST & AFRICA: HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE, 2021-2022 (USD MILLION)	107
TABLE 30	MIDDLE EAST & AFRICA: HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE, 2023-2030 (USD MILLION)	107
10.6.3	SAUDI ARABIA	107
10.6.3.1	Hydrogen Hub Strategy to drive market	107
10.6.4	UAE	107
10.6.4.1	Growing production of blue and green hydrogen to drive market	107
10.6.5	REST OF MIDDLE EAST & AFRICA	108
10.7	LATIN AMERICA	108
FIGURE 39	LATIN AMERICA: HYDROGEN HUBS MARKET SNAPSHOT	109
10.7.1	LATIN AMERICA: PESTLE ANALYSIS	109
10.7.2	LATIN AMERICA: RECESSION IMPACT ANALYSIS	111
TABLE 31	LATIN AMERICA: HYDROGEN HUBS MARKET, BY INDUSTRY, 2021-2022 (USD MILLION)	111
TABLE 32	LATIN AMERICA: HYDROGEN HUBS MARKET, BY INDUSTRY, 2023-2030 (USD MILLION)	111
TABLE 33	LATIN AMERICA: HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE, 2021-2022 (USD MILLION)	112
TABLE 34	LATIN AMERICA: HYDROGEN HUBS MARKET, BY SUPPLY TECHNIQUE, 2023-2030 (USD MILLION)	112
10.7.3	CHILE	112
10.7.3.1	Large-scale hydrogen production to drive market	112
10.7.4	ARGENTINA	112
10.7.4.1	National Hydrogen Strategy to drive market	112
10.7.5	REST OF LATIN AMERICA	113
11	COMPETITIVE LANDSCAPE	114
11.1	INTRODUCTION	114
11.2	MARKET RANKING ANALYSIS	114
FIGURE 40	MARKET RANKING OF TOP 5 PLAYERS, 2022	114
?		
11.3	COMPANY EVALUATION MATRIX	116
11.3.1	STARS	116
11.3.2	EMERGING LEADERS	116
11.3.3	PERVASIVE PLAYERS	116
11.3.4	PARTICIPANTS	116
FIGURE 41	COMPANY EVALUATION MATRIX, 2022	117
11.4	COMPANY FOOTPRINT	117
TABLE 35	COMPANY PRODUCT FOOTPRINT	117
TABLE 36	COMPANY FOOTPRINT, BY END USE	118
TABLE 37	COMPANY FOOTPRINT, BY REGION	119
11.5	COMPETITIVE SCENARIO	120
11.5.1	PRODUCT LAUNCHES	120
TABLE 38	PRODUCT LAUNCHES, 2020-2023	120
11.5.2	DEALS	124
TABLE 39	DEALS, 2020-2023	125
12	COMPANY PROFILES	152
	(Business overview, Products/Services/Solutions offered, Recent Developments, MNM view)*	
12.1	INTRODUCTION	152
12.2	KEY PLAYERS	153

