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

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**FORM 8-K**

**CURRENT REPORT  
Pursuant to Section 13 or 15(d) of the  
Securities Exchange Act of 1934**

**Date of report (Date of earliest event reported): November 8, 2019**

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**IDEAL POWER INC.**

(Exact name of registrant as specified in Charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**001-36216**  
(Commission File No.)

**14-1999058**  
(IRS Employee Identification No.)

**4120 Freidrich Lane, Suite 100  
Austin, Texas, 78744**  
(Address of Principal Executive Offices)

**512-264-1542**  
(Issuer Telephone number)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the Registrant under any of the following provisions (see General Instruction A.2 below).

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b)).
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock	IPWR	Nasdaq Capital Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2).

Emerging growth company

If an emerging growth company, indicate by check mark if 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.

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**ITEM 7.01. REGULATION FD DISCLOSURE.**

Ideal Power Inc. (the “Company”) is filing an investor presentation dated November 2019 attached as Exhibit 99.1 to this Current Report on Form 8-K.

Also, as disclosed in the investor presentation, as of September 30, 2019, the Company had cash and cash equivalents of \$0.8 million. This amount is unaudited and preliminary, and does not present all information necessary for an understanding of the Company’s financial condition as of September 30, 2019. The Company’s estimate is based solely on information available to it as of September 30, 2019. Actual results for the quarter ended September 30, 2019 remain subject to the completion of management’s and the Company’s audit committee’s final reviews and the Company’s other financial closing procedures and the completion of the preparation of the Company’s unaudited consolidated financial statements.

The information in this Item 7.01, including the investor presentation attached as Exhibit 99.1 to this Current Report on Form 8-K, shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.

**ITEM 9.01. FINANCIAL STATEMENTS AND EXHIBITS.**

(d) *Exhibits.*

<b>Exhibit No.</b>	<b>Description</b>
<u>99.1</u>	<u>Investor Presentation.</u>

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**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this Current Report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: November 8, 2019

IDEAL POWER INC.

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

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# Investor Presentation

November 2019

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# Safe Harbor

All statements in this presentation that are not based on historical fact are "forward looking statements." While management has based any forward looking statements included in this presentation on its current expectations, the information on which such expectations were based may change.

These forward looking statements rely on a number of assumptions concerning future events and are subject to a number of risks, uncertainties and other factors, many of which are outside of our control, that could cause actual results to materially differ from such statements.

Such risks, uncertainties, and other factors include, but are not limited to, whether the patents for our technology provide adequate protection and whether we can be successful in maintaining, enforcing and defending our patents, whether demand for our products, which we believe are disruptive, will develop and whether we can compete successfully with other manufacturers and suppliers of power semiconductor products, both now and in the future, as new products are developed and marketed.

Furthermore, we operate in a highly competitive and rapidly changing environment where new and unanticipated risks may arise. Accordingly, investors should not place any reliance on forward looking statements as a prediction of actual results. We disclaim any intention to, and undertake no obligation to, update or revise forward looking statements.



# Investment Highlights

**IDEAL POWER**  
**B-TRAN**

**Disruptive Semiconductor Architecture Technology**

**Significant Cost, Size & Efficiency Improvements**

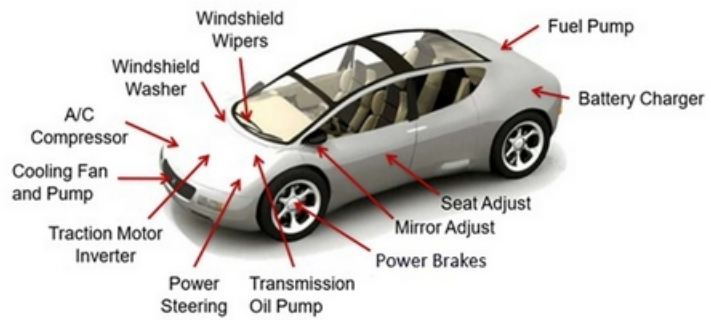
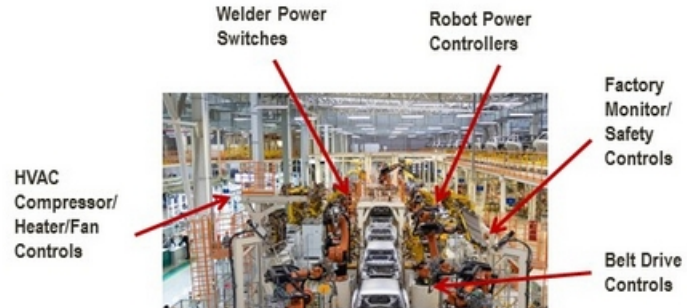
**Recently Validated Electrical Performance**

