

## Due Diligence and Valuation Report

Arrowhead Code: 12-01-01  
 Coverage initiated: April 11, 2019  
 This document: April 11, 2019  
 Fair share value bracket: AUD 0.10 and AUD 0.13  
 Share price (April 11, 2019): AUD 0.04<sup>i</sup>

### Analysts

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### Market Data

52-Week Range: AUD 0.035 - AUD 0.09<sup>ii</sup>  
 Average Daily Volume (3M Avg.): 80,554<sup>iii</sup>  
 Market Cap (April 11, 2019): AUD 10 mn<sup>iv</sup>

### Financial Forecast (in AUD) (FY Ending – Dec.)

AUD '000	'19E	'20E	'21E	'22E	'23E	'24E
High NI	(1,745)	(657)	797	1,807	2,766	4,279
High EPS	(0.76)	(0.28)	0.35	0.78	1.20	1.86
Low NI	(1,920)	(896)	381	1,379	2,421	3,748
Low EPS	(0.83)	(0.39)	0.17	0.60	1.05	1.63

**Company Overview:** Headquartered in the US, BuildingIQ Inc. ("BuildingIQ" or "BIQ" or "the company") offers an optimized balance of energy savings, operational efficiency, and tenant comfort through its cloud-based 5i Intelligent Energy Platform (5i Platform). The company's trademark Predictive Energy Optimization (PEO) technology employs machine learning to help building owners and operators stay ahead in energy efficiency. BIQ operates in existing as well as newly constructed buildings.

**FY 2018 result:** BuildingIQ's revenue from ordinary activities grew by 40% year-on-year (YoY) to AUD 7.4 mn in FY 2018 from AUD 5.3 mn in FY 2017. Growth in the company's greenfield business segment led to an increase in customer receipts by 120% YoY to AUD 6.7 mn in FY 2018 from AUD 3 mn in FY 2017. Annual contracted revenue (ACR) for FY 2019 was reported at AUD 8.5 mn; up 25% from AUD 6.8 mn for FY 2018. Operating expenses increased by 13% YoY to AUD 8.1 mn in FY 2018 from AUD 7.1 mn in FY 2017. Cash and cash equivalents were positive at ~AUD 2 mn. During FY 2018, the company added 183 buildings to its portfolio, including 30 greenfield building contracts. The company ended the year with over 1,268 buildings active on its 5i Platform. Total area under contract stood over 125 mn square feet (sq ft).



Company: BUILDINGIQ INC  
 Ticker: BIQ  
 Headquarters: California, US  
 Chairman: Alan Cameron  
 MD/CEO: Michael Nark  
 Website: [www.buildingiq.com](http://www.buildingiq.com)

**Key Highlights:** (1) BIQ's services deliver value to building owners and operators at any stage of a building's lifecycle (2) In the subscription / managed services offering for established buildings, the company's services require a minimum upfront capital to get started and can be availed through a monthly subscription. On the other hand, in the greenfield segment related to newly constructed buildings, the cash flows have a cycle of 8 quarters, wherein the company breaks even in the fifth quarter (3) The 5i Platform leads to energy cost savings of 10%-25% (4) BIQ's PEO technology is backed by a strong history of research and development (R&D) of about 50 man years (5) The company has good channel partnerships enabling steady growth in ACR (6) The Buildingsense acquisition is expected to provide a significant boost to the greenfield segment (6) The company's BIQ Mobile App allows energy efficiency management and ticketing on the go (7) The company has raised AUD 6.5 mn to bridge its cash flow gap and to assist growth and development of the business (8) There is a noticeable trend in the adoption of BIQ's services in significantly larger buildings (9) The company has signed a 10 + 10 years reseller partnership agreement with BuildingAI, Indonesia, to expand its geographical reach in the Asian markets (10) BIQ also provides turnkey solutions in Dubai (UAE) through its channel partner Smart Energy Automation, LLC (11) The company has also partnered with PURfx Inc., a Caribbean-Islands-based company, to provide 5i services for its healthcare and hospitality sectors (12) BIQ has become the first Building Management System (BMS) cloud integrator in the smart building services market by entering into an agreement with Sauter Controls North America (13) The company has joined the invitation-only Intel Internet of Things (IoT) Solutions Alliance.

**Key Risks:** (a) Changes in the energy sector's regulatory framework, (b) increase in competition, thus, leading to negative pressure on pricing, are some of the key risks that the business is exposed to.

**Valuation and Assumptions<sup>v</sup>:** Given the due diligence and valuation estimates, Arrowhead believes that BIQ's fair share value lies between AUD 0.10 in the low bracket and AUD 0.13 in the high bracket, calculated using the Discounted Cash Flow (DCF) method.

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## 1. Summary and Outlook

We are initiating coverage on BuildingIQ. The company's fair value is AUD 0.10 in the low bracket scenario and AUD 0.13 in the high bracket scenario (DCF Valuation Method).

### Key Highlights<sup>vi</sup>:

- 1) BuildingIQ's cloud-based Software as a service (SaaS) solution can be deployed selectively and at any stage of the building's lifecycle. It can be tailored to meet the needs of any building or portfolio of buildings including sectors such as healthcare, higher education, commercial, owner occupied and government buildings. The platform helps reduce energy consumption and operational costs, while maintaining occupant comfort levels —even in buildings rated as highly energy efficient by LEED, ENERGY STAR, and NABERS.
- 2) The company's trademarked PEO technology is backed by about 50 man years of R&D effort. It combines machine learning capabilities, including thermal modelling of buildings, predictive analysis and human comfort modelling, and Internet of Things (IoT) to optimize heating, ventilation and air conditioning (HVAC) systems. The platform, thus, provides energy cost savings of 10%-25%.
- 3) The company's subscription services require a minimum upfront capital to get started. The company's services are delivered at a monthly subscription fee, which enables companies availing these services to expend such amounts as an operating expense as opposed to a capital expense. Other services related to the design, supply, engineering, installation, commissioning and service of building technologies are based on completion.
- 4) While typical energy sector projects require a multi-year payback, BIQ's customers are guaranteed to be cash flow positive within a year. Most customers are cash flow positive within 2 quarters.
- 5) The company has good channel partnerships, enabling steady growth in ACR. These include BMS vendors such as Schneider Electric, Siemens, Honeywell and other service providers such as Direct Energy Business, AtSite and AE Smith. The company has recently got into channel partnership agreements with Gotham 360 in the US, BuildingAI in Indonesia, and PBOTech and DOTS Tech Systems in the UAE.
- 6) In 2018, the company completed its acquisition of Buildingsense, its partner since 2016. The acquisition is expected to provide a significant boost to the greenfield segment. Buildingsense brings with it, distribution rights in Australia for the integrated BMSs to the BuildingIQ portfolio. The acquisition has also secured the BIQ, local distribution rights for Swiss-owned Sauter BMSs and Italian-owned Pettinaroli Valves.
- 7) BIQ has become the first BMS cloud integrator in the smart building services market by entering into an agreement with Sauter Controls North America. Through the addition of building controls to its cloud-based optimization platform, BIQ has defined a new category of integrator that optimizes BMS implementation and creates cloud-ready buildings designed to share and leverage data across functional boundaries.
- 8) The company's BuildingIQ mobile app allows energy efficiency management and ticketing on the go. The app should help the company expand the scope of tenant engagement by facilitating personnel with increased functionality as they can create tickets and keep track of maintenance work orders on the go.
- 9) During FY 2018, the company raised AUD 6.5 mn to bridge its cash flow gap and to assist growth and development of the business. The capital raise included an institutional placement, an existing shareholder placement, and an entitlement offer. It resulted in the issue of up to 144,444,444 new CHES Depository Interests (CDIs) at AUD 0.045 per CDI.
- 10) There is a noticeable trend in the adoption of BIQ's services in the single tenant type buildings. The average area per booked building increased by 47.6% YoY to 121,000 sq ft in Q3 2018 from 81,978 sq ft in Q3 2017.
- 11) The company has signed a 10 + 10 years reseller partnership agreement with BuildingAI, Indonesia, to expand its geographical reach in the Asian markets. Through this arrangement, BIQ intends to initially introduce its visualisation service, and subsequently its other 5i Platform services, in Indonesia's rapidly evolving market. Some other partnerships are as follows:

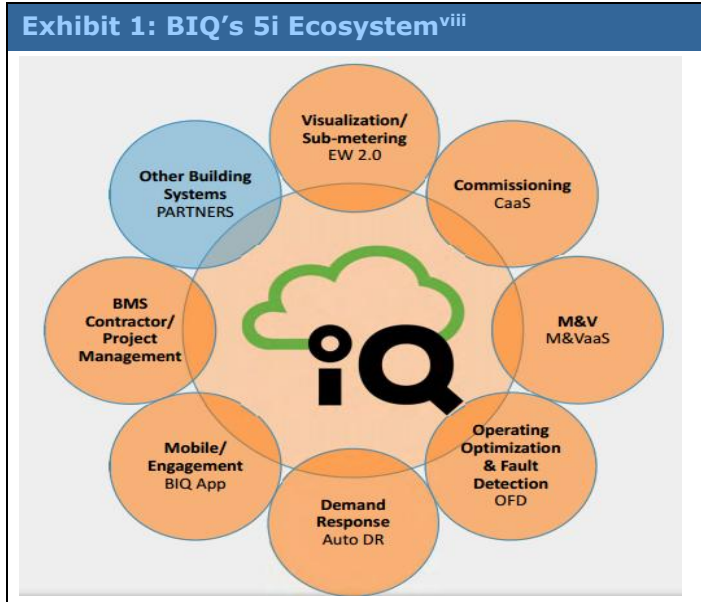
- A partnership has been signed with Smart Energy Automation, LLC, in Dubai (UAE). BIQ's full 5i services will be implemented alongside SmartAE's extensive facility services.
- The company has partnered with PURfx, Inc. – a Caribbean-Islands-based company, to provide 5i services for its healthcare and hospitality sectors. BIQ's services are expected to help PURfx differentiate its sustainable solutions.
- BIQ and Gotham 360 have collaborated to help the YMCA of Greater New York reduce energy consumption across 21 branches with the support of the New York State Energy Research and Development Authority (NYSERDA) Remote Energy Management (REM) program. Both BIQ and Gotham 360 will help in analyzing whole building energy data, identifying energy savings opportunities and carrying out implementation support services.
- BIQ has joined the invitation-only Intel Internet of Things Solutions Alliance that works to drive revenue growth and market share for over 500 members in the IoT space. This alliance is expected to build a strong and sustainable market advantage for BIQ through a solution-centered ecosystem program based on intel architecture.

12) Financial Overview: As of FY 2018, the company's revenue and other income grew by 26% YoY to AUD 8.8 mn from AUD 7 mn in FY 2017, with revenue from ordinary activities alone rising by 40% YoY (to AUD 7.4 mn from AUD 5.3 mn). FY 2019 ACR revenue reached AUD 8.5 mn; up 25% from AUD 6.5 mn for FY 2018. The company added 183 buildings to its portfolio, including 30 greenfield building contracts, during FY 2018. At the end of FY 2018, the company had 1,268 buildings active on its 5i Platform. Total area under contract stood over 125 mn sq ft.

## 2. Business Overview<sup>vii</sup>

Incorporated in 2009 in Australia, BuildingIQ is headquartered in the US. It has extensive operations in the US and Australia and is expanding into Asia. The company offers a cloud-based, software-as-a-service (SaaS) energy management and optimization solution for owners and managers of large commercial building portfolios. Through its flagship 5i Platform, the company offers visualization, analytics, control and optimization services. It works in conjunction with a facility's BMS, making real-time changes to HVAC operations.

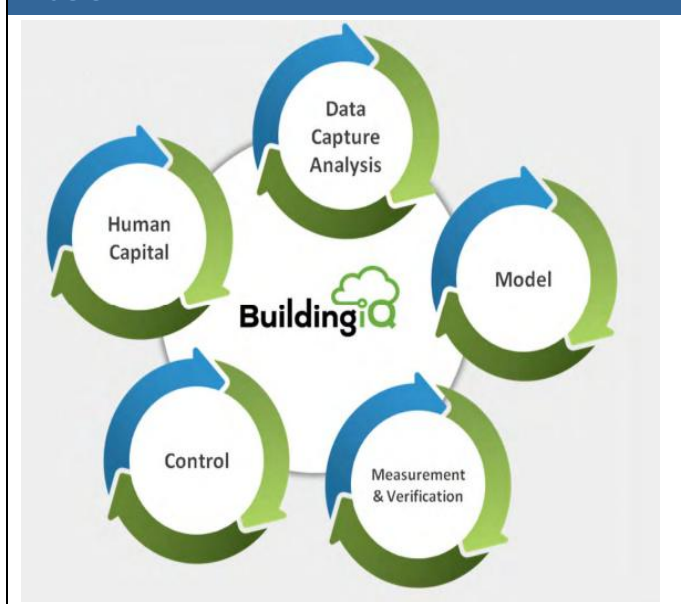
The company's core business is focused on helping building owners and operators worldwide to lower energy use, increase building operation efficiency and enhance tenant comfort. The 5i Platform technology combines machine learning capabilities, such as thermal modelling of buildings, predictive analysis and human comfort modelling, and IoT to optimize HVAC systems. The company's CDIs are listed on the Australian Securities Exchange under the symbol BIQ.



**Exhibit 2: 5i Services Optimize Every Part of the Process<sup>ix</sup>**



**Exhibit 3: The 5 Pillars of BuildingIQ's 5i Platform<sup>x</sup>**



The 5i Platform is built on 5 pillars:

**1. Data Capture and Analysis:** The company's 5i Platform is built to capture and analyze data from the BMS and its capabilities, the thermal model and its qualities, occupancy, external data sources such as utility tariffs, and demand responses.

**2. Model:** The platform runs a series of models including the building's thermal model, weather model, occupancy model, and BMS behavior models. Machine learning is applied to ensure that these models are constantly learning and are updated.

**3. Measurement & Verification:** This platform offers predictive control and predictive forecasting.

**4. Control:** The platform controls the building's BMS to provide set points on a minute-by-minute basis. The management system employed is based on the inputs coming in from the various models.

