

LEVY PAUL S  
Form 4/A  
March 18, 2010

**FORM 4**

**UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549**

OMB APPROVAL

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**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person \*  
LEVY PAUL S

(Last) (First) (Middle)

C/O JLL PARTNERS, INC., 450  
LEXINGTON AVE., 31ST FLOOR

(Street)

NEW YORK, NY 10017

(City) (State) (Zip)

2. Issuer Name and Ticker or Trading Symbol  
PGT, Inc. [PGTI]

3. Date of Earliest Transaction  
(Month/Day/Year)  
03/10/2010

4. If Amendment, Date Original Filed(Month/Day/Year)  
03/12/2010

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

Director  10% Owner  
 Officer (give title below)  Other (specify below)

6. Individual or Joint/Group Filing(Check Applicable Line)  
 Form filed by One Reporting Person  
 Form filed by More than One Reporting Person

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)	4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)	5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Ownership (Instr. 4)
Common Stock, par value \$0.01 per share	03/10/2010		X	(A) 2,613,943 (1) (2)	\$ 1.5 32,092,267	I (3)	By JLL Partners Fund IV, L.P.

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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SEC 1474 (9-02)

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**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned**  
(e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)	5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)	6. Date Exercisable and Expiration Date (Month/Day/Year)	7. Title and Underlying Security (Instr. 3 and 4)
Subscription Rights (right to buy)	\$ 1.5	03/10/2010		X	2,613,943 <sup>(4)</sup>	02/12/2010 03/12/2010 <sup>(5)</sup>	Common Stock, par value \$0.01 per share

## Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
LEVY PAUL S C/O JLL PARTNERS, INC. 450 LEXINGTON AVE., 31ST FLOOR NEW YORK, NY 10017	X	X		

## Signatures

/s/ Paul S. Levy 03/18/2010

\*\*Signature of Reporting Person Date

## Explanation of Responses:

\* If the form is filed by more than one reporting person, see Instruction 4(b)(v).

\*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations. See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

(1) These shares of common stock, par value \$0.01 per share, of PGT, Inc. (the "Company") were purchased by JLL Partners Fund IV, L.P. upon exercise of subscription rights issued pro rata to holders of the Company's common stock as of the close of business on February 8, 2010, to purchase shares of the Company's common stock at a subscription price of \$1.50 per share (the "Rights Offering") under JLL Partners Fund IV, L.P.'s over-subscription privilege in the Rights Offering. This Form 4 amends the Form 4 filed on March 12, 2010, which reported the purchase of 10,719,390 shares of the Company's common stock under JLL Partners Fund IV, L.P.'s basic subscription privilege in the Rights Offering.

(2) Pursuant to the over-subscription privilege in the Rights Offering, JLL Partners Fund IV, L.P. was entitled to acquire, on a pro rata basis, a portion of any shares of the Company's common stock that were not purchased by other stockholders as of the expiration of the Rights Offering under the basic subscription privilege of the Rights Offering at the same subscription price of \$1.50 per share. On March 16, 2010, the Company and American Stock Transfer & Trust Company, LLC, as subscription agent for the Rights Offering, determined the allocation of shares of the Company's common stock under the over-subscription privilege in the Rights Offering, and JLL Partners Fund IV, L.P. was notified that it was entitled to purchase 2,613,943 additional shares of the Company's common stock.

(3) JLL Partners Fund IV, L.P. is the direct beneficial owner of 32,092,267 shares of common stock of the Company. Mr. Levy is the managing member of JLL Associates G.P. IV, L.L.C., which is the general partner of JLL Associates IV, L.P., which in turn is the general partner of JLL Partners Fund IV, L.P. Although Mr. Levy may be deemed to be an indirect beneficial owner of shares of the Company's common stock owned by JLL Partners Fund IV, L.P., Mr. Levy disclaims beneficial ownership of such shares except to the

extent of any pecuniary interest therein.

- (4) These subscription rights were exercised by JLL Partners Fund IV, L.P. under its over-subscription privilege in the Rights Offering, as described above in Notes 1 and 2.

The Rights Offering expired at 5:00 p.m., Eastern Time, on March 12, 2010. JLL Partners Fund IV, L.P. exercised its subscription rights

- (5) under its basic subscription privilege and over-subscription privilege in the Rights Offering on March 10, 2010, and was notified on March 16, 2010, of the number of shares of the Company's common stock it was entitled to purchase under its over-subscription privilege, as described above in Notes 1 and 2.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.

Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number. gn: left"> 195,497 1,526,181 1,234,678 Accumulated depreciation and amortization (459,614) (308,779) \$1,066,567 \$925,899

## Note 6 – Intangible Assets

Intangible assets, net consisted of the following:

	June 30, 2016 (unaudited)	December 31, 2015
Patents	\$ 1,467,996	\$ 1,313,269
Other intangible assets	470,870	211,394
	1,938,866	1,524,663
Accumulated amortization	(86,919 )	(57,852 )
	\$ 1,851,947	\$ 1,466,811

In 2015, the Company entered into licensing agreements which expire on February 7, 2033. The agreements provide the Company an exclusive royalty-free license associated with semiconductor power switches which enhances its intellectual property portfolio. In 2015, the Company recorded legal and acquisition costs of \$211,394 associated with the licensing agreements as other intangible assets. In March 2016, the Company recorded an additional \$259,476, associated with a patent issuance under the licensing agreements, as an other intangible asset. This amount represents the estimated present value of all future payments associated with the issued patent. The Company is amortizing the capitalized costs over the 17-year term of the agreements. For further discussion of the licensing agreement, see Footnote 8.

Amortization expense amounted to \$15,705, \$29,067 and \$5,406, \$9,963 for the three and six months ended June 30, 2016 and 2015, respectively. Amortization expense for the succeeding five years and thereafter is \$32,885 (2016), \$65,769 (2017), \$65,769 (2018), \$65,769 (2019), \$65,769 (2020), and \$854,593 (thereafter).

## Note 7 – Accrued Expenses

Explanation of Responses:

Accrued expenses consisted of the following:

	June 30, 2016 (unaudited)	December 31, 2015
Accrued compensation	\$ 338,929	\$ 616,029
Warranty reserve	244,472	358,296
Other	248,554	265,768
	\$ 831,955	\$ 1,240,093

8

**Note 8 – Commitments**Lease

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The Company has entered into a lease for 14,782 square feet of office and laboratory space located in Austin, Texas. The triple net lease has a term of 48 months and commenced on June 1, 2014. The annual base rent in the first year of the lease was \$154,324 and increases by \$3,548 in each succeeding year of the lease. In addition, the Company is required to pay its proportionate share of operating costs for the building. The Company has a one-time option to terminate the lease on May 31, 2017 with a termination payment of approximately \$99,000 if it elects to exercise this option.

At June 30, 2016, the remaining annual base rent commitments under the lease, assuming no early termination, are as follows:

Year Ended December 31,	Amount
2016	\$80,710
2017	163,489
2018	68,736
Total	\$312,935

The Company incurred rent expense of \$55,719 and \$53,166 for the three months ended June 30, 2016 and 2015, respectively. For the six months ended June 30, 2016 and 2015, the Company incurred rent expense of \$111,324 and \$107,377, respectively.

License Agreement

In 2015, the Company entered into licensing agreements which expire on February 7, 2033. Per the agreements, the Company has an exclusive royalty-free license which enhances its intellectual property portfolio related to semiconductor power switches. The agreements include both fixed and variable payments. The variable payments are a function of the number of associated patent filings pending and patents issued under the agreements. The Company will pay \$10,000 for each patent filing pending and \$20,000 for each patent issued within 20 days of December 21, 2017 and each subsequent year of the agreement, up to a maximum of \$100,000 per year (i.e. five issued patents). In March 2016, one patent associated with the agreements had been issued and the Company recorded an other intangible asset and corresponding long-term liability for the estimated present value of future payments of \$259,476.

Explanation of Responses:

This long-term liability incurred in connection with the patent issuance is a non-cash investing activity with regard to the Company's statements of cash flows.

### **Note 9 — Equity Incentive Plan**

On May 17, 2013, the Company adopted the 2013 Equity Incentive Plan (the "Plan") and reserved shares of common stock for issuance under the Plan. The Plan is administered by the Compensation Committee of the Company's Board of Directors. At June 30, 2016, 641,027 shares of common stock were available for issuance under the Plan.

During the six months ended June 30, 2016, the Company granted 37,938 stock options to Board members and 42,000 stock options to employees under the Plan. The estimated fair value of these stock options, calculated using the Black-Scholes option valuation model, was \$250,374, of which \$81,460 was recognized during the six months ended June 30, 2016.

During the six months ended June 30, 2016, the Company also granted employees 119,000 performance stock units ("PSUs") under the Plan, which are subject to the satisfaction of certain market-based and continued service conditions. The market-based vesting criteria are separated into four tranches and require that the Company achieve certain stock price targets ranging from \$10 per share to \$16 per share during the four-year period following the grant date. With certain limited exceptions, continued employment with the Company on the fourth anniversary of the grant date is required in order for the PSUs to vest. The grant-date fair value of the PSUs was \$429,293, or \$3.61 per unit, using a Monte Carlo Simulation with a four-year life, 55% volatility and a risk free interest rate of 1.5%. The fair value of these PSUs is being recognized over the vesting period and \$53,662 was recognized during the six months ended June 30, 2016.

