

Green Ammonia Market by Technology (Alkaline Water Electrolysis (AWE), Proton Exchange Membrane (PEM), SOE), End-Use Application (Transportation, Power Generation, Industrial Feedstock (Industrial, Fertilizers)), Region - Global Forecast & Trends to 2030

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Report description:

The green ammonia market is expected to grow from USD 0.3 billion in 2024 to USD 6.2 billion by 2030, with a CAGR of 66.0% during the forecast period. The development of a global hydrogen economy is driving the demand for green ammonia. As an efficient hydrogen carrier, green ammonia is crucial for transporting hydrogen over long distances and enabling its use in various applications, including power generation, transportation, and industrial processes.

"Solid oxide electrolysis technology segment to be the fastest-growing market from 2024 to 2030"

The green ammonia market is divided into three technological categories: alkaline water electrolysis, proton exchange membrane electrolysis, and solid oxide electrolysis. The increasing global need for green hydrogen is pushing the use of Solid Oxide Electrolysis Cell (SOEC) technology, which provides an effective technique for producing hydrogen from renewable sources. SOEC technology is more energy efficient than conventional electrolysis technologies, giving it a competitive advantage in the green ammonia industry. The scalability of SOEC systems enables both small-scale and large-scale applications, satisfying the green ammonia industry's different requirements.

"Industrial Feedstock, by end-use application, expected to be the largest market from 2024 to 2030"

The green ammonia market, by end-use application, is bifurcated into power generation, transportation and industrial feedstock. The industrial feedstocks segment is expected to be the largest market, followed by power generation during the forecast period. This dominance is because of the need for green fertilizers in agricultural industries. The growing emphasis on sustainability and decreasing carbon footprints in industrial operations fuels demand for green ammonia as a greener alternative to standard ammonia manufacturing methods. Governments are adopting rules and incentives to encourage industry to use green ammonia.

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Green ammonia may be employed as a hydrogen carrier for energy storage, making it a flexible alternative for balancing supply and demand in renewable energy systems. Green ammonia is utilized in a variety of industrial applications, including fertilizers, chemicals, and medicines, where sustainability is increasingly important.

"Europe is expected to be the largest region in the green ammonia market."

Several European nations have made significant pledges to increase the proportion of renewable energy in their energy mix. The availability of wind and solar resources in Europe offers a solid foundation for the creation of green hydrogen, which is subsequently converted into green ammonia. The combination of green ammonia with renewable energy sources helps to stabilize the system and store extra energy. In addition, Europe has made major investments in the infrastructure required for green ammonia production, storage, and delivery. The construction of pipelines, terminals, and storage facilities improves the scalability and logistics of green ammonia, allowing it to be widely adopted throughout the area.

Breakdown of Primaries:

In-depth interviews have been conducted with a variety of 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, as well as 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 Level- 25%, and Others- 45%

By Region: North America - 25%, Europe - 25%, Asia Pacific - 30%, Middle East & Africa- 10% and South America - 10%

Note: Other designations include sales managers, marketing managers, product managers, and product engineers.

The tier of the companies is defined based on their total revenue as of 2023. Tier 1: USD 1 billion and above, Tier 2: From USD 500 million to USD 1 billion, and Tier 3: <USD 500 million.

The Green ammonia market is dominated by a few major players that have a wide regional presence. The leading players in the green ammonia market are Siemens Energy (Germany), ACME Group (India), ThyssenKrupp AG (Germany), Nel ASA (Norway), Iberdrola, S.A. (Spain), and Yara (Norway) among others. The major strategy adopted by the players includes new product launches, partnerships, collaboration, merger, and investments & expansions.

Research Coverage:

The report defines, describes, and forecasts the global green ammonia market by technology, capacity, end-use 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 sustainable fuel market.

