



**“GATEWAY TO THE INTELLIGENT HOME”™**

**KOOLBRIDGE SOLAR EXECUTIVE SUMMARY**  
**1Q2018**

**1. Product / Service:**

The principle business of Koolbridge Solar Inc. is to design, develop and sell innovative electrical products that allow solar energy to be integrated into homes more efficiently and economically, to reduce energy bills, to provide greater supply reliability, and to provide clean energy for mankind. We will accomplish this with our first product, The SMART LOAD CENTER™.

Our SMART LOAD CENTER will:

- Provide solutions to increase in-home energy efficiencies;
- Provide solutions to decrease homeowner’s energy costs;
- Provide solutions that increase the homeowner’s ROI;
- Provide solutions that complete the communications chain from utility to “smart grid” to “smart home” to “smart appliance”.

Our SMART LOAD CENTER is a solar and utility energy breaker box that can *automatically select the use of utility power or solar-derived power independently for each of a number of load circuits based on smart algorithms*. The automatic selections of power use a microcontroller to dynamically switch each breaker circuit based on:

- Availability of utility and/or solar power;
- Preset user priorities; Battery charge status;
- Time of day;
- Instantaneous consumption;
- Historical consumption patterns, and
- Weather forecasts.

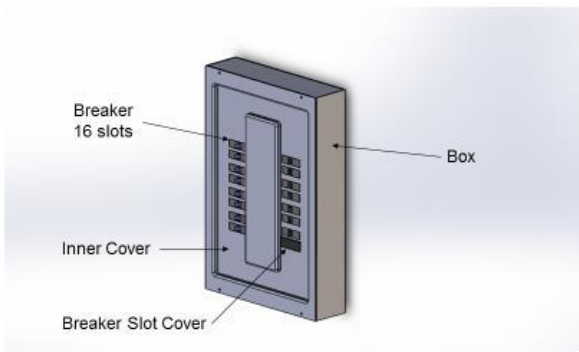
## Smart Load Center Printed Circuit Board

- 4 for initial testing
- 20+ for prototype run
- Design complete
- Fabrication complete
- Population underway

## Smart Load Center Embedded Software

- Basic operating system in place
  - Task priorities
  - Task scheduling
- User interface under development
  - LEDs for load source
  - LCD display for status
  - Communication port for configuration and testing
- Electrical power interface under development
  - Monitor 16 breaker currents
  - Monitor 2 power currents

## Door Asm. Removed

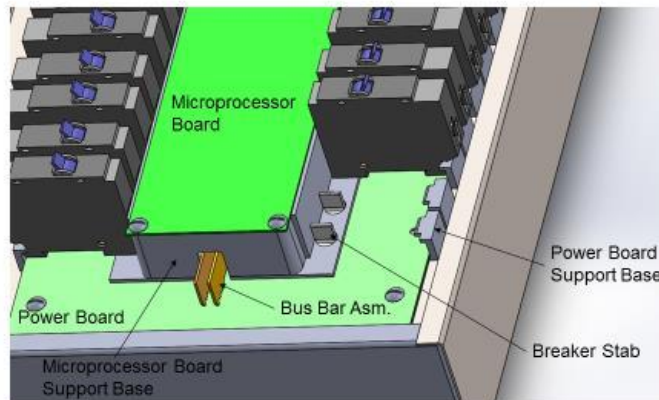
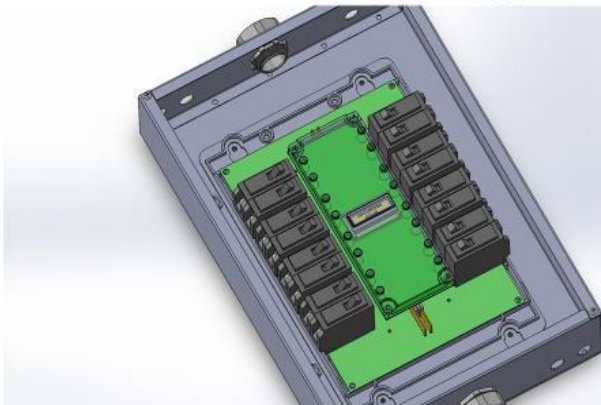


