



RESEARCH REPORT

Executive Summary:

Energy Efficient Buildings Global Outlook

HVAC, Lighting, Building Envelope, Building Controls, Water Efficiency, Water Heating, and Commissioning and Installation Services: Global Market Analysis and Forecasts

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Published 2Q 2017

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Section 1

EXECUTIVE SUMMARY

1.1 Overview

Global buildings offer a focal point for affordably reaching the global sustainability goals established for energy and water consumption, materials use, and waste disposal, to name just a few. According to the World Resources Institute, buildings are responsible for nearly 40% of energy use (including 60% of electricity use), 12% of water use, 40% of waste generated by volume, and 40% of material resources. Efficiency opportunities in buildings provide an ample resource that is readily available in every region and country of the world, as well as an inexpensive alternative to other sources of generation.

The products and services for energy efficient buildings are poised for consistent growth through 2017 and beyond, and many favorable market factors and influences will be driving this growth. North America, Western Europe, and Asia Pacific will continue to be the largest markets for energy efficient building technologies in the global landscape.

In many regions around the world, growth in the overall building stock has been decoupled from regional energy consumption as newer buildings become more efficient. One significant driver supporting this decoupling has been the variety of organizations committed to increasing efficiency standards. While these organizations vary by region, many are prevalent across multiple countries, including the US Green Building Council's Leadership in Energy and Environmental Design (LEED), the US Department of Energy's (DOE's) Better Buildings Initiative, and the European Union's (EU's) Energy Performance of Buildings Directive (EPBD) and Energy Efficiency Directive (EED).

This Navigant Research report provides a broad examination of the state of the market for energy efficient building technologies in commercial and public buildings today. It also examines the key market factors and drivers that will contribute to market growth through 2026.

1.2 Key Market Dynamics

The energy efficient building technology market consists of a diverse set of product and service offerings, including HVAC, lighting, building envelope, building controls, water efficiency, water heating, and commissioning and installation services. Many of these equipment markets—such as the HVAC industry—have evolved slowly for more than a century. However, the landscape for efficient building technologies may be changing more rapidly today than it has at any point in its history. New market trends such as digitization, as a service offerings, the Internet of Things (IoT), and the ubiquitous nature of software systems are bringing new dynamics of operation and competition to the efficient buildings

market. Companies that did not have the foresight to start assessing the digital transformation years ago will be at a serious disadvantage competing in the years to come.

Navigant Research explores the following significant market trends in this report:

- Digitization has penetrated most energy efficient building technologies, providing more efficient building performance with the potential for deeper, enterprisewide strategic insights on overall business performance.
- The ubiquitous nature of software implementation within building equipment has shifted the approach from a component-based one to project design and implementation with more of a systems level process, coordinating all aspects of a building's operations.
- Participants in the efficient buildings value chain are creating products and services that broaden and deepen market penetration with increased simplicity or added sophistication, as well as investment and payback figures that better match the internal requirements of end-use customers.
- Service and distribution channels have had to evolve to meet the complex challenges of some of the more sophisticated efficient building technologies. As digitization overtakes most technology offerings, service providers and sales channels have had to elevate their understanding of these systems to ultimately provide the best service to their customer bases.
- Innovations in the efficient buildings market have created new competitive opportunities for companies with the foresight to take advantage of the disruptive nature of market change.