Key Benefits of Buying the Report

- Increasing emphasis on net zero emissions and supporting government regulations are just a few of the primary drivers propelling the green ammonia market. Regulatory and legislative uncertainties, as well as costly initial capital expenditure, limit the market's expansion. The ongoing energy shift to reduce carbon emissions is likely to provide attractive prospects for green ammonia market participants.
- Product Development/ Innovation: The green ammonia market is seeing substantial product development and innovation, driven by rising environmental concerns. Companies are investing in improved green ammonia manufacturing technology.
- Market Development: ThyssenKrupp AG has signed an engineering and supply contract with CF Industries to deliver a green hydrogen plant for the production of green ammonia at the Donaldsonville industrial complex in Louisiana. Under this deal, ThyssenKrupp AG will design and build a 20 MW hydrogen production unit using their alkaline water electrolysis technology, as well as all related utilities.
- Market Diversification: Siemens Energy collaborated with Fortescue Future Industries, a green hydrogen manufacturing company, and GeoPura, a provider of renewable energy, EV charging, and emission-free electricity, to create an ammonia cracker prototype designed to produce green hydrogen on an industrial scale, thereby addressing climate change and lowering carbon emissions. The prototype would use ammonia to generate 200 kg of hydrogen each day, enough to power around 5-10 hydrogen fuel cell electric buses.

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-Competitive Assessment: In-depth analysis of market share, growth plans, and service offerings of top companies in the green ammonia industry, including Siemens Energy (Germany), ACME (India), ThyssenKrupp AG (Germany), Nel ASA (Norway), Iberdrola, S.A. (Spain), and Yara (Norway) among others.

Table of Contents:

1	INTRODUCTION	26
1.1	STUDY OBJECTIVES	26
1.2	MARKET DEFINITION	26
1.3	STUDY SCOPE	27
1.3.1	INCLUSIONS AND EXCLUSIONS	27
1.3.2	MARKETS COVERED	28
1.3.3	YEARS CONSIDERED	29
1.4	CURRENCY CONSIDERED	29
1.5	LIMITATIONS	29
1.6	STAKEHOLDERS	30
1.7	SUMMARY OF CHANGES	30
1.8	RECESSION IMPACT	31
2	RESEARCH METHODOLOGY	32
2.1	RESEARCH APPROACH	32
2.2	DATA TRIANGULATION	33
2.2.1	PRIMARY AND SECONDARY RESEARCH	33
2.2.1.1	Secondary data	33
2.2.1.2	List of major secondary sources	34
2.2.1.3	Key data from secondary sources	34
2.2.2	PRIMARY DATA	34
2.2.2.1	List of primary interview participants	35
2.2.2.2	Key data from primary sources	35
2.2.2.3	Breakdown of primaries	35
2.3	MARKET SIZE ESTIMATION METHODOLOGY	37
2.3.1	BOTTOM-UP APPROACH	37
2.3.2	TOP-DOWN APPROACH	38
2.4	DEMAND-SIDE ANALYSIS	39
2.4.1	DEMAND-SIDE METRICS	39
2.4.1.1	Assumptions for demand-side analysis	40
2.4.1.2	Calculations for demand-side analysis	40
2.4.2	SUPPLY-SIDE ANALYSIS	41
2.4.2.1	Assumptions for supply-side analysis	41
2.4.2.2	Calculations for supply-side analysis	42
2.4.3	FORECAST	42
2.5	RESEARCH LIMITATIONS	43
2.6	RISK ANALYSIS	43
2.7	IMPACT OF RECESSION ON MARKET	43
3	EXECUTIVE SUMMARY	44
4	PREMIUM INSIGHTS	49
4.1	ATTRACTIVE OPPORTUNITIES FOR PLAYERS IN GREEN AMMONIA MARKET	49
4.2	GREEN AMMONIA MARKET, BY REGION	49
4.3	GREEN AMMONIA MARKET, BY TECHNOLOGY	50