## 100+ Amp Load Center Prototype



- 16 Slots
- 20 Amp Max
- LED's (Solar or
- LCD

## Electrical Module





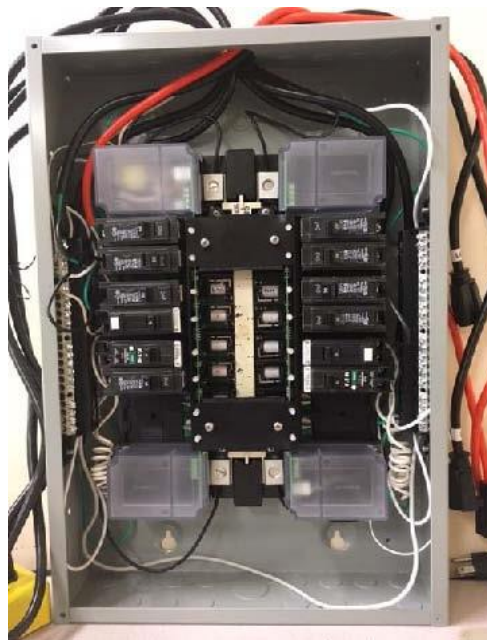
Brains of the Smart Load Center



Product #2—DC to AC 98% Efficient Smart Inverter



Smart Load Center—Outside



## 2. Market Opportunity:

The Koolbridge Solar, Inc. SMART LOAD CENTER is scalable and, in time, will have a positive impact on two distinct market segments: Residential and Commercial, both in the US and International.

The company's immediate focus is on penetrating the U.S. residential segment of the market. This robust market is growing at a fast pace and is perfectly positioned for the benefits of implementing solar technology.

Our research uncovered:

90,000+ new homes per month are being built in the United States / 1,080,000 per year.

HUD forecasts new home growth in the United States will average 100,000 per month during this decade.

15% of new homeowners are installing solar systems in their new homes.

85% (918,000) new non-solar homes can become "Solar Ready" and have access to energy utilization data.

US retrofit market: 132,000,000 existing homes in the United States are potential customers.

Our initial product, the SMART LAOD CENTER, is an innovative, timely product that maximizes the use of free solar energy when the sun is shining, i.e. "self-consumption", and only pulls power from the grid when solar is not available. It manages both solar and utility based energy in a complimentary fashion but also works with battery, wind or generator. We have filed and own 30+ granted patents and pending applications, both in the US and International. As of January 1, 2018, 8 of these patents are granted and 24 are pending in the US and several other countries. Our international patents include, but are not limited to Smart Appliance Intercommunication and Addressable Electrical Power Outlets. Our patent filings cover the use of a microcontroller inside the SMART LOAD CENTER that uses algorithms to keep the electricity flowing seamlessly, especially during grid outages, and maximizes the cost savings for the consumer. The Smart Load Center manages the homeowner's energy usage down to the individual circuit breakers, and will provide information to the homeowner as to where and when energy is being utilized throughout the home.

In the future, the SMART LOAD CENTER will know where your smart appliances are located and will directly communicate with them. When there is ample solar energy available, the SMART LOAD CENTER will automatically begin the process of starting the dishwasher or clothes dryer when programmed by the homeowner. If solar energy is not available, and the home is utilizing power from the grid, the SMART LOAD CENTER will not start any appliance until the grid power is at its absolute lowest cost of the day, potentially when the energy is free from the sun's rays. This feature not only saves money for the homeowner, but helps the utility by not turning on appliances with heavy electrical draw during high peak demand periods. The SMART LOAD CENTER uses today's technology to increase efficiencies and decrease energy costs in one of the fastest growing segments of the market – Solar. We believe that we've eliminated any reasons for the homeowner not to pursue a solar solution.

