ACORN ENERGY, INC.
Form 10-K
March 22, 2010

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2009 Commission file number: 0-19771

ACORN ENERGY, INC.
(Exact name of registrant as specified in charter)

Delaware	22-2786081
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
4 West Rockland Road, Montchanin, Delaware	19710
(Address of principal executive offices)	(Zip Code)

302-656-1707
Registrant's telephone number, including area code

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

Title of Class	Name of Each Exchange on Which Registered
Common Stock, par value $.01 per share	The NASDAQ Global Market

Securities registered pursuant to Section 12(g) of the Act:
None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ¨ No x

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes ¨ No x

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ¨ No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ¨ Accelerated filer ¨ Non-accelerated filer ¨ Smaller reporting company x

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ¨ No x

As of last day of the second fiscal quarter of 2009, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was approximately $30.4 million based on the closing sale price on that date as reported on the NASDAQ Global Market. As of March 15, 2010 there were 14,219,148 shares of Common Stock, $0.01 par value per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE:

None.

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Certain statements contained in this report are forward-looking in nature. These statements can be identified by the use of forward-looking terminology such as “believes”, “expects”, “may”, “will”, “should” or “anticipates”, or the nega thereof, or comparable terminology, or by discussions of strategy. You are cautioned that our business and operations are subject to a variety of risks and uncertainties and, consequently, our actual results may materially differ from those projected by any forward-looking statements. Certain of such risks and uncertainties are discussed below under the heading “Item 1A. Risk Factors.”

AquaShield™ is a trademark of our DSIT Solutions Ltd. subsidiary. CoaLogix™ and MetalliFix™ are trademarks of our CoaLogix subsidiary. Coreworx™ is a trademark of our Coreworx subsidiary.

PART I

ITEM 1. BUSINESS

OVERVIEW

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

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

SCR Catalyst and Management Services. We provide selective catalytic reduction ("SCR") catalyst and management services for coal-fired power plants through our CoaLogix Inc. ("CoaLogix") subsidiary. These services include SCR catalyst management, cleaning and regeneration as well as consulting services to help power plant operators optimize efficiency and reduce overall nitrogen oxides ("NOx") compliance costs through CoaLogix's SCR-Tech LLC subsidiary.

- Naval and RT Solutions. We provide sonar and acoustic related solutions for energy, defense and commercial markets with a focus on underwater site security for strategic energy installations and other real-time and embedded hardware and software development and production through our DSIT Solutions Ltd. ("DSIT") subsidiary.

- Energy Infrastructure Software (EIS) Services. We provide energy infrastructure software services through our Coreworx Inc. ("Coreworx") subsidiary. Coreworx is a leading provider of integrated project collaboration and advanced document management solutions for the architecture, engineering and construction markets, particularly for large capital projects in the energy industry.

Entities in which we own equity interests are engaged in the following activities:

- GridSense Pty Ltd. ("GridSense") provides remote monitoring and control systems to electric utilities and industrial facilities worldwide.

- U.S. Sensor Systems, Inc. ("USSI") develops and produces fiber optic sensing systems for the energy and defense markets (See "Recent Developments").

During 2009, we had operations in three reportable segments: providing catalyst regeneration technologies and management services for SCR systems through our CoaLogix subsidiary (our CoaLogix segment); providing sonar and acoustic related solutions and other real-time and embedded hardware and software development and production for energy, defense and commercial markets through our DSIT subsidiary (our Naval & RT Solutions segment); and providing integrated project collaboration and advanced document management solutions for the architecture, engineering and construction markets through our Coreworx subsidiary (our EIS segment). Our "Other" segment represents IT and consulting activities at our DSIT subsidiary.

REVENUES BY COMPANY

The following table shows, for the periods indicated, the dollar amount (in thousands) of the consolidated revenues attributable to each of our consolidated companies.

	Year ended December 31,		Three months ended December 31,	
	2008	2009	2008	2009
CoaLogix	$ 10,099	$ 18,099	$ 4,658	$ 5,338
DSIT Solutions	8,267	9,219	1,945	2,746
Coreworx	2,330	3,999	1,563	512
Total	$ 20,696	$ 31,317	$ 8,166	$ 8,596

COALOGIX

Through SCR-Tech, which is 100% owned by our 77% owned CoaLogix subsidiary, we offer a variety of services for coal-fired power plants that use SCR systems to reduce nitrogen oxides ("NOx") emissions. NOx emissions are contributors to ground-level ozone (smog), particulate matter and acid rain. These services include SCR catalyst management, cleaning and regeneration, as well as consulting services to help power plant operators optimize efficiency and reduce overall NOx compliance costs.

Coal-fired power plants, in particular, continue to be a primary target for NOx reduction, and selective catalytic reduction remains the most widely used technology by plant operators to control NOx. With NOx removal efficiencies of up to 95%, SCR systems (also referred to as SCR reactors) are considered to be the most effective NOx reduction solution, and we expect it to remain the dominant technology choice for coal-fired power plants to meet increasingly stringent U.S. air quality regulations.

