

Table of Content

Chapter 1	Research Methodology	14
1.1	Research design	14
1.1.1	Research approach	14
1.1.2	Data collection methods	15
1.2	Base estimates and calculations	15
1.2.1	Base year calculation	15
1.2.2	Key trends for market estimates	21
1.3	Forecast model	22
1.4	Primary research & validation	23
1.4.1	Primary sources	23
1.4.2	Data mining sources	24
1.5	Market definitions	25
Chapter 2	Executive Summary	29
2.1	Industry 360° synopsis, 2018-2032	29
2.2	Business trends	29
2.2.1	Total Addressable Market (TAM), 2024 -2032	30
2.2.1.1	TAM trends	30
2.3	Regional trends	31
2.4	Battery trends	32
2.5	Battery capacity trends	33
2.6	Application trends	34
2.7	Data center trends	35
Chapter 3	Industry Insights	37
3.1	Industry ecosystem analysis	37
3.1.1	Battery component suppliers	38
3.1.2	Manufacturers	38
3.1.3	Data center developers	39
3.1.4	End-use landscape	39
3.1.5	Distribution channel analysis	39
3.1.6	Maintenance services providers	40
3.2	Supplier Landscape	40
3.3	Technological & innovation landscape	42
3.3.1	Li-ion batteries	42
3.3.2	Battery Management Systems (BMS) for data centers	43
3.3.3	Artificial Intelligence in battery technology	44

3.3.4	New battery technologies	45
3.4	Patent analysis	45
3.5	Key news and initiatives	48
3.6	Regulatory Landscape	49
3.6.1	Global	49
3.6.1.1	IEC 62485-4:2015	49
3.6.1.2	IEC 62619:2022	49
3.6.1.3	NFPA 855	50
3.6.1.4	UL 9540	50
3.6.1.5	EN 50600	50
3.6.2	North America	51
3.6.2.1	National Electrical Code (NEC)	51
3.6.2.2	NEMA US 80027 2023	51
3.6.2.3	IEEE 1188-2015	51
3.6.2.4	U.S. Environmental Protection Agency Guidelines	51
3.6.3	Europe	52
3.6.3.1	EN Standards	52
3.6.3.2	CE Marking	52
3.6.3.3	European Code of Conduct for Data Centers	52
3.6.4	Asia Pacific	53
3.6.4.1	GB/T Standards	53
3.6.4.2	National Building Code	53
3.6.4.3	Green Building Standards	53
3.6.5	Latin America	53
3.6.5.1	Brazilian Solid Waste National Policy	53
3.6.5.2	National Electrical Code	54
3.6.6	MEA	54
3.6.6.1	Saudi Arabia Data Center Regulations	54
3.6.6.2	Dubai Building Code	54
3.7	Industry impact forces	55
3.7.1	Growth drivers	55
3.7.1.1	Rising construction of data centers across the world	55
3.7.1.2	Increasing cloud computing adoption	56
3.7.1.3	Growing internet of things (IoT) adoption	56
3.7.1.4	Advancements in battery technology	57
3.7.2	Industry pitfalls and challenges	58
3.7.2.1	High initial investments in data center batteries	58
3.7.2.2	Space limitations in data centers for installing battery systems	58

3.8	Growth potential analysis	59
3.9	Porter's analysis.....	60
3.10	PESTEL analysis.....	61
Chapter 4	Competitive Landscape, 2023	62
4.1	Introduction.....	62
4.2	Company market share analysis	62
4.2.1	Lead-acid.....	62
4.2.3	Lithium-ion.....	63
4.3	Competitive positioning matrix	67
4.4	Strategic outlook matrix	69
Chapter 5	Data Center Battery Market, By Battery	70
5.1	Key trends.....	70
5.2	Lead-acid	70
5.3	Lithium-ion	71
5.4	Nickel-Zinc	72
5.5	Others.....	72
Chapter 6	Data Center Battery Market, By Battery Capacity	74
6.1	Key trends.....	74
6.2	Small-Scale Batteries (Below 100 kWh)	74
6.3	Medium-Scale Batteries (100 kWh - 1 MWh).....	75
6.4	Large-Scale Batteries (Above 1 MWh)	75
Chapter 7	Data Center Battery Market, By Application	76
7.1	Key trends.....	76
7.2	Uninterruptible Power Supply (UPS).....	76
7.3	Backup Power Systems	77
7.4	Energy Storage Systems (ESS)	77
7.5	Peak shaving and load balancing	77
Chapter 8	Data Center Battery Market, By Data Center	79
8.1	Key trends.....	79
8.2	Enterprise data centers.....	79
8.3	Colocation data centers	80
8.4	Hyperscale data centers.....	80
8.5	Edge data center.....	81
Chapter 9	Data Center Battery Market, By Region.....	82
9.1	Key trends.....	82
9.2	North America	82

