Zacks Equity Research

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Acorn Energy, Inc. (ACFN-NASDAQ)

ACFN: Zacks Co. Report – OUTPERFORM

Current Recommendation	**Outperform**
Prior Recommendation	N/A
Date of Last Change	08/29/2010
Current Price (02/04/11)	$4.12
Six- Month Target Price	**$6.00**

OUTLOOK

In December 2010, Acorn Energy not only removed Coreworx from its core portfolio of companies, but also raised capital through an equity offering to fund further investments in CoaLogix, GridSense and US Sensor Systems. By jettisoning its financial obligation to Coreworx, the company's SG&A and R&D costs are now manageable, which could lead to Acorn's profitability. In late March, Acorn Energy is expected to announce full year 2010 and fourth quarter earnings, from which we will be better able to ascertain the company's cost structure going forward.

SUMMARY DATA

52-Week High	**$7.49**
52-Week Low	**$3.55**
One-Year Return (%)	**-28.47**
Beta	**0.89**
Average Daily Volume (shrs.)	**27,816**
Shares Outstanding (million)	**17.3**
Market Capitalization ($mil.)	**$71**
Short Interest Ratio (days)	**2.81**
Institutional Ownership (%)	**18**
Insider Ownership (%)	**14**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**51.9**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/M**
P/E using 2011 Estimate	**N/M**
P/E using 2012 Estimate	**N/M**
Zacks Rank	**3**

Risk Level	**Above Average**
Type of Stock	**Small - Value**
Industry	**Elect. Prods. – Misc.**
Zacks Rank in Industry	**21 of 27**

ZACKS ESTIMATES

Revenue
(in millions of $)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2009	8.5 A	7.8 A	6.5 A	8.6 A	31.3 A
2010	7.9 A	9.1 A	10.6 A	13.6 E	41.1 E
2011	13.6 E	14.4 E	15.2 E	16.1 E	59.3 E
2012					66.1 E

Earnings per Share
(EPS is operating earnings before non recurring items)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2009	-$0.09 A	$0.03 A	-$0.11 A	-$0.33 A	-$0.50 A
2010	-$0.25 A	-$0.21 A	-$0.29 A	$0.02 E	-$0.71 E
2011	$0.01 E	$0.00 E	-$0.00 E	-$0.01 E	-$0.00 E
2012					-$0.03 E

Zacks Projected EPS Growth Rate - Next 5 Years % **N/M**

Quarterly numbers may not equal annual total due to rounding.

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KEY POINTS

- Acorn Energy is a holding company with a portfolio of four operating companies that are focused on addressing the challenges of the energy sector, particularly the opportunities in repairing, monitoring, updating, expanding, and protecting the existing global energy infrastructure.
- CEO John Moore has a successful track record of investing in small emerging companies and enhancing their value. Shareholders of Acorn Energy have the opportunity to participate in his latest venture into Cleantech.
- Management demonstrated financial discipline by divesting much of its ownership of Coreworx and thereby eliminating the cash drain of funding Coreworx further.
- Revenue growth was greater than expectations at Acorn's four companies: CoaLogix, DSIT, GridSense and US Sensor Systems during the last reported quarter (3rd quarter of 2010).
- **CoaLogix** is a major participant in SCR (Selective Catalytic Reduction) catalyst replacement market for coal-fired power plants. CoaLogix will benefit from the increased capacity with the second plant at its Steele Creek (Charlotte, NC) facility having been opened late last year.
- **DSIT** is expected to continue to grow both top-line revenue and net income due to new orders and a rising backlog. DSIT is Acorn's only profitable company.
- **GridSense** provides a range of smart monitoring sensors and systems that provide real-time information in electric power transmission and utility distribution networks.
- **US Sensor Systems** (USSI) designs, manufactures, and sells optical fiber sensing systems to the energy and defense markets. USSI has significant potential in both the fiber optic perimeter security market and the adoption of 4D seismic technology by oil and gas companies to map out underground reservoirs for advanced extraction techniques. Acorn Energy began to fully consolidate USSI in February 2010, having acquired options to purchase 84% of USSI by May 2011.
- Consult the initiation report dated September 7, 2010 for full background information.

OVERVIEW

Based in Montchanin, Delaware, Acorn Energy (ACFN) is a holding company of four operating companies, which share the common theme of applying technology to improve the productivity and security of existing infrastructure within various energy industries. Currently, all four operating companies are consolidated with **CoaLogix, Inc.** being 72% owned by Acorn Energy and **DSIT Solutions Ltd**., being 84% owned. **GridSense Pty Ltd**. is wholly-owned. Acorn Energy is increasing its ownership of **US Sensor Systems** (USSI) with its options to increase ownership to 84%[1] by May 2011; currently, ownership is 69.5%[2]. Acorn owns a 10% equity interest in Coreworx, along with a 10% warrant interest, and a $4 million secured note. In 2009, when only CoaLogix, DSIT, and Coreworx (now divested) were consolidated, CoaLogix accounted for 58% of revenues, DSIT Solutions Ltd. 29%, and Coreworx 13%.