### **3. Strategy / Operations:**

Koolbridge Solar is deploying two main strategies to introduce our technology into the marketplace:

1. Form alliances with leading residential breaker box manufacturers that are already involved in our targeted space. Manufacturers of non-smart, residential breaker boxes, like Schneider-Electric, Eaton Corporation, General Electric, Westinghouse, Siemens, etc. will benefit tremendously by adding the Koolbridge Solar SMART LOAD CENTER to their product portfolio. Those strategic relationships could include engineering support, financing, manufacturing, and distribution. NDA's are in place with several of these potential strategic partners.
2. Work a second initiative in parallel with the first, which calls for Koolbridge Solar to establish strategic relationships with companies offering solutions to the residential market, although not specifically in the SMART LOAD CENTER space, like solar installers and solar distributors/resellers. The SMART LOAD CENTER would be *pulled through* as part of a value-added solution package. This initiative differs from the first in that Koolbridge Solar would work with a 3<sup>rd</sup> party manufacturing company to directly provide the SMART LOAD CENTER. We are currently in discussions with 3<sup>rd</sup> party contract manufacturers to accomplish this initiative.

#### 4. Company History & Milestones:

History: Stephen Burnett was approached by his long-time friend, Dr. Paul W. Dent, about building a company around Paul's two filed "Smart Solar" patent applications. They agreed to move forward together and filed the Articles of Incorporation with the State of North Carolina on July 26, 2013. The two of them brought in four other business thinkers who filled critical gaps in the corporate structure and made them all Co-Founders: Larry Zirbel for Software Engineering, Phil Johnston for Legal and Business, Curt Thornton for Mechanical Engineering, and Dr. Jeff SooHoo for Electrical and Software Engineering. All co-founders have other business and strategic proficiencies that go above and beyond their core competencies that are extremely valuable to the company.

Other executives were asked to assist, consult, advise, and otherwise help the company fill strategic positions as the company gained traction: Bill Griffin, initially a Business Advisor, moved into the role of President and CEO in 2017. Ed Green of Coats and Bennett in Cary, NC handles all Intellectual Property matters. Ken Gilbert leads us in all Professional Engineering services needed. Bob Gosselin manages all tradeshow, public relations and marketing activities. Bob Belts manages all CFO responsibilities. Chris Tridico manages all Product Development as Chief Technology Officer. Koolbridge has eight full-time employees as of 1Q18. Koolbridge Solar has as of 1Q18 approximately 20-consultants and employees.

#### **Milestones: 30+ Patents and pending Applications, both in the US and International including, but not limited to the following:**

1. Solar Energy Conversion and Utilization System – GRANTED  
US8937822
2. Smart Load Center for Distribution of Power from Two Sources –  
GRANTED US9735703
3. Residential Electrical Energy Installation
4. Remotely Controlled Photovoltaic String Combiner
5. Inverter Inrush Current Limiting
6. Transformerless DC to AC Converter
7. Overcurrent Trip Coordination Between Inverter and Circuit  
Breakers
8. AC Electrical Power Measurements
9. DC Bias Prevention in Transformerless Inverters
10. Inverter with Independent Current and Voltage Controlled Outputs
11. Potential Arc Fault Detection and Suppression – GRANTED  
US8891211
12. Potential Arc Fault Detection and Suppression (Continuation) –  
GRANTED US9190836
13. Rotary Solar Converter
14. Smart Appliances – GRANTED US9614588
15. Addressable Electrical Outlets – GRANTED US9785213
16. Smart Appliances (Continuation) – GRANTED US9793953
17. Dual Power Electrical Outlets
18. Hybrid Wired-Wireless Communication System for Control of Smart  
Appliances
19. Smart Outlets
20. Intercoupling of Microinverters
21. Solid State Phase-Splitting Transformer – GRANTED US9634552
22. Adaptive Load Sharing System
23. Rapid De-Energization of DC Conductors with a Power Source at  
Both Ends
24. SMART LOAD CENTER Panel