9.3	Europe	83
9.4	Asia Pacific	84
9.5	Latin Amerca	85
9.6	MEA	85
Chapter 10	Company Profiles.....	87
10.1	Alpha Technologies.....	87
10.1.1	Global Overview	87
10.1.2	Market/Business Overview.....	87
10.1.3	Financial data	87
10.1.4	Product Landscape.....	88
10.1.5	SWOT analysis.....	88
10.2	C&D Technologies, Inc.....	89
10.2.1	Global Overview	89
10.2.2	Market/Business Overview.....	89
10.2.3	Financial data	89
10.2.4	Product Landscape.....	90
10.2.5	Strategic Outlook	94
10.2.6	SWOT analysis.....	94
10.3	Leoch International Technology	95
10.3.1	Global Overview	95
10.3.2	Market/Business Overview.....	95
10.3.3	Financial Data	96
10.3.3.1	Sales Revenue, 2021-2023	96
10.3.4	Product Landscape.....	97
10.3.5	Strategic Outlook	97
10.3.6	SWOT Analysis.....	98
10.4	East Penn	99
10.4.1	Global Overview	99
10.4.2	Market/Business Overview.....	99
10.4.3	Financial Data	99
10.4.4	Product Landscape.....	99
10.4.5	Strategic Outlook	100
10.4.6	SWOT Analysis.....	101
10.5	EnerSys.....	102
10.5.1	Global Overview	102
10.5.2	Market/Business Overview.....	102
10.5.3	Financial Data	103
10.5.3.1	Sales Revenue, 2021-2023	103

	10.5.4	Product Landscape.....	104
	10.5.5	Strategic Outlook.....	105
	10.5.6	SWOT Analysis.....	105
10.6		Energion	106
	10.6.1	Global Overview.....	106
	10.6.2	Market/Business Overview.....	106
	10.6.3	Financial Data	106
	10.6.4	Product Landscape.....	107
	10.6.5	Strategic Outlook.....	108
	10.6.6	SWOT Analysis.....	108
10.7		Exide Technologies	109
	10.7.1	Global Overview.....	109
	10.7.2	Market/Business Overview.....	109
	10.7.3	Financial Data	109
	10.7.4	Product Landscape.....	110
	10.7.5	Strategic Outlook.....	110
	10.7.6	SWOT Analysis.....	111
10.8		MK Battery	112
	10.8.1	Global Overview.....	112
	10.8.2	Market/Business Overview.....	112
	10.8.3	Financial data	112
	10.8.4	Product landscape	112
	10.8.5	SWOT analysis.....	114
10.9		LG Energy Solution	115
	10.9.1	Global overview	115
	10.9.2	Market/Business overview	115
	10.9.3	Financial data	115
	10.9.3.1	Sales Revenue, 2021-2023.....	115
	10.9.4	Product landscape	116
	10.9.5	Strategic outlook	117
	10.9.6	SWOT analysis.....	118
10.10		FIAMM Energy Technology S.p.A.	119
	10.10.1	Global overview	119
	10.10.2	Market/Business overview	119
	10.10.3	Financial data	119
	10.10.4	Product landscape	119
	10.10.5	SWOT analysis.....	122
10.11		GS Yuasa	123