Acorn is focused on addressing the challenges of the energy sector, from improving the efficiency and environmental impact of energy production to dealing with security risks related to the ownership of large energy assets. There are substantial business opportunities in repairing, monitoring, updating, expanding and protecting the existing global energy infrastructure. Acorn's strategy is to take controlling positions (at significant discount to previously invested capital) in viable companies that are and will be benefiting from these opportunities. In 2009, 70% of consolidated revenues were generated in the U.S. & Canada, 18% in Israel, and 11% in Asia.

The major drivers in 2011 are expected to be the additional capacity being brought on line CoaLogix' second plant, the investment in seismic monitoring products at USSI, and the broadening of the product

[1] on a fully diluted basis
[2] on a non-diluted basis

line at GridSense. Proceeds from the December 2010 secondary offering are expected to fund these initiatives.

RECENT NEWS

On February 1, 2011, GridSense, a subsidiary of Acorn Energy, announced the launch of the LineIQ transmission and distribution line monitoring system. LineIQ provides a smart grid tool to pinpoint line faults in real-time and allows utilities to better manage outages and optimize capacity.

On January 27, 2011, U.S. Sensor Systems (USSI), a subsidiary of Acorn Energy, announced that a recent side-by-side testing of the company's Ultra High Sensitivity (UHS) fiber optic geophones exhibited 330 times the sensitivity of the best electronic geophone, thereby enabling oil and gas producers to more accurately map reservoirs and improve production. Currently, oil and gas companies use over 10 million geophones per year to map out underground reservoirs, usually for advanced extraction techniques, such as directional drilling, CO2 flooding, horizontal drilling and unconventional extraction. USSI's UHS fiber optic geophones are more cost-effective and provide increased sensitivity for seismic mapping.

On January 25, 2011, Acorn Energy filed an 8-K indicting that the company's annual goodwill impairment analysis and testing for 2010 resulted in a $1.2 million impairment of goodwill related to its GridSense subsidiary. The impairment will be reported in the fourth quarter 2010 results.

On December 20, 2010, Acorn Energy announced a registered direct common stock offering of 1,150,000 common shares at $3.50 per share to the public and a warrant exercisable into 80,500 common shares at $3.68 to HFP Capital Markets. The net proceeds were $3.7 million. HFP Capital Markets LLC acted as placement agent for the offering.

On December 17, 2010, Acorn Energy announced the sale of its Coreworx subsidiary to a management buyout group consisting of the management of Coreworx and other investors. The debt of Coreworx to Acorn was reduced from $5.4 million to $4.0 million, and Acorn exchanged all of its shares of common stock of Coreworx for 10% of the newly issued non-voting shares of Coreworx, along with warrants to acquire that number of additional shares of common stock of Coreworx equal to the number of New Coreworx Shares i.e. an additional 10%. The $4.0 million debt is non-interest bearing. Also, Coreworx is to pay Acorn a 4% sales royalty until Acorn's investment is returned ($20 million). Therefore, Acorn will retain a portion of Coreworx's ultimate success without any further financial commitment. A non-reoccurring, non-cash impairment charge (write-off of goodwill and other intangible assets) of approximately $9.4 million is expected in the fourth quarter.

On November 12, 2010, U.S. Sensor Systems, a subsidiary of Acorn Energy, announced that its GroundAlert fiber optic perimeter security system was selected for a multi-site maximum security project in Latin America. USSI's perimeter security system utilizes fiber optic sensing cables that are to be buried along fence perimeters in order to detect attempts to tunnel underneath the fences. The project is valued at $600,000 and is headed by PCSC of Torrance, California.

On November 11, 2010, Acorn Energy reported third quarter results for the three-month period ending September 30, 2010. Revenues increased 63.8% to $10.6 million from $6.46 million, driven by increased capacity at the new facility at Steele Creek Road in Charlotte, NC, which came on-line in August and DSIT's continued successful penetration into the security market of exposed waterfront commercial installations. Revenue growth was greater than expectations at CoaLogix, DSIT, GridSense and US Sensor. Management decided to divest Acorn's problem child, Coreworx, through a management buyout. Revenues at Coreworx declined 21.2% and were below expectations. Total gross profit increased 27.7% to $3.65 million from $2.86 million in the comparable-period last year. The gross profit margin decreased 976 basis points (bps) to 34.5% from 44.3% in the comparable year-ago quarter, primarily due to start-up

costs Steele Creek facility causing margin compression at CoaLogix (16.7% versus 24.7%). Acorn reported a loss of $4.57 million or $0.29 per diluted share.

OVERVIEWS OF ACORN ENERGY'S FOUR OPERATING COMPANIES

CoaLogix™

Located in Charlotte, NC, **CoaLogix, Inc.**, through its subsidiary SCR-Tech LLC, is a major participant in SCR (Selective Catalytic Reduction) catalyst replacement market for coal-fired power plants and the attendant catalyst management services. The company has successfully commercialized the catalyst replacement process for plate, corrugated, and honeycomb substrates used in the implementation of SCR technology. Through August 2010, CoaLogix regenerated over 21,000 modules of catalyst. Currently, CoaLogix has over 40,000 MW under contract for catalyst management services. CoaLogix is 72% owned by Acorn Energy, 27% owned by EnerTech Capital III LP, and approximately 1% owned by certain members of management.

