ACORN ENERGY, INC.
Form 424B5
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Registration Statement No. 333-169434

The information in this preliminary prospectus supplement is not complete and may be changed. This preliminary prospectus supplement and the accompanying prospectus are not an offer to sell nor are we soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED OCTOBER 4, 2013

PROSPECTUS SUPPLEMENT

(To Prospectus dated October 27, 2010)

$15,000,000

Acorn Energy, Inc.

Shares

Common Stock

We are offering shares of our common stock. Our common stock is quoted on the NASDAQ Global Market under the symbol "ACFN." On October 4, 2013, the last reported sale price of our common stock on the NASDAQ Global Market was $4.94 per share.

Investing in our securities involves a high degree of risk. See the "Risk Factors" section on page S-12 of this prospectus supplement and the corresponding sections in the accompanying prospectus and in our Annual Report on Form 10-K for the year ended December 31, 2012, as well as our subsequent filings with the

Securities and Exchange Commission under the Securities Exchange Act of 1934, which are incorporated by reference into this prospectus supplement.

	Per Share	Total
Public offering price	$	$
Underwriting discount (1)	$	$
Offering proceeds to us, before expenses	$	$

(1) The underwriters will receive compensation in addition to the underwriting discount, as set forth in the section entitled “Underwriting” beginning on page S-37 upon the closing of this offering, which consists of five-year compensation warrants entitling the underwriters to purchase 6.5% of the aggregate number of shares of common stock issued in this offering, including shares issued pursuant to the exercise of the over-allotment option, with an exercise price equal to 110% of the price per share of the common stock sold in this offering. The underwriter compensation warrants and the common stock issuable upon exercise of these underwriter compensation warrants are covered by this prospectus supplement. We have also agreed to reimburse the underwriters for certain expenses incurred by the underwriter up to an amount not to exceed $46,500 for all expenses (including background checks with respect to our senior management) other than legal fees plus the greater of $100,000 or 1% of the gross proceeds of the offering for legal fees. See the heading entitled “Underwriting” on page S-37 of this prospectus supplement for additional disclosure regarding compensation to the underwriters payable by us.

We have granted the underwriters an option for a period of 45 days to purchase an aggregate of up to an additional shares of our common stock solely to cover over-allotments. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable will be $ and the total proceeds to us, before expenses, will be $.

Delivery of the shares of common stock is expected to be made on or about October , 2013.

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

Sole Book Running Manager

Maxim Group LLC

Co-Managers

Chardan Capital Markets LLC National Securities Corporation FIG Partners LLC

The date of this prospectus supplement is October , 2013.

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Accompanying Prospectus dated October 27, 2010

This prospectus supplement and the accompanying prospectus relate to the sale of shares of our common stock. You should rely only on the information contained in this prospectus supplement, the accompanying 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 prospectus is accurate only as of their respective dates, regardless of the time of delivery of this prospectus supplement and accompanying 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 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 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.

ABOUT THIS PROSPECTUS SUPPLEMENT

You should carefully read this entire prospectus supplement and the accompanying 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 prospectus and the financial statements and the other information incorporated by reference in the accompanying prospectus, before making an investment decision.

This prospectus supplement and the accompanying 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 prospectus in one or more offerings, up to a total dollar amount of $20,000,000 of which approximately $15,385,000 remains available. The accompanying 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 prospectus and the documents incorporated by reference herein and therein include important information about us, the securities we are offering and underwriting 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 prospectus, the statements made in this prospectus supplement modify or supersede those made in the accompanying prospectus. You should read both this prospectus supplement and the accompanying prospectus together with additional information described under the headings, "Incorporation of Certain Documents by Reference" and "Where You Can Find More Information," which are collectively referred to herein as "this prospectus."

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 is www.acornenergy.com. Information contained in our website does not constitute part of this prospectus supplement or the accompanying prospectus. Unless otherwise indicated or the context otherwise requires, references to "Acorn Energy", "Acorn", "ACFN", the "Company", "we", "our" or "us" refer to Acorn Energy, Inc. and its subsidiaries.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying 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 si 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-12 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 accompanying prospectus.

PROSPECTUS SUPPLEMENT SUMMARY

This summary description highlights selected information contained elsewhere in this prospectus supplement or incorporated herein by reference. This summary does not contain all of the information that you should consider before buying securities in this offering. You should carefully read this entire prospectus supplement, including the "Risk Factors" beginning on Page S-4, and the accompanying prospectus*, including each of the documents incorporated herein or therein by reference, before making an investment decision. More detailed information about our business is contained in our 2012 Annual Report on Form 10-K and in each of our 2013 quarterly reports on Form 10-Q, in each case as filed with the United States Securities and Exchange Commission. Important supplemental and updated information to the description of our business in the above mentioned reports is provided below. This information should be read together with the disclosure in those reports.* ***If information in this prospectus supplement is inconsistent with the information in our earlier disclosure you should rely on the information in this prospectus supplement.***

OUR COMPANY

Acorn Energy, Inc. ("Acorn" or "the Company") is a holding company focused on technology driven solutions for energy infrastructure asset management. Each of our four businesses is focused on helping its customers achieve greater productivity, reliability, security and efficiency

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

- **Oil and Gas Sensor Systems** (formerly known as Energy and Security Sensor Systems)**.** These products and services are provided by our US Seismic Systems, Inc. subsidiary ("USSI") which develops and produces "state of the art" fiber optic sensing systems for the energy, commercial security and defense markets.