The average useful life of SCR catalyst used at coal-fired power plants is approximately 24,000 hours (equivalent to three years of year-round operation). Until 2003, the only solution in the U.S. for restoring activity and NOx reduction performance was to replace spent catalyst with costly new catalyst. Since 2003, SCR-Tech has offered U.S. power plant operators a more cost-effective alternative in the form of catalyst regeneration.

Regulatory Drivers

The 1990 Clean Air Act Amendments were implemented to improve air quality in the U.S., and are enforced by the U.S. Environmental Protection Agency ("EPA"). Under the Clean Air Act, the EPA limits how much of a pollutant can be in the air anywhere in the United States, with each state responsible for developing individual state implementation plans ("SIPs") to meet the EPA's set limits for various pollutants. Emissions of NOx from coal-fired power plants are included in the EPA's criteria pollutants for which limits have been established. Operators of large power plants, particularly in the Eastern half of the U.S., have been required to significantly reduce their NOx emissions.

The original regulatory driver of SCR-Tech's business was the EPA's NOx SIP Call program which was designed to mitigate the regional transport of NOx and required energy producers and other industries operating large power plants in the Eastern half of the U.S. to reduce their NOx emissions substantially and to maintain them at reduced levels particularly during the five-month "ozone season" (May 1-September 30) in 19 Midwestern and Eastern states and the District of Columbia. This program has resulted in a dramatic increase in the number of SCR system installations at coal-fired power plants for the removal of NOx.

The Clean Air Interstate Rule ("CAIR") is another regulatory driver of our SCR service business. Phase I caps on NOx emissions took effect January 1, 2009, and are designed to permanently cap and achieve substantial reductions in emissions of NOx across 28 Eastern states and the District of Columbia that we believe will further increase the size of our addressable market. By 2015, CAIR is expected to significantly reduce NOx emissions in these states from 2003 levels by plants utilizing a cap-and-trade approach. This rule builds on the NOx SIP Call with the objective of further mitigating air pollution moving across state boundaries, and is designed to cut NOx emissions from power plants significantly with the 2009 Phase I caps and by the implementation of Phase II caps in 2015. CAIR's Phase I caps require year-round SCR system operation for many power plants (with increased NOx reduction required during ozone season) to meet the more stringent requirements. With year-round operation of SCRs needed by many power plants to comply with CAIR, coal-fired power plant operators will be required to replenish the catalyst used in SCR systems with new or regenerated catalyst on a much more frequent basis.

On July 11, 2008, the D.C. Court of Appeals vacated CAIR and the associated Federal Implementation Plan. On December 23, 2008, the court subsequently re-instated CAIR to give the EPA an opportunity to fix flaws found by the court in its previous decision. The court did not provide a time limit for the EPA to complete the changes. The changes required by the court do not affect SCR usage or required emission caps or limits.

Market for SCR Catalyst and Management Services

Coal-fired plants represent approximately 50% of U.S. power generating capacity, and we believe they will continue to play an important role in the U.S. electricity generation market in the years ahead. Department of Energy (DOE) projections indicate that coal-fired electric power generation will grow gradually through 2035. The recent growth in SCR system installations in coal-fired power plants driven by the NOx SIP Call and CAIR has resulted in a large and growing U.S. market for SCR catalyst and management services. Based upon the substantial number of SCR systems that commenced operation between 2000 and 2006 combined with the CAIR Phase I caps which began on January 1, 2009, we expect the market for catalyst replenishment to increase dramatically, and result in a total addressable market for catalyst cleaning and regeneration estimated in excess of $100 million by 2011.

By offering customers more economical ways to operate and maintain their SCR units, along with a lower cost regeneration alternative to purchasing new catalyst, we believe SCR-Tech has the potential to play a significant role in the growing U.S. market for SCR catalyst and management services.

SCR-Tech's Service Offerings

Catalyst Cleaning, Rejuvenation and Regeneration

We offer proprietary and patented processes that can improve the NOx removal efficiency and restore the useful life of installed SCR catalyst, providing a compelling economic alternative to catalyst replacement. SCR-Tech's processes are capable of not only physically cleaning and rejuvenating the most severely plugged, blinded or poisoned catalyst, but of also chemically reactivating deactivated catalyst. Depending upon the state of the installed catalyst, SCR-Tech offers several alternatives for restoring its NOx removal efficiency and extending its life. The chemicals and raw materials used in the cleaning and regeneration processes are commonly and readily available.

SCR-Tech's regeneration process has several advantages over purchasing new catalyst by (i) offering cost savings, (ii) eliminating or reducing environmental related disposal issues, (iii) enhancing catalyst activity and (iv) reducing sulfur dioxide conversion.

SCR and Catalyst Management

We provide a broad array of customized SCR and catalyst management services, including guidance on effective SCR and catalyst management strategies, with the objective of assisting plant operators in optimizing the operation and performance of their SCR systems while reducing their operation and maintenance costs and achieving cost-effective NOx compliance. All SCR and catalyst management services are offered as either a complete package or "a la carte," allowing the flexibility to select and combine various services on an as-needed basis tailored to the individual SCR system.

