

ACORN ENERGY, INC.
 Form 424B5
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 Registration No. 333-161315
 and Registration No. 333-165356

PROSPECTUS SUPPLEMENT
 (To Prospectus dated September 16, 2009)

2,231,818 shares of Common Stock

We are offering up to 2,231,818 shares of our common stock at a public offering price of \$5.50 per share. Our common stock is traded on the Nasdaq Global Market under the symbol "ACFN." On March 8, 2010, the closing price of our common stock on the Nasdaq Global Market was \$6.75 per share.

We are offering these shares on a best efforts basis. We have retained Merriman Curhan Ford & Co. to act as our exclusive placement agent in this offering, and we will pay fees to it in connection with this offering equal to 6.0% of the proceeds of the offering, except for shares sold to certain investors. We have also agreed to reimburse the placement agent for certain expenses incurred by it in connection with the offering. In no event will the fees and expense reimbursements received by the placement agent exceed an aggregate of 8.0% of the gross proceeds of the offering. The placement agent is not required to purchase or sell any of the shares offered by this offering, but will use its commercially reasonable efforts to sell the shares offered. Because there is no minimum offering amount required as a condition to closing in this offering, the actual public offering amount, placement agent's fee and net proceeds to us, if any, in this offering are not presently determinable and may be substantially less than the maximum offering amounts set forth below.

Investing in our securities involves a high degree of risk. See "Risk Factors" beginning on page S-4 of this prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

| | Per Share | Total |
|--|-----------|---------------|
| Public offering price | \$ 5.50 | \$ 12,274,999 |
| Placement agent's fee (1) | \$ 0.33 | \$ 736,500 |
| Proceeds to Acorn Energy, Inc. (before expenses) | \$ 5.17 | \$ 11,538,499 |

(1) Assumes all of the shares offered hereby are sold and that the placement agent receives a fee for all of the shares sold. See the section entitled "Plan of Distribution" for a full description of the compensation to be paid to the placement agent.

We estimate the total expenses of this offering, excluding the placement agent's fee, will be approximately \$240,000.

Delivery of the shares to purchasers will be made on or about March 11, 2010.

As Placement Agent

March 8, 2010

This prospectus supplement and the accompanying base prospectus, dated September 16, 2009, relate to the offer by us of 2,231,818 shares of our common stock. You should rely only on the information contained in this prospectus supplement, the accompanying base prospectus and the documents incorporated by reference herein or therein. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information contained in this prospectus supplement and the accompanying base prospectus is accurate only as of their respective dates, regardless of the time of delivery of this prospectus supplement and accompanying base prospectus or of any sale of shares. Our business, financial condition, results of operations and prospects may have changed after the date of this prospectus supplement. You should not consider this prospectus supplement or the accompanying base prospectus to be an offer or solicitation relating to the securities in any jurisdiction in which such an offer or solicitation relating to the securities is not authorized. Furthermore, you should not consider this prospectus supplement or the accompanying base prospectus to be an offer or solicitation relating to the securities if the person making the offer or solicitation is not qualified to do so, or if it is unlawful for you to receive such an offer or solicitation.

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Base Prospectus dated September 16, 2009

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ABOUT THIS PROSPECTUS SUPPLEMENT

You should carefully read this entire prospectus supplement and the accompanying base prospectus, including the information included and referred to under “Risk Factors” below, the information incorporated by reference in this prospectus supplement and in the accompanying base prospectus and the financial statements and the other information incorporated by reference in the accompanying base prospectus, before making an investment decision.

This prospectus supplement and the accompanying base prospectus are part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, using a “shelf” registration process. Under this shelf registration process, we may offer and sell any combination of securities described in the accompanying base prospectus in one or more offerings, up to a total dollar amount of \$12,275,000. The accompanying base prospectus provides you with a general description of the securities we may offer. Each time we use the accompanying base prospectus to offer securities, we will provide a prospectus supplement (such as this prospectus supplement) that will contain specific information about the terms of that offering. This prospectus supplement, the accompanying base prospectus and the documents incorporated by reference herein and therein include important information about us, the securities we are offering and placement arrangements of the offering and other information you should know before investing.

To the extent that any statement that we make in this prospectus supplement is inconsistent with statements made in the accompanying base prospectus, the statements made in this prospectus supplement modify or supersede those made in the accompanying base prospectus. You should read both this prospectus supplement and the accompanying base prospectus together with additional information described under the heading, “Where You Can Find More Information,” which are collectively referred to herein as “this prospectus.”

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the base prospectus and the registration statement of which it forms a part and the documents incorporated by reference into these documents contain forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. We use words such as “anticipates,” “believes,” “plans,” “expects,” “future,” “intends,” “will,” “foresee” and similar expressions to identify these forward-looking statements. These forward-looking statements are subject to certain known and unknown risks and uncertainties, as well as assumptions that could cause actual results to differ materially from those reflected in these forward-looking statements. Factors that might cause actual results to differ include, but are not limited to, those set forth and referenced in the section entitled “Risk Factors” beginning on page S-4 of this prospectus supplement. Readers are cautioned not to place undue reliance on any forward-looking statements contained herein, which reflect management’s opinions only as of the date hereof. Except as required by law, we undertake no obligation to revise or publicly release the results of any revision to any forward-looking statements. You are advised, however, to consult any additional disclosures we have made or will make in our reports to the SEC on Forms 10-K, 10-Q and 8-K. All subsequent written and oral forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by the cautionary statements contained in this prospectus supplement and the base prospectus.

PROSPECTUS SUPPLEMENT SUMMARY

This summary description highlights selected information contained elsewhere in this prospectus supplement or incorporated herein by reference. This summary may not contain all of the information that you should consider before buying securities in this offering. You should carefully read this entire prospectus supplement and the base prospectus, including each of the documents incorporated herein or therein by reference, before making an investment decision. As used herein, “we,” “us,” and “our” refer to Acorn Energy and its subsidiaries.

Our Company

Acorn Energy is a holding company focused on improving the efficiency and environmental impact of the energy infrastructure, fossil fuel and nuclear industries. Our operating companies are focused on three problems in the energy sector: improving the efficiency of the energy grid; reducing the risk for owners of large energy assets; and reducing the environmental impact of the energy sector. Our companies leverage advanced technologies to transform the existing energy infrastructure. We aim to acquire primarily controlling positions in companies led by promising entrepreneurs and we add value by supporting those companies with financing, branding, positioning, and strategy and business development.

Through our majority-owned operating subsidiaries and a company in which we own a significant equity interest we provide the following services:

- **SCR Catalyst and Management Services.** We provide selective catalytic reduction, or SCR, management and catalyst regeneration services for coal-fired power plants through our CoaLogix subsidiary. These services include SCR catalyst management, cleaning and regeneration as well as consulting services to help power plant operators to optimize efficiency and reduce overall nitrogen oxide compliance costs.
- **Naval and RT Solutions.** We provide sonar and acoustic related solutions for energy, defense and commercial markets with a focus on underwater site security for strategic energy installations and other real-time and embedded hardware and software development and production through our DSIT subsidiary.
- **Energy Infrastructure Software (EIS) Services.** We provide energy infrastructure software services through our Coreworx Inc. subsidiary. Coreworx is a leading provider of integrated project collaboration and advanced document management solutions for the architecture, engineering and construction markets, particularly for large capital projects in the energy industry.
- **GridSense Pty Ltd.,** in which we own a significant equity interest, provides remote monitoring and control systems to electric utilities and industrial facilities worldwide.