Charged by Congress with protecting the nation's land, air, and water resources, the U. S. Environmental Protection Agency (EPA) has mandated sulfur dioxide (SO_2), nitrogen oxides (NO_x), and mercury (Hg) reductions as part of Title IV of the Clean Air Act Amendments of 1990. Subsequent regulations have established annual allowable emission limitations for nitrogen oxides by boilers of coal-fired electric generation units depending on boiler type[3]. Plant operators have several options for complying with the limits. One of very attractive alternatives is the use of SCR technology. For example, essentially all coal-fired boilers in Germany are equipped with SCR technology, since SCR significantly reduces all three pollutants by more than 80%. In the United States, SCR technology has been applied mainly to coal-fired boilers with capacities between 25 to 800 megawatts (MW) and in total represents over 100 gigawatts (GW) of coal-fired capacity, up from 2 GW in 1997. These SCR systems have experienced relatively few operational or maintenance problems. As a result of the enforcement of The Clean Air Act, pollutant levels have been substantially reduced; for example, wet inorganic nitrogen deposition has been dramatically decreased.

SCR technology reduces nitrogen oxide levels through a catalyst-accelerated reaction of nitrogen oxide with ammonia, reducing nitrogen oxides to water and nitrogen. The reaction takes place on the surface of catalysts within the catalyst chamber. The catalytic materials are coated onto substrate structures that are layered within the chamber. According to EPA[4], the average catalyst life is assumed to be approximately 15,000 to 20,000 hours. SCR-Tech cleans, rejuvenates, and regenerates the catalyst on the substrates at a significant 40% cost savings versus purchasing new catalyst. SCR-Tech's regeneration process removes catalyst poisons, along with blinding and masking agents, from the substrate and places new active ingredients back onto the catalyst substrate and/or regenerates the existing catalyst.

The SCR catalyst market boomed between 2000 and 2003 as many SCR technology-based systems were initially installed. The first major replacement cycle is imminent and in the third quarter of 2010, a second plant became operational at the Steele Creek (Charlotte, NC) facility to meet the increasing demand. Not only does the plant double the company's capacity from $18 million to $32 million, but also the second plant employs a lower cost process. Each plant has the capability of increasing production by 50%. The facility has the potential for an additional phase of expansion when market demand requires. However, since the second plant is more efficient, at first, production will be moved from the first plant to the second. Thereafter, increased capacity is expected to be attained by building a third plant in Ohio, possibly in late 2011.

[3] 40 CFR Part 76
[4] EPA report 600/R-01/087

SCR-Tech also provides consulting services and SCR system management programs to help power plant operators reduce nitrogen oxide compliance costs and optimize operational efficiency. Having provided SCR services for years, customers can benefit from the unique experience of SCR-Tech's employees and the company's patented regeneration process.

CoaLogix is pursuing significant opportunities in China. With approximately 80% of China's electrical energy being generated by coal-fired plants, China's pollution problems are immense. In addition, China's potential market for catalyst is 300% larger than the U.S. market[5]. China's 12th Five-Year Plan for Energy (2010-2015), despite seeking additional nuclear and wind-power energy sources, will maintain China's coal-dominated electric consumption structure. CoaLogix now has an office in China and has completed four small projects. CoaLogix is pursuing the catalyst regeneration market in China, though the required political and financial capital required most likely will require a collaborative partner.

In 2009, revenue at CoaLogix increased 79% to $18.1 million due to continued penetration of the SCR regeneration market along with the addition of capacity by a plant expansion project completed in the fourth quarter of 2008. The gross margin increased to 34.8% from 24.3% in 2008 due improved operational efficiency. In the last reported quarter (third quarter of 2010), revenue increased 94.0% to $5.48 million from $2.82 million. Gross profit increased 31.3% to $916 thousand from $698 thousand. The gross profit margin decreased 799 basis points (bps) to 18.7% from 24.7% in the comparable year-ago quarter due to increased overhead costs stemming from new hires associated with the opening of the second plant at Steele Creek. CoaLogix received new orders of $5.9 million during the third quarter 2010, and at the end of September 2010, CoaLogix's backlog was $9.3 million.

Based in Givat Shmuel, Israel, **DSIT Solutions** provides sonar and acoustic-related solutions for port security of strategic energy installations, in addition to related defense and homeland security markets. The flagship product is **AquaShield**, a Diver Detection Sonar (DDS) system that provides coastal and offshore protection by detecting and then tracking divers, swimmers, swimmer delivery vehicles, submersibles, and small surface vessels. DSIT's sonar and acoustic technologies have a myriad of other applications, such as naval radiated noise measurement and sonar training simulation. The PC-based system is connected to sonar nodes and can detect a diver with a re-breather apparatus at 700 meters, a scuba diver at 1,000 meters, and a swimmer delivery vehicle at 1,500 meters. AquaShield was first sold in 2007 and the company has subsequently sold approximately 30 systems. DSIT also offers a smaller **PointShield** system for small, restricted areas, such as water intake channels, canals, narrow marine entrances or similar confined areas. In addition, other companies are using sonar building blocks built by DSIT in the construction of their own sonar systems.

In 2009, approximately 57% of DSIT's revenues were derived from inside of Israel, down from 85% in 2008. The company is quickly penetrating European, Asian, and US markets. For example, in March 2009, the U.S. Nuclear Regulatory Commission (NRC) increased the security requirements for nuclear power reactors to require detection and assessment systems at all licensed US nuclear power plants. As a result, managers of strategic coastal waterfront energy installations (especially naval ports, oil terminals, off-shore oil and gas rigs, liquid natural gas plants, and desalination plants) are realizing the need for increased security, which should translate into increased demand for DDS systems. The

[5] The Chinese market potential is estimated to be $6.0 billion versus $1.5 billion in the U.S.

company estimates that there are at least 3,000 waterfront facilities in need of enhanced maritime security.