Customers

Our SCR catalyst and management services business currently primarily serves the U.S. coal-fired power generation market. Our customer base ranges from large investor-owned utilities and independent power producers to smaller municipal power generators. As part of an ongoing growth and revenue diversification strategy, SCR-Tech continues to actively target SCR operators at coal-fired power plants throughout the United States, and the Eastern U.S. in particular, to further expand its customer base and broaden its reach in the marketplace. In 2009, two customers represented approximately 36% of SCR-Tech's revenue, and one of those customers, Alleghany Energy, comprised 14.0% of Acorn's sales for 2009 and the loss of Alleghany Energy as a customer would have a material adverse effect on Acorn and its subsidiaries taken as a whole. In 2008, three customers represented approximately 75% of SCR-Tech's revenue.

Competition

We are aware of one company, Evonik Energy Services LLC ("Evonik LLC"), which entered the U.S. catalyst regeneration market beginning in 2008, and has a regeneration facility in North Carolina. Evonik LLC, based in Charlotte, North Carolina, is a subsidiary of a large German company, Evonik Steag GmbH. We are currently involved in litigation with Evonik LLC. See Item 3. Legal Proceedings. Another company, Enerfab Inc. provides catalyst management, and also cleans and rejuvenates catalyst but does not regenerate catalyst (which involves reactivating catalyst with chemicals to restore the catalyst to its maximum efficiency). In addition, new catalyst replacement is the primary competition for SCR-Tech's regeneration process when a replenishment of catalyst activity is necessary. The basis of competition is often price as many projects are subject to competitive bidding. Quality and service can also be competitive factors.

Production Facilities

SCR-Tech's business operations are located in Charlotte, North Carolina in a 126,000 square foot production facility for the cleaning and regeneration of SCR catalyst.

In anticipation of CoaLogix's need to increase production capacity in order to satisfy expected increased orders from customers, in April 2009 we entered into an agreement with EnerTech and CoaLogix senior management to invest approximately $11.5 million in CoaLogix. To date, $5.6 million has been invested by EnerTech, CoaLogix senior management and us in CoaLogix under the agreement.

In September 2009, we announced that SCR-Tech entered into an agreement to lease approximately 7.3 acres of land in Charlotte, North Carolina together with a building containing approximately 143,500 square feet of office and warehouse space. SCR-Tech entered into this lease to provide it with additional space for manufacturing, warehousing, research and development and administration. SCR-Tech is initially leasing 98,460 square feet through August 31, 2010, and will lease the balance of the 45,040 square feet on or before September 1, 2010. SCR-Tech is in the process of upfitting the space, and anticipates such upfit to be completed around mid-2010. We believe that our current production facility together with the new production facility (when ready) will provide sufficient capacity for cleaning and regeneration activities for the near future.

Intellectual Property

We use a combination of patents, trade secrets, contracts, copyrights and trademarks to protect the proprietary aspects of our core technologies, technological advances and innovations, including our cleaning and regeneration processes and other know-how, and we work to actively maintain protection of our proprietary technologies and processes over time through follow-on patent filings associated with technology and process improvements that we continually develop. A significant portion of our know-how is protected as trade secrets and supported through contractual agreements with our employees, suppliers, partners and customers.

We either own (exclusively or jointly) or hold exclusive license rights from third parties for six U.S. patents, three Canadian patents, one German patent and six pending U.S. applications. We anticipate that when our early patents expire, we will rely on subsequently filed and additional patents along with trade secrets and other know-how to protect the foundation technology and cleaning and regeneration processes. We plan to continue to file new patent applications as we gain knowledge and experience with our various processes and service offerings.

NAVAL & RT SOLUTIONS – DSIT SOLUTIONS LTD.

DSIT Solutions is a globally-oriented company 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. In addition, based on expertise in fields such as signal acquisition and processing applications, communication technologies, computerized vision for the semiconductor industry and command, control and communication management ("C3") we provide wide ranging solutions to both governmental and commercial customers.

Products and Services

DSIT's Naval and RT Solutions activities are focused on two areas – sonar and acoustic solutions for naval and security markets and other real-time and embedded hardware and software development and production.

Naval Solutions. Our naval solutions include a full range of sonar and acoustic-related solutions to the strategic energy installation, defense and homeland security markets. These solutions include:

- AquaShield™ Diver Detection Sonar ("DDS") – DSIT has developed an innovative, cost-effective DDS system, the AquaShield™, that provides critical coastal and offshore protection of sites through long-range detection, tracking, and warning of unauthorized divers and swimmer delivery vehicles ("SDVs") for rapid deployment and effective response. Our AquaShield™ DDS system is fully automatic and customizable, and requires intervention of a security person only for decision and response to the threat. The DDS sensors can be integrated with other sensors into a comprehensive command and control ("C&C") system to provide a complete tactical picture both above and below the water for more intelligent evaluation of and effective response to threats.

- Harbor Surveillance System ("HSS") – DSIT has developed an integrated HSS that incorporates DDS sensors with above-water surveillance sensors to create a comprehensive above and below water security system to coastal and offshore sites such as energy terminals, offshore rigs, nuclear power plants and ports. The system reliably detects, intercepts, and warns of intruders such as divers, swimmers, SDVs, submersibles, small surface vessels and mines.