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4.4	GREEN AMMONIA MARKET, BY CAPACITY	50
4.5	GREEN AMMONIA MARKET, BY APPLICATION	51
4.6	GREEN AMMONIA MARKET IN EUROPE, BY APPLICATION AND COUNTRY	51
5	MARKET OVERVIEW	52
5.1	INTRODUCTION	52
5.2	MARKET DYNAMICS	52
5.2.1	DRIVERS	53
5.2.1.1	Need to store renewable energy for longer term	53
5.2.1.2	Regulatory policies and incentives to reduce GHG emissions	53
5.2.1.3	Increased need for eco-friendly fertilizers	54
5.2.2	RESTRAINTS	55
5.2.2.1	High initial setup costs	55
5.2.3	OPPORTUNITIES	55
5.2.3.1	Potential of ammonia as maritime fuel	55
5.2.3.2	Increasing focus on building hydrogen-based economy	56
5.2.3.3	Plans to achieve net-zero and electrolyzers target	56
5.2.4	CHALLENGES	57
5.2.4.1	Lack of information about green ammonia among chemical manufacturers	57
5.2.4.2	Low level of technology readiness for use of ammonia as zero-carbon fertilizer, fuel, and energy storage	57
5.3	TRENDS/DISRUPTIONS IMPACTING CUSTOMER BUSINESS	58
5.3.1	REVENUE SHIFT AND NEW REVENUE POCKETS FOR PROVIDERS OF GREEN AMMONIA	58
5.4	SUPPLY CHAIN ANALYSIS	59
5.4.1	TECHNOLOGY PROVIDERS	59
5.4.2	PRODUCERS	59
5.4.3	AMMONIA PLANT EPC COMPANIES	59
5.4.4	END USERS	59
5.5	ECOSYSTEM ANALYSIS	60
5.6	TECHNOLOGY ANALYSIS	61
5.6.1	KEY TECHNOLOGIES	61
5.6.1.1	Electrolyzer-based Haber-Bosch process	61
5.6.1.2	Proton exchange membrane electrolysis	61
	?	
5.6.1.3	Alkaline electrolysis	61
5.6.1.4	Solid oxide electrolysis	62
5.6.2	COMPLEMENTARY TECHNOLOGY ANALYSIS	62
5.6.2.1	Electrochemical synthesis	62
5.6.2.2	Photochemical synthesis	63
5.6.2.3	Biomass with carbon capture and storage	63
5.7	CASE STUDY ANALYSIS	63
5.7.1	DOWNSCALING HABER-BOSCH	63
5.7.1.1	Background	63
5.7.1.2	Challenges	64
5.7.1.3	Solution	64
5.7.2	STORING AND TRANSPORTING RENEWABLE ENERGY	64
5.7.2.1	Background	64
5.7.2.2	Challenges	64
5.7.2.3	Solution	64

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5.7.3	DEVELOPING CARBON-FREE ENERGY SYSTEMS WITH GREEN AMMONIA	65
5.7.3.1	Background	65
5.7.3.2	Challenges	65
5.7.3.3	Solution	65
5.8	PATENT ANALYSIS	66
5.9	TRADE ANALYSIS	70
5.9.1	HS CODE 2814	70
5.9.1.1	Export scenario	70
5.9.1.2	Import scenario	71
5.9.2	HS CODE 280410	72
5.9.2.1	Export scenario	72
5.9.2.2	Import scenario	73
5.9.3	HS CODE 280430	74
5.9.3.1	Export scenario	74
5.9.3.2	Import scenario	75
5.10	PRICING ANALYSIS	76
5.10.1	AVERAGE LEVELIZED COST OF GREEN AMMONIA, BY REGION	76
5.10.2	INDICATIVE PRICING ANALYSIS, BY TECHNOLOGY (USD)	77
5.11	KEY CONFERENCES & EVENTS, 2024-2025	77
5.12	MARKET MAP	78
5.13	REGULATORY LANDSCAPE	78
5.13.1	REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS	78
5.13.2	REGULATIONS	80
5.14	PORTER'S FIVE FORCES ANALYSIS	81
5.14.1	THREAT OF SUBSTITUTES	82
5.14.2	BARGAINING POWER OF SUPPLIERS	82
5.14.3	BARGAINING POWER OF BUYERS	82
5.14.4	THREAT OF NEW ENTRANTS	82
5.14.5	INTENSITY OF COMPETITIVE RIVALRY	83
5.15	KEY STAKEHOLDERS AND BUYING CRITERIA	83
5.15.1	KEY STAKEHOLDERS IN BUYING PROCESS	83
5.15.2	BUYING CRITERIA	84
5.16	INVESTMENT AND FUNDING SCENARIO	85
6	KEY ELEMENTS IN GREEN AMMONIA PRODUCTION	86
6.1	NECESSARY ELEMENTS TO PRODUCE GREEN AMMONIA	86
6.1.1	POWER SOURCE	86
6.1.2	ELECTROLYZERS	87
6.1.3	HABER-BOSCH REACTORS	87
6.1.4	AIR SEPARATION UNITS	88
6.1.5	AMMONIA STORAGE UNITS	88
7	GREEN AMMONIA MARKET, BY TECHNOLOGY	89
7.1	INTRODUCTION	90
7.2	ALKALINE WATER ELECTROLYSIS	91
7.2.1	MATURITY AND COST-EFFECTIVENESS - KEY GROWTH DRIVERS	91
7.3	PROTON EXCHANGE MEMBRANE ELECTROLYSIS	92
7.3.1	FLEXIBLE TECHNOLOGY FOR DYNAMIC AND INTERMITTENT RENEWABLE ENERGY SYSTEMS	92
7.4	SOLID OXIDE ELECTROLYSIS	94