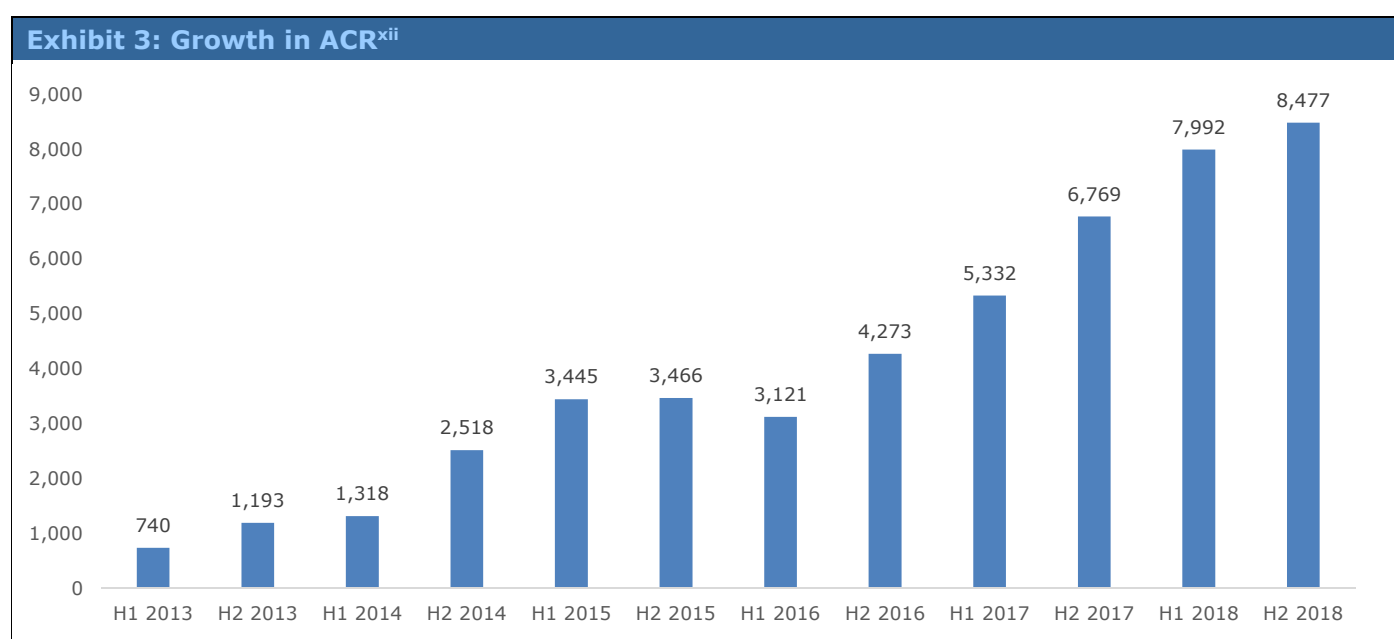
**5. Human Capital:** The platform gives due importance to the onsite team of experts that occupy a



building. The company's operation center provides a first line of defense for contact under data analytics. So, insights from data science are molded with the insights of the onsite data analytics team to get true human capital-based insight into what's going on in the building.

## 2.1 Financial Overview<sup>xi</sup>

In FY 2018, BuildingIQ's revenue from ordinary activities grew by 40% YoY to AUD 7.4 mn in FY 2018 from AUD 5.3 mn in FY 2017. Operating expenses increased by 13% to AUD 8.1 mn in FY 2018 from AUD 7.1 mn in FY 2017. Customer renewal rates remained firm at greater than 97%. Growth in the company's greenfield business facilitated an increase in ACR by 25% YoY to AUD 8.5 mn for FY 2019 from AUD 6.8 mn in FY 2018. Consequently, the company's cash position improved because of improved customer receipts, which jumped by 120% YoY to AUD 6.7 mn in FY 2018 as compared with AUD 3 mn in FY 2017.



ACR, a key revenue determinant for the company, has been growing steadily over the years. The company's ACR grew by 25% YoY to AUD 8.5 mn for FY 2019 from AUD 6.8 mn for FY 2018.

Operationally, BuildingIQ continued to expand its footprint in both its major markets, North America and Australasia. FY 2018 ended with 183 buildings being added (including 30 greenfield buildings), taking the company's buildings portfolio to a total of 1,268 buildings commanding over 125 mn sq ft. In Australia, the company's strategy has primarily targeted the greenfield business segment of the market. During Q3 2018, the company signed a 10 + 10 years reseller partnership agreement with BuildingAI, Indonesia, to expand its geographical reach in the Asian markets. In Q4 2018, BIQ signed two reseller partnership agreements with PBOtech and DOTS Tech Systems, in the UAE. Thus, these partnership agreements add on to the already existing reseller partnerships in North America with Gotham 360 (New York).

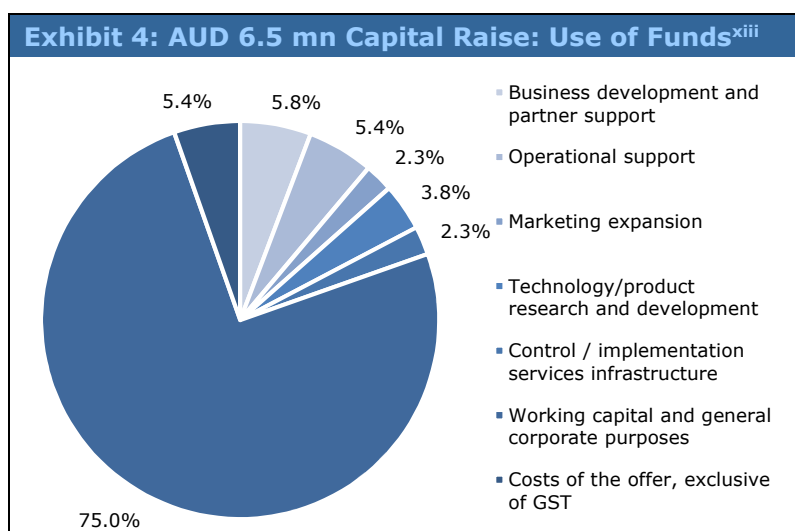
### The AUD 6.5 mn capital raising

During FY 2018, the company raised AUD 6.5 mn to fund its growing sales pipeline, the 5i Platform services development and for additional working capital. The capital raise resulted in the issue of up to 144,444,444 new CDIs at AUD 0.045 per CDI, and included:

- An Institutional Placement: AUD 2,138,411 raised under an institutional placement completed and oversubscribed by new institutional and sophisticated investors. Canaccord Genuity (Australia) Limited was the lead manager for this placement.
- An Existing Securityholder Placement to the tune of AUD 568,903 was completed on December 22, 2017.

- An Entitlement Offer: AUD 3,792,686 raised under its 1-for-1 non-renounceable pro rata entitlement offer made to eligible securityholders. The offer was completed on January 19, 2018.

The Existing Securityholder Placement and Entitlement Offer were partially underwritten to AUD 3 mn (in aggregate) by Exto Partners Pty Ltd (Exto) and sub-underwritten by Welas Pty Ltd and Spenceley Management Pty Ltd. The capital raise was completed on January 24, 2018. The company intends to use the proceeds of the capital raising in the following manner:



The table below provides a quick look into the recent financial performance of the company on certain key metrics:

**Exhibit 5: Building IQ Financial Performance<sup>xiv</sup>**

Financial Metrics (in AUD '000, unless otherwise stated)	2015	2016	2017	2018
<b>Revenue (recognized)</b>	4,273	3,958	5,264	7,359
<b>Gross Profit</b>	3,646	3,417	5,210	4,941
<b>Gross Margin (%)</b>	70.6%	68.2%	74.2%	56.0%
<b>EBITDA</b>	(4,509)	(7,099)	(1,930)	(3,149)
<b>EBIT</b>	(5,190)	(7,783)	(3,537)	(4,472)
<b>Profit/(Loss) before Tax</b>	(5,274)	(7,771)	(3,536)	(4,468)

The 7.4% YoY dip in recognized revenues observed from FY 2015 to FY 2016 can be predominantly attributed to a ~20% YoY fall in energy prices in the US. Gross margin for FY 2016 declined as recognized revenue declined and the cost of services sold increased by 4.6% YoY to AUD 1.05 mn in FY 2016 from AUD 0.89 mn in FY 2015. A USD 719,000 write-off of accrued revenue in FY 2016 resulted in increased loss before tax for the company in FY 2016.

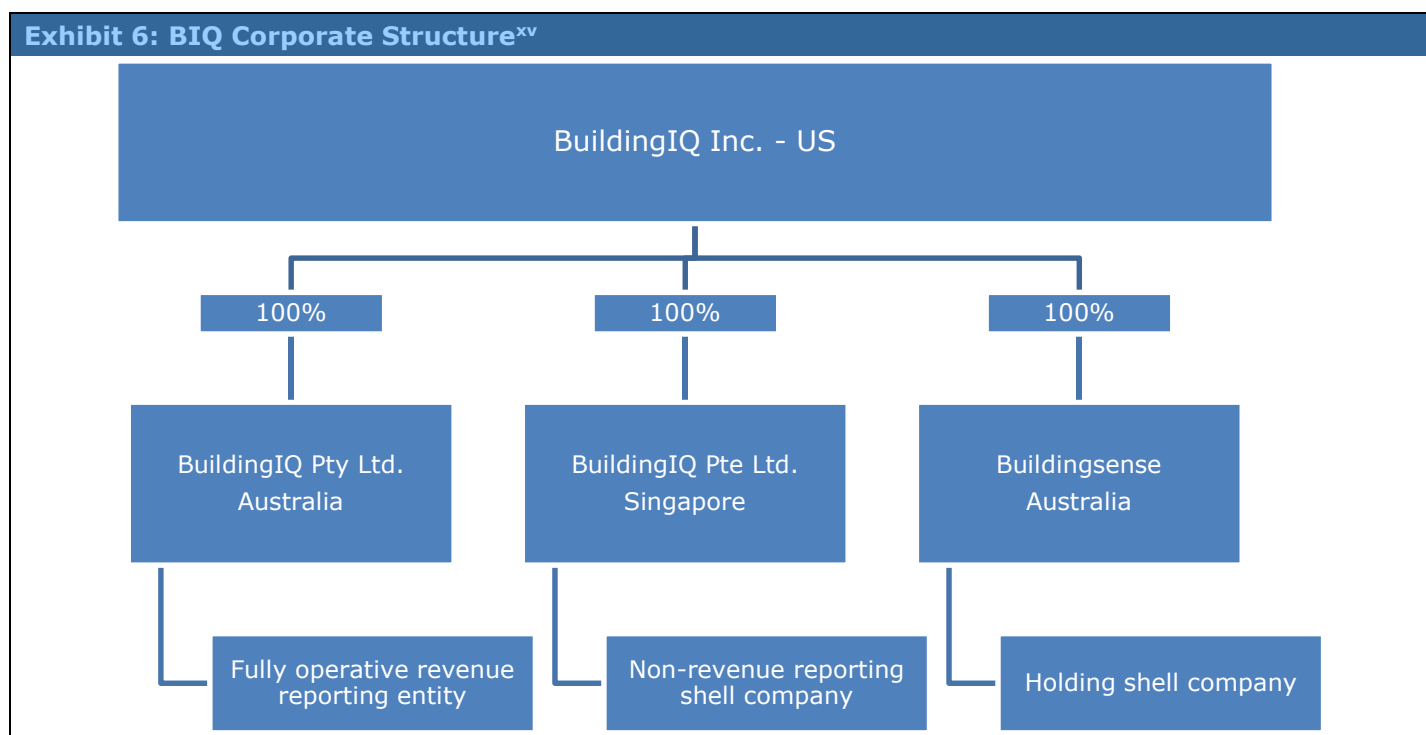
FY 2017 saw revenues, profitability and margins recover on the back of a 33% YoY increase in revenues generated by new contracts, and a 68% YoY increase in FY 2017 from FY 2016 in R&D grant received for research expenses (other income) for the company. EBITDA loss decreased by 72.8% YoY to AUD 1.9 mn in FY 2017 from AUD 7.0 mn in FY 2016 due to a 32% decrease in operating expenses driven by cost strategies employed by the company and gain in process efficiencies.

FY 2018 witnessed revenue growth on the back of new contracts in both the greenfield and established building segments. However, profit and margin dipped on account of an increase in the costs incurred by the business. These included one-off administrative costs of ~AUD 730,000 related to the Buildingsense acquisition, and additional expense requirements to support revenue growth from greenfield building contracts. These cascaded down to an increased EBITDA loss and net loss for the company for FY 2018. However, the company either met or exceeded most of its financial and business targets for H2 2018. BIQ exited FY 2018 with:

- an on-target ACR of AUD 8.5 mn;
- added 92 new buildings (against a target of 60) to its portfolio in H2 2018;
- recorded a 12% increase in annualized revenue per building (against a target of 10%); and,
- surpassed 125 sq ft in area under contract, in line with expectations.

## 2.2 Corporate Structure

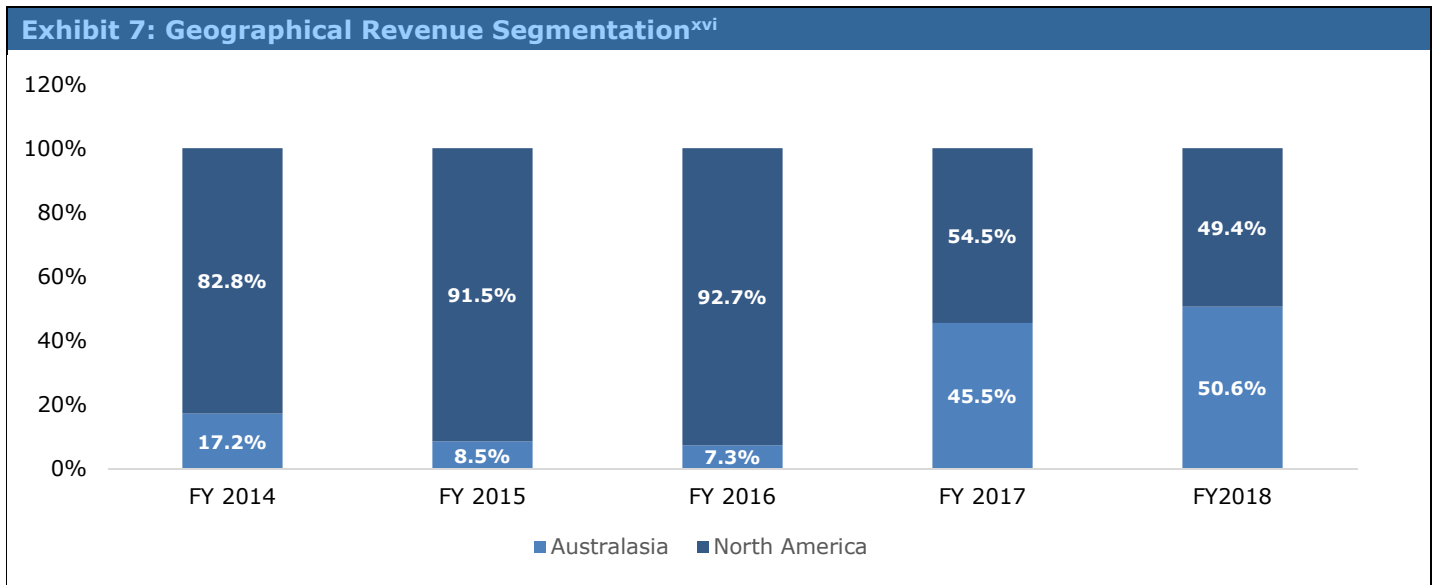
**Exhibit 6: BIQ Corporate Structure<sup>xv</sup>**





### 2.3 Geographical Spread & Outreach

The company has successfully established and expanded its business operations in the US and Australia and is already extending the operations into Asian markets.



There has been a noticeable change in the geographical revenue segmentation for the company between FY 2016 and FY 2018. Revenue accruing from Australia has commanded an over 50% share in the company’s aggregate revenues in FY 2018, as compared to 7.3% share in FY 2016. The change is attributable to the company’s business foray into newly constructed buildings. The shift in BIQ’s focus to greenfield buildings has resulted in rapid growth in business coming from the region.

From a sector perspective, the company’s business operations are spread across the real estate investment trust (REIT) & commercial offices sector, education and healthcare, retail and hospitality, and the government sector. The company’s strategy for growth and outreach within and beyond its existing markets employs direct sales initiatives as well as channel partnerships. Direct sales represent approximately 60% of BuildingIQ sales. The other 40% is accounted for by channel partnerships with companies or via utility or government programs.