In 2009, revenue at DSIT increased 10% to $9.2 million. The gross margin increased to 44% from 34% in the 2008 due to an improved product mix shift to higher-margin naval projects. In 2009, three customers accounted for 83% of DSIT's sales 2009 (38%, 32%, and 13%, respectively). Obviously, the loss of any one of these customers could have a materially adverse effect. DSIT's backlog was $7.6 million, up 58% from $4.8 million at the end of 2008

In 2010, DSIT received several notable orders. In February, the company announced a $4,400,000 AquaShield contract for the protection of several coastal and offshore installations, along with other repeat orders totaling almost $2 million. In September, the company was awarded over $6 million in orders for underwater sonar systems from a major Asian nation. Lastly, DSIT named a component provider to a $600,000 perimeter security system for a multi-site maximum security project in Latin America.

In the last reported quarter (third quarter of 2010), revenue at DSIT increased 48.1% to $3.19 million from $2.15 million in the comparable-period last year driven by the AquaShield and a major Asian country's order for underwater sonar systems. Gross profit increased 46.3% to $1.37 million from $0.939 million in third quarter of 2009, but the gross profit margin decreased 51 basis points (bps) to 43.1% from 43.6%. DSIT is Acorn's only profitable company, generating positive net income of $1.2 million during the first nine months of 2010. At the end of third quarter, DSIT's backlog was $8.4 million, up 11% from $7.6 million at year-end 2009. DSIT is expected to continue to grow both top-line revenue and net income due to new orders and a rising backlog.

GridSense™

Headquartered in Sydney, Australia, **GridSense** provides a range of smart monitoring sensors and systems that provide real-time information in electric power transmission and utility distribution networks. GridSense's products address the old and aging electric power delivery system infrastructure of electric utilities, i.e. between the power generation facilities and the end-user. GridSense should be a beneficiary of increased demand as Smart Grid stimulus grants from the U.S. Federal government are released to electric utilities. GridSense has over 200 customers in the U.S. and Canada.

The main goal of Smart Grids is to modernize the electric utility system in order for both customers and utilities to have more information so that electricity can be utilized more efficiently. From the utilities point of view, advanced grid[6] monitoring equipment enables the implementation of automated peak pricing in response to demand, along with anticipating and responding to grid disturbances, the target market of GridSense. From the customer's point of view, the installation of advanced digital meters (aka smart meters) and the execution of demand-reduction efforts by commercial and industrial customers at times of peak demand will allow the users of electricity to lower their costs. Smart meters not only provide utilities with real-time demand information, but also enable the consumer to make use of on-site renewable energy sources. In addition, smart appliances allow consumers to defer or schedule energy use, lowering costs and reducing peak demand.

GridSense's product offerings detect and measure critical aspects at vital points along the electricity transmission and distribution systems, namely at substations and transformers, and on distribution and transmission lines. Products include **LineTracker** overhead line recorders, **PowerMonic** low voltage power analyzers, **TransformerIQ** transformer monitors, **LineIQ** transmission and distribution line monitoring system, and **LiveLine** high voltage inspection cameras. For example, LineTracker is a self-powered device that clamps onto bare transmission conductors and transmits real-time information in

[6] The grid includes transmission, distribution and customer systems.

order to detect faults in the transmission of electrical power. Once alerted to a fault, response to the situation allows electric companies to more quickly restore power and assist in preventing damage to other equipment, such as breakers, switches and other hardware. GridSense's low-cost ($3,000) transformer monitoring solution, TransformerIQ, monitors 24 different failure points, which can help extend the life of a $300,000 transformer by measuring real-time load and re-routing power during times of high demand. By layering in a demand response mechanism in the distribution network, utilities can delay or avoid building new infrastructure, such as additional power generation facilities and/or transmission lines. LineIQ provides a smart grid tool to pinpoint line faults in real-time and allows utilities to better manage outages and optimize capacity. LiveLine camera is appropriately insulated to be used around energized high voltage lines by linemen in order to examine connections, read name plates, find faults, and read gauges and meters.

