

Ideal Power Inc.
Form 10-K
April 02, 2018

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ ANNUAL REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

☒ For the fiscal year ended December 31, 2017

OR

☐ TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from **to**

Commission File Number 001-36216

IDEAL POWER INC.

(Exact name of registrant as specified in its charter)

DELAWARE

14-1999058

(State or other jurisdiction of

(I.R.S. Employer Identification No.)

incorporation or organization)

4120 Freidrich Lane, Suite 100

Austin, Texas 78744

(Address of principal executive offices)

(512) 264-1542

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class

Name of each exchange on which each is registered

Common Stock, par value \$0.001 NASDAQ Capital Market

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes o No x

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes o No x

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports); and (2) has been subject to such filing requirements for the past 90 days. Yes x No o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§229.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No o

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Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company.

Large accelerated filer ☐ Accelerated filer ☐
Non-accelerated filer ☐ Smaller reporting company ☒
Emerging growth company ☒

If an emerging growth company, indicate by check mark whether the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. "

Indicate by check mark whether the issuer is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes "
No x

State the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the registrant's most recently completed second fiscal quarter.

As of June 30, 2017, the aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the last sale price of the common equity was \$27,880,463. As of March 23, 2018 the issuer has 13,996,121 shares of common stock, par value \$0.001, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

The information required by Part III of this Report, to the extent not set forth herein, is incorporated herein by reference from the Proxy Statement relating to the registrant's 2018 annual meeting of stockholders, which shall be filed with the Securities and Exchange Commission within 120 days after the end of the fiscal year to which this Report relates.

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**SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND
OTHER INFORMATION CONTAINED IN THIS REPORT**

This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 and the provisions of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Forward-looking statements give our current expectations or forecasts of future events. You can identify these statements by the fact that they do not relate strictly to historical or current facts. You can find many (but not all) of these statements by looking for words such as "approximates," "believes," "hopes," "expects," "anticipates," "estimates," "projects," "intends," "plans," "would," "should," "could," "may" or other similar expressions in this report. In particular, these include statements relating to future actions, prospective products, applications, customers, technologies, future performance or results of anticipated products, expenses, and financial results. These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from our historical experience and our present expectations or projections. Factors that could cause actual results to differ from those discussed in the forward-looking statements include, but are not limited to:

- our history of losses;
- our ability to achieve profitability;
- our limited operating history;
- our ability to successfully market and sell our products;
- the size and growth of markets for our current and future products;
- our expectations regarding the growth and expansion of our customer base;
- regulatory developments that may affect our business;
- our ability to successfully develop new technologies, including our bi-directional bipolar junction transistor, or B-TRAN™;
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our expectations regarding the completion of testing of new products under development and the timing of the introduction of those new products;

- the expected performance of new and existing products, including future products incorporating our B-TRAN™;
 - the performance of third-party manufacturers who supply and manufacture our products;

our expectations of the reliability of our products over the applicable warranty term and the future costs associated with warranty claims;

our ability to cost effectively manage product life cycles, inclusive of product launches and end of product life situations;

- the rate and degree of market acceptance for our current and future products;

our ability to successfully obtain certification for our products, including in new markets, and the timing of the receipt of any necessary certifications;

- our ability to successfully license our technology;

our ability to obtain, maintain, defend and enforce intellectual property rights protecting our current and future products;

- our expectations regarding the decline in prices of battery energy storage systems;
 - the success of our cost reduction plan;
- general economic conditions and events and the impact they may have on us and our potential customers;
 - our ability to obtain adequate financing in the future, as and when we need it;
 - our success at managing the risks involved in the foregoing items; and
 - other factors discussed in this report.

The forward-looking statements are based upon management's beliefs and assumptions and are made as of the date of this report. We undertake no obligation to publicly update or revise any forward-looking statements included in this report. You should not place undue reliance on these forward-looking statements.

PART I

ITEM 1:

BUSINESS

Our Company

Ideal Power Inc. was formed in Texas on May 17, 2007 and converted to a Delaware corporation on July 15, 2013. Unless otherwise stated or the context otherwise requires, the terms "Ideal Power," "we," "us," "our" and the "Company" refer to Ideal Power Inc.

We design, market and sell electrical power conversion products using our proprietary technology called Power Packet Switching Architecture™, or PPSA™. PPSA™ is a power conversion technology that improves upon existing power conversion technologies in key product metrics, such as size and weight while providing built-in isolation and bi-directional and multi-port capabilities. PPSA™ utilizes standardized hardware with application specific embedded software. Our products are designed to be used in both on-grid and off-grid applications. Our advanced technology is important to our business and we make significant investments in research and development and protection of our intellectual property. Our PPSA™ and bi-directional switch technologies are protected by a patent portfolio of 66 US and 12 foreign issued patents as of December 31, 2017.

We sell our products primarily to systems integrators for inclusion in larger turn-key systems which enable end users to manage their electricity consumption by reducing demand charges or fossil fuel consumption, integrating renewable energy sources and forming their own microgrid. Our products are made by contract manufacturers to our specifications, enabling us to scale production to meet demand on a cost-effective basis without requiring significant expenditures on manufacturing facilities and equipment. As our products establish a foothold in key power conversion markets, we may begin to focus on licensing our proprietary PPSA™-based product designs to OEMs to reach more markets and customers. We may seek to build a portfolio of relationships that generate license fees and royalties from OEMs for sales of their products which integrate PPSA™.

To date, operations have been funded primarily through the sale of common stock and, prior to our initial public offering, the issuance of convertible debt. Total revenue generated from inception to date as of December 31, 2017 amounted to \$13.2 million with approximately 20% of that revenue coming from government grants. We may pursue additional research and development grants, if and when available, for the purpose of developing new products and improving current products.

Industry Background

Utility power grids are built using alternating current, or AC, generation, transmission, and distribution resources. This method of power transmission and distribution has been proven over time to be reliable and safe. The outlets in a typical home or business are AC but many electrical devices, such as computers, televisions, and other appliances operate on direct current, or DC, power. Batteries and photovoltaic, or PV, solar panels produce DC power as well. In order to connect DC devices to an AC power grid, a power conversion device is necessary.

We believe that significant changes in the supply of and demand for electrical power are driving demand for new energy infrastructure products and supporting technologies. In a traditional utility model, electrical power is generated from central stations and transmitted over long distance high-voltage transmission lines to substations where the voltage is reduced for distribution to consumers. Utility power grids are built to manage the flow of power in one direction, from generation to use, where sophisticated tools have been developed to match the amount of power being generated with the amount being consumed. Utilities ramp power plants up or down to closely match generation with load.

The rapid growth in worldwide renewable energy generation, such as wind and solar power, has added a new level of complexity to the task of matching power generation with consumption. These intermittent resources cannot be dispatched at will or relied upon to meet the peak power demands of the grid. Renewable energy sources tend to ramp up and down quickly. For example, a single cloud over a PV farm can cause electrical output to change dramatically in a matter of seconds. These new challenges make it increasingly difficult for utilities to accurately forecast and meet peak power demands.

Increased peak demand for power also has exposed weaknesses in the existing power grid. In high-cost, high-demand states, such as California, public utilities have instituted peak demand charges as a way to ration power during periods of peak demand and to incentivize commercial and industrial customers to shift their power consumption to off-peak times. At the same time, both the Federal and certain state governments have created incentive programs to encourage the development and implementation of alternative energy sources, such as solar and wind power, which has the adverse consequence of making peak demand more difficult to forecast and satisfy. Strains on the electric grid have resulted in significant brown-outs and black-outs that have heightened awareness of the vulnerabilities of the existing system. As a result, power consumers are turning to new technologies to manage their energy consumption, lower costs and assure a reliable source of supply. We believe that distributed generation with advanced power conversion systems, such as our PPSA™ products, is becoming an increasingly important element of this new infrastructure.

In response to these changes in the market for electrical power, a number of technologies have been developed to enable users to more effectively manage their consumption and, one of these technologies, energy storage systems, has emerged as an increasingly attractive way to mitigate the instabilities and market inefficiencies caused by these emerging power grid realities. For example, a commercial business can shift energy usage from peak to non-peak times by installing a battery energy storage system, or BESS. The commercial business can use electricity generated during off-peak hours to charge the BESS and then use the stored power to satisfy all or part of its demand during peak hours. Similarly, a commercial business can install a solar power system to generate power for use either immediately upon generation or for storage in a BESS for later use.

Battery energy storage systems and many alternative energy sources provide power on a DC basis. However, the electric power grid and most electrical equipment operates on an AC basis. Consequently, power conversion systems are required to convert power from DC to AC or from AC or DC as necessary to make the various components of the system function together. In addition to converting power, power conversion systems enable customers to regulate current, voltage and frequency while optimizing system resources such as batteries, PV and the utility power grid to reduce energy costs. Systems incorporating advanced power converters may also manage distributed grid energy storage and be used to create stand-alone microgrids to bring power to a business or residence if the main electrical grid, if one is present, is unavailable.

Our Technology

PPSA™ uses indirect power flow in which power flows through input switches and is temporarily stored in our proprietary AC link inductor. Our proprietary fast switching algorithms enable the transfer of quantum packets of power between ports in our system. As the AC link becomes charged, it disconnects from its input switches, resonates without being connected to either the input or output switches, and then reconnects to its output switches when it reaches the correct voltage and frequency for the application. PPSA™ is a power conversion technology that differentiates itself from traditional power conversion technology in key product metrics, such as size and weight while providing built-in isolation and bi-directional and multi-port capabilities. At December 31, 2017, we had been granted 38 US patents and five foreign patents related to PPSA™.

Figure 1: Schematic of PPSA™ Process

Traditional power conversion systems use continuous power flow that relies on relatively heavy and expensive magnetic components and bulk capacitors. Many of these traditional systems have custom hardware for specific applications. By contrast, our conversion technology eliminates the majority of the passive components of traditional power conversion systems, including the separate isolation transformer and most of the inductors and bulk capacitors.

We believe PPSA™ offers several key advantages over traditional technologies, such as:

Bi-directional: PPSA™ is inherently bi-directional enabling power flow in both directions. For example, one PPSA™-based power converter could be used to both charge and discharge batteries.

Built-in Isolation: PPSA™-based power converters have built-in isolation and thus do not require an isolation transformer which adds cost, size and weight and reduces the efficiency of battery energy storage systems.