10.11.1	Global overview	123
10.11.2	Market/Business overview	123
10.11.3	Financial data	124
10.11.3.1	Sales Revenue, 2021-2023	124
10.11.4	Product landscape	125
10.11.5	Strategic outlook	126
10.11.6	SWOT analysis.....	126
10.12	Narada Power Source	127
10.12.1	Global overview	127
10.12.2	Market/Business overview	127
10.12.3	Financial data	128
10.12.3.1	Sales Revenue, 2020-2022.....	128
10.12.4	Product landscape	128
10.12.5	SWOT analysis.....	129
10.13	Delta Electronics	130
10.13.1	Global overview	130
10.13.2	Market/Business overview	130
10.13.3	Financial data	131
10.13.3.1	Sales Revenue, 2021-2023	131
10.13.4	Product landscape	132
10.13.5	Strategic outlook	133
10.13.6	SWOT analysis.....	134
10.14	Huawei Technologies Co., Ltd.....	135
10.14.1	Global Overview.....	135
10.14.2	Market/Business Overview.....	135
10.14.3	Financial Data	136
10.14.3.1	Sales Revenue, 2021-2023	136
10.14.4	Product Landscape.....	137
10.14.5	Strategic Outlook.....	137
10.14.6	SWOT Analysis.....	138
10.15	Power-Sonic Corporation	139
10.15.1	Global Overview.....	139
10.15.2	Market/Business Overview.....	139
10.15.3	Financial Data	139
10.15.4	Product Landscape.....	139
10.15.5	SWOT Analysis.....	140
10.16	Tycorun	141
10.16.1	Global Overview.....	141

	10.16.2	Market/Business Overview.....	141
	10.16.3	Financial Data	141
	10.16.4	Product Landscape.....	141
	10.16.5	SWOT Analysis.....	142
10.17		Samsung SDI	143
	10.17.1	Global Overview	143
	10.17.2	Market/Business Overview.....	143
	10.17.3	Financial Data	144
	10.17.3.1	Sales Revenue, 2021-2023	144
	10.17.4	Product Landscape.....	144
	10.17.5	Strategic Outlook	146
	10.17.6	SWOT Analysis.....	146
10.18		Saft Groupe	147
	10.18.1	Global Overview	147
	10.18.2	Market/Business Overview.....	147
	10.18.3	Financial Data	147
	10.18.3.1	Sales Revenue, 2021-2023	147
	10.18.4	Product Landscape.....	149
	10.18.5	Strategic Outlook	149
	10.18.6	SWOT Analysis.....	150
10.19		Intercel Services B.V.	151
	10.19.1	Global Overview	151
	10.19.2	Market/Business Overview.....	151
	10.19.3	Financial Data	151
	10.19.4	Product Landscape.....	151
	10.19.5	SWOT Analysis.....	152
10.20		HBL Batteries	153
	10.20.1	Global Overview	153
	10.20.2	Market/Business Overview.....	153
	10.20.3	Financial Data	153
	10.20.3.1	Sales Revenue, 2021-2023	153
	10.20.4	Product Landscape.....	155
	10.20.5	SWOT Analysis.....	156
10.21		CSB Battery Co., Ltd.....	157
	10.21.1	Global Overview	157
	10.21.2	Market/Business Overview.....	157
	10.21.3	Financial Data	158
	10.21.3.1	Sales Revenue, 2020-2023.....	158

	10.21.4	Product Landscape.....	160
	10.21.5	SWOT analysis.....	160
10.22		Toshiba Corporation	161
	10.22.1	Global Overview.....	161
	10.22.2	Market/Business Overview.....	161
	10.22.3	Financial Data	162
	10.22.3.1	Sales Revenue, 2020-2023.....	162
	10.22.4	Product Landscape.....	163
	10.22.5	Strategic Outlook.....	164
	10.22.6	SWOT analysis.....	165
10.23		Trojan Battery	166
	10.23.1	Global Overview.....	166
	10.23.2	Market/Business Overview.....	166
	10.23.3	Financial Data	166
	10.23.4	Product Landscape.....	166
	10.23.5	Strategic Outlook.....	167
	10.23.6	SWOT analysis.....	168
10.24		CTECH ENERGY PRIVATE LIMITED	169
	10.24.1	Global Overview.....	169
	10.24.2	Market/Business Overview.....	169
	10.24.3	Financial Data	169
	10.24.4	Product Landscape.....	169
	10.24.5	SWOT analysis.....	171
10.25		Vertiv.....	171
	10.25.1	Global Overview.....	171
	10.25.2	Market/Business Overview.....	172
	10.25.3	Financial Data	173
	10.25.3.1	Sales Revenue, 2020-2023.....	173
	10.25.4	Product Landscape.....	173
	10.25.5	Strategic Outlook.....	175
	10.25.6	SWOT analysis.....	176
10.26		ZincFive	177
	10.26.1	Global Overview.....	177
	10.26.2	Market/Business Overview.....	177
	10.26.3	Financial Data	177
	10.26.4	Product Landscape.....	177
	10.26.5	Strategic Outlook.....	178
	10.26.6	SWOT analysis.....	178

