

ENOVA SYSTEMS INC
Form S-3
December 30, 2009

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**AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION ON DECEMBER 30, 2009
REGISTRATION NO. 333-**

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

**FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

ENOVA SYSTEMS, INC.
(Exact name of registrant as specified in its charter)

California
(State or other jurisdiction of
incorporation or organization)

95-3056150
(I.R.S. Employer Identification Number)

**1560 West 190th Street
Torrance, CA 90501
(310) 527-2800**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**Michael Staran
Chief Executive Officer
Enova Systems, Inc.
1560 West 190th Street
Torrance, CA 90501
(310) 527-2800**

(Address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

**Donald C. Reinke, Esq.
Reed Smith LLP
101 Second Street, Suite 1800
San Francisco, California 94105-3659
(415) 543-8700**

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, as amended, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

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If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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, non-accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act.

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

(Do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

| Title of each class of securities to be registered | Amount to be registered⁽¹⁾ | Proposed maximum offering price per share⁽²⁾ | Proposed maximum aggregate offering price⁽²⁾ | Amount of registration fee |
|---|--|--|--|-----------------------------------|
| Common stock, no par value | 9,024,960 | \$1.43 | \$12,905,692 | \$920.18 |

(1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the Securities Act), the shares being registered hereunder include such indeterminate number of shares of the Registrant's common stock as may be issuable with respect to the shares being registered hereunder to prevent dilution by reason of any stock dividend, stock split,

recapitalization
or other similar
transaction.

- (2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) of the Securities Act. The proposed maximum offering price per share and proposed maximum aggregate offering price are based upon the average of the high \$1.50 and low \$1.36 sales prices of the Registrant's common stock on December 23, 2009, as reported on the NYSE Amex. The Registrant is not selling any shares of common stock in this offering and therefore will not receive any proceeds from this offering.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to Section 8(a), may determine.

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The information in this preliminary prospectus is not complete and may be changed. The selling stockholders may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities, and the selling stockholders are not soliciting offers to buy these securities, in any state where the offer or sale of these securities is not permitted

SUBJECT TO COMPLETION, DATED DECEMBER 30, 2009

PROSPECTUS

9,024,960 SHARES

ENOVA SYSTEMS, INC.

COMMON STOCK

This prospectus covers the sale or other disposition of up to 9,024,960 shares of our issued and outstanding common stock by the selling stockholders identified in this prospectus, or their transferees. The selling stockholders may, from time to time, sell, transfer, or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

We are not offering any shares of our common stock for sale under this prospectus, and we will not receive any of the proceeds from the sale or other disposition of the shares of our common stock covered hereby.

Our common stock is quoted on the NYSE Amex under the symbol ENA. On December 29, 2009, the last reported sales price of our common stock, as reported on the NYSE Amex, was \$1.85 per share.

INVESTING IN OUR COMMON STOCK INVOLVES RISKS. SEE THE SECTION ENTITLED RISK FACTORS BEGINNING ON PAGE 4 OF THIS PROSPECTUS. YOU ALSO SHOULD CONSIDER THE RISK FACTORS DESCRIBED IN THE DOCUMENTS INCORPORATED BY REFERENCE INTO THIS PROSPECTUS.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ACCURACY OR ADEQUACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the SEC) using a shelf registration or continuous offering process.

You should read this prospectus and the information and documents incorporated by reference carefully. Such documents contain important information you should consider when making your investment decision. See Where You Can Find More Information and Incorporation of Certain Documents by Reference in this prospectus. You should rely only on the information provided in this prospectus or documents incorporated by reference into this prospectus. We have not, and the selling stockholders have not, authorized anyone to provide you with different information. This prospectus covers offers and sales of our common stock only in jurisdictions in which such offers and sales are permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of our common stock. You should not assume that the information contained in this prospectus is accurate as of any date other than the date on the front cover of this prospectus, or that the information contained in any document incorporated by reference is accurate as of any date other than the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any sale of a security.

In this prospectus, we refer to Enova Systems, Inc. as we, us, our, the Company or Enova. Reference to selling stockholders refers to those stockholders listed herein under Selling Stockholders, and their transferees.

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PROSPECTUS SUMMARY

The following is only a summary and therefore does not contain all of the information you should consider before investing in our securities. We urge you to read this entire prospectus, including the matters discussed under Risk Factors in this prospectus and the more detailed consolidated financial statements, notes to the consolidated financial statements and other information incorporated by reference from our other filings with the SEC.

Our Company

Enova Systems is an emerging alternative energy industry company. We believe we are a leader in the development and production of proprietary, commercial digital power management systems for transportation vehicles and stationary power generation systems. Power management systems control and monitor electric power in an automotive or commercial application such as an automobile or a stand-alone power generator. Drive systems are comprised of an electric motor, an electronics control unit and a gear unit which power an electric vehicle. Hybrid systems, which are similar to pure electric drive systems, contain an internal combustion engine in addition to the electric motor, eliminating external recharging of the battery system. Stationary power systems utilize similar components to those which are in a mobile drive system in addition to other elements.