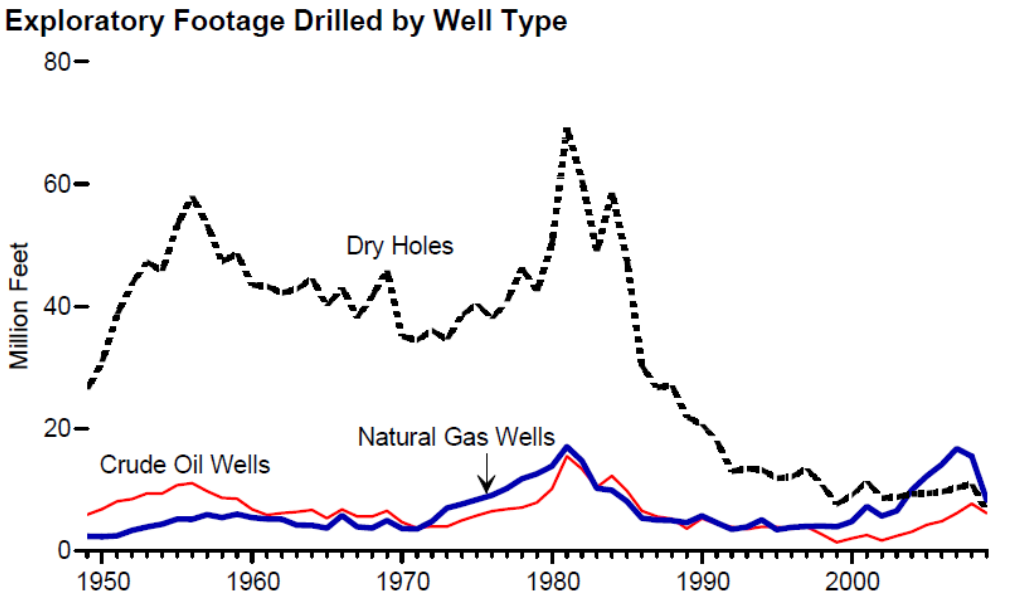
In 2009, Acorn Energy owned 31% of GridSense, and the investment was accounted for using the equity method. After acquiring all the outstanding shares of GridSense for 356,000 shares of ACFN and $1.5 million in cash, Acorn began to fully consolidate GridSense on May 12, 2010. Also in May 2010, GridSense acquired Online Monitoring, Inc., which produces specialty substation monitors[7] for specific transformer parts. The data captured by these monitors help utilities prevent failures that can result in forced outages, along with collateral damage to other equipment.

US SENSOR SYSTEMS INC

Located in Los Angeles, **US Sensor Systems** Inc. (USSI) designs, manufactures, and sells optical fiber sensing systems to the energy and defense markets. USSI utilizes All-Optical sensing technology, which employs Fiber Bragg Gratings (FBGs) embedded into the core of the optical fiber, thereby allowing the fiber itself to be a sensor. The fiber is then packaged into cables appropriate for each application. USSI's optic fiber can be laid on the ocean bottom for undersea surveillance or around marine facilities for harbor security. And it can also be buried along a fence line for commercial, industrial, military or homeland security. Or it can be placed in a coal mine or along a pipeline to monitor structural integrity. USSI's optical fiber systems have four distinct competitive advantages over traditional legacy electronic monitors: 1) the sensing optical cables are able withstand extreme environments, 2) the sensing coverage of optical cable is continuous over the entire length of the cable while electronic monitors have gaps in coverage between sensors, 3) the optical fiber cable has no moving parts and is not subject to failure as discrete electronic sensors are, and 4) the electronics for detecting the acoustic disturbances along a FBG fiber optic cable can be located in a benign location. USSI's optical fiber-based products are designed to replace existing, legacy, electronics-based sensor systems. USSI's optical fiber systems are being installed for evaluation by several companies in North America, Asia, and Eastern Europe. In the first half of 2010, USSI was awarded a $0.3 million contract by the U.S. Navy for the design, development and testing of a prototype security system, which will be evaluated to protect 360 US ports and harbors.

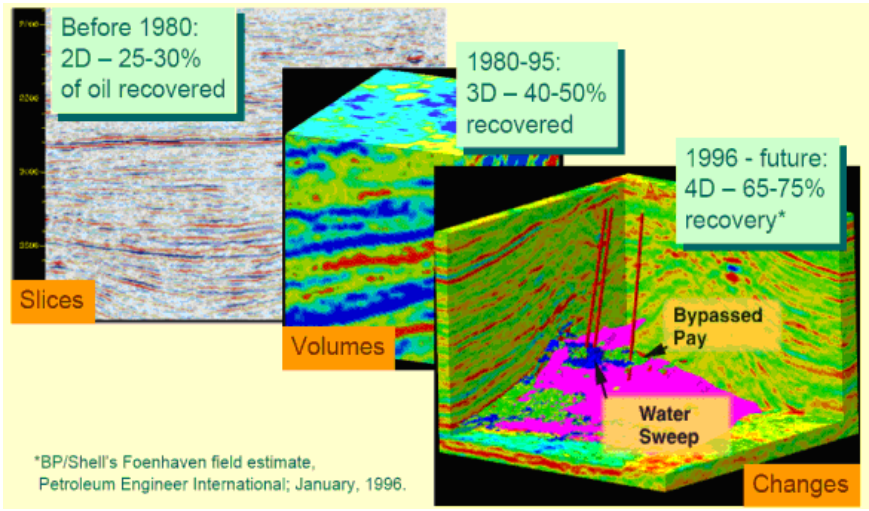
The optical sensor technology of USSI's optical fiber has the exciting potential to become an enabling technology for 4D seismic in the exploration and production of oil and gas. The use of 3-D seismic has been an enabler for both fossil fuel exploration and reserve augmentation over the last two decades, dramatically reducing the footage drilled resulting in dry holes (see graph below). For example, before 1985 deepwater drilling achieved only a 10% success rate, but by 2002, the global average was 30%. In 2009, Anadarko Petroleum (APC: NYSE) achieved a 50% success rate. Between 1993 and 2002, 75% of global liquid reserve additions came from revisions and extensions of known reserves, not from new field discoveries. These increases in reserves include the application of enhanced oil recovery techniques that utilize 3D monitoring systems.