25. Neutral Routing for Communal Inverter Systems
26. High Current Toroidal Transformer
27. Low Latency RTOS for Accurate Waveform Generation

#### **Milestones: Agreements / Mutual NDA's**

- Solar City – NDA [www.solarcity.com](http://www.solarcity.com)
- Schneider Electric – NDA [www.schneider-electric.com](http://www.schneider-electric.com)
- ABB – NDA [www.abb.com](http://www.abb.com)
- Electric Power Research Institute (EPRI) – NDA [www.epri.com](http://www.epri.com)
- Future Renewable Electric Energy Distribution & Management Systems Center (FREEDM) – NDA [www.freedm.ncsu.edu](http://www.freedm.ncsu.edu)
- Grove Battery Manufacturing, LLC – NDA
- North Carolina Clean Technology Energy Center (NCCTEC), Formerly North Carolina Solar Center – NDA [www.nccleantech.ncsu.edu](http://www.nccleantech.ncsu.edu)
- Flextronics – NDA [www.flextronics.com](http://www.flextronics.com)
- Parks Livestock, LLC – Memorandum of Agreement [www.parkslivestorck.com](http://www.parkslivestorck.com)
- Specialized Investment Group, LLC, i.e. “IQ Energy” – NDA & Memorandum of Understanding
- Nixon Power Services – NDA [www.nixonpower.com](http://www.nixonpower.com)
- BriteStreet Energy – NDA [www.britestreet.com](http://www.britestreet.com)
- One large unnamed utility

#### **Milestones: Other**

- 2014-- Asked to join the Research Triangle CleanTech Cluster
- 2015-- Engaged former SEC Attorney, Michael Williams, [www.gopublicdirect.com](http://www.gopublicdirect.com)
- 2015—Successfully Completed Private Placement Memorandum (PPM) Raise of \$500,000
- 2015-- Engaged SEC Public Company Accounting Oversight Board (PCAOB) CPA Auditing Firm of Daszkal Bolton
- 2015—WINNER – Coastal Entrepreneur of the Year Award – Manufacturing & Distribution
- 2015—Top Ten Finalist by NC Technology Association for “Top Ten Start-Ups to Watch in North Carolina” and one of Five Finalists for “Energy & Environment”
- 2015-- Discussions held with Duke Energy, Strata Solar, ABB, Schneider Electric, GE Renewables
- 2016—Successfully Completed Private Placement Memorandum Raise of \$1,875,000.
- 2016--- Entered 3<sup>rd</sup> engagement with UL on the Smart Load Center
- 2016 – New CTO joins Koolbridge Solar
- 2016—Exhibited at Solar Power International, Las Vegas
- 2016 – 22 patent applications filed
- 2017 – 32<sup>nd</sup> patent application filed in US and/or abroad. Eighth patent application becomes granted.
- 2017 -- Smart Load Center passes UL tests for “Energy Management System”
- 2017 – Smart Load Center has two components UL approved
- 2017 – Smart Load Center undergoes formal testing at UL’s Chicago headquarters as “Load Center”
- 2017 – Koolbridge Solar exhibits at Solar Power International, Las Vegas

