ENOVA SYSTEMS INC Form S-3 August 24, 2011

As filed with the Securities and Exchange Commission on August 24, 2011

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 95-3056150 (I.R.S. Employer

incorporation or organization)

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

President and 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:

David T. Mittelman, Esq.

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. b

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.

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 | " (Do not check if a smaller reporting company) | Smaller reporting company | þ |

CALCULATION OF REGISTRATION FEE

| | Proposed | |
|--|-------------------------------|------------------|
| | maximum | |
| Title of each class of | aggregate | Amount of |
| securities to be registered ⁽¹⁾ | offering price ⁽²⁾ | registration fee |
| Common stock, no par value | | |
| Warrants | \$50,000,000 | \$5805 |
| Debt securities | \$30,000,000 | \$3603 |
| Units | | |

- (1) This registration statement covers such indeterminate number of shares of common stock, such indeterminate number of warrants to purchase common stock or debt securities, such indeterminate principal amount of debt securities, and/or such indeterminate number of units of the registrant as may from time to time be sold at indeterminate prices. The securities registered hereunder also include such indeterminate number of shares of common stock and amount of debt securities as may be issued upon conversion of or exchange for common stock or debt securities that provide for conversion or exchange, upon exercise of warrants, or pursuant to the anti-dilution provisions of any of such securities. In addition, this registration statement also relates to an indeterminate number of shares of common stock that may be issued upon stock splits, stock dividends or similar transactions in accordance with Rule 416 under the Securities Act.
- (2) The registration fee has been calculated in accordance with Rule 457(o) under the Securities Act.

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 or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to Section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be changed. The registrant 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 registrant is 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 AUGUST 24, 2011

PROSPECTUS

ENOVA SYSTEMS, INC.

\$50,000,000

Common Stock

Warrants

Debt Securities

Units

We may from time to time in one or more offerings, offer and sell one or any combination of the securities we describe in this prospectus, either individually or as units comprised of one or more of the other securities.

Each time we sell our securities, we will provide the specific type, amount, and price offered in a supplement to this prospectus. The prospectus supplement may also add, update or change information contained in this prospectus. You should read this prospectus and the applicable prospectus supplement carefully before you invest in any securities. This prospectus may not be used to consummate a sale of securities unless accompanied by the applicable prospectus supplement.

We may sell our securities through agents we select or through underwriters and dealers we select. If we use agents, underwriters or dealers, we will name them and describe their compensation in a prospectus supplement.

Our common stock is quoted on the NYSE Amex under the symbol ENA. On August 23, 2011, the last reported sales price of our common stock, as reported on the NYSE Amex, was \$0.59 per share.

As of July 8, 2011, the aggregate market value of our outstanding common stock held by non-affiliates was approximately \$24,195,346, which was calculated based on 27,810,743 shares of outstanding common stock held by non-affiliates and on a price per share of \$0.87, the closing price of our common stock on July 8, 2011. Pursuant to General Instruction I.B.6 of Form S-3, in no event will we sell our common stock in a public primary offering with a value exceeding more than one-third of our market value in any 12-month period so long as our market value remains below \$75 million. We have not offered any securities pursuant to General Instruction I.B.6 of Form S-3 during the 12 calendar months prior to and including the date of this prospectus.

Investing in our securities involves certain risks. See Risk Factors in our Annual Report on Form 10-K for the year ended December 31, 2010, our Quarterly Report on Form 10-Q for the period ended June 30, 2011, as well as our subsequently filed periodic and current reports, which have been filed with the Securities and Exchange Commission and are incorporated by reference into this prospectus. You should read the entire prospectus carefully before you make your investment decision.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. 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 authorized anyone to provide you with different information. This prospectus covers offers and sales of our securities 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 securities. 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.

OUR COMPANY

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.

Enova believes it is a leader in the development, design and production of proprietary, power train systems and related components for electric and hybrid electric buses and medium and heavy duty commercial vehicles. Electric drive systems are comprised of an electric motor, an electronics control unit and a gear unit which power a vehicle. Hybrid electric systems, which are similar to pure electric drive systems, contain an internal combustion engine in addition to the electric motor, and may eliminate external recharging of the battery system. A hydrogen fuel cell based system is similar to a hybrid system, except that instead of an internal combustion engine, a fuel cell is utilized as the power source. A fuel cell is a system which combines hydrogen and oxygen in a chemical process to produce electricity.

