

Acorn Energy (ACFN)

Buy

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ACFN: Initiating Coverage with a Buy Rating

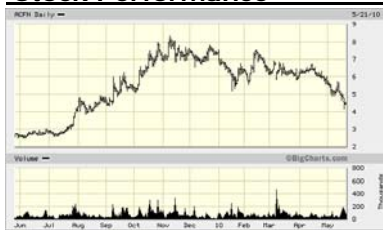
Key Metrics

Price	\$4.48
Rating	Buy
52-week Range	\$8.33-2.40
Cash (M)	\$19
Debt (M)	\$1
Debt/Capital	2%
Book Value/Share	\$3.47

Market Data

Market Cap (M)	\$70
Enterprise Value (M)	\$52
Shares Out. (M)	15.6
Float	14.6
10-Day Avg. Vol	77,360
Institutional Ownership	9%

Stock Performance



Source: BigCharts.com

Valuation (FTM-E)

EV/Sales	0.8x
P/E-GAAP	NM
EV/EBITDA	18.0x

Company Description

Acorn Energy's five operating subsidiaries offer a broad range of products and services including pollution control, security systems, software for document management and project control, electric grid monitoring and control equipment and fiber-optic sensing systems. Acorn's primary target market is the massive energy industry.

Investment Conclusion

We are initiating coverage of Acorn Energy with a Buy recommendation and \$7-8 potential valuation range. We believe the key driver of near-term results is Acorn's subsidiary, CoaLogix, which provides catalyst regeneration services to coal-fired electric power plants. We estimate CoaLogix's potential in the U.S. market alone more than justifies purchase of the stock. We believe the value of CoaLogix, in a few years, could be worth over \$10 per share, after adjusting for minority interests.

Summary

- We expect CoaLogix to grow rapidly over the coming years with sales growing from \$18M in 2009 to \$23M in 2010 and \$38M in 2011. We believe our estimates are conservative and in the not-too-distant future it could be generating over \$100M in revenue.
- CoaLogix is pursuing other pollution control markets, like SO₃ and mercury, and is looking to become an integral part of the pollution reduction process of the utilities. This could lead to service level agreements that result in revenue for the management of the utilities pollution control obligations.
- While the focus is currently on CoaLogix, Acorn owns four other operating companies that address different segments of the power and energy industries. This layered approach reduces Acorn's reliance on one segment and provides for future growth. We estimate the value of these subsidiaries at close to \$4 per share
- We value Acorn on a sum-of-the-parts method and estimate the potential value of CoaLogix alone is enough to justify purchase. We believe it is not a stretch to assume CoaLogix can reach \$150M in revenue in four to five years. Capitalizing this at 1.4x, the multiple currently given to other companies in the pollution mitigation industry, results in a potential value of \$212M. Acorn's share of this, at 72.3% is \$153M, or \$9.58 per share. Our potential valuation range blends this and comparable valuation of Acorn's subsidiaries.

MCF Estimates

	FY09A	FY10E	FY11E
Sales (M)			
1Q	\$8.5	\$7.9	\$19.1
2Q	7.8	10.1	18.1
3Q	6.5	13.3	18.1
4Q	8.6	16.9	19.1
FY (Dec)	\$31.3	\$48.1	\$74.4
EV/S	1.7x	1.1x	0.7x
EPS-GAAP			
1Q	(\$0.09)	(\$0.25)	\$0.07
2Q	0.03	(0.17)	0.04
3Q	(0.11)	(0.11)	0.04
4Q	(0.33)	(0.00)	0.06
FY (Dec)	(\$0.50)	(\$0.50)	\$0.21
P/E	NM	NM	21.6x

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last page of this
report.

Investment Summary

We are initiating coverage of Acorn Energy with a Buy recommendation and \$7-8 potential valuation range. We believe the key driver of near-term results is Acorn's subsidiary, CoaLogix, which provides catalyst regeneration services to coal-fired electric power plants. Catalysts are used by utilities to remove nitrogen oxide and nitrogen dioxide (NOx) released by the burning of coal and other fossil fuels. Limits on NOx emissions are governed by the Clean Air Act, as amended, and administered by the EPA. At the beginning of 2009 NOx emission limits were reduced sharply, increasing catalyst usage and shortening the period before replacement or regeneration is required. CoaLogix's proprietary process of regenerating used catalysts is typically priced at a significant discount to new catalysts, sometimes as much as 40%. More importantly CoaLogix is taking a holistic view of the market, and move away from simply competing on prices, by attempting to sell a service level agreement to utilities, guaranteeing a certain level of NOx reduction for an annual fee. If successful on this front the company would create substantial barriers to entry, and highly predictable revenue streams.

We estimate CoaLogix's potential in the U.S. market, on the regeneration of NOx catalysts alone, more than justifies purchase of the stock. We believe the value of CoaLogix, in a few years, when the catalyst regeneration market could be \$200-250 million annual revenue, at over \$10 per share, after adjusting for minority interests. This assumes no value for the other aspects of CoaLogix business or any value for the four other operating companies at Acorn.

We expect CoaLogix to grow rapidly over the coming years with sales growing from \$18 million in 2009 to \$22 million in 2010 and \$38 million in 2011. We believe our estimates are very conservative and in the not-too-distant future it could be generating over \$100 million in revenue. This would be solely on regeneration of catalysts used in removal of NOx from coal-fired plants. However, the company is pursuing other pollution control markets, like SO₃ and mercury, and is looking to become an integral part of the pollution reduction process of the utilities which could lead to service level agreements that result in revenue for the entire management of the utilities pollution control obligations.

While the focus of investors is currently on CoaLogix, Acorn also owns: Coreworx, which provides document management and project control software to the engineering and construction industry; DSIT- an Israeli-based provider of acoustic and sonar equipment to monitor underwater access to key energy and other high-value infrastructure; GridSense, a provider of smart grid solutions and U.S. Sensors, which sells fiber-optic based sensors for security monitoring and management of oil and gas reservoirs. We believe the combined value of these companies is close to \$4 per share.

Company and Market Overview

Acorn Energy's five operating subsidiaries offer a broad range of products and services including pollution control, security systems, software for document management and project control, electric grid monitoring and control equipment and fiber-optic sensing systems. Acorn's primary target market is the massive energy industry. The company's strategy is to purchase stakes in companies after much of the product development has taken place, but before significant adoption of its products has occurred. It seeks out opportunities where the original or secondary owners lack the resources to continue development of the product or sales channel and is thus able to purchase at attractive prices, operations close to mass acceptance.

The energy market is one of the largest in the world and due to cost pressures, regulatory and technological change a ripe market for new products and services. Just the energy sector of the S&P 500 is over \$1 trillion in market cap and the utility industry over \$350 billion. Given the size and the constantly changing regulations there are ample opportunities for Acorn to find companies that address the numerous pain points in the industry. Today, that includes products that help the industry meet new regulatory mandates, guard against physical threats posed by terrorists, improve costs and efficiency of the electric grid and better manage oil and gas reservoirs. But over time this will include other companies with technologies and services addressing different segments of the market.