Data Tables

TABLE 1.	Global Data center battery market revenue, by company, 2023 (USD Million)	16
TABLE 2.	Data centre battery ASP, by country, by battery, 2023 (USD)	17
TABLE 3.	Data centre battery ASP, by country, by lead acid battery, 2023 (USD)	18
TABLE 4.	Data centre battery ASP, by country, by lithium-ion battery, 2023 (USD/kWh)	19
TABLE 5.	Global data center battery market, by data center, 2023 (USD Million)	20
TABLE 6.	Data center battery market, 2018 - 2023 (USD Million)	30
TABLE 7.	Data center battery market, 2024 – 2032 (USD Million)	30
TABLE 8.	Total addressable market, 2024 – 2032 (USD Million)	30
TABLE 9.	Data center battery market, by region, 2018 - 2023 (USD Million)	31
TABLE 10.	Data center battery market, by region, 2024 – 2032 (USD Million)	32
TABLE 11.	Data center battery market, by battery, 2018 - 2023 (USD Million)	33
TABLE 12.	Data center battery market, by battery, 2024 – 2032 (USD Million)	33
TABLE 13.	Data center battery market, by battery capacity, 2018 - 2023 (USD Million)	34
TABLE 14.	Data center battery market, by battery capacity, 2024 – 2032 (USD Million)	34
TABLE 15.	Data center battery market, by application, 2018 - 2023 (USD Million)	35
TABLE 16.	Data center battery market, by application, 2024 – 2032 (USD Million)	35
TABLE 17.	Data center battery market, by data center, 2018 - 2023 (USD Million)	36
TABLE 18.	Data center battery market, by data center, 2024 – 2032 (USD Million)	36
TABLE 19.	Supplier Landscape	40
TABLE 20.	Competitive analysis of major market players	66
TABLE 21.	Competitive positioning matrix: Classification criteria	68

Charts & Figures

FIG. 1	Forecast approach & model	22
FIG. 2	Breakdown of respondents	23
FIG. 3	Industry synopsis, 2018 – 2032	29
FIG. 4	Industry ecosystem	37
FIG. 5	Lithium-ion Battery Manufacturing Capacity by Region, 2022 (in TWh)	43
FIG. 6	Power Usage Effectiveness in Data Centers (2020-2022) (%)	44
FIG. 7	Impact forces	55
FIG. 8	Global public cloud service spending	56
FIG. 9	Global Internet of Things (IoT), total annual revenue	57
FIG. 10	Growth potential analysis	59
FIG. 11	Porter's analysis	60
FIG. 12	PESTEL analysis	61
FIG. 13	Competition market share	62
FIG. 14	Competition market share	63
FIG. 15	Competitive analysis of major players	65
FIG. 16	Competitive positioning matrix	67
FIG. 17	Strategic outlook matrix	69
FIG. 18	Data center battery market, by battery, 2023 & 2032 (USD Million)	70
FIG. 19	Data center battery market, by battery capacity, 2023 & 2032 (USD Million)	74
FIG. 20	Data center battery market, by application, 2023 & 2032 (USD Million)	76
FIG. 21	Data center battery market, by data center, 2023 & 2032 (USD Million)	79
FIG. 22	Data center battery market, by region, 2023 & 2032 (USD Million)	82