12.2.1	LINDE PLC	153
TABLE 40	LINDE PLC: COMPANY OVERVIEW	153
FIGURE 42	LINDE PLC: COMPANY SNAPSHOT	154
TABLE 41	LINDE PLC: PRODUCTS/SOLUTIONS/SERVICES OFFERED	154
TABLE 42	LINDE PLC: DEALS	155
12.2.2	SAUDI ARABIAN OIL GROUP (ARAMCO)	157
TABLE 43	SAUDI ARABIAN OIL GROUP (ARAMCO): COMPANY OVERVIEW	157
FIGURE 43	SAUDI ARABIAN OIL GROUP (ARAMCO): COMPANY SNAPSHOT	158
TABLE 44	SAUDI ARABIAN OIL GROUP (ARAMCO): PRODUCTS/SOLUTIONS/SERVICES OFFERED	158
TABLE 45	SAUDI ARABIAN OIL GROUP (ARAMCO): DEALS	159
12.2.3	SHELL PLC	161
TABLE 46	SHELL PLC: COMPANY OVERVIEW	161
FIGURE 44	SHELL PLC: COMPANY SNAPSHOT	162
TABLE 47	SHELL PLC: PRODUCTS/SOLUTIONS/SERVICES OFFERED	162
TABLE 48	SHELL PLC: PRODUCT LAUNCHES	163
TABLE 49	SHELL PLC: DEALS	163
12.2.4	SINOPEC CORP.	165
TABLE 50	SINOPEC CORP.: COMPANY OVERVIEW	165
FIGURE 45	SINOPEC CORP.: COMPANY SNAPSHOT	165
TABLE 51	SINOPEC CORP.: PRODUCTS/SOLUTIONS/SERVICES OFFERED	166
TABLE 52	SINOPEC CORP.: PRODUCT LAUNCHES	166
12.2.5	AIRBUS SE	168
TABLE 53	AIRBUS SE: COMPANY OVERVIEW	168
FIGURE 46	AIRBUS SE: COMPANY SNAPSHOT	169
TABLE 54	AIRBUS SE: PRODUCTS/SOLUTIONS/SERVICES OFFERED	169
TABLE 55	AIRBUS SE: DEALS	170
12.2.6	AIR LIQUIDE SA	172
TABLE 56	AIR LIQUIDE SA: COMPANY OVERVIEW	172
FIGURE 47	AIR LIQUIDE SA: COMPANY SNAPSHOT	173
TABLE 57	AIR LIQUIDE SA: PRODUCT/SOLUTIONS/SERVICES OFFERED	173
TABLE 58	AIR LIQUIDE SA: PRODUCT LAUNCHES	174
TABLE 59	AIR LIQUIDE SA: DEALS	174
12.2.7	AIR PRODUCTS AND CHEMICALS INC.	179
TABLE 60	AIR PRODUCTS AND CHEMICALS INC.: COMPANY OVERVIEW	179
FIGURE 48	AIR PRODUCTS AND CHEMICALS INC.: COMPANY SNAPSHOT	180
TABLE 61	AIR PRODUCTS AND CHEMICALS INC.: PRODUCTS/SOLUTIONS/SERVICES OFFERED	180
TABLE 62	AIR PRODUCTS AND CHEMICALS INC.: DEALS	181
12.2.8	CHEVRON CORPORATION	184
TABLE 63	CHEVRON CORPORATION: COMPANY OVERVIEW	184
FIGURE 49	CHEVRON CORPORATION: COMPANY SNAPSHOT	185
TABLE 64	CHEVRON CORPORATION: PRODUCTS/SOLUTIONS/SERVICES OFFERED	185
TABLE 65	CHEVRON CORPORATION: DEALS	186
12.2.9	IWATANI CORPORATION	189
TABLE 66	IWATANI CORPORATION: COMPANY OVERVIEW	189
FIGURE 50	IWATANI CORPORATION: COMPANY SNAPSHOT	189
TABLE 67	IWATANI CORPORATION: PRODUCTS/SOLUTIONS/SERVICES OFFERED	190
TABLE 68	IWATANI CORPORATION: DEALS	190

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

12.2.10	MESSERS GMBH	192
TABLE 69	MESSERS GMBH: COMPANY OVERVIEW	192
TABLE 70	MESSERS GMBH: PRODUCTS/SOLUTIONS/SERVICES OFFERED	192
TABLE 71	MESSERS GMBH: DEALS	192
12.2.11	BGR ENERGY SYSTEMS LTD.	194
TABLE 72	BGR ENERGY SYSTEMS LTD.: COMPANY OVERVIEW	194
FIGURE 51	BGR ENERGY SYSTEMS LTD.: COMPANY SNAPSHOT	195
TABLE 73	BGR ENERGY SYSTEMS LTD.: PRODUCTS/SOLUTIONS/SERVICES OFFERED	195
TABLE 74	BGR ENERGY SYSTEMS LTD.: DEALS	196
12.2.12	UNIPER SE	197
TABLE 75	UNIPER SE: COMPANY OVERVIEW	197
FIGURE 52	UNIPER SE: COMPANY SNAPSHOT	197
TABLE 76	UNIPER SE: PRODUCTS/SOLUTIONS/SERVICES OFFERED	198
TABLE 77	UNIPER SE: DEALS	198
?		
12.2.13	GREENSTAT	199
TABLE 78	GREENSTAT: COMPANY OVERVIEW	199
TABLE 79	GREENSTAT: PRODUCTS/SOLUTIONS/SERVICES OFFERED	199
TABLE 80	GREENSTAT: DEALS	200
12.2.14	FUELCELL ENERGY, INC.	202
TABLE 81	FUELCELL ENERGY, INC.: COMPANY OVERVIEW	202
FIGURE 53	FUELCELL ENERGY, INC.: COMPANY SNAPSHOT	202
TABLE 82	FUELCELL ENERGY, INC.: PRODUCTS/SOLUTIONS/SERVICES OFFERED	203
TABLE 83	FUELCELL ENERGY, INC.: PRODUCT LAUNCHES	203
TABLE 84	FUELCELL ENERGY, INC.: DEALS	204
12.2.15	CUMMINS INC.	207
TABLE 85	CUMMINS INC.: COMPANY OVERVIEW	207
FIGURE 54	CUMMINS INC.: COMPANY SNAPSHOT	207
TABLE 86	CUMMINS INC.: PRODUCTS/SOLUTIONS/SERVICES OFFERED	208
TABLE 87	CUMMINS INC.: PRODUCT LAUNCHES	208
TABLE 88	CUMMINS INC.: DEALS	209
12.2.16	BLOOM ENERGY GROUP	210
TABLE 89	BLOOM ENERGY GROUP: COMPANY OVERVIEW	210
FIGURE 55	BLOOM ENERGY GROUP: COMPANY SNAPSHOT	210
TABLE 90	BLOOM ENERGY GROUP: PRODUCTS/SOLUTIONS/SERVICES OFFERED	210
TABLE 91	BLOOM ENERGY GROUP: PRODUCT LAUNCHES	211
TABLE 92	BLOOM ENERGY GROUP: DEALS	212
12.2.17	PLUG POWER INC.	214
TABLE 93	PLUG POWER INC.: COMPANY OVERVIEW	214
FIGURE 56	PLUG POWER INC.: COMPANY SNAPSHOT	214
TABLE 94	PLUG POWER INC.: PRODUCTS/SOLUTIONS/SERVICES OFFERED	215
TABLE 95	PLUG POWER INC.: DEALS	216
12.2.18	ELEMENT 1 CORP.	220
TABLE 96	ELEMENT 1 CORP.: COMPANY OVERVIEW	220
TABLE 97	ELEMENT 1 CORP.: PRODUCTS/SOLUTIONS/SERVICES OFFERED	220
TABLE 98	ELEMENT 1 CORP.: PRODUCT LAUNCHES	221
TABLE 99	ELEMENT 1 CORP.: DEALS	221

