CATALYST

Achieving Net Zero with Building Technologies

Harry Wilson – Industry Analyst, Verdantix

Buildings Are 'Carbonivores'

"CO$_2$ emissions from building operations have reached an all-time high of around 10GtCO$_2$, around a 5% increase from 2020 and 2% higher than the previous peak in 2019."
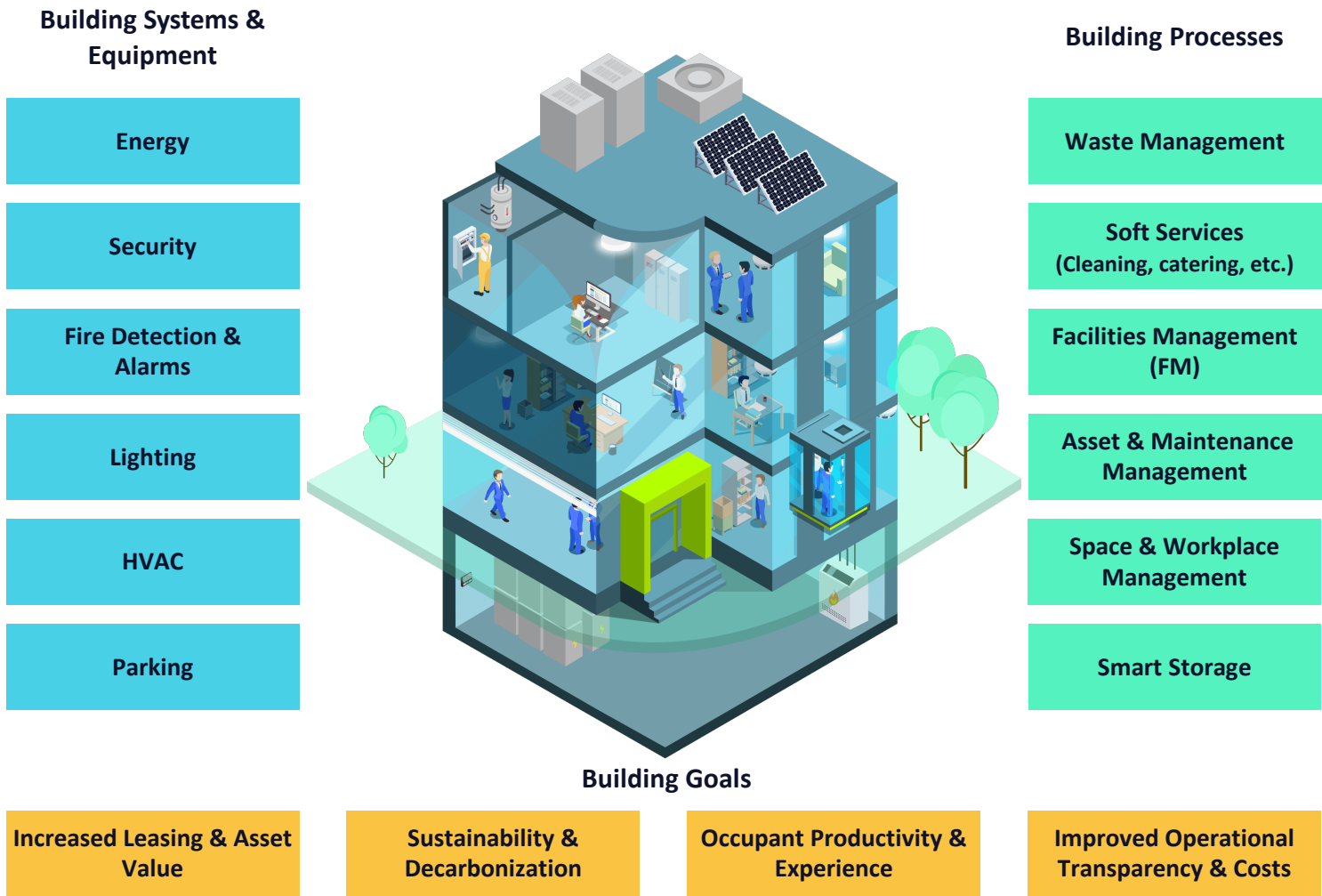
Source: UN Environment Programme, Global Status Report For Buildings and Construction

What impact is ESG, Sustainability and Decarbonization having in shaping your real estate strategy?