Not only is the energy industry large, but it is highly visible, controversial and regulated. Recently a 987 page draft bill (why does it seem most of the major bills introduced recently weigh in at 1,000 pages or more? Are they competing with James Michener? Do they get paid by the page?) was introduced by Senators Kerry and Lieberman touching on almost every aspect of the energy industry and every aspect of Acorn's business. The ultimate disposition of the bill remains in doubt, particularly since Senator Graham pulled his sponsorship, but the trend of greater regulatory oversight and the classification of carbon dioxide as a pollutant, (which will make it difficult for the exhalers amongst us) will result in changes and pressures to the industry for many years to come. Again, an opportunity for Acorn.

Those wishing to alter the energy industry, and at the core we believe the wish is to eliminate carbon-based fuel sources, face a difficult problem: There are no competitively priced alternatives to carbon-based fuel, now or in the medium-term that can satisfy the country's demand for energy. Coal, oil, natural gas and nuclear fuel over 90% of the electricity in the U.S. and the DoE predicts in 2035 will still power over 85% of the electricity generated in the U.S. Acorn's portfolio of companies target pressure points in our current energy industry, pressure points that will remain for many years to come.

Acorn's Subsidiaries

In essence Acorn is a public venture capital company, and although it has a wide variety of investments, what ties them together is a focus on energy and security. Its strategy is to invest in companies and technologies that have already been, or are about to be proven in the market, with reference customers, that address markets where they can generate at least \$100 million in annual revenue. Acorn has a layered approach to these investments. CoaLogix is on the cusp of rapid revenue and earnings growth as the need for new and regenerated catalysts grow. Coreworx is completing a heavy investment phase, having expanded its sales force and recently completing the purchase of Decision Dynamics to broaden its product line and open up new channels. Losses will be incurred until sales can ramp to around \$20 million annually. Incremental revenue growth beyond that mark should have high incremental operating margins. DSIT has a slower growth projection, and a long sales cycle, but is seeing initial successes with a new product line. Rapid growth is likely a few years off. Both GridSense and US Sensors are less mature than the other companies in the portfolio, but like the others, address large markets with unique products.

With its layered portfolio approach, Acorn is trying to replicate and sustain the success it had with Comverge, a maker of advanced meter reading systems and remote operation of high-energy consuming devices at peak demand periods. Comverge went public in 2007 at a valuation over \$300 million and annual sales of \$33 million. Comverge was built via a \$1.3 million acquisition of intellectual property from Lucent, a \$4.2 million purchase of the control systems division of Scientific-Atlanta and internally generated products. The

operations were funded by Acorn until an \$18.6 million private equity round of financing in 2003, supplemented by subsequent rounds. As stated earlier, Comverge went public in 2007 and through 2009, Acorn sold stock generating \$48 million in proceeds to fund its current portfolio of companies.

CoaLogix

In 2009 CoaLogix generated \$18.1 million in revenue and we expect it to generate over \$22 million this year due to better capacity utilization at its current facility and the addition of another facility mid-year. CoaLogix regenerates catalysts used in coal-fired power plants to reduce NOx emissions. Since the beginning of 2009 coal-fired plants have been required to meet more stringent emissions requirements, leading to a year-round usage of catalysts and a greater need to replace or regenerate the in situ catalysts. CoaLogix has a 40% cost advantage over new catalysts. It also plans on offering a suite of services for NOx emission, in essence becoming the outsourced partners of utilities for their NOx emissions requirement. The company is also looking to expand into the China market sometime in the coming quarters as China is requiring to NOx emission reductions of its coal-fired plants. CoaLogix has also entered into partnership with FL Smidth for SO₃ mitigation.

Acorn currently owns a little less than 76% of CoaLogix, with 23.6% owned by EnerTech Capital Partners, a private equity fund specializing in the energy markets and less than 1% by management. An April 2009 agreement entered into between Acorn, EnerTech and CoaLogix management calls for an investment of \$5.6 million each from Acorn and EnerTech and \$260 thousand from CoaLogix management. Approximately \$4.2 million remains on this commitment and after all investments are made Acorn will have a 72.3% ownership of CoaLogix.

Coreworx

Coreworx offers document management software to the engineering and construction, oil and gas, power, nuclear and mining industries. It typically targets users with capital projects over \$500 million but many of its projects run into the billions or tens of billions of dollars to construct. A billion dollar project can result in revenues to Coreworx of over \$1 million. However, a number of years ago favorable pricing to Fluor led to widespread adoption of the Coreworx platform, but a paucity of revenue. Other users have followed, such as Chevron and J. Ray McDermott. Growth has been good, but achieving scale has been challenging given the deliberate pace of customers in this industry and the low pricing received by Fluor.

There are a couple of initiatives that could lead to greater scale in the short-term. First, Coreworx has developed interface management software-software that helps manage the interface of equipment from different vendors-in conjunction with Fluor, for the offshore oil, nuclear power and other large capital projects. Babcock & Wilcox has chosen Coreworx support software developed specifically for the nuclear power industry for its new mPower nuclear reactor. There are a total of four new products the company has introduced that should hit the market this year. In addition, Coreworx recently completed the acquisition of Decision Dynamics Technology (DDY) a provider of project information and costs control software for capital projects. Coreworx will benefit from the increased scale, as DDY should add over \$4 million of annual sales, and with the larger balance sheet of Acorn, could be able to close sales previously lost due to customer concern over the company's viability.

However, as we detail below, there are significant upfront costs Acorn faces and losses are likely until the company reaches about \$20 million in sales. This is still some way off, as we have sales estimated at \$8.5 million in 2010 and \$14 million in 2011. There could be significant upside to these estimates.

DSIT

In 2005 DSIT focused its efforts on real-time embedded systems using sonar and acoustic technology for naval and security markets. DSIT has developed diver detection sonar systems that detect and track underwater intrusion at sensitive sites such as ports, oil and gas facilities and nuclear power plants. Revenues in 2009 were \$9.2 million and we estimate could reach \$11.0 million in 2010 and \$12.2 million in 2011.

The company is working with partners worldwide including an Asian and U.S. homeland security integrator. Backlog increased from \$4.8 million at the end of 2008 to \$7.6 million at the end of 2009.

This is a challenging business since security solutions typically struggle to demonstrate an ROI to customers other than those occasions when risk is priced higher, usually brought on by terrorist attacks, wars or increased geo-political tensions. However, this is a solid business, with ample room to grow, good margins and is cash flow positive.