- Mobile Acoustic Range ("MAR") – The MAR accurately measures a submarine's or surface vessel's radiated noise; thus enabling navies and shipyards to monitor and control the radiated noise and to silence their ships and submarines. By continuously tracking the measured vessel and transmitting the data to a measurement ship, the MAR system enables real time radiated noise processing, analysis and display. The system also includes a platform database for measurement results management and provides playback and post analysis capability.

- Generic Sonar Simulator ("GSS") – DSIT has developed a GSS for the rapid and comprehensive training of anti-submarine warfare ("ASW"), submarine, and mine detection sonar operators. This advanced, low cost, PC-based training simulator is designed for all levels of sonar operators from beginners to the most experienced, including ship ASW/attack teams. The simulator includes all aspects of sonar operation, with emphasis on training in weak target detection in the presence of noise and reverberation, torpedo detection, audio listening and classification.

- Underwater Acoustic Signal Analysis System ("UASA") – DSIT's UASA system processes and analyzes all types of acoustic signals radiated by various sources and received by naval sonar systems (submarine, surface and air platforms, fixed bottom moored sonar systems, etc.).

Other Real-Time and Embedded Solutions

Additional areas of development and production in real-time and embedded hardware and software include:

- Applications - DSIT specializes in Weapon/ C&C Operating Consoles for unique air and naval applications, designed through synergistic interaction with the end-user. Weapon/C&C Consoles utilize Human-Machine Interface ("HMI") prototyping supported on a variety of platforms as an integral part of the HMI definition and refinement process. Weapon/C&C Console specific applications driven by HMI include signal processing and data fusion and tracking.

- Computerized Vision for the Semiconductor Industry - DSIT has been cooperating with global leaders of state-of-the-art semiconductor wafer inspection systems in developing cutting edge technologies to enable the semiconductor industry to detect defects in manufacture. DSIT develops and manufactures hardware and embedded software for computerized vision systems, and we supply this multi-disciplinary field in the integration of digital and analog technologies, image processing and intricate logic development.

- Modems and data links - DSIT's PCMCIA Soft Modem card is a state of the art modem and an example of the advanced technology DSIT has achieved in performance and miniaturization of complex technologies. The design simplicity and flexibility allows customers to easily define and create a range of applications, and to design the card into a variety of OEM products, using the same, or slightly modified, hardware. The on-board processor enables and manages transfer of data over radio networks using different radio systems.

- Sonar Building Blocks – based on our sonar capabilities and development of the DDS, DSIT has developed a number of generic building blocks of sonar systems such as Signal Processing Systems and Sonar Power Amplifiers (SPA). Some customers designing and building their own sonar systems have purchased these building blocks from us.

Customers and Markets

All of this segment's operations (excluding sales and product delivery, set-up and service) take place in Israel. In 2008, approximately 15% of this segment's revenues were derived from outside of Israel. In 2009, approximately 43% of DSIT's revenues were derived from outside of Israel. We expect this trend of increasing sales generated from outside of Israel to continue in 2010. DSIT is continuing to invest considerable effort to penetrate European, Asian, U.S. and other markets in order to broaden its geographic sales base with respect to its sonar technology solutions. We have created significant customer relationships with some of Israel's largest companies in its defense and electronics industries.

The global war on terror has shifted the focus of governments and Homeland Security agencies to invest in situational awareness equipment to better protect their national infrastructure. For example, in March 2009, the U.S. Nuclear Regulatory Commission ("NRC") amended the security requirements for nuclear power reactors to require detection and assessment systems at all licensed U.S. nuclear power plants. In addition, commercial enterprises are also increasingly aware of the need to protect critical coastal and waterfront infrastructures. These critical infrastructures include naval ports, oil terminals, off-shore oil and gas rigs, liquid natural gas plants and terminals, nuclear plants, coal terminals and desalination plants. We believe there will be a growing demand by governmental agencies and commercial owners of these facilities for products and services such as our naval solutions described above.

We believe that in 2010, increased awareness as to the susceptibility of strategic coastal waterfront energy installations worldwide will result in increased orders of our AquaShield™ DDS systems. Furthermore, we have entered into a cooperation agreement with a U.S. based integrator to help us penetrate the U.S. market, particularly with respect to recent NRC security requirements.

Three customers accounted for 83% of segment sales in 2009 (38%, 32% and 13%, respectively) while in 2008, two customers accounted for 60% (49% and 11%, respectively) of segment sales. The loss of any one or more of these customers would have a material adverse effect on this segment.

Competition

Our Naval & RT Solutions segment faces competition from several competitors, large and small, operating in worldwide markets, (such as Sonardyne International Ltd., C-Tech Development Corp. and the Kongsberg group of companies) with substantially greater financial and marketing resources, particularly with respect to our Naval solutions. 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.

Intellectual Property

DSIT rigorously attempts to protect its proprietary know-how, proprietary technologies, processes and other intellectual property.

DSIT's systems are heavily based on software implementing advanced acoustic signal processing algorithms. The foundation of the systems and DSIT's competitive edge lies in these algorithms. Our strategy is to identify these key intellectual property elements developed by us in order to protect them in a timely and effective manner, and to continually use such intellectual property to our competitive advantage in the marketplace.