Multi-Port Capabilities: PPSA™ architecture enables multiple AC and/or DC sources and uses to be connected together in one power converter, minimizing total system cost for tying together, for example, DC solar PV and DC batteries to the AC grid.

Scalability/Flexibility: PPSA™ is made from standard industry components, is battery agnostic and software driven, thus providing scalability that enables rapid development cycles for new products and new applications. This same functionality provides ultimate flexibility for customers globally as it is capable of power conversion in both 50Hz and 60Hz AC environments.

Size and Weight: PPSA™ reduces size and weight by eliminating passive components such as isolation transformers, inductors and bulk capacitors. Reduced size and weight result in lower transportation and installation costs. Our fully isolated 30kW power conversion systems weighs less than 150 pounds. By contrast, similar transformer-based 30kW power conversion systems typically weigh over 600 pounds.

Products

We currently sell several power conversion systems, or PCS, utilizing our patented PPSA™ technology. These products are described as follows:

The 30kW Stabiliti™ series has two product offerings, two-port (AC-DC) and multi-port (AC-DC-DC) models, which are both UL1741 Supplement A, or UL1741 SA, certified. These products are intended to be used in the stand-alone energy storage and microgrid markets. They are bi-directional and operate in both grid-tied and grid-forming modes with near seamless transfer between operating modes. Grid-forming mode provides customers the ability to form and manage a microgrid. The products operate in both 50Hz and 60Hz environments.

The 30kW SunDial™ and the 30kW SunDial Plus™, which are also UL1741 SA certified, are intended to be used for the commercial and industrial grid-tied solar and solar plus storage markets. The SunDial™ is a PV string inverter which is field upgradable through the addition of a drop-in second DC port to connect batteries to a solar PV array. The SunDial Plus™ includes the PV inverter and the second DC battery port in one package. These products both include a built-in 6 string PV combiner and DC disconnects and are grid-tied, AC export only.

Future Innovations

Bi-Directional Switches

Our existing products incorporate multiple insulated gate bipolar transistors (“IGBTs”), which are power switches used in the process to convert power from one current form to another. IGBTs switch power in only one direction (DC to AC or AC to DC) and require the use of a blocking diode to prevent power from flowing back through the system. To enable our existing products to perform bi-directional power conversion, for each IGBT and diode used in our products, we must include a second IGBT and diode. These additional components have slight voltage drops that affect the electrical efficiency of our products and generate heat that must be dissipated. We have patented and are developing a new, highly efficient power switch called a bi-directional bipolar transistor, or B-TRAN™, that we believe will allow us to substitute one B-TRAN™ for two pairs of IGBTs and diodes used in our current products and is also a potential replacement for conventional power switches in the broader power semiconductor market.

Based on third party device software simulations and initial prototype testing, we believe that the B-TRANs™ can significantly improve electrical efficiency in our power converters. The higher efficiency would substantially reduce the heat generated by the operation of our products. As a result, products incorporating B-TRANs™ will require less space for heat dissipation which would allow us to increase power density, or power per pound, and reduce material costs.

In 2016, one of our semiconductor fabricators successfully tested single-sided B-TRAN™ silicon dies and the results were consistent with third party simulations that predict significant performance and efficiency improvements over conventional power switches such as SCRs, IGBTs and MOSFETs. In the second half of 2017, we shifted our focus to de-risking the proof of concept phase of the B-TRAN™ development timeline, as this phase of development was taking longer than anticipated due to the complexity of manufacturing complicated, two-sided power semiconductor devices. To facilitate this, we engaged a second semiconductor fabricator, on a parallel path, to produce a less complex to manufacture B-TRAN™ on an accelerated schedule for proof of concept and initial testing. In the first quarter of 2018, we successfully completed proof of concept testing of double-sided B-TRAN™ prototypes, validating the ability to make B-TRAN™ semiconductor power switches using conventional silicon semiconductor fabrication equipment and processes. Test results on the standard double-sided prototypes measured B-TRAN™ electrical losses at less than 40% that of conventional power switches such as silicon IGBTs. The results of this testing will be incorporated into the B-TRAN™ design and their manufacturing process. With the double-sided transistor behavior and low conduction losses confirmed, the next step is to incorporate planned corrections and improvements in the manufacturing process followed by the fabrication of prototype engineering samples for potential customers and partners.

We plan to first utilize the B-TRAN™ in our own power conversion products and then introduce it into the multi-billion dollar power semiconductor market utilizing a licensing model. We believe our new B-TRAN™ technology can

potentially address a significant portion of the power semiconductor market that currently relies on power semiconductor devices such as IGBTs. Potential addressable markets for B-TRAN™-based products include solar photovoltaic inverters, microgrid power conversion systems, electric vehicle drivetrains, bi-directional energy storage, solid-state DC and AC contactors and breakers, variable frequency drives and other power conversion and control applications that could benefit from B-TRAN™'s enhanced switching performance. At December 31, 2017, we have 28 US and seven foreign issued patents covering the operation, control and manufacturing of the B-TRAN™ device.

Business Strategy

Our business strategy is to promote and expand the uses of PPSA™ initially through product development and product sales. To bring our products to market, we will seek out best-in-class partners who will distribute, white-label or integrate our innovative products into higher value systems resulting in multiple strategic sales channels for our PPSA™-based products and product designs. Although our primary market is the United States, we will increasingly target markets outside the United States as early as 2018. As our products gain broader acceptance in the power conversion market, we intend to license our proprietary PPSA™-based product designs to OEMs within our target markets, as well as license our technologies for other markets which we do not plan to enter directly. The basis for this approach is the belief that OEMs may achieve higher product margins and gain more market share by providing PPSA™-based products, which are differentiated from the traditional product offerings in the industry, to their customers. We believe such strategic relationships with key OEM licensees would enable us to reap the benefits of PPSA™ and gain market share more quickly than by strictly manufacturing and distributing our products.

Target Markets

Currently, our primary markets are solar + storage and, to a lesser extent, microgrids. We also intend to be opportunistic with regard to the stand-alone energy storage market. Prior to 2017, our primary market was the stand-alone energy storage market but we shifted our strategic focus in early 2017 to solar + storage as that market leverages the mature and global solar market while the nascent stand-alone energy storage market has been slow to develop.

Solar + Storage and Microgrid Markets

Solar PV has one of the lowest levelized costs of energy for new electrical generation capacity and we expect this to remain true in the near term. We expect distributed PV to continue to be a high growth business as system costs have fallen dramatically over the past several years. Accordingly, we expect the economics of generating PV for local consumption to remain strong for several more years, especially given the investment tax credit, or ITC, extension passed by Congress and signed into law in 2015 for solar energy production. Our SunDial™ products were launched to directly address this market. One shortcoming of distributed, behind-the-meter PV systems is that they require connection to the utility power grid in order to operate. For example, a business with PV on its roof will not, in most cases, benefit from the ability to generate power should the utility power grid go down. Another shortcoming of distributed PV systems is the instability they cause on the local power lines. Utility power grids were not designed to manage power inflow from the end of the lines. As a result, distributed generation sources can lead to wide swings in line voltages when clouds pass and power output falls off, requiring the utility to ramp up its power generation to make up for the shortfall in solar. We believe the proliferation of PV, its intermittency and the elimination of net metering in many states may drive growth in the solar + storage market.

Whether for emergency backup power or for baseload generation in remote locations with weak or no electric grids, microgrids are an emerging business case for solar paired with energy storage. A distributed PV system connected to a BESS that includes one of our Stabiliti™ multi-port PCS enable a business to benefit from the ability to form and manage a local microgrid powered by the PV system and BESS even when the utility power grid is down. This capability is attractive to electricity consumers who need to power critical loads even in a blackout. Our Stabiliti™ PCS are also equipped to meet evolving utility requirements for low voltage ride-through and other key operating parameters, which may enable the PV and BESS it connects to the grid to help stabilize the utility power grid when voltage or frequency fluctuates due to imbalances in load and supply. In remote locations where there is no reliable electric grid or a dependence on diesel generators, which may be as diverse as a military battlefield or remote tropical island resort, or in locations where local electric rates are high due to aging and inefficient generation technology, a trend towards self-generation microgrids is developing. These sites can use solar, batteries and other forms of generation all brought together by one or more of our Stabiliti™ PCS to form and manage a microgrid using maximum solar generation for lowest cost. As such, we believe our products may become increasingly attractive to co-locate BESS with distributed PV.

According to their research, IHS believes that systems will be deployed in two principal configurations. One configuration is to have separate BESS and PV systems tied together through the AC wiring, which is supported by our current and legacy products. A second, emerging configuration is to place the BESS and the PV system behind a single PCS with two DC inputs. Our Stabiliti™ and SunDial™ Plus were designed specifically to enable this configuration which we believe is the lower cost and more efficient configuration. By tying the solar and batteries together as a DC-coupled system, the batteries become eligible for the Federal Investment Tax Credit, or ITC, and accelerated depreciation further enhancing the project economics. A key unique feature of the SunDial™'s patented technology is its ability to be deployed first as a standard commercial PV inverter and later be upgraded in the field to bring energy storage into the PV system using the same inverter. We believe this is the only product in the market today to have this unique field-upgrade capability for pairing solar with energy storage in one inverter.

Stand-Alone Energy Storage Market

The stand-alone energy storage market is served by BESS. BESS are racks of batteries coupled with a system controller and a power conversion system, such as those manufactured by us, to enable electric power to be captured, stored, and used in conjunction with electric power grids. These systems can be large, megawatt-scale systems operated by utilities to better manage their system resources, or smaller kilowatt-scale systems used by businesses and designed to enable these businesses to manage their power use and mitigate utility imposed "peak demand charges", which are charges utilities levy on their business customers for delivery of power at peak usage times of the day, such as mid-afternoons in the summer. The growth of peak demand charges has been substantial over the past decade and now can make up 50% or more of a commercial utility bill in certain markets. This is a trend that is likely to continue as more intermittent resources are added to the utility power grid causing grid instability. Utilities and aggregators of distributed generation resources are also expected to adopt BESS due to the proliferation of renewables and to take advantage of additional value streams such as energy arbitrage, frequency regulation and ancillary services, infrastructure upgrade deferral and locational capacity.

There are strong economic incentives available to commercial and industrial consumers in major US markets such as California and New York in the form of reduced time-of-use and/or demand charges for installing a BESS and managing when power is drawn from the grid or reducing peak consumption. There is also strong regulatory support for such systems. For example, California has issued a mandate for over 1,800 megawatts of new energy storage to be installed by 2020. Other states, including New York and Massachusetts, have also recently issued mandates for energy storage and we expect this trend to continue.