- No impact
- Minimal impact
- Don't know
- 11%
- 1
- 52% — Significant impact
- 36%
- Moderate impact
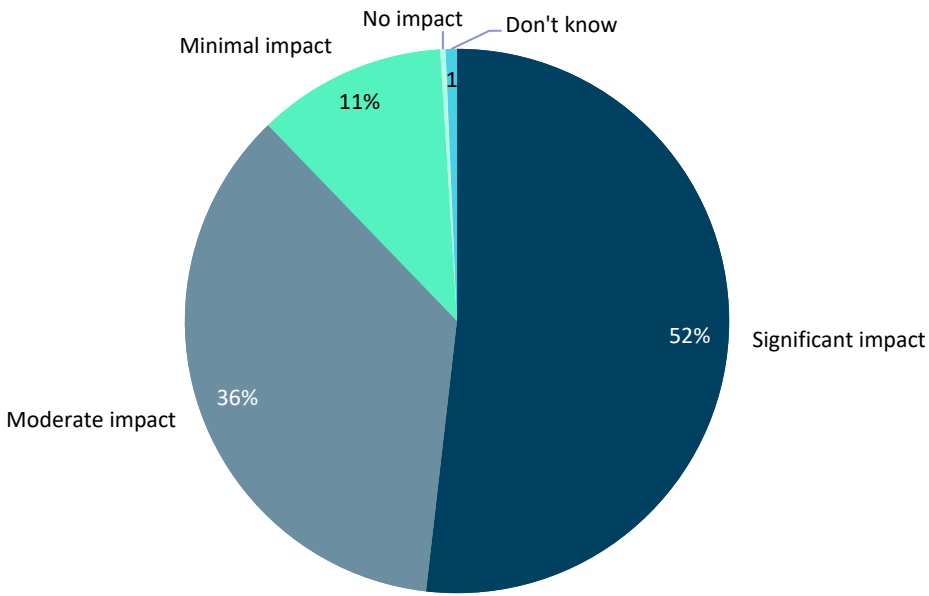
N=303
Note: Data labels are rounded to zero decimal places. Data values less than 1 are not shown.
Source: Verdantix Real Estate Executive Global Corporate Survey 2023

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Simplified Overview Of Office Building Systems And Processes

Building Systems & Equipment

- Energy
- Security
- Fire Detection & Alarms
- Lighting
- HVAC
- Parking

Building Processes

- Waste Management
- Soft Services (Cleaning, catering, etc.)
- Facilities Management (FM)
- Asset & Maintenance Management
- Space & Workplace Management
- Smart Storage

Building Goals

- Increased Leasing & Asset Value
- Sustainability & Decarbonization
- Occupant Productivity & Experience
- Improved Operational Transparency & Costs

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2010-2015

High volatile energy prices

Limited carbon reporting

Energy managed in silos

2016-2021

Low energy prices

Voluntary carbon reporting

Combined asset/space management

2022-2027

Return of volatile prices

Mandatory carbon reporting

Energy within wider asset management

Source: Verdantix Analysis

Energy Management Software Has Grown To Encompass Six Key Functionalities

Energy procurement and risk management

Energy monitoring and reporting

Carbon management

Utility bill management

Operations and control

Project management

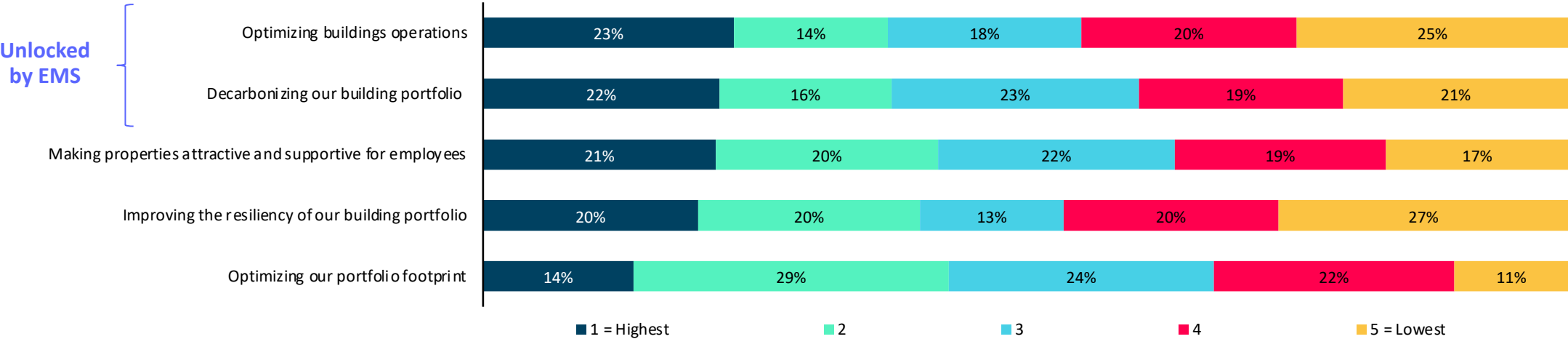**Source: Verdantix Analysis**

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Energy Management Unlocks Executives' Key Priorities

Rank the following real estate management objectives by importance for your organization over the next three years.