A fundamental element of our strategy is to develop and produce advanced proprietary software, firmware and hardware for applications in these alternative power markets. Our focus is digital power conversion, power management, and system integration, focusing chiefly on vehicle power generation.

Specifically, we develop, design and produce drive systems and related components for electric, hybrid-electric and fuel cell vehicles. We also develop, design and produce power management and power conversion components for stationary distributed power generation systems. Additionally, we perform research and development to augment and support others and our own related product development efforts.

Our product development strategy is to design and introduce to market successively advanced products, each based on our core technical competencies. In each of our product/market segments, we provide products and services to leverage our core competencies in digital power management, power conversion and system integration. We believe that the underlying technical requirements shared among the market segments will allow us to more quickly transition from one emerging market to the next, with the goal of capturing early market share.

Our primary market focus centers on both series and parallel hybrid medium and heavy-duty drive systems for multiple vehicle and marine applications. A series hybrid system is one where only the electric motor connects to the drive shaft; a parallel hybrid system is one where both the internal combustion engine and the electric motor are connected to the drive shaft. We believe series-hybrid and parallel hybrid medium and heavy-duty drive system sales offer us the greatest return on investment in both the short and long term. We believe the medium and heavy-duty hybrid market's best chances of significant growth lie in identifying and pooling the largest possible numbers of early adopters in high-volume applications. By aligning ourselves with key customers in our target markets, we believe that alliances will result in the latest technology being implemented and customer requirements being met, with an optimized level of additional time or expense. As we penetrate more market areas, we are continually refining and optimizing both our market strategy and our product line to maintain our leading edge in power management and conversion systems for mobile applications.

Our company, previously known as U.S. Electricar, Inc., a California corporation, was incorporated on July 30, 1976. Our address is 1560 West 190th Street, Torrance, California 90501 and our telephone number is 310-527-2800. Our website address is www.enovasytems.com. Information on our website is not incorporated by reference into this prospectus and does not constitute part of this prospectus.

Table of Contents**Recent Financing**

On October 29, 2009, Enova entered into a Purchase Agreement to sell 9,024,960 shares of common stock to institutional investors at a price of \$1.00 per share. In connection with the Purchase Agreement, Enova agreed to enter into a Registration Rights Agreement with the investors.

On October 29, 2009, Enova also entered into a Placing Agreement with Investec Bank (UK) Limited acting as Enova's agent to sell 1,323,200 shares of common stock at a fixed price of 62.5 Pence, or approximately the equivalent of \$1.00 per share based on the exchange rate as of that date. The 1,323,200 shares covered by the Placing Agreement are not subject to the Registration Rights Agreement.

Each of the October 29, 2009 offerings covered by the Purchase Agreement and Placing Agreement were subject to standard closing conditions and also subject to shareholder approval of the issuance of the shares in accordance with NYSE Amex Rule Section 713. At a meeting held on December 8, 2009, Enova shareholders voted to approve the issuance of the shares.

On December 15, 2009, Enova closed the sale of the 9,024,960 shares of common stock under the Purchase Agreement, resulting in gross proceeds of \$9,024,960, and the sale of the 1,323,200 shares of common stock under the Placing Agreement resulting in gross proceeds of 827,000 pounds sterling (approximately \$1,323,200 based upon the exchange rate on December 15, 2009). Enova intends to use the proceeds for working capital and general corporate purposes, including funding of its strategic operating plan and the completion of key product development initiatives.

The Offering

| | |
|--|--|
| Common stock covered hereby: | 9,024,960 shares |
| Common stock outstanding: | 31,363,120 shares ⁽¹⁾ |
| NYSE Amex symbol: | ENA |
| Alternative Investment Market (London Stock Exchange) symbols: | ENV and ENV5 |
| Use of Proceeds: | We will not receive any of the proceeds from the sale or other disposition of the shares covered by this prospectus. |
| Risk Factors: | See Risk Factors beginning on page 4 and other information included in this prospectus for a discussion of factors you should consider before investing in shares of our common stock. |

(1) The number of shares shown to be outstanding is based on the number of shares of our common stock outstanding as of December 28, 2009, and does not include

shares issuable
upon conversion
of outstanding
preferred stock
or reserved for
issuance upon
the exercise of
options granted
or available
under our equity
compensation
plan.

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RISK FACTORS

An investment in our common stock involves a high degree of risk. Before investing in our common stock, you should consider carefully the specific risks detailed in this Risk Factors section and any applicable prospectus supplement, together with all of the other information contained in this prospectus and any prospectus supplement. If any of these risks occur, our business, results of operations and financial condition could be harmed, the price of our common stock could decline, and you may lose all or part of your investment.

RISKS RELATED TO OUR BUSINESS

Our history of operating losses and our expectation of continuing losses may hurt our ability to reach profitability or continue operations.