We keep the detailed description of these core algorithms as proprietary information and accordingly they are not disclosed to the public or to customers. We use contractual measures such as non-disclosure agreements and special contract terms to protect this intellectual and proprietary information. It is uncommon for companies such as ours to rely on patents, as the patent itself may disclose critical information.

A significant portion of our know-how is protected as commercial secrets and supported through contractual agreements with our employees, suppliers, partners and customers.

Facilities

DSIT’s activities are conducted in approximately 18,000 square feet of office space in the Tel Aviv metropolitan area under a lease that expires in August 2012. We believe that DSIT’s current premises are sufficient to handle the anticipated increase in sales for the near future.

ENERGY INFRASTRUCTURE SOFTWARE SERVICES – COREWORX INC.

We acquired Coreworx, which is based in Kitchener, Ontario, Canada on August 13, 2008, and we currently own 100% of Coreworx. Coreworx is an Ontario, Canada corporation. Coreworx provides software that manages project information and work processes on an international scale to increase efficiency and reduce risks for owners and operators (“O/O”) and engineering and construction contractors (“E&C”) involved with major capital projects (“MCPs”).

Coreworx considers MCPs to be those that are more than $500 million in cost with a high level of complexity due to sophisticated engineering and design, international collaboration and often a higher level of regulation than is required for general building, such as projects involving offshore oil and gas, nuclear, hydroelectric and biochemical. The execution of a MCP can take from three to seven or more years and the capital costs run from half a billion dollars to tens of billions of dollars. Due to the scale, large number of stakeholders involved, and the complexity of MCPs, project information control and work process management are crucial to managing project execution risk.

Products & Benefits

Coreworx offers a variety of products in a secure web-based enterprise class software platform that provide information control and work process automation for the engineering, procurement, and construction phases of a global MCP.

During the construction of a typical MCP, multiple revisions of tens of thousands of documents and drawings will be exchanged by thousands of team members every month around the globe. With Coreworx, our customers are able to control and manage thousands of document-centric work processes and benefit specifically from improved control thereby mitigating commercial risk and reducing costs.

Coreworx's nuclear product is being used to manage licensing of new nuclear plants and return to service current fossil and nuclear plants.

Customers and Markets

Market Drivers and Trends

MCP activity is usually found within the following broad sectors: industrial and manufacturing; mining; oil and gas; power and utilities (generation and transmission); commercial and retail; and public infrastructure. Coreworx is focused on sales to large E&Cs and O/Os that execute MCPs in the oil and gas, mining and power generation sectors primarily in North America and Australia. Coreworx is also pursuing growing Latin and South America markets using local partners to advance opportunities.

Prior to the recent global economic downturn, spending for MCPs by governments, quasigovernmental entities, and private enterprise was on the rise in response to the global economic expansion. With the recent world economic downturn, marginal projects were shelved, and only well-funded owners are proceeding with MCPs.

Presently, as markets have begun to stabilize, commodity and construction material prices have also begun to stabilize and projects are being resumed in a more favorable cost environment. Over the long term, MCP spending in target sectors is expected to grow in line with global economic development and population growth in order to service the energy and commodity demands these forces create.

Information Technology Use in Major Capital Projects

O/Os, E&Cs, their subcontractors and suppliers have historically been late adopters of business process automation technology. Coreworx recognized the need for project information control in MCPs, and developed its Coreworx software in 2005 to assist E&Cs and O/Os in meeting the challenges involved with MCPs, including cost overruns involving rework, project schedule delays, and compliance with contract terms and applicable regulations.

Oil and Gas

The oil and gas sector continues to attract a large volume of capital investment resulting in initiation of MCPs. Analyst Wood Mackenzie expects national oil companies to spend more than $100 billion per year over the next five years developing MCPs. Global oil & gas exploration and production spending in 2009 amounted to $400 billion, based on Barclays Capital annual survey of 357 oil & gas companies. For 2010, the same survey found an increase in planned spending to $439 billion.

Mining

Weakened commodity prices, credit tightness and rising project costs applied downward pressure to mining projects in 2009 compared to the boom growth of previous years. However, markets and commodities prices have begun to stabilize and project activity is resuming as mining output in turn feeds other necessary projects. Many of the world's largest mining companies are based in resource rich Latin America, Australia and Canada. In Canada alone, 136 projects worth more $53 billion have begun construction or are expected to begin between June 2009 and December 2010, according to Industrial Info Resources. Western Australia is also a significant area of mining MCP activity, and the country is the world's second largest uranium producer after Canada, giving it a favorable position in supplying nuclear power projects around the world.

Power Generation

Continuing demand for electricity and the growth of developing economies in addition to refurbishment of aging existing infrastructure and development of renewable energy sources have lead to global increases in capital spending on new power generation and transmission projects. The International Energy Agency estimates that world nuclear capacity must grow 80% beyond current capacity by 2030, not only to meet growing electricity demand but also climate change regulations, and that $13.6 trillion must be spent on power generation projects between 2008 and 2030. In North America, 295 Canadian power projects worth more than $41 billion have begun construction or are expected to begin construction between June 2009 and December 2010, according to Industrial Info Resources. The Edison Electric Institute estimates that spending by U.S. power utilities will exceed $250 billion between 2009 and 2011.