Unlocked by EMS

Objective	1 = Highest	2	3	4	5 = Lowest
Optimizing buildings operations	23%	14%	18%	20%	25%
Decarbonizing our building portfolio	22%	16%	23%	19%	21%
Making properties attractive and supportive for employees	21%	20%	22%	19%	17%
Improving the resiliency of our building portfolio	20%	20%	13%	20%	27%
Optimizing our portfolio footprint	14%	29%	24%	22%	11%

■ 1 = Highest   ■ 2   ■ 3   ■ 4   ■ 5 = Lowest

N=303
Note: Data labels are rounded to zero decimal places.
Source: Verdantix Global Corporate Survey 2023

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Energy Management Is Back On Executives' Agendas

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Volatile Energy Prices

"The fluctuating energy prices have made budgeting difficult; we have had to reduce our consumption to limit spend"

Economic Uncertainty

"The economic landscape is certainly having an impact on our real estate planning... inflation continues to be a problem"

Net Zero Targets and Commitments

"We needed [Vendor's] solution to help us with understanding our energy use across all our sites... decarbonization is a key company priority and we need to know what we consume to reduce it."
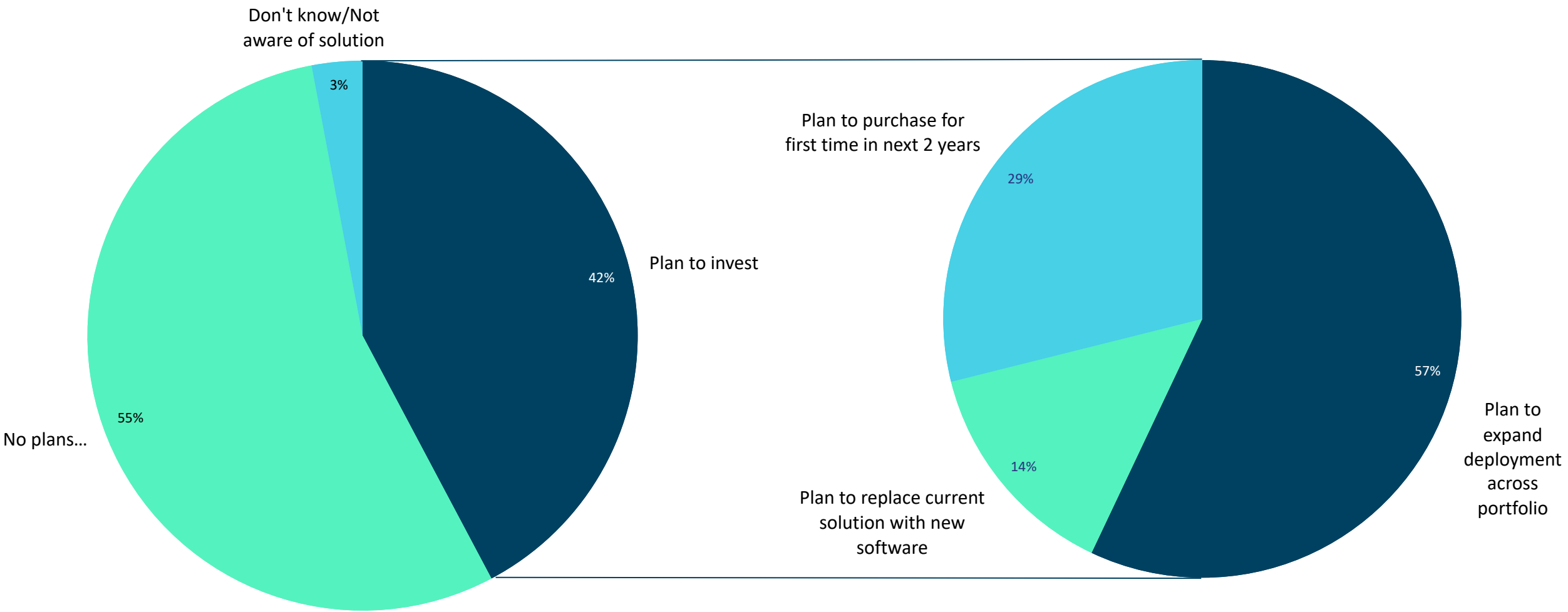
Sustainability Pressures

"We are required by state legislators to submit energy consumption per building annually... it simply would not be possible without EMS"