- **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. ("DSIT") subsidiary.

- **Smart Grid Distribution Automation.** These products and services are provided by our GridSense™ subsidiaries (GridSense Inc. in the United States and GridSense Pty Ltd. and CHK GridSense Pty Ltd. in Australia - collectively "GridSense") which develop, market and sell remote monitoring and control systems to electric utilities and industrial facilities worldwide.

- **Power Generation (PG) Monitoring.** These products and services are provided by our OmniMetrix™, LLC ("OmniMetrix") subsidiary, acquired in February 2012. OmniMetrix's PG products and services deliver critical, real-time machine information to customers and provide remote diagnostics that give users real-time visibility of their equipment.

We continually evaluate opportunities related to all of our portfolio companies and our eventual goal is to position them for a strategic event, which may include co-investment by one or more third parties and/or a sale of assets or equity.

We intend to use the proceeds of this offering to provide the capital needed to successfully lead USSI down the four-step path laid out below.

Oil and Gas Sensor Systems — US SEISMIC SYSTEMS, INC. (USSI)

Our Oil and Gas Sensor Systems Segment (previously known as the Energy and Security Sensor Systems segment) is conducted through USSI, a Delaware corporation based in Chatsworth, California which was established in October 2007. USSI's primary focus is on developing and producing “state of the art” fiber optic sensing systems for the energy market. We currently own approximately 95.7% of USSI upon conversion of currently held USSI preferred stock.

Products and Services

USSI's new fiber optic sensing systems have been designed to provide users with a competitive advantage over those relying on existing sensor technology. USSI's fiber optic sensors can provide the ability to monitor the fracing process, improve production efficiency and minimize potential environmental damage at a fraction of the cost of competing technology. As further described below, primary product lines for which USSI is currently developing products include downhole fiber optic sensor systems for hydrofrac monitoring used in unconventional oil and gas exploration and recovery, and 4D seismic reservoir monitoring systems. USSI has demonstrated the highest performance down-hole seismic sensor system systems in the oil and gas industry. Based on laboratory and field data available to us, we believe that USSI's sensor systems provide the greatest sensitivity (improved signal to noise ratio), widest bandwidth (detects all signals of interest), lowest noise floor (detects quieter signals) and high temperature capable seismic sensors available today for use in the oil and gas industry.

Hydrofrac (microseismic) monitoring. The major oil companies are increasingly focusing on horizontal drilling techniques combined with hydro fracking to produce the world's vast tight oil and gas shale reserves. Of the over 35,000 wells fracked annually in the U.S. as reported by the EPA, we believe that less than 3% are monitored using micro-seismic techniques, in large part due to high cost, poor reliability and high temperature restrictions. According to a 2012 survey of decision makers within the petroleum operating companies engaged in hydraulic fracture and fracture mapping services by the oilfield research firm Welling & Co., 73% of respondents said the root cause of frac jobs not meeting performance expectations was attributed it to a failure to understand the subsurface. We believe that the only way to improve understanding of the subsurface, is via seismic monitoring with sensors specifically designed to detect and locate microseismic events.

While we previously believed based on discussion with leading industry participants, that they would monitor all their frac jobs if equipment cost can be reduced by 75% below the cost of monitoring with traditional (which we believe is achievable by utilizing USSI fiber optic sensor systems), based on our current understanding of the marketplace and customer constraints, we anticipate that the rate of adoption may occur at a slower pace. We remain optimistic, however, that the market for advanced seismic monitoring will nevertheless be sizeable based upon current pricing of $250,000 (for a 10-level system) to $1.0 million for a larger (40-level) monitoring system.

4D Reservoir Monitoring. In order to optimize production out of operating fields, exploration and production companies are keen to utilize technologies that allow them to understand how the reservoir is changing over time and how it is responding to enhanced recovery techniques like water injection and CO2 flooding. To produce more oil from these existing fields, increased use of 4D seismic techniques (repeated 3D seismic images to monitor the movement of oil reservoir fluids over time) are planned. For 4D to be cost-effective, permanently-installed seismic sensors are needed. Current mainstream oilfield seismic sensing systems are based upon 50 year-old technology that is too costly and unreliable for permanent installations. USSI's fiber optic seismic sensors are specifically designed to meet the demanding performance, cost, and reliability requirements needed for permanent installation and advanced 4D seismic analysis. We are currently involved in a monitoring trial with an oil supermajor where our array will be cemented in the customer’s well and is being observed for a period of several weeks.