A fundamental element of our strategy is to develop and produce advanced proprietary software and hardware for applications in these alternative power markets. Our focus is powertrain systems including 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 powered vehicles in both the new and retrofit markets. We also perform internal research and development and funded third party research and development to augment our product development and support our customers.

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 aligning ourselves with key customers and integrating with original equipment manufacturers 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 and expense. As we penetrate new market areas, we are continually refining both our market strategy and our product line to maintain our leading edge in power management and conversion systems for vehicle 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.enovasystems.com. Information on our website is not incorporated by reference into this prospectus and does not constitute part of this prospectus.

THE OFFERING

Securities registered hereunder: Common Stock, Warrants, Debt Securities, Units

Proposed maximum aggregate offering price: \$50,000,000 (subject to any applicable limit under General

Instruction I.B.6 of Form S-3)

Common Stock outstanding: 31,515,223 shares

NYSE Amex symbol for Common Stock: ENA

Alternative Investment Market (London Stock Exchange) symbols for

Common Stock:

Use of Proceeds:

Risk Factors:

instruction 1.B.o of 1 of

ENV and ENVS

We intend to use the net proceeds of any offering as set forth in the applicable prospectus supplement.

See Risk Factors in our Annual Report on Form 10-K for the year ended December 31, 2010, our Quarterly Report on Form 10-Q for the period ended June 30, 2011, as well as our subsequently filed periodic and current reports, for a discussion of factors to consider before investing in shares of our securities.

RISK FACTORS

Investment in our securities involves risks. Prior to making a decision about investing in our securities, you should consider carefully the risk factors, together with all of the other information contained or incorporated by reference in this prospectus and any prospectus supplement, including any additional specific risks described in the section entitled Risk Factors contained in any supplements to this prospectus and in our Annual Report on Form 10-K for the fiscal year ended December 31, 2010, our Quarterly Report on Form 10-Q for the period ended June 30, 2011, as well as any amendments or additions thereto reflected in subsequent filings with the SEC. Each of these risk factors could materially and adversely affect our business, financial condition, results of operations, and liquidity.

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 27A of the Securities Act of 1933, as amended (the Securities Act) and Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange 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, potential and similar expressions. Such forward-looking statements, including, without limitation, those relating to the futu goal, 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, 2010, our Quarterly Report on Form 10-Q for the period ended June 30, 2011, 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 intend to use the net proceeds of any offering as set forth in the applicable prospectus supplement. Except as may be otherwise described in a prospectus supplement, we currently anticipate using any net proceeds to us for general corporate purposes, which may include higher production volumes of our power train systems and may also include working capital, research and development expenses, general and administrative expenses, and capital expenditures. The amounts and timing of our actual expenditures for each purpose may vary significantly depending upon numerous factors, including the actual amount of proceeds we receive, the status of our research and product development efforts, regulatory approvals, competition and economic or other conditions.

DESCRIPTION OF COMMON STOCK

Under our Restated and Amended Articles of Incorporation, we are currently authorized to issue 750,000,000 shares of common stock, no par value. As of July 31, 2011, we had 31,515,223 shares of common stock outstanding.

Holders of our common stock are entitled to one vote for each share of common stock held of record on all matters to be voted on by holders, except as otherwise provided by law or in any preferred stock designation. Our bylaws specify that, except as otherwise required by law or our charter, the presence in person or by proxy of holders of a majority of the shares entitled to vote at a meeting of stockholders will be necessary, and will constitute a quorum, for the transaction of business at such meeting.

Every holder of common stock has the right to cumulate the holder s votes in connection with the election of our directors. Under cumulative voting, each holder may cast for a single candidate, or distribute among the candidates as such holder chooses, a number of votes equal to the number of candidates multiplied by the number of votes to which holders—shares are entitled. Cumulative voting will apply only to those candidates whose names have been placed in nomination prior to voting. No holder will be entitled to cumulate votes unless a holder has given notice at the meeting, prior to the voting, of such holder—s intention to cumulate the holder—s votes. If any one holder gives such notice, all holders eligible to vote may cumulate their votes for candidates in nomination, except to the extent that if a holder withholds votes from the nominees.

Holders of our common stock are entitled to receive dividends when, as and if declared by our board of directors out of funds legally available therefor. In the event of our liquidation, dissolution or winding up, the holders of common stock are entitled to share in all assets remaining which are available for distribution to them after payment of liabilities and after provision has been made for each class of stock, if any, having preference over the common stock.