Source: Verdantix Analysis

Executives Plan To Invest In Energy Management Software

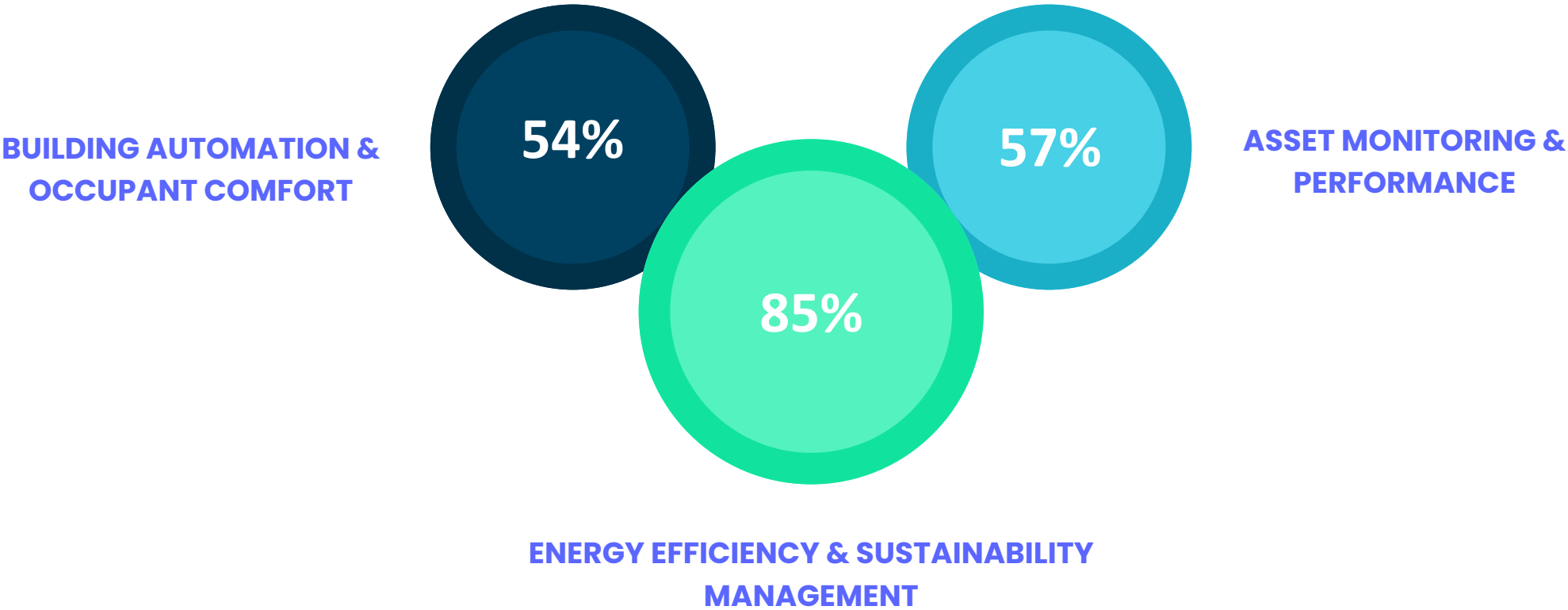*How do you expect your investment in Energy Management Software to change?*

Don't know/Not aware of solution

3%

No plans...

55%

57%

42%

Plan to invest

Plan to purchase for first time in next 2 years

29%

57%

Plan to expand deployment across portfolio

14%

Plan to replace current solution with new software

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Executives Plan To Invest In Energy Management Services