We expect the cost of commercial and industrial BESS to continue to decline due primarily to lower battery costs and, as a result, expect significant expansion in the addressable market for these systems. We also believe the combination of lower BESS costs, third-party financing, increases in utility demand charges, and the entrance of large, established companies to the BESS space may contribute to accelerating market growth for stand-alone energy storage.

Other Markets

Although our technology may be suitable for other vertical markets within the global power conversion market landscape, we do not currently offer products for sale directly to other power conversion markets such as the variable-frequency drive (“VFD”), uninterruptible power supply, rail, wind or electric vehicle (“EV”) traction drive markets.

In addition to the markets discussed above, we may also have opportunities for market expansion into fast electric vehicle chargers in certain applications where our products’ compact size and multi-port capabilities can unlock value for the system integrator particularly in locations where battery storage is coupled with the charging system to eliminate demand charges or expand the charging systems response capabilities.

We plan to continue to monitor all power conversion markets for opportunities to create solutions for customers and unlock the broader value of our patented technology.

Intellectual Property

We rely on a combination of patents, laws that protect intellectual property, confidentiality procedures, and contractual restrictions with our employees and others, to establish and protect our intellectual property rights. In addition, the software that is shipped with our products is encrypted. As of December 31, 2017, we have 66 US and 12 foreign issued patents. We also had approximately 60 additional pending U.S. and international patent applications. We expect to continue to build our patent estate for both our core power conversion technology, our bi-directional switch technology and other technological developments that broaden the scope of our technology platform.

Customers

While we have historically been reliant on a small number of customers, our customer based expanded in 2017 and only one customer represented greater than 10% of our net revenues. For the year ended December 31, 2017, Sharp Corporation accounted for 15% of net revenues. For the year ended December 31, 2016, Sonnen Inc. and Gexpro accounted for 44% of net revenues.

Sales and Marketing

We sell our products primarily to systems integrators for installation as part of a larger turn-key system providing end users with a complete solution for managing their energy consumption. Before a system integrator agrees to specify our products in their systems, the integrator engages in a lengthy and time-consuming process of testing and evaluating our equipment for use, which typically takes from a few months to as long as a year. Our products have also historically been sold through distribution channel partners and, although we do not currently have any active distribution partners, we may utilize distribution partners in the future.

For certain geographic markets and applications, we may seek to enter into licensing agreements that would enable licensees to build our products for sale in local markets or we may license product designs to global brands for specific applications. In 2016, we entered into our first licensing agreement for our SunDial™ with Flex Ltd. (Nasdaq: Flex). NEXTracker Inc., a Flex company, will sell the SunDial™ as part of its NX Flow solar plus storage tracker.

Manufacturing and Supply

We use contract manufacturers to manufacture our products to our specifications. We have an agreement with our contract manufacturer pursuant to which they manufacture our products pursuant to issued purchase orders. This agreement provides us with a moderate degree of rescheduling and cancellation flexibility. The agreement, executed in 2017, has a three-year term and renews annually thereafter unless terminated. We believe there are many contract manufacturers that are qualified to manufacture our products to our specifications.

Our contract manufacturer is responsible for the sourcing of components and materials. We qualify sources for our components and materials. Our strategy is to have multiple suppliers for all of our components and materials. Currently, we have multiple sources for most of our components. A very limited number of components are single-sourced and the process of identifying and qualifying alternative sources for these components is underway.

Backlog

Our backlog was approximately \$0.2 million at December 31, 2017. The Company defines backlog as consisting of accepted orders from customers for which a product delivery schedule has been specified. The purchased orders comprising backlog are not cancelable in most cases and such orders do not typically provide price protection. Nevertheless, deliveries against received purchase orders may be rescheduled within negotiated parameters and our backlog may therefore not be indicative of the level of future sales. As our initial target markets are new or, in the case of the stand-alone energy storage market, did not grow as expected over the last two years, we have seen a trend where customers are not placing orders covering extended time periods such as six months or a year but are instead placing orders by project or by quarter. This trend results in lower backlog for us until such time that the market starts to mature and market growth is more stable and/or predictable.

Competition

We will compete against well-established incumbent power conversion technology providers, including PV inverter companies that already operate at a large scale in the PV market, as these competitors enter our target markets and, specifically, the commercial and industrial segment of these target markets. We expect that these power conversion technology providers will base their products on current technologies, described below, although we continue to monitor the competitive landscape for offerings or potential offerings based on new technologies. To date, we are not aware of any offerings or potential offerings based on new methods of power conversion other than our PPSATM products.

Traditional Power Conversion: Traditional power conversion systems are the conservative choice, as they are proven and have been commercially available longer than any other type of power conversion system. They provide isolation, but are big, heavy, and relatively inefficient. There have been improvements in the efficiency of transformer-based power conversion systems over the years, but we believe further improvements are limited due to the physical characteristics of transformers themselves. Major suppliers in this market include ABB, Eaton and Schneider Electric.

Transformerless PV Inverters: Transformerless PV solar inverters are a special class of power conversion system applicable only to PV arrays. They have become a popular choice in the market for PV applications, as they are lighter and more efficient than transformer based inverters. These transformerless inverters are one-way (DC to AC) inverters, and provide no electrical isolation. PV systems are not required to be electrically isolated in most electrical code jurisdictions. These PV inverters are not directly applicable to markets that require electrical isolation. Key providers of transformerless PV inverters include companies such as SMA Solar Technology AG, or SMA, Huawei Technologies Co., Ltd., or Huawei, and SolarEdge Technologies Inc.

Research and Development Costs

Research and development costs are presented as a line item under operating expenses and are expensed as incurred. Total research and development costs incurred during the years ended December 31, 2017 and 2016 amounted to \$4.2 million and \$5.2 million, respectively.

Employees

As of February 28, 2018, we have 19 employees, all of whom are full-time employees. None of these employees are covered by a collective bargaining agreement, and we believe our relationship with our employees is good.

Industry Certifications

Industry certifications are generally required for our products. The main certification requirement is conformance to UL1741 Supplement A, or UL1741 SA, which specifies standards for grid and product safety for grid-connected generation equipment, including the power conversion systems made by us. A National Recognized Testing Laboratory, or NRTL, must certify our products for conformance to UL1741 SA before our customers may install and use our products in grid-tied applications in the United States. We utilize Underwriters Laboratories, or UL, for our certification requirements.

The European Union, or EU, Japan and certain other major jurisdictions have different certification test procedures, but generally test for similar safety and performance capabilities. Local certifications are likely to be required to sell our products outside of the United States for many applications. To date, we have not received any international certifications on our products but have deployed products in a few instances in foreign countries as demonstrations, test projects in laboratories or microgrid applications which may be exempt from the certification requirements. We currently do not have plans to start the certification process in any international market in 2018.

Government Regulation

Government approval is not required for us to sell our products. However, government support for renewable energy, grid storage, electric vehicle charging infrastructure and improved grid resiliency, including incentives and mandates, may impact the size and growth rate of our target markets. Utility regulations and support may also impact these end markets. In the near term, government and utility support for many of these markets is generally required for these markets to grow and therefore changes in policy by governments or utilities may limit the near-term market opportunities for our products.

Available Information

Our Internet address is www.idealpower.com and our investor relations website is located at ir.idealpower.com. We make available free of charge on our investor relations website under the heading “SEC Filings” our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports as soon as reasonably practicable after such materials are electronically filed with (or furnished to) the SEC. We also make available on our website, our corporate governance documents, including our code of conduct and ethics. Information contained on our website is not incorporated by reference into this Annual Report on Form 10-K. In addition, the public may read and copy materials we file with the SEC at the SEC’s Public Reference Room at 100 F Street, NE, Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling

the SEC at 1-800-SEC-0330. In addition, the SEC maintains an Internet site, www.sec.gov, that includes filings of and information about issuers that file electronically with the SEC.

ITEM 1A:

RISK FACTORS

We are subject to various risks that may materially harm our business, prospects, financial condition and results of operations. An investment in our common stock is speculative and involves a high degree of risk. In evaluating an investment in shares of our common stock, you should carefully consider the risks described below, together with the other information included in this report.

The risks described below are not the only risks we face. If any of the events described in the following risk factors actually occurs, or if additional risks and uncertainties later materialize, that are not currently known to us or that we currently deem immaterial, then our business, prospects, results of operations and financial condition could be materially adversely affected. In that event, the trading price of our common stock could decline, and you may lose all or part of your investment in our shares. The risks discussed below include forward-looking statements, and our actual results may differ substantially from those discussed in these forward-looking statements.

Risks Related to the Company

We lack an established operating history on which to evaluate our business and determine if we will be able to execute our business plan. We have also incurred losses in prior periods, expect to incur losses in the future and we can give no assurance that our operations will result in profits.

We were formed in Texas on May 17, 2007 and converted to a Delaware corporation on July 15, 2013. We have a limited operating history that makes it difficult to evaluate our business. Historical sales of our products have been in low volume, and we cannot say with certainty when we will begin to achieve profitability, if ever.

Since inception, we have sustained approximately \$56 million in net losses and we had a net loss for the year ended December 31, 2017 of approximately \$10 million. We expect to have operating losses at least until such time as we have developed a substantial and stable revenue base. We cannot assure you that we can develop a substantial and stable revenue base or achieve or sustain profitability on a quarterly or annual basis in the future.

As sales of our products have generated limited operating revenues, we have been funding operations primarily through the sale of common stock and, prior to our initial public offering, the issuance of convertible debt. If we are unable to execute our business plan, generate sustainable revenue and achieve profitable operations with our existing capital we would need to raise funds through equity or debt offerings and there can be no assurance that we will be able to do so.

Our future success is difficult to predict because we operate in emerging and evolving markets, and the industries in which we compete are subject to volatile and unpredictable cycles.

The stand-alone energy storage, solar + storage, microgrid and related industries are emerging and evolving markets which may make it difficult to evaluate our future prospects and which may lead to period to period variability in our operating results. Our products are based on unique technology which we believe offers significant advantages to our customers, but the markets we serve are in a relatively early stage of development and it is uncertain how rapidly they will develop. It is also uncertain whether our products will achieve high levels of demand and acceptance as these markets grow. If companies in the industries we serve do not perceive or value the benefits of our technologies and products, or if they are unwilling to adopt our products as alternatives to traditional power conversion solutions, the market for our products may not develop or may develop more slowly than we expect, which could significantly and adversely impact our operating results.