Our Corporate Information

Our executive offices are located at 4 West Rockland Road, Montchanin, Delaware 19710, our telephone number at that location is (302) 656-1707, and our website can be accessed at www.acornenergy.com. Information contained in our website does not constitute part of this prospectus supplement or the base prospectus.

THE OFFERING

| | |
|---|---|
| Common stock offered by us | 2,231,818 shares |
| Common stock outstanding before this offering (1) | 11,987,330 shares |
| Common stock to be outstanding after this offering (assuming sale of all 2,181,818 offered shares) | 14,219,148 shares |
| Use of proceeds | We intend to use the net proceeds received from the sale of the shares to finance in part certain pending acquisitions, for possible future acquisitions and for working capital and other general corporate purposes. See "Use of Proceeds" on page S-5. |
| Risk factors | See "Risk Factors" included and referred to on page S-4 for a discussion of factors you should carefully consider before deciding to invest in our common stock. |
| Nasdaq Global Market symbol | ACFN |

(1) Does not include: 233,306 warrants outstanding, all of which are exercisable at a price of \$4.50, and 1,421,831 options outstanding and exercisable with a weighted average exercise price of \$3.52 per share, which warrants and options, if exercised, would result in the issuance of an additional 1,655,137 shares of our common stock; and 323,334 options that are outstanding, but have not yet vested. Also does not include approximately 1,590,000 shares expected to be issued in connection with pending acquisition transactions.

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RISK FACTORS

An investment in our common stock involves a high degree of risk. Before making an investment decision you should carefully consider the risks described below and the risks and uncertainties described in our other periodic filings, including Part II, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2008, which is incorporated by reference herein, and the other information set forth or incorporated by reference in this prospectus supplement and the accompanying base prospectus. The risks and uncertainties described or incorporated by reference in this prospectus supplement and the accompanying prospectus are not the only ones we face. Additional risks and uncertainties that we are unaware of or that we believe are not material at this time could also materially adversely affect our business, financial condition or results of operations. You should also refer to our financial statements and the notes to those statements, which are incorporated by reference in this prospectus supplement.

Our use of the offering proceeds may not yield a favorable return on your investment.

We currently intend to use the net proceeds received from the sale of the securities to finance in part certain pending acquisitions, to finance possible future acquisitions and for working capital and other general corporate purposes. Our management has broad discretion over how these proceeds are used and could spend the proceeds in ways with which you may not agree. Pending the use of the proceeds in this offering, we will invest them. However, the proceeds may not be invested in a manner that yields any significant return.

As a new investor, you will incur substantial dilution from the price paid in this offering.

The offering price is substantially higher than the net tangible book value per share of our outstanding common stock. As a result, based on our capitalization as of September 30, 2009, investors purchasing common stock in this offering will incur immediate dilution of \$3.18 per share of common stock purchased, based on the offering price of \$5.50 per share. Such investors may experience additional dilution upon the exercise of outstanding stock options and warrants having exercise prices less than the per share offering price to the public in this offering. See "Dilution" on page S-6.

Our share price may decline due to the large number of shares of our common stock eligible for future sale in the public market including shares underlying warrants and options.

A substantial number of shares of our Common Stock are or could become eligible for sale in the public market as described below. Sales of a substantial number of shares of our common stock in the public market, or the possibility of these sales, may adversely affect our stock price.

As of the date hereof, 11,987,330 shares of our common stock are issued and outstanding. We have 233,306 warrants outstanding and exercisable, all of which have an exercise price of \$4.50, and 1,421,831 options outstanding and exercisable with a weighted average exercise price of \$3.52 per share, which if exercised would result in the issuance of an additional 1,655,137 shares of our common stock. An additional 323,334 options are outstanding, but have not yet vested.

Substantially all our outstanding shares and shares issuable under our outstanding options and warrants are or would be freely tradable.

In addition to the 2,231,818 shares being offered in this offering, we will be issuing approximately 1,590,000 additional shares in connection with certain previously announced pending acquisition transactions, if and when they are consummated, of which 660,000 will be freely tradable upon issuance, 735,000 will be freely tradable within six months of their issuance and the balance will be freely tradable one year after their issuance.

USE OF PROCEEDS

We estimate that the net proceeds of this offering, after deducting placement agent fees and our estimated offering expenses, will be approximately \$11.3 million, assuming all the shares offered hereby are sold and that the placement agent receives a fee for all of the shares sold.

We expect to use a portion of the net proceeds from this offering for the following: \$2.9 million to fund our CoaLogix subsidiary; up to \$3.5 million if we exercise all of our remaining options to acquire shares of US Sensor Systems, Inc.; \$1.5 million to complete our acquisition of GridSense; and \$2.0 million that we have committed to GridSense after acquisition. We plan to use the balance of the proceeds for general corporate purposes and/or to finance future acquisitions.

Our management has broad discretion as to the allocation of the net proceeds received in this offering and may use these proceeds for those purposes in the future.

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DILUTION

If you invest in our shares, your interest in the common stock contained therein will be diluted to the extent of the difference between the public offering price per share of our shares and the net tangible book value per share of our common stock after this offering. Our net tangible book value on September 30, 2009 was approximately \$19,843,000, or approximately \$1.77 per share of common stock. Net tangible book value per share is determined by dividing our net tangible book value, which consists of tangible assets less total liabilities, by the number of shares of common stock outstanding on that date. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of shares in this offering and the net tangible book value per share of common stock immediately after the completion of this offering. Without taking into account any other changes in our net tangible book value after September 30, 2009, other than to give effect to our receipt of the estimated proceeds from the sale of the maximum number of shares issuable in this offering (2,231,818 shares) at a public offering price of \$5.50 per share, less the fees due to the placement agent and our estimated offering expenses, our pro forma net tangible book value as of September 30, 2009, after giving effect to the items above, would have been approximately \$31,141,000, or \$2.32 per share. This represents an immediate increase in the net tangible book value of \$0.55 per share to existing stockholders and an immediate dilution of \$3.18 per share to anyone who purchases shares in the offering. The following table illustrates this per share dilution:

| | | | |
|--|----|------|--------|
| Public offering price per share: | | \$ | \$5.50 |
| Net tangible book value per share as of September 30, 2009 | \$ | 1.77 | |
| Increase in net tangible book value per share attributable to this offering: | \$ | 0.55 | |
| Pro forma net tangible book value per share as of September 30, 2009 after giving effect to this offering: | | \$ | 2.32 |
| Dilution per share to new investors in this offering: | | \$ | 3.18 |

The foregoing table is based 11,210,005 shares of our common stock outstanding as of September 30, 2009.

In addition, the calculations in the foregoing table do not take into account any of the following:

- 1,999,833 shares subject to outstanding options as of September 30, 2009, having a weighted average exercise price of \$3.21, 254,668 of which have been exercised through the date hereof;
- 755,961 shares subject to outstanding warrants as of September 30, 2009, having a weighted average exercise price of \$4.08, 522,655 of which have been exercised through the date hereof;
- 145,000 shares subject to options granted subsequent to September 30, 2009, having a weighted average exercise price of \$6.35

To the extent that any of our outstanding options or warrants are exercised, we grant additional options under our stock option plans or issue additional warrants, or we issue additional shares of common stock in the future, there may be further dilution to new investors.