We have experienced significant operating losses since our inception. Our net loss was \$12,894,000 for the fiscal year ended December 31, 2008 and \$4,974,000 for the nine months ended September 30, 2009. Our accumulated deficit was \$129,663,000 as of December 31, 2008, and \$134,637,000 as of September 30, 2009. It is likely that we will continue to incur substantial net operating losses and an accumulated deficit for the foreseeable future, which may adversely affect our ability to continue operations. To achieve profitable operations, we must successfully develop, and market our products. We may not be able to generate sufficient product revenue to become profitable. Even if we do achieve profitability, we may not be able to sustain or increase our profitability on a quarterly or yearly basis.

Because we depend upon sales to a limited number of customers, our revenues will be reduced if we lose a major customer

Our revenue is dependent on significant orders from a limited number of customers. We typically enter into supply agreements with major customers establishing product and price standards for future periods. Subsequent events may change the needs of the customer, requiring us to make corresponding adjustments. Our largest four customers accounted for 73% of our revenue for the fiscal year ended December 31, 2008 and 97% of our total revenue for the nine months ended September 30, 2009. We believe that revenues from major customers will continue to represent a significant portion of our revenues. This customer concentration increases the risk of quarterly fluctuations in our revenues and operating results. The loss or reduction of business from one or a combination of our significant customers could adversely affect our revenues, financial condition and results of operations. Moreover, our success will depend in part upon our ability to obtain orders from new customers, as well as the financial condition and success of our customers and general economic conditions.

We extend credit to our customers, which exposes us to credit risk

Most of our outstanding accounts receivable are from a limited number of large customers. The four highest outstanding accounts receivable balances represented 86% of our net accounts receivable at December 31, 2008 and 99% of our net accounts receivable at September 30, 2009. If we fail to monitor and manage effectively the resulting credit risk and a material portion of our accounts receivable is not paid in a timely manner or becomes uncollectible, our business would be significantly harmed, and we could incur a significant loss associated with any outstanding accounts receivable.

Our business is affected by current economic and financial market conditions in the markets we serve

Current global economic and financial markets conditions, including severe disruptions in the credit markets and the significant and potentially prolonged global economic recession, may materially and adversely affect our results of operations and financial condition. We are particularly impacted by the global automotive slowdown and the effects on OEM inventory levels, production schedules, support for our products and decreased ability to accurately forecast future product demand. We could also be impacted in our ability to timely collect receivables from our customers and, conversely, reductions in the level and tightening of terms of trade credit available to us.

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The nature of our industry is dependent on technological advancement and is highly competitive

The mobile and stationary power markets, including electric vehicle and hybrid electric vehicles, continue to be subject to rapid technological change. Most of the major domestic and foreign automobile manufacturers: (1) have already produced electric and hybrid vehicles, (2) have developed improved electric storage, propulsion and control systems, and/or (3) are now entering or have entered into production, while continuing to improve technology or incorporate newer technology. Various companies are also developing improved electric storage, propulsion and control systems. In addition, the stationary power market is still in its infancy. A number of established energy companies are developing new technologies. Cost-effective methods to reduce price per kilowatt have yet to be established and the stationary power market is not yet viable.

Our current products are designed for use with, and are dependent upon, existing technology. As technologies change, and subject to our limited available resources, we plan to upgrade or adapt our products in order to continue to provide products with the latest technology. We cannot assure you, however, that we will be able to avoid technological obsolescence, that the market for our products will not ultimately be dominated by technologies other than ours, or that we will be able to adapt to changes in or create leading-edge technology. In addition, further proprietary technological development by others could prohibit us from using our own technology.

Our industry is affected by political and legislative changes

In recent years there has been significant public pressure to enact legislation in the United States and abroad to reduce or eliminate automobile pollution. Although states such as California have enacted such legislation, we cannot assure you that there will not be further legislation enacted changing current requirements or that current legislation or state mandates will not be repealed or amended, or that a different form of zero emission or low emission vehicle will not be invented, developed and produced, and achieve greater market acceptance than electric or hybrid electric vehicles. Extensions, modifications or reductions of current federal and state legislation, mandates and potential tax incentives could also adversely affect our business prospects if implemented.

We are subject to increasing emission regulations in a changing legislative climate

Because vehicles powered by internal combustion engines cause pollution, there has been significant public pressure in Europe and Asia, and enacted or pending legislation in the United States at the federal level and in certain states, to promote or mandate the use of vehicles with no tailpipe emissions (zero emission vehicles) or reduced tailpipe emissions (low emission vehicles). Legislation requiring or promoting zero or low emission vehicles is necessary to create a significant market for electric vehicles. The California Air Resources Board is continuing to modify its regulations regarding its mandatory limits for zero emission and low emission vehicles. Furthermore, several car manufacturers have challenged these mandates in court and have obtained injunctions to delay these mandates.

We may be unable to effectively compete with other companies who have significantly greater resources than we have

Although we were originally founded in 1976, our business just completed a migration into a production stage, and our proposed operations are subject to all of the risks inherent in production stage, including the likelihood of continued operating losses. Many of our competitors, in the automotive, electronic and other industries, are larger, more established companies that have substantially greater financial, personnel, and other resources than we do. These companies may be actively engaged in the research and development of power management and conversion systems. Because of their greater resources, some of our competitors may be able to adapt more quickly to new or emerging technologies and changes in customer requirements, or to devote greater resources to the promotion and sales of their products than we can. We believe that developing and maintaining a competitive advantage will require continued investment in product development, manufacturing capability and sales and marketing. We cannot assure you however that we will have sufficient resources to make the necessary investments to do so. In addition, current and potential competitors may establish collaborative relationships among themselves or with third parties, including third parties with whom we have relationships. Accordingly, new competitors or alliances may emerge and rapidly acquire significant market share.

