ENOVA SYSTEMS INC
Form 10-K/A
October 13, 2009

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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-K/A

(Amendment 1)

þ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2008

Or

o **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from to

Commission file no. 1-33001

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

California	**95-3056150**
(State or Other Jurisdiction of Incorporation or Organization)	*(I.R.S. Employer Identification Number)*

1560 West 190th Street, Torrance, California 90501
(Address of principal executive offices, including zip code)

Registrant s telephone number, including area code:
(310) 527-2800

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

Title of Each Class	**Name of Each Exchange on Which Registered**
Common Stock, no par value	The NYSE Amex

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act: Yes **o** No **þ**

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act: Yes **o** No **þ**

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

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

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

Large accelerated filer o Accelerated filer o Non-accelerated filer o Smaller reporting company þ
(Do not check if a smaller reporting company)

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

As of June 30, 2008, the approximate aggregate market value of common stock held by non-affiliates of the Registrant was $48,139,000 (based upon the closing price for shares of the Registrant s common stock as reported by The NYSE Amex). As of February 28, 2009, there were 20,852,053 shares of common stock, no par value, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

None.

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Explanatory Note

Enova Corporation (the Company) is filing this Amendment No. 1 to its Annual Report on Form 10-K for the fiscal year ended December 31, 2008, as filed with the Securities and Exchange Commission (SEC) on March 31, 2009 (the Original Filing). The purpose of this amendment is to correct the date of the fiscal year end set forth in exhibit 32 to the Original Filing to correctly refer to the fiscal period covered by the Original Filing. The remainder of the Company s Annual Report on Form 10-K remains unchanged.

This report speaks as of the filing date of the Original Filing and has not been updated to reflect events occurring subsequent to March 31, 2009. Accordingly, in conjunction with reading this Form 10-K/A, you should also read all other filings that the Company has made with the SEC since the date of the Original Filing.

ENOVA SYSTEMS, INC.

2008 FORM 10-K ANNUAL REPORT

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PART I

ITEM 1. *BUSINESS*

General

In July 2000, we changed our name to Enova Systems, Inc (Enova or the Company). Our company, previously known as U.S. Electricar, Inc., a California corporation, was incorporated on July 30, 1976.

Enova believes it is 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. 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. Stationary power systems utilize similar components to those which are in a mobile drive system in addition to other elements. .

A fundamental element of Enova s 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, fuel cell and microturbine-powered 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 (R&D) 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.

Enova s primary market focus centers on both electric 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 Enova 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 both our market strategy and our product line to maintain our leading edge in power management and conversion systems for mobile applications.

Our website, www.enovasystems.com, contains up-to-date information on our company, our products, programs and current events. Our website is a prime focal point for current and prospective customers, investors and other affiliated parties seeking data on our business.

We continue to receive recognition from both governmental and private industry with regards to both commercial and military application of our hybrid drive systems and fuel cell power management technologies. Although we believe that current negotiations with several parties may result in development and production contracts during 2009 and beyond, there are no assurances that such additional agreements will be realized.

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During 2008, we continued to develop and produce electric and hybrid electric drive systems and components for First Auto Works of China (FAW), Navistar (International Truck and Engine or IC Corporation or IC Corp), Hyundai Motor Company, the US Military, and Optare Plc (Optare) as well as several other domestic and international vehicle and bus manufacturers. We also were successful in introducing our technology to companies such as Concurrent Technology Corporation (CTC), PUES (Tokyo Research and Development) and Better Place Inc. Our various electric and hybrid-electric drive systems, power management and power conversion systems are being used in applications including several light, medium and heavy duty trucks, train locomotives, transit buses and industrial vehicles.

Enova believes that its business outlook will continue to improve, especially in light of messages from the governments in the United Kingdom, China, and United States regarding their intentions to mandate the curbing of green house gas emissions in the future as well as intentions to provide government incentives that may induce consumption of our products and services. As a result, the Company implemented operational changes in 2008 laying the groundwork to benefit from these factors while also reducing our cost structure to the current market situation:

The Company received its certification for ISO 9001:2000 for Quality and ISO 14001 for Environmental Management over our operational and manufacturing processes in the first quarter of 2009. In order to receive ISO certifications for quality and environmental management systems, an organization must demonstrate operating systems and procedures for managing the it s processes to consistently turn out products and services that meet customer and regulatory requirements, as well as identify and control the environmental impact of its activities, products or services.