During the six months ended June 30, 2016, 4,607 options to purchase shares of the Company's common stock were exercised resulting in net proceeds of \$23,035.

A summary of the Company's stock option activity and related information is as follows:

	Stock Options	Weighted Average Exercise Price	Weighted Average Remaining Life (in years)
Outstanding at December 31, 2015	1,332,323	\$ 6.94	8.4
Granted	79,938	\$ 6.13	
Exercised	(4,607 )	\$ 5.00	
Forfeited/Expired/Exchanged	(8,350 )	\$ 8.20	
Outstanding at June 30, 2016	1,399,304	\$ 6.90	8.0
Exercisable at June 30, 2016	663,260	\$ 6.24	7.4

At June 30, 2016, there was \$3,405,635 of unrecognized compensation cost related to non-vested equity awards granted under the Plan. That cost is expected to be recognized over a weighted average period of 2.6 years.

#### Note 10 — Warrants

During the six months ended June 30, 2016, a warrant holder exercised 3,596 warrants and paid the exercise price in cash. The Company received \$12,501 in net cash proceeds for the exercise of the warrants. At June 30, 2016, there were 1,404,406 warrants outstanding with a weighted average exercise price of \$4.57. The shares underlying the warrants have not been registered.

**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, and Section 21E of the Securities Exchange Act of 1934, as amended. 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 the 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;

emerging competition and rapidly advancing technology in our industry that may outpace our technology;

customer demand for the products we develop;

the impact of competitive or alternative products, technologies and pricing;

the timing of growth, and the growth rate of, the less mature markets we have entered or may enter in the future;

our ability to have any products we develop manufactured;

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

the impact of changes in government policy or incentives on our target markets;



general economic conditions and events and the impact they may have on us and our potential customers;

the adequacy of protections afforded to us by the patents that we own and the cost to us of maintaining, enforcing and defending those patents;

our ability to obtain, expand and maintain patent protection in the future, and to protect our non-patented intellectual property;

our exposure to and ability to defend third-party claims and challenges to our patents and other intellectual property rights;

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.

Unless otherwise stated or the context otherwise requires, the terms "Ideal Power," "we," "us," "our" and the "Company" refer to Ideal Power Inc.

## **ITEM MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS 2. OF OPERATIONS**

*The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the financial statements and related notes included elsewhere in this Quarterly Report on Form 10-Q as well as our audited 2015 financial statements and related notes included in our Annual Report on Form 10-K. In addition to historical information, the discussion and analysis here and throughout this Form 10-Q contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of certain factors, including, but not limited, to those set forth under "Risk Factors" in Part II, Item 1A of this report.*

### **OVERVIEW**

Ideal Power is located in Austin, Texas. We design, market and sell electrical power conversion products incorporating our proprietary technology called Power Packet Switching Architecture™, or PPSA. PPSA enables high efficiency power conversion by eliminating many of the heavy, passive components used in conventional power conversion products and replacing them with a unique software-enabled topology. Our products are designed to be used in both on-grid and off-grid applications. We believe our products are the only transformer-less power converters with electrical isolation certified for on-grid applications. At June 30, 2016, our technology is protected by a patent portfolio comprised of 45 US and eight foreign issued patents.

We sell our products primarily to system 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, integrate renewable energy sources and/or form 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. Our existing products that connect to the power grid are certified for UL1741 conformance. 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.

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 June 30, 2016 amounted to \$11,155,865 with approximately a quarter 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.

## **Our Technology**

We believe PPSA is the only power conversion technology on the market that provides electrical isolation without the need for the transformer that conventional power conversion systems require to connect electrical devices such as energy storage systems to the grid. Electrical isolation is at the core of PPSA.

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 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, providing true electrical isolation without the need for a transformer.

12

## Products

We have developed products commercializing PPSA and make these products available for sale both directly to customers and through distributors. We currently sell five power conversion products utilizing our patented PPSA technology. These products are described as follows:

30kW Battery Converter, which is certified for UL1741 conformance and is intended to be used for the commercial and industrial grid-tied distributed energy storage market. This battery converter is bi-directional, which means power can flow to or from batteries. This product is more efficient and approximately 1/4th to 1/8th the size and weight of similar transformer-based products.

30kW Grid-Resilient AC-DC Power Conversion System (“PCS”), which is certified for UL1741 conformance. This product is capable of power conversion in both 50Hz and 60Hz AC current environments and has the ability to form and manage a microgrid. This product is intended for customers who need a 30kW battery converter for use overseas or who need the additional capability to form a microgrid. This product is not a replacement for our 30kW battery converter but complements the existing product with additional features.