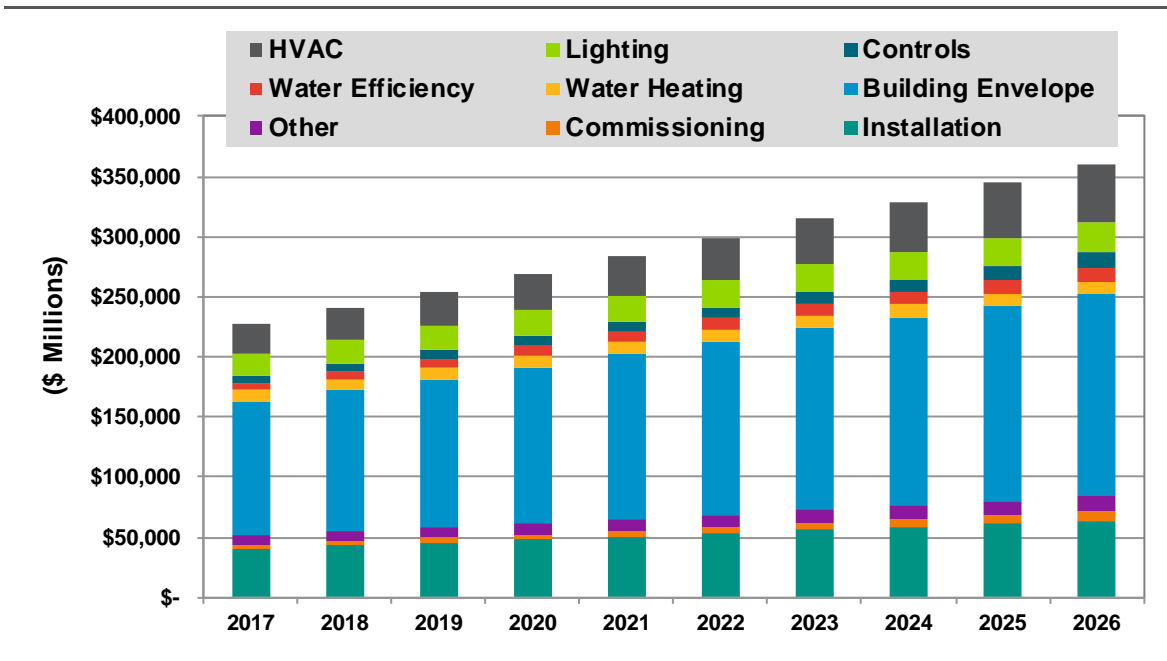
1.3 Market Forecast

Overall, the global market for energy efficient building technologies is expected to reach \$227.4 billion in 2017 and grow to nearly \$360.6 billion in 2026, with a compound annual growth rate (CAGR) of 5.3%. Nearly three-quarters of this incremental growth is projected to occur in new construction rather than retrofits.

Building envelope technologies will likely remain the most significant revenue generator in the energy efficient buildings market. Global building envelope revenue is anticipated to reach \$167.2 billion in 2026, growing at a CAGR of 4.6%. Water efficiency products have generated increased investment interest as water risk becomes a more important concern globally. Such products will likely see spending of \$11.6 billion in 2026, with a CAGR of 7.2%.

Throughout this forecast period, Western Europe will remain the global leader in energy efficient building spending. Aggressive policies across the EU such as the EPBD are expected to drive growth in the energy efficient building technologies market through 2030, although a slowly recovering construction market dampens this growth in the new construction sector. Strong growth is also forecast in Asia Pacific due to the relative size of its market and as China's 13th Five-Year Plan and its aggressive efficiency goals take hold.

Chart 1.1 *Energy Efficient Building Revenue by Product and Service Type, World Markets: 2017-2026*



(Source: Navigant Research)

Section 8

TABLE OF CONTENTS

Section 1	1
Executive Summary	1
1.1 Overview	1
1.2 Key Market Dynamics	1
1.3 Market Forecast	2
Section 2	4
Market Issues	4
2.1 Overview of Energy Efficient Buildings Markets: A Global Opportunity	4
2.1.1 Defining Energy Efficient Buildings	5
2.1.1.1 Deep Energy Efficiency	5
2.1.1.2 Green Versus Efficient Buildings	6
2.1.1.3 Definition of Energy Efficient Buildings	6
2.2 Commercial Building Sector Definition	7
2.3 Energy Efficiency Market Ecosystem	9
2.3.1 Equipment Manufacturers	9
2.3.2 Energy Service Companies	10
2.3.3 Architectural, Engineering, and Contracting Service Providers	12
2.3.4 Real Estate Companies	12
2.3.5 Investors and Financial Institutions	12
2.3.6 Utilities	14
2.3.7 Public Sector Customers: National and Provincial Governments	14
2.3.8 Private Sector Customers: Building Owners and Managers	15