[7] Such as PFLive Plus.



Source: U.S. Energy Information Administration - Annual Energy Review 2009

The transition from 3D seismic to 4D seismic monitoring should greatly enhance recoveries from and significantly increase reserves in existing oilfields. By adding the dimension of time to 3D monitoring (by taking snapshots of the subsurface at regular intervals - see diagram below), 4D seismic monitoring should enhance oil recovery in several ways. First, by adding the dimension of time, reservoirs can be monitored with time-lapse images during the implementation of enhanced oil recovery techniques, such as steam flooding, chemical flooding and gas flooding. As the flood front sweeps through the reservoir, the evolution of the reservoir during the injection process can be examined and controlled, thereby improving recovery yields. Secondly, during another enhanced oil recovery technique, horizontal drilling, hydraulic fracturing (aka fracking) is employed to create fissures in rock that not only can release oil and gas, but also prepares a path for horizontal drilling. Real-time seismic monitoring enables proper well placement during the subsurface drilling process, especially during the transition from a vertical to horizontal hole. Lastly, vertical seismic profiling (VSP) improves the structural and stratigraphic interpretations of the subsurface and involves the measurement of seismic waves along a series of sensors positioned vertically down the wall of a drilled well, in contrast to horizontal seismic profiling where sensors are positioned horizontally on the earth's surface. USSI is developing products for downhole fiber optic sensor systems to provide the energy industry with a tool needed for VSP. During the second half of 2010, USSI's fiber optic oilfield sensing equipment was used in multiple field trials with major oil and oil service companies, and in 2011, Southwest Energy will be conducting commercial trial with USSI's products.



Source: Petroleum Engineer International, January 1996

Initially, Acorn Energy invested $200,000 in USSI to help the company fund a fiber optic geophone technology trial at the Department of Energy (DOE) with a major oil service company. The positive results from the trial resulted in another investment of $300,000 on February 23, 2010, bringing Acorn's ownership of USSI to 146,386 shares or 10% of USSI's fully diluted capitalization. Having acquired a series of options to purchase up to 84% of USSI for $6,100,000 in cash and stock through May 2011, Acorn Energy began to fully consolidate USSI as of February 23, 2010. As of January 31, 2011, Acorn Energy owns 69.5% of USSI.

MANAGEMENT – THE CEO FACTOR

John A. Moore has been a Director and Chief Executive Officer of the Acorn Energy since March 10, 2006. He is a tireless executive with a passion for investing in small emerging companies and building up their value. John initially was attracted to Acorn when it was Data Systems & Software Inc. (DSSI), primarily because DSSI was the largest shareholder of Comverge, a company that provides capacity solutions to electric utilities and grid operators. John repositioned DSSI's focus to investing in emerging companies and aiding their growth through funding and synergistic bolt-on acquisitions. The company was ultimately renamed Acorn Energy. In April 2007, Comverge (COMV: NASDAQ) went public at eight times 12-month trailing revenues, and in December 2007, Comverge completed a secondary offering lead by Goldman Sachs (GS: NYSE) at 16 times revenues. Acorn Energy sold 889,005 shares of COMV stock for $25.8 million in the secondary offering, 1,261,165 shares for $15.4 million in 2008, and the remaining 502,500 shares for $4.0 million in 2009.

John's career began at Lehman Brothers, where he converted defaulted debt into equity of a small public company (CGS Scientific) for a 50 bagger over three years. After a series of business investments[8], John co-founded and was President of Edson Moore Healthcare Ventures, a fund which acquired $150 million portfolio of 16 joint venture health care-related assets from Elan Pharmaceuticals in July 2002. Over time, the assets were sold at a considerable profit. Also, he was a co-founder and CEO of Optimer Inc., which was sold to a leveraged buyout fund (Sterling Capital) in 2007.

John is an advocate for increasing productivity in the energy sector by utilizing technological innovation on existing infrastructure (aka Cleantech) as evident by his co-authorship of The Hidden Cleantech Revolution, published in 2010. He has appropriately named his blog: betthejockey.

VALUATION

The appropriate valuation methodology for Acorn Energy is based on price-to-sales (P/S) due the character of Acorn's enterprise, namely a small-capitalization company with negative profitability, but with a sales profile that should grow and expand over time as management makes investments in the underlying businesses. Ultimately, the growing revenue stream should manifest itself into positive earnings. Based on historical norms for similar companies and the company's historical P/S range, a price-to-sales valuation range between 1.1 and 3.2 is expected. Our $6.00 price target is based on a 2.5 price-to-sales ratio valuation. At $4.12, the current P/S ratio of Acorn's stock is 1.75.

A critical step in the methodology of determining the appropriate price-to-sales ratio is the debt level of the company. Debt should be added to the "price." In other words, the price-to-sales ratio is calculated as equity plus debt divided by sales.

[8] American Electromedics, October Films, Virata, and BlueGill Technologies

Significant fundamental events can considerably increase the company's valuation parameter in a step-fashion. One such event would be the company's achievement of positive profitability, in which case the stock could experience multiple expansion in short order. Management has the ability to dramatically lower SG&A and achieve profitability sooner than expected, since current expenses are above-trend due to heavy investments aimed at driving revenue growth.