As channel partners, the company has entered into agreements with BMS vendors such as Schneider Electric, Siemens and Honeywell, to name a few; and value-added resellers, including performance contractors, building management companies, and service providers such as Direct Energy Business, AtSite, and AE Smith. Given below is a snapshot view of the company’s current partnerships:

Exhibit 8: Corporate Partnerships<sup>xvii</sup>



## 2.4 Company Milestones

Exhibit 9: BuildingIQ Milestones <sup>xviii</sup>	
Year/Period	Event
2009	<ul style="list-style-type: none"> <li>Incorporation of BuildingIQ Pty Ltd in Sydney, Australia</li> <li>Exclusive worldwide license to core technology secured from the Commonwealth Scientific and Industrial Research Organization (CSIRO)</li> </ul>
2010	<ul style="list-style-type: none"> <li>Secured initial investors to fund technology R&amp;D</li> <li>Technology development and enhancements done in collaboration with CSIRO</li> </ul>
2011	<ul style="list-style-type: none"> <li>Launched BuildingIQ 1.0 in Australia with initial pilots</li> <li>Ended year with 0.5 mn sq ft (46,000 sq meters (mtr)) under contract</li> </ul>
2012	<ul style="list-style-type: none"> <li>Initial launch in US market and reorganization as BuildingIQ Inc.</li> <li>Multi-year energy efficiency partnership with NV Energy (Nevada state utility)</li> <li>Secured USD 9 mn in financing from US and Australian financial and strategic investors, including Siemens Venture Capital, Paladin Capital Group and Exto Partners</li> <li>Ended year with 2.1 mn sq ft (195,000 sq mtr) under contract</li> </ul>
2013	<ul style="list-style-type: none"> <li>Expanded NV Energy partnership to 3.5 mn sq ft (325,000 sq mtr)</li> <li>Michael Nark appointed CEO in September 2013</li> <li>Launched Game Plan, Measurement and Verification and Portfolio Management products</li> <li>Ended year with 9.9 mn sq ft (919,000 sq mtr) under contract and AUD 1.2 mn in ACR</li> </ul>
2014	<ul style="list-style-type: none"> <li>Awarded USD 1.8 mn multi-year US Department of Energy (DOE) contract in partnership with Siemens and the City of Washington, DC, to roll out BuildingIQ in up to 7.5 mn sq ft (696,000 sq mtr)</li> <li>Launched BuildingIQ version 4.0</li> <li>Existing investors Siemens, Paladin and Exto commit to second round of private financing, totaling USD 7.5 mn</li> <li>Ended year with 22.5 mn sq ft (2.1 mn sq mtr) under contract and AUD 2.5 mn in ACR</li> </ul>
2015	<ul style="list-style-type: none"> <li>Awarded NYSERDA Grant, USD 0.5 mn incentive for deployment of technology in New York City</li> <li>OeH within New South Wales – approved measurement and verification (M&amp;V) provider</li> <li>Public offering on the ASX: BIQ secured AUD 20 mn</li> <li>Ended period with 35 mn sq ft under contract and AUD 3.5 mn in ACR</li> </ul>
2016	<ul style="list-style-type: none"> <li>Completed acquisition and integration of Energy &amp; Facility WorkSite</li> <li>Acquired core technology from CSIRO</li> <li>Recognized as a CSIRO distinguished partner for the 2016 CSIRO Entrepreneurship Award</li> <li>Launched transformational new 5i Platform</li> <li>Launched technology partnerships with US-based AMP Technologies and GE Current</li> <li>Ended year with 70 mn sq ft under contract, with 927 buildings active on the 5i Platform, and AUD 4.3 mn in ACR</li> </ul>
2017	<ul style="list-style-type: none"> <li>Successful shift in product and sales resulted in growth of greenfield buildings with full utilization of 5i Platform from construction through operations</li> <li>Achieved early adoption in Asia and Europe</li> <li>Ended year with over 100 mn sq ft under contract, and 1,085 buildings active on the 5i Platform</li> </ul>
2018	<ul style="list-style-type: none"> <li>Signed a long-term reseller partnership agreement with BuildingAI for 10 + 10 years to expand into Indonesia's rapidly evolving market</li> <li>Signed two channel partnerships in the UAE with - PBOTech (as a Silver Partner) and DOTS Tech Systems (as a Referral Partner) - to expand the company's geographical reach in the Middle East in commercial office buildings space</li> <li>Collaborated with Gotham 360 to optimize energy consumption at 21 YMCA facilities in New York</li> <li>Released the BuildingIQ Mobile App to existing customers</li> <li>Ended year with ~125 mn sq ft under contract, and 1,265 buildings active on the 5i Platform</li> </ul>

## 2.5 Business and Revenue Model

### 2.5.1 Business Model

BuildingIQ's core business is the sale and installation of its cloud-based SaaS energy management and optimization solution for commercial building portfolios. The company's core business is the successful delivery of its 5i Platform. Products and services provided under the platform can be broadly classified into three key verticals – Visualization, Building Operations and Predictive Control.

- 1. Visualization** – Under this umbrella, the company provides cloud-based energy metering services, via its SaaS analytical tool, Energy Worksite. The energy consumption is monitored on an hourly basis, for each building, by an advanced algorithm powered by the tool. It facilitates quick user access to vital information with respect to the energy consumption level (over/under/on target), along with outlier identification, thereby helping the user stay on top of energy use.
- 2. Building Operations** – This vertical includes the Facility Worksite, Smart Tune, and Outcome-based Fault Detection (OFD) solutions. Products and services offered under this vertical help the user manage, tune, and operate buildings through big data, re-commissioning, and monitored commissioning.

**Facility Worksite:** The Facility Worksite is a service request and work order management system (also known as ticketing system) that makes it easier to manage the predictable as well as unpredictable demands that the facility teams face daily. The tool, which is a part of the BuildingIQ 5i platform, helps to optimize and manage occupant comfort and HVAC operations. The Facility Worksite can be deployed on a standalone basis. The company has also launched BuildingIQ Mobile App, which helps users collect relevant data for the building in a few seconds.

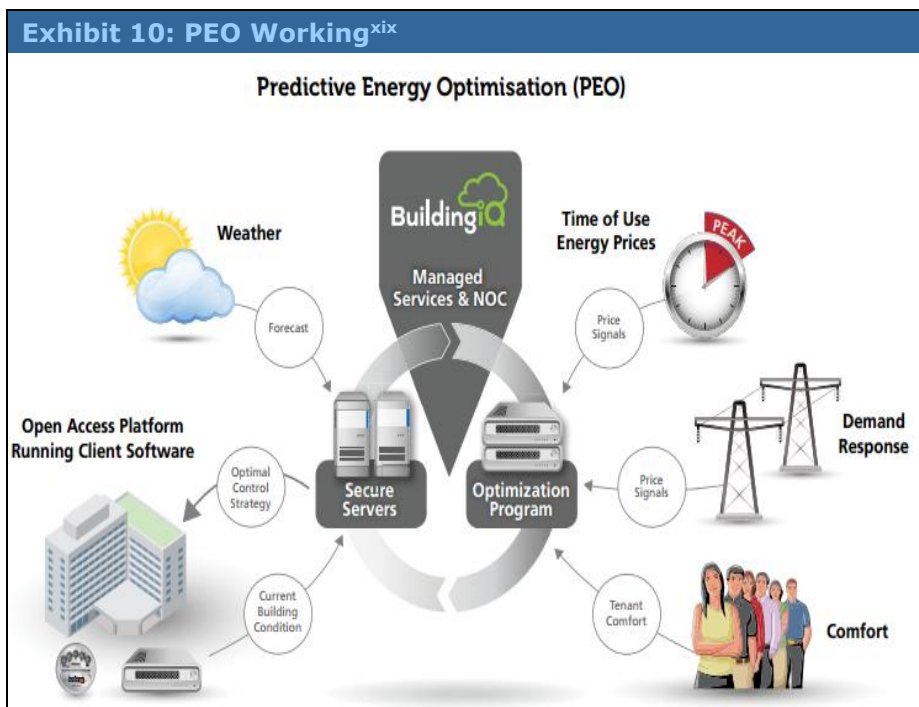
The BuildingIQ Mobile App allows tenants to provide feedback on comfort, thus expanding the scope of tenant engagement. It facilitates personnel with increased functionality as they can create tickets and keep track of maintenance work orders on the go. The app makes it possible to uniquely tune the HVAC system towards higher tenant satisfaction. Currently, the app has two core modules – comfort and service center – both of which are designed to simplify the task of managing the facilities of buildings.

**Smart Tune:** Smart Tune is BuildingIQ's data-driven retro-commissioning services. This service makes sure that the configuration of the HVAC control system is optimal. Smart Tune is aimed at building efficiency and it helps ensure that commissioning work is correct, keeping in view for the future a predictive control system which is fully autonomous. Tactical and specific improvements to the existing BMS, along with system overhauls, are included in the projects here.

**OFD:** The OFD service addresses the shortcomings common to all fault detection and diagnostic (FDD) services, while facilitating the prioritization of faults and issues, ticketing work, and data-based validation of the effectiveness of work performed. This tool has the potential to be further enhanced to autonomously take corrective actions as defined by the PEO algorithms, by adding close-loop control.

- 3. Predictive Control** – This vertical includes the Demand Response, Automated Measurement and Verification (AM&V), and PEO solutions. Products and services offered under this vertical allow 24/7 optimized control in-built M&V, and demand response uniquely tailored to a building.
  - a) Demand Response:** It is a specialized form of PEO, wherein instead of an energy-cost-driven optimization paradigm, event goals are achieved through a more aggressive time-based curtailment strategy that still seeks to optimize comfort. It enables participation in utility demand response incentive programs.
  - b) AM&V:** The AM&V system fosters repeatable, utility-grade M&V of initiatives at lower cost and higher accuracy. The required transparency for compliance with the International Performance M&V Protocol (IPMVP), along with verification, is provided by BuildingIQ's automated M&V solution (cloud-based). It provides scalability, repeatability utility-grade reliability, and is the first truly software-only solution. Its hourly calculation capabilities dramatically lower the margin of error.

**c) PEO™:** BuildingIQ’s cloud-based SaaS solution, the PEO, leverages a responsive and well-maintained HVAC system, to improve the energy efficiency of commercial, public, or academic buildings. The PEO works with a building’s existing BMS to optimize around system efficiency and occupancy comfort at the lowest cost. Customers typically achieve 10%-25% energy reductions in HVAC consumption. The system automatically fetches inputs such as the local weather forecast, the occupancy for the building, energy prices, and tariffs, and runs thousands of simulations to arrive at the most efficient HVAC operating strategy for the next 12 hours.



### 2.5.2 Revenue Model

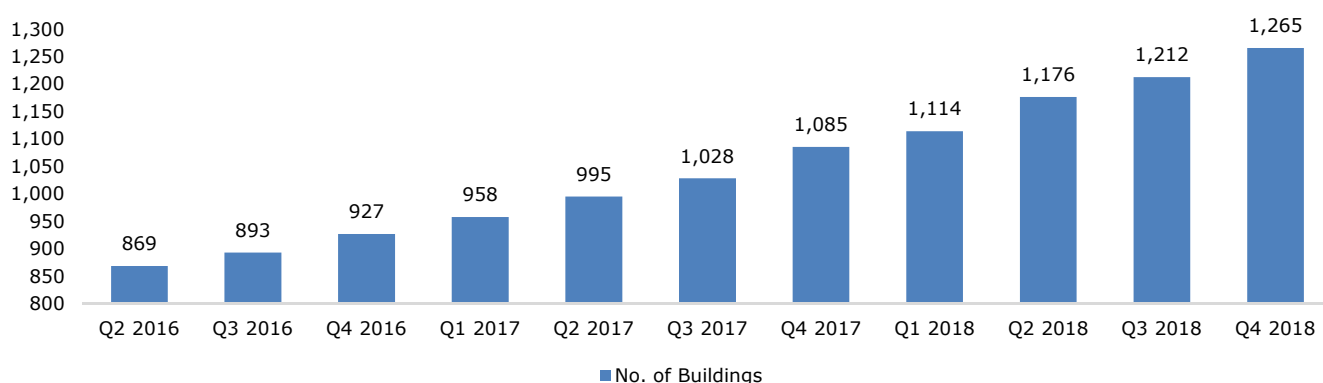
BuildingIQ provides the 5i Platform which enhances and optimizes its customers’ buildings, by installing HVAC, setting up BMS, configuring mechanical/electrical support systems (Mechelec) and placing IoT devices at key control points. From this hardware foundation, BuildingIQ maximizes energy savings and customer comfort by using SaaS subscriptions to enable AM&V, demand response, OFD and PEO.

Revenue is recognized on a stage-of-completion basis for construction-type hardware installations in greenfield buildings, and on a monthly basis for the duration of SaaS subscription services in greenfield and established buildings. When it is probable that revenue can be measured reliably and the consolidated entity is likely to get economic benefit, revenue is recognized. The fair value of the consideration receivable or received is used to measure revenue.

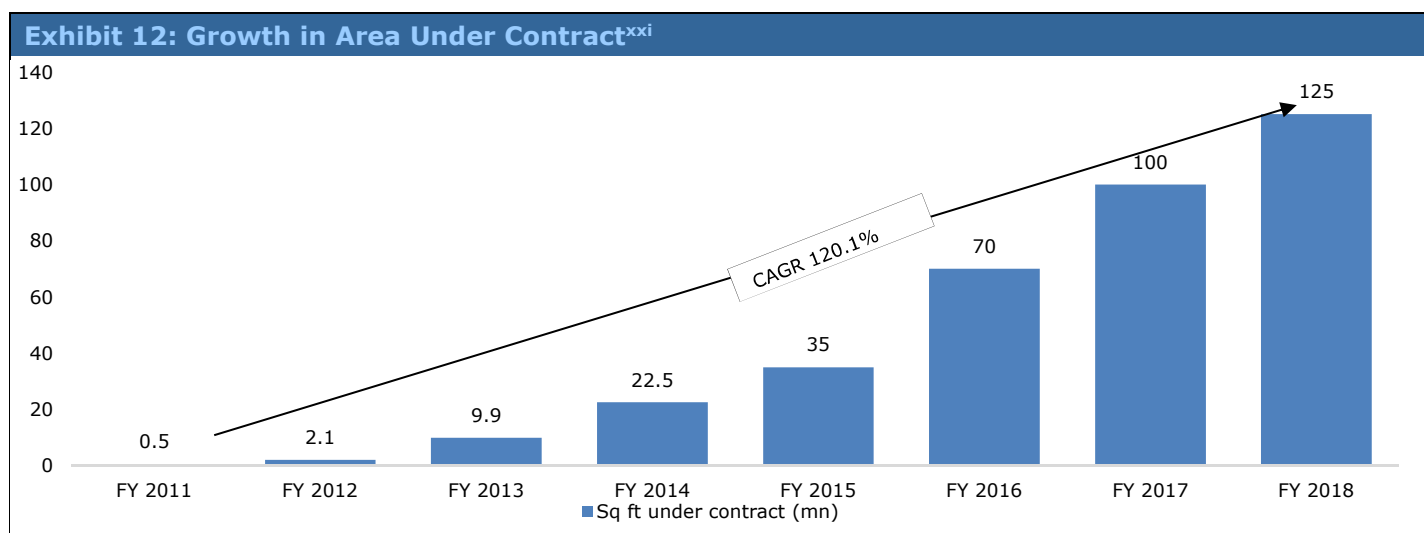
As the obligation of performance is satisfied over the implementation term, revenue for installation services is recognized. The revenue is recognized by reference to the stage of completion of the individual contract. Stage of completion is derived from the estimated time to completion, which is measured on a monthly basis. The timing of invoicing may differ to the timing of revenue recognition due to contract milestones included within the contract with a customer. This results in the recognition of accrued income or deferred revenue.