Fiber optic perimeter security. USSI has developed an all-optical security system based upon a microphonic cable that can be mounted on a fence, buried along a border/perimeter, or placed underwater in a harbor. We believe the USSI fiber optic microphonic cable is the most sensitive available as it can detect disturbance signals that are 100 times quieter than competing systems. In addition, the USSI system can detect and classify multiple simultaneous events.

Customers and Markets

While USSI continues to make nominal sales to security customers, we are not currently engaged in actively developing and marketing systems for the security market.

USSI targets its products into the oilfield geophysics market, which according to Barclays Capital 2011 E&P Spending report has a $16-19 billion annual market size, of which approximately 10-15%, or approximately $1.6 to 2.85 billion is for equipment such as seismic sources and sensors. USSI's -potential customers are primarily the oilfield service companies. According to the PFC Energy (an IHS Inc. company) 2012 rankings some of the leading oilfield service companies are Schlumberger, Halliburton, Baker Hughes, Ensco, Weatherford and CGG Veritas. To date, we have not sold a product for commercial deployment, as all of our sales have been for trials or pilot projects. . USSI recently announced an order from one of the world's largest oilfield services companies. We are currently focused on completing what we believe are the final steps toward having a commercial product that we hope will lead to reference customers. As a result of several recent customer trials, USSI believes that its products may be of particular interest to those oilfield services companies supporting hydro-fracking in high temperature fields who further desire the ability to deploy and retract sensing devices rather than permanently embed them in their customers' wells.   USSI's products are, however, designed for mid and low temperature deployments as well and have been field tested repeatedly under those conditions.

Challenges and Updates

In connection with the trials referred to above, USSI has experienced various design and deployment challenges that have negatively impacted product performance. Although feedback from several customers indicates that the data from our sensors meets or exceeds our specifications, several customers have requested improvements regarding water blocking (primarily a solution to prevent a crack in the fiber optic cable from allowing water to penetrate the entire array), noise cancellation (a process to eliminate the impact of ambient noise on frac detection) and improved clamping mechanisms to improve vector fidelity (the ability to identify the location of a fracture point with precision). We believe that we have provided or are close to achieving solutions responsive to each of these concerns, but the time involved in resolving these technical issues has delayed our ability to ship product beyond what we had previously anticipated. In the interim, customers continue to rely on existing competing technology, primarily conventional retrievable downhole sensors. Where these systems are not capable of sustained performance (i.e., in high temperature, long-term deployments), well owners are simply foregoing monitoring.

We ramped up USSI’s manufacturing capabilities and head count in anticipation of order volumes we expected would occur during the second half of 2013. Those expectations have not been realized and we do not anticipate significant array sales in 2013; it therefore may be necessary to realign expenses at USSI with the scope of current and near-term revenues. We therefore plan to closely monitor expenses to ensure they remain in line with current and projected activities. We may also make strategic hires of additional personnel with experience in the oil and gas industry to assist with our penetration into this complex market.

Our path toward full-scale production and, we believe, ultimate profitability, involves our successfully following four key steps:

- Prove that our tool works. Customer feedback from the trials to date, like the supermajor conducting the trial referred to above, and others, are telling us that our data is excellent and that we meet or exceed our own published specs;

- Confirm through further testing that the data we collect has economic value to our target customers. We expect to do this by further field trials with producers and the oilfield services companies that support them and are in active discussions now for more of these projects;

- Increase opportunities to attract early adopters of our technology by building, as capital permits, a “fleet” of rental arrays to reduce the economic hurdle to their evaluation of our products; and

- Reach a level of industry adoption and sales where we can either operate USSI profitably on our own, attract a partner with the financial and other resources necessary to scale the business, or monetize our investment through a sale or other strategic event.

ENERGY & SECURITY SONAR SOLUTIONS – DSIT SOLUTIONS LTD.

We currently own approximately 88.3% of DSIT Solutions Ltd. ("DSIT") upon conversion of currently held DSIT preferred stock. DSIT is a globally-oriented business based in Israel with expertise in sonar and acoustics and development capabilities in the areas of real-time and embedded systems. Based on these capabilities, we offer a full range of sonar and acoustic-related solutions to strategic energy installations as well as defense and homeland security markets. Commencing in 2012, DSIT began to leverage its acoustic signal processing capabilities for land seismic security applications.

Products and Services

DSIT’s Energy & Security Sonar Solutions activities are focused on two areas – sonar and acoustic solutions for energy and security markets and other real-time and embedded hardware and software development and production. DSIT’s other operations include IT and consulting activities whose results are not included in the Energy & Security Sonar Solutions segment.