**Substrate Agnostic – Silicon, SiC, GaN**

**Broad Patent Estate – 47 Issued & 36 Pending**

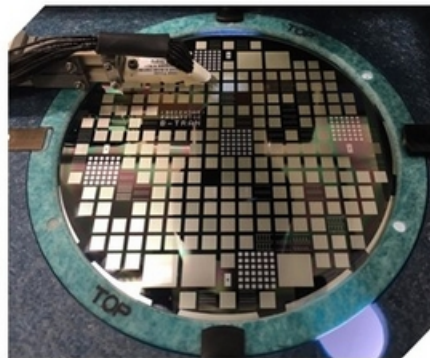
**Low Burn with Intense Focus on Signing Initial License**

# Electric Power Switching is Required Everywhere



# B-TRAN Will Address Most Power Switching Needs

- B-TRAN is a proprietary semiconductor power switch
- B-TRAN architecture has 3 compelling advantages
  - Bi-directional switching
  - Smaller, more compact designs
  - Lower losses = lower user costs
- First parts are being fabricated using mature silicon wafer bipolar processing equipment
- **New is**
  - The design (architecture)
  - Fabrication of both sides of wafers





# Validated Electrical Performance

We have validated critical performance characteristics:

	Simulation	Measured*	Next Generation
Configuration	PNP	PNP	NPN
Breakdown Voltage (V)	>1200	1240	1360
On-state Voltage (V)	0.25	0.22	0.2
Gain	2.1	2.2	6.1
Bi-directional Operation	Predicted	Confirmed conduction in both directions	Predicted

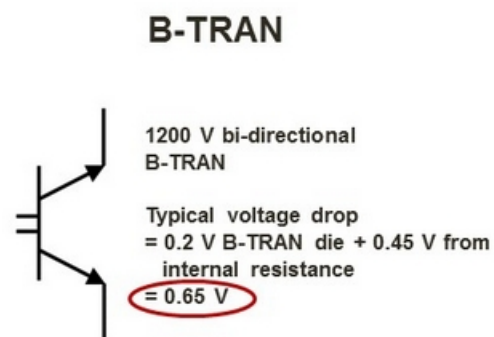
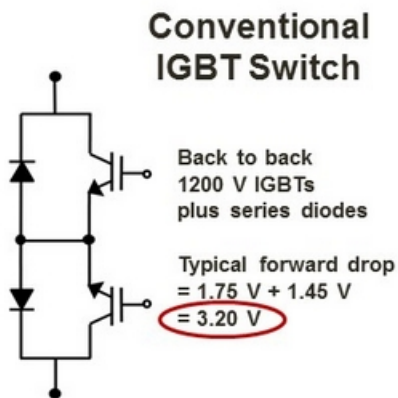


\* Results of multiple device/multiple wafer tests

# B-TRAN Bi-directional Switching

## Conduction losses ~ 5x better than IGBT + blocking diode

- B-TRAN replaces 4 devices in a bi-directional switch
- Effective forward drop < 0.65 V