GridSense

Acorn completed the acquisition of the ~70% of GridSense it did not own earlier this month for \$1.2 million in cash, which included a \$594 thousand cash advance to pay a shareholder loan, and the issuance of 356 thousand shares of Acorn stock. We have GridSense contributing \$4 million in revenue this year and \$8 million next year from the sale of remote monitoring and control systems to electric facilities. These products are used to remotely monitor line loads and transformers. The company has a few grants and pilot programs underway with large utilities.

US Sensors

US Sensors is the latest addition to the portfolio and builds fiber-optic sensing systems. These systems are primarily targeted to the oil and gas industry for monitoring and control of petroleum reservoirs. Sales are modest, less than \$2 million now and we estimate it will take time and patience for the business to scale. However, Acorn's investment to date and its option to purchase up to 84% of the stock would require \$3.6 million over the next twelve months.

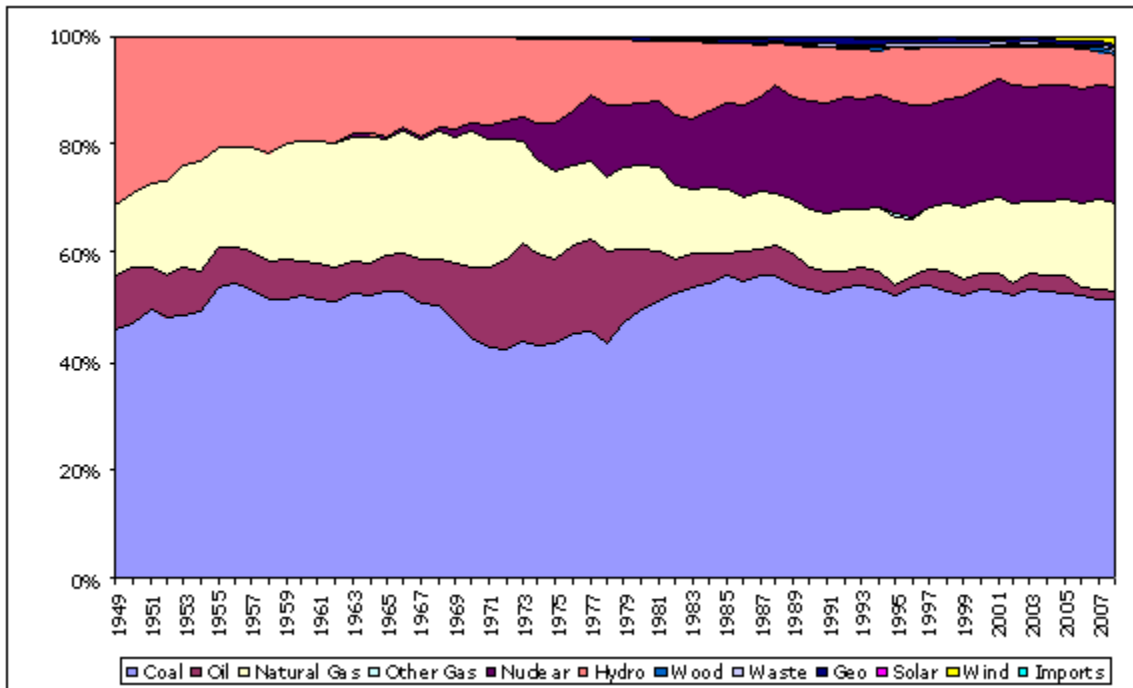
	FY 08	FY 09	FY 10 E	FY 11 E
Revenues (External)				
CoalLogix	10,099	18,099	23,128	38,000
Naval & RT Solutions	7,032	7,985	9,781	11,000
CoreWorx	2,330	3,999	8,470	14,000
GridSense	0	0	4,000	8,000
US Sensors	0	0	1,500	2,200
Other	1,235	1,234	1,225	1,200
Total	20,696	31,317	48,104	74,400
Gross Profit				
CoalLogix	2,457	6,296	8,460	13,300
Naval & RT Solutions	2,383	3,540	4,423	4,950
CoreWorx	1,409	3,301	6,754	11,200
GridSense			1,800	3,600
US Sensors			675	990
Other	284	415	464	440
Total	6,533	13,552	22,576	34,480
Operating Income				
CoalLogix	(1,433)	(2,742)	548	4,900
Naval & RT Solutions	605	1,051	1,736	2,010
CoreWorx	(1,171)	(3,360)	(6,736)	(2,800)
GridSense	0	0	363	1,185
US Sensors	0	0	(127)	45
Other	(86)	64	37	40
Total	(2,085)	(4,987)	(4,180)	5,380

Source: Merriman and Acorn

The U.S. Electricity Market

Fossil fuels (coal, oil and natural gas) and nuclear are used to power 90% of the electricity generated in the United States. Of the remaining 10%, almost two-thirds, or 6% of total electricity generation is powered by hydro. The remaining comes from wood, waste, geothermal, solar, wind and imports. Wind is the largest of the renewables and powers 1% of electricity in the U.S. DoE projects modest changes in the power sources for electricity generation. In 2035, the DoE projects fossil fuels and nuclear to account for 85% of the total with renewables increasing its share to 15%.