As the obligation of performance is satisfied over the subscription term, the revenue for SaaS subscription is recognized. The revenue is recognized equally over the term of the subscription. In cases where it is billed up front, it results in deferred revenue recognition in order to ensure it is recognized over the subscription term.

**Exhibit 11: Growth in Total No. of Buildings on the 5i Platform<sup>xx</sup>**



BuildingIQ has witnessed steady growth in its building portfolio, especially since the launch of its transformational 5i Platform. From 927 buildings at the end of FY 2016, the company had over 1,265 buildings active on its 5i Platform at the end of FY 2018.



The amount of building space under management has been growing at a healthy CAGR of 120.1% (owing to a lower base) over the seven years from 2011-2018 – from 0.5 mn sq ft in FY 2011 to 125 mn sq ft in FY 2018.

## Buildingsense acquisition to boost the greenfield segment

Complementing its established and expanding portfolio of 5i implementations in existing buildings, BuildingIQ has entered into new building constructions for the implementation of its energy optimizing software. Termed the greenfield sector, the company is already on course to strengthen its capabilities and growth prospects in this new business segment via inorganic initiatives. During 2018, the company acquired Buildingsense Australia, which has been a highly valued partner of the company in Australia since 2016.

Buildingsense has strong capabilities in services related to the design, supply, engineering, installation, commissioning and service of building technologies. The company has distribution rights in Australia for the integrated BMS. With the acquisition, BIQ intends to grow its greenfield sector, globally. The acquisition has also secured the local distribution rights for Swiss-owned Sauter BMSs and Italian-owned Pettinaroli Valves.

As per the terms of the acquisition transaction (completed on August 31, 2018), BuildingIQ would establish a subsidiary to purchase 100% of the shares of Buildingsense. The new subsidiary would be owned 70% by BuildingIQ and 30% by the current owners of Buildingsense. The equity and cash consideration for the purchase is:

- CDIs of BuildingIQ Inc. to the value of ~AUD 1.2 mn (USD 825,000) based on the 30-day volume weighted average price (VWAP) prior to August 23, 2018.
- AUD 90,000 is due on August 15, 2019, subject to the achievement of certain revenue targets, and AUD 30,000 is due on or about June 30, 2020, subject to any warranty claims.

## 2.6 Corporate Strategy and Future Outlook

### 2.6.1 Strategy<sup>xxii</sup>

#### 2.6.1.1 Organic and inorganic growth

BuildingIQ is currently focused on strengthening its position in current markets (mainly the US and Australasia) with newly constructed (greenfield) and established building growth. It is poised to drive more of its services to existing customers. This strategy falls in line with BIQ's objective to foster growth in the buildings under contract count and consequently, its ACR. Operationally, the company's focus remains on providing comfort, operational efficiency, and energy savings to its clients.



BIQ is also looking to expand into North America with a brownfield (retrofit) buildings approach to complement their successful established buildings presence. The company is expected to continue its organic growth along with an appropriate blend of inorganic growth, to drive increased shareholder value. BIQ is expected to continue to drive more of its services to existing clients while investigating new geographies to exploit and drive a competitive advantage.

BIQ recognizes that different markets present different opportunities and is geared to tap that opportunity via both organic and inorganic growth initiatives. Consequently, the company has signed reseller partnership agreements with BuildingAI in Indonesia and PBOTech and DOTS Tech Systems in the UAE to expand into the Asian markets. By early Q3 2019, the company expects to bring on some additional sites in the UAE within its portfolio.

### **2.6.1.2 Greenfield sector development**

BuildingIQ expects its greenfield sector initiative to become a valuable growth driver for the company. The company has been implementing its software solution in existing buildings. In 2016, BIQ expanded its scope of business beyond existing buildings to include new building constructions. The Buildingsense acquisition falls in line with this growth strategy. BIQ acquired Buildingsense for the issue of ~AUD 1.2 mn (USD 825,000) of CDIs and deferred cash payment of ~AUD 280,000 (USD 200,000) payable over 2 years.

The Buildingsense acquisition has secured the greenfield market opportunity locally for the company. The deal strengthens their marketing and sales capabilities in the greenfield sector and allows BuildingIQ to offer additional 5i-Platform-enabled solutions – Sauter BMS and Pettinaroli Valves – to clients locally through distribution rights owned by Buildingsense. This is in line with the company’s strategy to expand its reach geographically.

The company expects the acquisition to deliver significant financial benefits over the medium- to long-term, including:

- Approximately AUD 1 mn in additional revenue to the consolidated entity in H1 2019,
- Approximately AUD 350,000 net positive cash flows to the consolidated entity in H1 2019,
- Improved terms of trade and cash receipts (in the greenfield segment) by 30 days;
- Expansion of BuildingIQ’s sales and marketing capabilities in the greenfield sector; and
- Extension of BuildingIQ’s service offering through new distribution rights.

Other strategic benefits are as follows:

- Reinforces the delivery of BIQ’s stated strategic growth initiatives,
- Access to expert resources, which, in turn, can deliver more projects and expand sales and marketing capabilities on a global scale,
- Improve value throughout the entire building lifecycle for Australian customers using BuildingIQ’s 5i Platform,
- Addition of further control services such as Sauter’s BMS installation and ongoing control and tuning optimization services,
- Secured local distribution rights for Swiss-owned Sauter BMS and Italian owned Pettinaroli Valves, and
- Benefits of leveraging these capabilities in other geographies in the future.

In Australia, the company’s strategy has primarily targeted the greenfield business segment of the market. The company considers crane count metrics, which is currently on the rise in Australia, to be an indicator of growth in new constructions.

### **2.6.1.3 Strategic goals and opportunities**

The company’s current strategic goals for its business include platform integration, expanded channels, integrated services and expanded services. On the services side, the company aims to work on its mobile capabilities; service centre workflow; tenant comfort management; OFD; validated, prioritized fault identification; and integrated workflow management.

Other growth opportunities include sub-metering capabilities, battery management, and the integration of on-site generation assets, including solar.

## 2.6.2 Outlook

BuildingIQ remains poised to strengthen its position in its current markets from both greenfield and established buildings growth through a combination of organic and inorganic initiatives. The company is expected to drive more of its services to existing customers along with expanding into new geographies.

The company's management expects the business to register 45%-50% growth annually. 15%-20% per annum growth is expected from the North American market – led by visualization and analytical services on its platform. BIQ is gearing up to bring to the North American marketplace, in early 2019 - a brownfield offering – targeting retrofit projects.

BIQ expects to achieve a positive income statement position by the end of Q2 2019, and subsequently, record positive cash flows from operations in Q4 2019, given the current business conditions and BIQ's growth prospects.

## 2.7 Company Premiums<sup>xxiii</sup>

**Stable business platform in Building Energy Optimization:** BuildingIQ has a well-established business set-up offering its cloud-based energy optimization solution to buildings to reduce their costs on HVAC by 10%-25%. Its proven trademark PEO technology platform is already contracted in 1,265 buildings across the US and Australasia. Rapidly expanding channel partnerships across vendor types and geographies demonstrate BuildingIQ's product and service capabilities.

**Highly scalable business:** The company's 5i Platform is cloud-based and employs machine learning and IoT technology capabilities to continuously improvise on its existing SaaS solution. These aspects lend the software a self-learning characteristic, which enables the company's offering to respond, in real time, to changing data inputs and customer demands. It allows the service offering to adapt to any new major technological overhauls or customization requirements. The company has a recurring subscription revenue business model and customer contract terms are typically 12 to 36 months, allowing long-term revenue visibility.

**Tighter emission regulations and higher energy prices expected to spur demand:** Both higher energy prices and tighter emission regulations are events that trigger increased demand for the company's offering. The company's trademark PEO technology helps reduce energy usage costs by 10%-25%. This makes it more attractive in a rising electricity cost environment. Other system capabilities offered under the company's predictive control vertical become vital when the regulatory environment with respect to emissions and/or energy usage becomes stricter.

**Seasoned management team:** BuildingIQ has a seasoned management team with over 25 years, on average, of energy efficiency and commercial building sector experience.

**Strategic partnerships:** The company has strategic relationships with major BMS players, such as Schneider Electric, Siemens, Honeywell. Such strategic relationships are expected to boost top line growth by providing significant and recurring sales opportunities.

**Well-placed for longer-term trends:** The company's business is well-placed to cater to (and generate revenues from) longer-term environment trends such as rising climate change consciousness, greenhouse gas emissions, increased imposition of and adherence to emission allowances and demand response programs.

## 2.8 Company Risks<sup>xxiv</sup>

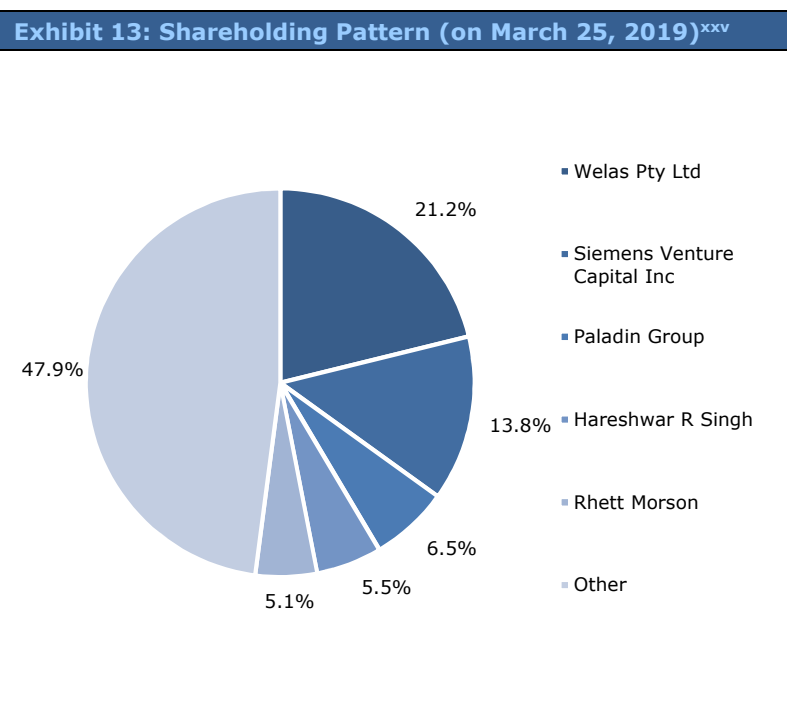
**Impact of regulation:** The regulatory environment in the energy sector is very capricious. Regulations around power usage, consumption, distribution, emissions, etc., are all very volatile. Hence, the need to constantly upgrade and adjust system design and capabilities to match the current regulatory framework of operations within the energy sector is an operational risk that the company is exposed to.

**Liquidity risk:** The company's CDIs trade on the Australian Securities Exchange. There can be no assurance that an active market in the CDIs will always be there or that the price of the CDIs will increase. The liquidity risk there, thus remains.

**Competition:** Increased competition could result in negative pressure on pricing, reduced profit margins, and loss of market share, all of which could adversely affect the company’s business, operating results and financial condition.

## 2.9 Shareholding Pattern

The company had 249,223,825 CDIs issued and outstanding on April 11, 2019.



**Exhibit 14: Shareholding Pattern**

Shareholders	No. of Shares	% of total
Welas Pty Ltd	52,766,620	21.2%
Siemens Venture Capital Inc	34,313,644	13.8%
Paladin Group	16,272,885	6.5%
Hareshwar R Singh	13,636,364	5.5%
Rhett Morson	12,773,844	5.1%
Others	119,460,468	47.9%
<b>Total Shares Outstanding</b>	<b>249,223,825</b>	<b>100.0%</b>

## 2.10 Listing and Contact Details<sup>xxvi</sup>

BuildingIQ’s CDIs are listed on the Australian Securities Exchange under the symbol BIQ (ASX-BIQ).

### Company Contacts

Address 1: 2121 South El Camino Real, Suite 200, San Mateo, CA 94403 US (Headquarters)  
 Contact No: +1 888 260 4080

Address 2: Suite 1102 46 Market Street, Sydney NSW, 2000 Australia  
 Contact No: +61 2 9360 0602

Website: [www.buildingiq.com](http://www.buildingiq.com)

## 3. News<sup>xxvii</sup>

- **BIQ joined Intel IoT Solutions Alliance to accelerate growth of Intelligent Devices and Analytics:** On April 2, 2019, the company announced that it had joined the invitation-only Intel IoT Solutions Alliance that worked to drive revenue growth and market share for over 500 members in the IoT space. The alliance seemed to build a strong and sustainable market advantage through a solution-centered ecosystem program based on Intel architecture. BIQ joined Intel and the ecosystem of partner companies such as Dell, GE Healthcare and Hewlett Packard Enterprise to accelerate the design and deployment of IoT devices and analytics.
- **BIQ became first BMS Cloud Integrator with Sauter agreement:** On March 20, 2019, the company announced that it had become the first BMS cloud integrator in the smart building services market by entering into an agreement with Sauter Controls North America. Through the addition of building controls to its cloud-based optimization platform, BIQ defined a new category of integrators that optimize BMS implementation and create cloud-ready buildings designed to share and leverage data across functional boundaries.
- **FY 2018 financial results:** On February 28, 2019, BIQ announced its FY 2018 results. The company reported a 40% YoY increase in its revenues to AUD 7.4 mn in FY 2018 from AUD 5.3 mn in FY 2017. ACR increased by 25% YoY to AUD 8.5 mn in FY 2018 from AUD 6.8 mn in FY 2017. The company added 183 buildings (including 30 greenfield building contracts) to its portfolio in FY 2018. The company had 1,265 buildings active on the 5i Platform at the end of FY 2018; up 17% YoY from FY 2017. Total booked area under management rose to over 125 mn sq ft. Contract renewal rate for the year stood at 97%.
- **Q4 2018 market update:** On January 31, 2019, BIQ announced a 5% rise in its unaudited revenue to AUD 1.88 mn in Q4 2018 from AUD 1.79 mn in Q4 2017. The company added 56 buildings over Q4 2018, including one contract for 9 greenfield buildings. BIQ had more than 1,265 buildings, and approximately 125 mn sq ft in area under contract. Customer renewal rate stood greater than 97%.
- **Collaboration with Gotham 360:** On January 15, 2019, the company announced that it has collaborated with Gotham 360 to optimize energy at 21 New York City YMCA facilities. The collaboration is supported by the New York State Energy Research and Development Authority (NYSERDA) Remote Energy Management (REM) program and is eligible for an NYSERDA incentive of up to USD 0.7 mn.
- **Lapsed unlisted options:** On December 17, 2018, BuildingIQ announced that its 90,000 unlisted options exercisable at AUD 1 each had lapsed. The options had been issued to Alan Cameron and Tanya Cox, both of whom are directors of the company.
- **Channel partnership agreements:** In an operational update released on December 13, 2018, the company made an announcement regarding its strategic initiatives to enter new markets. According to it, the company had signed several channel partnerships - with Gotham 360 in the US, as a Silver Partner with PBOtech, and as a Referral Partner with DOTS Tech Systems in the UAE. The company has also entered into a long-term reseller partnership agreement with Jakarta-based BuildingAI to tap the rapidly evolving Indonesian market.
- **Q3 2018 results:** On October 31, 2018, BIQ announced its Q3 2018 results. The company reported a 44% YoY increase in its revenues to AUD 1.93 mn in Q3 2018 from AUD 1.34 mn in Q3 2017. Contract booking increased by 50% YoY. Cash receipts increased by 145% YoY, reflecting growth in the company's greenfield business segment. The company added 36 buildings (including 20 greenfield building contracts) to its portfolio. The average area per booked building increased by 47.6% YoY to 121,000 sq ft in Q3 2018 from 81,978 sq ft in Q3 2017. The company had a total of 1,212 buildings, comprising approximately 120 mn sq ft, active on the 5i Platform. Contract renewal rate improved to 99%.
- **H1 2018 results:** On August 31, 2018, the company announced its results for H1 2018. Revenue from ordinary activities increased by 72% YoY, and cash inflow increased by 43% YoY, leading to a rise in the company's EBITDA by 21% YoY, as compared to H1 2017. The company's ACR increased by 50% YoY to AUD

7.99 mn in H1 2018 from AUD 5.33 mn in H1 2017. The company added 91 new buildings to its portfolio, taking the total count of buildings active on the 5i Platform to 1,176. The company had over 115 mn sq ft under management. Contract renewal rate stood at 98%.