30kW Grid-Resilient AC-DC-DC Multi-Port PCS with two DC ports enabling two DC inputs, such as photovoltaic (“PV”) and batteries, with one power converter. This product is certified for UL1741 conformance. This product is capable of power conversion in both 50Hz and 60Hz AC current environments, and also has the ability to form and manage a microgrid. The key feature of this multi-port PCS is that it effectively pairs energy storage with a distributed generation resource to support critical loads or allow a building to disconnect from the utility power grid. This product received the “Electrical Energy Storage Award” for product innovation in 2014 at InterSolar Germany, the world’s largest solar exhibition, and was recognized as one of the 2015 top inverter products by Solar Power World Magazine.

125kW Grid-Resilient AC-DC PCS, which is certified for UL1741 conformance. This 125kW system has over four times the power of the 30kW product and is also able to convert in both 50Hz and 60Hz AC current environments and form and manage a microgrid. This product is a larger version of our 30kW grid-resilient AC-DC PCS for use in higher power applications.

SunDial™ 30kW solar PV string inverter with an optional bi-directional 3rd port for direct integration of solar with energy storage. The SunDial™, announced in May 2016, will feature a newly designed AC link providing true galvanic isolation from the AC to the DC ports, enabling PV installations to be either grounded or true floating. This product was recently recognized as a top 20 energy storage disruptor by PV-Tech. We intend to certify this product for UL1741 conformance with first shipments expected in September 2016.

## 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 or white-label our products 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 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. In May 2016, we executed our first licensing agreement with a Fortune Global 500 Company for our SunDial product.

## Target Markets

Currently, our three primary markets are standalone storage, which represented a majority of our sales in the six months ended June 30, 2016, PV + storage, and microgrids. Based on market studies and forecasts by Navigant Research and Zpryme Research & Consulting, these three markets combined are forecasted to grow to over \$100 Billion by 2020. Assuming that power conversion systems represent approximately 17.5% of the system cost, a Company estimate, power conversion systems such as those made by Ideal Power are forecasted to account for nearly \$18 billion of this market.

### *Stand-Alone Storage Market*

The stand-alone storage market is served by a battery energy storage system (“BESS”). BESS are racks of batteries coupled with 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 consumers or businesses and designed to enable these consumers or businesses to manage their power use, provide short term back up power and mitigate utility-imposed peak demand charges. Peak demand charges 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.

Currently, there are strong economic incentives available to commercial and industrial consumers in a limited number of US markets in the form of reduced demand charges for installing a BESS and reducing peak consumption. There is also strong regulatory support for such systems in certain markets. For example, California, the primary market for BESS today, has a Self-Generation Incentive Program, providing significant incentives for BESS projects, and has also issued a mandate for over 1,000 megawatts of new energy storage to be installed by 2020. Our 30kW and 125kW power conversion systems enable these BESS to connect to the utility power grid and, when paired with batteries, offer these customers a substantial cost saving opportunity on their monthly electric bill. This market is still in its early years and, until battery prices decline significantly, largely dependent on government support and incentives, but we have established a strong brand and market position capturing many of the initial system integrators and distributors in the US commercial and industrial storage market. Based on market studies and forecasts by Navigant Research and Zpryme Research & Consulting, this market is forecasted to grow 40% annually over the next five years and we believe it offers the highest value proposition today for our products.

We believe this market is poised to grow beyond pilot installations to higher volume installations driven by the underlying economics of BESS to commercial and industrial customers. A good indicator of this is the availability of third party financing for BESS. Several of our customers have recently signed or announced financing deals for their BESS products, including Gexpro whose PowerIQ product is being commercially financed by a subsidiary of NextEra Energy Resources (NYSE: NEE).

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 continued entrance of large, established companies to the BESS space will all contribute to accelerating market growth for stand-alone storage.

#### *PV + Storage Market*

PV has one of the lowest levelized costs of energy for new electrical generation. We expect distributed PV to continue to be a high growth business as system costs have fallen dramatically over the past several years. As such, the economics of generating PV for local consumption is expected to remain strong for several more years, especially given the investment tax credit (“ITC”) extension passed by Congress in 2015 for solar energy production. One shortcoming of these 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 such, 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 central power stations to make up for the shortfall in solar.

Our grid-resilient PCS help resolve these shortcomings. For example, when a distributed PV system is connected to a BESS that includes one of our multi-port PCS, the business will 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 grid-resilient PCS are also equipped to meet evolving utility requirements for low voltage ride through and other key operating parameters, enabling 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.