PLAN OF DISTRIBUTION

Merriman Curhan Ford & Co., referred to as the placement agent, has entered into a placement agency agreement, dated as of March 8, 2010, with us in which it has agreed to act as placement agent in connection with the offering. Subject to the terms and conditions contained in the placement agency agreement, the placement agent is using its commercially reasonable efforts to introduce us to potential investors who will purchase the securities. The placement agent may engage selected dealers to assist in the placement of shares and Morgan Keegan & Company, Inc. has agreed to act as a selected dealer in the offering. The placement agent is not purchasing or selling any shares offered by this prospectus supplement nor is it required to arrange the purchase or sale of any specific number of shares, but has agreed to use its commercially reasonable efforts to arrange for the sale of all of the shares offered hereby. The placement agent has solicited indications of interest from investors for the full amount of the offering. We will enter into subscription agreements directly with investors in connection with this offering and we may not sell all the shares offered pursuant to this prospectus supplement.

Any compensation paid by us to the placement agent in connection with the offering of the securities offered in this prospectus supplement, and any discounts, concessions or commissions allowed by the placement agent to participating dealers, are set forth below. In no event will the total amount of compensation paid to any member of The Financial Industry Regulatory Authority upon completion of the offering exceed 8.0% of the maximum gross proceeds of such offering.

We have agreed to pay the placement agent a fee equal to 6.0% of the proceeds of this offering, except for shares sold to certain investors. The following table shows the per share and total fees we will pay to the placement agent in connection with the sale of the shares offered pursuant to this prospectus supplement assuming the sale of all of the shares offered hereby and that the placement agent receives a fee for all of the shares sold.

| | |
|-----------|-----------|
| Per Share | \$0.33 |
| Total | \$736,500 |

Because there is no minimum offering amount required as a condition to closing in this offering, the actual total offering commissions, if any, are not presently determinable and may be substantially less than the maximum amount set forth above.

We have also agreed to reimburse the placement agent, on a fully accountable basis, for all reasonable travel, legal and other out-of-pocket expenses that it incurs in connection with the offering; provided, however, that individual out-of-pocket expense items in excess of \$2,500 and out-of-pocket expenses (excluding legal expenses) in excess of \$10,000 will require our approval, such approval not to be unreasonably withheld or delayed. We have agreed to pay the reasonable fees, disbursements and other charges of counsel to the placement agent up to an aggregate of \$60,000.

Unless other arrangements are made with a particular investor, all investor funds will be delivered directly to us. We have not accepted any investor funds prior to the date of this prospectus supplement.

Our obligation to issue and sell shares to the investors is subject to the conditions set forth in the placement agency agreement, which may be waived by us at our discretion. An investor's obligation to purchase shares is subject to the conditions set forth in the subscription agreement as well, which may also be waived.

We currently anticipate that the sale of the shares of common stock offered hereby will be completed on or about March 11, 2010. At the closing, The Depository Trust Company will credit the shares of common stock to the respective accounts of the investors.

We have agreed to indemnify the placement agent and certain other persons against certain liabilities under the Securities Act.

This is a brief summary of the material provisions of the placement agency agreement and does not purport to be a complete statement of its terms and conditions. The placement agency agreement and the form of subscription agreement will be exhibits to our Form 8-K to be filed with the SEC on or about March 9, 2010, and will be incorporated by reference into the registration statement of which this prospectus supplement forms a part from and after that date. See "Where You Can Find More Information" on page S-8.

The placement agent has informed us that it will not engage in over-allotment, stabilizing transactions or syndicate covering transactions in connection with this offering.

LEGAL MATTERS

The validity of the issuance of securities offered by this prospectus supplement will be passed upon for us by Eilenberg & Krause LLP, New York, New York. Lowenstein Sandler, PC, Roseland, New Jersey has represented the placement agent in connection with the offering.

EXPERTS

The consolidated financial statements as of December 31, 2008 and 2007, and for each of the three years in the period ended December 31, 2008, incorporated in this Prospectus by reference from the Company's Annual Report on Form 10-K, have been audited by Kesselman & Kesselman, a member of PricewaterhouseCoopers International Limited, an independent registered public accounting firm, as stated in their report which is incorporated herein by reference. Such consolidated financial statements have been so included in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file reports, proxy statements and other information with the SEC. Copies of our reports, proxy statements and other information may be inspected and copied at the SEC's Public Reference Room at 100 F. Street, N.E., Washington, D.C. 20549. Copies of these materials can also be obtained by mail at prescribed rates from the Public Reference Room of the SEC, 100 F. Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an internet site that contains reports, proxy and information statements and other information regarding our company and other issuers that file electronically with the SEC. The address of the SEC internet site is www.sec.gov. This information is also available on our website at www.acornenergy.com. Information contained in our website does not constitute part of this prospectus supplement or the base prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” into this prospectus the information we have filed with the SEC. This means that we can disclose important information by referring you to those documents. All documents that we subsequently file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, prior to the termination of this offering, will be deemed to be incorporated by reference into this prospectus and to be a part hereof from the date of filing of such documents. Unless expressly incorporated into this prospectus, a Current Report (or portion thereof) furnished, but not filed, on Form 8-K shall not be incorporated by reference into this prospectus. Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We incorporate by reference the following documents that we have filed with the SEC and any filings that we will make with the SEC in the future under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act until this offering is terminated:

- Annual Report on Form 10-K for the fiscal year ended December 31, 2008;
- Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2009;
- Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2009;
- Quarterly Report on Form 10-Q, and amended on Form 10-Q/A, for the fiscal quarter ended September 30, 2009;
 - Current Report on Form 8-K filed February 19, 2009;
 - Current Report on Form 8-K filed February 25, 2009;
 - Current Report on Form 8-K filed March 16, 2009;
- Current Report on Form 8-K filed April 13, 2009 and amended on Form 8-K/A filed April 15, 2009;
 - Current Report on Form 8-K filed August 3, 2009;
 - Current Report on Form 8-K filed August 18, 2009;
 - Current Report on Form 8-K filed September 9, 2009;
 - Current Report on Form 8-K filed October 23, 2009;
 - Current Report on Form 8-K filed October 27, 2009;
 - Current Report on Form 8-K filed November 5, 2009;
 - Current Report on Form 8-K filed December 31, 2009;
- Current Report on Form 8-K filed February 24, 2010 (except for the portions thereof furnished under Item 7.01 and the exhibit referenced therein);

- Current Report on Form 8-K filed March 4, 2010; and
- The description of our Common Stock contained in our Form 8-A filed December 13, 2007.

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Copies of these filings are available free of charge by writing to Acorn Energy, Inc., 4 West Rockland Road, Montchanin, Delaware 19710, Attention: Joe B. Cogdell, Jr., Secretary, or by telephoning us at (302) 656-1707. We will also provide to each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the information that has been incorporated by reference in this prospectus supplement but not delivered with this prospectus supplement. See “Where You Can Find More Information.”

Any statement made in this prospectus supplement concerning the contents of any contract, agreement or other document is only a summary of the actual document. You may obtain a copy of any document summarized in this prospectus at no cost by writing to or telephoning us at the address and telephone number given above. Each statement regarding a contract, agreement or other document is qualified in its entirety by reference to the actual document.