- **Acquisition of Buildingsense:** On August 23, 2018, the company announced that it had acquired its greenfield building sector partner, Buildingsense Australia Pty Ltd. The consideration for the acquisition included the issue of ~AUD 1.2 mn (USD 825,000) CDIs and deferred cash payments of ~AUD 280,000 (USD 200,000) payable over two years. More information on this acquisition is available in Section 2.5.2 of this report.
- **Q1 2018 results:** On April 27, 2018, the company announced its results for Q1 2018. Revenue increased by 86% YoY to AUD 1.79 mn in Q1 2018 from AUD 0.96 mn in Q1 2017. Between the comparable periods, contract bookings increased by 32% YoY to AUD 3.05 mn; operating expenses increased by 18% YoY to AUD 2.06 mn; and cash receipts from customers decreased by 12% YoY to AUD 0.68 mn in Q1 2018. The company added 29 buildings to its portfolio during the quarter, taking the total to 1,114 buildings with approximately 109 mn sq ft under contract. Contract renewal rates were greater than 98%.
- **Launch of Mobile App:** On April 27, 2018, the company announced the launch of its mobile application. The app is designed to provide a building's facilities team with access to BuildingIQ's 5i Platform while on-the-go. The intuitive app allows facilities teams using Facility Worksite to identify and submit issues within a facility, document with mobile photos and automatically create a maintenance ticket. Further, the app has the functionality to allow tenants to submit service requests for automatic ticket creation.
- **Partnership with Cypress Envirosystems:** On April 27, 2018, the company announced that it had entered into a partnership with Cypress Envirosystems to expand the market for closed-loop PEO to older building stock that are currently using pneumatic thermostats. The combination of technologies is expected to enable older buildings to reduce electrical energy usage by up to 30%, while improving comfort and eliminating operational waste.
- **FY 2017 results:** On February 23, 2018, the company reported its FY 2017 results. Revenues from ordinary activities increased by 33% YoY to AUD 5.26 mn in FY 2017 from AUD 3.96 mn in FY 2016. Operating expenses decreased by 32% YoY to AUD 7.14 mn. EBITDA loss improved by 73% YoY to AUD 1.93 mn in FY 2017 from AUD 7.10 in FY 2016. Net loss after tax improved by 55% to AUD 3.54 mn in FY 2017. The company added 158 new buildings during the financial year, taking the aggregate count to 1,085 buildings (over 100 mn sq ft) active on the 5i Platform.
- **Closing of entitlement offer:** On January 24, 2018, the company announced that the successful closure of its partially underwritten non-renounceable entitlement offer. The offer, initially announced on December 15, 2017, to raise approximately AUD 3.8 mn, closed on January 19, 2018. The offer formed part of its AUD 6.5 mn capital raise.
- **AUD 6.5 mn capital raising:** On December 15, 2017, the company announced a capital raise of up to AUD 6.5 mn to fund the company's growing sales pipeline, its 5i Platform services development and to provide additional working capital. The capital raising comprised an AUD 2.1 mn Institutional Placement, an AUD 0.5 mn Existing Securityholder Placement, and an AUD 3.8 mn Entitlement Offer at AUD 0.045 per CDI.
- **Release of shares, CDIs and options from escrow:** On November 30, 2017, the company announced that as at the end of December 17, 2018, its 2,075,688 shares of common stock, 31,959,307 CDIs, and 3,905,586 options were due to be released from ASX-imposed escrow. On the same day, a further 755,443 CDIs were due to be released from voluntary escrow.
- **Q3 FY 2017 results:** On October 27, 2017, the company announced a 72% jump in its Q3 2017 revenue at AUD 1.34 mn, as compared to AUD 0.78 mn reported in Q3 2016. Cash receipts from customers decreased by 17% YoY to AUD 0.64 mn. However, operating expenses reduced by 22% from AUD 2.42 mn in Q3 2016 to

AUD 1.89 mn in Q3 2017. Contract bookings saw a 64% increase during these comparable periods, with 33 buildings added to the 5i Platform's active portfolio. The company closed the quarter with a total of 1,028 buildings, representing approximately 80 mn sq ft active on its 5i Platform.

- **H1 FY 2017 financial results:** On August 25, 2017, the company reported its H1 2017 results. Revenues from ordinary activities increased by 5% YoY. Revenue from other income increased by 4% YoY. Operating loss was reported at AUD 2.2 mn. However, ACR on June 30, 2017, stood at AUD 4.8 mn, recording a 53.8% YoY growth. The company witnessed an 11% YoY reduction in net cash payments and a 31% YoY reduction in operating expenses. Sixty-eight net new buildings were added to the company's building portfolio, taking the total to 995 buildings, covering approximately 77 mn sq ft active on the 5i Platform.
- **Removal of US investor restriction:** On January 30, 2017, the company announced that the ASX Settlement had notified that the company's CDIs, listed under the symbol BIQ, would be removed from Schedule 1 of the ASX Settlement Operating Rules from February 1, 2017, thereby removing restrictions on US investors from investing in the company.



## 4. Management and Governance<sup>xxviii</sup>

BuildingIQ has a seasoned management team with 25+ years of energy efficiency and commercial building sector experience on an average.

Exhibit 15: Management and Governance		
Name	Position	Experience
Michael Nark	President / CEO	<ul style="list-style-type: none"> <li>• Michael is the CEO and Executive Director of BuildingIQ since September 2013.</li> <li>• He has over 25 years of experience in software and technology-enabled service delivery businesses.</li> <li>• He has served as President and CEO of GEOCOMtms, a fleet-management software provider.</li> <li>• He has also led Prenova, an energy-management services provider, to triple digit growth.</li> <li>• He recently served as President and CEO of Power Analytics.</li> <li>• He holds a Bachelor of Science (B.S.) degree in Applied Sciences from Miami University.</li> </ul>
Alan Cameron	Chair / Non-Executive Director	<ul style="list-style-type: none"> <li>• Alan is the Chairman and Non-Executive Director in BuildingIQ since June 2015.</li> <li>• He currently chairs Property Exchange Australia Limited, Hastings Funds Management Limited, and various companies in the BT Financial Group.</li> <li>• Previously, he has held the positions of a Commonwealth Ombudsman and chairman of the ASC and the ASIC.</li> <li>• He has also chaired the Investments and Commercialization Committee at the University of Sydney.</li> <li>• He graduated with degrees in Arts and Law from the University of Sydney and is an Officer in the Order of Australia.</li> </ul>
Steve Nguyen	VP of Product and Marketing	<ul style="list-style-type: none"> <li>• Steve leads product and marketing to bring a suite of cloud-based energy intelligence service to the commercial, healthcare, education, and other building markets at BuildingIQ.</li> <li>• Previously at Bidgely, he helped utilities to better engage consumers with their energy use through disaggregation.</li> <li>• Prior to Bidgely, he ran corporate marketing and embedded solutions product marketing at IoT pioneer Echelon.</li> <li>• He holds a B.S. degree from Brandeis University and an M.B.A. from Boston College.</li> </ul>
Adam Benson	VP of Engineering	<ul style="list-style-type: none"> <li>• Adam leads the R&amp;D and IT technology teams at BuildingIQ.</li> <li>• In the past, Adam has held leadership positions at technology giants including Oracle, Towers Watson and OpenTV.</li> <li>• At OpenTV, his leadership was instrumental in the commercialization of early SaaS-based transaction and management systems for the digital media space.</li> <li>• He has a B.A. degree in Computer Science from Macquarie University, Sydney, Australia.</li> </ul>
Dave McCroskey	VP of Global Operations	<ul style="list-style-type: none"> <li>• Dave McCroskey is the VP of Global Operations for BuildingIQ.</li> <li>• He is a 25-year Silicon-Valley-based executive with an extensive international customer Success and operations experience base.</li> <li>• Previously, he had led global customer operations for a SaaS mobile software management company.</li> <li>• He has also held executive technical services and operational roles at Pillar Data systems, Network Appliance, Silicon Graphics, MIPS Computer Systems and Lockheed Martin Aerospace.</li> <li>• Dave has a B.S. degree in Finance from San Jose State University.</li> </ul>

## 5. Industry Overview

### 5.1 Market Definition

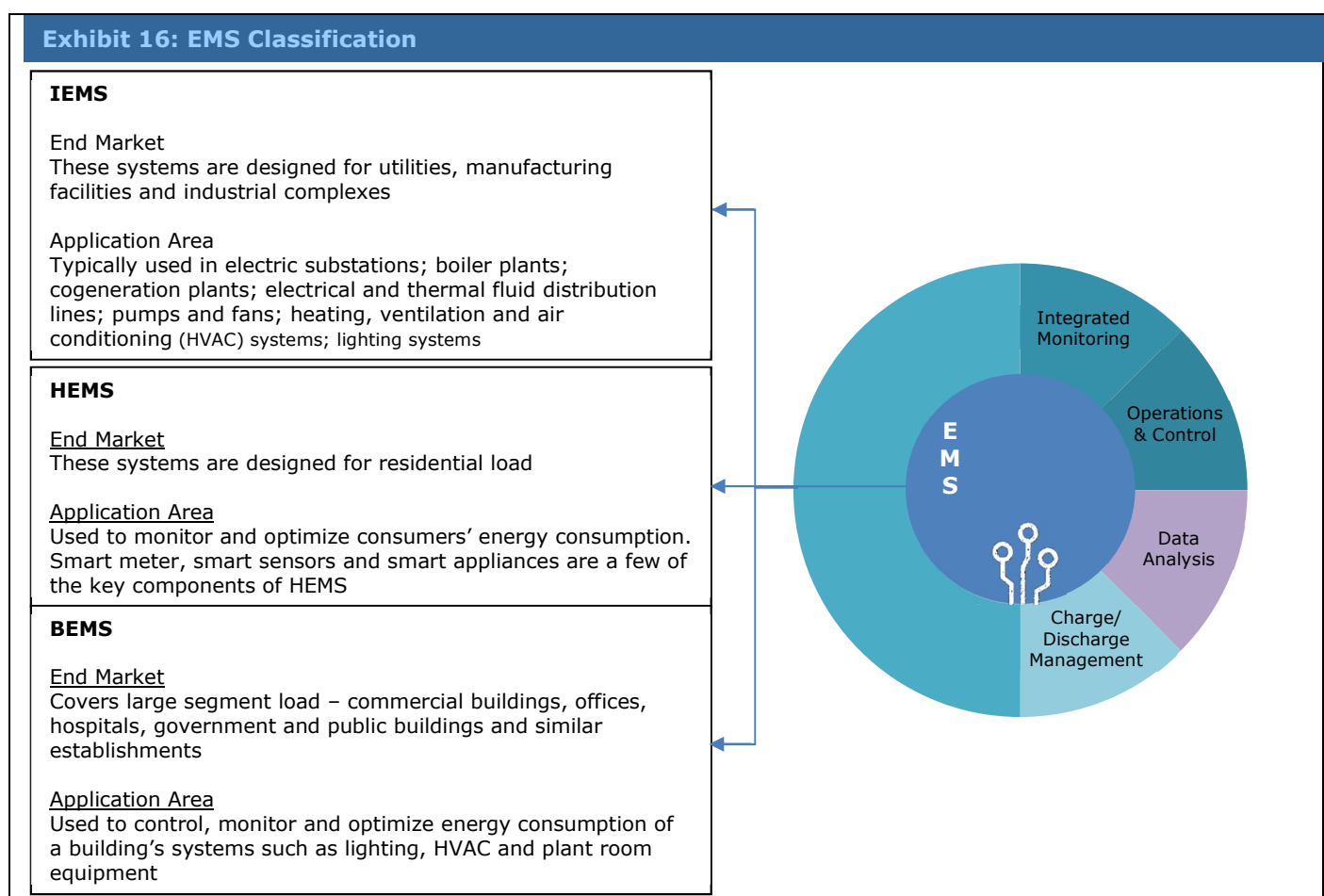
#### 5.1.1 Energy Management System (EMS)<sup>xxix,xxx</sup>

An EMS is a collection of computer-aided tools used by operators of electric facilities to monitor, control and optimize performance of generation and transmission systems. The main objective of an EMS is to maximize system performance through monitoring and control functions that require a centralized system of data collection.

Practically, EMS comprises metering and collecting the data for energy consumption, finding opportunities and implementing methods to save energy, and analysis and tracking of the meter data to find out the efficiency.