Energy & Security Sonar Solutions.

Our energy & security sonar solutions include a full range of sonar and acoustic-related solutions to the strategic energy installation, defense and homeland security markets. DSIT's product offerings include: AquaShield™ Diver Detection Sonar (DDS), PointShield™ Portable Diver Detection Sonar (PDDS), Sonar Simulators and Trainers, Portable Acoustic Ranges (PAR), Underwater Acoustic Signal Analysis (UASA) systems and Sonar Upgrade Programs (SUP). Last year, DSIT and USSI were awarded a grant from the Israel-U.S. Binational Industrial Research and Development Foundation ("BIRD Foundation") for the joint development of a next generation integrated passive/active threat detection system for underwater site protection (PAUSS). Due to USSI's focus on its oil and gas activities, we foresee some slowdown in the development of the PAUSS in the near future. In addition to its joint efforts with USSI in underwater site protection, DSIT is exploring solutions for the perimeter fiber optic security market. DSIT and Ramot, the technology transfer company of Tel-Aviv University, recently were jointly awarded a grant from MEIMAD for the joint development of a next generation Fiber-Optic Based Perimeter Security System Interrogator. The interrogator is the optics/electronics heart of the fiber optic sensing system.

Other Real-Time and Embedded Solutions

Additional areas of development and production in real-time and embedded hardware and software include Weapon/C&C Operating Consoles for unique naval and air applications; Computerized Vision for the Semiconductor; and modems, data links and telemetry systems.

Customers and Markets

DSIT looks to sell to potential customers in areas that have significant underwater energy assets and infrastructure, including the oil platforms that drill, extract and temporarily store oil and gas, as well as the oil and gas wellheads, pipelines and pumps required to transfer the product from its location to shore. Our Energy & Security Sonar Solutions segment faces competition from several competitors, large and small, operating in worldwide markets with substantially greater financial and marketing resources. We believe that our wide range of experience and long-term relationships with large businesses as well as the strategic partnerships that we are developing will enable us to compete successfully and obtain future business.

SMART GRID DISTRIBUTION AUTOMATION – GridSense

GridSense which is 100% owned by Acorn, develops and markets remote monitoring systems to electric utilities and industrial facilities worldwide. These systems are used in a wide range of utility applications including outage management, power quality monitoring, system planning, trouble shooting and proactive maintenance, and condition monitoring. These systems provide transmission and distribution network operators with the intelligence to better and more efficiently conduct grid operations. GridSense's solutions allow end-users to cost effectively monitor the power quality and reliability parameters of electric transmission and distribution systems in applications where competitive offerings are non-existent or cost-prohibitive.

GridSense Offerings & Solutions

GridSense provides a range of offerings to utilities worldwide that help them identify, and in some cases prevent, outages and failure conditions. GridSense offerings identify issues on transformers from the substation to the poletop, overhead distribution and transmission lines, and power transformer bushings. GridSense also provides solutions for underground line monitoring, power quality analysis, and close up inspection of energized, high voltage assets. GridSense offerings include: Transformer IQ® - a comprehensive, cost-effective monitoring system that monitors from the substation to the residential transformer all transformer failure parameters; Line IQ® Systems – which provide real-time monitoring of events, load, voltage and temperatures with intelligent algorithms for accurate fault detection and overhead line condition monitoring; Bushing IQ® - a continuous online system for monitoring power factor in high voltage capacitive bushings in all types of weather; PowerMonic™ – a range of outdoor power analyzers and analytical software that provides portable, comprehensive monitoring of low-voltage circuits, including power quality profiles, transient recordings, RMS event captures, flicker, sags and swells, and remote capabilities; and HighV™ Camera - a high-voltage inspection tool for energized assets to 345kV phase to phase.

GridSense also has several products under current development including: Grid InSite™ - an intuitive, integrated software platform for configuring GridSense network monitoring devices, accessing their data, and turning that data into actionable, smart grid intelligence; DemandIQ™ – a system that uses TransformerIQ® to detect overload conditions at the poletop transformer and, in conjunction with proprietary algorithms developed at San Diego Gas and Electric, perform direct load shedding within the household; and DistributionIQ® - a robust platform for battery- and maintenance-free remote monitoring of non-transformer assets and applications, including fixed capacitor banks, underground cables, and underground line faults.