U.S. Electricity Generation by Fuel Source: 1949-2009

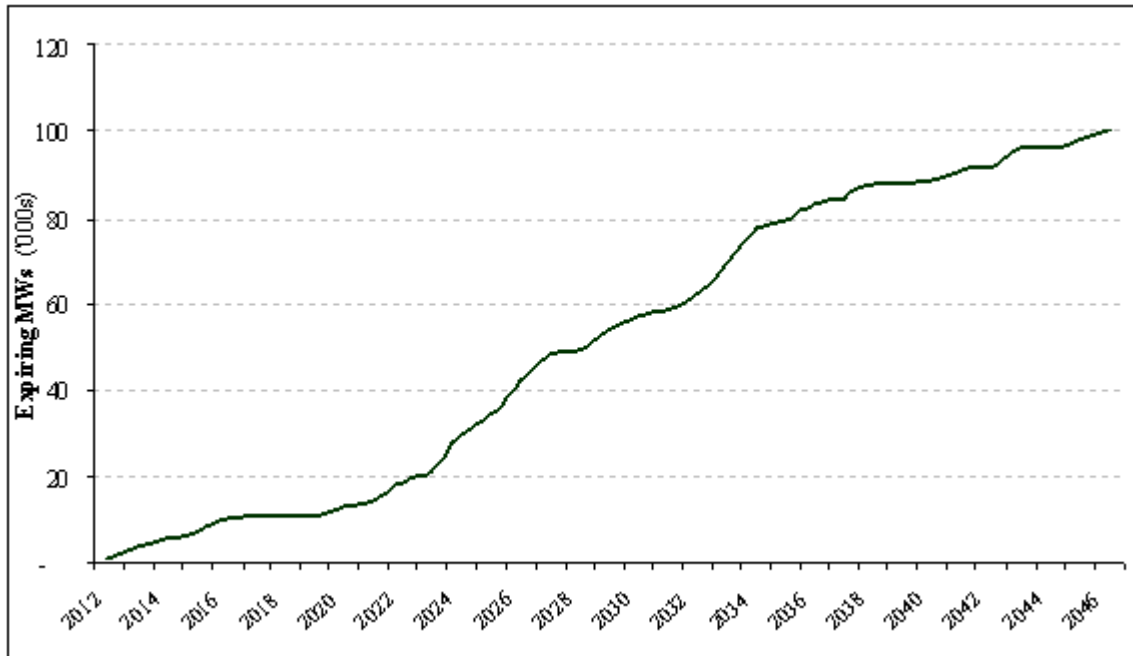


Source: Department of Energy

Over the past 50 years electricity usage has risen ten-fold (a 3.8% compound annual rate) but in the past five and ten year period has grown at a 1% CAGR. Over the next 25 years, DoE forecasts energy capacity to grow at a 0.6% CAGR, almost 20% in total. Generating capacity will have to be built to replace retired plants as well as for the increased demand expected. This assumes no major price dislocation occurs to change, in a meaningful way, the pricing of the inputs.

Construction of new generating facilities, of any sort, is a major challenge for the industry. Even so called green power, like the Cape Cod Wind project continues to face serious objections to its construction. Numerous coal-fired plants are being delayed because they do not address carbon emissions.

Nuclear power capacity also faces significant declines as licenses on nuclear power plants, representing 80% of the capacity in the U.S. fleet, is set to expire by 2035. In order for the industry to continue to supply the market, decommissioning of nuclear plants need to be delayed and/or new plants built in a timely manner, or reliance on coal-fired plants must be increased. We think it is unlikely solar, wind, biomass etc. can scale, with or without the massive subsidies they currently receive, to fill the slack.

Nuclear Power License Expiration: 2012-2046

Source: Department of Energy

The Regulatory Environment

Significant changes to the country's energy policy are likely irrespective of the ultimate disposition of the Kerry-Lieberman American Power Act (APA). If no legislation passes the EPA has indicated it will move ahead with regulations on carbon emissions. The Agency has determined carbon dioxide is a greenhouse gas that threatens public health and the environment and according to a Supreme Court decision, greenhouse gases are air pollutants covered by the Clean Air Act.

It is uncertain if APA will pass, but the general outline, we believe, will remain the driving policy prescriptions of those seeking to reduce carbon emissions. The major policy objective, we believe, will include some sort of tax on carbon emissions. In order to get enough support from other constituencies, greater offshore drilling, loan subsidies for nuclear power and increased subsidies for so-called green energy will probably also be included. If implemented this will most assuredly raise prices to consumers which could slow adoption. This tension will play out over many years.

Obviously, changes in the regulatory environment will have an impact on Acorn's investments. However, we believe it is well-positioned for these changes. In our view:

- Coal will remain the dominant source of power generation for some time, with or without carbon taxes. We feel highly confident the requirement for lower NOx, SOx and mercury emissions will not abate, and is more likely to become even more restrictive. This is a positive for CoaLogix.
- New nuclear plants are required in the U.S., at the very least to replace the plants coming off license. This is a positive for Coreworx.
- Carbon taxes and increased or sustained subsidies for nuclear and so-called green energy will raise the price of electricity. In order to offset this and the ensuing public outcry, new technologies to manage the grid will be deployed. This is a positive for GridSense.

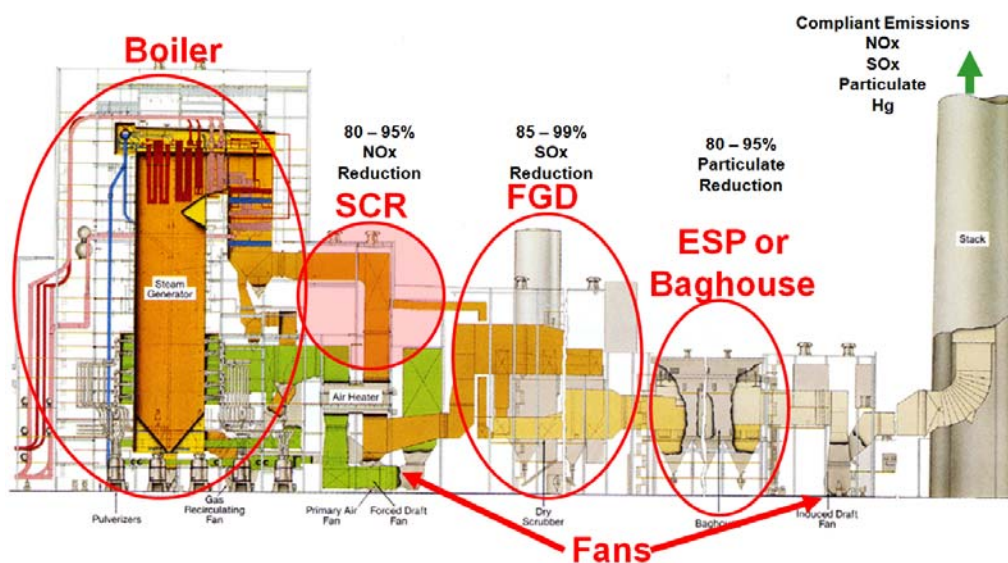
- Security of power facilities remains an underpriced risk, but continued threats to the power system will remain. In addition, with policy decisions that raise prices and restrict the entry of new plants, risk to existing plants will increase. This is a positive for DSIT.
- Better management of oil and gas reservoirs can lower costs for the industry. The industry has constantly sought out technology for cost reduction. Increased carbon taxes could lower demand, resulting in the need for greater cost control. This is a positive for US Sensors.

CoaLogix and Catalyst Regeneration

CoaLogix, through its subsidiary SCR-Tech, provides catalyst regeneration services to coal-fired electric power plants. Plants with between 150,000-200,000MW of capacity utilize selective catalytic reduction (SCR), to comply with the NOx emission requirements of the Clean Air Act and its amendments. Beginning in the next few years, the catalysts used to reduce NOx emissions will need to be replaced or regenerated, resulting in a \$500 million annual market if the catalysts are replaced, or \$350 million annual market if the catalysts are regenerated. We expect the company to grow rapidly over the coming years with sales rising from \$18 million in 2009 to \$22 million in 2010 and \$38 million in 2011. We believe our estimates are very conservative and in the not-too-distant future it could be generating over \$100 million in revenue.

SCR is one of multiple strategies used by industry to reduce NOx emissions. Most power plants use a layered approach that includes modifying combustion in the boiler, selective non-catalytic reduction (SNCR) and SCR. Under the rules, authorized emitters receive emission allowances, giving the holder the right to emit a certain amount of NOx. The allowances can be used, sold or banked, resulting in industry flexibility to meet overall NOx reduction goals in the most efficient manner. The program has been very successful. Between 1990 and 2003 NOx emissions from coal-fired power plants fell from 6.7 million tons to 4.2 million tons even though the amount of coal used to produce electric power increased 27%.