We may also be subject to business cycles. The timing, length, and volatility of these business cycles may be difficult to predict. These markets may be cyclical because of sudden changes in customers' manufacturing capacity requirements and spending, which depend in part on capacity utilization, demand for customers' products, the availability and amount of government incentive programs, inventory levels relative to demand, and access to affordable capital. These changes may affect the timing and amounts of customers' purchases and investments in technology, and materially affect our orders, net sales, operating expenses, and net income. For example, during 2016, we experienced a significant decline in revenues compared to 2015 as a result of delays in awards under California's Self-Generation Incentive Program, or SGIP, which provides economic incentives for energy storage projects. The California Public Utility Commission, or CPUC, delayed announcing the 2016 awards as it examined and ultimately revised the award solicitation process and other aspects of the SGIP. The revised SGIP was not finalized until July 1, 2016, which delayed the determination of project winners and the processing of the related awards. These delays not only caused a temporary disruption in the market, as awarded projects are typically not commissioned and installed until many months after the award is granted, but also contributed to an overall stagnation in the California market for stand-alone energy storage that continued throughout 2017. If delays occur in the future under the SGIP or other governmental incentives or these programs prove ineffective or burdensome, our revenues may be delayed or reduced.

To meet rapidly changing demand in each of the markets we serve, we must effectively manage our resources and production capacity. During periods of decreasing demand for our products, we must be able to appropriately align our cost structure with prevailing market conditions, effectively manage our supply chain, and motivate and retain key employees. During periods of increasing demand, we must have sufficient manufacturing capacity and inventory to fulfill customer orders, effectively manage our supply chain, and attract, retain, and motivate a sufficient number of qualified individuals. If we are not able to timely and appropriately adapt to changes in our business environment or to accurately assess where we are positioned within a business cycle, our business, financial condition, or results of operations may be materially and adversely affected.

Obsolete inventory as a result of changes in demand for our products, changes in life cycle of our products or regulatory changes could adversely affect our business, operating results and financial condition.

The life cycles of our products depend upon the rapidly evolving industries for which our products are designed. Products with short life cycles require us to closely manage our production and inventory levels. Inventory may also become obsolete because of adverse changes in market demand. We may in the future be adversely affected by obsolete or excess inventories, which may result from unanticipated changes in the estimated total demand for our products or shorter than anticipated product life cycles due to changes in product designs necessitated by market factors or changes to regulatory standards and/or requirements. In addition, certain customers in early markets may change their strategy, exit our target markets and/or go out of business; therefore, some of our product inventory may become obsolete and, thus, adversely affect our business, operating results and financial condition. As an example, we recorded charges of \$334,889 and \$673,102 in 2016 and 2017, respectively, for excess and obsolete inventory in connection with the end-of-life, or EOL, of our IBC-30 battery converter and first generation 125kW product. In addition, although we did not record a charge for excess and obsolete inventory in connection with the EOL of our second generation 30kW product, we did discontinue this product in 2017. Challenges in managing EOL situations or lower than expected sales prior to the EOL of our products could result in material charges related to excess and obsolete inventory and our business, financial condition, or results of operations may be materially and adversely affected.

To date we have had a limited number of customers. We cannot assure you that our customer base will increase.

We had revenue from one customer that accounted for 15% of net revenue for the year ended December 31, 2017. The Company had an accounts receivable balance from three customers that accounted for 60% of net trade receivables at December 31, 2017. As we sell our products to a limited number of customers, we cannot assure you that our customer base will expand or that any decline in net revenue attributable to customer losses will be replaced in a timely manner.

Product development is an inherently uncertain process, and we may encounter unanticipated development challenges and may not be able to meet our product development and commercialization milestones.

Product development and testing may be subject to unanticipated and significant delays, expenses and technical or other problems. We cannot guarantee that we will successfully achieve our milestones within our planned timeframe or ever. We commonly develop prototypes of planned products prior to the full commercialization of these products. We cannot predict whether prototypes of future products will achieve results consistent with our expectations. A prototype could cost significantly more than expected or the prototype design and construction process could uncover problems that are not consistent with our expectations. Prototypes of emerging products are a material part of our business plan, and if they are not proven to be successful, our business and prospects could be harmed.

More generally, the commercialization of our products may also be adversely affected by many factors not within our control, including:

- the willingness of market participants to try new products and the perceptions of these market participants of the safety, reliability, functionality and cost effectiveness of our products;

- policy changes and the availability of governmental incentives at both the state and federal level for our target markets;

- the emergence of newer, possibly more effective technologies;

- the future cost and availability of the raw materials and components needed to manufacture and use our products; and

- the adoption of new regulatory or industry standards that may adversely affect the use or cost of our products.

Accordingly, we cannot predict that our products will be accepted on a scale sufficient to support development of mass markets for them.

We must achieve design wins to retain our existing customers and to obtain new customers, although design wins achieved do not necessarily result in substantial sales.

Our products are typically integrated into systems by our customers. We must work with these manufacturers early in their design cycles to modify our equipment or design new equipment to meet the requirements of their systems. Manufacturers typically choose one or two vendors to provide the components for use in their systems. Selection as one of these vendors is called a design win. It is critical that we achieve these design wins in order to retain existing customers and to obtain new customers.

We believe that equipment manufacturers often select their suppliers based on factors including long-term relationships and end user demand. Accordingly, we may have difficulty achieving design wins from equipment manufacturers who are not currently our customers. In addition, we must compete for design wins for new systems and products of our existing customers, including those with whom we have had long-term relationships. Our efforts to achieve design wins are time consuming and expensive and may not be successful. If we are not successful in achieving design wins, or if we do achieve design wins but our customers' systems that utilize our products are not successful, our business, financial condition, and results of operations could be materially and adversely impacted.

Once a manufacturer chooses a component for use in a particular system, it is likely to retain that component for the life of that system. Our sales and growth could experience material and prolonged adverse effects if we fail to achieve design wins. However, design wins do not always result in substantial sales, as sales of our products are dependent upon our customers' sales of their products.

We will be subject to applicable third-party certification to ensure compliance with applicable codes and standards of the countries in which we sell products, which are costly and may prevent or delay us from marketing our products in those countries.

In addition to third-party certification to ensure compliance with applicable codes and standards in the United States, we are subject to the third-party certification of our products to ensure compliance with applicable codes and standards for each foreign country to which we export our products. For example, in the EU, third-party certification requires compliance with Conformité Européene, or CE, standards and is evidenced by a CE mark. The CE mark is the manufacturer's declaration that the product complies with the essential requirements of the relevant European health, safety and environmental protection legislation. Additionally, to sell a product in any specific country in the EU, the product must meet the International Electrotechnical Commission, or IEC, codes specified for products in the specific country. The applicable codes vary from country to country. It generally takes several months to obtain the relevant CE and IEC certifications. Any changes in codes and standards and related third-party compliance testing and listing may cause us to incur additional costs. We may not be able to obtain US or foreign third-party certification on a timely basis, if at all, and any failure to do so may cause us to incur additional costs or prevent us from marketing or selling our products in US or foreign countries, which may have a material adverse effect on our business, financial condition and results of operations.

We have received grant funds from the United States for the development of a bi-directional switch. In certain instances, the United States may obtain title to inventions related to this effort. If we were to lose title to those inventions, we may have to pay to license them from the United States in order to manufacture the inventions. If we were unable to license those inventions from the United States, it could slow down our product development.

In conjunction with the Advanced Research Projects Agency-Energy, or ARPA-E, grant we received from the Department of Energy, we granted to the United States a non-exclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States inventions related to the bi-directional switch and made within the scope of the grant. If we fail to disclose to the Department of Energy an invention made with grant funds that we disclose to patent counsel or for publication, or if we elect not to retain title to the invention, the United States may request that title to the subject invention be transferred to it.

We also granted “march-in-rights” to the United States in connection with any bi-directional switch inventions in which we choose not to retain title, if those inventions are made under the ARPA-E grant. Pursuant to the march-in-rights, the United States has the right to require us, any person to whom we have assigned our rights, or any exclusive licensee to grant a non-exclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant upon terms that are reasonable. If the license is not granted as requested, the United States has the right to grant the license if it determines that we have not achieved practical application of the invention in the field of use, the action is necessary to alleviate health or safety needs, the action is necessary to meet requirements for public use specified by Federal regulations and such requirements have not been satisfied, or the action is necessary because an agreement to manufacture the invention in the United States has not been obtained or waived or because any such agreement has been breached.

If we lost title to the United States as a result of any of these events, we would have to pay to license the inventions, if needed, from the United States to manufacture the bi-directional switch. If we were unable to license those inventions from the United States, it could slow down our product development.

As we continue to grow and to develop our intellectual property, we could attract threats from patent monetization firms or competitors alleging infringement. We may incur substantial costs as a result of litigation or other proceedings relating to patent and other intellectual property rights.

As we continue to grow and to develop our intellectual property, we could attract threats from patent monetization firms or competitors alleging infringement of intellectual property rights.

In addition, some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. If we do not prevail in this type of litigation, we may be required to: pay monetary damages; stop commercial activities relating to our product; obtain one or more licenses in order to secure the rights to continue manufacturing or marketing certain products; or attempt to compete in the market with substantially similar products. Uncertainties resulting from the initiation and continuation of any litigation could limit our ability to continue some of our operations.

We expect to license our technology in the future; however the terms of these agreements may not prove to be advantageous to us. If the license agreements we enter into do not prove to be advantageous to us, our business and results of operations will be adversely affected.

During 2016, we entered into our first licensing agreement and we expect to license the manufacture of our product designs for certain markets as well as license our technology for certain potential applications which we choose not to pursue directly through the sale of products in the future. However, we may not be able to secure license agreements with customers on terms that are advantageous to us. Furthermore, the timing and volume of revenue earned from license agreements is and will be outside of our control. If the license agreements we have, or enter into in the future, do not prove to be advantageous to us, our business and results of operations will be adversely affected.

Until recently, we have not devoted significant resources towards the marketing and sale of our products and we continue to rely on the marketing and sales efforts of third parties whom we do not control.