2.4	Market Drivers	15
2.4.1	Energy Efficiency Policies	15
2.4.2	Corporate Sustainability Initiatives	16
2.4.3	End-Use Cost of Energy Consumption	16
2.4.4	Energy Efficiency Product Pivots	16
2.5	Market Barriers.....	17
2.5.1	Finance, Payback, and ROI Requirements.....	17
2.5.2	Market Confusion	17
2.5.3	Resource Availability	18
2.5.4	Split Incentives	18
2.6	General Market Trends and Issues.....	19
2.6.1	Early Adopter Stage for Many New Technologies	19
2.6.2	Low Hanging Fruit Is a Thriving Market Segment.....	19
2.6.3	Distribution Channels Are Ripe for Disruption.....	20
2.6.4	Water Efficiency Becoming More Important.....	20
2.7	Supply-Side Trends and Issues	21
2.7.1	IT Drives Transformation of Supply-Side OEMs and Vendors.....	21
2.7.2	Supply-Side Vendors Adopting Demand-Side Toolsets	22
2.7.3	Building Communication Is Still a Challenge.....	23
2.7.4	Utilities Becoming More Cooperative with Data Access	23
2.8	Demand-Side Trends and Issues.....	23
2.8.1	Analytics More Accepted Now.....	24
2.8.2	Product Pivots Around Inadequate Building Resources and Experience	24
2.8.3	Utility Bills Rising Faster Than National Electricity Prices.....	25
2.9	Key Global Policies Driving Energy Efficient Buildings.....	27

2.10	Key Regional Market Dynamics	29
2.10.1	North America	29
2.10.1.1	United States	30
2.10.1.2	Canada	31
2.10.2	Western Europe	31
2.10.2.1	France	32
2.10.2.2	Germany	33
2.10.2.3	United Kingdom	33
2.10.3	Eastern Europe	34
2.10.4	Asia Pacific.....	34
2.10.4.1	Australia	35
2.10.4.2	China.....	35
2.10.4.3	Japan	36
2.10.5	Latin America	36
2.10.5.1	Brazil	37
2.10.5.2	Mexico.....	37
2.10.6	Middle East & Africa.....	38
2.10.6.1	South Africa	38
Section 3	.....	39
Technology Issues	.....	39
3.1	Definition of Energy Efficient Building Technologies.....	39
3.2	Uniqueness of Individual Energy Efficiency Projects	39
3.3	Energy Efficiency Project Categorizations	40
3.4	Overview of Mechanical and Electrical Technologies.....	42
3.4.1	HVAC Technologies	42

3.4.1.1	Unitary Systems.....	42
3.4.1.2	Heat Pumps	42
3.4.1.3	Furnaces.....	43
3.4.1.4	Boilers	43
3.4.1.5	Variable Refrigerant Flow	43
3.4.1.6	Chillers.....	43
3.4.1.7	Geothermal Heat Pumps	44
3.4.2	Lighting Technologies	44
3.4.3	Controls	45
3.4.3.1	HVAC Controls	45
3.4.3.2	Lighting Controls.....	45
3.4.3.3	BMSs	45
3.4.4	Water Efficiency.....	46
3.4.4.1	Low Flow, Low Flush, and Zero Flush Fixtures, Toilets, and Urinals.....	46
3.4.4.2	Greywater Systems	46
3.4.5	BEMS	47
3.5	Overview of Building Envelope Technologies.....	47
3.5.1	Steel	47
3.5.2	Concrete	48
3.5.3	Glass	49
3.5.4	Insulation	49
3.5.5	Innovations in Materials.....	50
3.6	Overview of Services	51
3.6.1	Installation and Labor.....	51
3.6.2	Commissioning Services	51

3.7	Energy Efficient Building Technology Trends and Issues.....	52
3.7.1	Use Cases Promote New Technology Adoption.....	52
3.7.2	IoT Components Are Not Autonomous.....	53
3.7.3	IT and BMS More Integrated into Design and Construction Process.....	54
3.8	Examples of Digital Penetration in Select Market Segments.....	54
3.8.1	Use of Digital Tools by Energy and Engineering Services Companies.....	54
3.8.2	Digital Penetration into the AEC Markets.....	54
3.8.2.1	Building Information Modeling.....	55
3.8.2.2	Communication and IT Network Infrastructure.....	55
Section 4	.....	57
Key Industry Players	.....	57
4.1	Tier One Players.....	57
4.1.1	Acuity Brands.....	57
4.1.2	Daikin.....	58
4.1.3	Honeywell.....	58
4.1.4	Johnson Controls.....	59
4.1.5	Philips.....	60
4.1.6	Schneider Electric.....	61
4.1.7	Siemens.....	61
4.1.8	Trane.....	62
4.2	Other Major Players.....	63
4.2.1	CBRE.....	63
4.2.2	Cimetrics.....	64
4.2.3	Ecova.....	65
4.2.4	IBM.....	65