Another step-up event would be the re-valuation of one of the company's operating companies, possibly through an initial public offering (IPO) or an industry demand-enhancing catalyst. Investors should be cognizant of precedents with somewhat similar characteristics. For example, the anticipation for increased usage of smart meters and the expected government stimulus for electricity grid modernization drove Itron's stock (ITRI: NYSE), a mid-sized manufacturer of smart meters, to a 5.7 price-to-sales valuation in mid-2007. And CEO John Moore sold Comverge at 16 times revenues, also in 2007.

When the company achieves a permanent upward shift in the level of profitability, the appropriate valuation methodology should shift to the price-to-earnings (P/E) ratio unless the foundation of the business' demand is highly sensitive to the economic cycle. When a price-to-earnings ratio is applicable, other factors, such as the operating margin and return-on-equity, will take on increased importance in determining the expected P/E valuation range.

PROJECTED INCOME STATEMENT & BALANCE SHEET

Acorn Energy, Inc.

Income Statement and Balance Sheet

(Dollars in millions, except EPS data)

	12/05	12/06	12/07	12/08	12/09	12/10E
Revenues	4.2	4.1	5.6	20.7	31.3	41.1
Cost of Goods Sold	2.9	2.8	4.2	14.2	17.8	22.9
SG&A	3.5	4.6	5.3	11.7	18.5	26.1
Interest expense	0.1	0.0	1.6	3.0	0.2	0.4
Other	0.4	0.8	-0.3	5.7	2.2	1.2
Zacks Adjusted Income before NRI	-2.7	-4.1	-5.2	-13.9	-7.4	-10.5
Net Income	-1.3	-6.1	32.5	-7.9	-5.7	-19.9
Diluted EPS before NRI	-0.33	-0.48	-0.45	-1.20	-0.65	-0.71
Reported EPS	-0.16	-0.71	3.30	-0.69	-0.50	-1.29
Cash & Marketable Securities	0.9	1.5	19.6	15.1	11.2	14.9
Current Assets	6.6	3.6	24.7	25.6	24.7	40.0
Current Liabilities	5.2	3.3	10.9	11.8	8.4	18.4
Long Term Debt	0.1	0.0	0.0	0.0	0.4	0.3
Shareholder's Equity	0.8	-0.5	67.3	36.1	36.1	47.0