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PROSPECTUS

\$12,000,000

Common Stock
Debt Securities
Warrants
Rights
Units

The securities covered by this prospectus may be offered and sold by us from time to time. When we offer securities, we will provide you with a prospectus supplement describing the specific terms of the specific issue of securities, including the offering price of the securities. You should carefully read this prospectus and the prospectus supplement relating to the specific issue of securities, together with the documents incorporated by reference into this prospectus and any prospectus supplement, before you decide to purchase any of these securities.

THIS PROSPECTUS MAY NOT BE USED TO OFFER OR SELL ANY SECURITIES UNLESS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

We may offer the securities from time to time in amounts and on terms as we may determine through public or private transactions or through other means described in the section entitled “Plan of Distribution” beginning on page 13 of this prospectus. We may offer and sell these securities to or through one or more underwriters, dealers and agents, or directly to purchasers, on a continuous or delayed basis. The applicable prospectus supplement will provide the specific terms of the plan of distribution for the securities covered by such prospectus supplement.

Our common stock is listed on The Nasdaq Global Market under the ticker symbol “ACFN.” The last reported sale price of our common stock on September 8, 2009 was \$4.55 per share. As of September 8, 2009, the aggregate market value of our outstanding common stock held by non-affiliates was approximately \$47.6 million, based on 11,187,636 shares outstanding, of which approximately 10,466,585 shares were held by non-affiliates. As of the date hereof, we have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the prior 12 calendar month period that ends on and includes the date hereof.

Investing in our securities involves a high degree of risk. See “Risk Factors” beginning on page 3 of this prospectus. You should carefully review the risks and uncertainties described under the heading “Risk Factors” contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is September 16, 2009.

You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized anyone to provide you with different or additional information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information provided by this prospectus is accurate as of any date other than the date on the front of this prospectus. Our business, financial condition, results of operations and prospects may have changed since then.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this shelf registration process, we may, from time to time, offer and/or sell the securities referenced herein in one or more offerings up to a total amount of \$12,000,000. This prospectus includes a general description of the securities we may offer. Each time we offer our securities, we will provide a prospectus supplement that will contain more specific information about the offering. The prospectus supplement may also add, update or change information contained in this prospectus. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. If there is any inconsistency between the information in this prospectus and a prospectus supplement, you should rely on the information in that prospectus supplement. In addition, a prospectus supplement may include a discussion of any risk factors in addition to those described in this prospectus. You should read both this prospectus and any accompanying prospectus supplement or free writing prospectus together with the additional information described under the headings “Where You Can Find More Information” and “Incorporation of Certain Documents by Reference.”

You should rely only on the information contained in this prospectus, any applicable prospectus supplement and those documents incorporated by reference herein. We have not authorized anyone to provide you with different information. This prospectus may only be used where it is legal to sell these securities. This prospectus is not an offer to sell, or a solicitation of an offer to buy, in any state where the offer or sale is prohibited. The information in this prospectus, any prospectus supplement or any document incorporated herein or therein by reference is accurate as of the date contained on the cover of such documents. Neither the delivery of this prospectus or any prospectus supplement, nor any sale made under this prospectus or any prospectus supplement will, under any circumstances, imply that the information in this prospectus or any prospectus supplement is correct as of any date after the date of this prospectus or any such prospectus supplement.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the registration statement of which it forms a part, any prospectus supplement and the documents incorporated by reference into these documents contain forward-looking statements within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. We use words such as “anticipates,” “believes,” “plans,” “expects,” “future,” “intends,” “will,” “foresee” and similar expressions to identify these forward-looking statements. These forward-looking statements are subject to certain known and unknown risks and uncertainties, as well as assumptions that could cause actual results to differ materially from those reflected in these forward-looking statements. Factors that might cause actual results to differ include, but are not limited to, those referenced in the section entitled “Risk Factors” beginning on page 3 of this prospectus. Readers are cautioned not to place undue reliance on any forward-looking statements contained herein, which reflect management’s opinions only as of the date hereof. Except as required by law, we undertake no obligation to revise or publicly release the results of any revision to any forward-looking statements. You are advised, however, to consult any additional disclosures we have made or will make in our reports to the SEC on Forms 10-K, 10-Q and 8-K. All subsequent written and oral forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by the cautionary statements contained in this prospectus.

ABOUT ACORN ENERGY

This summary description of us and our business highlights selected information contained elsewhere in this prospectus or incorporated herein by reference. This summary may not contain all of the information that you should consider before buying securities in this offering. You should carefully read this entire prospectus and any applicable prospectus supplement or free writing prospectus, including each of the documents incorporated herein or therein by reference, before making an investment decision. As used herein, “we,” “us,” and “our” refer to Acorn Energy and its subsidiaries.

Our Company

Acorn Energy is a holding company focused on improving the efficiency and environmental impact of the energy infrastructure, fossil fuel and nuclear industries. Our operating companies leverage advanced technologies to transform the existing energy infrastructure. We aim to acquire primarily controlling positions in companies led by promising entrepreneurs and we add value by supporting those companies with financing, branding, positioning, and strategy and business development.

Through our majority-owned operating subsidiaries and a company in which we own a significant equity interest we provide the following services:

- **SCR Catalyst and Management Services.** We provide selective catalytic reduction (“SCR”) management and catalyst regeneration services for coal-fired power plants. These services include SCR catalyst management, cleaning and regeneration as well as consulting services to help power plant operators to optimize efficiency and reduce overall nitrogen oxide compliance costs through CoaLogix’s SCR-Tech LLC subsidiary.
- **Naval and RT Solutions.** We provide sonar and acoustic related solutions for energy, defense and commercial markets with a focus on underwater site security for strategic energy installations and other real-time and embedded hardware and software development and production through our DSIT subsidiary.
- **Energy Infrastructure Software (EIS) Services.** We provide energy infrastructure software services through our Coreworx Inc. subsidiary. Coreworx is a leading provider of integrated project collaboration and advanced document management solutions for the architecture, engineering and construction markets, particularly for large capital projects in the energy industry.
- **GridSense Systems Inc.,** in which we own a significant equity interest, provides remote monitoring and control systems to electric utilities and industrial facilities worldwide.

Our Corporate Information

Our executive offices are located at 4 West Rockland Road, Montchanin, Delaware 19710, our telephone number at that location is (302) 656-1707, and our website can be accessed at www.acornenergy.com. Information contained in our website does not constitute part of this prospectus.

RISK FACTORS

An investment in our securities involves a high degree of risk. You should carefully consider the specific risks described under the heading “Risk Factors” in the applicable prospectus supplement, and under the caption “Risk Factors” in any of our filings with the SEC pursuant to Sections 13(a), 14 or 15(d) of the Exchange Act, which are incorporated herein by reference, before making an investment decision. Each of the risks described could adversely and materially affect our business, financial conditions and operating results. As a result, the trading price of our common stock could decline and you may lose all or a part of your investment in our common stock. For more information see “Where You Can Find More Information” and “Incorporation of Certain Documents By Reference,” on page 16 of this prospectus.

USE OF PROCEEDS

Unless we state otherwise in the applicable prospectus supplement accompanying this prospectus, we expect to add substantially all of the net proceeds of the sale of securities by us to our general funds for general corporate purposes, including working capital, the repayment or reduction of long-term and short-term debt and possible acquisitions. We may invest funds that we do not immediately require in short-term marketable securities.