To what extent do you expect your use of service providers to increase for the following processes over the next 3 years?
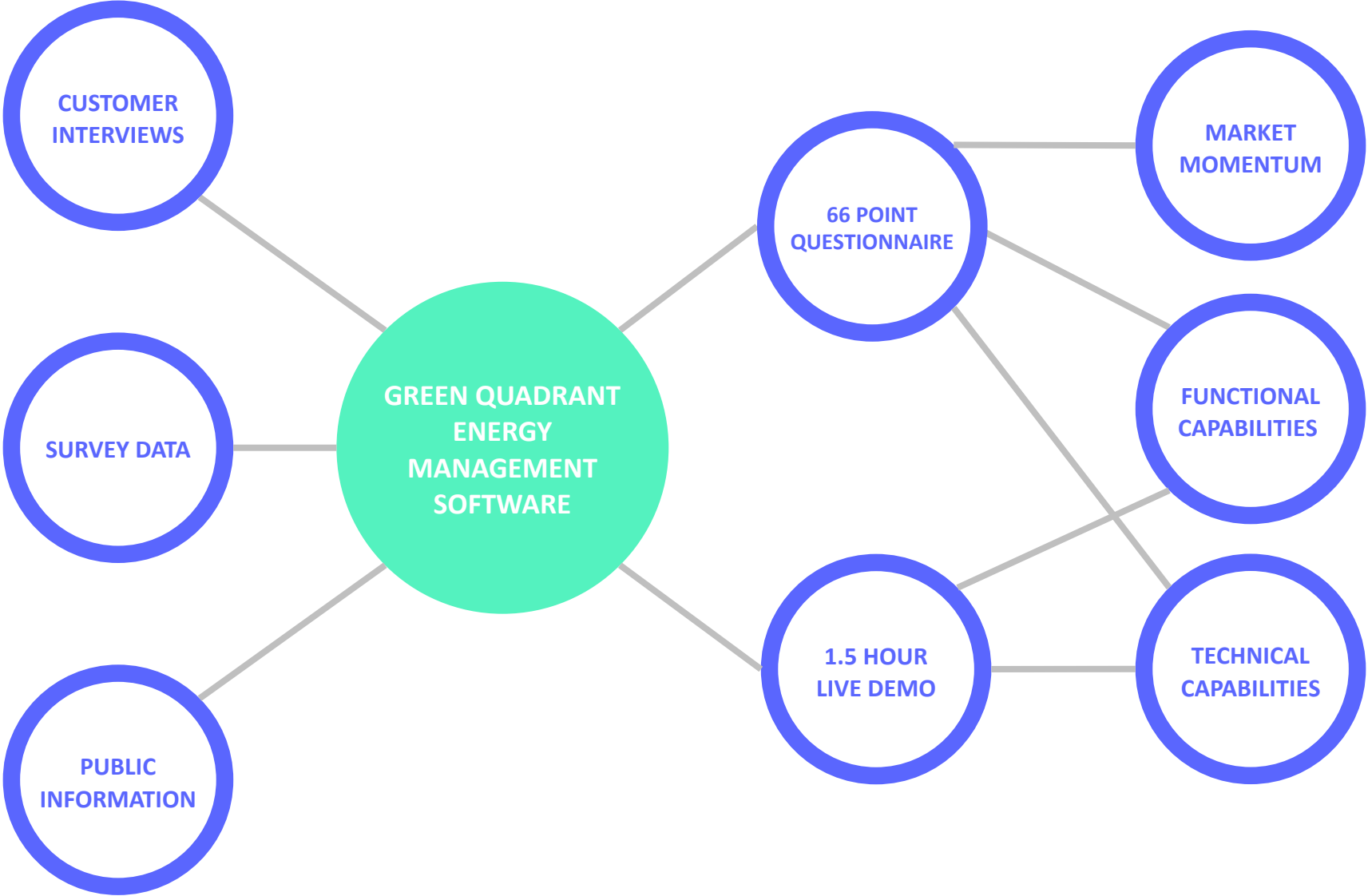
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BUILDING AUTOMATION & OCCUPANT COMFORT

54%

85%

57%

ASSET MONITORING & PERFORMANCE

ENERGY EFFICIENCY & SUSTAINABILITY MANAGEMENT

N=303
Note: Data labels are rounded to zero decimal places.
Source: Verdantix Global Corporate Survey 2023

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*"The Verdantix Green Quadrant methodology **provides buyers** of specific products or services with **a structured assessment of comparable offerings** at a certain point in time. The methodology **supports purchase decisions** by identifying potential vendors, structuring relevant purchase criteria through discussions with buyers, and **providing an evidence-based assessment** of the products or services in the market."*

Source: Verdantix Green Quadrant: Energy Management Software 2023

Verdantix Green Quadrant: Energy Management Software 2023

CUSTOMER INTERVIEWS

SURVEY DATA

PUBLIC INFORMATION

GREEN QUADRANT ENERGY MANAGEMENT SOFTWARE

66 POINT QUESTIONNAIRE

1.5 HOUR LIVE DEMO

MARKET MOMENTUM

FUNCTIONAL CAPABILITIES

TECHNICAL CAPABILITIES

Source: Verdantix Analysis

Verdantix Green Quadrant: Energy Management Software 2023

Vendor	Solution packages submitted for assessment
ABB	Ability: Asset Manager, Asset and Energy Manager, Energy Manager, Energy Simulator, OPTIMAX Plant Simulator
Accruent	AOEM, ServiceChannel, vx Observe
Bueno	Smart Building Analytics
Carrier	Abound Net Zero Management, The CORTIX™ Platform, The CORTIXone™ Dashboard, The CORTIXedge™ Application, The CORTIXedge™ Cockpit
Enel X	Demand Side Response, Energy Consulting Services, Energy Exchange, Utility Bill Management
EnergyCAP	Bill CAPture, CarbonHub, Smart Analytics, UtilityManagement
Facilio	Facilio Connected Buildings
GridPoint	GridPoint Intelligence
Honeywell	Honeywell Energy Manager, Honeywell Forge Sustainability+ for Buildings: Carbon & Energy Management, N4 Energy Manager
Johnson Controls	OpenBlue Enterprise Manager: Central Utility Plant Optimization, Equipment Performance Essentials, Net Zero Enhanced, Net Zero Essentials
MRI Software	MRI Angus, MRI eSight, MRI Evolution, MRI Forms Intelligence
Nordomatic (Spica)	Ecopilot
Schneider Electric	EcoStruxure: Building Advisor, Building Operation, Microgrid Advisor, Power Advisor, Power Monitoring, Power Operation, Resource Advisor
Siemens	Brightly Energy Manager, Brightly Stream, Building X Energy Manager, Building X Sustainability Manager, Navigator
Spacewell	Spacewell Energy: Analyse, Dashboards, Detect, Optimise

Source: Verdantix Analysis

Verdantix Green Quadrant: Energy Management Software 2023

- Verdantix identified the **leading 15 vendors of Energy Management Software**, each vendor offering comprehensive functionality to their target market across a range of asset types.

