

ACORN ENERGY, INC.
Form 424B2
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Registration No. 333-169434

PROSPECTUS SUPPLEMENT

Dividend Reinvestment Plan

600,000 shares of Common Stock

This prospectus supplement relates to 600,000 shares of common stock, \$0.01 par value, of Acorn Energy, Inc. (“Acorn”), which may be offered and sold from time to time pursuant to the terms of the Acorn Energy, Inc. Dividend Reinvestment Plan (the “Plan”).

The Plan provides participants with a convenient and economical method for investing cash dividends in additional shares of Acorn common stock. This prospectus supplement describes and constitutes the Acorn Energy, Inc. Dividend Reinvestment Plan.

Shares of common stock will either be purchased directly from Acorn or in the open market. Initially, we intend to issue the shares under the Plan directly from Acorn at a 5% discount from the market price. We reserve the right to change or eliminate the discount in our sole discretion. See “Information About the Plan”.

Our common stock is listed on the NASDAQ Global Market under the symbol “ACFN.” On August 14, 2012, the closing price of our common stock was \$8.15 per share.

Please read this prospectus supplement carefully and keep it and any future investment statements for your reference. If you have any questions about the Plan, please call the Plan administrator, American Stock Transfer & Trust Company, LLC, or “AST,” toll free at (877) 276-7523, 24 hours a day, seven days a week. Customer service representatives are available Monday through Friday, between the hours of 8:00 A.M. and 7:00 P.M. Eastern time.

Investing in our common stock involves a high degree of risk. You should carefully review the risks and uncertainties described in this prospectus supplement, any applicable prospectus supplement or free writing prospectus and in our filings with the Securities and Exchange Commission, and under similar headings in the other documents that are incorporated by reference into this prospectus supplement before enrolling in the Plan and investing in our common stock.

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

The date of this Prospectus Supplement is August 15, 2012.

You should rely only on the information contained or incorporated by reference in this prospectus supplement. 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 supplement is accurate as of any date other than the date on the front of this prospectus supplement. Our business, financial condition, results of operations and prospects may have changed since then.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the base prospectus are part of a registration statement on Form S-3 that we initially filed on September 16, 2010 with the Securities and Exchange Commission (“SEC”) using a “shelf” registration process and which was declared effective on October 27, 2010. The registration statement, including the base prospectus, and documents incorporated by reference herein can be obtained from the SEC as described below under the heading “Where You Can Find More Information.” You should read this prospectus supplement and the information incorporated herein by reference.

The number of shares offered by this prospectus supplement at any time may not exceed the amount then available for issuance under the shelf registration.

You should rely only on the information contained in this prospectus supplement and the base 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 supplement may only be used where it is legal to sell these securities. This prospectus supplement 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 supplement and the base 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 supplement and the base prospectus or any prospectus supplement, nor any sale made under this prospectus supplement or any prospectus supplement will, under any circumstances, imply that the information in this prospectus supplement 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 supplement 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 of 1933, as amended, 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 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.

ABOUT ACORN ENERGY

This summary description of us and our business 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, the base 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, Inc. and its subsidiaries.

Our Company

Acorn is a holding company focused on technology driven solutions for energy infrastructure asset management. Our four businesses improve the world's energy infrastructure by making it more secure by providing security solutions for underwater energy infrastructure (DSIT), more reliable by providing condition monitoring instruments for critical assets on the electric grid (GridSense and OmniMetrix LLC) and more productive and efficient by increasing oil and gas production while lowering costs through use of ultra-high sensitive seismic tools for more precise pinpointing of oil and gas reservoirs (USSI).

Through our majority or wholly-owned operating subsidiaries we provide the following services and products:

Energy & Security Sonar 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 advanced acoustic systems and real-time embedded hardware and software development and production through our DSIT Solutions Ltd. subsidiary.

Smart Grid Distribution Automation. These products and services are provided by our GridSense subsidiaries which develop, market and sell remote monitoring and control systems to electric utilities and industrial facilities worldwide.

Energy and Security Sensor Systems. These products and services are provided by our US Seismic Systems, Inc. subsidiary which develops and produces “state of the art” fiber optic sensing systems for the energy, commercial security and defense markets worldwide.