In September 2008, the material weakness in our inventory process was remediated and management asserted that internal controls over financial reporting were operating effectively as of September 30, 2008. Management asserts that our internal controls over financial reporting were also operating effectively as of December 31, 2008 as referenced in Item 9A of Part II herein.

In January 2009, Enova completed a series of reorganization efforts aimed at adapting the Company to revised demand forecasts from major customers Tanfield and Think, re-alignment of our engineering and program management functions and concentration of R&D resources in support of our marketing strategy. This included streamlining our management structure, and implementing a 48% reduction of our workforce company wide when comparing December 31, 2007 employee headcount figures to February 28, 2009.

For the year ended December 31, 2008, the following customers each accounted for more than ten percent (10%) of our total revenues:

Customer	**Percent**
Tanfield Engineering Systems Limited	28%
Hawaii Center for Advanced Transportation Technologies	22%
International Truck and Engine Corporation	13%
Think Technology	10%

***HybridPower*[tm] Electric and Hybrid-Electric Drive Systems**

Environmental Initiatives and Legislation

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 Europe and 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). We believe legislation requiring or promoting zero or low emission vehicles is necessary to create a significant market for electric vehicles. The California Air Resources Board (CARB) is continually modifying its limits for low emission vehicles. The Company believes government incentives and funding for our customers are necessary for a more prompt transition into commercialization.

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Our products are subject to federal, state, local and foreign laws and regulations, governing, among other things, emissions as well as laws relating to occupational health and safety. Regulatory agencies may impose special requirements for implementation and operation of our products or may significantly impact or even eliminate some of our target markets. We may incur material costs or liabilities in complying with government regulations. In addition, potentially significant expenditures could be required in order to comply with evolving environmental and health and safety laws, regulations and requirements that may be adopted or imposed in the future.

As part of a New Energy for America plan, the newly elected administration for the US government has proposed implementing a wide array of government initiatives and potential laws which are designed to be environmentally-friendly. Proposals such as an increase in fuel economy standards, placing one million plug-in electric vehicles on the road by 2015, financing in the form of tax credits and loan guarantees to domestic auto and parts manufacturers, establishing a national low carbon fuel standard, and investing in an electrical infrastructure are all considered to be conducive to an environment where our products and services may thrive. Although the Company believes these planned initiatives will be pursued in earnest by the newly elected US administration in contrast with the former US administration, there are no assurances any revenues will be realized from such proposals or initiatives.

In the United Kingdom, the Environmental Transformation Fund (ETF) was formed by the UK government in April 2008 as an initiative to move forward the commercialization of low carbon energy and energy efficiency technologies in the UK and developing countries. In particular, a focus on the demonstration and deployment phases of bringing low carbon technologies to the market. The UK element of the ETF will total 400 million pounds sterling (approximately US$644 million) from 2009 though 2011. Although the Company expects our customers to benefit from the ETF, there are no assurances revenues will be realized from such benefits.

In China, during the third quarter of 2008, the Ministry of Environmental Protection reported that the Ministry of Industry and Information Technology, the National Development and Reform Commission and the Ministry of Science and Technology are in the process of designing policies on alternative-fuel vehicles, aiming for energy conservation and reduction in greenhouse gases as announced at the First China Green Energy Automotive Development Summit of 2008. These policies are set to go into effect by the end of 2009. In addition, the Ministry of Environmental Protection reported new energy vehicles are currently in low numbers as their costs to produce are high and incentives do not exist for consumption. Although the Company expects our customer to benefit from these policies, there are no assurances revenues will be realized from such policies.

Strategic Alliances, Partnering and Technology Developments

Our continuing strategy is to adapt ourselves to the ever-changing environment of alternative power markets for mobile applications. Originally focusing on pure electric drive systems, we believe we are positioned as a global supplier of drive systems for electric, hybrid and fuel cell applications.

We continue to seek and establish alliances with major players in the automotive and fuel cell fields. In 2008, Enova furthered its penetration into the European and Asian markets, as well as began relationships with significant North American companies. 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. We will utilize our competitive advantages, including customer alliances, to gain greater market share. By aligning ourselves with key customers in our target market(s), we believe that the alliance will result in the latest technology being implemented and customer requirements being met, with a minimal level of additional time or expense.