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

12.2.19	NEL HYDROGEN	224
TABLE 100	NEL HYDROGEN: COMPANY OVERVIEW	224
FIGURE 57	NEL HYDROGEN: COMPANY SNAPSHOT	224
TABLE 101	NEL HYDROGEN: PRODUCTS/SOLUTIONS/SERVICES OFFERED	225
TABLE 102	NEL HYDROGEN: DEALS	226
12.2.20	AW ENERGY	228
TABLE 103	AW ENERGY: COMPANY OVERVIEW	228
TABLE 104	AW ENERGY: PRODUCTS/SOLUTIONS/SERVICES OFFERED	228
TABLE 105	AW ENERGY: DEALS	229
TABLE 106	AW ENERGY: OTHERS	229
12.2.21	NPROXX	230
TABLE 107	NPROXX: COMPANY OVERVIEW	230
TABLE 108	NPROXX: PRODUCTS/SOLUTIONS/SERVICES OFFERED	230
TABLE 109	NPROXX: DEALS	231
12.2.22	GARDNER CRYOGENICS	232
TABLE 110	GARDNER CRYOGENICS: COMPANY OVERVIEW	232
TABLE 111	GARDNER CRYOGENICS: PRODUCTS/SOLUTIONS/SERVICES OFFERED	232
12.2.23	CALVERA HYDROGEN SA	233
TABLE 112	CALVERA HYDROGEN SA: COMPANY OVERVIEW	233
TABLE 113	CALVERA HYDROGEN SA: PRODUCTS/SOLUTIONS/SERVICES OFFERED	233
TABLE 114	CALVERA HYDROGEN SA: PRODUCT LAUNCHES	234
TABLE 115	CALVERA HYDROGEN SA: DEALS	235
12.2.24	HEXAGON COMPOSITES	236
TABLE 116	HEXAGON COMPOSITES: COMPANY OVERVIEW	236
FIGURE 58	HEXAGON COMPOSITES: COMPANY SNAPSHOT	237
TABLE 117	HEXAGON COMPOSITES: PRODUCTS/SOLUTIONS/SERVICES OFFERED	237
TABLE 118	HEXAGON COMPOSITES: DEALS	238
*Details on Business overview, Products/Services/Solutions offered, Recent Developments, MNM view might not be captured in case of unlisted companies.		
13	APPENDIX	239
13.1	DISCUSSION GUIDE	239
13.2	KNOWLEDGESTORE: MARKETSandMARKETS' SUBSCRIPTION PORTAL	241
13.3	CUSTOMIZATION OPTIONS	243
13.4	RELATED REPORTS	243
13.5	AUTHOR DETAILS	244

Hydrogen Hubs Market by Industry (Automotive, Aviation, Marine), Supply Technique (SMR, Electrolysis), End Use (Liquid Hydrogen, Hydrogen Fuel Cell) & Region (North America, Europe, APAC, MEA, & Latin America) - Global Forecast to 2030

Market Report | 2024-01-12 | 241 pages | MarketsandMarkets

To place an Order with Scotts International:

- ☐ - Print this form
- ☐ - Complete the relevant blank fields and sign
- ☐ - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User	\$4950.00
	Multi User	\$6650.00
	Corporate License	\$8150.00
	Enterprise Site License	\$10000.00
		VAT
		Total

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*	<input type="text"/>	Phone*	<input type="text"/>
First Name*	<input type="text"/>	Last Name*	<input type="text"/>
Job title*	<input type="text"/>		
Company Name*	<input type="text"/>	EU Vat / Tax ID / NIP number*	<input type="text"/>
Address*	<input type="text"/>	City*	<input type="text"/>
Zip Code*	<input type="text"/>	Country*	<input type="text"/>

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Date

2025-05-20

Signature



Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com