4.2.5	Mitsubishi Electric.....	66
4.3	Additional Players	67
4.3.1	Ameresco	67
4.3.2	Aquicore	68
4.3.3	Candi Controls.....	69
4.3.4	Cisco Systems, Inc.....	69
4.3.5	EcoEnergy	70
4.3.6	EnergyAi	71
4.3.7	Envizi	71
4.3.8	Gridium Inc.	72
4.3.9	I'm in Control	72
4.3.10	KGS Buildings	73
4.3.11	Kinestral Technologies.....	74
4.3.12	SkyFoundry, LLC	75
4.3.13	Termobuild	75
Section 5	.....	77
Market Forecasts	.....	77
5.1	Overview	77
5.2	Methodology.....	77
5.3	Product/Service Types	78
5.4	World Markets	78
5.4.1	Market by Product/Service	79
5.4.2	Market by Region	80
5.5	North America	80
5.5.1	Market by Product/Service	81

5.5.2	Market by Construction Type	82
5.6	Western Europe	82
5.6.1	Market by Product/Service	83
5.6.2	Market by Construction Type	84
5.7	Eastern Europe	85
5.7.1	Market by Product/Service	85
5.7.2	Market by Construction Type	86
5.8	Asia Pacific.....	86
5.8.1	Market by Product/Service	87
5.8.2	Market by Construction Type	88
5.9	Latin America	88
5.9.1	Market by Product/Service	89
5.9.2	Market by Construction Type	90
5.10	Middle East & Africa	91
5.10.1	Market by Product/Service.....	91
5.10.2	Market by Construction Type	92
5.11	Conclusions and Recommendations	93
Section 6	.....	95
Building Types	.....	95
6.1	Office	95
6.2	Retail	95
6.3	Education	95
6.4	Healthcare	95
6.5	Hotels & Restaurants	95
6.6	Institutional/Assembly	95

6.7 Warehouse	96
6.8 Transport	96
Section 7	97
Acronym and Abbreviation List.....	97
Section 8	100
Table of Contents	100
Section 9	108
Table of Charts and Figures.....	108
Section 10	110
Scope of Study	110
Sources and Methodology	111
Notes	111

Section 9

TABLE OF CHARTS AND FIGURES

Chart 1.1	Energy Efficient Building Revenue by Product and Service Type, World Markets: 2017-2026	3
Chart 2.1	Commercial Building Stock by Region, World Markets: 2016-2024	7
Chart 2.2	Share of Global Building Stock by Region, World Markets: 2016.....	8
Chart 2.3	Commercial Electricity Prices and Percent Change, United States: 2005-2015.....	25
Chart 2.4	Average Annual Electric \$/kWh Cost: 2013-2016	26
Chart 2.5	Average Annual Electric \$/kWh Cost, Single Client After Utility Bill Adjustments: 2013-2016	27
Chart 3.1	Energy Consumption by End Use and US Climate Zone, Supermarkets	40
Chart 3.2	IP-Based Business Communication Traffic Growth, World Markets: 2015-2020.....	56
Chart 5.1	Energy Efficient Building Revenue by Product and Service Type, World Markets: 2017-2026	79
Chart 5.2	Energy Efficient Building Revenue by Region, World Markets: 2017-2026	80
Chart 5.3	Energy Efficient Building Revenue by Product and Service Type, North America: 2017-2026	81
Chart 5.4	Energy Efficient Building Revenue by Construction Type, North America: 2017-2026	82
Chart 5.5	Energy Efficient Building Revenue by Product and Service Type, Western Europe: 2017-2026	83
Chart 5.6	Energy Efficient Building Revenue by Construction Type, Western Europe: 2017-2026	84
Chart 5.7	Energy Efficient Building Revenue by Product and Service Type, Eastern Europe: 2017-2026	85
Chart 5.8	Energy Efficient Building Revenue by Construction Type, Eastern Europe: 2017-2026	86