We expect that the marketing and sale of our products to end user customers will continue to be conducted primarily by a combination of system integrators, third-party strategic partners, distributors, and original equipment manufacturers, or OEMs. Consequently, commercial success of our products will depend, to a great extent, on the efforts of others. We may not be able to identify, maintain or establish additional and/or appropriate relationships in the future. We can give no assurance that these third parties will focus adequate resources on selling our products or will be successful in selling them. In addition, these third-parties have or may require us to provide volume price discounts and other allowances, customize our products or provide other concessions that could reduce the potential profitability of these relationships. Failure to develop sufficient customer, distribution and marketing relationships in our target markets will adversely affect our commercialization schedule and to the extent we have entered or enter into such relationships, the failure of our distributors and other third parties to assist us with the marketing and distribution of our products, or to meet their monetary obligations to us, may adversely affect our financial condition and results of operations.

A material part of our success depends on our ability to manage our suppliers and contract manufacturers. Our failure to manage our suppliers and contract manufacturers could materially and adversely affect our results of operations and relations with our customers.

We rely upon suppliers to provide the components necessary to build our products and on contract manufacturers to procure components and assemble our products. There can be no assurance that key suppliers and contract manufacturers will provide components or products in a timely and cost-efficient manner, provide quality components or manufacturing and assembly services or otherwise meet our needs and expectations. Our ability to manage such relationships and timely replace suppliers and contract manufacturers, if necessary, is critical to our success. Our failure to timely replace our contract manufacturers and suppliers, should that become necessary, could materially and adversely affect our results of operations and relations with our customers.

We are currently in arbitration with our former contract manufacturer due, in part, to workmanship quality issues we have identified in the assembly of our legacy products by this contract manufacturer. The failure of our contract manufacturers to provide quality manufacturing and assembly services, as well as the resources that may be required to address any such issues on products shipped to customers with any such quality issues, could materially and adversely affect our reputation, results of operations and relations with our customers.

We may need additional financing to execute our business plan and fund operations, which additional financing may not be available on commercially reasonable terms or not at all.

We believe that our current cash and working capital resources will be sufficient to fund our operations for at least the next twelve months. If we are unable to generate sufficient cash flow from our operations to fund our future working capital needs, we will be required to obtain additional financing to continue our operations and execute our business plan. We may not be able to obtain such financing on commercially reasonable terms or at all. If we are unable to obtain such financing when needed, our business could fail.

The macro-economic environment in the United States and abroad has adversely affected, and may in the future adversely affect, our ability to raise capital, which may potentially impact our ability to continue our operations.

As a company with limited revenues to date, we have relied on raising funds from investors to support our research and development activities and our operations. Macro-economic conditions in the United States and abroad may result in a tightening of the credit markets and/or less capital available for small public companies, which may make it more difficult to raise capital. If we are unable to raise funds as and when we need them, we may be forced to curtail our operations or even cease operating altogether.

We are subject to credit risks.

Some of our customers may experience financial difficulties and/or may fail to meet their financial obligations to us. As a result, we may incur charges for bad debt provisions related to some trade receivables. In addition, in connection with the growth of the renewable energy market and other markets for our products, we are gaining new customers, some of which have relatively short histories of operations, are located outside the United States or are newly formed companies. As a result, it is difficult to ascertain financial information in order to appropriately extend credit to these customers. Further, the volatility in the renewable energy market may put additional pressure on our customers' financial positions, as they may be required to respond to large swings in revenue. The renewable energy industry has also, from time to time, seen an increasing amount of bankruptcies and reorganizations as the availability of financing has diminished. Although none of our customers filed for bankruptcy in 2017, one customer filed for bankruptcy in 2016 and another customer filed for bankruptcy in 2015. In addition, we are currently pursuing legal action against KACO new energy, Inc. for its failure to pay us for product shipped in December 2016. On March 23, 2018, we received a judgment of garnishment to recover funds from KACO new energy, Inc. held by Chase Bank in the amount of \$203,121.

If customers fail to meet their financial obligations to us, or if the assumptions underlying our recorded bad debt provisions with respect to receivables obligations do not accurately reflect our customers' financial condition and payment levels, we could incur write-offs of receivables in excess of our provisions, which could have a material adverse effect on our cash flow and operating results.

If our products have component malfunctions or design defects, we may be exposed to lawsuits and/or other claims and we may not be able to control our warranty exposure, which could increase our expenses, harm our reputation and prevent us from growing our business.

We currently offer, and expect to continue to offer, a warranty with respect to our products and a design warranty with respect to licensing agreements. Due to our limited long-term history of operating data, our warranty reserve is estimated based on engineering judgment and third-party assessments of our product reliability. If our products have component malfunctions or design defects, the accumulated cost of warranty claims could be significant. If the cost of warranty claims exceeds any reserves we may establish for such claims, our results of operations and financial condition could be adversely affected. In 2017, we recorded incremental charges of \$283,457 to increase our reserves for warranty claims and may have other potentially material incremental charges in the future.

In addition, potential customers may rely on our products for critical needs and a malfunction of our products could result in warranty claims or other product liability. A well-publicized actual or perceived problem could adversely affect the market's perception of our products. This could result in a decline in demand for our products, which would reduce revenue and harm our business. Further, since our products are used in systems that are made by other

manufacturers, we may be subject to product liability claims or negative market perception of our products even if our products do not malfunction.

We are highly dependent on the services of key members of our management team. Our inability to retain these individuals could impede our business plan and growth strategies, which could have a negative impact on our business and the value of your investment.

Our ability to implement our business plan depends, to a critical extent, on the continued efforts and services of key members of our management team. If we lose the services of any of these persons during this important time in our development, the loss may result in a delay in the implementation of our business plan and plan of operations. We can give no assurance that we could find satisfactory replacements for these individuals on terms that would not be unduly expensive or burdensome to us. We do not currently carry a key-man life insurance policy that would assist us in recouping our costs in the event of the death or disability of any of these persons.

Any failure by management to properly manage our expected rapid growth could have a material adverse effect on our business, operating results and financial condition.

If our business develops as expected, we anticipate that we may grow rapidly in the near future. Our failure to properly manage any such rapid growth could have a material adverse effect on our ability to retain key personnel. Our expansion could also place significant demands on our management, supply chain, operations, systems, accounting, internal controls and financial resources. If we experience difficulties in any of these areas, we may not be able to expand our business successfully or effectively manage our growth. Any failure by management to manage growth and to respond to changes in our business could have a material adverse effect on our business, financial condition and results of operations.

Backlog may not result in revenue.

We define backlog as consisting of accepted orders from customers for which an expected product delivery schedule has been specified. The purchase orders comprising backlog are not cancelable in most cases and such orders generally do not provide price protection. Nevertheless, deliveries against received purchase orders may be rescheduled within negotiated parameters or canceled in certain limited instances and our backlog may, therefore, not be indicative of revenues in any given period. From time to time, our backlog is highly concentrated with a limited number of customers. If any of these customers change their strategy, exit our target markets and/or go out of business, our backlog would be materially adversely impacted.

In particular, there is significant uncertainty around the pace and timing of growth in both the solar + storage market and the stand-alone energy storage market. For the solar + storage market, a new market, companies are beginning to install their first systems or developing their product offerings. For the stand-alone energy storage market, the customer representing a majority of our backlog in 2015 and 2016 exited the system integration business for commercial and industrial stand-alone energy storage. This customer exit had a material adverse impact on our backlog and we are currently evaluating whether to pursue legal action against this customer for unfulfilled orders.

Risks Relating to the Industry

The electric power conversion industry is competitive, has a number of well-financed incumbents and may see a significant number of new market entrants. We cannot guarantee that we can compete successfully.

We may compete against providers of PCS that are well established and have substantially greater assets, including manufacturing, marketing, and financial assets. These incumbents also have strong market share and name brand recognition in the industry. Potential competitors include ABB, Ltd., Eaton Corporation plc, Huawei , SMA , and Schneider Electric SE. Pricing and servicing, as well as the general quality, efficiency and reliability of products, are significant competitive criteria in this industry. New market entrants may offer competitive new technologies and products, and will contribute to significant price competition.

Our ability to successfully compete on each of these criteria is material to the acceptance of our products and their future profitability. In addition, the industry may resist new technology and products from suppliers that are not well capitalized with long track records of performance. Our competitors use their balance sheet and brand recognition to their competitive advantage. Should our products become commercially successful, competitors may seek to drive their own innovation and adopt or copy ideas, designs and features to regain their competitive positions. Incumbent or new competitors may develop or offer technologies and products that may be more effective or popular than our products and these competitors may be more successful in marketing their products than we are in marketing our products.

Our ability to achieve our cost reduction goals now and in the future and maintain pricing at or near the level of our competitors is critical to our long-term success and the viability of our business as, over the long-term, price is a key competitive criteria in the power electronics industry. Additionally, price competition may result in lower than expected margins for our products which would adversely affect our business prospects, financial condition and operating results.

We expect to compete on the basis of our products' technological innovation, flexibility, features and smaller footprint at a market competitive price. Unrelated technological advances in alternative energy products or other power conversion technologies may negatively impact the development of our products or make our products uncompetitive or obsolete at any time. We cannot guarantee that we will be able to compete successfully in the electric power conversion industry.

Our business is and we expect will continue to be substantially dependent on utility rate structures and government incentive programs that encourage the use of alternative energy sources. The reduction or elimination of government subsidies and economic incentives for energy-related technologies would harm our business.

The current market for, and we believe that near-term growth of, energy-related technologies, including power conversion technology, relies and will continue to rely on the availability and size of government and economic incentives and grants (including, but not limited to, the U.S. ITC and various state and local incentive programs). These incentive programs could be challenged by utility companies, or for other reasons found to be unconstitutional, and/or could be reduced or discontinued for other reasons. The reduction, elimination, or expiration of government subsidies and economic incentives would harm our business.

A combination of utility rate structures and government subsidies that encourage the use of alternative energy sources is a primary driver of demand for our products. For example, public utilities are often allowed to collect demand charges on commercial and industrial customers in addition to traditional usage charges. In addition, the federal government and many states encourage the use of alternative energy sources through a combination of direct subsidies and tariff incentives such as net metering for users that use alternative energy sources such as solar power. California also encourages alternative energy technology through its SGIP which offers rebates for businesses and consumers who adopt certain new technologies. As a result of these incentives, we believe that a substantial portion of the products we have sold have been for use by end customers in California. Other states have similar incentives and mandates which encourage the adoption of alternative energy sources. Notwithstanding the adoption of other incentive programs, we expect that California will be the most significant market for the sale of our products in the near term for stand-alone energy storage applications. Should California or another state in which we derive a substantial portion of our product revenues in the future change its utility rate structure or delay, eliminate or significantly reduce its incentive programs, demand for our products could be substantially affected, which would adversely affect our business prospects, financial condition and operating results.