DESCRIPTION OF WARRANTS

We may issue warrants to purchase shares of our common stock or our debt securities. We may issue warrants independently or together with other securities. Warrants sold with other securities may be attached to or separate from the other securities. We will issue warrants under one or more warrant agreements between us and a warrant agent that we will name in the prospectus supplement.

The prospectus supplement relating to any warrants we offer will include specific terms relating to the offering. These terms will include some or all of the following:

| the title of the warrants; |
|--|
| the aggregate number of warrants offered; |
| the designation, number and terms of the shares of common stock or other securities purchasable upon exercise of the warrants and procedures by which those numbers may be adjusted; |
| the exercise price of the warrants; |
| the dates or periods during which the warrants are exercisable; |
| the designation and terms of any securities with which the warrants are issued; |
| |

if the warrants are issued as a unit with another security, the date on and after which the warrants and the other security will be

separately transferable;

if the exercise price is not payable in U.S. dollars, the foreign currency, currency unit or composite currency in which the exercise price is denominated;

any minimum or maximum amount of warrants that may be exercised at any one time;

any terms relating to the modification of the warrants;

any terms, procedures and limitations relating to the transferability, exchange or exercise of the warrants; and

any other specific terms of the warrants.

DESCRIPTION OF DEBT SECURITIES

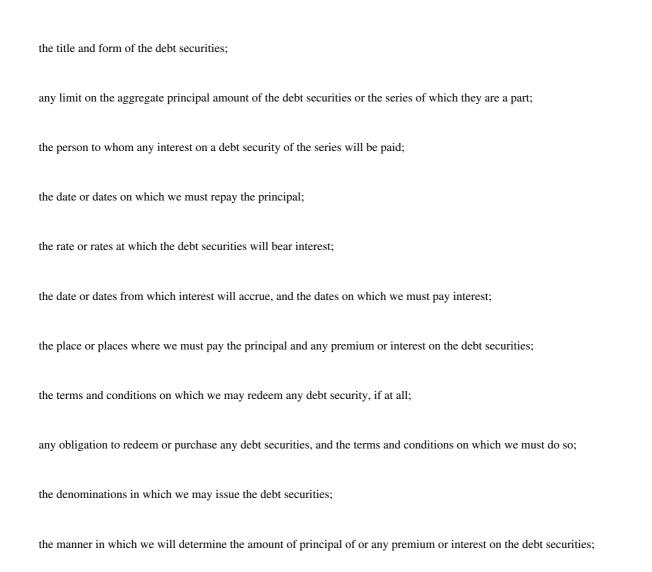
We may issue debt securities under an indenture between us and a U.S. banking institution, as the indenture trustee. Each indenture will be subject to, and governed by, the Trust Indenture Act of 1939, as amended, and we may supplement the indenture from time to time after we execute them.

This prospectus summarizes the material provisions of the indenture and the debt securities that we may issue under an indenture. This summary may not describe all of the provisions of the indenture or of any of the debt securities that might be important to you. For additional information, you should carefully read the forms of indenture that are incorporated by reference as an exhibit to the registration statement of which this prospectus forms a part.

When we offer to sell a particular series of debt securities, we will describe the specific terms of those debt securities in a supplement to this prospectus. We will also indicate in the supplement whether the general terms in this prospectus apply to a particular series of debt securities. Accordingly, for a description of the terms of a particular issue of debt securities, you should carefully read this prospectus and the applicable supplement.

Terms

The prospectus supplement will describe the debt securities and the price or prices at which we will offer the debt securities. The description will include:



the currency in which we will pay the principal of and any premium or interest on the debt securities;

the principal amount of the debt securities that we will pay upon declaration of acceleration of their maturity;

the amount that will be deemed to be the principal amount for any purpose, including the principal amount that will be due and payable upon any maturity or that will be deemed to be outstanding as of any date;

if applicable, that the debt securities are defeasible and the terms of such defeasance;

if applicable, the terms of any right to convert debt securities into, or exchange debt securities for, shares of our debt securities, common stock, or other securities or property;

whether we will issue the debt securities in the form of one or more global securities and, if so, the respective depositaries for the global securities and the terms of the global securities;

the subordination provisions that will apply to any subordinated debt securities;

any addition to or change in the events of default applicable to the debt securities and any change in the right of the trustee or the holders to declare the principal amount of any of the debt securities due and payable;

any addition to or change in the covenants in the indentures; and

any other terms of the debt securities not inconsistent with the applicable indentures.