Commercial and industrial BESS are able to generate value far beyond peak demand reduction. We believe our products will become increasingly attractive to co-locate BESS with distributed PV. IHS, a global research firm with a strong renewable industry focus, forecasts that global installations of grid-tied commercial BESS coupled with PV will grow 111% annually from near obscurity in 2014 to over 600 MW PV + storage systems by 2018.

According to their research, IHS believes that systems will be deployed in two principle configurations. The present configuration is to have separate BESS and PV systems tied together through the AC wiring, which is supported by all of our current products. A second, emerging configuration will be to place the BESS and the PV system behind a single PCS with two DC inputs. This configuration is forecast to improve efficiency, reduce costs, and allow PV harvesting when operating without a utility power grid present in microgrid mode. Our grid-resilient 30kW multi-port PCS was designed specifically to enable this lower cost and more efficient second configuration.

Also according to IHS, the global PV industry is projected to grow from 45GW of annual installations in 2014 to 71GW in 2018. Providing a new generation of solutions with integrated energy storage will enable the PV industry to address new markets with high growth potential. These new PV + storage markets include providing backup power during blackouts, improving grid stability in high penetration PV areas and reducing fossil fuel consumption in remote and off-grid microgrids. In the event of a grid failure, grid-tied PV installations are not capable of operating independently. For example, during Superstorm Sandy many PV system owners were displeased to learn that their grid-tied PV installations would not power their home or business. Systems incorporating our multi-port PCS along with PV and a BESS will be capable of providing backup power during grid blackouts. We expect our multi-port PCS product to be attractive to existing customers as a low-cost system upgrade to improve integration of PV. We further expect our product to provide a competitive solution for these market requirements.

In May 2016, we announced our new SunDial™ solar PV string inverter which includes an optional bi-directional 3rd port for direct integration of solar with energy storage. According to IHS Technology, global solar PV inverter revenues were estimated at \$6.9 billion globally in 2015. The new SunDial™ system directly addresses this large established market, giving commercial and industrial PV developers and installers a competitively-priced PV inverter product today with the flexibility to seamlessly integrate energy storage today or in the future. The integration of solar and storage is already economically attractive for customers addressing high retail electricity rates, high commercial demand charges, or those located on islands and areas where selling PV power back to the grid is not supported.

The initial SunDial™ product is a 30kW system based on our PPSA technology. It is the first in a planned family of field-upgradable SunDial™ PV string inverters. An important new feature of the SunDial™ system will be a newly designed AC link providing true galvanic isolation from the AC to the DC ports, enabling PV installations to be either grounded or true floating. The new SunDial™ inverter is comparable in size and cost to today's widely used transformerless PV string inverters, but is fully isolated and offers the additional value of an optional, upgradable fully isolated bi-directional port for direct storage integration. The SunDial™ can be applied to both new PV installations and PV system retrofits where there is a desire to add energy storage to an existing array. We believe these features are the basis for Sundial's recognition as a top 20 energy storage disruptor by PV-Tech.



We plan to target commercial and industrial scale PV installations that want the optionality of adding energy storage or other DC sources at the time of installation or at any time in the future. We intend to have the 30kW product UL1741 listed as well as NEC 2014 compliant for behind-the-meter installations. We expect to start shipping this product later this year.

#### *Microgrid Market*

Over the next decade the greatest demand for new power generation capacity is likely to occur in regions such as Southeast Asia, Africa, the Middle East, and Central and South America. Remote communities and infrastructure in these regions are more likely to depend on expensive and polluting fossil fuel generation for their primary fuel supply and may not have a utility power grid in place to access high quality, reliable power.

In contrast to grid-tied BESS and PV applications that are likely to be North American installations, we believe off-grid BESS and PV opportunities will develop rapidly across these regions with the greatest demand for new power generation. IHS recently forecasted the off-grid and microgrid BESS installations with PV market to reach 400MW by 2018 with the majority of this growth coming from regions with less developed electricity infrastructure. We believe that our grid-resilient 30kW multi-port PCS offers a superior solution for these applications.

We believe that our award-winning multi-port power conversion architecture is a highly attractive solution for integrating BESS and renewables for both grid-tied and off-grid markets. Customer and industry forecasts indicate that these markets will grow dramatically in the coming years, and we expect to benefit from this growth. The benefits of our multi-port PCS in microgrid application is not limited to PV or renewable energy systems. Our products have been integrated into systems to manage a diesel generator and, in combination with batteries, to form and operate a microgrid using far less fuel, emitting far fewer pollutants, and providing better power quality than a diesel generator alone.