- **Mature, developed market** with hundreds of offerings available to buyers and new entrants continuing to emerge.

- **New innovations in AI, building systems connectors, and carbon emission accounting** have driven EMS to new heights and key functionality such as these have formed part of our assessment criteria.

- **Range of business model offerings** to buyers – hardware, services and software can all come in bundled or discrete packages.

Source: Verdantix Green Quadrant: Energy Management Software 2023

Verdantix Green Quadrant: Energy Management Software 2023

- **8 vendors** placed in the Leaders quadrant, and these were found to have **end-to-end energy management capabilities**.

- These solutions **scored highest** in terms of market **momentum** and **capabilities**.

- **Functionalities are rich and extensive**, offering buyers a solution which allows them to **manage all aspects of their energy** within their facilities.

- **EnergyCAP scored firmly within the Leaders quadrant**, offering comprehensive functionality across those assessed.

Source: Verdantix Green Quadrant: Energy Management Software 2023

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*"The firm's trifecta of the SmartAnalytics (formerly Wattics), UtilityManagement and CarbonHub packages cover **energy, cost and carbon data** and workflows **from the portfolio level down to the asset and device level** in a single platform. EnergyCAP's **well-rounded capabilities** secure it a **score above 1.0 for all six functionalities assessed.**"*

*"One **standout area is utility bill management**, where it scores a 2.0 due to its automated bill processing and utility provider connection, complemented by an intuitive bill and contract visualization interface. Interaction between SmartAnalytics and UtilityManagement **offers bill validation to users while also enabling energy and cost predictions** thanks to a cross-package ML algorithm."*

*"The solution achieves the **second highest score for carbon management** thanks to **comprehensive carbon accounting and reporting functionality,** with a global catalogue of emissions factors."*

Source: Analyst Insight – EnergyCAP Profile
Verdantix Green Quadrant: Energy Management Software 2023

ENERGYCAP®

Functional Capabilities	Scoring
Energy Procurement and Risk Management	1.2
Utility Bill Management	2.0
Energy Monitoring & Reporting	1.7
Operations & Control	1.3
Carbon Management	2.2
Project Management	1.6

3 = Market Leading Capability.
2 = Strong Capability.
1 = Comprehensive Capability.
0 = No Capability.

Green Highlight indicates an above average score.

SmartAnalytics

CarbonHub

Utility Management

BillCAPture

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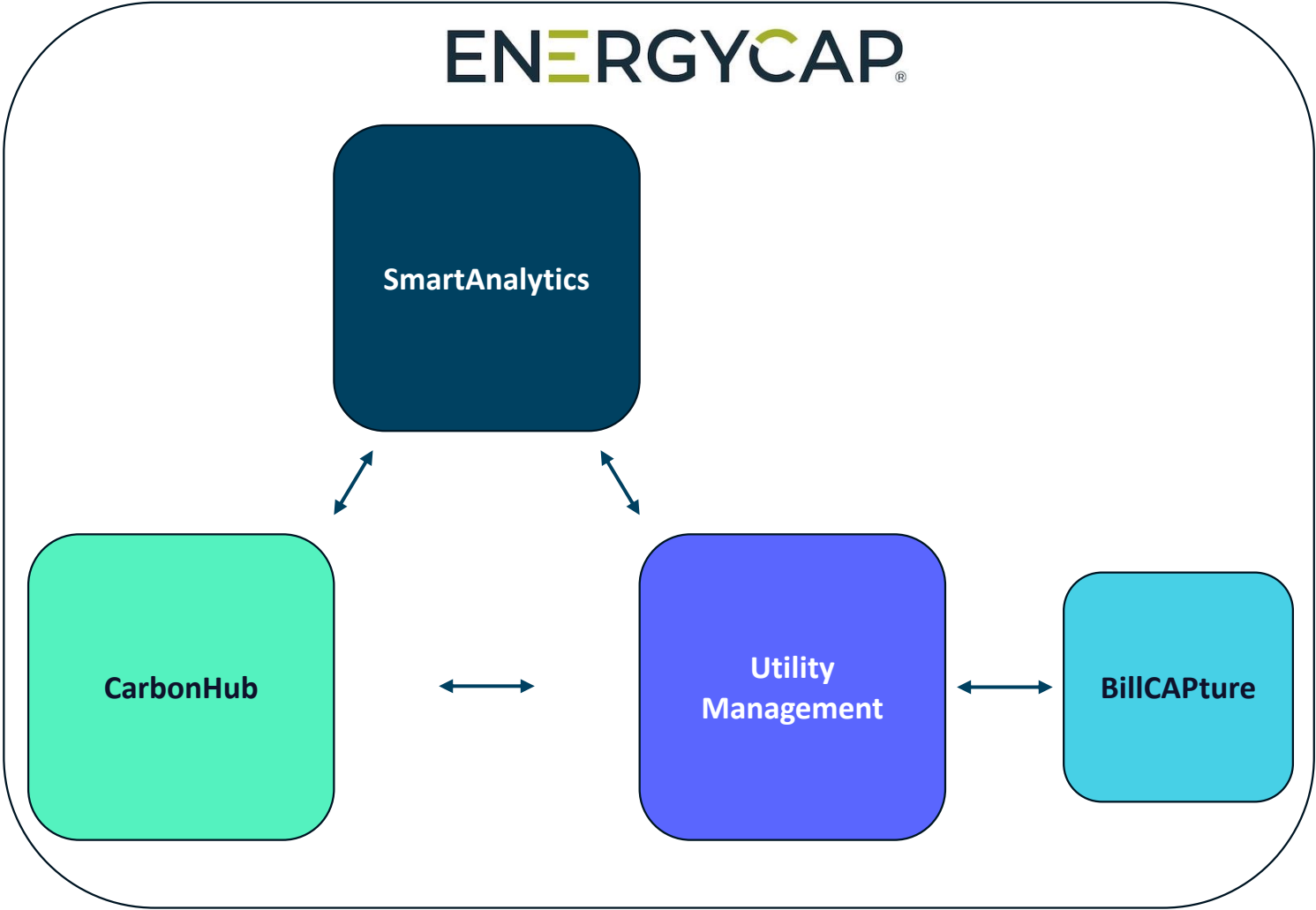
Technical Capabilities	Scoring
Data capture	**2.1**
Architecture, Data Audit and Scalability	**2.4**
Internationalisation	**2.2**
Mobile	**1.6**
User Interface	**1.6**