## 5. Entrepreneurs & Management Team

- J. Stephen Burnett- Co-Founder & Chairman - Responsible for IP licensing, execution of Business Plan including roll-out of all products, advancing strategic alliances, fundraising initiatives, get Koolbridge acquired or publicly traded via a Direct Public Offering, and general day to day business activities; Background includes IP Licensing, former business owner in Raleigh, and Registered Investment Advisor for 10 years in Raleigh/Durham.
- Dr. Paul W. Dent- Founder, Chief Scientist, Chief Patent Officer, Director- Responsible for Smart Solar patent portfolio / inventions, prototype development to UL approval, lead engineering teams including mechanical, electrical, & software; Background includes 20 years as Chief Scientist at Ericsson Mobile in RTP, #1 inventor in the world for wireless communications, 350+ granted US patents, original Co-inventor of Bluetooth Wireless Technology.
- Bill Griffin- President & CEO- Leads all strategic alliance initiatives and develop other sales channels, work with the team to execute the Business Plan, help the CEO in all other initiatives; Background includes Cornerstone Business Advisors, 45 years of seasoned Business experience, former officer of Comp-USA.
- Curt Thornton- Co-Founder, Sr. Mechanical Engineer- Design and integrate the mechanical engineering of our Smart Load Center and lead the mechanical engineering development of all future products to UL approval; Background includes 12 years at Ericsson and Sony Ericsson as Technical Lead Engineer. Specialties include Machine design, product development, & mechanical design.
- Dr. Jeffrey SoHo- Co-Founder, Electrical & Software Engineer- Design and integrate the communication abilities of the microcontroller of the Smart Load Center as the energy management hub of the home and lead the software/electrical development of all future products to UL approval; Background includes electrical design, mechanics, electronics, software and firmware.
- Larry Zirbel- Co-Founder, Director- Design and integrate advanced software engineering into the Smart Load Center for Smart Appliance integration. Background includes R&D at IBM's T.J. Watson's Laboratory, owner of Software Techniques which now manages 20 million parcels of real estate and was sold to Thompson Reuters.
- Robert "Bob" Gosselin- VP of Marketing – Advises on all strategic marketing initiatives. Mission is a "cradle-to-grave" perspective on varied marketing applications. Bob has developed marketing programs for Fortune 500 OEM's, Distributors, VARs and integrators. He was responsible for helping launch numerous biotech, medical, scientific, pharmaceutical, laboratory instrument and technology companies domestically and internationally.
- Chris Tridico—Chief Technology Officer—Managed 200 engineers and technologists with Accenture and responsible for \$1.7B annual revenue. Advises and manages all Koolbridge Product Development activities until each product successfully receives UL approval.
- Dr. Jaap Haartsen – Technology Advisor -- Dr. Haartsen led the invention of Bluetooth, a wireless communications technology for the connection of devices over short distances which is in over 10 billion devices. He is internationally regarded as the *Father of Bluetooth*. Dr. Haartsen has been inducted into the National Inventors Hall of Fame alongside Thomas Edison, the Wright Brothers, and Henry Ford for his invention of Bluetooth. He most recently was inducted into the Consumer Technology Association Hall of Fame alongside Steve Jobs, Founder of Apple Computers. He has joined Koolbridge on a part-time basis as our "Technology Advisor". Dr. Haartsen was hired by our Founder, Dr. Paul Dent, at Ericsson Research in Research Triangle Park, NC in 1991 where the two worked on wireless technology that was a precursor to the founding of the Bluetooth technology. Dr. Haartsen is working on patents and the design of an indoor communication and control system between the Koolbridge Smart Load Center and residential appliances.



**Please feel free to contact me if you have any questions about the contents of this document:**

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#### **Forward-Looking Statements and Risks**

This Investment Summary contains statements that are forward-looking. Forward-looking statements are, by their very nature, uncertain and risky. These risks and uncertainties include international, national, and local general economic and market conditions; our ability to sustain, manage, or forecast growth; new product development and introduction; existing government regulations and changes in, or the failure to comply with, government regulations; competition; fluctuations and difficulty in forecasting operating results; change in business strategy or development plans; business disruptions; the ability to attract and retain qualified personnel; the ability to protect technology; the risk of foreign currency exchange rate; and other risks that may or may not be presently known. There is also the possibility that Koolbridge Solar will not be able to attain UL approval, or at least not obtain UL approval within a reasonable timeframe. Please consult with your attorney or financial representative before making any investment decisions regarding Koolbridge Solar.

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