Based on the end-user application, EMS is classified into:

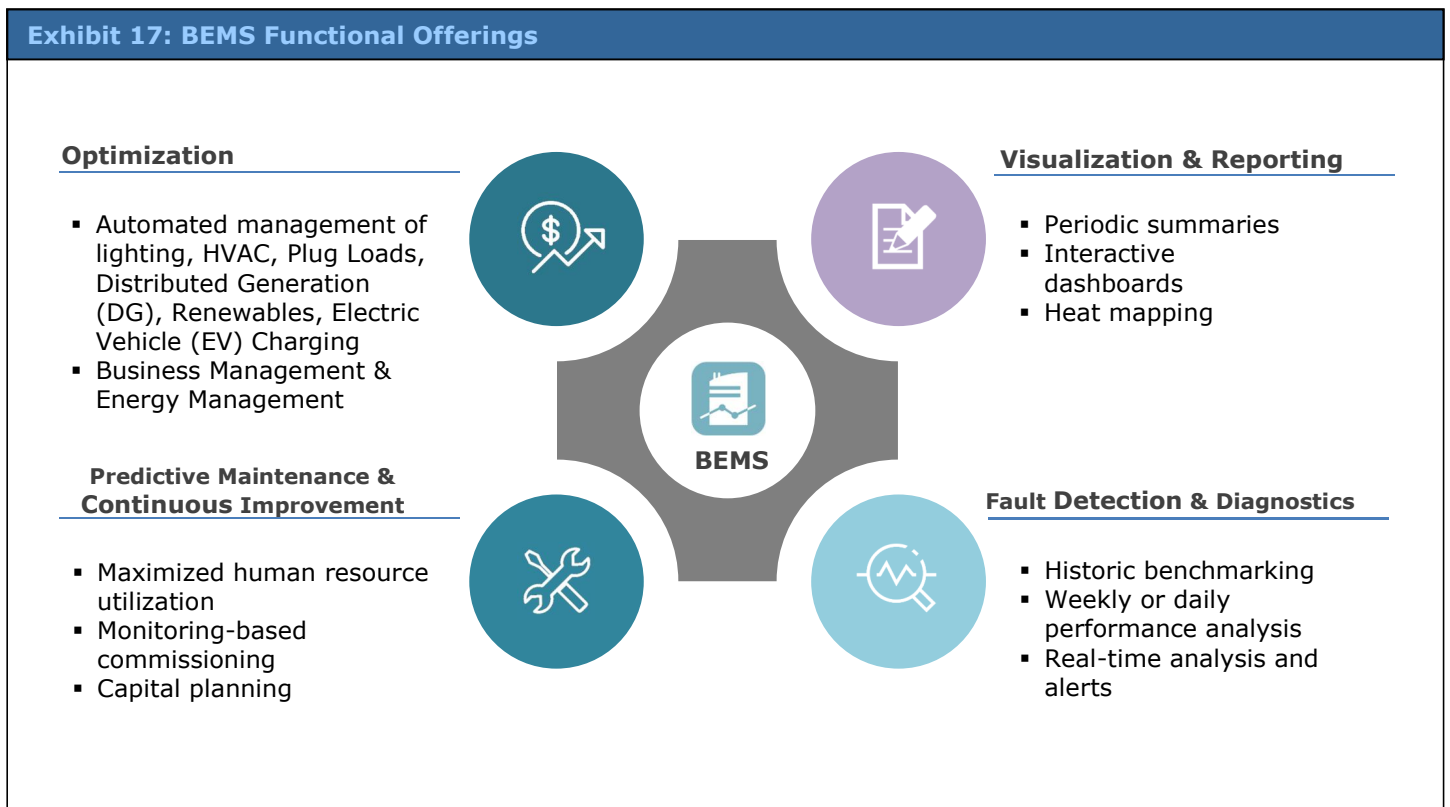
- Home EMS (HEMS)
- Building EMS (BEMS)
- Industrial EMS (IEMS)



#### 5.1.2 Building EMS<sup>xxxi,xxxii,xxxiii</sup>

BEMS is an integrated system of software, hardware and services that controls energy usage through information and communication technology. BEMS technology offers monitoring, automation and control of building systems such as HVAC and lighting to increase a building's energy efficiency and improve comfort. Next to energy management, the system can control and monitor a large variety of other aspects of the building, regardless of whether it is residential or commercial.

BEMS can be categorized in terms of the following four functional offerings:

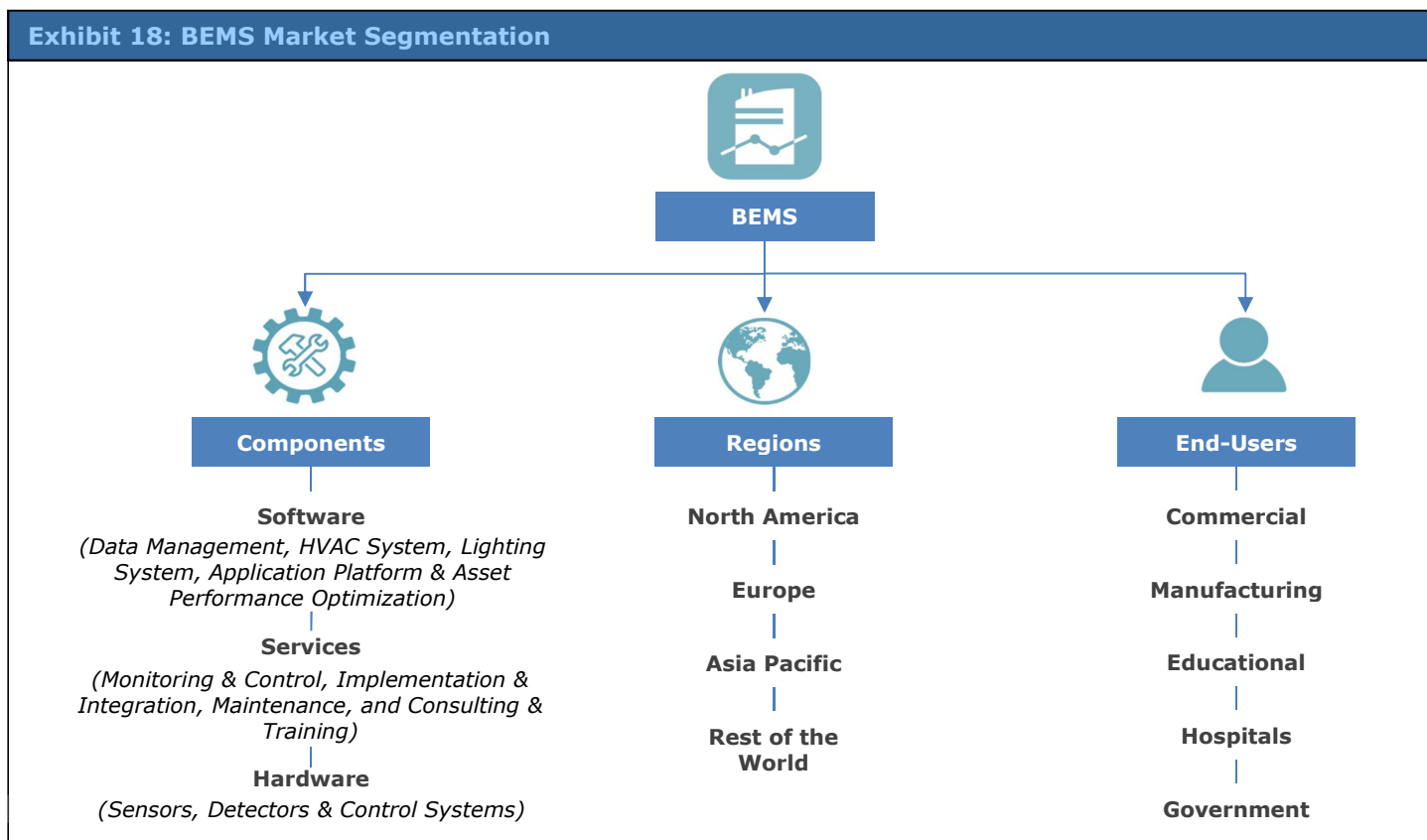


BEMS implementation provides certain benefits:

- Increased energy efficiency
- Improved environmental conditions
- Efficient use of staff
- Improved fire, security and other emergency procedures
- Improved standards of plant/building functioning
- Improved management of the building

## 5.2 Market Segmentation<sup>xxxiv,xxxv,xxxvi</sup>

The BEMS market is segmented by components, regions and end-users.



### 5.2.1 Market by Components (Offering Type)

#### 5.2.1.1 Services

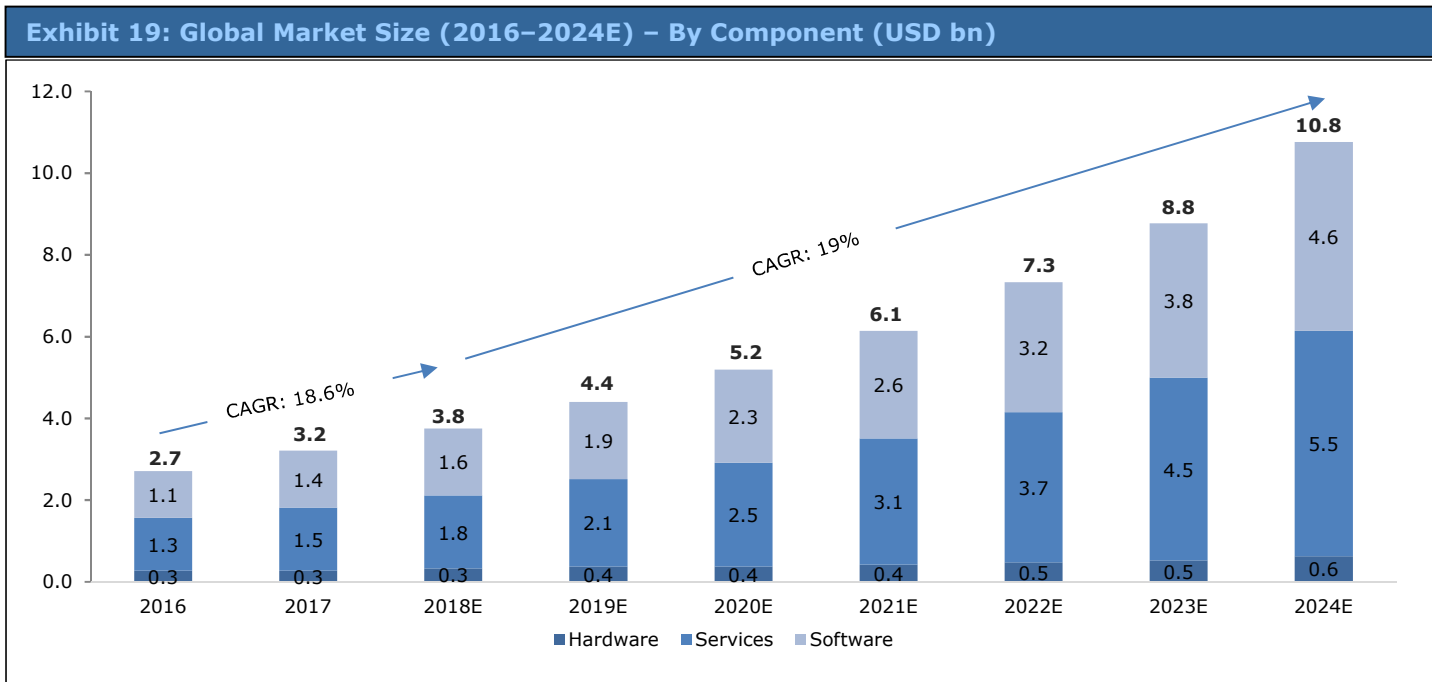
In 2018, the Services segment dominated the market, accounting for 49% of the market share in terms of revenue. The Services market grew from USD 1.3 bn in 2016 to USD 1.8 bn in 2018 at a CAGR of 18%. This segment is a major revenue earner because of the understanding of the BEMS consulting and installation required by the end-users across different buildings. The Services segment is estimated to display the fastest growth till 2024, growing to USD 5.5 bn at a CAGR of 21% during 2018–2024E. This segment is likely to remain the leading revenue generator until 2024.

#### 5.2.1.2 Software

The Software segment accounted for 43% of market share in terms of revenue in 2018. Compared with other segments, it grew the fastest from USD 1.1 bn in 2016 to USD 1.6 bn in 2018 at a CAGR of 21%. It is estimated to grow to USD 4.6 bn by 2024 at a CAGR of 19% during 2018–2024E.

#### 5.2.1.3 Hardware

The Hardware segment accounted for 8% of market share in terms of revenue in 2018 and did not display a significant growth from 2016 to 2018. However, it is likely to grow from USD 0.3 bn in 2018 to USD 0.6 bn in 2024, thus registering a CAGR of 12%.



## 5.2.2 Market by Regions

### 5.2.2.1 Europe

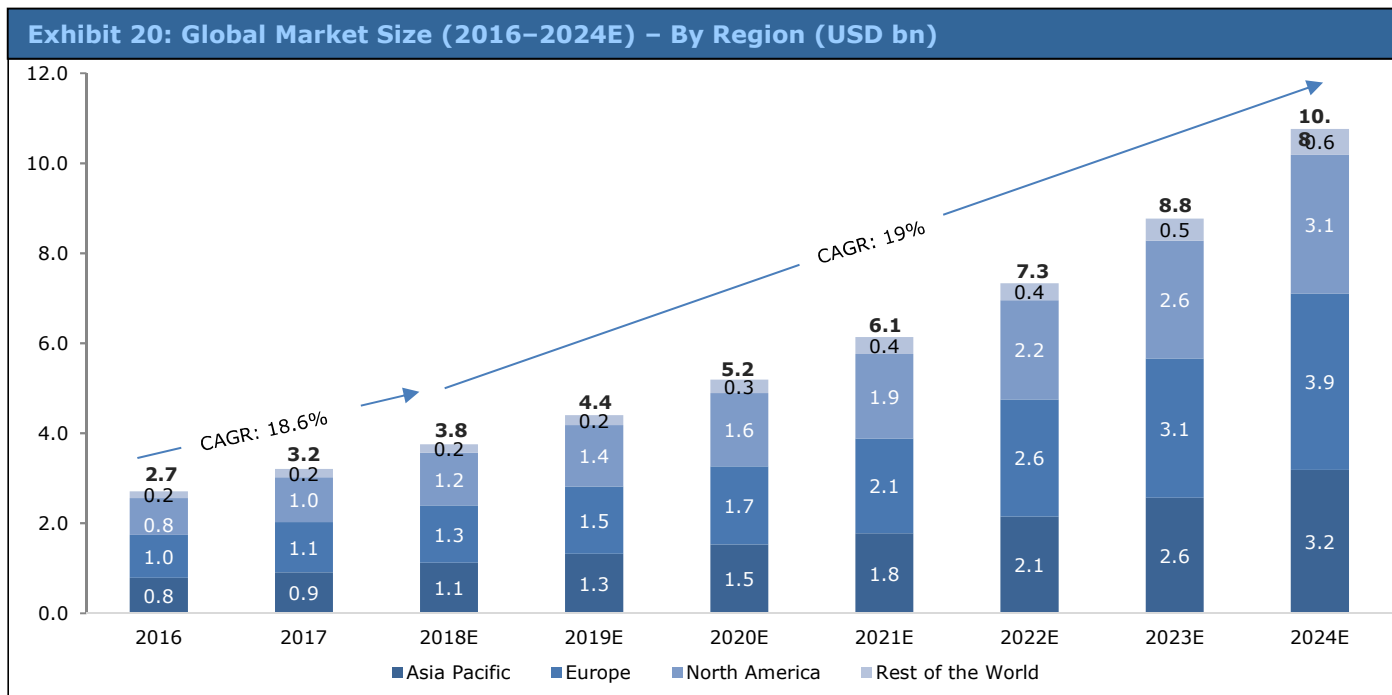
In 2018, Europe dominated the market, accounting for 34% of the market share in terms of revenue. The market in Europe grew from USD 1 bn in 2016 to USD 1.3 bn in 2018 at a CAGR of 14%. The market is estimated to undergo a faster growth to 2024, reaching USD 3.9 bn at a CAGR of 20% during 2018–2024E. The growth is likely to be driven by increasing usage of smart grid systems. France, the UK and Germany are expected to contribute significantly to the European market’s growth.