### **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 VFD, uninterruptible power supply, rail, wind, or EV traction drive markets. We have provided PCS to multiple EV charging system integrators for fast electric vehicle charging applications but, to date, this market has not been a primary focus for us.

We expect to announce plans to commercialize a product for the VFD market later this year and will continue to monitor all power conversion markets for opportunities to create solutions for customers and unlock the broader value of our patented technology.

### **Future Innovations**

#### *Variable Frequency Drives (“VFD”)*

Variable frequency drives control the speed of electric motors used in HVAC (heating, ventilating and air conditioning) compressors and blowers, conveyor motors, cranes, pumps, and a wide range of other products. We believe that a variable frequency drive product based on our PPSA technology could be offered as a high-efficiency alternative to traditional VFDs which suffer from similar size, weight, and heat loss inefficiencies as those of traditional power conversion systems. A PPSA-based VFD may offer medium to large low-voltage motors a high quality drive that improves efficiency, costs less to manufacture and install, and reduces electrical noise and harmonics over traditional VFDs. Such a product could potentially open up new markets for VFDs where they may not be commercially viable today due to their size, efficiency, or power quality.

In first quarter of 2016, after undergoing months of testing by independent researchers at the University of Texas Center for Electromechanics (UT CEM) alongside a popular product from one of the world's leading VFD manufacturers, our PPSA-based VFD yielded superior performance results over the existing technology. UT CEM's testing, research and comparative analysis demonstrated that our PPSA-based VFD had very low output distortion which results in quiet motor operation and preserves overall motor life. The high output distortion of a traditional VFD will degrade a motor's life when compared to the low output distortion of our PPSA-based VFD.

We are currently developing a commercialization plan to address the global VFD market which is projected to reach \$37 billion by 2026, according to Future Market Insights. We plan to initially target low voltage AC drives, which make up 71 percent of the addressable market, through licensing and alliance partnerships.

### *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 excess heat that must be dissipated. We have patented and are developing a new, highly efficient silicon switch called a bi-directional bipolar transistor ("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, we believe that the B-TRANs can improve electrical efficiency in our power converters from approximately 96.5% to levels approaching 99.0%. 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 April 2016, we announced our semiconductor fabricator successfully tested 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. The next major milestone towards commercializing the B-TRAN will be testing a fully-packaged device.

We plan to introduce the B-TRAN into the rapidly growing power semiconductor market, estimated to be \$17 billion in 2015 according to research firm IHS Technology. We believe our new B-TRAN technology can potentially address up to 50% of the power semiconductor market as a replacement for older, less efficient power switch technologies such as IGBTs and MOSFETs, as well as the newer gallium nitride (GaN) and silicon carbide (SiC) devices. Potential addressable markets for B-TRAN-based products include very low loss solid-state DC and AC contactors, electric vehicle drivetrains, variable frequency drives, solar PV inverters, bi-directional energy storage and microgrid power conversion systems, matrix converters and other power conversion products. We currently have 17 US and two foreign issued patents covering the operation, control and manufacturing of the B-TRAN device.

We expect that our intellectual property rights will continue to be a significant asset to us and our strategy is to actively pursue patent protection for our innovative technologies in the US and other commercially important global markets. As of June 30, 2016, we have 45 US and eight foreign issued patents. We have filed numerous additional pending US and foreign patent applications.

### **Critical Accounting Policies**

There have been no significant changes during the three and six months ended June 30, 2016 to the critical accounting policies disclosed in Management's Discussion and Analysis of Financial Condition and Results of Operations in our Annual Report on Form 10-K for the fiscal year ended December 31, 2015.

## Results of Operations

### Comparison of the three months ended June 30, 2016 to the three months ended June 30, 2015

*Revenues.* Revenues for the three months ended June 30, 2016 of \$322,116 were \$876,921, or 73%, lower than the \$1,199,037 we earned in revenues for the three months ended June 30, 2015. The decrease in revenue was driven by the timing of, and the variability in, the early market for standalone storage. The leading market for standalone storage, California, experienced temporary challenges surrounding the state's Self Generation Incentive Program ("SGIP"), which provides economic incentives for storage projects. Awards under SGIP were delayed as the California Public Utility Commission ("CPUC") assessed the 2016 submittal process and project winners. The delays in SGIP awards adversely affected order closure for our customers in California and thus negatively impacted our product revenue for the three months ended June 30, 2016. In July 2016, the CPUC announced its resolution of the 2016 SGIP delay, enabling funding of approximately \$70 million of new energy storage projects to proceed.

*Cost of Revenues.* Cost of revenues decreased for the three months ended June 30, 2016 to \$298,937 compared to \$1,056,138 for the three months ended June 30, 2015. The decrease was primarily due to lower unit sales volumes and was also impacted by lower production overhead.