Some recent highlights of our accomplishments are:

Enova management visited First Auto Works of China s (FAW) research and development center and FAW s affiliate electronics manufacturer in China, to further develop the basis for a continued cooperation on hybrid transit buses, and potentially on other FAW vehicles. Enova has developed a customized, pre-transmission solution for FAW. This system has been designed in parallel with FAW s development of a new transmission package, which they hope to aggressively market across Asia and possibly export abroad. The designed in feature of our pre-transmission hybrid system indicates that Enova will continue to be heavily engaged with FAW in their efforts to market their hybrid solutions. Building on our prior success with FAW,

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the Company received a second order of 20 systems in December 2008 for delivery in the first quarter of 2009.

Optare Plc (Optare) engaged Enova to develop two different prototype transit buses for a new UK bus manufacturer. These vehicles were delivered in the third quarter of 2008. The plug-in hybrid diesel-electric and full-electric vehicles use the latest lithium ion battery technology to provide maximum vehicle range and fuel efficiency. Enova s electric and hybrid drive system solutions include fully integrated on-board or stationary battery charging systems. The Enova drive systems and chargers were featured in Optare s Solo full-electric and Rapta double-deck transit buses in the fourth quarter of 2008 at the Euro Bus Expo in Birmingham, UK.

We also received recognition from both governmental agencies and private industry with regards to U.S. military applications of our hybrid drive systems and fuel cell power management technologies. Through 2008 we began the finalization of our development on several new power management and drive systems such as our High Voltage version of our 120kW and 240 kW drive system, Dual 8kW inverter, 380V DC/DC converter, a multi-functional processor, as well as upgrades to our Battery Care Management system, Fuel Cell Management system and High Voltage Power Converter. We continued to develop and produce electric and hybrid electric drive systems and components for Ford Motor Company (Ford), the City of Honolulu and several domestic and international vehicle and bus manufacturers in China, Italy, the United Kingdom, Malaysia and Japan. Our various electric and hybrid-electric drive systems, power management and power conversion systems are being used in applications including Class 8 trucks, monorail systems, transit buses and industrial vehicles. We also are continuing our current research and development programs with EDO Corporation, the U.S. Air Force and the U.S. Navy, as well as developing new programs with Hyundai Motor Company (HMC), the U.S. government and other private sector companies for hybrid and fuel cell systems.

In September 2003, Enova and Hyundai Heavy Industries, Co. Ltd. (HHI) commenced a relationship to establish the Hyundai-Enova Innovative Technology Center (ITC) to be located at Enova s Torrance headquarters. ITC was originally established as a technical center for specified products that would engage Enova as the commercial managers, ITC as the primary engineering and development venture, and HHI as the primary components supplier. ITC was integral to our development and financial stability in prior years, however Enova is now more established in the market as a fully functional, self-sufficient entity. Enova, along with HHI, evaluated this relationship to determine its future role for both companies. As a result of this evaluation, HHI and Enova have entered final negotiations to dissolve the joint venture.

Research and development programs included our advanced power management systems for fuel cells, our diesel generation engine/motor system for our heavy-duty drive systems, a dual 8kW inverter, and upgrades and improvements to our current power conversion and management components. Additionally, we continue to optimize our technologies to be more universally adaptable to the requirements of our current and prospective customers. By modifying our software and firmware, we believe we should be able to provide a more comprehensive, adaptive and effective solution to a larger base of customers and applications. We will continue to research and develop new technologies and products, both internally and in conjunction with our alliance partners and other manufacturers as we deem beneficial to our global growth strategy.

Products

Enova s hybrid and electric drive systems provide all the functionality one would find under the hood of an internal combustion engine powered vehicle. The hybrid and electric power system consists of an enhanced electric motor and the electronic controls that regulate the flow of electricity to and from the batteries at various voltages and power to propel the vehicle. In addition to the motor and controller, the system includes a gear reduction/differential unit which ensures the desired propulsion and performance. The system is designed to be installed as a drop in, fully integrated turnkey fashion, or on a modular, as-needed basis. Regardless of power source (battery, fuel cell, diesel generator or

turbine) the hybrid and electric power system is designed to meet the customer s drive cycle requirements. Enova s all electric drive systems use largely the same designs as the hybrid systems, excepting that there is no internal combustion engine in the vehicle.

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Our family of medium-duty drive systems includes:

30kW and 90kW all-electric drives

80/25kW hybrid drive

80/40kW hybrid drive

90kW hybrid drive

combinations of these systems based on customer requirements.

Our family of heavy-duty electric drive systems includes:

120kW all-electric drive

120/60kW hybrid drive

240/120kW hybrid drive

Our hybrid drive systems, in conjunction with, internal combustion engines, microturbines, fuel cells, flywheels, and generators sets provide state of the art hybrid and electric propulsion systems.