Customers and Markets

The industry in which GridSense operates is characterized by intense competition from both large, established companies as well as smaller companies with specialized offerings. Strategically important markets include North America, South America, China and South Africa. Having invested heavily in an organization to support its customers in the U.S. and Canada, GridSense has grown its customer base from just a handful a few years ago to nearly 400 utility companies ranging from municipal utilities and cooperatives to large investor owned utilities. GridSense has not, however, generally been able to leverage market exposure into high volume sales. We believe this is due to the fact that until recently, GridSense's focus had been on increasing the number of pilots which, though having potential for sizeable orders, required considerable engineering resources and customization effort. Furthermore, pilot programs (consisting of deployment of one or more products on a test basis) generally last between three and eighteen months. GridSense's new management has realigned sales and engineering efforts and is focusing on fewer and more standardized opportunities with the most perceived likelihood for successful deployment and commercial-scale orders. Unlike North America, which is characterized by a large number of electricity suppliers over a vast geographic territory, the opportunities in South America, China and South Africa are focused on a small number of large electric utility operators. We utilize a network of resellers, including rental companies, electrical engineering firms, distributors, independent manufacturers' representatives and agents and are currently pursuing deployment opportunities in these aforementioned markets, including supporting local pilots that either were underway or meet our new participation criteria. We have no assurance that any of our pilot programs will ultimately result in large scale roll-out programs.

Restructuring and Financial Outlook

During the second quarter of 2013, GridSense restructured its operations in both its USA and Australian entities. This action was taken primarily in order to improve efficiency based on GridSense's revenue mix and skills mix. Accordingly, GridSense recorded a restructuring charge of $594,000 related to severance and other termination benefits for positions made redundant both in the United States and in Australia, moving its operations to a smaller facility in Australia, the abandoned fixed assets and for products which had been produced in Australia, but will no longer be produced or supported by U.S. operations.

In addition to the impact of the restructuring, delays in anticipated orders and the slow conversion of pilots to commercial sales has kept GridSense revenues below initially projected revenues for 2013. We have, however, reduced the break-even point for GridSense by nearly $5 million. While no assurance can be given that such will be the case, GridSense's plan for the fourth quarter of 2013 and for 2014 is being developed (together with OmniMetrix as described below) with a goal of being cash neutral to Acorn. As described below, we also believe GridSense may benefit from the addition of a recurring revenue stream following completion of a planned integration with OmniMetrix.

POWER GENERATION MONITORING - OmniMetrix, LLC

We acquired OmniMetrix™ on February 15, 2012. OmniMetrix is a Georgia limited liability company established in 1998 based in Buford, Georgia that develops and markets wireless remote monitoring systems and services for two markets - stand-by power generators and cathodic protection for the gas pipeline industry. Acorn owns 100% of OmniMetrix.

Products & Services

In the Power Generation ("PG") market, OmniMetrix sells a line of devices built on its baseline G8500 wireless remote monitor. This device is designed to be broadly applicable across all brands and models of emergency power generators. The G8500 product family provides the ability to identify whether an emergency generator is capable of operating as expected. In 2012, OmniMetrix designed and gained approval from PTCRB and AT&T for a new 4G data radio module, replacing the 2G technology used since 2007. This new device includes GPS functionality for the first time, enabling the company to bring a mobile asset tracking functionality into the market, with primary focus on mobile generators and related equipment. OmniMetrix’ G8700 product line is designed specifically for this mobile market segment, and offers robust functionality and ultra-low power consumption, a critically important feature for mobile equipment.

In the Pipeline market, OmniMetrix offers two primary product lines, Rectifier Monitors and Test Point Monitors. Both of these products are used in Cathodic Protection ("CP") engineering, a process which reduces rust and corrosion on the steel pipes used to transport natural gas underground. As the name suggests, the OmniMetrix Rectifier Monitor (RM) product monitors the operation of the rectifiers, which are a critical component in the effort to prevent corrosion, and are also the most common point of failure in the corrosion system. The OmniMetrix Computer Automated Test Station (CATS) is also used to provide data points along the pipeline segment powered by the rectifier.

Customers and Markets

OmniMetrix' PG monitors have been installed on generators from original equipment manufacturers ("OEMs") such as Caterpillar, Kohler, Generac, Cummins, MTU Energy and other generator manufacturers. Based on both published and industrial sources, we estimate that the U.S. emergency power generation marketplace consists of at least 100,000 industrial generators and 150,000 residential generators per year. These new machines join an installed base of approximately two million generators. While new generators provide more useful diagnostic data thanks to their computerized controls, older machines have an ever greater need for basic monitoring due to their aging systems. Some estimates place the world market for monitoring at over 10 million installed generators.

OmniMetrix provides dual value propositions to the generator service organizations as well as to the machine owner. The dealers benefit from the receipt of performance data and status conditions from the generators they service for their customers that allows the dealer service organization to be proactive in their delivery of service to their customers, as well as to implement the OmniMetrix *SmartService™* approach to analyzing the remote machines before dispatching a service truck. Since the majority of service and warranty costs are incurred from service people driving trucks, preemptive analysis of customer site conditions prior to dispatch can reduce their labor cost consequentially. From the machine owner's perspective, the OmniMetrix product provides a powerful tool to be used in their constant effort to avoid failures that come from consumables such as batteries and fuel. With proper monitoring, the large majority of machine failures can be avoided completely. This migration from failure reporting to failure prevention is fundamental to the OmniMetrix focus, and is the result of a strong data collection and analysis design point. We believe that this transition to prognostics sets OmniMetrix apart from its competitors, many of whom are still in the failure reporting phase of application development.

