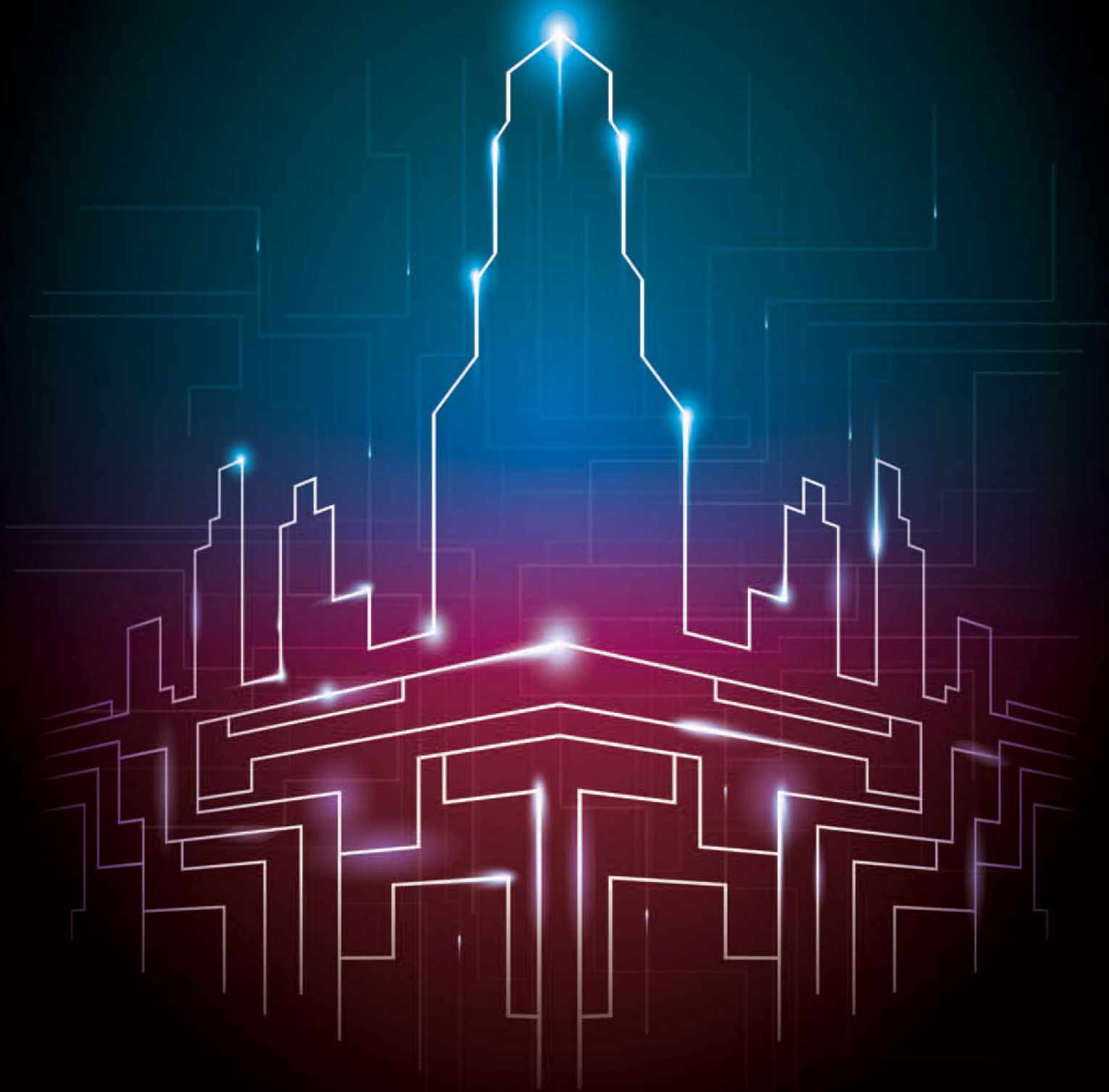
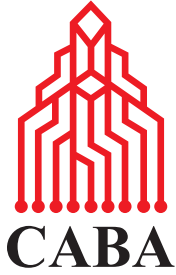


SMART GRID IMPACT

on Intelligent Buildings





SMART GRID IMPACT

on Intelligent Buildings

CABA and the following CABA members funded this project:

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SMART GRID IMPACT on Intelligent Buildings

The Continental Automated Buildings Association (CABA) is an industry association dedicated to the advancement of intelligent homes and intelligent buildings technologies. CABA is an international association, with over 300 major private and public technology companies committed to research and development within the intelligent buildings and connected home sector. Association members are involved in the design, manufacture, installation and retailing of products for home and building automation. CABA is a leader in initiating and developing cross-industry collaborative research, under the CABA Research Program.

CABA's "Smart Grid Impact on Intelligent Buildings" research study estimates that the North American smart grid marketplace will reach \$8 billion in revenue by 2013 and will exceed \$10 billion by 2015. In 2011, the marketplace was estimated to have reached \$6.6 billion.

The study found that the fastest growing components of the smart grid market are grid applications, followed by: demand response and peak load management, building energy management systems, and smart meters. While building management systems are not projected to be the fastest growing segment of the market, the study notes that smart grid development will become a major driver for the development and deployment of more intelligent building technologies.

The information and trends in CABA's "Smart Grid Impact on Intelligent Buildings" research study emphasize the need for innovative solutions to enhance the efficiency and effectiveness of power generation, transmission and consumption capacity. Intelligent buildings are prime examples of innovative technology that will aid in the deployment of new smart grid infrastructure.