Awarded score of 3.0/3.0 thanks to BillCAPture functionalities.

3.0/3.0 in Data Normalization and Calculation subcategory thanks to range of **ML- and regression-based models to predict and normalize datasets**.

Native support for **10 languages and 150 currencies**, and **automatic conversion between energy units** and within and across commodities.

3 = Market Leading Capability.
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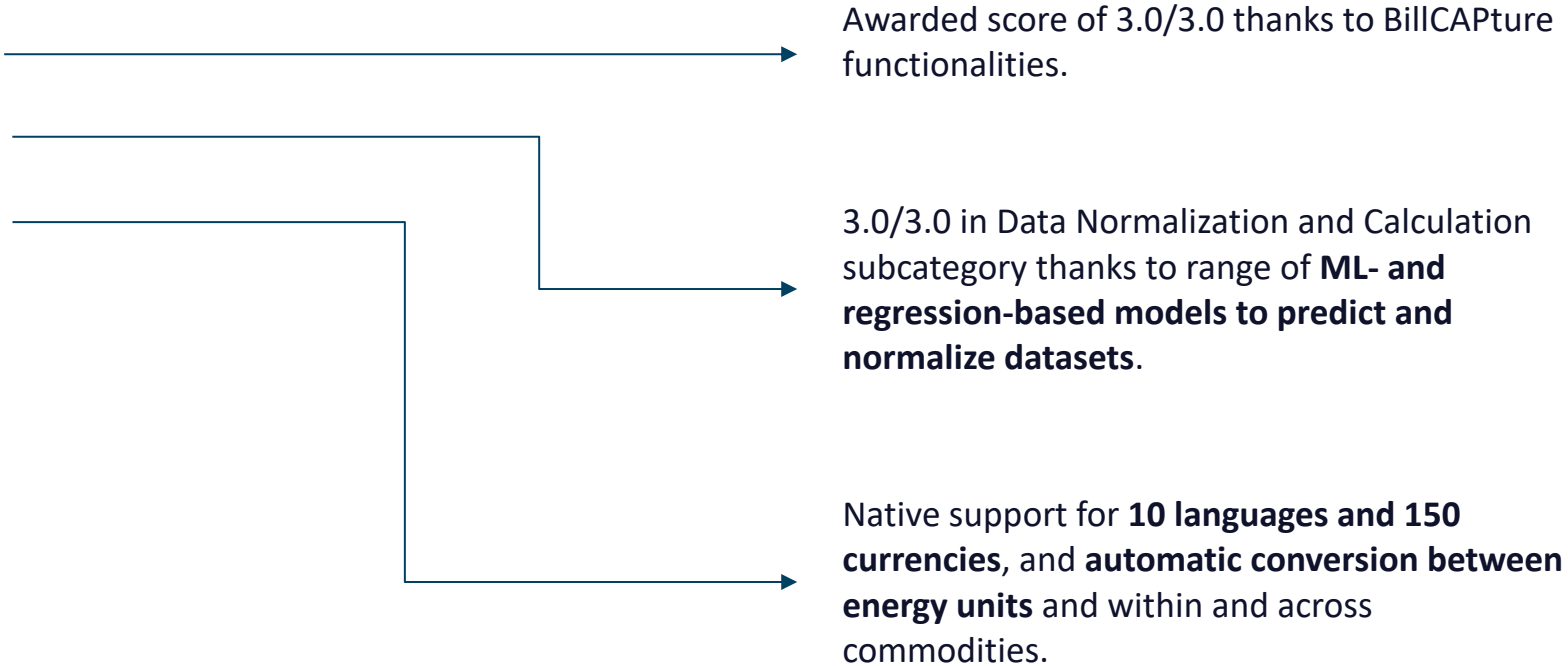
Green Highlight indicates an above average score.