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We may be exposed to product liability or tort claims if our products fail, which could adversely impact our results of operations

A malfunction or the inadequate design of our products could result in product liability or other tort claims. Accidents involving our products could lead to personal injury or physical damage. Any liability for damages resulting from malfunctions could be substantial and could materially adversely affect our business and results of operations. In addition, a well-publicized actual or perceived problem could adversely affect the market's perception of our products. This could result in a decline in demand for our products, which would materially adversely affect our financial condition and results of operations.

We are highly dependent on a few key personnel and will need to retain and attract such personnel in a labor competitive market

Our success is largely dependent on the performance of our key management and technical personnel, the loss of one or more of whom could adversely affect our business. Additionally, in order to successfully implement our anticipated growth, we will be dependent on our ability to hire additional qualified personnel. There can be no assurance that we will be able to retain or hire other necessary personnel. We do not maintain key man life insurance on any of our key personnel. We believe that our future success will depend in part upon our continued ability to attract, retain, and motivate additional highly skilled personnel in an increasingly competitive market.

There are minimal barriers to entry in our market

We presently license or own only certain proprietary technology, and therefore have created little or no barrier to entry for competitors other than the time and significant expense required to assemble and develop similar production and design capabilities. Our competitors may enter into exclusive arrangements with our current or potential suppliers, thereby giving them a competitive edge which we may not be able to overcome, and which may exclude us from similar relationships.

RISKS RELATED TO OWNING OUR STOCK

The holders of our preferred stock have certain rights and privileges that are senior to our common stock, and we may issue additional shares of preferred stock without stockholder approval that could have a material adverse effect on the market value of the common stock

Our Board of Directors has the authority to issue a total of up to 35,000,000 shares of preferred stock and the rights, preferences, privileges, and restrictions, including voting rights, of the preferred stock, are senior to the rights of the common shareholders. The rights of our common shareholders are subject to, and may be adversely affected by, the rights of the holders of the preferred stock that have been issued, or might be issued in the future. Preferred stock also could have the effect of making it more difficult for a third party to acquire a majority of the outstanding voting stock of Enova. This could delay, defer, or prevent a change in control. Furthermore, holders of preferred stock may have other rights, including economic rights, senior to the Common Stock. As a result, their existence and issuance could have a material adverse effect on the market value of the Common Stock. We have in the past issued and may from time to time in the future issue, preferred stock for financing or other purposes with rights, preferences, or privileges senior to the Common Stock. At December 28, 2009 we had two series of preferred stock outstanding, Series A convertible preferred stock (Series A) and Series B convertible preferred stock (Series B).

The provisions of our Series B prohibit the payment of dividends on the Series A or the Common Stock unless the dividends on those Series B Stock are first paid. Series B shareholders are entitled to receive non-cumulative cash dividends at the rate of seven percent of \$2.00 per share per annum, whenever funds are legally available and when and if declared by the Board of Directors. Subject to the dividend rights of Series B, Series A holders are entitled to receive non-cumulative cash dividends in preference to any dividend on the Common Stock at the rate of six percent of \$0.60 per share per annum, whenever funds are legally available and when and if declared by the Board of Directors. After payment in full during any fiscal year of all preferred stock preferential dividends in the amounts set out above, each holder of Common Stock is entitled to receive non-cumulative cash dividends, whenever funds are legally available and if and when declared by the Board of Directors, in an amount equal to the per share amount paid to the Series A on an as converted basis. After the holders of record of the Common Stock, Series A and Series

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B have been paid their preferential dividends in full, then the holders of record of Series A, Series B and Common Stock are entitled to share ratably in any additional dividends during such fiscal year on an as converted basis. Upon a liquidation or dissolution, the holders of the Series B Preferred Stock will be entitled to receive, in preference to any distribution to the holders of Series A and Common Stock, distributions of (i) \$2.00 per share, (ii) an amount equal to a dividend of 7% on \$2.00, compounded annually, for each year (or fraction thereof) which has transpired between March 15, 2006 and the date of such liquidation, less the amount of any dividends actually paid and (iii) all declared but unpaid dividends. Upon a liquidation or dissolution, Series A holders will be entitled to receive, subject to the liquidation preference of the Series B holders, and in preference to the holders of Common Stock, an amount equal to \$0.60 per share, plus declared and unpaid dividends. Thereafter, the holders of Common Stock shall be entitled to receive proceeds up to a total amount per share equal to the liquidation preference of the Series A on an as converted basis.