Total Addressable Market

There are presently approximately 3,500 MCPs in the oil and gas, mining and power generation sectors either under construction or in the front-end engineering design stage with an estimated approximate value of $3.8 trillion. Of such MCPs we believe that the total addressable market for software such as Coreworx is approximately $2 billion.

Customers

Coreworx software is currently in use by global customers in 35 countries on more than 400 capital projects with tens of thousands of users. In the year ended December 31, 2009, Coreworx was dependent upon a few major customers such as USEC, Fluor Corporation, Chevron Corporation), J. Ray McDermott, Inc. and Husky Energy.

Competition

Many other vendors are attempting to address the MCP needs that are addressed by Coreworx from a variety of functional backgrounds such as plant design or project management. Most of our competitors are software companies that offer products that we believe address some, but not all, aspects of MCP information control addressed by Coreworx; however, a small number of companies such as Aconex, McLaren Engineering and Organice are viewed by our customers as direct competitors. Price is often a competitive determinant as many projects are awarded based on competitive bidding. Functionality and service can also be competitive factors.

Locations

Coreworx' corporate office is located at 22 Frederick Street, in Kitchener, Ontario, Canada in approximately 8,600 square feet of office space under a lease that expires in December 2010. We believe we will have to take more space in 2010 and 2011 to meet our near term growth expectations.

Intellectual Property

We use a combination of proprietary source code, trade secrets, and contracts with our employees, OEM suppliers, partners and customers, and trademarks to protect the proprietary aspects of our core technologies, technological advances and innovations and know-how. We work actively to maintain protection of our proprietary technologies and processes over time and process improvements that we continually develop.

GRID MONITORING SOLUTIONS - GRIDSENSE PTY LTD.

In 2009 we owned approximately 31% of GridSense Pty Ltd. (GridSense), and accounted for our investment under the equity method.

GridSense develops and markets remote monitoring systems to electric utilities and industrial facilities worldwide. These systems, used in a myriad of utility applications including outage management, power quality monitoring, system planning, trouble shooting and proactive maintenance, condition monitoring, and providing network operators with the intelligence to better and more efficiently operate grid operations.

Due to increasing stresses on the system, an old and aging infrastructure and greater demands for power quality and reliability of supply, utilities are striving to modernize their electrical infrastructures with "SmartGrid" initiatives. Cost-effective and easily deployable, GridSense solutions provide critical components of the future grid.

GridSense's patented 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 has developed a range of offerings that addresses all the critical points of the electricity delivery system, including distribution and transmission lines, substations and transformers, and the point of electricity consumption.

GridSense is headquartered in Sydney, Australia and operates from offices in the U.S. and Australia and has utility customers throughout the world, including the Americas, Asia, Australia, Africa, and the UK.

GridSense Offerings & Solutions

GridSense has a range of commercially proven offerings sold to customers worldwide. The success of GridSense's offerings is based on being able to provide identifiable and quantifiable value to its utility customers by minimizing inconveniences and productivity losses for their consumers, optimizing operations of existing assets, reducing costs of identifying and rectifying outages and disturbances on their networks, and providing them with the requisite information to make better capital expenditure decisions. GridSense's offerings include:

- LineTrackerTM Systems - The LineTrackerTM provides real-time monitoring of electricity grids and captures important operational, maintenance, planning and regulatory reporting information such as current, temperature and power factor. The LineTrackerTM provides all these applications at a fraction of the cost of alternative solutions in the market.

- PowerMonic Systems - The PowerMonic range of outdoor power analyzers and analytical software allows electric utilities to monitor and investigate power quality problems in homes, offices, factories, and key points on the electricity distribution infrastructure.

- Transformer IQ – The Transformer IQ is a comprehensive monitoring system that consolidates all transformer monitoring functions onto a single platform using industry-proven hardware, and allows utilities to effectively predict nearly all the failure modes known to occur to transformers.

Customers and Markets

Within Australia where GridSense has an established sales team and support infrastructure, GridSense sells the PowerMonic, LineTracker and Transformer IQ range of products directly to electric utilities and industrial customers. Outside of Australia, GridSense utilizes a network of resellers, including rental companies, electrical engineering firms, distributors, independent manufacturers' representatives and agents. By leveraging off this indirect sales network, GridSense has expanded into international territories with effectiveness while minimizing the risk and financial burden of maintaining a direct sales organization.

Strategically important markets outside of Australia include North America, UK and South Africa. In North America, sales activity has experienced promising growth in the last several years. GridSense continues to generate new orders with new customers as well as repeat orders from existing customers. With only a handful of customers just five years ago, GridSense now has over 200 customers in the U.S. and Canada. GridSense has activities in other international markets but continues a measured and disciplined approach toward expansion.

Production Facilities and Locations

GridSense is headquartered in Sydney, Australia in an 8,000 square foot leased facility and has a 2,950 square foot leased facility in Sacramento, California, both of which GridSense management deems sufficient to meet its needs for the foreseeable future. GridSense has successfully outsourced many production aspects to external parties. The transfer of production to accredited contract manufacturers has reduced the Company's fixed manufacturing overhead and freed up resources to focus on quality assurance and service.