Power Generation (PG) Monitoring. These products and services are provided by our OmniMetrix, LLC subsidiary. OmniMetrix's PG products and services deliver critical, real-time machine information to customers and provide remote diagnostics that give users real control over their equipment.

Our Corporate Information

Our executive offices are located at 3903 Centerville Road, Wilmington, Delaware 19807. 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.

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” on page 12 of this prospectus supplement and “Incorporation of Certain Documents By Reference,” on page 13 of this prospectus supplement.

USE OF PROCEEDS

Unless we state otherwise in a prospectus supplement accompanying this prospectus supplement, we expect to use the proceeds from the sales of common stock by us under the Plan for general corporate purposes, including working capital and possible acquisitions. We have no basis for estimating the number of shares of common stock that ultimately will be sold by us under the Plan or the prices at which such shares will be sold. We will not receive any proceeds from sales of common stock to Plan participants obtained in open market purchases.

INFORMATION ABOUT THE PLAN

1. What is the purpose of the Plan?

The purpose of the Plan is to provide stockholders with a simple and convenient method of reinvesting cash dividends paid on shares of our common stock. The Plan allows participants to have all or a portion of cash dividends paid on their shares of our common stock automatically reinvested to purchase shares of our common stock.

2. What are the advantages of the Plan?

Participants may increase their holdings of Acorn common stock through the reinvestment of cash dividends received on previously owned shares of common stock registered in their names or held for their account within the Plan without incurring any brokerage commissions and fees in connection with purchases under the Plan. Initially, we

intend to issue shares under the Plan at a 5% discount to the market price.

Regular account statements will provide participants in the Plan with a record of each transaction. Participation in the plan is entirely voluntary. You may join or terminate your participation at any time prior to a particular cash dividend record date by making timely written notice to the Plan administrator. You can access these services through the Plan administrator's website, www.amstock.com at "Invest Online" under the "Shareholders" tab.

3. What are the disadvantages or risks of the Plan?

In addition to those risks of an investment in our stock set forth or referenced in the section titled "Risk Factors" above, the disadvantages or risks of the Plan include:

Participants bear all the risk of loss that may result from market fluctuations in the price of Acorn stock. Participants must bear the market risk associated with fluctuations in the price of our stock. You cannot designate a specific price or date at which to purchase or sell shares held in the Plan. Your ability to purchase or sell shares is subject to the terms of the Plan. You may not be able to purchase or sell your shares in the Plan in time to react to market conditions. In addition, you will not know the exact number of shares purchased until after the investment date.

We do not guarantee the payment of future dividends. Our Board of Directors has the sole discretion to declare and pay dividends. Although we have recently paid cash dividends on a regular basis, the amount and timing of any dividends may be changed at any time without notice.

Long-term investment. The market price for our stock varies, and you should purchase shares for long-term investment only. Although our stock currently is traded on the NASDAQ Global Market, we cannot assure you that there will at any time in the future be an active trading market for our stock. Even if there is an active trading market for our stock, we cannot assure you that you will be able to sell all of your shares at one time or at a favorable price, if at all. As a result, you should participate in the Plan only if you are capable of making, and seeking to make, a long-term investment in our stock.

4. Who administers the Plan for participants?

American Stock Transfer & Trust Company, LLC, Acorn's stock transfer agent, administers the Plan for participants by (i) directing the purchase of our common stock with the cash dividends to be reinvested, (ii) maintaining records, (iii) sending account statements to participants and (iv) performing other duties relating to the Plan. The Plan administrator acts in the capacity as agent for participants in the Plan. We may replace the Plan administrator at any time in our sole discretion.

You should send all correspondence with the administrator to:

American Stock Transfer & Trust Company, LLC

6201 15th Avenue

Brooklyn, NY 11219

All transaction processing should be directed to:

American Stock Transfer & Trust Company, LLC

P.O. Box 922

Wall Street Station

New York, NY 10269-0560

Please reference Acorn Energy, Inc. (NASDAQ symbol “ACFN”) and this Plan in all correspondence. In addition, you may call the Plan administrator at (877) 276-7523 or contact the Plan administrator via the internet at www.amstock.com.

5. Who is eligible to enroll in the Plan? How do I enroll?

The following persons are eligible to participate in the Plan:

Record Owners. All record owners (stockholders whose shares are held in their name on the records kept by our transfer agent) of shares of our common stock are eligible to participate directly in the Plan. Record owners may join the Plan by completing and signing an Authorization Form and returning it to the Plan administrator or by following the enrollment procedures specified on the Plan administrator’s website at www.amstock.com, at “Invest Online” under the “Shareholders” tab, or by contacting the Plan administrator at the address or telephone number provided in Question 4.