From time to time, we may engage in additional public or private financings of a character and amount which we may deem appropriate.

SECURITIES WE MAY OFFER

We may, from time to time offer under this prospectus, separately or together:

- common stock;
- debt securities;
- warrants to purchase securities;
- rights to purchase common stock; and
- units.

The aggregate initial offering price of the offered securities will not exceed \$12,000,000.

DESCRIPTION OF CAPITAL STOCK

General

Our Certificate of Incorporation, as amended, (the "Certificate of Incorporation") authorizes 20,000,000 shares of capital stock, all of which has been designated as common stock, \$.01 par value per share. We do not have any authorized preferred stock. The foregoing and the following description of capital stock give effect to the Certificate of Incorporation and the provisions of the applicable Delaware law.

Common Stock

The holders of common stock are entitled to one vote per share on all matters to be voted upon by the stockholders. The holders of common stock are entitled to receive ratably any dividends that may be declared from time to time by the board of directors out of funds legally available for that purpose. In the event of our liquidation, dissolution or winding up, the holders of our common stock are entitled to share ratably in all assets remaining after payment of liabilities. The common stock has no preemptive or conversion rights or other subscription rights.

Warrants and Options

As of August 31, 2009, warrants to purchase 778,334 shares of our common stock at a weighted average exercise price of \$4.07 per share, and options to purchase 1,999,833 shares of our common stock at a weighted average exercise price of \$3.21 per share, were outstanding.

Anti-Takeover Provisions

Our By-Laws establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to the board of directors. At an annual meeting, stockholders may consider a proposal or nomination by a person who was a stockholder of record on the record date for the meeting, who is entitled to vote at the meeting and who has given to the Secretary timely written notice, in proper form, of his or her intention to bring that business before the meeting. Our By-laws do not give the board of directors the power to approve or disapprove stockholder nominations of candidates or proposals regarding other business to be conducted at a special or annual meeting of the stockholders. However, our By-laws may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed. These provisions may also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us.

Under Delaware law, a special meeting of stockholders may be called by the board of directors or by any other person authorized to do so in our Certificate of Incorporation or our By-Laws. Our By-Laws authorize only our board of directors or our President to call a special meeting of stockholders. Because our stockholders do not have the right to call a special meeting, a stockholder could not force stockholder consideration of a proposal over the opposition of the board of directors by calling a special meeting of stockholders prior to such time as a majority of the board of directors believed or the President believed the matter should be considered or until the next annual meeting provided that the requestor met the notice requirements. The restriction on the ability of stockholders to call a special meeting means that a proposal to replace the board also could be delayed until the next annual meeting.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer and Trust Company LLC, 59 Maiden Lane, Plaza Level, New York, NY 10038.

DESCRIPTION OF DEBT SECURITIES

This prospectus describes the general terms and provisions of the debt securities we may offer and sell by this prospectus. When we offer to sell a particular series of debt securities, we will describe the specific terms of the series in a prospectus supplement. We will also indicate in the prospectus supplement whether the general terms and provisions described in this prospectus apply to a particular series of debt securities.

We may offer under this prospectus up to \$12,000,000 in aggregate principal amount of debt securities, or if debt securities are issued at a discount, or in a foreign currency or composite currency, such principal amount as may be sold for an initial offering price of up to \$12,000,000. We may offer debt securities in the form of either senior debt securities or subordinated debt securities. The senior debt securities and the subordinated debt securities are together referred to in this prospectus as the “debt securities.” Unless otherwise specified in a prospectus supplement, the senior debt securities will be our direct, unsecured obligations and will rank equally with all of our other unsecured and unsubordinated indebtedness. The subordinated debt securities generally will be entitled to payment only after payment of our senior debt.

The debt securities will be issued under an indenture between us and a trustee, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. We have summarized the general features of the debt securities to be governed by the indenture. The summary is not complete. The executed indenture will be incorporated by reference from a report on Form 8-K. We encourage you to read the indenture, because the indenture, and not this summary, will govern your rights as a holder of debt securities. Capitalized terms used in this summary will have the meanings specified in the indenture. References to “we,” “us” and “our” in this section, unless the context otherwise requires or as otherwise expressly stated, refer to Acorn Energy, Inc., excluding its subsidiaries.

Additional Information

The terms of each series of debt securities will be established by or pursuant to a resolution of our board of directors, or a committee thereof, and set forth or determined in the manner provided in an officers’ certificate or by a supplemental indenture. The particular terms of each series of debt securities will be described in a prospectus supplement relating to such series, including any pricing supplement.

We may issue an unlimited amount of debt securities under the indenture, and the debt securities may be in one or more series with the same or various maturities, at par, at a premium or at a discount. Except as set forth in any prospectus supplement, we will also have the right to “reopen” a previous series of debt securities by issuing additional debt securities of such series without the consent of the holders of debt securities of the series being reopened or any other series. Any additional debt securities of the series being reopened will have the same ranking, interest rate, maturity and other terms as the previously issued debt securities of that series. These additional debt securities, together with the previously issued debt securities of that series, will constitute a single series of debt securities under the terms of the applicable indenture.

We will set forth in a prospectus supplement, including any pricing supplement, relating to any series of debt securities being offered, the aggregate principal amount and other terms of the debt securities, which will include some or all of the following:

- the title;

- any limit on the amount that may be issued;

- whether or not we will issue the series of debt securities in global form, and, if so, the terms and the name of the depository;

- the maturity date;

- the interest rate, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;

- whether or not the debt securities will be secured or unsecured, and the terms of any securities;

- classification as senior or subordinated debt securities;

- in the case of subordinated debt securities, the degree, if any, to which the subordinated debt securities of the series will be senior to or be subordinated to other indebtedness of our in right of payment, whether the other indebtedness is outstanding or not;

- the terms on which any series of debt securities may be convertible into or exchangeable for our common stock or other of our securities, including (a) provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option and (b) provisions pursuant to which the number of shares of common stock or other securities of ours that the holders of the series of debt securities receive would be subject to adjustment;

- the place where payments will be payable;

- our right, if any, to defer payment of interest and the maximum length of any such deferral period;

- the date, if any, after which, and the price at which, we may, at our option, redeem the series of debt securities pursuant to any optional redemption provisions;

- the date, if any, on which, and the price at which we are obligated, pursuant to any mandatory sinking fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities;

- whether the indenture will restrict our ability to pay dividends, or will require us to maintain any asset ratios or reserves;

- whether we will be restricted from incurring any additional indebtedness;

- any listing of a series of debt securities on a securities exchange or market;

- the denominations in which we will issue the series of debt securities, if other than denominations of \$1,000 and any integral multiple thereof; and

- any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities.

We will provide information on the applicable United States income tax considerations and other special considerations applicable to any of these debt securities in the applicable prospectus supplement.

If we denominate the purchase price of any of the debt securities in a foreign currency or currencies or a foreign currency unit or units, or if the principal of, and premium and interest on, any series of debt securities is payable in a foreign currency or currencies or a foreign currency unit or units, we will provide you with information on the restrictions, elections, general tax considerations, specific terms and other information with respect to that issue of debt securities and such foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement.