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- 7.4.1 LOW DEMAND DUE TO INSTABILITY OF POWER SOURCES 94
- 8 GREEN AMMONIA MARKET, BY CAPACITY 95
- 8.1 INTRODUCTION 96
- 8.2 SMALL-SCALE 97
- 8.2.1 FLEXIBILITY AND LOWER CAPITAL INVESTMENT TO FUEL GROWTH 97
- 8.3 MEDIUM-SCALE 97
- 8.3.1 RISING REGIONAL AND LOCAL DEMAND TO BOOST GROWTH 97
- 8.4 LARGE-SCALE 97
- 8.4.1 EXTENSIVE PRODUCTION CAPACITY TO EXPEDITE GROWTH 97
- 9 GREEN AMMONIA MARKET, BY APPLICATION 98
- 9.1 INTRODUCTION 99
- 9.2 INDUSTRIAL FEEDSTOCK 100
- 9.2.1 FERTILIZERS 102
- 9.2.1.1 Wide-scale use of ammonia in production of agricultural fertilizers 102
- 9.2.2 CHEMICAL, PHARMACEUTICAL, TEXTILE 102
- 9.2.2.1 Growing demand from industries for sustainability 102
- ?
- 9.3 POWER GENERATION 102
- 9.3.1 CRUCIAL ROLE IN GAS TURBINES TO BOOST MARKET GROWTH 102
- 9.4 TRANSPORTATION 104
- 9.4.1 INCREASING INVESTMENTS IN FUEL CELL PROJECTS TO DRIVE MARKET 104
- 10 GREEN AMMONIA MARKET, BY REGION 105
- 10.1 INTRODUCTION 106
- 10.2 EUROPE 108
- 10.2.1 RECESSION IMPACT: EUROPE 109
- 10.2.2 EUROPE: MACRO FACTORS 110
- 10.2.2.1 Europe: Ammonia production 110
- 10.2.2.2 Europe: Hydrogen generation 110
- 10.2.2.3 Europe: Installed renewable capacity 110
- 10.2.2.4 Europe: Greenhouse gas emissions 111
- 10.2.3 BY TECHNOLOGY 111
- 10.2.4 BY APPLICATION 112
- 10.2.5 BY COUNTRY 112
- 10.2.5.1 Germany 113
- 10.2.5.1.1 Ongoing green ammonia projects to stimulate market growth 113
- 10.2.5.1.2 Germany: Macro factors 114
- 10.2.5.1.3 By application 115
- 10.2.5.2 UK 115
- 10.2.5.2.1 Role of green ammonia in country's net-zero emission goal to boost production 115
- 10.2.5.2.2 UK: Macro factors 116
- 10.2.5.2.3 By application 116
- 10.2.5.3 Netherlands 117
- 10.2.5.3.1 Favorable government policies and initiatives to drive market 117
- 10.2.5.3.2 Netherlands: Macro factors 117
- 10.2.5.3.3 By application 118
- 10.2.5.4 Denmark 119
- 10.2.5.4.1 Investments in large-scale green ammonia projects to fuel market growth 119