Beneficial Owners. Beneficial owners (stockholders whose shares are held in the name of a broker, bank or other nominee on the records kept by our transfer agent) of shares of our common stock may participate in two ways. A beneficial owner may seek to participate through his broker, bank or other nominee. The Plan administrator has arrangements in place with the Depository Trust Company (which acts as the depository for its member brokers) to allow brokers to participate in the Plan. A beneficial owner may also participate directly in the Plan by becoming a record owner by having his shares transferred into a record owner position at the transfer agent.

If you are a beneficial owner interested in participating in the Plan, check with your broker, bank or other nominee to ascertain if you can participate through them. Please note that brokers may offer their own Acorn dividend reinvestment plans that do not provide a discount. In such event, ask your broker to arrange for your participation in Acorn's Dividend Reinvestment Plan. Alternatively, beneficial owners may request that the shares the beneficial owner wishes to be enrolled in the Plan be reregistered in the beneficial owner's own name as record owner in order to participate directly in the Plan.

6. When may a stockholder join the Plan?

A record owner may enroll in the Plan at any time. If a properly executed Authorization Form is received by the Plan administrator on or before the record date set by our Board of Directors for a cash dividend payment their reinvestment of cash dividends will begin with that scheduled cash dividend payment. If you are a beneficial owner, check with your broker, bank or other nominee regarding when you may join the Plan.

In the past, record dates for dividends generally have preceded the dividend payment dates by approximately 10 to 20 days. Although we have only recently commenced paying dividends, we currently expect that they will be paid on or about the first business day of each March, June, September and December.

7. What does the Authorization Form provide?

The Authorization Form appoints the Plan administrator as agent for the stockholder and directs the Plan administrator to apply all or a specified portion of cash dividends declared and paid by us for the purchase of additional shares of Acorn common stock in accordance with the terms and conditions of the Plan.

8. Is there a minimum level of investment under the Plan?

Yes. Consistent with the Emergency Economic Stabilization Act, passed by Congress 2008, you must reinvest at least 10% of your dividend distribution if you wish to participate in the Plan.

9. What are my dividend reinvestment options under the Plan?

As a participant in the Plan, you may elect to reinvest all, part or none of the dividends on your Acorn common stock for the purchase of additional shares. If you are a record owner completing the Authorization Form, you must select one of the two dividend options on the Authorization Form. If you are a beneficial owner, check with your broker, bank or other nominee regarding dividend reinvestment options under the Plan. If you complete and return an Authorization Form without selecting a dividend option, your dividends will automatically be fully reinvested to purchase additional shares. The Plan administrator will reinvest all dividends paid on shares that it holds on behalf of participants in the Plan.

Full dividend reinvestment. If you select full dividend reinvestment, cash dividends paid on all of the shares you own of record in either certificated or book entry form will automatically be reinvested to purchase additional shares.

Partial dividend reinvestment. If you select partial dividend reinvestment, a portion of your cash dividend will automatically be reinvested to purchase additional shares, and the remainder will be paid to you in cash. To elect this option, you must specify the number of whole shares owned of record by you on which you wish to have dividends reinvested. The remaining cash dividend will be sent to you by check.

10. Can a participant change a dividend option?

You may change your dividend participation option at any time by contacting the Plan administrator as set forth in the response to Question 4 above.

Please remember that the Plan administrator must receive your request on or before a dividend record date in order for your request to be effective for that dividend. Otherwise, your request will be effective for the following dividend.

11. May a participant elect to make additional cash payments to purchase stock under the plan?

No. Under the Plan additional cash payments are not permitted. Purchases of common stock may be made under the Plan only through dividend reinvestment.

12. What is the source of common stock purchased under the Plan?

The Plan administrator will purchase common stock either directly from us or on the open market. We will determine the source of the common stock to be purchased under the Plan and so instruct the Plan administrator after a review of current market conditions and our current and projected capital needs. We have instructed the Plan administrator to make all purchases of common stock under the Plan directly from us until otherwise instructed. We reserve the right to change these instructions without any prior written notice to you by us or the Plan administrator.