Organizations that participated in CABA's Smart Grid Impact on Intelligent Buildings research included: Belimo Air Controls Inc., Cadillac Fairview Corporation, CommScope Inc., CoR Advisors, Diebold Incorporated, Energent Incorporated, GE Energy, Grundfos Pumps Corp., Honeywell International/Tridium, Hydro-Québec, InfoComm International, Ingersoll Rand/Trane/Schlage, Johnson Controls, Legrand/Ortronics, LG Electronics, Natural Resources Canada, Philips Research North America, Priva North America, Public Works and Government Services Canada, Robinson Solutions, Schneider Electric, Sempra Utilities, Shell International Inc., Siemens Industry Inc., Southern California Edison, the U.S. General Services Administration (GSA), Verizon, and Viridity Energy. The research was conducted by the BSRIA research consultancy: <http://www.bsria.co.uk/>.

CABA's report has been released to its funding partners and will be made available for purchase to the rest of the industry after an embargo period, which ended June 2, 2012. Companies enquiring for details and pricing can contact George Grimes, CABA's Business Development Manager at grimes@caba.org or 613.686.1814 x226.

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1

INTRODUCTION

In July 2011 The Continental Automated Buildings Association (CABA) Intelligent and Integrated Buildings Council (IIBC) commissioned BSRIA Ltd. to carry out an independent market study to investigate and assess the impact of the Smart Grid on Commercial Buildings in North America and size the principle business opportunities. The project commenced in July 2011 and was completed in February 2012.

The project would not have been possible without the support of the 29 organizations who sponsored this research and the many other companies and organisations that provided data and information to make this study possible.

2

APPROACH & METHODOLOGY

2.1 RESEARCH PROGRAM

The field research for this project comprised an on-line survey, telephone interviews and face-to-face interviews.

PRINCIPAL STAGES OF THE STUDY PROGRAM



The principal stages of the research that commenced in July 2011 have been:

STAGE 1 – ESTABLISHING THE DATABASE

Detailed talks were held with the sponsors to discuss and agree the detailed scope of the work. Desk research was carried out to locate and analyse published information on building, floor space statistics, energy statistics, suppliers and technologies.

On-line access was made to relevant databases; for techno/commercial information and the subsequent data was then collected and reviewed. Using recommendations from sponsors, BSRIA's own databases, and relevant directories a list of selected end users and suppliers was compiled in order to carry out a program of ranging interviews to establish a profile of the market.

An aide-memoire/questionnaire was developed for the field work to take account of the perceived major issues but sufficiently exploratory to provoke discussion, so ensuring coverage of all aspects and revealing drivers, barriers and trends in the market. This information was then analysed to determine the critical factors and gaps in information and further telephone interviews were made where necessary.

In addition to thorough desk research, we put special emphasis on primary data and a project scope tailored to the desires and needs of the sponsors.

A kick off webinar was held on July 7th 2011. Project meetings with the sponsors were held approximately every 2 weeks throughout the project duration.

STAGE 2 – VERIFICATION AND ASSESSMENT

An on-line survey was developed together with CoR Advisors, a sponsor of the project, who then conducted the on-line survey during October 2011. The results of the survey are incorporated in the study.

Fieldwork was carried out by the research team between September and December 2011 and continued with telephone interviews up to the beginning of 2012. Report writing was carried out between December 2011 and January 2012.

2.2 DELIVERABLES

This report originally comprised three components:

1. Executive Summary (Microsoft Word report)
2. Main Report and Appendices (Microsoft Word report)
3. PowerPoint Slide presentation and Executive Summary

2.3 PRESENTATION

The findings were presented to the sponsors in a face-to-face session held at the AHR Expo in Chicago on January 23rd 2012, followed by a further webinar to the sponsors on February 2nd 2012.

2.4 RESPONDENTS

The field research for this project comprised an on-line survey, telephone interviews and face-to-face interviews.

Special acknowledgement is given to project sponsor Darlene Pope and her team at CoR Advisors for supporting this research effort. CoR Advisors provided many of the names for the in-person interviews and worked with BSRIA and the other sponsors to design an on-line questionnaire that was distributed to over 25,000 of CoR Advisors' real estate industry contacts. Several hundred initial responses were received, providing valuable market data and feedback. After filtering out those respondents who did not fully complete the survey, entered unusable information, or were not applicable to the study, approximately 80 responses were used, representing more than 12,250 buildings and over 1.2 billion square feet of property. The responses and analyses of these buildings are included in this report.

Jeremy Towler and Lone Hansen conducted the telephone and face-to-face interviews at BSRIA. BSRIA conducted some 45 interviews, approximately two-thirds of which were face-to-face and one-third by telephone. In some organisations, BSRIA interviewed more than one respondent so that different specialisms and different areas of responsibility were represented. This enhanced the richness of information gathered and delivered further viewpoints to the questions asked.

The face-to-face interviews were carried out across North America and 15 states or provinces were visited including NY, FL, TX, IL, CA, WA, DC, NJ, IN, GA, MA, VA, PA, Ontario and Quebec. Many of the face-to-face and telephone interviews were with organisations representing large regional or national portfolios of buildings with buildings of varying sizes and energy demand.

The interviews were of high quality and conducted with senior level respondents, covering the principal verticals by building type and representatives of the main supplier types in the supply chain. Some of the interviews lasted several hours. Several relevant webinars were also attended.

The distribution of face-to-face and telephone interviews is as follows:

- Developers, owners, and managers: 40%
- Building automation suppliers: 5%
- Utilities: 13%
- Utility systems developers and integrators; 2%
- Demand response service and software suppliers: 9%
- Infrastructure and metering suppliers: 16%
- Others (U.S. GSA / Public Works Canada and independent consultants, etc.): 15%