Transfer And Exchange

Each debt security will be represented by either one or more global securities registered in the name of The Depository Trust Company, as Depository, or a nominee (we will refer to any debt security represented by a global debt security as a “book-entry debt security”), or a certificate issued in definitive registered form (we will refer to any debt security represented by a certificated security as a “certificated debt security”) as set forth in the applicable prospectus supplement.

You may transfer or exchange certificated debt securities at any office we maintain for this purpose in accordance with the terms of the indenture. No service charge will be made for any transfer or exchange of certificated debt securities, but we may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection with a transfer or exchange.

You may effect the transfer of certificated debt securities and the right to receive the principal of, and any premium and interest on, certificated debt securities only by surrendering the certificate representing those certificated debt securities and either reissuance by us or the trustee of the certificate to the new holder or the issuance by us or the trustee of a new certificate to the new holder.

No Protection in the Event of a Change of Control

Unless we state otherwise in the applicable prospectus supplement, the debt securities will not contain any provisions which may afford holders of the debt securities protection in the event we undergo a change in control or in the event of a highly leveraged transaction (whether or not such transaction results in a change in control) which could adversely affect holders of debt securities.

Covenants

We will set forth in the applicable prospectus supplement any restrictive covenants applicable to any issue of debt securities.

Consolidation, Merger and Sale of Assets

We may not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of our properties and assets to, any person, which we refer to as a successor person, unless:

- we are the surviving corporation or the successor person (if other than us) expressly assumes our obligations on the debt securities and under the indenture;
-

immediately after giving effect to the transaction, no event of default, and no event which, after notice or lapse of time, or both, would become an event of default, shall have occurred and be continuing under the indenture; and

- certain other conditions are met, including any additional conditions described in the applicable prospectus supplement.

Events of Default

Event of default means, with respect to any series of debt securities, any of the following:

- default in the payment of any interest upon any debt security of that series when it becomes due and payable, and continuance of that default for a period of 30 days (unless the entire amount of the payment is deposited by us with the trustee or with a paying agent prior to the expiration of the 30-day period);
- default in the payment of principal of or premium on any debt security of that series when due and payable;
- default in the performance or breach of any other covenant or warranty by us in the indenture (other than a covenant or warranty that has been included in the indenture solely for the benefit of a series of debt securities other than that series), which default continues uncured for a period of 90 days after we receive written notice from the trustee or we and the trustee receive written notice from the holders of not less than a majority in principal amount of the outstanding debt securities of that series as provided in the indenture;
 - certain events of bankruptcy, insolvency or reorganization of our company; and
- any other event of default provided with respect to debt securities of that series that is described in the applicable prospectus supplement.

No event of default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an event of default with respect to any other series of debt securities. The occurrence of an event of default may constitute an event of default under our bank credit agreements in existence from time to time. In addition, the occurrence of certain events of default or an acceleration under the indenture may constitute an event of default under certain of our other indebtedness outstanding from time to time.

If an event of default with respect to debt securities of any series at the time outstanding occurs and is continuing, then the trustee or the holders of not less than a majority in principal amount of the outstanding debt securities of that series may, by a notice in writing to us (and to the trustee if given by the holders), declare to be due and payable immediately the principal (or, if the debt securities of that series are discount securities, that portion of the principal amount as may be specified in the terms of that series) of, and accrued and unpaid interest, if any, on all debt securities of that series. In the case of an event of default resulting from certain events of bankruptcy, insolvency or reorganization, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding debt securities will become and be immediately due and payable without any declaration or other act on the part of the trustee or any holder of outstanding debt securities. At any time after a declaration of acceleration with respect to debt securities of any series has been made, but before a judgment or decree for payment of the money due has been obtained by the trustee, the holders of a majority in principal amount of the outstanding debt securities of that series may rescind and annul the acceleration if all events of default, other than the non-payment of accelerated principal and interest, if any, with respect to debt securities of that series, have been cured or waived as provided in the indenture. We refer you to the prospectus supplement relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an event of default.

The indenture provides that the trustee will be under no obligation to exercise any of its rights or powers under the indenture at the request of any holder of outstanding debt securities, unless the trustee receives indemnity satisfactory to it against any loss, liability or expense. Subject to certain rights of the trustee, the holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to the debt securities of that series.

No holder of any debt security of any series will have any right to institute any proceeding, judicial or otherwise, with respect to the indenture or for the appointment of a receiver or trustee, or for any remedy under the indenture, unless:

- that holder has previously given to the trustee written notice of a continuing event of default with respect to debt securities of that series; and
- the holders of at least a majority in principal amount of the outstanding debt securities of that series have made written request, and offered reasonable indemnity, to the trustee to institute the proceeding as trustee, and the trustee has not received from the holders of a majority in principal amount of the outstanding debt securities of that series a direction inconsistent with that request and has failed to institute the proceeding within 60 days.

Notwithstanding the foregoing, the holder of any debt security will have an absolute and unconditional right to receive payment of the principal of, and any premium and interest on, that debt security on or after the due dates expressed in that debt security and to institute suit for the enforcement of payment.

If any securities are outstanding under the indenture, the indenture requires us, within 120 days after the end of our fiscal year, to furnish to the trustee a statement as to compliance with the indenture. The indenture provides that the trustee may withhold notice to the holders of debt securities of any series of any default or event of default (except in payment on any debt securities of that series) with respect to debt securities of that series if it in good faith determines that withholding notice is in the interest of the holders of those debt securities.

Modification And Waiver

We may modify and amend the indenture with the consent of the holders of at least a majority in principal amount of the outstanding debt securities of each series affected by the modifications or amendments. We may not make any modification or amendment without the consent of the holders of each affected debt security then outstanding if that amendment will:

- reduce the amount of debt securities whose holders must consent to an amendment or waiver;
- reduce the rate of or extend the time for payment of interest (including default interest) on any debt security;
- reduce the principal of, or premium on, or change the fixed maturity of, any debt security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation with respect to any series of debt securities;
 - reduce the principal amount of discount securities payable upon acceleration of maturity;

- waive a default in the payment of the principal of, or premium or interest on, any debt security (except a rescission of acceleration of the debt securities of any series by the holders of at least a majority in aggregate principal amount of the then outstanding debt securities of that series and a waiver of the payment default that resulted from such acceleration);
- make the principal of, or premium or interest on, any debt security payable in currency other than that stated in the debt security;
- make any change to certain provisions of the indenture relating to, among other things, the right of holders of debt securities to receive payment of the principal of, and premium and interest on, those debt securities and to institute suit for the enforcement of any such payment and to waivers or amendments; or
 - waive a redemption payment with respect to any debt security.

Except for certain specified provisions, the holders of at least a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all debt securities of that series waive our compliance with provisions of the indenture. The holders of a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all the debt securities of such series waive any past default under the indenture with respect to that series and its consequences, except a default in the payment of the principal of, or any premium or interest on, any debt security of that series or in respect of a covenant or provision, which cannot be modified or amended without the consent of the holder of each outstanding debt security of the series affected; provided, however, that the holders of a majority in principal amount of the outstanding debt securities of any series may rescind an acceleration of the debt securities of such series and its consequences, including any related payment default that resulted from the acceleration.