### 5.2.2.2 North America

North America accounted for 32% of the market share in terms of revenue in 2018. Compared with other regions, the North American market grew the fastest from USD 0.8 bn in 2016 to USD 1.2 bn in 2018 at a CAGR of 23%. The US is anticipated to dominate the market due to technological developments in energy-efficient systems coupled with the implementation of demand response programs. The market is estimated to reach USD 3.1 bn by 2024, growing at a CAGR of 17% during 2018–2024E.

### 5.2.2.3 Asia Pacific

The Asia Pacific region had a 29% market share in terms of revenue in 2018. The market grew from USD 0.8 bn in 2016 to USD 1.1 bn in 2018 at a CAGR of 17%. An increase in investments in Asia Pacific is projected in the mid and long terms, owing to increasing industrialization, development of smart cities and adoption of green technologies. China, Japan and India have been the main contributors to market growth in this region. These countries are increasingly building and expanding their commercial and industrial landscapes to serve the needs of growing populations. The market in Asia Pacific is forecast to surpass the North American market by 2024, reaching USD 3.2 bn, while growing at a CAGR of 20% during 2018–2024E.



### 5.2.3 Market by End Users

BEMS, segmented on the basis of end-users, includes manufacturing; office & commercial buildings; retail; government and Municipal, University, School and Hospital (MUSH); telecom and IT systems. The commercial building segment dominated the BEMS market in 2018. Further growth in the commercial application will be led by the increasing demand for energy security and sustainable development, along with environmental and social benefits.

### 5.3 Market Performance and Outlook<sup>xxxvii,xxxviii,xxxix,xl,xli,xlii</sup>

The global BEMS market has grown from USD 2.7 bn in 2016 to USD 3.8 bn in 2018 at a CAGR of 19%. It has evolved alongside building ecosystem technologies such as control systems and wireless technologies. The market continues to gain momentum and remains competitive and fragmented.

The pace of the BEMS market adoption is expected to accelerate and register a 19% CAGR over 2018-2024E to reach USD 10.8 bn. By 2024, the 'Services' segment is likely to remain the largest, and the market in Asia-Pacific is forecast to surpass the North American market in terms of revenue.

In the near- to mid-term, the industry's offerings are likely to remain diverse in terms of solution capabilities and integration complexity due to variance in customer needs. In the next 10 years, the market is likely to witness increasing partnerships and emergence of new offerings based on shifting technologies. Moreover, the connectivity and data flow linked with Internet of Things (IoT) and the Software as a Service (SaaS) delivery model are likely to support adoption of flexible and cost-effective solutions by customers that have conventionally benefited from traditional building controls and automation.

### 5.4 Market Drivers and Inhibitors<sup>xliii,xliv,xlv,xlvi,xlvii,xlviii</sup>

With increasing environmental consciousness, consumers have changed their consumption patterns in order to reduce costs and increase energy efficiency. Also, with the ever-growing population, rise in urbanization and rapid growth in industrialization, energy consumption has increased extensively, widening the energy demand-supply gap.

BEMS market growth can be attributed to rising electricity prices, stringent governmental policies, emergence of next-generation IT solutions, growing industrialization and growth of the energy services market. There have been



increasing concerns over climatic changes globally, which have developed the demand for reduction in energy consumption and greenhouse gas emissions. The growth has also been fueled by improving customer education and technology trends such as the IoT and cloud computing, which have expedited investments in the market. The growth in the commercial sector is likely to be led by the rising demand for energy security (uninterrupted availability of energy sources at an affordable price), and environmental and social benefits.

Swift growth of smart buildings and rapid urban infrastructure development in the emerging economies are also driving the growth of the industry. Incentives, tax credits and rebates from governments are likely to encourage infrastructure and real estate companies to implement BEMS.

However, factors such as high initial investment, longer payback periods, lack of awareness among end-users, and shortage of skilled professionals able to serve the growing customer base are hindering the BEMS market.

## 5.5 Market Trends<sup>xlix,i,li,lii</sup>

Energy efficiency is increasingly being recognized as one of the most important and cost-effective ways to reduce greenhouse gas emissions. There is an increased focus on energy efficiency in the buildings sector as buildings account for a significant percentage of primary energy consumption. In buildings, most energy is consumed by HVAC systems, office equipment, catering, fans, pumps and controls. Major benefits brought about by BEMS include cost saving, reduction in fossil fuel consumption, balanced environment, tax benefits and exemption from stringent regulations.

The BEMS market has been changing faster in recent years, with accelerating evolutions in technologies such as IoT, advanced analytics, artificial intelligence (AI), edge computing and the cloud. In addition to technological developments, customer education has steadily improved.

### 5.5.1 Rise in Internet of Things (IoT) Adoption

The infusion of IoT in BEMS and merging it with multiple features in equipment such as lighting, security and heating is likely to be an upcoming trend. According to Navigant Research, the IoT market for intelligent buildings is likely to exceed USD 22 bn in 2026.

### 5.5.2 Cloud Technology Adoption

Rise in cloud technology has expanded BEMS from traditional energy visualization and energy analytics to demand response systems. The granularity of data gathered through sensors and software applications is the basis of actionable insights delivered through cloud-based analytics. In addition to technology developments, customer education has steadily improved.

### 5.5.3 Next-Generation BEMS

Next-generation BEMS is joining forces directly with utility companies so that the building owners can gauge power prices and demand volatility, allowing proper scheduling of high-power-use activities. This will enable them to reduce costs considerably.

## 5.6 Government Regulations and Initiatives<sup>liii</sup>

With the fast depletion of fossil fuels, electricity prices are further expected to increase in the coming years. Governments of many countries are imposing stringent energy regulations and guidelines to better manage the demand-supply gap and promote smart and optimum energy management. Regulatory bodies and governments of different countries have defined their own sets of norms and standards for making their economies energy efficient.

In 2016, President Obama's government in the US set a clean energy target for North America to generate 50% of the electricity through non-polluting resources by 2025.

For the European Union (EU) region, the European Commission has set a target of 20% increase in energy efficiency by 2020.

Similarly, Japan aims to achieve 30% enhancement in energy efficiency by 2030.

## 5.7 Competitive Landscape<sup>liv,lv,lvi</sup>

The global BEMS market is highly competitive, owing to the presence of well-established large players and evolving start-ups. Along with effective product launches, companies are adopting inorganic growth strategies to gain higher market shares. While the market is growing, BEMS has been characterized in the early adopter stage of market maturity.

Both established players and new entrants are competing to offer an expanding range of BEMS solutions. The following table presents an overview of the main competitors of BuildingIQ:

**Exhibit 21: Players in the BEMS Market**

Company	Founded	Key Offerings	Key Strategies/ Developments	Value Proposition
Schneider Electric (France)	1836	'SmartStruxure' (powered by StruxureWare Building Operations software) is part of an enterprise BEMS offering that includes hardware, software and services.	In 2011, the company acquired Summit Energy, which provided the foundation of its StruxureWare BEMS platform. Following that, the company has announced many partnerships and acquisitions to strengthen its capabilities in the intelligent building analytics domain.	The size of the company and the time dedicated to development of its BEMS offerings provide strength in terms of product portfolio, geographic reach and sustainability.
Honeywell (US)	1906	'Command and Control Suite' is a BEMS offering that provides visualization, reporting and data aggregation.	The company has offered different software (ranging from a simple visualization tool to sophisticated analytics and control capabilities) for different stakeholders in an organization.	Honeywell's breadth of offerings (services, controls and software) positions it to support the first generation of market adopters.
Siemens (Germany)	1847	'Advantage Navigator BEMS' is a cloud-based software solution for data analysis to support energy efficiency, sustainability and build performance.	The company provides services hand in hand with visualization and analytical tools. This approach provides Siemens a channel for customer engagement and new potential sales.	Major strengths are the company's geographic reach, product portfolio and technology. It also has a strong position in the development of BEMS offerings for enterprise customers.
Trane – subsidiary of Ingersoll Rand (Ireland)	2007	Trane provides BEMS and services under the 'Trane Building Advantage' platform. Cloud-based software is offered in conjunction with engineering	The company focuses on diverse offerings that include intelligent services, building performance (HVAC optimization), energy performance (BEMS), energy assessment (visualization), active monitoring (network operating	-

Company	Founded	Key Offerings	Key Strategies/ Developments	Value Proposition
		services to support implementation of energy-conservation measures.	center), and energy optics (3D visualization). The company does not focus on an aggressive partnership and marketing strategy.	
Johnson Controls (US)	1885	BEMS offerings are now an element of the Metasys product line that includes building automation and optimization of HVAC equipment, building, plant and enterprise. 'Johnson Controls Panoptix' platform for data analytics has been embedded in the Metasys release.	In 2015, the company pulled back from 'Penoptix' with a refocus on evolution of Metasys. The decision of transition was to focus on the market-recognized Metasys brand, where customers could use the optimization software for non-Metasys buildings with standard internet protocol for data integration.	-
Daintree Networks – subsidiary of 'Current by General Electric' (US)	2003	Daintree's solutions are designed to optimize HVAC, lighting and plug load energy consumption using its 'ControlScope' wireless energy management platform.	In 2014, the company introduced Building Energy Management as a Service to swing from the on-premise to cloud-based approach to analytics. In 2016, it was acquired by Current by General Electric, and was positioned as an Enterprise IoT provider.	The technology criteria comprise an area of strength for Daintree because of the low-cost devices, open architecture and its service offerings. The company also has a wide-spread network of technology partners, majorly lighting manufacturers such as Cooper Lighting, GE Lighting and Osram Sylvania.
IBM (US)	1911	IBM offers TRIRIGA Environmental and Energy Management Software—a BEMS offering that integrates data collection, visualization, work order management and reporting.	In 2011, IBM acquired TRIRIGA (provider of facility and real estate management software solutions) to make its offerings more expansive than just BEMS. It then also started offering applications for financial, real estate, and facilities management in addition to the energy management capabilities. In 2016, the company partnered with ISS (facility services provider) to expand its BEMS capabilities through IoT initiatives.	The company has advantages in terms of its reach, financial strength, partnership strategies and vision for energy and operation optimization through technology.
Powerhouse Dynamics (US)	2008	The company offers 'SiteSage BEMS'; cloud-based analytics use patented algorithms for	The company targets the market both directly (end users) and through channel partners. The offering optimizes the	Ingersoll Rand and Constellation are the notable investors in the company. The

Company	Founded	Key Offerings	Key Strategies/ Developments	Value Proposition
		real-time monitoring and control of energy consuming assets via wireless thermostats, equipment controllers, sensors, gateways and circuit-level metering.	portfolios of small to medium sized buildings including restaurants, convenience, retail, and other small commercial facilities.	company also focuses on cyber security with Payment Card Industry Data Security Standard PCI Level 1 certification of its cloud-based analytics. This helps position the company's offerings as secure.
Switch Automation (Australia)	2005	Switch Automation offers individual facility and enterprise monitoring and analysis of building performance data on a single platform. The offerings include applications for supplier management, occupant satisfaction, maintenance, measurement and verification, and energy and sustainability reporting.	The company is expanding geographically with markets moving beyond Australia to the Philippines, Ukraine and the US.	The offerings are built on algorithm-based analytics from the Australian national labs (CSIRO). Its SaaS offerings are technology-agnostic. The company has strengths in terms of technology and product portfolio.
GridPoint – Subsidiary of Twenty First Century Utilities (US)	2003	The Enterprise Energy Management Solution is a BEMS that provides real-time visualization, cloud-based analytics, automated alerts, equipment performance, remote equipment control and energy management project tracking.	GridPoint's acquisition in 2015 by TFC Utilities was designed to support TFC Utilities' vision to deliver technology through utility channels. The company primarily targets the mid-market (fast-serve restaurants, retail, grocery and convenience stores), focusing on delivering data-driven analytics and controls via its wireless devices.	The development of its devices and the focus on hardware have been the company's key value propositions for mid-market customers. However, GridPoint has had limited geographic reach.
Lucid (US)	2004	'BuildingOS' BEMS offering is a data aggregation platform for enterprise-wide insight into energy and facility performance. The cloud-based offering leverages third-party data from utility bills, smart meters and sensors.	The company has partnered with device manufacturers and technology providers such as 38 Zeros, Obvius, Weather Underground and Wegowise. It has also partnered with service providers such as ENERGY STAR, Constellation, Ecova and the US Green Building Council.	-
Panoramic Power (US)	2009	Panoramic Power provides device-level	In 2015, the company was acquired by Texas-based electricity	The key differentiator for

Company	Founded	Key Offerings	Key Strategies/ Developments	Value Proposition
		energy management via data collection and analysis from circuit-level sensors. It also provides an application programming interface for data extraction to third-party software.	retailer Direct Energy. The company's customers range across industry verticals and include McDonald's, The North Face, Vornado and Wrangler.	Panoramic Power is the low-cost, self-powered, wireless circuit sensors that give customers detailed insight into building system performance through cloud-based interfaces. The company still struggles in terms of geographic reach.
Building Robotics (US)	2012	Building Robotics provides 'Comfy' smartphone app for occupant comfort. It is designed to regulate individual room temperatures. It also offers +Comfy (Plus Comfy) that allows individuals to control temperature, lighting, windows, etc., from a smartphone app or a web browser to maximize performance of lighting, access controls and space use.	+Comfy (Plus Comfy) is the company's approach to expand beyond HVAC optimization to maximize performance of lighting, access controls and space use. The company's customers include CBRE, Google, Johnson Controls and Under Armour.	The company's solution approach, using occupants as data sources, is unique and disruptive. Notable investors in the company are Emergence Capital, Microsoft Ventures and CBRE.

Other prominent players in the industry are Azbil, ABB Group, C3 Energy, Cylon Controls, Daikin Industries, Echelon, Ecova, EnerNOC, FirstFuel Software, eSight Energy, Jones Lang LaSalle, Optimum Energy, Verisae and SkyFoundry.

**Leaders** in the BEMS market differentiate themselves by targeting specific customer segments and engaging in technology and strategic partnerships.

**Emerging companies** are expanding inorganically through mergers and acquisitions to gain market share in both developed and developing economies.

Being a technology-driven market, **new entrants** are spending substantially on research and development to keep pace with the technological advancements.

## 6. Valuation

The fair value for the company stands between AUD 22.5 mn and AUD 29.9 mn as of April 11, 2019. The fair share value for one of the company's publicly traded shares stands between AUD 0.10 and AUD 0.13 as of April 11, 2019. The valuation approach followed is the DCF method.