SCR in a Coal-Fired Plant



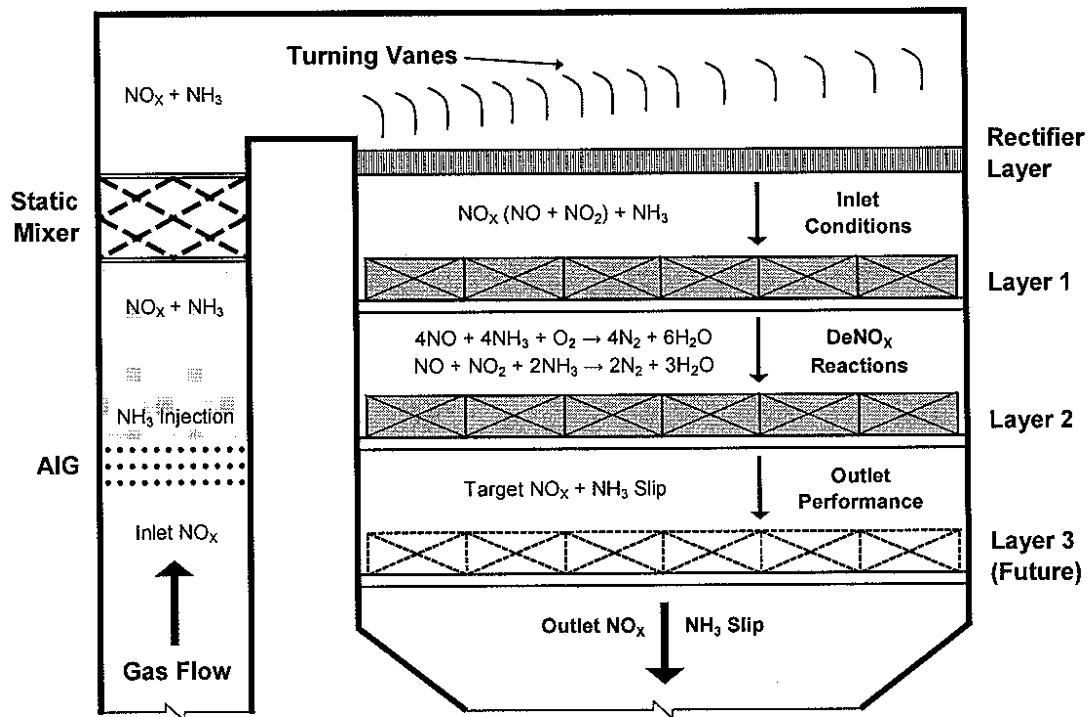
Source: Acorn Energy

In 2005 the EPA promulgated the Clean Air Interstate Rule (CAIR) to reduce NO_x emissions to 1.6 million tons by 2010 and 1.3 million tons by 2015. Importantly, CAIR is applied on an annual basis, versus seasonal NO_x caps previously. Through January 1, 2009 coal-fired power plants operated their SCR systems during the five month ozone season but since have been required to operate year-round. A court ruling vacated the CAIR rules in 2008, but later that year, remanded the rules to the EPA, without vacating them. New rules are being devised by the EPA to meet the court's objections. In the meantime, NO_x reduction continues on a year-round basis.

SCR works by injecting ammonia into the flue gas, which in the presence of the catalyst reacts with nitrogen oxide, nitrogen dioxide and oxygen to form nitrogen, water as well as residual NO_x and ammonia. An undesirable reaction is the creation of sulfur trioxide which can react with water to become sulfuric acid or react with ammonia to create ammonia bisulfate.

Common catalysts, such as vanadium and tungsten are mixed with a ceramic compound and pressed onto a stainless steel mesh, honeycomb or corrugated substrate. These are organized into modules, then layers. A typical SCR system has three layers of catalyst.

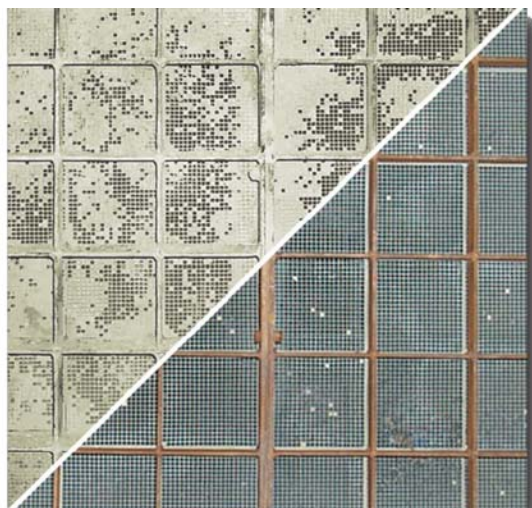
SCR System Anatomy



Source: Cormetech

By definition, the catalyst is unchanged by the reaction, but over time will degrade due to contaminants in the flue gases. In addition, the substrates can become blocked from particles in the flue gas.

Catalyst: Before and After Regeneration



Source: Acorn Energy

When the effectiveness diminishes, the catalysts either need to be replaced, or regenerated. A typical power plant needs between 1.3 and 1.5 cubic meters of catalyst for every MW of power generated. At \$6,000 per cubic meter, total catalyst costs can be over \$4.2 million for a 500MW plant, the size of an average coal-fired plant in the U.S. (Of the 615 coal fired plants in the U.S. 223 are over 500MW and represent 83% of the generating capacity). Typically, catalysts are rated for 24,000 hours of use, or about three years. With a three-layer system one layer per year would be replaced or regenerated.

The regeneration process consists of removing the larger particles, and dipping the modules into a chemical bath to replace the catalysts. Over time, the substrate will become too damaged to repair.

Industry estimates point to over 150,000MW of coal-fired capacity that utilize SCR, which should grow with greater restrictions on NO_x emissions and the migration of capacity from small to large units, where SCR has higher penetration. This could lead to a \$1.5 billion installed market for new catalysts, and assuming one-third of the catalysts are replaced per year, a \$500 million annual market. In overseas markets, regeneration has a 70%+ market share, and with prices 60% of new catalysts, this suggests an annual market of \$130 million to \$200 million for regeneration.

SCR-Tech has a strong position in the U.S. market with only one competitor, Evonik, whom SCR is suing as well as its CEO and CFO, for among other things, breach of confidentiality agreements, as both are former employees of SCR. SCR's success will not, however, be contingent upon a successful resolution of the litigation. The company is building relationships and entering contracts with the largest coal-fired utilities in the country, and is looking to offer an emissions reduction service, rather than compete on price alone. That is, SCR is looking to be the manager of the utilities' fleet of catalysts. Success in this could result in longer-term service level agreements with the customers, where SCR guarantees maximum NO_x emissions.