In addition, in January 2013, the EPA finalized amendments to the National Emissions Standards for Hazardous Air Pollutants for stationary reciprocating internal combustion engines (generators). Now, every commercial generator over a certain size is required to collect and report run times and annual emissions or face significant civil penalties. Consequently, we believe that some end-user customers as well as environmental engineering firms, will see significant value in our offering due to our ability to assist end-user customers in complying with such environmental regulations. As a result, we have increased our marketing efforts to highlight this value we provide to our customers. We are currently providing reports and information to end-user customers to assist them in their environmental compliance, and we have received positive feedback from these customers.

There are two types of competitors in the PG marketplace: independent monitoring organizations (such as OmniMetrix) who produce the monitoring systems (but not the equipment being monitored); and OEMs such as generator manufacturers or generator controls manufacturers who have begun offering customer connectivity to their machinery. We recently commissioned a market study that supports our belief that we offer an excellent product, but which indicates that our pricing strategy needs to become more aggressive in order to compete effectively with both our monitoring and OEM competitors. Whether any new pricing and marketing programs will be effective cannot be determined.

Within the CP pipeline marketplace, there are no OEM competitors, but there are several independent monitoring companies similar to OmniMetrix. While we believe that OmniMetrix systems provide greater functionality than its competitors, those competitors offer a broader range of corrosion products beyond monitoring enabling better channel penetration than OmniMetrix can accomplish. We do not anticipate significant growth in this marketing channel due to the crowded competitive field, although we are fortunate to have several repeat customers for which we are monitoring hundreds of units.

Restructuring and Financial Outlook

OmniMetrix operates primarily on a recurring revenue model where monitors are sold at or below cost in exchange for customer commitments for fixed term monitoring contracts. We have increased connections (the number of units producing revenue – primarily from monitoring subscriptions) from approximately 1,700 at the time of our acquisition in February 2012, to approximately 3,800 as of September 30, 2013. During the first half of 2013, OmniMetrix marketed primarily to dealers and distributors of the most common brands of generators. While some larger dealers have embraced the *SmartService™* model, it has not universally resonated within the dealer marketplace and the rate of anticipated adoption (and thus sales of monitors and monitoring subscriptions) has been far slower than anticipated. Revenue in 2013 and expected future monitoring revenues from renewals has been significantly adversely impacted by both our inability to make new sales as well as the loss of a long-standing customer that resulted in the impairment charge previously disclosed.

We are currently refining a revised strategic direction for this company which includes marketing to end-users as well as to select dealers identified as possessing both substantial maintenance customer bases and a willingness to provide value-added services. We intend to combine the operations of OmniMetrix with GridSense in order to capitalize on synergies from both companies' machine-to-machine operating models, power assurance focus and complementary personnel, and as a first step have appointed the CEO of GridSense to also serve as CEO of OmniMetrix. At this time, we have begun to identify potential cost savings and are evaluating appropriate steps to substantially reduce the working capital requirements at OmniMetrix. We do not expect that such restructuring plan will require significant capital in the short term.

RECENT DEVELOPMENTS

As discussed above, each of our companies experienced delays in anticipated orders, lower than planned sales volume or shipment of orders and, in the case of USSI, technical challenges that collectively and materially have negatively impacted and are expected to continue to negatively impact our financial performance for the near term. We anticipate that revenue and earnings performance for the third quarter of 2013 ended September 30, 2013 (not yet reported) and for the years ending December 31, 2013 and 2014 will be materially below analyst consensus expectations. We anticipate that revenues for the third quarter of 2013 will, however, be approximately the same as those reported for the second quarter of 2013 ended June 30, 2013. Because the impairment and restructuring charges related to OmniMetrix cannot yet be determined, we currently do not have visibility into the earnings results for the third quarter. We also anticipate a material decrease in cash related to our general business activities throughout the quarter ended September 30, 2013 that is expected to be consistent with cash burn in the quarter ended June 30, 2013.

On October 3, 2013, the Company's Audit Committee. determined that the Company will record an impairment charge as a result of write-downs of goodwill and/or other intangibles, and will record a restructuring charge, with respect to OmniMetrix. OmniMetrix is currently engaged in restructuring its operations to better align expenses with revenues as now projected by its new management**.** This is expected to result in significantly reduced utilization of its new leased facility in Buford, Georgia and to result in a write-down of a substantial portion of the carrying value of the leasehold improvements associated with the facility and other restructuring charges.