### 6.1 DCF Method

#### Valuation

##### WACC

Risk-free rate	2.7% <sup>lvii</sup>
Beta	1.3 <sup>lviii</sup>
Equity Market return	9.7% <sup>lix</sup>
Country Risk Premium	0.0% <sup>lx</sup>
Cost of Equity	11.8%
Cost of Debt	0.0%
Terminal Growth Rate	2.0%
WACC (Discount Rate)	11.8%

Year Ending- Dec	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E
<b>FCFF (Low) - (AUD '000)</b>								
Net cash from operating activities	1,165	2,333	2,750	3,466	3,928	5,335	7,630	9,925
Capital Expenditure	(1,693)	(1,737)	(1,619)	(1,899)	(2,286)	(2,489)	(2,696)	(3,088)
Free Cash Flow to Firm	(528)	596	1,131	1,566	1,642	2,846	4,933	6,837
Discount factor	0.92	0.82	0.74	0.66	0.59	0.53	0.47	0.42
Present Value of FCF	(487)	492	834	1,033	969	1,502	2,327	2,885
<b>FCFF (High) - (AUD '000)</b>								
Net cash from operating activities	1,453	2,780	3,070	3,774	4,462	5,990	8,631	12,718
Capital Expenditure	(1,737)	(1,799)	(1,698)	(2,010)	(2,444)	(2,689)	(2,932)	(3,381)
Free Cash Flow to Firm	(284)	981	1,373	1,764	2,018	3,301	5,699	9,336
Discount factor	0.92	0.82	0.74	0.66	0.59	0.53	0.47	0.42
Present Value of FCF	(262)	809	1,013	1,164	1,190	1,741	2,689	3,939

Arrowhead Fair Value Bracket	High	Low
Terminal Value (TV) (AUD '000)	40,906	29,957
Present Value of TV (AUD '000)	17,258	12,639
Present Value of FCF (AUD '000)	12,283	9,554
Net Debt (AUD '000)	53	53
<b>Equity Value Bracket</b>		
Shares O/s (000)	230,430	230,430
<b>Fair Share Value Bracket (AUD)</b>		
	<b>0.13</b>	<b>0.10</b>
Current Market Price (AUD)	0.04	0.04
Upside/(Downside)	224%	144%
Current Market Cap. (AUD '000)	9,217	9,217
<b>Target Market Cap. Bracket (AUD '000)</b>	<b>29,878</b>	<b>22,530</b>



### Sensitivity Analysis

Sensitivity Table - High		WACC (%)				
		8%	10%	12%	14%	16%
GROWTH RATE (%)	2.3%	0.30	0.19	0.13	0.10	0.08
	2.4%	0.31	0.19	0.13	0.10	0.08
	2.5%	0.31	0.19	0.13	0.10	0.08
	2.6%	0.32	0.20	0.14	0.10	0.08
	2.7%	0.32	0.20	0.14	0.10	0.08

Sensitivity Table - Low		WACC (%)				
		8%	10%	12%	14%	16%
GROWTH RATE (%)	2.3%	0.22	0.14	0.10	0.07	0.06
	2.4%	0.23	0.14	0.10	0.07	0.06
	2.5%	0.23	0.15	0.10	0.08	0.06
	2.6%	0.24	0.15	0.10	0.08	0.06
	2.7%	0.24	0.15	0.10	0.08	0.06

### Approach for DCF Valuation

**Time Horizon:** The Arrowhead fair valuation for BuildingIQ is based on a DCF method. The time period chosen for the valuation is 93 months (2019E-2026E).

**Terminal Value:** Terminal value is estimated using terminal growth rate of 2.0%.

**Prudential nature of valuation:** It should be noted that this Arrowhead Fair Value Bracket estimate is a relatively prudential estimate, as it discounts the eventuality of any new products being launched in the market or any significant change in the strategy.

### **Important information on Arrowhead methodology**

The principles of the valuation methodology employed by Arrowhead BID are variable to a certain extent depending on the subsectors in which the research is conducted, but all Arrowhead valuation research possesses an underlying set of common principles and a generally common quantitative process.

With Arrowhead Commercial and Technical Due Diligence, Arrowhead extensively researches the fundamentals, assets and liabilities of a Company, and builds solid estimates for revenue and expenditure over a coherently determined forecast period.

Elements of past performance, such as price/earnings ratios, indicated as applicable, are present mainly for reference purposes. Still, elements of real-world past performance enter the valuation through their impact on the commercial and technical due diligence.

Elements of comparison, such as multiple analyses may be to some limited extent integrated in the valuation on a project-by-project or asset-by-asset basis. In the case of this BUILDINGIQ report, there are no multiple analyses integrated in the valuation.

### **Arrowhead BID Fair Market Value Bracket**

The Arrowhead Fair Market Value is given as a bracket. This is based on quantitative key variable analysis, such as key price analysis for revenue and cost drivers or analysis and discounts on revenue estimates for projects, especially relevant to those projects estimated to provide revenue near the end of the chosen forecast period. Low and high estimates for key variables are produced as a tool for valuation. The high-bracket DCF valuation is derived from the high-bracket key variables, while the low-bracket DCF valuation is based on the low-bracket key variables.

In principle, an investor who is comfortable with the high-brackets of our key variable analysis will align with the high-bracket in the Arrowhead Fair Value Bracket, and likewise in terms of low estimates. The investor will also take into account the Company intangibles – as presented in the first few pages of this document in the analysis on strengths and weaknesses and other essential Company information. These intangibles serve as supplementary decision factors for adding or subtracting a premium in the investor's own analysis.

The bracket should be understood as a tool provided by Arrowhead BID for the reader of this report and the reader should not solely rely on this information to make his decision on any particular security. The reader must also understand that on one hand, global capital markets contain inefficiencies, especially in terms of information, and that on the other hand, corporations and their commercial and technical positions evolve rapidly: this present edition of the Arrowhead valuation is for a short to medium-term alignment analysis (one to twelve months). The reader should refer to important disclosures on page 37 of this report.

## 7. Appendix

### 7.1 BuildingIQ's Financial Summary

<b>Exhibit 22: Financial Summary</b>		<i>Low Bracket Estimates</i>						
<i>Year Ending Dec</i>	<b>2019E</b>	<b>2020E</b>	<b>2021E</b>	<b>2022E</b>	<b>2023E</b>	<b>2024E</b>	<b>2025E</b>	<b>2026E</b>
Revenue (AUD 000)	13,692	17,326	21,857	29,843	39,458	51,177	69,005	90,232
Operating Profit (AUD 000)	(251)	983	2,467	3,888	5,495	7,607	11,152	14,864
Net Income (AUD 000)	(1,920)	(896)	381	1,379	2,421	3,748	6,131	8,617
EPS	(0.83)	(0.39)	0.17	0.60	1.05	1.63	2.66	3.74
<b>Growth rates (%)</b>								
Revenue	55.3%	26.5%	26.1%	36.5%	32.2%	29.7%	34.8%	30.8%
Operating Profit	NM	NM	NM	57.6%	41.3%	38.4%	46.6%	33.3%
<b>Margins (%)</b>								
Gross Margins	56.5%	57.0%	57.5%	58.1%	58.6%	59.2%	59.0%	59.0%
Operating Profit	(1.8%)	5.7%	11.3%	13.0%	13.9%	14.9%	16.2%	16.5%
Net Profit Margin	(14.0%)	(5.2%)	1.7%	4.6%	6.1%	7.3%	8.9%	9.5%
<b>Ratios</b>								
ROA	(11.3%)	(5.3%)	2.2%	7.0%	10.5%	13.3%	17.1%	18.2%
ROE	(16.3%)	(8.3%)	3.4%	10.9%	16.1%	19.9%	24.6%	25.7%

<b>Exhibit 23: Financial Summary</b>		<i>High Bracket Estimates</i>						
<i>Year Ending Dec</i>	<b>2019E</b>	<b>2020E</b>	<b>2021E</b>	<b>2022E</b>	<b>2023E</b>	<b>2024E</b>	<b>2025E</b>	<b>2026E</b>
Revenue (AUD 000)	13,914	17,788	22,599	31,432	42,149	55,251	74,969	98,732
Operating Profit (AUD 000)	(73)	1,250	3,089	4,548	6,067	8,474	12,457	18,679
Net Income (AUD 000)	(1,745)	(657)	797	1,807	2,766	4,279	6,948	11,221
EPS	(0.76)	(0.28)	0.35	0.78	1.20	1.86	3.02	4.87
<b>Growth rates (%)</b>								
Revenue	57.8%	27.8%	27.0%	39.1%	34.1%	31.1%	35.7%	31.7%
Operating Profit	NM	NM	NM	47.2%	33.4%	39.7%	47.0%	49.9%
<b>Margins (%)</b>								
Gross Margins	56.5%	57.0%	57.5%	58.1%	58.6%	59.2%	59.0%	59.0%
Operating Profit	(0.5%)	7.0%	13.7%	14.5%	14.4%	15.3%	16.6%	18.9%
Net Profit Margin	(12.5%)	(3.7%)	3.5%	5.7%	6.6%	7.7%	9.3%	11.4%
<b>Ratios</b>								
ROA	(10.0%)	(3.8%)	4.3%	8.5%	11.0%	13.9%	17.5%	20.8%
ROE	(14.6%)	(5.8%)	6.6%	13.0%	16.6%	20.4%	24.9%	28.7%

## 7.2 BuildingIQ's Balance Sheet Forecast

### Exhibit 24: Consolidated Balance Sheet

All figures in AUD 000, unless stated differently

*Low Bracket estimates*

Year Ending-Dec	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E
Total current assets	7,814	7,362	7,946	9,867	12,716	17,186	24,553	35,356
Total non-current assets	9,225	9,471	9,562	9,887	10,442	10,937	11,400	12,023
<b>TOTAL ASSETS</b>	<b>17,040</b>	<b>16,832</b>	<b>17,507</b>	<b>19,754</b>	<b>23,157</b>	<b>28,123</b>	<b>35,954</b>	<b>47,379</b>
Total current liabilities	5,280	5,969	6,263	7,130	8,113	9,330	11,030	13,838
Total non-current liabilities	-	-	-	-	-	-	-	-
<b>TOTAL LIABILITIES</b>	<b>5,280</b>	<b>5,969</b>	<b>6,263</b>	<b>7,130</b>	<b>8,113</b>	<b>9,330</b>	<b>11,030</b>	<b>13,838</b>
Total shareholder's equity	11,760	10,863	11,245	12,623	15,045	18,793	24,924	33,541
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>17,040</b>	<b>16,833</b>	<b>17,507</b>	<b>19,754</b>	<b>23,157</b>	<b>28,123</b>	<b>35,954</b>	<b>47,379</b>

### Exhibit 25: Consolidated Balance Sheet

All figures in AUD 000, unless stated differently

*High Bracket estimates*

Year Ending-Dec	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E
Total current assets	8,102	7,899	8,823	11,235	14,490	19,576	27,880	41,524
Total non-current assets	9,269	9,557	9,687	10,065	10,696	11,274	11,816	12,538
<b>TOTAL ASSETS</b>	<b>17,371</b>	<b>17,456</b>	<b>18,511</b>	<b>21,300</b>	<b>25,186</b>	<b>30,850</b>	<b>39,696</b>	<b>54,062</b>
Total current liabilities	5,437	6,178	6,436	7,418	8,538	9,923	11,821	14,966
Total non-current liabilities	-	-	-	-	-	-	-	-
<b>TOTAL LIABILITIES</b>	<b>5,437</b>	<b>6,178</b>	<b>6,436</b>	<b>7,418</b>	<b>8,538</b>	<b>9,923</b>	<b>11,821</b>	<b>14,966</b>
Total shareholder's equity	11,935	11,278	12,075	13,882	16,648	20,927	27,875	39,096
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>17,371</b>	<b>17,456</b>	<b>18,511</b>	<b>21,300</b>	<b>25,186</b>	<b>30,850</b>	<b>39,696</b>	<b>54,062</b>

## 8. Analyst Certifications

I, Natasha Agarwal, certify that all the views expressed in this research report accurately reflect my personal views about the subject security and the subject Company, based on the collection and analysis of public information and public Company disclosures.

I, Parvati Rai, certify that all the views expressed in this research report accurately reflect my personal views about the subject security and the subject Company, based on the collection and analysis of public information and public Company disclosures.

### Important disclosures

Arrowhead Business and Investment Decisions, LLC has received fees in 2019 and will receive further fees in 2019 from BuildingIQ for researching and drafting this report and for a series of other services to BuildingIQ including distribution of this report and networking services. Arrowhead BID owns a long position in BuildingIQ's equity (under 5%). Arrowhead BID's principals have a mandate for investment banking services from BuildingIQ and intend to receive compensation for investment banking activities from BuildingIQ in 2019.

Aside from certain reports published on a periodic basis, the large majority of reports are published by Arrowhead BID at irregular intervals as appropriate in the analyst's judgment.

Any opinions expressed in this report are statements of Arrowhead BID's judgment to this date and are subject to change without notice.

This report was prepared for general circulation and does not provide investment recommendations specific to individual investors. As such, any of the financial or other money-management instruments linked to the company and company valuation described in this report, hereafter referred to as "the securities", may not be suitable for all investors.

Investors must make their own investment decisions based upon their specific investment objectives and financial situation utilizing their own financial advisors as they deem necessary.

Investors are advised to gather and consult multiple sources of information while preparing their investment decisions. Recipients of this report are strongly advised to read the Information on Arrowhead Methodology section of this report to understand if and how the Arrowhead Due Diligence and Arrowhead Fair Value Bracket integrate alongside the rest of their stream of information and within their decision-making process.

Past performance of securities described directly or indirectly in this report should not be taken as an indication or guarantee of future results. The price, value of, and income from any of the financial securities described in this report may rise as well as fall and may be affected by simple and complex changes in economic, financial and political factors.

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Arrowhead Business and Investment Decisions, LLC is not responsible for any loss, financial or other, directly or indirectly linked to any price movement or absence of price movement of the securities described in this report.

## 9. Notes and References

- <sup>i</sup> Source: Bloomberg, retrieved on April 11, 2019
- <sup>ii</sup> Source: Bloomberg: 52 weeks to April 11, 2019
- <sup>iii</sup> Source: Bloomberg: 3 months to April 11, 2019
- <sup>iv</sup> Source: Bloomberg
- <sup>v</sup> Arrowhead Business and Investment Decisions Fair Value Bracket-AFVBTM. See information on valuation on pages 32-34 of this report and important disclosure on pages 37 of this report
- <sup>vi</sup> Source: Company Filings, Company Website and Press Releases
- <sup>vii</sup> Source: Company website and Company Filings
- <sup>viii</sup> Source: Company presentation
- <sup>ix</sup> Source: Company presentation
- <sup>x</sup> Source: Company presentation
- <sup>xi</sup> Source: Company Filings and Press Releases
- <sup>xii</sup> Source: Company Filings
- <sup>xiii</sup> Source: Company Filings
- <sup>xiv</sup> Source: Company Filings
- <sup>xv</sup> Source: Company Filings
- <sup>xvi</sup> Source: Company Filings
- <sup>xvii</sup> Source: Company Filings
- <sup>xviii</sup> Source: Company Website
- <sup>xix</sup> Source: Company Filings
- <sup>xx</sup> Source: Company Filings
- <sup>xxi</sup> Source: Company Filings
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- <sup>xxxiii</sup> Source: Navigant Research (<https://www.intel.com/content/dam/www/public/us/en/documents/white-papers/intel-daikin-applied-next-generation-bems-white-paper.pdf>)



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  - xxxvii Source: Navigant Research (<https://f.nordiskemedier.dk/2gq3k2u9zf56js6a.pdf>)
  - xxxviii Source: BuildingIQ Prospectus (<https://buildingiq.com/investor-relations/>)
  - xxxix Source: Navigant Research (<https://www.intel.com/content/dam/www/public/us/en/documents/white-papers/intel-daikin-applied-next-generation-bems-white-paper.pdf>)
  - xi Source: Hexa Research (<https://view.joomag.com/hvac-and-construction-industry-bems-market-size-analysis-growth-trends-2024/0717915001480669722>)
  - xii Source: PR Newswire (<https://www.prnewswire.com/news-releases/building-energy-management-systems-market-2023-300614773.html>)
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