If we do in the future instruct the Plan administrator to purchase common stock under the Plan in the open market, neither we nor any participant will have authority to direct the price at which shares may be purchased on the open market or the selection of the broker or dealer through or from whom purchases are to be made. These open market purchases of shares under the Plan will be made by or on behalf of the Plan administrator on the dividend payment date and/or during the five trading days preceding and/or the 20 trading days following the dividend payment date.

13. How many shares of Acorn common stock will be purchased for participants?

The number of shares purchased for each participant on any cash dividend payment date will depend on the amount of each participant's cash dividend invested and the purchase price of the shares of Acorn common stock. Each participant's Plan account will be credited with that number of shares (including fractional shares computed to three decimal places) equal to the total amount of such participant's cash dividends to be invested, divided by the applicable purchase price of our common stock (also computed to four decimal places).

14. At what price will shares of Acorn common stock be purchased under the Plan?

The purchase prices for shares of common stock purchased under the Plan will be determined as follows:

If the shares are purchased from us, the purchase price will be equal to 100% of the unsolicited volume weighted average price, rounded to four decimal places, of our common stock as reported by the NASDAQ Global Market (or § other principal market where our common stock may then be traded), during trading hours from 9:30 a.m. to 4:00 p.m. Eastern time, on the payment date of the dividend.

§ We may elect to offer a discount ranging from 0% to 5% from such purchase price, which discount may vary each month. We initially will offer shares under the Plan at a discount of 5%. **This discount is subject to change at any time without prior notice.** Participants may ascertain the prevailing discount from the market price and other important information by visiting our website at www.acornenergy.com, under the "Investor Relations" tab. Our decision to set a discount in a particular month shall not affect the setting of a discount for any subsequent month.

If the shares are purchased in the open market, the purchase price will be the average price of shares purchased by the Plan administrator. We may elect to offer a discount ranging from 0% to 5% from such purchase price, which discount may vary each month. As stated above, we have no current plans to instruct the Plan administrator to purchase shares on the open market in connection with the Plan.

15. When will investments in the common stock be made?

Shares will be allocated and credited to Plan accounts as of or as soon as practicable following the applicable dividend payment date. The investment date with respect to the common stock acquired pursuant to dividend reinvestments will be the quarterly or special dividend payment date declared by our Board of Directors.

Purchases of common stock directly from us will be made as of each dividend payment date. Purchases by the Plan administrator through market transactions will be made on or in the five trading days preceding and/or the 20 trading days following the dividend payment date, and will be completed as soon as reasonably practicable. However, the exact timing and related aspects of purchases may be subject to certain conditions (such as compliance with applicable rules and regulations), which may affect the timing of purchases.

16. How are cash dividends on shares purchased through the Plan applied?

The purpose of the Plan is to provide the participant with a convenient method of investing cash dividends in shares of our common stock. Accordingly, cash dividends paid in shares of Acorn common stock held in the Plan will be automatically reinvested in additional shares of Acorn common stock unless and until the participant elects in writing to terminate participation in the Plan.

17. Are there any expenses to participants in connection with share purchases or sales under the Plan?

Purchases of Acorn common stock on behalf of participants in the Plan will be made without the payment of brokerage commissions by the participants, and Acorn will pay all fees and commissions in connection with purchases of shares of Acorn common stock under the Plan, except for the actual purchase price of Acorn common stock purchased on each dividend payment date. There are no fees or service charges to the participant in connection with purchases of Acorn common stock under the Plan. All costs of administration of the Plan are paid by Acorn.

If a participant requests the Plan Administrator to sell his or her shares of Acorn common stock held in the Plan, the participant will pay a sale fee of \$15.00 plus brokerage commissions associated with such sale and all applicable service charges and fees. The Plan administrator will deduct the applicable fees from the proceeds from a sale. Participants may also request that their Plan shares be issued to them in a record owner position at Acorn's transfer agent and/or be credited to the participant's account at their broker.

18. What reports will be sent to participants in the Plan?

As soon as practical after the purchase of Acorn common stock on the Investment Date, each participant will receive a statement from the Plan administrator. These statements serve as each participant's continuing record of the cost of shares of Acorn common stock purchased and the number of shares acquired under the Plan. Participants should retain these reports for tax purposes. You may also review your Plan account information online through the Plan Administrator's website at www.amstock.com, where you may apply for a PIN number or you can access your account by using your social security number and your American Stock Transfer ten digit account number.