The Company is currently unable to determine the amount of the impairment and restructuring charges. The total carrying value at June 30, 2013 of the OmniMetrix goodwill was approximately $1.9 million, other intangibles was approximately $3.8 million and the gross amount of the leasehold improvements was approximately $0.7 million. It is expected that these values would be written down in amounts to be determined, but that they may not necessarily be written off in their entirety. The impairment charges from write-down of the goodwill and/or other intangibles and the leasehold improvements would be non-cash expenses, while any other restructuring charges may be cash expenses. The impairment and restructuring charges would likely have a material impact on the Company's results of operations for the third quarter of 2013.

Business Developments

Despite the decline in financial performance, there have been several key developments that we believe ultimately may positively impact our future financial performance. Announcements we have made recently are as follows:

- USSI announced an order from one of the world's largest oil services companies – August 14, 2013;

- USSI announced advances in tests with a supermajor oil company – October 1, 2013;
- DSIT and Tel Aviv University collaborated to win development grant – September 3, 2013; and
- GridSense/OmniMetrix are being combined into a single operating division exploiting synergies with the goal of accelerating the path to market for products—July 31, 2013.

THE OFFERING

Proposed Aggregate Offering Size	$15,000,000
Common Stock Offered	
Common Stock to be Outstanding After This Offering (1)	shares
Over-allotment Option	We have granted the underwriters a 45-day option to purchase up to an additional shares of common stock solely to cover over-allotments. If the underwriters exercise the option in full, the total underwriting discount payable by us will be $ and the total proceed to us before expenses will be $.
Use of Proceeds	We intend to use the net proceeds received from the sale of the shares primarily to provide working capital for the development of our USSI subsidiary and for other general corporate purposes. See “Use of Proceeds” on page S-32.
Underwriter Compensation Warrants	The Company shall issue to the representative of the underwriters, upon closing of this offering, compensation warrants entitling the representative to purchase 6.5% of the aggregate number of shares of common stock issued in this offering, including shares issued pursuant to the exercise of the over-allotment option. The underwriter warrants will have a term of five years and may be exercised on a cashless basis. The underwriter warrants are exercisable commencing 180 days after the date of the prospectus supplement.
Indication of Interest to Participate by Certain of our Directors and Officers	Certain of our directors and officers have indicated an interest in purchasing an aggregate of approximately 140,000 shares of our common stock in this offering on the same terms and subject to the same conditions as the other investors in the offering.
Risk Factors	This investment involves a high degree of risk. See “Risk Factors” included and referred to on page S-12 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, as of September 30, 2013: 23,000 warrants outstanding, all of which are exercisable at a price of $3.68 per share, and 1,107,159 options outstanding and exercisable with a weighted average exercise price of $4.78 per share, and 396,723 options that are outstanding, but have not yet vested. Except as otherwise noted, all information in this prospectus supplement assumes no exercise of the underwriters’ over-allotment option.

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 I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2012, which is incorporated by reference herein, and the other information set forth or incorporated by reference in this prospectus supplement and the accompanying 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. We may from time to time make written or oral statements that contain forward-looking information. However, our actual results may differ materially from our expectations, statements or projections. The following risks and uncertainties, together with other factors not presently determinable, could cause actual results to differ from our expectations, statements or projections.

RISKS RELATED TO THE OFFERING

We have broad discretion in how we use the proceeds from this offering and we may use the proceeds in ways with which you disagree.

Our management has broad discretion over how the proceeds of this offering are used and could spend the proceeds in ways with which you may not agree. We currently intend to use the net proceeds received from the sale of the securities primarily to provide working capital for our USSI and other general corporate purposes. 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 or any return. The failure of our management to use the proceeds of this offering effectively could have a materially adverse effect on our business, financial condition and prospects.

You will experience immediate dilution in the book value per share of the common stock you purchase.

The public offering price per share of common stock is expected substantially higher than the net tangible book value per share of our outstanding common stock. As a result, based on our capitalization as of June 30, 2013, investors purchasing common stock in this offering will incur immediate dilution of $ per share of common stock purchased, based on the offering price of $ 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-35.

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.

Almost all of our outstanding shares of common stock are, or could upon exercise of options or warrants would 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 September 30, 2013, 18,090,536 shares of our common stock were issued and outstanding. As of that date we had 23,000 warrants outstanding and exercisable with a weighted average exercise price of $3.68 and 1,107,159 options outstanding and exercisable with a weighted average exercise price of $4.78 per share, which if exercised would result in the issuance of additional shares of our common stock. In addition to the options noted above, at September 30, 2013, 396,723 options are outstanding, but have not yet vested and are not yet exercisable.

Substantially all our currently outstanding shares and shares issuable under our outstanding options and warrants are or would be freely tradable, as would the shares to be issued in this Offering.

Our stock price is highly volatile.