Beside NO_x emissions the company is evaluating entering the Chinese market which has a large and growing coal-fired power industry as well as increased interest in pollution control. Further work in sulfur trioxide reduction and mercury reduction offers market opportunities as large as NO_x reduction.

The company's sole plant is in Charlotte, NC and in 2009 generated \$18 million in revenue. Through most of 2009 the company was under contract to regenerate catalysts for plants with about 10,000MW of capacity. This increased to over 20,000 near year-end and recent contracts increased that to over 25,000. We believe this equated to annual revenue of close to \$40 million. These long-term contracts should dominate the revenue mix and give SCR solid visibility, but spot transactions and emergency regeneration projects can add upwards of \$5 million to \$10 million per year depending on capacity availability. Our revenue estimate of \$23 million in 2010 and \$38 million in 2011, we believe, is conservative, given the contracts in hand. Construction of a second plant is underway in Charlotte that will at least double capacity when it comes on line in the second half of this year.

If successful, CoaLogix could grow its U.S. catalyst regeneration business to over \$100 million per year, based on 150,000 MW of plants in the U.S. using SCR, 70% choosing regeneration and 70% market share. The success of potential efforts in service level agreements for fleet management, SO₃ and Hg reduction, and China could be additive. We believe the U.S. regeneration business alone could be worth \$250 million, or over \$10 per share, after adjusting for the minority interest share.

The company faces multiple market and specific risks. Remember, the life of a catalyst is based on the usage of the power plant. Lower demand for electricity due to a restrained economy could result in lower coal-fired power usage, although the impact should not be large given that most coal plants are used for base-load generation. It is more likely a sustained weak economy would impact building plans and reduce the growth in demand for regeneration services. Demand, and our revenue estimates can be impacted by pricing of new catalysts, the price of NOx allowances, the quantity of NOx allowances banked and competition from Evonik or others. Of course, remember, SCR is one of the tools power companies have to lower NOx emission, and alternative technologies could come to market.

This would be solely on regeneration of catalysts used in removal of NOx from coal-fire plants. However, the company is pursuing other pollution control markets, like SO₃ and mercury and is looking to become an integral part of the pollution reduction process of the utilities that could lead to service level agreements that result in revenue for the entire management of the utilities pollution control obligations.

Coreworx

Acorn has made substantial investments in Coreworx over the past quarters, with the purchase of Decision Dynamics (DDY) for approximately \$6 million in stock and a sharp increase in sales and marketing. These actions will support entry into new markets and a new product launch in each quarter of 2010. The DDY purchase is important for Coreworx in that it gives the company another product line to sell, cost management and forecasting, with a shorter sales cycle, and a hosted model. This could be a lead-in sale for the Coreworx document management suite of products.

The commitment was made, at least in part, as a bet on the nuclear industry. As we pointed out earlier, 80% of the nuclear power capacity in the U.S. will go off-license by 2035. Those licenses will either need to be extended and/or new plants built to meet the expected increase in electricity demand over the coming decades. The APA includes \$54 billion of loan guarantees for new nuclear plants and future energy bills could include subsidies as well. In February, the Administration offered conditional commitments of \$8.33 billion to for two new nuclear reactors at the W. Vogtle Electric Generating plant in Burke Georgia. A Vice-Presidential memo to the President on clean energy commits to loan guarantees of \$20.5 billion for two nuclear facilities for 3-4 new reactors in total.

In 2009 Coreworx generated \$4 million in revenue and a \$3.4 million operating loss as the company ramped its marketing efforts and sales force in 4Q to pursue a broader market. We project revenue in 2010 of \$8.4 million and an operating loss of \$6.7 million. The major pain point will be in the first half as increased spending on sales and marketing, including a doubling of the sales force (completed in February) over 2009 levels. We have sales ramping for the Coreworx and DDY platforms, particularly in the second half as the focus of the new sales force on the nuclear power industry, new products from Coreworx and better results from DDY. On an annualized basis, DDY could generate at least \$3 million as its fiscal 2009, ending September, revenue was \$2.8 million and this was hurt by customer reluctance to purchase due to its weak balance sheet.

With the additional sales and marketing expenses and the inclusion of Decision Dynamics, we estimate Coreworx needs about \$20 million in annual revenues to achieve break-even. Ultimately the Coreworx and DDY product lines will merge, but in the short-term DDY sales could benefit from being under the umbrella of a viable parent and will be able to utilize the finance organization of Coreworx as well as avoid public-company costs. Also, over time the market will migrate to a software as a service (SaaS) model, which is how much of DDY's revenues are currently generated. There should be cross-marketing opportunities since there is little overlap in the two company's customer base.

We believe our estimates are lower than company expectations, but software sales to large organizations can sometimes take longer than expected, in our opinion.

DSIT

DSIT offers semi-custom diver detection systems marketed under the AquaShield brand, for protection against underwater ingress of unauthorized divers. Systems are installed in valuable sites such as oil and gas facilities power plants and military ports. An installation can cost multi-million dollars. The company also markets a smaller, less-expensive system called PointShield and the command and control software for both. In addition, DSIT produces simulation systems and is completing Phase 2 of a training project for the Israeli Navy this year. Revenues in 2009 were \$9.2 million and we estimate could reach \$11.0 million in 2010 and \$12.2 million in 2011.

The company is working with partners worldwide including an Asian and a U.S. homeland security integrator. Backlog increased from \$4.8 million at the end of 2008 to \$7.6 million at the end of 2009 and we believe this supports our revenue estimate for the year.

This is a challenging business since security solutions typically struggle to demonstrate an ROI to customers other than those occasions when risk is priced higher, usually brought on by terrorist attacks, wars or increased geo-political tensions. However, this is a solid business, with ample room to grow, good margins and is cash flow positive. EBITDA margin increased from 11% in 2008 to 15.6% in 2009, and exited the year over 20%. We have margins maintained at this level in 2010 and 2011, providing a steady source of cash.

GridSense

The GridSense product line includes LineTracker for remote monitoring of distribution line condition and performance. TransformerIQ provides for centralized monitoring of grid's transformers. Portable power recorders are marketed under the PowerMonic name. The company is involved in a number of pilot projects in the U.S. that could result in fielding amounts well in excess of our estimates. However, at the current time we are assuming modest, and continued, pilot projects and tests generate the bulk of the company's revenues.

Valuation

We value Acorn on a sum-of-the-parts method and estimate the potential value of CoaLogix alone is enough to justify purchase. However, we estimate the other subsidiaries have significant value as well.

We believe it is not a stretch to assume CoaLogix can reach \$150 million in revenue in four to five years. Capitalizing this at 1.4x, the multiple currently given to other companies in the pollution mitigation industry results in a potential value of \$212 million. Acorn's share of this, at 72.3% is \$153 million, or \$9.58 per share. It is important to recognize this multiple is depressed, and much lower than the 2.0x to 2.5x typically garnered by the group.