# Example: B-TRAN Will Deliver Important Operating Cost Reductions

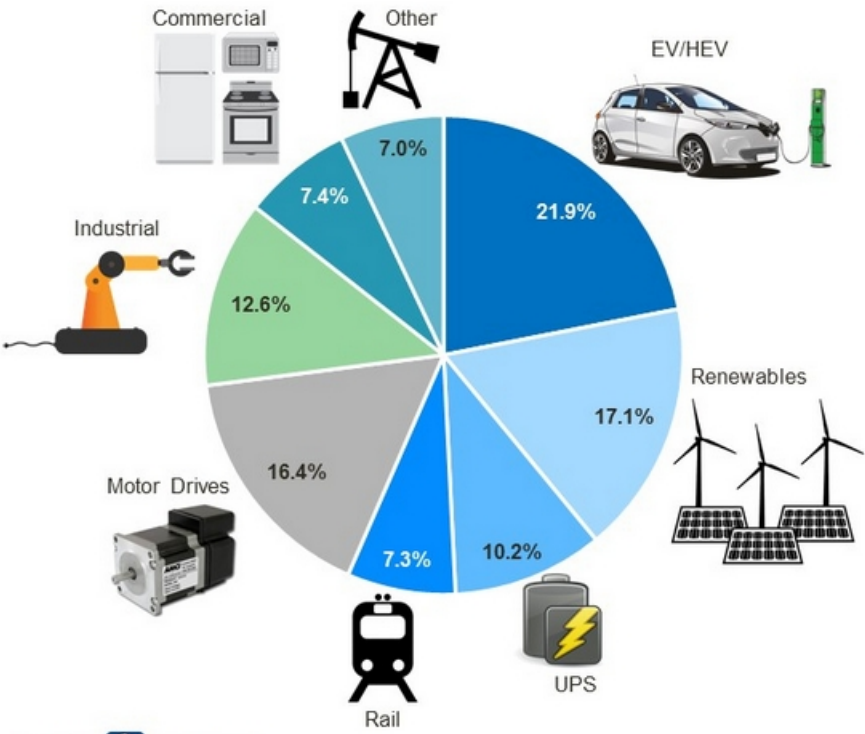
IGBT Power Switches



B-TRANS

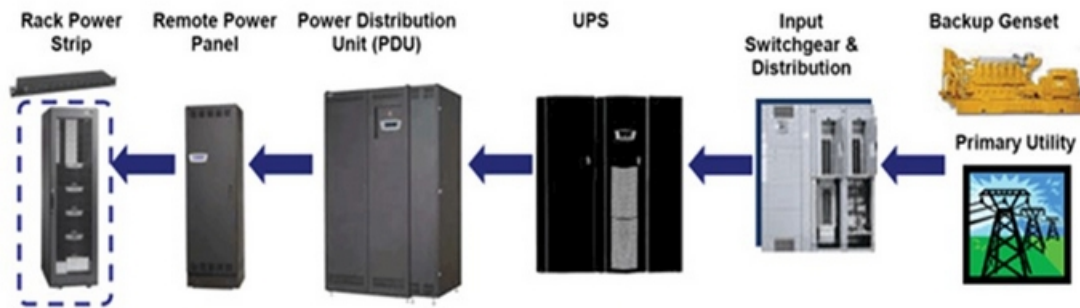


# IGBT Market



- Current \$4.9B IGBT market going to \$7.4B by 2022
- 10.6% projected CAGR
- EV/HEV segment projected to grow to nearly 50% in 2022

# Economic Driver for B-TRAN use in Data Centers



- All power for data center servers goes through a UPS system
- US data centers consume 73 billion kWh 2020 with > 13% loss
- UPS systems represent 6% of data center total energy losses<sup>1</sup>
- For a large commercial data center, improving UPS efficiency from 90% to 95% saves about \$2.2 million per year<sup>2</sup>
- \$600M/year power switch market<sup>3</sup>

<sup>1</sup> *Electrical Efficiency Measurement for Data Centers* by Neil Rasmussen

<sup>2</sup> *Assumes 50MW data center load and \$0.10/kWh electricity cost*

<sup>3</sup> *Global Insulated-Gate Bipolar Transistor Market (2016-2022)* by Mordor Intelligence



# Highly Focused Strategy



## Phase 1

### Develop Technology

- 4+ years of B-TRAN research and development
- Proven ability to manufacture functioning B-TRAN wafers
- Developed broad B-TRAN patent estate

## Q1 '20 Phase 2

### Fabricate Parts / Engage Customers

- Currently working with fabrication partners to manufacture packaged parts for bench testing
- Deliver samples to top priority UPS datacenter customers in Q1 2020 and engage with their technical teams