EnergyCAP's Momentum Is Strong, With A Large Customer Base And Strong Strategy

Market Momentum	Scoring
Vision & Commercial Strategy	1.8
Organizational Resources	1.6
Innovation & Product Strategy	2.0
Customers	1.8
Financial Resources	1.6
Customer Success & Adoption	1.3

3 = Market Leading Capability.
2 = Strong Capability.
1 = Comprehensive Capability.
0 = No Capability.

Green Highlight indicates an above average score.

Understands the need for energy management within a range of asset types. Solution positioned to **measure, track, and reduce energy consumption**.

2.0/2.0 across all subcategories thanks to **planned product enhancements** and **regular 3-week update cycle**.

Solution utilized at **over 170,000 sites**, and strong **customer retention of >90%** in 2023.
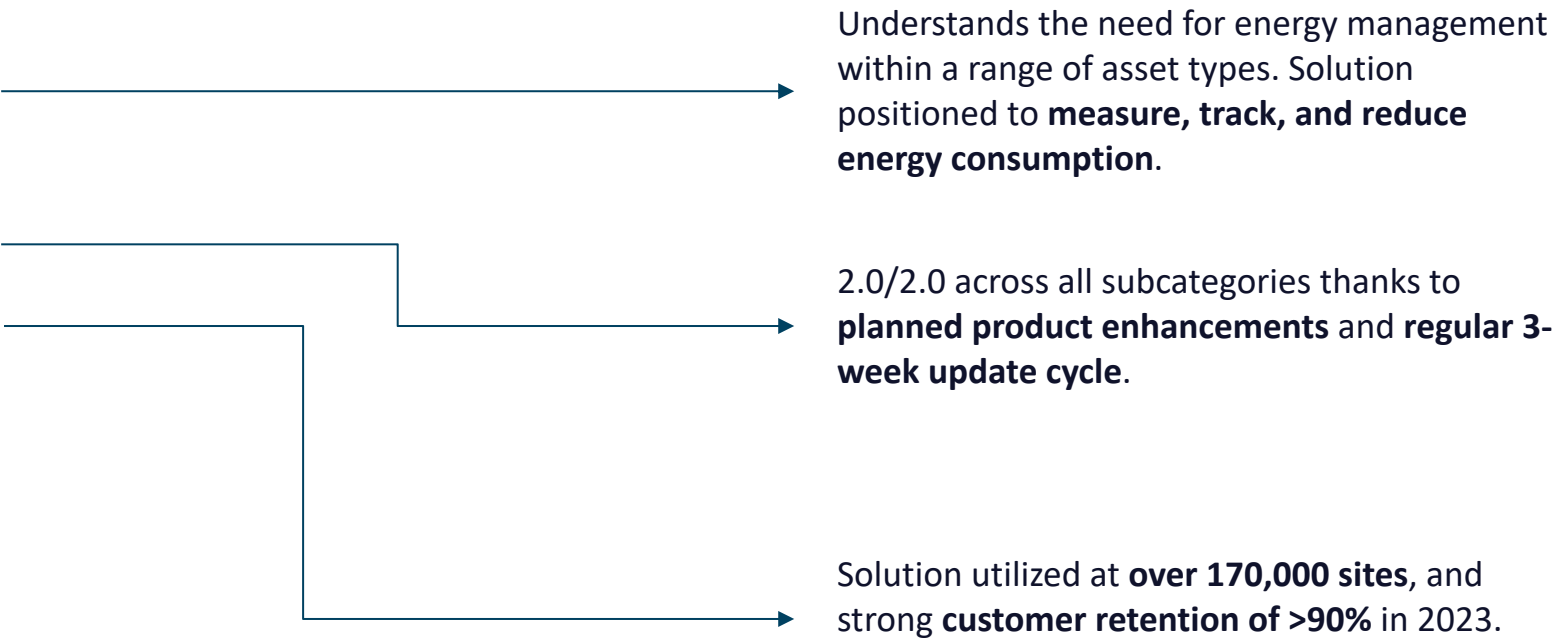
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