For example, in 2016, we experienced a material decline in revenues compared to 2015 as a result of delays in awards under California's SGIP, which provides economic incentives for energy storage projects. Awards under the SGIP were delayed as the California Public Utility Commission, or CPUC, examined and ultimately revised the award solicitation process and other aspects of the SGIP. The revised SGIP was not finalized until July 2016, which delayed the determination of project winners and the processing of the related awards. These delays not only caused a temporary disruption in the market, as awarded projects are typically not commissioned and installed until many months after the award is granted, but also contributed to an overall stagnation in the California market for stand-alone storage that continued throughout 2017. Political changes, disruptions or gridlock, or reviews or revisions of previously announced incentive programs or procedures for making awards or administering such programs could have a material adverse impact on our financial results and future prospects.

Changes to the National Electrical Codes could adversely affect our technology and products.

Our products are installed by system integrators that must meet the National Electrical Codes, or NEC, standards, including using equipment that meets industry standards such as UL1741 SA. The NEC standards address the safety of these systems. The NEC standards, along with the UL1741 SA and IEEE1547 requirements, continue to evolve and are subject to change. If we respond to these changing standards and requirements more slowly than our competitors, or if we are unable to meet new standards and requirements, our products will be less competitive.

Some of the components of energy storage products pose potential safety risks which could create negative public perception regarding the energy storage markets.

Many energy storage products make use of lithium-ion batteries, which have been observed in certain applications, such as automotive applications, to catch fire or vent smoke and flame. Such events have raised concerns, and future events may lead to additional concerns, about the safety of lithium-ion batteries. Negative public perceptions regarding the suitability of lithium-ion batteries for energy storage applications or any future incident involving lithium-ion batteries, even if such incident does not involve our power conversion systems or relates to an application other than energy storage, could negatively impact the continued adoption of energy storage products and have a material adverse impact on our sales and our business.

Growth in our target markets largely depends on the continued decline in battery prices.

Our initial target markets of solar + storage and stand-alone energy storage and are early stage markets. Growth in these markets is highly dependent on a continued decline in battery prices as batteries represent the largest component of system cost. Any disruption in the supply of batteries resulting in higher than expected battery pricing or stagnation in the level of price declines for batteries could result in slower than expected growth in our target markets and, as a result, could have a material adverse effect on our sales and our business.

New technologies in the alternative energy industry may supplant our current products and technology in this market, which would harm our business and operations.

The alternative energy industry is subject to rapid technological change. Our future success will depend on the cutting-edge relevance of our technology, and thereafter on our ability to appropriately respond to changing technologies and changes in function of products and quality. If new technologies supplant our power conversion technology, our business would be adversely affected and we will have to revise our plan of operation.

Businesses, consumers, and utilities might not adopt alternative energy solutions as a means for providing or obtaining their electricity and power needs.

On-site distributed power generation solutions that utilize our products provide an alternative means for obtaining electricity and are relatively new methods of obtaining electrical power. There is a risk that businesses, consumers, and utilities may not adopt these new methods at levels sufficient to grow our business. Traditional electricity

distribution is based on the regulated industry model whereby businesses and consumers obtain their electricity from a government regulated utility. For alternative methods of distributed power to succeed, businesses, consumers and utilities must adopt new purchasing practices and must be willing to rely upon less traditional means of providing and purchasing electricity. As larger solar projects come online, utilities are becoming increasingly concerned with grid stability, power management and the predictable loading of such power onto the grid.

We cannot be certain that businesses, consumers, and utilities will choose to utilize on-site distributed power at levels sufficient to sustain our business. The development of a mass market for our products may be impacted by many factors which are out of our control, including:

- market acceptance of systems that incorporate our products;
- the cost competitiveness of these systems;
- regulatory requirements and government incentives; and
- the emergence of newer, more competitive technologies and products.

If a mass market fails to develop or develops more slowly than we anticipate, we may be unable to recover the costs we will have incurred to develop these products.

Our sales cycle is lengthy and variable, which makes it difficult for us to accurately forecast revenue and which may affect our quarterly results.

The sales cycle for our products is typically lengthy and unpredictable, which makes it difficult for us to accurately forecast revenues in a given period, and may cause revenue and operating results to vary significantly from period to period. We currently sell our products primarily to system integrators that integrate our products into larger “turn-key” solutions for their customers. Before system integrators agree to specify our products in their systems, the integrators engage in a lengthy and time-consuming process of testing and evaluating our equipment. This process can take from a few months to as long as a year. Even if our products are approved for use by a system integrator, the system integrator may not place an order for our equipment until the system integrator has entered into a contract with the end user for the design and installation of the system. In many cases, the system integrator is required to respond to a detailed request for proposal or to submit a proposal before a contract for the system is executed. As a result, there may be a significant period of time between the time our products are approved for use by a particular system integrator and the time we record revenue from the sale of our products. As a result of potentially lengthy sales cycles, we may have difficulty in accurately predicting our operating results for any given period, and may experience significant unanticipated fluctuations in our revenues from period to period. Any failure to achieve anticipated revenues for a period could adversely affect our operating results and the market price of our common stock.

Our revenue and operating results for any quarterly reporting period may fluctuate significantly depending on the timing of the delivery of our products.

Our revenue from product sales has resulted from the sale of a relatively low volume of units to a limited number of customers. As a result, a change in the expected delivery date for a particular customer order could have a significant impact on our quarterly revenues and operating results. Although we maintain a small finished goods inventory, in most cases products are produced for us by our contract manufacturer in response to a particular customer order. Because of our varying sales cycles, our manufacturing lead times and the limited to moderate flexibility in rescheduling delivery dates we provide to our customers, we may not be able to accurately predict the timing of the delivery of a particular order. Significant unanticipated fluctuations in our revenues from period to period could adversely affect our operating results and the market price for our common stock.

Risks Related to Owning Our Common Stock

The public market for our common stock may be volatile. This may affect the ability of our investors to sell their shares as well as the price at which they sell their shares.

The market price for the shares may be significantly affected by factors such as variations in the volume of trading activity, quarterly and yearly operating results, general trends in the alternative energy industry or other markets we serve, and changes in state or federal regulations affecting us and our industry. Furthermore, in recent years the stock market has experienced extreme price and volume fluctuations that are unrelated or disproportionate to the operating performance of the affected companies. Such broad market fluctuations may adversely affect the market price of our common stock.

We have the right to issue, and have in the past issued, shares of preferred stock. If we were to issue additional preferred stock, it may have rights, preferences and privileges that may adversely affect the common stock.

We are authorized to issue 10,000,000 shares of “blank check” preferred stock, with such rights, preferences and privileges as may be determined from time-to-time by our board of directors. Our board of directors is empowered, without stockholder approval, to issue preferred stock in one or more series, and to fix for any series the dividend rights, dissolution or liquidation preferences, redemption prices, conversion rights, voting rights, and other rights, preferences and privileges for the preferred stock. The issuance of shares of preferred stock, depending on the rights, preferences and privileges attributable to the preferred stock, could reduce the voting rights and powers of the common stock and the portion of our assets allocated for distribution to common stockholders in a liquidation event, and could also result in dilution in the book value per share of the common stock we are offering. The preferred stock could also be utilized, under certain circumstances, as a method for raising additional capital or discouraging, delaying or preventing a change in control of the Company, to the detriment of the investors in the common stock offered hereby. We cannot assure you that we will not, under certain circumstances, issue shares of our preferred stock. At December 31, 2017, we had 1,518,430 shares of non-voting preferred stock outstanding inclusive of 708,430 non-voting shares of preferred stock sold to certain investors pursuant to a private placement of common stock, preferred stock and warrants to purchase common stock completed in March 2017.

We have not paid dividends in the past and have no immediate plans to pay dividends.

We plan to reinvest all of our earnings, to the extent we have earnings, in order to market our products and to cover operating costs and to otherwise become and remain competitive. We do not plan to pay any cash dividends with respect to our securities in the foreseeable future. We cannot assure you that we would, at any time, generate sufficient surplus cash that would be available for distribution to the holders of our common stock as a dividend. Therefore, you should not expect to receive cash dividends on our common stock.

We incur significant costs as a result of being a public company that reports to the Securities and Exchange Commission and our management is required to devote substantial time to meet compliance obligations.

As a public company reporting to the Securities and Exchange Commission, or the SEC, we incur significant legal, accounting and other expenses. We are subject to reporting requirements of the Exchange Act and the Sarbanes-Oxley Act, as well as rules subsequently implemented by the SEC that impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. Our management and other personnel are required to devote a substantial amount of time to these and other new compliance initiatives. In addition, we believe these rules and regulations may make it more costly for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage in the future. As a result, it may be more difficult for us to attract and retain qualified people to serve on our board of directors, on our board committees or as executive officers.

Shares eligible for future sale may adversely affect the market for our common stock.

Sales of substantial amounts of our common stock in the public market, or the perception that these sales could occur, could cause the market price of our common stock to decline. These sales could also make it more difficult for us to sell equity or equity-related securities in the future at a time and price that we deem appropriate.

At December 31, 2017, we had 13,996,121 shares of common stock outstanding and 1,518,430 shares of preferred stock outstanding. Shares beneficially owned by our affiliates and employees are subject to volume and other restrictions under Rules 144 and 701 under the Securities Act, various vesting agreements, our insider trading policy and/or any applicable 10b5-1 trading plan. Shares that are not beneficially owned by our affiliates and employees generally can be freely sold in the public market, subject in some cases to restrictions under Rule 144.

At December 31, 2017, we had 8,837,315 potentially dilutive shares outstanding and we may grant additional options, stock-based awards and/or warrants in the future. If our stock price rises, the holders of vested options, stock-based awards or warrants may exercise their options, stock-based awards and/or warrants and sell a large number of shares. Any sale of a substantial number of shares of our common stock may have a material adverse effect on the market price of our common stock.

Our charter documents and Delaware law may inhibit a takeover that stockholders consider favorable.