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10.2.5.4.2	Denmark: Macro factors	119
10.2.5.4.3	By application	120
10.2.5.5	Norway	120
10.2.5.5.1	Need for carbon-free products in country to boost market growth	120
10.2.5.5.2	Norway: Macro factors	121
10.2.5.5.3	By application	121
?		
10.2.5.6	Spain	122
10.2.5.6.1	Significant growth in green ammonia projects due to excellent resources	122
10.2.5.6.2	Spain: Macro factors	123
10.2.5.6.3	By application	123
10.2.5.7	Rest of Europe	124
10.2.5.7.1	Rest of Europe: Macro factors	124
10.2.5.7.2	By application	125
10.3	ASIA PACIFIC	125
10.3.1	RECESSION IMPACT: ASIA PACIFIC	126
10.3.2	ASIA PACIFIC: MACRO FACTORS	127
10.3.2.1	Asia Pacific: Ammonia production	127
10.3.2.2	Asia Pacific: Hydrogen generation	127
10.3.2.3	Asia Pacific: Installed renewable capacity	127
10.3.2.4	Asia Pacific: Greenhouse gas emissions	128
10.3.3	BY TECHNOLOGY	128
10.3.4	BY APPLICATION	129
10.3.5	BY COUNTRY	129
10.3.5.1	Australia	130
10.3.5.1.1	Increasing focus on renewable energy production to drive market	130
10.3.5.1.2	Australia: Macro factors	131
10.3.5.1.3	By application	131
10.3.5.2	China	132
10.3.5.2.1	Acceleration of green ammonia production in China to drive market growth	132
10.3.5.2.2	China: Macro factors	132
10.3.5.2.3	By application	133
10.3.5.3	Japan	134
10.3.5.3.1	Favorable policies promoting use of green ammonia to support market growth	134
10.3.5.3.2	Japan: Macro factors	134
10.3.5.3.3	By application	135
10.3.5.4	New Zealand	136
10.3.5.4.1	Innovations and subsidies for hydrogen and ammonia energy to boost market growth	136
10.3.5.4.2	New Zealand: Macro factors	136
10.3.5.4.3	By application	137
10.3.5.5	India	138
10.3.5.5.1	Growing green ammonia consumption in mobility sector to propel market	138
10.3.5.5.2	India: Macro factors	138
10.3.5.5.3	By application	139
?		
10.3.5.6	Rest of Asia Pacific	140
10.3.5.6.1	Rest of Asia Pacific: Macro factors	140

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10.3.5.6.2	By application	141
10.4	NORTH AMERICA	142
10.4.1	RECESSION IMPACT: NORTH AMERICA	142
10.4.2	NORTH AMERICA: MACRO FACTORS	142
10.4.2.1	North America: Ammonia production	142
10.4.2.2	North America: Hydrogen generation	142
10.4.2.3	North America: Installed renewable capacity	143
10.4.2.4	North America: Greenhouse gas emissions	143
10.4.3	BY TECHNOLOGY	143
10.4.4	BY APPLICATION	144
10.4.5	BY COUNTRY	145
10.4.5.1	US	145
10.4.5.1.1	High demand for transportation fuel to boost market	145
10.4.5.1.2	US: Macro factors	146
10.4.5.1.3	By application	146
10.4.5.2	Canada	147
10.4.5.2.1	Favorable policies promoting use of green ammonia to drive market	147
10.4.5.2.2	Canada: Macro factors	147
10.4.5.2.3	By application	148
10.4.5.3	Mexico	149
10.4.5.3.1	Growing fertilizer market to boost demand for green ammonia	149
10.4.5.3.2	Mexico: Macro factors	149
10.4.5.3.3	By application	150
10.5	REST OF THE WORLD	151
10.5.1	RECESSION IMPACT: ROW	151
10.5.2	ROW: MACRO FACTORS	152
10.5.2.1	Ammonia production	152
10.5.2.2	Hydrogen generation	152
10.5.2.3	Installed renewable capacity	152
10.5.2.4	Greenhouse gas emissions	153
10.5.3	BY COUNTRY	155
10.5.3.1	GCC Countries	155
10.5.3.1.1	Investments in renewable energy initiatives likely to propel market	155
10.5.3.1.2	Saudi Arabia	155
10.5.3.1.2.1	Green ammonia and hydrogen projects underway to boost economy	155
	?	
10.5.3.1.3	UAE	156
10.5.3.1.3.1	Increasing number of projects to stimulate market growth	156
10.5.3.1.4	UAE: Macro factors	156
10.5.3.1.5	Other GCC Countries	157
10.5.3.1.6	Macro factors	157
10.5.3.2	Rest of Middle East & Africa	157
10.5.3.2.1	Egypt: Macro factors	158
10.5.3.2.2	Morocco: Macro factors	158
10.5.3.3	Chile	159
10.5.3.3.1	Constant developments in energy sector to accelerate market growth	159
10.5.3.3.2	Chile: Macro factors	159