We may sell the debt securities at a substantial discount below their stated principal amount. We will describe U.S. federal income tax considerations, if any, applicable to debt securities sold at an original issue discount in the prospectus supplement. An original issue discount security is any debt security sold for less than its face value, and which provides that the holder cannot receive the full face value if maturity is accelerated. The prospectus supplement relating to any original issue discount securities will describe the particular provisions relating to acceleration of the maturity upon the occurrence of an event of default. In addition, we will describe U.S. federal income tax or other considerations applicable to any debt securities that are denominated in a currency or unit other than U.S. dollars in the prospectus supplement.

Conversion and Exchange Rights

The prospectus supplement will describe, if applicable, the terms on which you may convert debt securities into or exchange them for debt securities, common stock, or other securities or property. The conversion or exchange may be mandatory or may be at your option. The prospectus supplement will describe how the amount of debt securities, number of shares of common stock, or other securities or property to be received upon conversion or exchange would be calculated.

Subordination of Subordinated Debt Securities

The indebtedness underlying any subordinated debt securities will be payable only if all payments due under our senior indebtedness, as defined in the applicable indenture and any indenture supplement, including any outstanding senior debt securities, have been made. If we distribute our assets to creditors upon any dissolution, winding-up, liquidation or reorganization or in bankruptcy, insolvency, receivership or similar proceedings, we must first pay all amounts due or to become due on all senior indebtedness before we pay the principal of, or any premium or interest on, the subordinated debt securities. In the event the subordinated debt securities are accelerated because of an event of default, we may not make any payment on the subordinated debt securities until we have paid all senior indebtedness or the acceleration is rescinded. If the payment of subordinated debt securities accelerates because of an event of default, we must promptly notify holders of senior indebtedness of the acceleration.

If we experience a bankruptcy, dissolution or reorganization, holders of senior indebtedness may receive more, ratably, and holders of subordinated debt securities may receive less, ratably, than our other creditors. The indenture for subordinated debt securities may not limit our ability to incur additional senior indebtedness.

Form, Exchange, and Transfer

We will issue debt securities only in fully registered form, without coupons, and only in denominations of \$1,000 and integral multiples thereof, unless the prospectus supplement provides otherwise. The holder of a debt security may elect, subject to the terms of the indentures and the limitations applicable to global securities, to exchange them for other debt securities of the same series of any authorized denomination and of similar terms and aggregate principal amount.

Holders of debt securities may present them for exchange as provided above or for registration of transfer, duly endorsed or with the form of transfer duly executed, at the office of the transfer agent we designate for that purpose. We will not impose a service charge for any registration of transfer or exchange of debt securities, but we may require a payment sufficient to cover any tax or other governmental charge payable in connection with the transfer or exchange. We will name the transfer agent in the prospectus supplement. We may designate additional transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, but we must maintain a transfer agent in each place where we will make payment on debt securities.

If we redeem the debt securities, we will not be required to issue, register the transfer of or exchange any debt security during a specified period prior to mailing a notice of redemption. We are not required to register the transfer of or exchange of any debt security selected for redemption, except the unredeemed portion of the debt security being redeemed.

Global Securities

The debt securities may be represented, in whole or in part, by one or more global securities that will have an aggregate principal amount equal to that of all debt securities of that series. Each global security will be registered in the name of a depositary identified in the prospectus supplement. We will deposit the global security with the depositary or a custodian, and the global security will bear a legend regarding the restrictions on exchanges and registration of transfer.

No global security may be exchanged in whole or in part for debt securities registered, and no transfer of a global security in whole or in part may be registered, in the name of any person other than the depositary or any nominee or successor of the depositary unless:

the depositary is unwilling or unable to continue as depositary; or

the depositary is no longer in good standing under the Exchange Act or other applicable statute or regulation. The depositary will determine how all securities issued in exchange for a global security will be registered.

As long as the depositary or its nominee is the registered holder of a global security, we will consider the depositary or the nominee to be the sole owner and holder of the global security and the underlying debt securities. Except as stated above, owners of beneficial interests in a global security will not be entitled to have the global security or any debt security registered in their names, will not receive physical delivery of certificated debt securities and will not be considered to be the owners or holders of the global security or underlying debt securities. We will make all payments of principal, premium and interest on a global security to the depositary or its nominee. The laws of some jurisdictions require that some purchasers of securities take physical delivery of such securities in definitive form. These laws may prevent you from transferring your beneficial interests in a global security.