*Gross Profit.* Gross profit for the three months ended June 30, 2016 was \$23,179 compared to \$142,899 for the three months ended June 30, 2015. The decrease was due primarily to the impact of lower product sales.

*Research and Development Expenses.* Research and development expenses increased by \$102,831, or 9%, to \$1,203,179 in the three months ended June 30, 2016 from \$1,100,348 in the three months ended June 30, 2015. The increase was due primarily to higher personnel costs of \$152,431 and stock-based compensation of \$21,248, partly offset by lower product certification costs of \$84,023, related to the timing of new product certification activities, and \$45,134 of costs associated with bi-directional power switch development.

*General and Administrative Expenses.* General and administrative expenses decreased by \$86,705, or 9%, to \$881,659 in the three months ended June 30, 2016 from \$968,364 in the three months ended June 30, 2015. The decrease was due primarily to higher capitalized software write-off of \$45,641 in the three months ended June 30, 2015 and lower personnel costs of \$36,625.

*Sales and Marketing Expenses.* Sales and marketing expenses increased by \$41,205, or 11%, to \$412,433 in the three months ended June 30, 2016 from \$371,228 in the three months ended June 30, 2015. The increase was due primarily to the higher personnel costs of \$59,482 and legal costs of \$33,736, partly offset by lower contract labor and sales representative costs of \$49,185.

*Loss from Operations.* Due to the reduction in gross profit and the slight increase in our operating expense, our loss from operations for the three months ended June 30, 2016 was \$2,474,092 or 8% higher than the \$2,297,041 loss from operations for the three months ended June 30, 2015.

*Interest Income, net.* Net interest income was \$6,615 for the three months ended June 30, 2016 compared to \$4,651 for the three months ended June 30, 2015.

*Net Loss.* As a result of a higher loss from operations, our net loss for the three months ended June 30, 2016 was \$2,467,477 as compared to a net loss of \$2,292,390 for the three months ended June 30, 2015.

**Comparison of the six months ended June 30, 2016 to the six months ended June 30, 2015**

*Revenues.* Revenues for the six months ended June 30, 2016 of \$818,760 were \$1,578,268, or 66%, lower than the \$2,397,028 we earned in revenues for the six months ended June 30, 2015. The decrease in revenue was driven by the timing of, and the variability in, the early market for standalone storage. The decrease in revenue was driven by the timing of, and the variability in, the early market for standalone storage. The leading market for standalone storage, California, experienced temporary challenges surrounding the state's SGIP, which provides economic incentives for storage projects. Awards under SGIP were delayed as the CPUC assessed the 2016 submittal process and project winners. The delays in SGIP awards adversely affected order closure for our customers in California and thus negatively impacted our product revenue for the six months ended June 30, 2016. In July 2016, the CPUC announced its resolution of the 2016 SGIP delay, enabling funding of approximately \$70 million of new energy storage projects to proceed.

*Cost of Revenues.* Cost of revenues decreased for the six months ended June 30, 2016, to \$793,691 compared to \$2,075,639 for six months ended June 30, 2015. The decrease was primarily due to lower unit sales volumes and was also impacted by lower production overhead.

*Gross Profit.* Gross profit for the six months ended June 30, 2016 was \$25,069 compared to \$321,389 for the six months ended June 30, 2015. The decrease was due primarily to the impact of lower product sales.

*Research and Development Expenses.* Research and development expenses increased by \$590,584, or 28%, to \$2,683,164 in the six months ended June 30, 2016 from \$2,092,580 in the six months ended June 30, 2015. The increase was due to higher personnel costs of \$369,053 and incremental costs associated with bi-directional power switch development of \$286,216, partly offset by product certification costs of \$106,915 and development costs for new products of \$104,517, both due to the timing of product development activities.

*General and Administrative Expenses.* General and administrative expenses decreased by \$77,151, or 4%, to \$1,801,990 in the six months ended June 30, 2016 from \$1,879,141 in the six months ended June 30, 2015. The decrease was due primarily to lower patent write-offs of \$54,516, capitalized software write-offs of \$45,641 and fair value of warrants issued for services of \$50,940, partly offset by higher stock-based compensation of \$58,683 and contract labor of \$21,461.

*Sales and Marketing Expenses.* Sales and marketing expenses decreased by \$19,217, or 2%, to \$824,963 in the six months ended June 30, 2016 from \$844,180 in the six months ended June 30, 2015.

*Loss from Operations.* Due to the increase in our operating expense and reduction in gross profit, our loss from operations for the six months ended June 30, 2016 was \$5,285,048 or 18% higher than the \$4,494,512 loss from operations for the six months ended June 30, 2015.