Discharging Our Obligations

We may choose to either discharge our obligations on the debt securities of any series in a legal defeasance, or to release ourselves from our covenant restrictions on the debt securities of any series in a covenant defeasance. We may do so at any time after we deposit with the trustee sufficient cash or government securities to pay the principal, interest, any premium and any other sums due to the stated maturity date or a redemption date of the debt securities of the series. If we choose the legal defeasance option, the holders of the debt securities of the series will not be entitled to the benefits of the indenture except for registration of transfer and exchange of debt securities, replacement of lost, stolen, destroyed or mutilated debt securities, conversion or exchange of debt securities, sinking fund payments and receipt of principal and interest on the original stated due dates or specified redemption dates.

We may discharge our obligations under the indenture or release ourselves from covenant restrictions only if, in addition to making the deposit with the trustee, we meet some specific requirements. Among other things:

- we must deliver an opinion of our legal counsel that the discharge will not result in holders having to recognize taxable income or loss or subject them to different tax treatment. In the case of legal defeasance, this opinion must be based on either an IRS letter ruling or change in federal tax law;
 - we may not have a default on the debt securities discharged on the date of deposit;
 - the discharge may not violate any of our agreements; and

- the discharge may not result in our becoming an investment company in violation of the Investment Company Act of 1940.

Governing Law

The indenture and the debt securities will be governed by, and construed in accordance with, the internal laws of the State of New York, without regard to conflict of law principles that would result in the application of any law other than the laws of the State of New York.

DESCRIPTION OF WARRANTS

We may issue, either separately or together with other securities, warrants for the purchase of any securities, including any combination of common stock or debt securities that we may sell under this prospectus. Warrants may be issued separately or together with other securities.

The warrants will be issued under warrant agreements to be entered into between us and the warrant holder as set forth in the applicable prospectus supplement relating to any or all warrants with respect to which this prospectus is being delivered. Copies of the form of agreement for each warrant, which we refer to collectively as “warrant agreements,” including the forms of certificates representing the warrants, which we refer to collectively as “warrant certificates,” and reflecting the provisions to be included in such agreements that will be entered into with respect to a particular offering of each type of warrant, will be filed with the SEC and incorporated by reference as exhibits to the registration statement of which this prospectus is a part or as an exhibit to a Current Report on Form 8-K.

The following description sets forth certain general terms and provisions of the warrants to which any prospectus supplement may relate. The particular terms of the warrants to which any prospectus supplement may relate and the extent, if any, to which the general provisions may apply to the warrants so offered will be described in the applicable prospectus supplement. To the extent that any particular terms of the warrants, warrant agreements or warrant certificates described in a prospectus supplement differ from any of the terms described in this section, then the terms described in this section will be deemed to have been superseded by that prospectus supplement. We encourage you to read the applicable warrant agreement and certificate for additional information before you purchase any of our warrants.

General

The prospectus supplement will describe the terms of the warrants with respect to which this prospectus is being delivered, as well as the related warrant agreement and warrant certificates, including the following, where applicable:

• the principal amount of, or the number of, securities, as the case may be, purchasable upon exercise of each warrant and the initial price at which the principal amount or number of securities, as the case may be, may be purchased upon such exercise;

• the designation and terms of the securities, if other than common stock, purchasable upon exercise of the warrants and of any securities, if other than common stock, with which the warrants are issued;

- the procedures and conditions relating to the exercise of the warrants;

• the date, if any, on and after which the warrants, and any securities with which the warrants are issued, will be separately transferable;

- the offering price, if any, of the warrants;
- the date on which the right to exercise the warrants will commence and the date on which that right will expire;
- if applicable, a discussion of the material United States federal income tax considerations applicable to the exercise of the warrants;
- whether the warrants represented by the warrant certificates will be issued in registered or bearer form and, if registered, where they may be transferred and registered;
 - call provisions, if any, of the warrants;
 - antidilution provisions, if any, of the warrants; and
 - any other material terms of the warrants.

The description of warrants in the prospectus supplement will not necessarily be complete and will be qualified in its entirety by reference to the warrant agreement and warrant certificate relating to the warrants being offered.

Exercise of Warrants

Each warrant will entitle the holder to purchase for cash that principal amount of, or number of, securities, as the case may be, at the exercise price set forth in, or to be determined as set forth in, the applicable prospectus supplement relating to the warrants. If mentioned in the relevant prospectus supplement, securities may be surrendered as all or part of the exercise of the warrants. Unless otherwise specified in the applicable prospectus supplement, warrants may be exercised as indicated in the applicable prospectus supplement at any time up to the close of business, New York City time, on the expiration date set forth in the applicable prospectus supplement. After the close of business, New York City time, on the expiration date, unexercised warrants will become void. Upon receipt of payment and the warrant certificate properly completed and duly executed, we will, as soon as practicable, issue the securities purchasable upon exercise of the warrant. If less than all of the warrants represented by the warrant certificate are exercised, a new warrant certificate will be issued for the remaining amount of warrants.

No Rights of Security Holder Prior to Exercise

Before the exercise of their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon the exercise of the warrants, and will not be entitled to, among other things, vote or receive dividend payments or similar distributions on the securities purchasable upon exercise.

Exchange of Warrant Certificates

Warrant certificates may be exchangeable for new warrant certificates of different denominations as indicated in the applicable prospectus supplement.

DESCRIPTION OF RIGHTS

We may issue rights to our stockholders for the purchase of shares of our common stock. Each series of rights will be issued under a separate rights agreement to be entered into between our company and a bank or trust company, as rights agent, all as set forth in the prospectus supplement relating to the particular issue of rights. The rights agent will act solely as an agent of our company in connection with the certificates relating to the rights of such series and will not assume any obligation or relationship of agency or trust for or with any holders of rights certificates or beneficial owners of rights. The rights agreement and the form of rights certificate relating to each series of rights will be filed with the SEC and incorporated by reference as an exhibit to the registration statement of which this prospectus is a part or as an exhibit to a Current Report on Form 8-K. We encourage you to read the applicable rights agreement and form of rights certificate before you purchase any of our rights.

DESCRIPTION OF UNITS

We may issue units to purchase one or more of the securities referenced herein. The terms of such units will be set forth in a prospectus supplement. The form of units and the applicable unit agreement will be filed with the SEC and incorporated by reference as exhibits to the registration statement of which this prospectus is a part or as an exhibit to a Current Report on Form 8-K. We encourage you to read the applicable unit agreement and form of unit before you purchase any of our units.

PLAN OF DISTRIBUTION

We may sell the offered securities (1) through underwriters or dealers; (2) directly to purchasers, including our affiliates and shareholders, or in a rights offering; (3) through agents; or (4) through a combination of any of these methods. The prospectus supplement will include the following information:

- the terms of the offering;
- the names of any underwriters, dealers or agents;
- the name or names of any managing underwriter or underwriters;
- the purchase price of the securities;
- the net proceeds from the sale of the securities;
- any over-allotment options under which underwriters may purchase additional securities from us;
 - any delayed delivery arrangements;
- any underwriting discounts or commissions or agency fees and other items constituting underwriters' or agent's compensation;
 - any discounts, commissions, or concessions allowed or reallocated or paid to dealers;
 - any commissions paid to agents; and
- any securities exchanges or markets on which the securities may be listed.

Any initial public offering price and any discounts or concessions allowed or reallocated or paid to dealers may be changed from time to time.