Only institutions that have accounts with the depositary or its nominee and persons that hold beneficial interests through the depositary or its nominee may own beneficial interests in a global security. The depositary will credit, on its book-entry registration and transfer system, the respective principal amounts of debt securities represented by the global security to the accounts of its participants. Ownership of beneficial interests in a global security will be shown only on, and the transfer of those ownership interests will be effected only through, records maintained by the depositary or any such participant.

The policies and procedures of the depositary may govern payments, transfers, exchanges and others matters relating to beneficial interests in a global security. We and the trustee will assume no responsibility or liability for any aspect of the depositary s or any participant s records relating to, or for payments made on account of, beneficial interests in a global security.

Payment and Paying Agents

We will pay principal and any premium or interest on a debt security to the person in whose name the debt security is registered at the close of business on the regular record date for such interest.

We will pay principal and any premium or interest on the debt securities at the office of our designated paying agent. Unless the prospectus supplement indicates otherwise, the corporate trust office of the trustee will be the paying agent for the debt securities.

Any other paying agents we designate for the debt securities of a particular series will be named in the prospectus supplement. We may designate additional paying agents, rescind the designation of any paying agent or approve a change in the office through which any paying agent acts, but we must maintain a paying agent in each place of payment for the debt securities.

The paying agent will return to us all money we pay to it for the payment of the principal, premium or interest on any debt security that remains unclaimed for a specified period. Thereafter, the holder may look only to us for payment, as an unsecured general creditor.

Consolidation, Merger, and Sale of Assets

Under the terms of the indentures, so long as any securities remain outstanding, we may not consolidate or enter into a share exchange with or merge into any other person, in a transaction in which we are not the surviving corporation, or sell, convey, transfer or lease our properties and assets substantially as an entirety to any person, unless:

the successor assumes our obligations under the debt securities and the indentures; and

we meet the other conditions described in the indentures.

Events of Default

Each of the following will constitute an event of default under each indenture:

failure to pay the principal of or any premium on any debt security when due;

failure to pay any interest on any debt security when due, for more than a specified number of days past the due date;

failure to deposit any sinking fund payment when due;

failure to perform any covenant or agreement in the indenture that continues for a specified number of days after written notice has been given by the trustee or the holders of a specified percentage in aggregate principal amount of the debt securities of that series;

events of bankruptcy, insolvency or reorganization; and

any other event of default specified in the prospectus supplement.

If an event of default occurs and continues, both the trustee and holders of a specified percentage in aggregate principal amount of the outstanding securities of that series may declare the principal amount of the debt securities of that series to be immediately due and payable. The holders of a majority in aggregate principal amount of the outstanding securities of that series may rescind and annul the acceleration if all events of default, other than the nonpayment of accelerated principal, have been cured or waived.

Except for its duties in case of an event of default, the trustee will not be obligated to exercise any of its rights or powers at the request or direction of any of the holders, unless the holders have offered the trustee reasonable indemnity. If they provide this indemnification and subject to conditions specified in the applicable indenture, the holders of a majority in aggregate principal amount of the outstanding securities of any series may direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to the debt securities of that series.

No holder of a debt security of any series may institute any proceeding with respect to the indentures, or for the appointment of a receiver or a trustee, or for any other remedy, unless:

the holder has previously given the trustee written notice of a continuing event of default;

the holders of a specified percentage in aggregate principal amount of the outstanding securities of that series have made a written request upon the trustee, and have offered reasonable indemnity to the trustee, to institute the proceeding;

the trustee has failed to institute the proceeding for a specified period of time after its receipt of the notification; and

the trustee has not received a direction inconsistent with the request within a specified number of days from the holders of a specified percentage in aggregate principal amount of the outstanding securities of that series.

Modification and Waiver

We and the trustee may change an indenture without the consent of any holders with respect to specific matters, including:

to fix any ambiguity, defect or inconsistency in the indenture; and

to change anything that does not materially adversely affect the interests of any holder of debt securities of any series. In addition, under the indentures, the rights of holders of a series of notes may be changed by us and the trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each series that is affected. However, we and the trustee may only make the following changes with the consent of the holder of any outstanding debt securities affected:

extending the fixed maturity of the series of notes;

reducing the principal amount, reducing the rate of or extending the time of payment of interest, or any premium payable upon the redemption, of any debt securities; or

reducing the percentage of debt securities the holders of which are required to consent to any amendment.