Each share of Series B is convertible at any time at the option of the holder into 0.0444 shares of Common Stock. Subject to certain limitations, the conversion price per share shall be adjusted in the event of certain subsequent stock dividends, splits, reclassifications, dilutive issuances, rights offerings, and reclassifications. Each share of Series B is also automatically converted immediately prior to either: (i) consummation of an underwritten public offering of Common Stock by Enova at a price per share of \$27.00 and resulting in net cash proceeds to Enova in excess of \$10,000,000 in cash or marketable securities; or (ii) a merger or consolidation with or into another corporation or a sale of the Common Stock or a sale of all or substantially all of Enova's properties and assets in which the aggregate gross cash proceeds received by the shareholders is at least \$10,000,000 in cash or marketable securities.

Each share of Series A is convertible at any time, at the option of the holder, into 0.0222 shares of Common Stock, the conversion price per share shall be adjusted in the event of certain subsequent stock dividends, splits, reclassifications, dilutive issuances, rights offerings, and reclassifications. Each share of Series A is also automatically converted immediately prior to either (i) consummation of an underwritten public offering of Common Stock by Enova under the Securities Act; (ii) the registration of the underlying Common Stock or the holders' Series A stock under the Securities Act; or (iii) a merger or consolidation of Enova with or into another corporation or a sale of more than 50 percent of the outstanding voting securities of the Company or a sale of all or substantially all of Enova's properties and assets.

The Series B and Series A holders have the right to vote on all matters submitted or required to be submitted to a vote of the shareholders and have that number of votes equal to the number of Common Stock shares issuable upon conversion of the Series B and Series A stock, respectively, at the record date for the determination of shareholders entitled to vote on such matters.

Our stock price has been volatile, and your investment in our common stock could suffer a decline in value

There has been significant volatility in the market price and trading volume of equity securities, which is unrelated to the financial performance of the companies issuing the securities. These broad market fluctuations may negatively affect the market price of our common stock. You may not be able to resell your shares at or above the price you pay for those shares due to fluctuations in the market price of our common stock caused by changes in our operating performance or prospects and other factors.

Some specific factors that may have a significant effect on our common stock market price include:

actual or anticipated fluctuations in our operating results or future prospects;

our announcements or our competitors' announcements of new products;

the public's reaction to our press releases, our other public announcements and our filings with the SEC;

strategic actions by us or our competitors, such as acquisitions or restructurings;

new laws or regulations or new interpretations of existing laws or regulations applicable to our business;

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changes in accounting standards, policies, guidance, interpretations or principles;

changes in our growth rates or our competitors' growth rates;

developments regarding our patents or proprietary rights or those of our competitors;

our inability to raise additional capital as needed;

concern as to the performance of our products;

changes in financial markets or general economic conditions;

sales of common stock by us or members of our management team; and

changes in stock market analyst recommendations or earnings estimates regarding our common stock, other comparable companies or our industry generally.

Future sales of our common stock could adversely affect its price and our future capital-raising activities could involve the issuance of equity securities, which would dilute your investment and could result in a decline in the trading price of our common stock.

We may sell securities in the public or private equity markets if and when conditions are favorable, even if we do not have an immediate need for additional capital at that time. Sales of substantial amounts of common stock, or the perception that such sales could occur, could adversely affect the prevailing market price of our common stock and our ability to raise capital. We may issue additional common stock in future financing transactions or as incentive compensation for our executive management and other key personnel, consultants and advisors. Issuing any equity securities would be dilutive to the equity interests represented by our then-outstanding shares of common stock. The market price for our common stock could decrease as the market takes into account the dilutive effect of any of these issuances. Furthermore, we may enter into financing transactions at prices that represent a substantial discount to the market price of our common stock. A negative reaction by investors and securities analysts to any discounted sale of our equity securities could result in a decline in the trading price of our common stock.

Sales of shares issued in recent placements may cause the market price of our shares to decline.

On December 15, 2009, we issued 10,348,160 shares of common stock to institutional investors in and outside the United States. We have agreed to register with the SEC up to 9,024,960 of those shares for resale as described in this prospectus. The shares issued on December 15, 2009 represent approximately 1/3rd of our issued and outstanding shares of common stock. Upon the effectiveness of the registration statement of which this prospectus is a part, they may be freely sold in the open market. The sale of a significant amount of shares in the open market, or the perception that these sales may occur, could cause the trading price of our common stock to decline or become highly volatile.

We may have to pay liquidated damages to our investors, which will increase our negative cash flows.

In connection with the December 15, 2009 issuance of shares described above, we entered into a Registration Rights Agreement. Under the terms of the Registration Rights Agreement, if a registration statement relating to the shares covered by this prospectus is not declared effective by the SEC within the time periods specified in the Registration Rights Agreement or, after having been declared effective, is not available (with certain limited exceptions), then we are required to pay the investors, as liquidated damages, 1.5% of the amount invested for each 30-day period (or pro rata portion thereof) during which such failure continues until the shares are sold or can be sold without restriction under Rule 144. As of the date of this prospectus, no liquidated damages have accrued. There can be no assurance that the registration statement of which this prospectus is a part will be declared or will remain effective by the SEC for the time periods necessary to avoid payment of liquidated damages.