The following table presents EV/Sales and EV/EBITDA multiples (based on forward 12-months estimates) for comparables to CoaLogix, Coreworx and DSIT, GridSense and US Sensors. The CoaLogix group includes other pollution mitigation companies. Coreworx comps are other enterprise software companies. We have lumped DSIT, GridSense and US Sensors together since their margin profiles should be similar and compare them to other security, sensor hardware manufacturers.

		Price	Market Cap	EV/Sales	EV/EBITDA
CoaLogix Comps					
FTEK	Fuel Tech Inc.	\$ 5.57	\$ 134.9	1.5x	9.0x
PMFG	PMFG Inc.	\$ 13.96	\$ 205.7	1.4x	11.5x
MPR	Met-Pro Corporation	\$ 9.84	\$ 143.8	1.3x	9.2x
	Average			1.4x	9.9x
Coreworx Comps					
ADSK	Autodesk	\$ 29.37	\$6,737.2	3.0x	12.5x
PMTG	Parametric Technology	\$ 17.15	\$1,990.8	1.7x	8.9x
ANSS	ANSYS, Inc.	\$ 43.52	\$3,939.0	6.4x	11.4x
MENT	Mentor Graphics	\$ 8.70	\$ 928.2	1.2x	6.6x
SNPS	Synopsys, Inc.	\$ 21.25	\$3,183.3	1.5x	5.8x
	Average			2.8x	9.0x
DSIT/GridSense/US Sensor Comps					
MRCY	Mercury Computer	\$ 11.93	\$ 282.5	1.0x	6.7x
STST	Argon ST	\$ 23.98	\$ 525.1	1.3x	8.7x
APSG	Applied Signal	\$ 17.85	\$ 237.5	0.9x	6.9x
FLIR	FLIR Systems	\$ 28.08	\$4,305.8	2.9x	9.2x
	Average			1.5x	7.9x

Source: Merriman and CapitalIQ

Acorn Energy (ACFN)

Buy

Applying comparable industry multiples to our revenue estimate for each subsidiary company results in a comparable valuation of \$7.00 per share. We believe our estimates are conservative, and current multiples are depressed. Both could increase over the coming quarters, which could be positive for Acorn.

	FTM Sales	Comp. Multiple	Comp. EV
CoaLogix	30,564	1.4x	31,240
Coreworx	11,235	2.8x	31,142
DSIT	11,603	1.5x	17,430
GridSense	6,000	1.5x	9,013
US Sensors	1,850	1.5x	2,779
Target EV			91,605
Plus cash			18,554
Less Debt			(842)
Comp. Market Cap			109,317
Shares			15,619
Comp. Price			\$ 7.00

Source: Merriman and CapitalIQ

Public Companies Mentioned in this Report

Alcatel-Lucent (NYSE:ALU \$2.46; Not Rated)
Ansys, Inc. (NASDAQ:ANSS \$43.52; Not Rated)
Applied Signal Technology, Inc. (NASDAQ:APSG \$17.85; Neutral)
Argon ST, Inc. (NASDAQ:STST \$23.98; Not Rated)
Autodesk, Inc. (NASDAQ:ADSK \$29.37; Not Rated)
Cisco Systems, Inc. (NASDAQ:CSCO \$23.46; Not Rated)
Comverge, Inc. (NASDAQ:COMV \$9.56; Not Rated)
FLIR Systems, Inc. (NASDAQ:FLIR \$28.08; Not Rated)
Fluor Corporation (NYSE:FLR \$45.79; Not Rated)
Fuel-Tech, Inc. (NASDAQ:FTEK \$5.57; Not Rated)
Mentor Graphics Corp. (NASDAQ:MENT \$8.70; Not Rated)
Mercury Computer Systems, Inc. (NASDAQ:MRCY \$11.93; Not Rated)
Met-Pro Corp. (NYSE:MPR \$9.84; Not Rated)
Parametric Technology Corporation (NASDAQ:PMTC \$17.15; Not Rated)
PMFG, Inc. (NASDAQ:PMFG \$13.96; Not Rated)
Synopsys Inc. (NASDAQ:SNPS \$21.25; Not Rated)

	FY 08	Q1 09	Q2 09	Q3 09	Q4 09	FY 09	Q1 10	Q2 10 E	Q3 10 E	Q4 10 E	FY 10 E	Q1 11 E	Q2 11 E	Q3 11 E	Q4 11 E	FY 11 E
Total Revenues	20,696	8,478	7,780	6,463	8,596	31,317	7,854	10,100	13,300	16,850	48,104	19,100	18,100	18,100	19,100	74,400
Total Cost of Sales	14,163	5,099	4,290	3,602	4,774	17,765	4,446	5,460	6,875	9,048	25,529	10,305	9,655	9,655	10,305	39,920
Gross Profit	6,533	3,379	3,490	2,861	3,822	13,552	3,708	4,640	6,425	7,803	22,576	8,795	8,445	8,445	8,795	34,480
R&D	1,169	276	(624)	424	493	569	670	750	750	750	2,920	788	788	788	788	3,150
In process R&D	2,444	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SG&A	11,667	4,108	4,619	4,565	5,225	18,517	6,321	6,426	7,400	7,400	27,547	7,275	7,275	7,275	7,275	29,100
Dividends from EnerTech	0	0	0	0	0	0	(135)	0	0	0	(135)	0	0	0	0	0
Impairments	3,664	70	10	0	2,692	2,692	0	0	0	0	0	0	0	0	0	0
Operating Expenses	18,944	4,454	4,005	4,989	8,330	21,778	6,856	7,176	8,150	8,150	30,332	8,063	8,063	8,063	8,063	32,250
Operating Income	(12,411)	(1,075)	(515)	(2,128)	(4,508)	(8,226)	(3,148)	(2,536)	(1,725)	(348)	(7,757)	733	383	383	733	2,230
Gain on early redemption	1,259	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finance Expense	(3,031)	(169)	85	297	(444)	(231)	50	45	40	40	175	0	0	0	0	0
Gain on sale of Convergence	8,861	417	810	176	0	1,403	0	0	0	0	0	0	0	0	0	0
Gain on private placement	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pretax Income	(5,315)	(827)	380	(1,655)	(4,952)	(7,054)	(3,098)	(2,491)	(1,685)	(308)	(7,582)	733	383	383	733	2,230
Tax Benefit (Expense)	(342)	0	0	72	672	744	(75)	0	0	0	(75)	0	0	0	0	0
Net Income	(5,657)	(827)	380	(1,583)	(4,280)	(6,310)	(3,173)	(2,491)	(1,685)	(308)	(7,657)	733	383	383	733	2,230
Share in Losses of Paketeria	(1,560)	0	0	263	0	263	0	0	0	0	0	0	0	0	0	0
Share in Losses of GridSense	(926)	(129)	0	0	0	(129)	0	0	0	0	0	0	0	0	0	0
Net Loss	(8,143)	(956)	380	(1,320)	(4,280)	(6,176)	(3,173)	(2,491)	(1,685)	(308)	(7,657)	733	383	383	733	2,230
Income of Non-controlling Inter	248	(107)	(37)	96	468	420	50	(115)	(19)	266	182	350	263	263	350	1,225
Net Loss attribu to ACFN	(7,895)	(1,063)	343	(1,224)	(3,812)	(5,756)	(3,123)	(2,606)	(1,704)	(42)	(7,475)	1,083	645	645	1,083	3,455
Shares-Basic	11,374	11,535	11,377	11,186	11,592	11,445	12,498	14,919	15,806	16,042	14,816	16,142	16,265	16,588	16,688	16,446
Shares-Diluted	11,374	11,535	11,553	11,186	11,592	11,445	12,498	14,919	15,806	16,042	14,816	16,342	16,565	16,788	16,888	16,646
EPS-Basic	\$ (0.69)	\$ (0.09)	\$ 0.03	\$ (0.11)	\$ (0.33)	\$ (0.50)	\$ (0.25)	\$ (0.17)	\$ (0.11)	\$ (0.00)	\$ (0.50)	\$ 0.07	\$ 0.04	\$ 0.04	\$ 0.06	\$ 0.21
EPS-Diluted	\$ (0.69)	\$ (0.09)	\$ 0.03	\$ (0.11)	\$ (0.33)	\$ (0.50)	\$ (0.25)	\$ (0.17)	\$ (0.11)	\$ (0.00)	\$ (0.50)	\$ 0.07	\$ 0.04	\$ 0.04	\$ 0.06	\$ 0.21