The market price of our common stock has fluctuated substantially in the past and is likely to continue to be highly volatile and subject to wide fluctuations. During 2013, our common stock has closed at prices as low as $5.82 and as high as $9.81 per share. Fluctuations in our stock price may continue to occur in response to various factors, many of which we cannot control, including:

- general economic and political conditions and specific conditions in the markets we address, including the continued volatility in the energy industry and the general economy;
- quarter-to-quarter variations in our operating results;
- announcements of changes in our senior management;
- the gain or loss of one or more significant customers or suppliers;
- announcements of technological innovations or new products by our competitors, customers or us;
- the gain or loss of market share in any of our markets;
- changes in accounting rules;
- changes in investor perceptions; or
- changes in expectations relating to our products, plans and strategic position or those of our competitors or customers.

In addition, the market prices of securities of energy related companies have been and remain volatile. This volatility has significantly affected the market prices of securities of many companies for reasons frequently unrelated to the operating performance of the specific companies.

We may have to offer additional securities for sale in the near future depending upon the amount of proceeds received in this offering.

We anticipate that we may need to raise additional amounts during 2014 to finance the plans for our USSI business as described herein. In such event, investors will incur additional dilution in the value of their shares. Even if we sell all the shares offered hereby and the underwriters exercise their over-allotment, the proceeds may still not be sufficient to allow us to execute our plans, including, due to delays in anticipated commercialization of our USSI products, cash needs at our other subsidiaries or the occurrence of one or more other events that require us to make significant expenditures.

GENERAL FACTORS

We expect that our earnings and revenues for the third quarter of 2013 and for the years ending December 31, 2013 and 2014 will be below the consensus expectations of the analysts that report on our stock.

Each of our companies experienced delays in anticipated orders, lower than planned sales volume or shipment of orders and, in the case of USSI, technical challenges that collectively and materially have negatively impacted and are expected to continue to negatively impact our financial performance for the near term. We anticipate that revenue and earnings performance for the third quarter of 2013 ended September 30, 2013 (not yet reported) and for the years ending December 31, 2013 and 2014 will be materially below analyst consensus expectations. We anticipate that revenues for the third quarter of 2013 will, however, be approximately the same as those reported for the second quarter of 2013 ended June 30, 2013. Because the impairment and restructuring charges related to OmniMetrix cannot yet be determined, we currently do not have visibility into the earnings results for the third quarter. We also anticipate a material decrease in cash related to our general business activities throughout the quarter ended September 30, 2013 that is expected to be consistent with cash burn in the quarter ended June 30, 2013.

We have a history of operating losses and have used increasing amounts of cash for operations and to fund our acquisitions and investments; we may need additional working capital beyond the proceeds of this Offering to fund our operations in 2014 and beyond.

We have a history of operating losses, and have used significant amounts of cash to fund our operating activities over the years. In 2010, 2011 and 2012, we had operating losses of $6.5 million, $8.0 million and $20.7 million, respectively. Cash used in operating activities of continuing operations in 2010, 2011 and 2012 was $6.3 million, $7.8 million and $22.2 million, respectively. Our operating losses and cash used in operations were $12.7 million and $11.0 million, respectively, as of June 30, 2013 and we believe that these amounts for calendar year 2013 may exceed 2012 amounts.

We do not presently anticipate pursuing new acquisitions and investment opportunities, but we do expect to continue to support the financing needs of USSI and possibly our other subsidiaries. Without the proceeds of this offering, we do not expect to have sufficient cash to fund our corporate headquarters activities and support all the working capital needs of USSI and other subsidiaries for the next year. Depending on the proceeds of this offering, we may have to raise capital either through the issuance of debt, equity or the sale of one or more of our investments in order to provide sufficient working capital for 2014 and beyond. We do not know if such funds will be available if needed on terms that we consider acceptable. We may have to limit or adjust our operating strategy in order to continue to pursue our corporate goals.

Goodwill and other intangible assets recorded in connection with our acquisitions is subject to impairment evaluations and as a result, we could be required to write off some or all of these intangibles, which may adversely affect our financial condition and results of operations.

In accordance with applicable accounting principles, goodwill is not amortized but is reviewed annually or more frequently for impairment and other intangibles are also reviewed if certain conditions exist. While we have not recorded an impairment of goodwill during the years ended December 31, 2012 or 2011, during the year ended December 31, 2010, we recorded a $5.0 million impairment of goodwill associated with our former Coreworx subsidiary following our decision to stop funding it and an impairment of $1.2 million associated with our GridSense segment. We also recorded an impairment charge of $1.1 million at OmniMetrix in the second quarter of 2013 due to the loss of a customer relationship. Any additional impairment of the value of recorded goodwill or other intangibles will result in an additional charge against earnings which could materially adversely affect our reported results of operations and financial position in future periods.