*Interest Income, net.* Net interest income was \$15,224 for the six months ended June 30, 2016 compared to \$9,124 for the six months ended June 30, 2015.

*Net Loss.* As a result of a higher loss from operations, our net loss for the six months ended June 30, 2016, was \$5,269,824 as compared to a net loss of \$4,485,388 for the six months ended June 30, 2015.

### **Liquidity and Capital Resources**

We 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.

At June 30, 2016, we had cash and cash equivalents of \$9,551,852. Our net working capital and long-term debt at June 30, 2016 were \$9,525,690 and \$0, respectively.



Operating activities in the six months ended June 30, 2016 resulted in cash outflows of \$5,005,375, which were due primarily to the net loss for the period of \$5,269,824 and negative working capital changes of \$761,209, partly offset by non-cash items of \$1,025,658, related primarily to stock-based compensation of \$763,326 and depreciation and amortization of \$184,279. Negative working capital changes included a \$597,855, or 113%, increase in finished goods inventory due to lower than expected product sales in the six months ended June 30, 2016. Operating activities in the six months ended June 30, 2015 resulted in cash outflows of \$3,480,931, which were due to the net loss for the period of \$4,485,388 partially offset by non-cash items of \$995,605, related primarily to stock-based compensation of \$666,434, the write-off of capitalized patents of \$103,289 and depreciation and amortization of \$80,940.

Investing activities in the six months ended June 30, 2016 and 2015 resulted in cash outflows of \$500,595 and \$538,586, respectively, for the acquisition of fixed assets and intangible assets.

Financing activities in the six months ended June 30, 2016 resulted in cash inflows of \$35,536 from the exercise of stock options and warrants. Financing activities in the six months ended June 30, 2015 resulted in cash inflows of \$16,073,297, related primarily to the issuance of 2,225,825 shares of common stock shares at a public offering price of \$7.75. Net cash proceeds after offering-related expenses were \$15,924,405. In addition, we received \$148,892 in net proceeds from the exercise of stock options.

On December 1, 2014, we filed a Form S-3 shelf registration statement with the Securities and Exchange Commission. The 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 public or private offerings on commercial terms. After the May 2015 follow-on offering, \$58 million is available to us under the registration statement.

### **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 \$9,525,690 as of June 30, 2016 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 or other 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.

### **ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

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

### **ITEM 4. CONTROLS AND PROCEDURES**

#### **Evaluation of Disclosure Controls and Procedures**

Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under the Securities Exchange Act of 1934, as amended, is accumulated and communicated to the issuer's management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Our management, with the participation of our Chief Executive Officer (principal executive officer) and our Chief Financial Officer (principal financial and accounting officer), has concluded that, as of June 30, 2016, our disclosure controls and procedures are effective.

#### **Changes in Internal Control over Financial Reporting**

There have been no other material changes in our internal controls over financial reporting that occurred during the quarter ended June 30, 2016 that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

#### **Limitations on the Effectiveness of Controls**

Control systems, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control systems' objectives are being met. Further, the design of any system of controls must reflect the fact that there are resource constraints, and the benefits of all controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of error or mistake. Control systems can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in

achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures.

## **PART II-OTHER INFORMATION**

### **ITEM 1. LEGAL PROCEEDINGS**

Not applicable.

### **ITEM 1A. RISK FACTORS**

There are no material changes from the risk factors disclosed in our 2015 Annual Report on Form 10-K.

### **ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS**

Not applicable.

### **ITEM 3. DEFAULTS UPON SENIOR SECURITIES**

Not applicable.

21

**ITEM 4. MINE SAFETY DISCLOSURES**

Not applicable.

**ITEM 5. OTHER INFORMATION**

Not applicable.

**ITEM 6. EXHIBITS**

<b>Exhibit Number</b>	<b>Document</b>
31.1	Certification of Principal Executive Officer pursuant to Exchange Act Rule, 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 *
31.2	Certification of Principal Financial Officer pursuant to Exchange Act Rule, 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 *
32.1	Certification pursuant to 18 U.S.C. 1350, adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 **
101.INS	XBRL Instant Document *
101.SCH	XBRL Taxonomy Extension Schema Document *
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document *
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document *
101.LAB	XBRL Taxonomy Extension Label Linkbase Document *
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document *

\* Filed herewith

\*\* Furnished herewith



**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the registrant, has duly, caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Dated August 12, 2016 **IDEAL POWER INC.**

By:/s/ R. Daniel Brdar  
R. Daniel Brdar  
Chief Executive Officer

By:/s/ Timothy W. Burns  
Timothy W. Burns  
Chief Financial Officer