Source: Merriman and Acorn

Acorn Energy (ACFN)

Buy

	FY 08	FY 09	Q1 10	Q2 10 E	Q3 10 E	Q4 10 E	FY 10 E	FY 11 E
Cash	15,142	11,208	18,554	13,862	14,022	14,576	14,576	20,436
Restricted Deposit	2,157	1,627	876	876	876	876	876	876
A/R	4,524	3,541	5,165	5,050	6,650	8,425	8,425	9,550
Unbilled WIP	581	4,113	3,720	4,000	4,000	4,000	4,000	4,000
Inventory	1,148	1,848	2,439	2,525	3,325	4,213	4,213	4,775
Investment in Comverge	0	0	0	0	0	0	0	0
Other	2,080	2,317	2,269	2,918	3,842	4,868	4,868	5,518
Current Assets	25,632	24,654	33,023	29,231	32,716	36,958	36,958	45,155
PP&E	2,447	3,357	5,212	10,244	10,304	11,560	11,560	11,704
Investment in Comverge	2,462	0	0	0	0	0	0	0
Investment in GridSense	129	0	0	0	0	0	0	0
Investment in EnerTech	1,117	2,796	2,808	2,808	2,808	2,808	2,808	2,808
Employee Termination Benefits	1,677	2,074	2,175	1,903	1,665	1,457	1,457	854
Restricted Deposit	579	611	1,185	1,185	0	0	0	0
Other intangibles	10,357	8,194	10,647	10,412	10,178	9,943	9,943	9,004
Goodwill	6,342	6,679	8,174	8,174	8,174	8,174	8,174	8,174
Other assets	313	370	377	485	638	809	809	917
Total Assets	51,055	48,735	63,601	64,442	66,483	71,709	71,709	78,616
STD	445	430	463	463	463	463	463	463
Notes Payable	3,400	0	0	0	0	0	0	0
A/P	2,285	1,607	2,068	2,723	3,429	4,513	4,513	5,140
Accrued Payroll	1,314	1,409	1,340	1,765	2,222	2,924	2,924	3,331
Other	4,350	4,988	6,107	8,043	10,127	13,327	13,327	15,179
Current Liabilities	11,794	8,434	9,978	12,994	16,241	21,227	21,227	24,113
Employee Termination Benefits	2,651	3,129	3,312	2,898	2,536	2,219	2,219	1,301
LTD	0	405	379	379	379	379	379	379
Other	487	669	534	687	904	1,146	1,146	1,299
Equity	36,123	36,098	49,398	47,485	46,423	46,739	46,739	51,525
Total Liab & Equity	51,055	48,735	63,601	64,442	66,483	71,709	71,709	78,616

Source: Merriman and Acorn

Cash Flow Statement	FY 08	FY 09	Q1 10	Q2 10 E	Q3 10 E	Q4 10 E	FY 10 E	FY 11 E
Net	(8,143)	(6,176)	(3,173)	(2,491)	(1,685)	(308)	(7,657)	2,230
D&A	1,298	1,775	449	560	875	879	2,763	3,894
Stock Comp	1,431	1,425	356	278	323	323	1,280	1,357
Other	2,919	1,477	126	(97)	1,125	(38)	1,116	(270)
Working Capital	(777)	(3,929)	(660)	2,116	(77)	1,298	2,676	548
Operating Cash Flow	(3,272)	(5,428)	(2,902)	366	561	2,154	179	7,759
Comverge	15,355	3,990	0	0	0	0	0	0
EnerTech	(750)	(1,000)	0	0	0	0	0	0
GridSense	(1,889)	(550)	(200)	(1,158)	0	0	(1,358)	0
Restricted Deposits	(1,219)	389	177	0	0	0	177	0
Paketeria	(2,551)	0	0	0	0	0	0	0
EES	(200)	0	0	0	0	0	0	0
Local Power	(250)	0	0	0	0	0	0	0
Coreworx	(3,990)	0	0	0	0	0	0	0
SCR Tech	(956)	0	0	0	0	0	0	0
USSI	0	(200)	7	(200)	(300)	(1,500)	(1,993)	(1,500)
Loans to investee/potential investee	(956)	(200)	0	0	0	0	0	0
Employee Termination Benefits	(51)	(377)	(35)	0	0	0	(35)	0
License Acquisition	(2,000)	(200)	0	0	0	0	0	0
Capx	(1,707)	(1,582)	(2,004)	(4,000)	(400)	(400)	(6,804)	(1,600)
Cash from Investing	(1,164)	270	(2,055)	(5,358)	(700)	(1,900)	(10,013)	(3,100)
Debt	(3,808)	(3,010)	0	0	0	0	0	0
Stock	2,860	3,813	12,372	300	300	300	13,272	1,200
Cash from Financing	(948)	803	12,372	300	300	300	13,272	1,200
FX	(74)	21	(69)	0	0	0	(69)	0
Change in Cash	(5,458)	(4,334)	7,346	(4,692)	161	554	3,368	5,859

Source: Merriman and Acorn

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