19. What if my address changes?

All communications to you, including notices, dividends and statements, will be sent to your latest address on record. Please notify the Plan administrator promptly if your address changes.

20. Will stock certificates be issued for shares of Acorn common stock purchased?

The Plan administrator will hold all shares representing purchases of Acorn common stock under the Plan in book entry form in its name or in the name of its nominee. Record book entry or stock certificates for shares of Acorn common stock purchased under the Plan will not be issued to participants. The number of shares of Acorn common stock credited to an account under the Plan will be shown on the participant's periodic statement of account.

You may receive a record book entry position or stock certificate for all or any portion of the full shares of Acorn common stock accumulated in your account under the Plan by sending a written request to the Plan administrator. When record book entry positions or stock certificates are issued to a participant, future cash dividends on such shares will not be reinvested in shares of Acorn common stock unless you have elected full dividend reinvestment or have provided us with a revised Authorization Form requesting reinvestment of cash dividends on such shares. No certificates representing fractional shares of Acorn common stock will be issued.

Your rights under the Plan and to the shares of Acorn common stock credited to your account under the Plan may not be pledged or assigned. A participant who wishes to pledge or assign such shares must request that certificates for such shares be issued in his or her name. Accounts under the Plan will be maintained in the same names in which the shares of Acorn common stock held by the participant were registered when the participant entered the Plan.

21. How does a participant withdraw from the Plan?

A participant may withdraw from the Plan at any time by sending a written withdrawal notice to the Plan administrator at the address contained in Question 4. When a participant withdraws from the Plan, or upon termination of the Plan by Acorn, book entry positions at the transfer agent (or upon request, stock certificates) for whole shares of our common stock credited to a participant's account under the Plan will be issued and a cash payment will be made for any fractional shares in the participant's account. Upon withdrawal from the Plan, the participant may also request that all of the shares of our common stock credited to his or her account be sold by the Plan administrator. If a sale is requested, the Plan administrator will place a sale order as promptly as possible after the processing of the request for withdrawal. A broker/dealer designated by the Plan administrator will sell the shares at the prevailing market price.

The participant will receive from the Plan administrator a check for the proceeds of the sale, less a sale fee of \$15.00 plus any applicable brokerage commission, transfer taxes and other fees and charges.

22. Does a participant have timing and control when Plan shares are sold?

Because the Plan administrator will sell the shares on behalf of the Plan, neither Acorn nor any participant in the Plan has authority or power to control the timing or pricing of shares sold or the selection of the broker making the sales. Therefore, you will not be able to precisely time your sales through the Plan, and will bear the market risk associated with fluctuation in the price of our common stock. That is, if you send in a request to sell shares, it is possible that the market price of our common stock could go down or up before the broker sells your shares. In addition, you will not earn interest on undistributed proceeds from a sales transaction.

23. What happens to a fractional share when a participant withdraws from the Plan?

When a participant withdraws from the Plan, a cash adjustment representing the value of any fractional share of our common stock then credited to the participant's account will be mailed directly to the participant. (The cash adjustment will be based on the current price of our common stock on the NASDAQ Global Market, or other principal market where our common stock may then be trading, on the effective date of the withdrawal.) In no case will stock certificates representing fractional shares be issued to a participant.

24. What happens if Acorn issues a stock dividend or declares a stock split or makes a rights offering?

Any stock dividend or split will be credited to participants' Plan accounts based on the number of shares, including fractional share interests, held in such accounts on the record date for such stock dividend or split.

In the event we make available to stockholders rights to purchase additional shares of common stock or other securities, such rights will be made available to participants based on the number of shares, including fractional shares interests to the extent practicable, held in the Plan accounts on the record date established for determining stockholders who are entitled to such rights.

Transaction processing under the Plan may either be curtailed or suspended until the completion of any stock dividend, stock split, rights offering or similar corporate action.

25. How will a participant's shares held under the Plan be voted at meetings of shareholders?

In connection with every Acorn stockholder meeting you will receive proxy materials and a proxy card that will cover all shares you hold in the Plan. You may vote your shares in accordance with the instructions provided in the proxy materials.