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We do not expect to pay cash dividends on our common stock for the foreseeable future.

We have never paid cash dividends on our common stock and do not anticipate that any cash dividends will be paid on the common stock for the foreseeable future. The payment of any cash dividend by us will be at the discretion of our board of directors and will depend on, among other things, our earnings, capital, regulatory requirements and financial condition. Furthermore, the terms of our Series B and Series A preferred Stock limit our ability to pay cash dividends on our Common Stock.

CAUTIONARY STATEMENT CONCERNING FORWARD-LOOKING INFORMATION

Information in and incorporated by reference into this prospectus contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 and the safe harbor provided by Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act), and Section 27A of the Securities Act. These forward-looking statements often can be, but are not always, identified by the use of words such as assume, expect, intend, plan, project, believe, estimate, predict, anticipate, may, might, should, could, goal, expressions. Such forward-looking statements, including, without limitation, those relating to the future business prospects, revenues and income of Enova, wherever they occur, are necessarily estimates reflecting the best judgment of our senior management on the date on which they were made, or if no date is stated, as of the date of this prospectus. Forward-looking statements are subject to risks, uncertainties and assumptions, including those described in the section entitled Risk Factors and elsewhere in the documents incorporated by reference into this prospectus, including our Annual Report on Form 10-K for the fiscal year ended December 31, 2008 and our subsequent SEC filings.

Because actual results or outcomes could differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any such forward-looking statements. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or any other reason. All subsequent forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to herein. In light of these risks, uncertainties and assumptions, the forward-looking events discussed in this prospectus may not occur.

USE OF PROCEEDS

We will not receive any of the proceeds from any such sale or other disposition of the common stock covered by this prospectus.

Table of Contents**SELLING STOCKHOLDERS**

We have prepared this prospectus to allow the selling stockholders or their donees, pledgees, transferees or other successors in interest to sell or otherwise dispose of, from time to time, up to 9,024,960 shares of our common stock which they acquired pursuant to the Purchase Agreement dated October 29, 2009. The table below presents information regarding the selling stockholders and the shares of our common stock that they may sell or otherwise dispose of from time to time under this prospectus. Percentages of beneficial ownership are based upon 31,363,120 shares of common stock issued and outstanding as of December 28, 2009. Beneficial ownership is determined under Section 13(d) of the Exchange Act and generally includes voting or investment power with respect to securities and including any securities that grant the selling stockholder the right to acquire common stock within 60 days of December 28, 2009. We do not know when or in what amounts the selling stockholders may sell or otherwise dispose of the shares covered hereby. The selling stockholders might not sell any or all of the shares covered by this prospectus or may sell or dispose of some or all of the shares other than pursuant to this prospectus. Because the selling stockholders may not sell or otherwise dispose of some or all of the shares covered by this prospectus and because there are currently no agreements, arrangements or understandings with respect to the sale or other disposition of any of the shares, we cannot estimate the number of the shares that will be held by the selling stockholders after completion of the offering. However, for purposes of this table, we have assumed that all of the shares covered by this prospectus will be sold by the selling stockholders.

| NAME OF SELLING STOCKHOLDERS ⁽¹⁾ | NUMBER OF SHARES BENEFICIALLY OWNED BEFORE OFFERING | NUMBER OF SHARES COVERED HEREBY | SHARES BENEFICIALLY OWNED AFTER OFFERING | |
|---|--|--|---|------------|
| | | | NUMBER | PERCENTAGE |
| Special Situations Fund III QP, L.P. ⁽²⁾ | 3,403,445 | 3,000,000 | 403,445 | 1.3% |
| Special Situations Cayman Fund, L.P. ⁽²⁾ | 1,127,369 | 1,000,000 | 127,369 | * |
| Stitching Shell Pensioenfonds ⁽³⁾ | 1,466,404 | 464,960 | 1,001,444 | 3.2% |
| Shell Pensions Trust Limited as trustee of the Shell Contributory Pension Fund ⁽³⁾ | 2,294,816 | 1,210,000 | 1,084,816 | 3.5% |
| Shell Trust (Bermuda) Limited as trustee of the Shell Overseas Contributory Pension Fund ⁽³⁾ | 2,293,740 | 1,500,000 | 793,740 | 2.5% |
| SAM Sustainable Asset Management AG on behalf of the Julius Bar Multipartner SAM Smart Energy Fund ⁽⁴⁾ | 1,771,750 | 1,500,000 | 271,750 | * |
| Eruca Limited ⁽⁵⁾ | 484,567 | 250,000 | 234,567 | * |
| Silicon Prairie Partners LP ⁽⁶⁾ | 122,000 | 100,000 | 22,000 | * |

* Represents beneficial ownership of less than 1%

(1) Unless otherwise noted, this table is based on information

supplied to us
by the selling
stockholders
and certain
records of the
Company.