The holders of a majority in principal amount of the outstanding debt securities of any series may waive any past default under the indenture with respect to debt securities of that series, except a default in the payment of principal, premium or interest on any debt security of that series or in respect of a covenant or provision of the indenture that cannot be amended without each holder s consent.

Except in limited circumstances, we may set any day as a record date for the purpose of determining the holders of outstanding debt securities of any series entitled to give or take any direction, notice, consent, waiver or other action under the indentures. In limited circumstances, the trustee may set a record date. To be effective, the action must be taken by holders of the requisite principal amount of such debt securities within a specified period following the record date.

Defeasance

To the extent stated in the prospectus supplement, we may elect to apply the provisions in the indentures relating to defeasance and discharge of indebtedness, or to defeasance of restrictive covenants, to the debt securities of any series. The indentures provide that, upon satisfaction of the requirements described below, we may terminate all of our obligations under the debt securities of any series and the applicable indenture,

known as legal defeasance, other than our obligation:

to maintain a registrar and paying agents and hold monies for payment in trust;

to register the transfer or exchange of the notes; and

to replace mutilated, destroyed, lost or stolen notes.

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In addition, we may terminate our obligation to comply with any restrictive covenants under the debt securities of any series or the applicable indenture, known as covenant defeasance.

We may exercise our legal defeasance option even if we have previously exercised our covenant defeasance option. If we exercise either defeasance option, payment of the notes may not be accelerated because of the occurrence of events of default.

To exercise either defeasance option as to debt securities of any series, we must irrevocably deposit in trust with the trustee money and/or obligations backed by the full faith and credit of the United States that will provide money in an amount sufficient in the written opinion of a nationally recognized firm of independent public accountants to pay the principal of, premium, if any, and each installment of interest on the debt securities. We may only establish this trust if, among other things:

no event of default shall have occurred or be continuing;

in the case of legal defeasance, we have delivered to the trustee an opinion of counsel to the effect that we have received from, or there has been published by, the Internal Revenue Service a ruling or there has been a change in law, which in the opinion of our counsel, provides that holders of the debt securities will not recognize gain or loss for federal income tax purposes as a result of such deposit, defeasance and discharge and will be subject to federal income tax on the same amount, in the same manner and at the same times as would have been the case if such deposit, defeasance and discharge had not occurred;

in the case of covenant defeasance, we have delivered to the trustee an opinion of counsel to the effect that the holders of the debt securities will not recognize gain or loss for federal income tax purposes as a result of such deposit, defeasance and discharge and will be subject to federal income tax on the same amount, in the same manner and at the same times as would have been the case if such deposit, defeasance and discharge had not occurred; and

we satisfy other customary conditions precedent described in the applicable indenture.

Notices

We will mail notices to holders of debt securities as indicated in the prospectus supplement.

Title

We may treat the person in whose name a debt security is registered as the absolute owner, whether or not such debt security may be overdue, for the purpose of making payment and for all other purposes.

Governing Law

The indentures and the debt securities will be governed by and construed in accordance with the laws of the State of New York.

DESCRIPTION OF UNITS

We may issue units comprised of one or more shares of common stock, warrants, and/or debt securities in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date.

We will describe in the applicable prospectus supplement the terms of the series of units, including, but not limited to:

the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;

any provisions of the governing unit agreement that differ from those described below; and

any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units.

The provisions described in this section, as well as those described under Description of Common Stock, Description of Warrants, and Description of Debt Securities will apply to each unit and to any common stock, debt security, and/or warrant included in each unit, respectively.

PLAN OF DISTRIBUTION

We may sell securities in any of the ways described below or in any combination: to or through underwriters or dealers; through one or more agents; or directly to purchasers or to a single purchaser. The distribution of the securities may be effected from time to time in one or more transactions: at a fixed price, or prices, which may be changed from time to time; at market prices prevailing at the time of sale; at prices related to such prevailing market prices; or at negotiated prices. Each prospectus supplement will describe the method of distribution of the securities and any applicable restrictions. The prospectus supplement with respect to the securities will describe the terms of the offering, including the following: the name or names of any underwriters, dealers or agents and the amount of securities underwritten or purchased by each of them; and the public offering price of the securities and the proceeds to us and any discounts, commissions or concessions allowed or reallowed or paid to dealers. Any offering price and any discounts or concessions allowed or reallowed or paid to dealers may be changed from time to time. Only the agents or underwriters named in each prospectus supplement are agents or underwriters in connection with the securities being offered thereby.