Our Certificate of Incorporation, or Certificate, and bylaws and applicable provisions of Delaware law may delay or discourage transactions involving an actual or potential change in control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares, or transactions that our stockholders might otherwise deem to be in their best interests. The provisions in our Certificate and bylaws:

authorize our board of directors to issue preferred stock without stockholder approval and to designate the rights, preferences and privileges of each class; if issued, such preferred stock would increase the number of outstanding shares of our capital stock and could include terms that may deter an acquisition of us;

- limit who may call stockholder meetings;
- do not permit stockholders to act by written consent;
- do not provide for cumulative voting rights; and

provide that all vacancies may be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum.

In addition, Section 203 of the Delaware General Corporation Law may limit our ability to engage in any business combination with a person who beneficially owns 15% or more of our outstanding voting stock unless certain conditions are satisfied. This restriction lasts for a period of three years following the share acquisition. These provisions may have the effect of entrenching our management team and may deprive you of the opportunity to sell your shares to potential acquirers at a premium over prevailing prices. This potential inability to obtain a control premium could reduce the price of our common stock. See “Anti-Takeover Effects of Certain Provisions of Delaware Law and Our Charter Documents” for additional information.

If securities or industry analysts do not publish or do not continue to publish research or reports about our business, or if they issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline.

The trading market for our common stock is influenced by the research and reports that industry or securities analysts publish about us or our business. Currently, a number of securities analysts publish reports on us on a regular basis. If

any of the analysts who cover us now or in the future issue an adverse opinion regarding our stock, our stock price would likely decline. If one or more of these analysts ceases coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

ITEM 1B: UNRESOLVED STAFF COMMENTS

None.

ITEM 2: PROPERTIES

Our principal office is located at 4120 Freidrich Lane, Suite 100, Austin, Texas 78744. We lease 14,782 square feet of office and laboratory space under a triple net lease. The lease commenced on June 1, 2014 and has a term of 48 months.

ITEM 3: LEGAL PROCEEDINGS

On May 17, 2017, the Company provided Libra Industries, Inc. (Libra), its prior contract manufacturer, notice that it was in breach of the Master Supply Agreement (MSA) between the parties. On May 19, 2017, the Company received notice from Libra that the Company was allegedly in breach of the MSA. On June 23, 2017, the Company received a Notice of Arbitration from Libra alleging claims against the Company and demanding recovery for alleged damages. On July 13, 2017, the Company responded to Libra with a Notice of Defense and Counterclaim. The arbitration is governed in accordance with the CPR International Institute for Conflict Prevention and Resolution Rules for Non-Administered Arbitration by a sole arbitrator, and the parties agreed on an arbitrator in August 2017. On January 11, 2018, the Company deposed representatives of Libra. On March 7, 2018 and March 8, 2018, Libra deposed representatives of the Company. The arbitration hearing is scheduled for April 23, 2018 to April 25, 2018 in Travis County, Texas. At this time, the Company is unable to estimate the possible loss, if any, associated with this proceeding. At December 31, 2017, the Company recorded a \$100,000 accrual based on a settlement offer made by the Company to Libra. This charge is reflected within the general and administrative line item of the statement of operations.

ITEM 4:

MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5: MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is quoted under the symbol IPWR on the NASDAQ Capital Market. The table below presents the range of high and low sales prices of our common stock for the years ended December 31, 2017 and 2016.

High and low sales prices

	High	Low
Fiscal year ended December 31, 2017		
First quarter	\$3.86	\$2.00
Second quarter	\$3.25	\$2.03
Third quarter	\$3.29	\$1.91
Fourth quarter	\$2.85	\$1.10
Fiscal year ended December 31, 2016		
First quarter	\$8.13	\$3.90
Second quarter	\$6.63	\$3.73
Third quarter	\$5.60	\$4.48
Fourth quarter	\$5.60	\$2.97

As of March 23, 2018 we had 157 shareholders of record. The name, address and telephone number of our stock transfer agent is Corporate Stock Transfer, Inc., 3200 Cherry Creek South Drive, Suite 430, Denver, Colorado 80209, (303) 282-4800.

Dividends

We have not paid any cash dividends on our common stock since our inception and do not anticipate paying any cash dividends in the foreseeable future. We plan to retain our earnings, if any, to provide funds for the expansion of our business.

Recent Issuances of Unregistered Securities and Use of Proceeds

On January 27, 2017, we issued 26,743 shares of common stock to an option holder in connection with the exercise of stock options. The per share exercise price was \$0.416675. We relied on the exemption provided by Section 4(a)(2) of the Securities Act to issue the common stock.

On March 3, 2017, we closed on a definitive securities purchase agreement to sell to certain accredited investors our common stock and preferred stock together with warrants to purchase shares of common stock, or the Private Placement. In the Private Placement, each share of common stock or preferred stock was sold together with a warrant to purchase one share of common stock at a collective price of \$2.535. Investors purchased an aggregate of 5,220,826 shares of common stock and 708,430 shares of preferred stock together with warrants to purchase 5,929,256 shares of common stock in the Private Placement for aggregate gross proceeds of \$15.0 million. The warrants have an exercise price of \$2.41 per share, are non-exercisable for the first six months and will expire three years from the date of issuance. We filed a Registration Statement on Form S-3 covering the resale of the registrable securities on March 31, 2017 with the SEC which was declared effective on April 21, 2017. We relied on the exemption provided by Section 4(a)(2) of the Securities Act and the safe harbor under Rule 506(b) of the Securities Act.

Net cash proceeds were \$13.7 million after offering fees and expenses, including the placement agent fee of \$1.1 million. The placement agent also received 237,170 warrants to purchase shares of common stock as part of its placement agent fee. The placement agent warrant has an exercise price of \$2.89 per share, is non-exercisable for 12 months and has a three-year term. We have been utilizing, and expect to continue to utilize, the net proceeds from the offering for working capital and general corporate purposes.

ITEM 6:

SELECTED FINANCIAL DATA

As a smaller reporting company we are not required to provide this information.

ITEM 7: MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the audited financial statements and related notes included elsewhere in this Annual Report on Form 10-K. In addition to historical information, this discussion and analysis here and throughout this Form 10-K contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements.

Overview

Ideal Power is located in Austin, Texas. We design, market and sell electrical power conversion products using our proprietary technology called Power Packet Switching Architecture™, or PPSA™. PPSA™ is a power conversion technology that improves upon existing power conversion technologies in key product metrics, such as size and weight while providing built-in isolation and bi-directional and multi-port capabilities. PPSA™ utilizes standardized hardware with application specific embedded software. Our products are designed to be used in both on-grid and off-grid applications. Our advanced technology is important to our business and we make significant investments in research and development and protection of our intellectual property. Our PPSA™ and bi-directional switch technologies are protected by a patent portfolio of 66 US and 12 foreign issued patents at December 31, 2017.

We sell our products primarily to systems integrators as part of a larger turn-key system which enable end users to manage their electricity consumption, by reducing demand charges or fossil fuel consumption, integrating renewable energy sources and forming their own microgrid. Our products are made by contract manufacturers to our specifications, enabling us to scale production to meet demand on a cost-effective basis without requiring significant expenditures on manufacturing facilities and equipment. As our products establish a foothold in key power conversion

markets, we may begin to focus on licensing our proprietary PPSATM-based product designs to OEMs to reach more markets and customers. We may seek to build a portfolio of relationships that generate license fees and royalties from OEMs for sales of their products which integrate PPSATM.

We were founded on May 17, 2007. To date, operations have been funded primarily through the sale of common stock and, prior to our initial public offering, the issuance of convertible debt. Total revenue generated from inception to date as of December 31, 2017 amounted to \$13.2 million with approximately 20% of that revenue coming from government grants. We may continue to pursue research and development grants, if and when available, for the purpose of developing new products and improving current products.

Critical Accounting Policies

The following discussion and analysis of financial condition and results of operations is based upon our financial statements, which have been prepared in conformity with accounting principles generally accepted in the United States of America. Certain accounting policies and estimates are particularly important to the understanding of our financial position and results of operations and require the application of significant judgment by our management or can be materially affected by changes from period to period in economic factors or conditions that are outside of our control. As a result, they are subject to an inherent degree of uncertainty. In applying these policies, we use our judgment to determine the appropriate assumptions to be used in the determination of certain estimates. Those estimates are based on our historical operations, our future business plans and projected financial results, the terms of existing contracts, our observance of trends in the industry, information provided by our customers and information available from other outside sources, as appropriate. Please see Footnote 2 to our financial statements for a more complete description of our critical accounting policies.

Revenue Recognition. Revenue from product sales is recognized when the risks of loss and title pass to the customer, as specified in (1) the respective sales agreements and (2) other revenue recognition criteria as prescribed by Staff Accounting Bulletin (“SAB”) No. 101, “Revenue Recognition in Financial Statements”, as amended by SAB No. 104, “Revenue Recognition”. We generally sell our products free-on-board shipping and recognize revenue when products are shipped.

Research and Development. Research and development costs are presented as a line item under operating expenses and are expensed as incurred.

Intangible Assets. Our intangible assets are primarily related to patents. We capitalize legal costs and filing fees, if any, associated with obtaining patents on our new inventions or other intangible assets. Once the asset has been issued or placed in service, we amortize these costs over the shorter of the legal life (generally a maximum of 20 years) or its estimated economic life using the straight-line method.

Income Taxes. We account for income taxes using an asset and liability approach that allows for the recognition and measurement of deferred tax assets based upon the likelihood of realization of tax benefits in future years. Under the asset and liability approach, deferred taxes are provided for the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. A valuation allowance is provided for deferred tax assets if it is more likely than not these items will either expire before we are able to realize their benefits, or that future deductibility is uncertain. Tax benefits from an uncertain tax position are recognized only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position.

Stock-Based Compensation. We apply Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) 718, “Stock Compensation,” when recording stock based compensation. The fair value of each stock option award is estimated on the date of grant using the commonly used Black-Scholes option valuation model. The assumptions used in the Black-Scholes model are as follows:

Grant Price — The grant price is determined based on the closing share price on the date of grant.

Risk-free interest rate — The risk-free interest rate is based on the implied yield available on US Treasury securities at the time of grant with an equivalent term of the expected life of the award.

Expected lives — As permitted by SAB 107, due to our insufficient history of option activity, we utilize the simplified approach to estimate the options’ expected term, calculated as the midpoint between the vesting period and the contractual life of the award.

Expected volatility — Volatility is estimated based on the historical volatilities of comparable companies.

Expected dividend yield — Dividend yield is based on current yield at the grant date or the average dividend yield over the historical period. We have never declared or paid dividends and have no plans to do so in the foreseeable future.