Competition

The industry in which GridSense operates is characterized by intense competition from both large, established companies as well as smaller companies with specialized offerings. To avoid direct competition, GridSense focuses on robust niches where it can offer a differentiated product based on superior cost and performance. As GridSense grows and penetrates markets where larger companies have been established, it may experience more competition. GridSense is in a field where electronics and software/firmware dominate. This fast changing area may generate new methods of detecting and monitoring disturbances. GridSense closely monitors trends and changes in technologies and customer demand that could adversely impact its competitiveness and overall success. Price, quality and experience are the primary competitive factors.

Intellectual Property

GridSense invests heavily in product development and research in order to maintain its competitiveness in the marketplace. Keeping proprietary information safe from unauthorized use or disclosure is therefore an important objective. In order to protect its proprietary know-how and technology, GridSense uses a combination of patents, trade secrets, contracts, copyrights and trademarks. However, some of GridSense's know-how and technology may not be patentable. To protect its rights, GridSense requires employees, consultants, advisors and collaborators to enter into confidentiality agreements. While these agreements will provide some level of protection, they cannot provide absolute assurance that GridSense's trade secrets, know-how or other proprietary information are fully safeguarded. Whenever intellectual property is developed internally or acquired, GridSense will evaluate and determine the optimal mix of controls to protect itself.

U.S. SENSOR SYSTEMS INC.

U.S. Sensor Systems Inc. ("USSI") is a Delaware corporation based in Northridge, California. In November, 2009 and February, 2010, we acquired an aggregate of approximately 10% of USSI with options that can increase our holdings to approximately 84% by May 2011.

USSI's primary focus is to develop and produce fiber optic sensing systems for the energy and defense markets. USSI's fiber optic sensor systems are being designed to replace the legacy expensive, unreliable, and bulky electronic sensors currently in widespread use today with small, low cost, ultra-reliable, and inherently-safe fiber optic sensors. USSI's new fiber optic sensing systems provide its users with a competitive advantage over those relying on existing sensor technology. Primary product lines for which USSI is currently developing products include downhole fiber optic sensor systems for oilfield 4D seismic reservoir monitoring, fiber optic perimeter security systems (including commercial and military), and fiber optic pipeline/coal mine monitoring systems. USSI's systems are currently being installed for evaluation by companies in North America, Asia, and Eastern Europe.

BACKLOG

As of December 31, 2009, our backlog of work to be completed and the amounts expected to be completed in 2010 were as follows (amounts in millions of U.S. dollars):

	Backlog at December 31, 2009	Amount expected to be completed in 2010
CoaLogix	$ 9.2	$ 8.3
DSIT Solutions	7.6	6.5
Coreworx	1.1	1.1
Total	$ 17.9	$ 15.9

RESEARCH AND DEVELOPMENT EXPENSE

Research and development expense recorded for the years ended December 31, 2008 and 2009 for each of our consolidated subsidiaries is as follows (amounts in thousands of U.S. dollars):

	Years ended December 31,	
	2008	2009
CoaLogix	—	86
DSIT Solutions	237	457
Coreworx	932*	26**
Total	$ 1,169	$ 569

* Coreworx was acquired on August 13, 2008. Accordingly, the research and development expense recorded with respect to Coreworx relates only to the period after its acquisition.

** In 2009, the amount recorded is net of credits of $1,016.

EMPLOYEES

At December 31, 2009, we employed a total of 190 employees, including 166 full-time employees. We consider our relationship with our employees to be satisfactory.

A breakdown of our full-time employees by geographic location can be seen below:

	Employee count at December 31, 2009			
	U.S	Canada	Israel	Total
CoaLogix	59	—	—	59
DSIT Solutions	—	—	50	50
Coreworx	8	48	—	56
Acorn	1	—	—	1
Total	68	48	50	166

A breakdown of our full-time employees by activity can be seen below:

	Employee count at December 31, 2009			
	Production, Engineering and Technical Support	Marketing and Sales	Management, Administrative and Finance	Total
CoaLogix	46	3	10	59
DSIT Solutions	40	2	8	50
Coreworx	37	13	6	56
Acorn	—	—	1	1
Total	123	18	25	166

We have no collective bargaining agreements with any of our employees. However, with regard to our Israeli activities, certain provisions of the collective bargaining agreements between the Israeli Histadrut (General Federation of Labor in Israel) and the Israeli Coordination Bureau of Economic Organizations (including the Industrialists Association) are applicable by order of the Israeli Ministry of Labor. These provisions mainly concern the length of the workday, contributions to a pension fund, insurance for work-related accidents, procedures for dismissing employees, determination of severance pay and other conditions of employment. We generally provide our Israeli employees with benefits and working conditions beyond the required minimums. Israeli law generally requires severance pay upon the retirement or death of an employee or termination of employment without due cause. Furthermore, Israeli employees and employers are required to pay specified amounts to the National Insurance Institute, which administers Israel's social security programs. The payments to the National Insurance Institute include health tax and are approximately 5% of wages (up to a specified amount), of which the employee contributes approximately 70% and the employer approximately 30%.