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10.5.3.4	Brazil	160
10.5.3.4.1	Rising production of green hydrogen to drive market	160
10.5.3.4.2	Brazil: Macro factors	160
11	COMPETITIVE LANDSCAPE	161
11.1	OVERVIEW	161
11.2	STRATEGIES ADOPTED BY KEY PLAYERS, 2020-2024	161
11.3	INDUSTRY CONCENTRATION	163
11.4	REVENUE ANALYSIS, 2019-2023	164
11.5	COMPANY VALUATION AND FINANCIAL MATRIX	165
11.6	BRAND COMPARISON	166
11.7	COMPANY EVALUATION MATRIX: KEY PLAYERS, 2023	167
11.7.1	STARS	167
11.7.2	EMERGING LEADERS	167
11.7.3	PERVASIVE PLAYERS	167
11.7.4	PARTICIPANTS	167
11.7.5	COMPANY FOOTPRINT: KEY PLAYERS, 2023	169
11.7.5.1	Product footprint	169
11.7.5.2	Company footprint	170
11.7.5.3	Regional footprint	170
11.7.5.4	Technology footprint	171
11.7.5.5	Application footprint	172
11.7.5.6	Capacity footprint	173
11.8	COMPANY EVALUATION MATRIX: STARTUPS/SMES, 2023	174
11.8.1	PROGRESSIVE COMPANIES	174
11.8.2	RESPONSIVE COMPANIES	174
11.8.3	DYNAMIC COMPANIES	174
11.8.4	STARTING BLOCKS	174
11.8.5	COMPETITIVE BENCHMARKING: KEY STARTUPS/SMES, 2023	176
?		
11.9	COMPETITIVE SCENARIO	177
11.9.1	PRODUCT LAUNCHES	177
11.9.2	DEALS	178
11.9.3	EXPANSIONS	179
11.9.4	OTHER DEVELOPMENTS	181
12	COMPANY PROFILES	183
12.1	PRODUCERS	183
12.1.1	ACME	183
12.1.1.1	Business overview	183
12.1.1.2	Products/Services/Solutions offered	183
12.1.1.3	Recent developments	184
12.1.1.3.1	Deals	184
12.1.1.3.2	Expansions	185
12.1.1.3.3	Other developments	186
12.1.1.4	MnM view	186
12.1.1.4.1	Right to win	186
12.1.1.4.2	Strategic choices	186
12.1.1.4.3	Weaknesses & competitive threats	186

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12.1.2	YARA	187
12.1.2.1	Business overview	187
12.1.2.2	Products/Services/Solutions offered	188
12.1.2.3	Recent developments	189
12.1.2.3.1	Deals	189
12.1.2.3.2	Expansions	190
12.1.2.3.3	Other developments	190
12.1.2.4	MnM view	190
12.1.2.4.1	Right to win	190
12.1.2.4.2	Strategic choices	190
12.1.2.4.3	Weaknesses & competitive threats	191
12.1.3	BASF SE	192
12.1.3.1	Business overview	192
12.1.3.2	Products/Services/Solutions offered	193
12.1.3.3	Recent developments	194
12.1.3.3.1	Deals	194
12.1.4	SIEMENS ENERGY	195
12.1.4.1	Business overview	195
12.1.4.2	Products/Services/Solutions offered	197
12.1.4.3	Recent developments	197
12.1.4.3.1	Deals	197
12.1.4.4	MnM view	198
12.1.4.4.1	Right to win	198
12.1.4.4.2	Strategic choices	198
12.1.4.4.3	Weaknesses & competitive threats	198
12.1.5	ENGIE	199
12.1.5.1	Business overview	199
12.1.5.2	Products/Services/Solutions offered	200
12.1.5.3	Recent developments	201
12.1.5.3.1	Deals	201
12.1.6	CF INDUSTRIES HOLDINGS, INC.	203
12.1.6.1	Business overview	203
12.1.6.2	Products/Services/Solutions offered	204
12.1.6.3	Recent developments	205
12.1.6.3.1	Deals	205
12.1.6.3.2	Other developments	206
12.1.7	UNIPER SE	207
12.1.7.1	Business overview	207
12.1.7.2	Products/Services/Solutions offered	208
12.1.7.3	Recent developments	209
12.1.7.3.1	Deals	209
12.1.8	GREENKO GROUP	211
12.1.8.1	Business overview	211
12.1.8.2	Products/Services/Solutions offered	211
12.1.8.3	Recent developments	212
12.1.8.3.1	Deals	212