Chart 5.9	Energy Efficient Building Revenue by Product and Service Type, Asia Pacific: 2017-2026	87
Chart 5.10	Energy Efficient Building Revenue by Construction Type, Asia Pacific: 2017-2026.....	88
Chart 5.11	Energy Efficient Building Revenue by Product and Service Type, Latin America: 2017-2026	89
Chart 5.12	Energy Efficient Building Revenue by Construction Type, Latin America: 2017-2026	90
Chart 5.13	Energy Efficient Building Revenue by Product and Service Type, Middle East & Africa: 2017-2026	91
Chart 5.14	Energy Efficient Building Revenue by Construction Type, Middle East & Africa: 2017-2026	92
Figure 2.1	Levelized Cost of Energy Efficiency vs. Other Generation Sources	4
Figure 2.2	Ecosystem of Building Efficiency Market Participants.....	9
Figure 2.3	Illustration of an ESCO EPC Business Model.....	11
Figure 2.4	Traditional and Specialized Energy Efficiency Financing Mechanisms	13
Figure 2.5	Aqueduct Project Global Water Data Risk Map: 2017	21
Figure 3.1	Energy Efficiency Project Categorizations	41
Figure 3.2	Typical Energy Efficiency Implementation vs. Use Case Implementation	53
Table 2.1	Green Building Certification Programs.....	28

Section 10

SCOPE OF STUDY

This Navigant Research report analyzes and forecasts the world market for commercial building energy efficient products and services. Market drivers and barriers in individual countries as well as key regions are discussed, along with technology drivers for increased building energy performance. Drivers include policy, economics, and the advantages of energy efficient technology beyond energy savings. Barriers include financing models and the cost of equipment, limited resources within most buildings, and market confusion regarding the most appropriate technology for a building. This report segments the market across six geographical regions: North America, Western Europe, Eastern Europe, Asia Pacific, Latin America, and the Middle East & Africa.

Key market participants are profiled and market revenue forecasts are provided for the 2017-2026 forecast period. The market forecast covers energy efficient building technologies, including products and services. It addresses seven product types (HVAC, lighting, controls, water efficiency, water heating, building envelope, and other) and two service types (commissioning and installation). The forecast methodology entails incorporating both primary and secondary research on the penetration and trends in each technology group based on global building stock, technological capabilities, and regional technology and efficiency measure preferences.

SOURCES AND METHODOLOGY

Navigant Research's industry analysts utilize a variety of research sources in preparing Research Reports. The key component of Navigant Research's analysis is primary research gained from phone and in-person interviews with industry leaders including executives, engineers, and marketing professionals. Analysts are diligent in ensuring that they speak with representatives from every part of the value chain, including but not limited to technology companies, utilities and other service providers, industry associations, government agencies, and the investment community.

Additional analysis includes secondary research conducted by Navigant Research's analysts and its staff of research assistants. Where applicable, all secondary research sources are appropriately cited within this report.

These primary and secondary research sources, combined with the analyst's industry expertise, are synthesized into the qualitative and quantitative analysis presented in Navigant Research's reports. Great care is taken in making sure that all analysis is well-supported by facts, but where the facts are unknown and assumptions must be made, analysts document their assumptions and are prepared to explain their methodology, both within the body of a report and in direct conversations with clients.

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NOTES

CAGR refers to compound average annual growth rate, using the formula:

$$\text{CAGR} = (\text{End Year Value} \div \text{Start Year Value})^{(1/\text{steps})} - 1.$$

CAGRs presented in the tables are for the entire timeframe in the title. Where data for fewer years are given, the CAGR is for the range presented. Where relevant, CAGRs for shorter timeframes may be given as well.

Figures are based on the best estimates available at the time of calculation. Annual revenues, shipments, and sales are based on end-of-year figures unless otherwise noted. All values are expressed in year 2017 US dollars unless otherwise noted. Percentages may not add up to 100 due to rounding.

Published 2Q 2017

©2017 Navigant Consulting, Inc.
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Note: Editing of this report was closed on April 25, 2017.

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