- (2) MGP Advisors
Limited (MGP)
is the general
partner of the
Special
Situations Fund
III, QP, L.P.
AWM
Investment
Company, Inc.
(AWM) is the
general partner
of MGP and the
general partner
of and
investment
adviser to the
Special
Situations
Cayman Fund,
L.P. Austin W.
Marxe and
David M.
Greenhouse are
the principal
owners of MGP
and AWM.
Through their
control of MGP
and AWM,
Messrs. Marxe
and Greenhouse
share voting and
investment
power over the
portfolio
securities of
each of the
funds listed
above.

- (3) Shell Asset
Management
Company B.V.

holds voting and investment power of the shares listed above. Per the table above, and as reported in its Amendment No. 3 to Schedule 13G filed December 15, 2009, Shell Asset Management Company B.V. beneficially owns 6,054,960 shares of our common stock.

- (4) SAM Sustainable Asset Management AG (SAM), as investment adviser of the Julius Bar Multipartner SAM Smart Energy Fund (part of the Julius Barr Funds), holds investment power over the shares listed above. The voting power of the shares listed above is held by the Julius Barr Funds fund administrator, Swiss & Global Asset Management Ltd. Zurich, which has delegated such

voting power over the shares listed above to SAM, which in turn, as of January 1, 2010, has delegated such voting power to Robeco Institutional Asset Management.

- (5) Tang Chon Luang, director of Eruca Limited, holds voting and investment power of the shares listed above.
- (6) John Micek, a director of Enova, is Managing Director at Silicon Prairie Partners L.P. Through his control of Silicon Prairie Partners L.P., Mr. Micek holds voting and investment power over the shares listed above. In addition, Mr. Micek beneficially owns 57,584 shares of our common stock for his own account.

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PLAN OF DISTRIBUTION

The selling stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock or interests in shares of common stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

The selling stockholders may use any one or more of the following methods when disposing of shares or interests therein:

ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;

block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;

purchases by a broker-dealer as principal and resale by the broker-dealer for its account;

an exchange distribution in accordance with the rules of the applicable exchange;

privately negotiated transactions;

short sales effected after the date the registration statement of which this Prospectus is a part is declared effective by the SEC;

through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;

broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share; and

a combination of any such methods of sale.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock, from time to time, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

In connection with the sale of our common stock or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of our common stock short and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

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The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering.

The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act of 1933, provided that they meet the criteria and conform to the requirements of that rule.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be underwriters within the meaning of Section 2(a)(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are underwriters within the meaning of Section 2(a)(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act. To the extent required, the shares of our common stock to be sold, the names of the selling stockholders, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus. In order to comply with the securities laws of some states, if applicable, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the selling stockholders and their affiliates. In addition, to the extent applicable we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act. We have agreed to indemnify the selling stockholders against liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus.

We have agreed with the selling stockholders to keep the registration statement of which this prospectus constitutes a part effective until the earlier of (1) such time as all of the shares covered by this prospectus have been disposed of pursuant to and in accordance with the registration statement or (2) the date on which the shares may be sold without restriction pursuant to Rule 144 of the Securities Act.

EXPERTS

The consolidated financial statements of Enova Systems, Inc. as of December 31, 2008 and 2007 have been incorporated by reference herein in reliance upon the report of PMB Helin Donovan, LLP, independent registered public accounting firm, given upon the authority of that firm as experts in accounting and auditing.

LEGAL MATTERS

The validity of our common stock offered hereby will be passed upon for us by Reed Smith LLP, San Francisco, California.

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WHERE YOU CAN FIND MORE INFORMATION

We electronically file annual, quarterly and special reports, proxy and information statements and other information with the SEC. The public may read and copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The address of that site is <http://www.sec.gov>. Our website address is www.enovasystems.com. Information contained in, or accessible through, our website is not a part of this prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference the information we file with them, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below and any filings that we will make with the SEC (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the initial filing date of the registration statement of which this prospectus forms a part and prior to the termination of this offering:

Our Annual Report on Form 10-K for the fiscal year ended December 31, 2008 filed with the SEC on March 31, 2009 and amended on October 13, 2009;

Our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2009 filed with the SEC on May 13, 2009 and amended on October 13, 2009;

Our Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2009 filed with the SEC on August 14, 2009 and amended on October 13, 2009;

Our Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2009 filed with the SEC on November 12, 2009;

Our Current Reports on Form 8-K filed with the SEC on February 23, 2009, April 13, 2009, April 16, 2009, October 28, 2009, October 30, 2009, December 16, 2009, and December 24, 2009; and

The description of our common stock included in our registration statement on Form 8-A filed with the SEC on August 28, 2006.