One or more firms, referred to as remarketing firms, may also offer or sell the securities, if a prospectus supplement so indicates, in connection with a remarketing arrangement upon their purchase. Remarketing firms will act as principals for their own accounts or as our agents. These remarketing firms will offer or sell the securities in accordance with the terms of the securities. Each prospectus supplement will identify and describe any remarketing firm and the terms of its agreement, if any, with us and will describe the remarketing firm s compensation. Remarketing firms may be deemed to be underwriters in connection with the securities they remarket. Remarketing firms may be entitled under agreements that may be entered into with us to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, and may

Agents, underwriters and other third parties described above may be entitled to indemnification by us against certain civil liabilities, including liabilities under the Securities Act, or to contribution from us with respect to payments which the agents, underwriters or other third parties may be required to make in respect thereof. Agents, underwriters and such other third parties may be customers of, engage in transactions with, or

perform services for us in the ordinary course of business.

be customers of, engage in transactions with or perform services for us in the ordinary course of business.

Certain underwriters may use this prospectus and the accompanying prospectus supplement for offers and sales related to market-making transactions in the securities. These underwriters may act as principal or agent in these transactions, and the sales will be made at prices related to prevailing market prices at the time of sale.

Certain persons participating in an offering may engage in overallotment, stabilizing transactions, short covering transactions and penalty bids in accordance with rules and regulations under the Exchange Act. Overallotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a short covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time.

EXPERTS

The consolidated financial statements of Enova Systems, Inc. as of December 31, 2010 and 2009 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 securities offered hereby will be passed upon for us by Reed Smith LLP, San Francisco, California.

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 on or 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, 2010 filed on March 30, 2010;

Our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2011 filed on May 12, 2011;

Our Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2011 filed on August 15, 2011;

Our Current Reports on Form 8-K filed on January 20, 2011, and June 21, 2011; 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

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 securities 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 | \$ 5,805 |
|---------------------------------|-----------|
| Legal fees and expenses | \$ 35,000 |
| Accounting fees and expenses | \$ 25,000 |
| Miscellaneous fees and expenses | \$ 5,000 |
| Total | \$ 70,805 |

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. 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 our 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 |
|--------|---|
| 1.1 | Form of underwriting agreement (or other similar agreement)* |
| 4.1 | Form of Warrant* |
| 4.2 | Form of Indenture for Senior Debt Securities between the Registrant and Trustee to be designated |
| 4.3 | Form of Indenture for Subordinated Debt Securities between the Registrant and Trustee to be designated |
| 4.4 | Form of Unit Agreement* |
| 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 | Power of Attorney (included in signature page hereto) |
| 25.1 | Form T-1 Statement of Eligibility under the Trust Indenture Act of 1939, as amended, of the Trustee under an indenture* |

^{*} To be filed, if applicable, by amendment or as an exhibit to a document to be incorporated by reference herein in connection with an offering of the securities registered

Item 17. Undertakings

- A. The undersigned registrant hereby undertakes:
- (1) 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.

- (2) 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.
- (3) 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.
- (5) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
 - (A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. 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 the purchaser with a time of contract of sale prior to such effective date,

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 effective date.

(6) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectuses relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

 B. 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.
- H. 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.
- J. The undersigned registrant hereby undertakes to file an application for the purpose of determining the eligibility of the Trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Commission under Section 305(b)(2) of the Act.

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 24th day of August, 2011.

ENOVA SYSTEMS, INC.

By: /s/ Michael Staran Michael Staran

President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Michael Staran and John Micek, 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 | President and Chief Executive Officer, and Director (<i>Principal Executive Officer</i>) | August 24, 2011 |
| Michael Staran | Executive Officer) | |
| /s/ John Micek | Chief Financial Officer, and Director | August 24, 2011 |
| John Micek | (Principal Financial and Accounting Officer) | |
| /s/ Edwin O. Riddell | Director | August 20, 2011 |
| Edwin O. Riddell | | |
| /s/ John R. Wallace | Director | August 22, 2011 |
| John R. Wallace | | |
| /s/ Roy S. Roberts | Director | August 22, 2011 |
| Roy S. Roberts | | |
| /s/ Richard Davies | Director | August 24, 2011 |
| Richard Davies | | |