Underwriters may offer and sell the offered securities from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. If underwriters are used in the sale of any securities, the securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions described above. The securities may be either offered to the public through underwriting syndicates represented by managing underwriters, or directly by underwriters. Unless we inform you otherwise in the prospectus supplement or free-writing prospectus, the underwriters' obligations to purchase the securities will be subject to certain conditions precedent and the underwriters will be obligated to purchase all of the securities if they purchase any of the securities. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement or free writing prospectus, naming the underwriter, the nature of any such relationship.

We may sell the securities directly or through agents from time to time. The prospectus supplement or free writing prospectus will name any agent involved in the offer or sale of the securities and any commissions we pay to them. Unless we inform you otherwise in the prospectus supplement or free-writing prospectus, any agent will be acting on a best efforts basis for the period of its appointment.

We may sell the securities directly to institutional investors or others who may be deemed to be underwriters within the meaning of the Securities Act with respect to any sale of those securities. We will describe the terms of any such sales in the prospectus supplement or free-writing prospectus.

We may also make direct sales through subscription rights distributed to our existing stockholders on a pro rata basis that may or may not be transferable. In any distribution of subscription rights to our stockholders, if all of the underlying securities are not subscribed for, we may then sell the unsubscribed securities directly to third parties or we may engage the services of one or more underwriters, dealers or agents, including standby underwriters, to sell the unsubscribed securities to third parties.

Offered securities also may be offered and sold, if so indicated in the applicable prospectus supplement or free-writing prospectus, in connection with a remarketing upon their purchase, in accordance with a redemption or repayment pursuant to their terms, or otherwise, by one or more remarketing firms, acting as principals for their own accounts or as agents for us. Any remarketing firm will be identified and the terms of its agreements, if any, with us and its compensation will be described in the applicable prospectus supplement. Remarketing firms may be deemed to be underwriters, as that term is defined in the Securities Act, in connection with the securities remarketed.

We may engage in at-the-market offerings of our common stock. An at-the-market offering is an offering of our common stock at other than a fixed price or through a market maker.

We may authorize underwriters, dealers or agents to solicit offers by certain purchasers to purchase the securities from us at the public offering price set forth in the prospectus supplement or free writing prospectus pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. The contracts will be subject only to those conditions set forth in the prospectus supplement or free writing prospectus, and the prospectus supplement or free writing prospectus will set forth any commissions we pay for solicitation of these contracts.

Agents and underwriters may be entitled to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, or to contribution with respect to payments which the agents or underwriters may be required to make in respect thereof. Agents and underwriters may be customers of, engage in transactions with, or perform

services for us in the ordinary course of business.

All securities we offer, other than common stock, will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities.

Any underwriter may engage in overallotment, stabilizing transactions, short covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. Overallotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time.

Any underwriters who are qualified market makers on the Nasdaq Global Market may engage in passive market making transactions in our common stock, warrants, debt securities, rights or units, as applicable, on the Nasdaq Global Market in accordance with Rule 103 of Regulation M, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded.

Broker-dealers engaged by us may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from us (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this Prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with NASD Rule 2440; and in the case of a principal transaction a markup or markdown in compliance with NASD IM-2440.

In connection with the sale of the common stock or interests therein, we may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. We may also sell shares of the common stock short and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. We may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

We and any broker-dealers or agents that are involved in selling the securities may be deemed to be "underwriters" within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the securities purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. In no event shall any broker-dealer receive fees, commissions and markups which, in the aggregate, would exceed eight percent (8%).

LEGAL MATTERS

The validity of the issuance of securities offered by this prospectus will be passed upon for us by Eilenberg & Krause LLP, New York, New York.

EXPERTS

The consolidated financial statements as of December 31, 2008 and 2007, and for each of the three years in the period ended December 31, 2008, incorporated in this Prospectus by reference from the Company's Annual Report on Form 10-K, have been audited by Kesselman & Kesselman, a member of PricewaterhouseCoopers International Limited, an independent registered public accounting firm, as stated in their report which is incorporated herein by reference. Such consolidated financial statements have been so included in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file reports, proxy statements and other information with the SEC. Copies of our reports, proxy statements and other information may be inspected and copied at the SEC's Public Reference Room at 100 F. Street, N.E., Washington, D.C. 20549. Copies of these materials can also be obtained by mail at prescribed rates from the Public Reference Room of the SEC, 100 F. Street, N.E., Washington, D.C. 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an internet site that contains reports, proxy and information statements and other information regarding our company and other issuers that file electronically with the SEC. The address of the SEC internet site is www.sec.gov. This information is also available on our website at www.acornenergy.com. Information contained in our website does not constitute part of this prospectus.

We have filed a registration statement on Form S-3 under the Securities Act with the SEC with respect to the securities to be sold hereunder. This prospectus has been filed as part of that registration statement. This prospectus does not contain all of the information set forth in the registration statement because certain parts of the registration statement are omitted in accordance with the rules and regulations of the SEC. We will provide a copy of any and all of the information that is incorporated by reference in this prospectus, without charge, upon written or oral request. If you would like to obtain this information from us, please direct your request, either in writing or by telephone, to Investor Relations, Acorn Energy, Inc., 4 West Rockland Road, Montchanin, DE 19710, Attention: Joe B. Cogdell, Jr., Secretary, (302) 656-1707.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus the information we have filed with the SEC. This means that we can disclose important information by referring you to those documents. All documents that we subsequently file with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, prior to the termination of this offering, will be deemed to be incorporated by reference into this prospectus and to be a part hereof from the date of filing of such documents. Unless expressly incorporated into this prospectus, a Current Report (or portion thereof) furnished, but not filed, on Form 8-K shall not be incorporated by reference into this prospectus. Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We incorporate by reference the following documents that we have filed with the SEC and any filings that we will make with the SEC in the future under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act until this offering is terminated:

- Annual Report on Form 10-K for the fiscal year ended December 31, 2008;
- Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2009;
- Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2009;
- Current Report on Form 8-K filed February 19, 2009;
- Current Report on Form 8-K filed February 25, 2009;
- Current Report on Form 8-K filed March 16, 2009;
- Current Report on Form 8-K filed April 13, 2009 and amended on Form 8-K/A filed April 15, 2009;
 - Current Report on Form 8-K filed May 14, 2009;
 - Current Report on Form 8-K filed August 3, 2009;
 - Current Report on Form 8-K filed August 13, 2009;
 - Current Report on Form 8-K filed August 18, 2009;
 - Current Report on Form 8-K filed September 9, 2009;
- The description of our Common Stock contained in our Form 8-A filed December 13, 2007; and
- All documents filed by us with the SEC pursuant to the Exchange Act after the date of the initial filing of the registration statement of which this prospectus is a part and prior to the effectiveness thereof.

Copies of these filings are available free of charge by writing to Acorn Energy, Inc., 4 West Rockland Road, Montchanin, Delaware 19710, Attention: Joe B. Cogdell, Jr., Secretary, or by telephoning us at (302) 656-1707. We will also provide to each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the information that has been incorporated by reference in the prospectus but not delivered with the prospectus. See “Where You Can Find More Information.”

Any statement made in this prospectus concerning the contents of any contract, agreement or other document is only a summary of the actual document. You may obtain a copy of any document summarized in this prospectus at no cost by writing to or telephoning us at the address and telephone number given above. Each statement regarding a contract, agreement or other document is qualified in its entirety by reference to the actual document.

2,231,818 Shares of Common Stock

PROSPECTUS SUPPLEMENT

March 8, 2010