We will provide without charge upon written or oral request, to each person, including any beneficial owner, to whom a prospectus is delivered, a copy of any or all of the documents incorporated by reference, including exhibits to these documents. You should direct any requests for documents to:

Chief Financial Officer
Enova Systems, Inc..
1560 West 190th Street
Torrance, CA 90501
(310) 527-2800

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PART II
INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table lists the costs and expenses payable by the registrant in connection with the sale of the common stock covered by this prospectus other than any sales commissions or discounts, which expenses will be paid by the selling stockholders. All amounts shown are estimates except for the SEC registration fee.

| | |
|---------------------------------|---------------|
| SEC registration fee | \$ 920 |
| Legal fees and expenses | \$ 30,000 |
| Accounting fees and expenses | \$ 7,500 |
| Miscellaneous fees and expenses | \$ 5,000 |
| Total | \$ 43,420 |

Item 15. Indemnification of Directors and Officers

Sections 204(a)(10), 204(a)(11), 204.5 and 317 of the California General Corporation Law (CGCL) permit a corporation to indemnify its directors, officers, employees and other agents in terms sufficiently broad to permit indemnification (including reimbursement for expenses) under certain circumstances for liabilities arising under the Securities Act of 1933. Our Articles of Incorporation provide that the liability of directors for monetary damages shall be eliminated to the fullest extent permitted under California law. In addition, our Articles of Incorporation provide that we are authorized to provide indemnification of agents through bylaw provisions or through agreements with the agents, or both, in excess of the indemnification otherwise permitted by Section 317 of the CGCL, subject only to the applicable limits set forth in Section 204 of the CGCL.

Our Bylaws provide that we may indemnify any person who was or is a party or is threatened to be made a party to any proceeding by reason of the fact that such person was an agent of the Company, against expenses, judgments, fines, settlements and other amounts actually and reasonably incurred in connection with such proceeding. We may advance expenses incurred in defending any proceeding prior to the final disposition of such proceeding.

The above discussion of the CGCL and our Articles of Incorporation and Bylaws is not intended to be exhaustive and is qualified in its entirety by such statutes, Articles of Incorporation and Bylaws.

Indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons under the foregoing provisions, or otherwise. We have been advised that in the opinion of the Securities and Exchange Commission this indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

Item 16. Exhibits

| Number | Exhibit |
|--------|---|
| 4.1 | Purchase Agreement dated October 29, 2009 (incorporated by reference to Exhibit 99.1 of our Current Report on Form 8-K filed October 30, 2009) |
| 4.2 | Registration Rights Agreement dated December 15, 2009 (incorporated by reference to Exhibit 99.1 of our Current Report on Form 8-K filed December 16, 2009) |
| 5.1 | Opinion of Reed Smith LLP |
| 23.1 | Consent of Independent Registered Public Accounting Firm |
| 23.2 | Consent of Reed Smith LLP (included in their opinion filed as Exhibit 5.1) |
| 24.1 | Power of Attorney (included in signature page hereto) |

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Item 17. Undertakings

The undersigned registrant hereby undertakes:

To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

- (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;
- (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the Calculation of Registration Fee table in the effective registration statement.
- (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement. *Provided, however,* that paragraphs (i), (ii) and (iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Securities and Exchange Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

Provided, however, that paragraphs (i), (ii), and (iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

That, for purposes of determining liability under the Securities Act of 1933 to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however,* that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

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The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934, as amended that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

Table of Contents**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Torrance, State of California, on the 30th day of December, 2009.

ENOVA SYSTEMS, INC.

By: /s/ Michael Staran
Michael Staran
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Michael Staran and Jarett Fenton, and each of them, as his true and lawful attorney-in-fact and agent, each with the full power of substitution and resubstitution, for him and in his name, place or stead, in any and all capacities, to sign any and all amendments to this Registration Statement (including any and all post-effective amendments), and to sign any registration statement for the same offering covered by this Registration Statement that is to be effective upon filing pursuant to Rule 462(b) promulgated under the Securities Act of 1933, and all post-effective amendments thereto, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their or his or substitutes, may lawfully do or cause to be done by virtue hereof. This Power of Attorney may be signed in several counterparts.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

| Signature | Title(s) | Date |
|--|--|-------------------|
| /s/ Michael Staran Michael Staran | Chief Executive Officer and Director (<i>Principal Executive Officer</i>) | December 30, 2009 |
| /s/ Jarett Fenton Jarett Fenton | Chief Financial Officer (<i>Principal Financial and Accounting Officer</i>) | December 30, 2009 |
| | Director | |
| John J. Micek | | |
| /s/ Edwin O. Riddell Edwin O. Riddell | Director | December 30, 2009 |
| /s/ John R. Wallace John R. Wallace | Director | December 30, 2009 |

| | | |
|--------------------|----------|-------------------|
| /s/ Roy S. Roberts | Director | December 30, 2009 |
| Roy S. Roberts | | |
| /s/ Richard Davies | Director | December 30, 2009 |
| Richard Davies | | |

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EXHIBIT INDEX

| Number | Exhibit |
|---------------|---|
| 4.1 | Purchase Agreement dated October 29, 2009 (incorporated by reference to Exhibit 99.1 of our Current Report on Form 8-K filed October 30, 2009) |
| 4.2 | Registration Rights Agreement dated December 15, 2009 (incorporated by reference to Exhibit 99.1 of our Current Report on Form 8-K filed December 16, 2009) |
| 5.1 | Opinion of Reed Smith LLP |
| 23.1 | Consent of Independent Registered Public Accounting Firm |
| 23.2 | Consent of Reed Smith LLP (included in their opinion filed as Exhibit 5.1) |
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