Acorn Energy Earnings Model

	YEARS ENDING 12/31	Q1	Q2	Q3	Q4	2009	Q1	Q2	Q3	Q4 E	2010 E	Q1 E	Q2 E	Q3 E	Q4 E	2011 E	2012 E
INCOME STATEMENT (000 except EPS)																	
CoaLogix	revenues	5,390	4,547	2,824	5,338	**18,099**	4,478	4,855	5,479	8,000	**22,812**	8,440	8,904	9,394	9,911	**36,649**	**42,146**
DSIT	revenues	1,966	2,036	2,154	2,651	**8,807**	2,507	2,751	3,189	3,925	**12,372**	4,160	4,410	4,675	4,955	**18,200**	**19,292**
Coreworx	revenues	1,027	1,075	1,385	511	**3,999**	770	897	1,091	667	**3,425**						
GridSense	revenues					**0**	0	517	671	800	**1,988**	840	882	926	972	**3,621**	**3,802**
US Sensor	revenues					**0**	0	104	157	185	**446**	192	200	208	216	**817**	**850**
Other	revenues	95	122	100	95	**412**	99	0	0	0	**99**						
TOTAL REVENUES		8,478	7,780	6,463	8,596	**31,317**	7,854	9,124	10,587	13,576	**41,141**	13,633	14,396	15,203	16,054	**59,286**	**66,089**
CoaLogix	cost of goods sold	3,535	2,931	2,126	3,211	**11,803**	2,546	3,000	4,563	4,960	**15,069**	5,233	5,521	5,824	6,145	**22,722**	**26,131**
DSIT	cost of goods sold	1,219	1,132	1,215	1,380	**4,946**	1,342	1,475	1,815	1,330	**5,962**	2,247	2,359	2,477	2,601	**9,685**	**10,266**
Coreworx	cost of goods sold	271	145	183	99	**698**	176	204	151	92	**623**						
GridSense	cost of goods sold					**0**	0	191	321	383	**895**	378	388	407	418	**1,592**	**1,671**
US Sensor	cost of goods sold					**0**	0	83	84	86	**253**	88	89	91	92	**359**	**373**
Other	cost of goods sold	74	82	78	84	**318**	82	0	0	0	**82**						
TOTAL COST OF GOODS SOLD		5,099	4,289	3,602	4,774	**17,765**	4,146	4,953	6,934	6,851	**22,884**	7,945	8,357	8,800	9,256	**34,358**	**38,441**
Gross Profit		3,379	3,491	2,861	3,822	13,552	3,708	4,171	3,653	6,725	**18,257**	5,688	6,039	6,403	6,798	**24,928**	**27,648**
TOTAL SG&A		4,108	4,629	4,565	5,215	**18,517**	6,321	7,565	7,466	4,725	**26,077**	5,103	5,511	5,952	6,428	**22,995**	**24,835**
	R&D expense	(276)	624	(424)	(493)	**(569)**	(670)	(872)	(886)	(190)	**(2,618)**	(204)	(218)	(233)	(249)	**(904)**	**(967)**
	Dividends from EnerTech					**0**	135				**135**						
	Impairments	(70)		0	(2,611)	**(2,692)**					**0**						
OPERATING INCOME		(1,075)	(514)	(2,128)	(4,497)	**(8,226)**	(3,148)	(4,266)	(4,699)	1,810	**(10,303)**	381	310	218	121	**1,029**	**1,846**
	Interest expense	(169)	85	297	(444)	**(231)**	50	(355)	131	(262)	**(436)**	(150)	(150)	(150)	(150)	**(600)**	**(700)**
	Gain on Sale Comverge	417	810	176	0	**1,403**					**0**						
	Gain on investment GridSense					**0**		1,327			**1,327**						
Pretax income		(827)	381	(1,655)	(4,941)	**(7,054)**	(3,098)	(3,294)	(4,568)	1,548	**(9,412)**	231	160	68	(29)	**429**	**1,146**
	Taxes	0	0	72	672	**744**	(75)	(123)	(372)	10	**(560)**	(112)	(112)	(113)	(113)	**(450)**	**(500)**
Net Income after taxes		(827)	381	(1,583)	(4,269)	**(6,310)**	(3,173)	(3,417)	(4,940)	1,558	**(9,972)**	119	48	(45)	(142)	**(21)**	**646**
	Equity income (loss) Paketeria	0	0	263	0	**263**	0	0	0	0	**0**	0	0	0	0		
	Equity income (loss) GridSense	(129)	0	0	0	**(129)**	0	0	0	(1,200)	**(1,200)**	0	0	0	0		
	Minority interest	(107)	(37)	96	468	**420**	0	265	373	0	**638**	0	0	0	0		
NET INCOME before NRI		(1,063)	344	(1,224)	(3,801)	**(5,745)**	(3,173)	(3,152)	(4,567)	358	**(10,534)**	119	48	(45)	(142)	**(21)**	**646**
	Weighted Avg. Shares Out. Diluted	11,535	11,553	11,186	11,592	**11,445**	12,498	15,161	15,721	16,200	**14,895**	17,350	17,697	18,051	18,412	**17,877**	**21,457**
Zacks Diluted EPS before NRI		(0.09)	0.03	(0.11)	(0.33)	**(0.50)**	(0.25)	(0.21)	(0.29)	0.02	**(0.71)**	0.01	0.00	(0.00)	(0.01)	**(0.00)**	**0.03**
NRI	ex-Comverge	(1,480)	(466)	(1,400)													
	Paketeria			1,583													
	Coreworx									(9,400)							
	Total Non-reoccurring Items (NRI)	(1,480)	(466)	183	0	**(1,764)**	0	0	0	(9,400)	**(9,400)**	0	0	0	0	**0**	**0**
NET INCOME after NRI		(2,543)	(123)	(1,041)	(3,801)	**(7,508)**	(3,173)	(3,152)	(4,567)	(9,042)	**(19,934)**	119	48	(45)	(142)	**(21)**	**646**
NRI per share		(0.13)	(0.04)	0.02	0.00	**(0.15)**	0.00	0.00	0.00	(0.58)	**(0.58)**	0.00	0.00	0.00	0.00	**0.00**	**0.00**
Diluted EPS after NRI		(0.22)	(0.01)	(0.09)	(0.33)	**(0.65)**	(0.25)	(0.21)	(0.29)	(0.56)	**(1.29)**	0.01	0.00	(0.00)	(0.01)	**(0.00)**	**0.03**

	YEARS ENDING 12/31	Q1	Q2	Q3	Q4	2009	Q1	Q2	Q3	Q4 E	2010 E	Q1 E	Q2 E	Q3 E	Q4 E	2011 E	2012 E
Gross margin		39.9%	44.9%	44.3%	44.5%	**43.3%**	47.2%	45.7%	34.5%	49.5%	**44.4%**	41.7%	41.9%	42.1%	42.3%	**42.0%**	**41.8%**
SGA % of revenues		48.5%	59.5%	70.6%	60.7%	**59.1%**	80.5%	82.9%	70.5%	34.8%	**63.4%**	37.4%	38.3%	39.2%	40.0%	**38.8%**	**37.6%**
R&D % of revenues		3.3%	-8.0%	6.6%	5.7%	**1.8%**	8.5%	9.6%	8.4%	1.4%	**6.4%**	1.5%	1.5%	1.5%	1.6%	**1.5%**	**1.5%**
Gross margins	CoaLogix	34.4%	35.5%	24.7%	39.9%	**34.8%**	43.1%	38.2%	16.7%	38.0%	**33.9%**	38.0%	38.0%	38.0%	38.0%	**38.0%**	**38.0%**
	DSIT	38.0%	44.4%	43.6%	47.9%	**43.8%**	46.5%	46.4%	43.1%	46.0%	**51.8%**	46.0%	46.5%	47.0%	47.5%	**46.8%**	**46.8%**
	Coreworx	73.6%	86.5%	86.8%	80.6%	**82.5%**	77.1%	77.3%	86.2%	86.2%							
	GridSense							63.1%	52.2%	55.0%	**55.0%**	55.0%	56.0%	56.0%	57.0%	**56.0%**	**56.0%**
	US Sensor							20.2%	46.5%	53.5%	**43.3%**	54.5%	55.5%	56.5%	57.5%	**56.0%**	**56.0%**

HISTORICAL ZACKS RECOMMENDATIONS



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