## Phase 3

### License Technology

- Validate B-TRAN technology
- Build rapid commercial momentum
- Potential to generate high-margin royalties on future B-TRAN sales

**Potential For Momentum To Build Quickly After Signing First License**



## Market Entry Approach for Data Centers

- Provide B-TRANS to established UPS providers
- Leverages rapidly growing market participants
- B-TRAN enables low conduction loss/high efficiency UPS
- Creates high value product/quick payback for data center operators
- UPS providers have high level power switch expertise to facilitate adoption
- Provides opportunities for a strategic relationship
- Volume sales can be served through licensing to existing power switch fabricators (Infineon, Fuji Electric, Semikron, ABB, etc.)

## Sustainable Competitive Advantage: Silicon now, Silicon Carbide next

Performance Metric	Si (Measured/Modeling Results)	SiC (Modeling Results)
Bi-directionality	Yes	Same
Switching off speed	200 nsec	~ 5x faster
Conduction losses	0.65V @ 100 amps	0.9V @ 100 amps (1.4x greater)
Maximum operating voltage	1200V	7200V (6x greater)
Maximum operating temperature	150°C	>200°C (>50°C greater)
B-TRAN Availability	Near term	Mid/long term

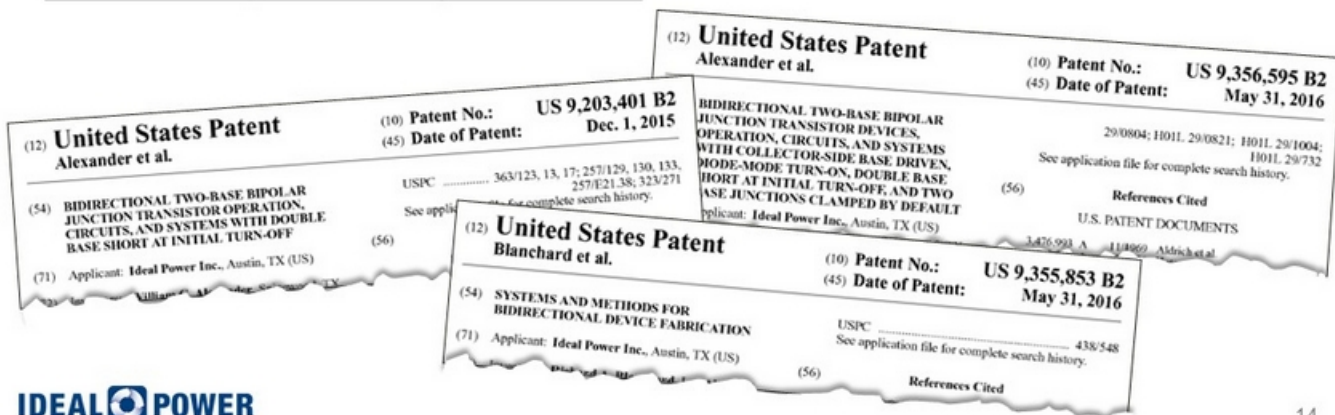


# Ideal Power's IP

Region	Issued Patents	Pending Patents
North America	35	7
Asia Pacific	4	20
Europe	8	9
<b>TOTAL</b>	<b>47</b>	<b>36</b>

## The patents cover:

- B-TRAN device architecture
- Control methodologies and techniques
- Double-sided device manufacturing techniques
- Applications specific uses of B-TRAN



# Financial Overview

## Equity Offering Provides Cash Runway Into 2021

### Cash

- Pro forma cash burn of ~\$220k / month<sup>(1)</sup>



### Capitalization

Basic Shares Outstanding	1,474,001
Options <sup>(1)</sup>	169,980
Warrants <sup>(2)</sup>	684,095
Preferred Stock <sup>(3)</sup>	81,000
<b>Fully Diluted Shares Outstanding</b>	<b>2,409,076</b>

- (1) Weighted Avg. Exercise Price = \$8.13  
 (2) Weighted Avg. Exercise Price = \$25.70  
 (3) Toothless Preferred

<sup>1</sup> Excludes any benefit from future grant income

<sup>2</sup> Assumes \$3.5mm offer size net of offering expenses



# Thank you!

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