We use a Monte Carlo simulation pricing model to determine the fair value of performance stock units (“PSUs”). A typical Monte Carlo exercise simulates a distribution of stock prices to yield an expected distribution of stock prices during and at the end of the performance period. The simulations are repeated many times in order to derive a probabilistic assessment of stock performance. The stock-paths are simulated using assumptions which include expected stock price volatility and risk-free interest rate.

We account for stock issued to non-employees in accordance with the provisions of FASB ASC 505-50 “Equity Based Payments to Non-Employees.” FASB ASC 505-50 states that equity instruments that are issued in exchange for the receipt of goods or services should be measured at the fair value of the consideration received or the fair value of the equity instruments issued, whichever is more reliably measurable. The measurement date occurs as of the earlier of (a) the date at which a performance commitment is reached or (b) absent a performance commitment, the date at which the performance necessary to earn the equity instruments is complete (that is, the vesting date).

Results of Operations

Comparison of the year ended December 31, 2017 to the year ended December 31, 2016

Revenues. Revenues for the year ended December 31, 2017 of \$1,212,270 were \$416,470, or 26%, lower than the \$1,628,740 we earned in revenues for the year ended December 31, 2016. The decrease was the result of lower sales into our initial target market of stand-alone energy storage. We have shifted our focus primarily to solar + storage as we believe this market is beginning to transact and meaningful revenue growth may be achievable for us in this market in the future

Cost of Revenues. Cost of revenues increased by \$301,970, or 16%, to \$2,241,682 for the year ended December 31, 2017 compared to \$1,939,712 for the year ended December 31, 2016. The increase was due to \$338,213 higher excess and obsolete, or E&O, charges, including inventory impairments, and \$167,009 higher adjustments to the Company's warranty accrual, both related to legacy products, partially offset by lower sales volumes.

Gross (Loss). Gross loss for the year ended December 31, 2017 was \$1,029,412 compared to a gross loss of \$310,972 for the year ended December 31, 2016 due to lower revenues and higher E&O charges and warranty accrual

adjustments .

Research and Development Expenses. Research and development expenses decreased by \$1,040,087, or 20%, to \$4,184,905 in the year ended December 31, 2017 from \$5,224,992 in the year ended December 31, 2016. The decrease was due primarily to lower costs associated with bi-directional power switch development and lower personnel costs in connection with a cost reduction plan initiated in April 2017.

General and Administrative Expenses. General and administrative expenses increased by \$45,912, or 1%, to \$3,789,852 in the year ended December 31, 2017 from \$3,743,940 in the year ended December 31, 2016. The increase was due primarily to higher patent impairments and a litigation accrual partially offset by lower executive bonuses and professional fees.

Sales and Marketing Expenses. Sales and marketing expenses decreased by \$288,716, or 17%, to \$1,448,517 in the year ended December 31, 2017 from \$1,737,233 in the year ended December 31, 2016. The decrease was due primarily to lower stock compensation expense and legal expenses, partially offset by higher bad debt expense.

Loss from Operations. Due to the decrease in operating expenses, our loss from operations for the year ended December 31, 2017 was \$10,452,686 or 5% lower than the \$11,017,137 loss from operations for year ended December 31, 2016.

Interest Income. Interest income decreased to \$17,588 for the year ended December 31, 2017 compared to \$36,046 for the year ended December 31, 2016.

Net Loss As a result of the decrease in our loss from operations, our net loss for the year ended December 31, 2017, was \$10,435,098 as compared to a net loss of \$10,981,091 for the year ended December 31, 2016.

Liquidity and Capital Resources

We currently do not generate enough revenue to sustain our operations. We have funded our operations through the sale of common stock and, prior to our initial public offering, the issuance of convertible debt.

As of December 31, 2017 and 2016, we had cash and cash equivalents of \$10,022,247 and \$4,204,916, respectively. Our net working capital and long-term debt at December 31, 2017 were \$9,247,272 and \$0, respectively.

Operating activities in the year ended December 31, 2017 resulted in cash outflows of \$7,415,539, which were due to the net loss for the period of \$10,435,098 offset by stock-based compensation of \$1,108,359, inventory impairment charges of \$760,785, depreciation and amortization of \$451,547 and other non-cash items of \$526,936 as well as favorable balance sheet timing of \$171,932. Operating activities in the year ended December 31, 2016 resulted in cash outflows of \$10,098,653, which were due to the net loss for the period of \$10,981,091 and unfavorable balance sheet timing of \$1,364,473, offset by stock-based compensation of \$1,517,545, depreciation and amortization of \$406,639 and other non-cash items of \$322,727.

Investing activities in the year ended December 31, 2017 and 2016 resulted in cash outflows of \$434,030 and \$750,992, respectively, for the acquisition of fixed assets and intangible assets.

In the second quarter of 2017, we implemented a cost reduction plan with the goal of reducing our cash outflows for operating and investing activities. This plan included the simplification of our product roadmap for the balance of 2017 to focus on our 30kW SunDial™ and Stabiliti™ products for the solar + storage and microgrid markets and the elimination of activities that did not present significant near-term revenue opportunities. In addition, we discontinued our legacy products, including our 125kW product, and postponed our development and certification efforts related to international markets and electric vehicle fast charging. These changes have resulted, and we believe will continue to result, in a reduced cash burn in advance of our expected revenue growth.

Financing activities in the year ended December 31, 2017 resulted in cash inflows of \$13,666,900 related primarily to our Private Placement net proceeds of \$13,657,331. In the Private Placement, each share of common stock or preferred stock was sold together with a warrant to purchase one share of common stock at a collective price of \$2.535. Investors purchased an aggregate of 5,220,826 shares of common stock and 708,430 shares of preferred stock together with warrants to purchase 5,929,256 shares of common stock in the Private Placement for aggregate gross proceeds of \$15.0 million. Net cash proceeds were \$13.7 million after offering fees and expenses, including the placement agent fee of \$1.1 million. Other financing activities in the years ended December 31, 2017 and 2016 resulted in cash inflows of \$9,569 and \$32,275, respectively, relating primarily to the exercise of stock options and warrants.

On December 1, 2014, we filed a Form S-3 shelf registration statement with the SEC. The registration statement became effective on April 27, 2015 and expires on April 27, 2018. The shelf registration statement allows us to offer up to an aggregate \$75 million of common stock, preferred stock, warrants to purchase common stock or preferred stock or any combination thereof and provides us with the flexibility over three years to potentially raise additional equity in a public or private offering on commercial terms. At December 31, 2017, our availability under this registration statement was \$58 million.

Inflation

We do not believe that inflation has had a material impact on our business and operating results during the periods presented, and we do not expect it to have a material impact in the near future, although there can be no assurances that our business will not be affected by inflation in the future.

Off-Balance Sheet Transactions

We do not have any off-balance sheet transactions.

Trends, Events and Uncertainties

Research and development of new technologies is, by its nature, unpredictable. Although we will undertake development efforts with commercially reasonable diligence, there can be no assurance that our working capital of \$9,247,272 as of December 31, 2017 will be sufficient to enable us to develop our technology to the extent needed to create future sales to sustain operations as contemplated herein. If our working capital is insufficient for this purpose, we will consider other options to continue our path to commercialization, including, but not limited to, additional financing through follow-on stock offerings, debt financing, co-development agreements, curtailment of operations, suspension of operations, sale or licensing of developed intellectual property, or other alternatives.

We cannot assure you that our technology will be adopted, that we will ever earn revenues sufficient to support our operations, or that we will ever be profitable. Furthermore, since we have no committed source of financing, we cannot assure you that we will be able to raise money as and when we need it to continue our operations. If we cannot raise funds as and when we need them, we may be required to severely curtail, or even to cease, our operations.

Other than as discussed above and elsewhere in this report, we are not aware of any trends, events or uncertainties that are likely to have a material effect on our financial condition.

ITEM 7A: QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

As a smaller reporting company we are not required to provide this information.

ITEM 8: FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Ideal Power Inc.

Opinion on the Financial Statements

We have audited the accompanying balance sheets of Ideal Power, Inc. (the "Company") as of December 31, 2017 and 2016, and the related statements of operations, stockholders' equity and cash flows, for each of the two years in the period ended December 31, 2017, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2017, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as

evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Liquidity

Since its inception, the Company has generated limited revenues from the sale of its products and has incurred significant losses from its operations. The Company has financed its operations primarily through the sale of its common stock. The Company's continued operations are dependent upon its ability to obtain adequate sources of funding through future sales, follow-on stock offerings, debt financing, co-development agreements, sale or licensing of developed intellectual property or alternatives. There can be no assurances that the Company will be successful in achieving its long-term plans.

/s/ Gumbiner Savett Inc.

We have served as the Company's auditor since 2013.

March 30, 2018

Santa Monica, California

IDEAL POWER INC.**Balance Sheets**

	December 31,	
	2017	2016
ASSETS		
Current assets:		
Cash and cash equivalents	\$10,022,247	\$4,204,916
Accounts receivable, net	221,084	378,658
Inventories, net	251,363	1,245,147
Prepayments and other current assets	283,208	312,593
Total current assets	10,777,902	6,141,314
Property and equipment, net	669,571	936,486
Intangible assets, net	2,082,014	1,905,556
Other assets	37,500	17,920
Total assets	\$13,566,987	\$9,001,276
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$449,475	\$346,767
Accrued expenses	1,081,155	1,149,129
Total current liabilities	1,530,630	1,495,896
Long-term liabilities	456,234	265,418
Total liabilities	1,986,864	1,761,314
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, \$0.001 par value; 10,000,000 shares authorized; 1,518,430 shares issued and outstanding at December 31, 2017	1,518	--
Common stock, \$0.001 par value; 50,000,000 shares authorized; 13,998,465 shares issued and 13,996,121 shares outstanding at December 31, 2017 and 9,560,896 shares issued and 9,559,213 shares outstanding at December 31, 2016, respectively	13,998	9,561
Additional paid-in capital	67,081,359	52,310,481
Treasury stock, at cost; 2,344 shares at December 31, 2017 and 1,683 shares at December 31, 2016, respectively	(7,489)	(5,915)
Accumulated deficit	(55,509,263)	(45,074,165)
Total stockholders' equity	11,580,123	7,239,962
Total liabilities and stockholders' equity	\$13,566,987	\$9,001,276

The accompanying notes are an integral part of these financial statements.

IDEAL POWER INC.

Statements of Operations

For the Year
Ended
December 31,
2017 2016