26. What are the principal income tax consequences of participation in the Plan?

The following discussion is a summary of the federal income tax provisions relating to participation in the Plan. State and local tax treatment may vary from federal income tax treatment and is not discussed in this summary. You should rely upon your own tax advisor about your particular circumstances and transactions.

Dividends. All dividends that are paid to you, whether paid in cash or reinvested and used to purchase additional shares, are considered taxable dividend income to you in the year they are paid by Acorn. At the end of each tax § year, our transfer agent will provide you and the Internal Revenue Service (the "IRS") with a Form 1099-DIV that reports the total dollar value of the dividends paid during the year.

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Discount on shares issued. All shares issued under the plan at a discount to the market price are considered taxable income to you and this will be reflected on the Form 1099-DIV.

Sales. All shares sold through the Plan will be reported to the IRS as required by law. At the end of each tax year, our transfer agent will provide you and the IRS with a Form 1099-B that reports the date of sale, cost basis of the shares sold and gross proceeds from the sale. In general, the amount of gain or loss that you recognize will be based § on the difference between the fair market value of your shares as of the date of purchase and the date of sale. Any profit that you realize will be taxed as capital gain, and any loss realized will be taxed as a capital loss. The capital gain or loss may be treated as “long-term” capital gain or loss if you have held the shares for at least one year before the sale or transfer.

Be sure to keep your account statements for income tax purposes. If you have questions about the tax impact of any of transactions you are contemplating, please consult your own tax advisor.

Transfers in or out of the Plan. You will not realize gain or loss for federal income tax purposes when you withdraw § shares from the Plan. However, as noted in the above paragraph, you will generally realize gain or loss upon the sale of shares (including the receipt of cash for fractional shares) held in the Plan.

Federal income tax withholding on dividends and sales proceeds. Federal law requires the Plan administrator to § withhold an amount (based upon the current applicable rate) from the amount of dividends and the proceeds of any sale of shares if:

§ You fail to certify to the Plan administrator that you are not subject to backup withholding and that the taxpayer identification number on your account is correct (on Form W-9), or

§ The IRS notifies Acorn or the Plan administrator that you are subject to backup withholding.

Any amounts withheld will be deducted from the dividends and/or from the proceeds of any sale of shares, and the remaining amount will be reinvested or paid as you have instructed.

In addition, if you are not a U.S. person, additional U.S. income tax withholding that is not fully discussed here may apply. Any amounts withheld will be deducted from the dividends and/or from the proceeds of any sale of shares, and the remaining amount will be reinvested or paid as you have instructed.

You may obtain a Form W-9 from the IRS or by contacting the Plan administrator.

The above discussion is not a complete discussion of all of the tax considerations that may be relevant to participation in the Plan. You should consult your own tax advisor about the tax consequences associated with participation in the Plan.

27. What are the responsibilities of Acorn and the Plan administrator under the Plan?

Acorn and the Plan administrator will not be liable for any act done in good faith or for the good faith omission to act, including, without limitation, any claim of liability arising out of failure to terminate a participant's account upon such participant's death or incapacity or with respect to: (i) the prices at which shares of our common stock are purchased or sold for the participant's account; (ii) the timing of such purchases or sales; (iii) any loss or fluctuation in the market value of our common stock; or (iv) any sales of our common stock made under the Plan on behalf of the participant. Acorn shall interpret the Plan and all such interpretations and determinations made by Acorn shall be conclusive. The terms and conditions of the Plan, the Authorization Form, the Plan's operation, and a participant's account will be governed by the laws of the State of New York and the rules and regulations of the SEC. The terms of the Plan and the Authorization Form cannot be changed by oral agreement.

28. Who bears the risk of market price fluctuations in our common stock?

A participant's investment in shares of Acorn common stock acquired under the Plan is no different from any other investment in shares of Acorn common stock. The participant bears the risk of loss and realizes the benefits of any gain from market price changes with respect to shares of our common stock held in the Plan. Neither Acorn nor the Plan administrator makes any representations with respect to the future value of our common stock purchased under the Plan. You should recognize that Acorn, the Plan administrator and related parties cannot assure the participant of realizing any profits or protect the participant against any loss related to an investment in our common stock purchased or sold under the Plan.