ADDITIONAL FINANCIAL INFORMATION

For additional financial information regarding our operating segments, foreign and domestic operations and sales, see "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" and Note 21 to our Consolidated Financial Statements included in this Annual Report.

ITEM 1A. RISK FACTORS

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 could cause actual results to differ from our expectations, statements or projections.

GENERAL FACTORS

The ongoing crisis in global credit and financial markets could materially and adversely affect our business and results of operations.

The ongoing global financial crisis may limit our ability to access the capital markets at a time when we would like, or need, to raise capital, which could have an impact on our ability to react to changing economic and business conditions. Accordingly, if the global financial crisis and current economic downturn continue or worsen, our business, results of operations and financial condition could be materially and adversely affected.

We have a history of operating losses and have used increasing amounts of cash for operations and to fund our acquisitions and investments.

We have a history of operating losses, and have used significant amounts of cash to fund our operating activities over the years. In 2008 and 2009, we had operating losses of $12.4 million and $8.2 million, respectively. Cash used in operations in 2008 and 2009 was $3.3 million and $5.4 million, respectively.

In addition, we continue to pursue additional acquisitions and investment opportunities and may need to support the financing needs of our subsidiaries. Following our recent capital raise (see "Recent Developments"), we currently have enough cash on hand to fund our operations for the next 12 months. However, we may need additional funds to finance future investment and acquisition activity we wish to undertake. 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 investment/acquisition strategy or sell some of our assets in order to continue to pursue our corporate goals.

We depend on key management for the success of our business.

Our success is largely dependent on the skills, experience and efforts of our senior management team and other key personnel. In particular, our success depends on the continued efforts of John A. Moore, our CEO, William J. McMahon, CEO of CoaLogix/SCR-Tech, Benny Sela, CEO of DSIT, Ray Simonson, CEO of Coreworx and other key management level employees. The loss of the services of any of these key employees could materially harm our business, financial condition, future results and cash flow. We do not maintain "key person" life insurance policies on any of our employees other than for our CEO, John A. Moore. Although to date we have been successful in retaining the services of senior management and have entered into employment agreements with them, members of our senior management may terminate their employment agreements without cause and with various notice periods. We may also not be able to locate or employ on acceptable terms qualified replacements for our senior management or key employees if their services were no longer available.

Loss of the services of a few key employees could harm our operations.

We depend on key technical employees and sales personnel. The loss of certain personnel could diminish our ability to develop and maintain relationships with customers and potential customers. The loss of certain technical personnel could harm our ability to meet development and implementation schedules. The loss of key sales personnel could have a negative effect on sales to certain current customers. Most of our significant employees are bound by confidentiality and non-competition agreements. Our future success also depends on our continuing ability to identify, hire, train and retain other highly qualified technical and managerial personnel. If we fail to attract or retain highly qualified technical and managerial personnel in the future, our business could be disrupted.

Our awards of stock options to employees may not have their intended effect.

A portion of our total compensation program for our executive officers and key personnel has historically included the award of options to buy our common shares or the common stock of our subsidiaries. If the price of our common stock performs poorly, such performance may adversely affect our ability to retain or attract critical personnel. In addition, any changes made to our stock option policies, or to any other of our compensation practices, which are made necessary by governmental regulations or competitive pressures could affect our ability to retain and motivate existing personnel and recruit new personnel.

Compliance with changing regulation of corporate governance, public disclosure and financial accounting standards may result in additional expenses and affect our reported results of operations.

Keeping informed of, and in compliance with, changing laws, regulations and standards relating to corporate governance, public disclosure and accounting standards, including the Sarbanes-Oxley Act, as well as new and proposed SEC regulations and accounting standards, has required an increased amount of management attention and external resources. Compliance with such requirements may result in increased general and administrative expenses and an increased allocation of management time and attention to compliance activities.

We may not be able to successfully integrate companies which we may invest in or acquire in the future, which could materially and adversely affect our business, financial condition, future results and cash flow.

On March 2, 2010, Coreworx and Acorn Energy entered into a definitive agreement for Coreworx to acquire Decision Dynamics Technology Ltd. (see "Recent Developments"), and we plan to close on our acquisition of GridSense in the second quarter of 2010. Any failure to effectively integrate Decision Dynamics or GridSense's management into our controls, systems and procedures could materially adversely affect our business, results of operations and financial condition.

Our strategy is to continue to expand in the future, including through acquisitions. Integrating acquisitions is often costly, and we may not be able to successfully integrate our acquired companies with our existing operations without substantial costs, delays or other adverse operational or financial consequences. Integrating our acquired companies involves a number of risks that could materially and adversely affect our business, including:

- failure of the acquired companies to achieve the results we expect;
- inability to retain key personnel of the acquired companies;
- dilution of existing stockholders;
- potential disruption of our ongoing business activities and distraction of our management;
- difficulties in retaining business relationships with suppliers and customers of the acquired companies;
- difficulties in coordinating and integrating overall business strategies, sales and marketing, and research and development efforts; and
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