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12.1.8.3.2	Other developments	213
12.2	OTHER PRODUCERS	214
12.2.1	FIRST AMMONIA	214
12.2.2	STARFIRE ENERGY	214
12.2.3	ALLIED GREEN AMMONIA PTY LTD	215
12.3	TECHNOLOGY PROVIDERS	216
12.3.1	THYSSENKRUPP AG	216
12.3.1.1	Business overview	216
12.3.1.2	Products/Services/Solutions offered	217
12.3.1.3	Recent developments	218
12.3.1.3.1	Deals	218
12.3.1.3.2	Other developments	220
12.3.1.4	MnM view	221
12.3.1.4.1	Right to win	221
12.3.1.4.2	Strategic choices	222
12.3.1.4.3	Weaknesses & competitive threats	222
		?
12.3.2	NEL ASA	223
12.3.2.1	Business overview	223
12.3.2.2	Products/Services/Solutions offered	224
12.3.2.3	Recent developments	225
12.3.2.3.1	Deals	225
12.3.2.3.2	Expansions	226
12.3.2.3.3	Other developments	226
12.3.2.4	MnM view	228
12.3.2.4.1	Right to win	228
12.3.2.4.2	Strategic choices	228
12.3.2.4.3	Weaknesses & competitive threats	228
12.3.3	ITM POWER PLC	229
12.3.3.1	Business overview	229
12.3.3.2	Products/Services/Solutions offered	230
12.3.3.3	Recent developments	231
12.3.3.3.1	Deals	231
12.3.3.3.2	Expansions	232
12.3.3.3.3	Other developments	233
12.3.4	GREEN HYDROGEN SYSTEMS	234
12.3.4.1	Business overview	234
12.3.4.2	Products/Services/Solutions offered	235
12.3.4.3	Recent developments	235
12.3.4.3.1	Deals	235
12.3.4.3.2	Expansions	237
12.3.4.3.3	Other developments	237
12.3.5	MCPHY ENERGY S.A.	238
12.3.5.1	Business overview	238
12.3.5.2	Products/Services/Solutions offered	239
12.3.5.3	Recent developments	239
12.3.5.3.1	Deals	239

12.3.5.3.2	Expansions	240
12.3.5.3.3	Other developments	240
12.3.6	CUMMINS INC.	241
12.3.6.1	Business overview	241
12.3.6.2	Products/Services/Solutions offered	242
12.3.6.3	Recent developments	243
12.3.6.3.1	Deals	243
12.3.7	ENAPTER S.R.L.	244
12.3.7.1	Business overview	244
12.3.7.2	Products/Services/Solutions offered	245
?		
12.3.7.3	Recent developments	246
12.3.7.3.1	Product launches	246
12.3.7.3.2	Deals	247
12.3.7.3.3	Expansions	247
12.3.7.3.4	Other developments	248
12.3.8	TOPSOE	250
12.3.8.1	Business overview	250
12.3.8.2	Products/Services/Solutions offered	251
12.3.8.3	Recent developments	252
12.3.8.3.1	Deals	252
12.3.8.3.2	Expansions	253
12.3.8.3.3	Other developments	253
12.3.9	FUELPOSITIVE	254
12.3.9.1	Business overview	254
12.3.9.2	Products/Services/Solutions offered	254
12.3.9.3	Recent developments	255
12.3.9.3.1	Product launches	255
12.3.9.3.2	Deals	255
12.3.9.3.3	Expansions	256
12.3.9.3.4	Other developments	256
12.4	OTHER TECHNOLOGY PROVIDERS	257
12.4.1	LONGI	257
12.5	AMMONIA PLANT EPC COMPANIES	258
12.5.1	IBERDROLA, S.A.	258
12.5.1.1	Business overview	258
12.5.1.2	Recent developments	260
12.5.1.2.1	Deals	260
12.6	OTHER AMMONIA PLANT EPC COMPANIES	261
12.6.1	HIRINGA ENERGY LTD	261
12.6.2	CEEC GLOBAL LTD	261
12.6.3	HYGENCO	262
13	APPENDIX	263
13.1	INSIGHTS FROM INDUSTRY EXPERTS	263
13.2	DISCUSSION GUIDE	264
13.3	KNOWLEDGESTORE: MARKETSandMARKETS? SUBSCRIPTION PORTAL	269
13.4	CUSTOMIZATION OPTIONS	271

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13.5 RELATED REPORTS 271

13.6 AUTHOR DETAILS 272

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