29. May the Plan be changed or discontinued?

The Plan may be amended, suspended, modified or terminated at any time by Acorn without the approval of the participants. Notice of any such suspension or termination or material amendment or modification will be sent to all participants, who shall at all times have the right to withdraw from the Plan. Acorn or the Plan administrator may terminate a participant's individual participation in the Plan at any time by written notice to the participant. In such event, the Plan administrator will request instructions from the participant for disposition of the shares of our common stock held in his or her account. If the Plan administrator does not receive instructions from the participant, it will send the participant a stock certificate for the number of whole shares held for the participant under the Plan and a check for the value of any fractional shares as provided for in the Plan.

DESCRIPTION OF CAPITAL STOCK

General

Our Certificate of Incorporation, as amended, (the “Certificate of Incorporation”) authorizes 30,000,000 shares of capital stock, all of which have been designated as common stock, \$0.01 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 14, 2012, warrants to purchase 28,750 shares of our common stock at a weighted average exercise price of \$3.68 per share, and options to purchase 1,345,000 shares of our common stock at a weighted average exercise price of \$4.71 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 & Trust Company, LLC, American Stock Transfer & Trust Company, LLC, 6201 15th Avenue, Brooklyn, NY 11219.

PLAN OF DISTRIBUTION

Except to the extent the Plan administrator purchases shares of common stock in the open market, we will sell directly to the administrator the shares of common stock acquired under the Plan. The shares may be resold in market transactions on any national securities exchange on which shares of our common stock trade or in privately negotiated transactions. Our common stock is currently listed on the NASDAQ Global Market.

Subject to the availability of shares of common stock registered for issuance under the Plan, there is no limit to the number of shares that can be issued pursuant to the Plan. We will pay all brokerage commissions and service charges in connection with the reinvestment of dividends to purchase shares of common stock under the Plan. You will have to pay any fees payable in connection with your voluntary sale of shares from your Plan account and/or withdrawal from the Plan.

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.

EXPERTS

The financial statements incorporated herein by reference to the Annual Report on Form 10-K for the year ended December 31, 2011 of Acorn Energy, Inc. have been so incorporated in reliance on the reports of each of Friedman LLP and Kesselman & Kesselman, independent registered public accounting firms, given on the authority of said firms as experts in auditing and accounting. 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, under the "Investor Relations" tab. Information contained in our website does not constitute part of this prospectus supplement.

We have filed a registration statement on Form S-3 under the Securities Act of 1933, as amended, with the SEC with respect to the securities to be sold hereunder. This prospectus supplement and the underlying base prospectus have been filed as part of that registration statement. This prospectus supplement 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 supplement, 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., 3903 Centerville Road, Wilmington, Delaware 19807, Attention: Heather K. Mallard, Secretary, (302) 656-1707.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to “incorporate by reference” into this prospectus supplement the information we have filed with the SEC. This means that we can disclose important information by referring you to those documents. 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, 2011 filed on March 15, 2012;

- - Current Report on Form 8-K filed on March 16, 2012;

Amendment No. 1 on Form 10-K/A to Annual Report on Form 10-K for the fiscal year ended December 31, 2011 filed on April 5, 2012;

- - Current Report on Form 8-K filed on April 12, 2012;

- - Current Report on Form 8-K filed on May 8, 2012;

- Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2012 filed on May 10, 2012;

- - Current Report on Form 8-K filed on May 10, 2012;

- - Current Report on Form 8-K filed on May 22, 2012;

- - Current Report on Form 8-K filed on June 14, 2012;

- - Current Report on Form 8-K filed on July 24, 2012;

- - Current Report on Form 8-K filed on July 25, 2012;

- - Current Report on Form 8-K filed on August 9, 2012;

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- Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2012 filed on August 9, 2012;

- Current Report on Form 8-K filed on August 10, 2012;

Amendment No. 1 on Form 10-Q/A to Quarterly Report on Form 10-Q for the fiscal quarter ended June 20, 2012 filed on August 13, 2012; and

- The description of our Common Stock contained in our Form 8-A filed December 13, 2007.

We are also incorporating by reference additional documents that we may file pursuant to the Exchange Act after the date of this prospectus supplement and prior to the termination of the offering, other than any portion of the respective filings furnished, rather than filed, under applicable SEC rules. This additional information becomes a part of this prospectus supplement from the date of filing for those additional documents.

Dividend Reinvestment Plan

600,000 Shares of Common Stock

August 15, 2012