Hybrid vehicles are those that utilize an electric motor and batteries in conjunction with an internal combustion engine (ICE), whether piston or turbine. With a hybrid system, a small piston or turbine engine fueled by gasoline or diesel, CNG, methane, etc., in a tank supplements the electric motor and battery. These systems are self-charging, in that the operating ICE recharges the battery.

There are two types of hybrid systems: series and parallel. 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. In a series hybrid system, the ICE turns the generator, which charges the battery, which through a control unit powers the electric motor that turns the wheels. In a parallel hybrid system, both the electric motor and the ICE can operate simultaneously to drive the wheels. (See diagrams below.) In both hybrid systems and in pure electric systems, regenerative braking occurs which assists in the charging of the batteries.

The parallel hybrid system is ideally suited for conditions where most of the driving is done at constant speed cruising, with a smaller amount of the driving involving random acceleration, such as up hill or with stop and go conditions. For acceleration, the controller causes the electric motor to kick in to assist the ICE, both running simultaneously. When speed is steady or the ground is flat, only the ICE runs. Additionally, when the batteries are low, the controller causes the ICE and motor to charge the batteries. As a result, the series hybrid system is best suited for starts and stops, and is ideal for applications such as urban transit buses and urban garbage trucks. The design of the series hybrid system is based on a driving cycle with a high percentage of random acceleration conditions.

Hybrid and Electric Drive Configurations

Enova has identified three primary configurations based upon how well they meet market needs economic requirements. We have developed all of the relevant technology required to produce these drive systems and is currently introducing the Hybrid Power product line worldwide. All of our innovative hybrid drive systems are compatible with wide range of fuel sources and engine configurations.

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Series Hybrid with Diesel Generator

The Series Hybrid is typically ideal for low floor vehicles with a driving cycle that has a high percentage of stop and go and/or hilly terrain. Refuse trucks, urban delivery trucks and intra-city buses are the primary target markets for these drive systems. Our clients for this application include WrightBus of Ireland, MTrans of Malaysia and Tomoedenki of Japan

Post Transmission Parallel Hybrid

The Post Transmission Parallel Hybrid is ideal for vehicles with a driving cycle with a high percentage of stop and go, as well as constant speed cruising. Target markets include refuse trucks, urban delivery trucks, School Buses and intra-city buses also. Our current and potential clients for this application include Navistar, Verizon, Mack Truck, Volvo and Waste Management.

Pre Transmission Parallel Hybrid

The Pre-Transmission Parallel Hybrid is ideal for vehicles with a driving cycle having a small percentage of constant speed cruising and a large percentage of stop and go cruising. Target markets include inter-city transit buses and trucks as well as military vehicles. Our current and potential clients for this application include Volvo Truck, Cummins, Caterpillar and First Auto Works of China as well as other drive system and vehicle manufacturers for these types of driving cycles.

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All Electric Vehicle Drive System

The Electric Drive Systems works well with vehicles with a disciplined driving route that has a high percentage of stop and go conditions. Refuse trucks, urban delivery trucks and intra-city vehicles are the primary markets for these drive systems. Some of the potential applications include companies such as Federal Express and Tanfield.

Definitions:

BCU Battery Care Unit; HCU Hybrid Control Unit; SDU Safety Disconnect Unit; VCU Vehicle Control Unit

CEU Control Electronics Unit (Houses MCU, DC-DC, and Charger); MCU Motor Control Unit;

EDM Electric Drive Motor; EDU Electric Drive Unit (Includes EDM & GDU); GDU Gear Drive Unit

GCU Generator Control Unit; EGM Electric Generator Motor; ICE Internal Combustion Engine

Electric Drive Motors

The electric drive unit is essentially an electric motor with additional features and functionality. The motor is liquid-cooled, environmentally sealed, designed to handle automotive shock and vibration, and includes parking pawl, which stops the vehicle when the driver parks the car. It also permits regenerative braking to provide power recovery, in which the mechanical energy of momentum is converted into electrical energy as the motor slows during braking or deceleration. The optional gear reduction unit takes the electric motor s high rpm and gears it down to the lower rpm required by the vehicle s conventional drive shaft. As the revolutions per minute (rpm) go down, the torque of the electric motor increases.

The hybrid electric drive systems exclusively utilize induction AC motors for their high performance, power density, robustness and low cost. The AC drive system is scaleable and can be customized for different applications. Due to the large operating range that these propulsion systems offer, all parameters can be optimized; the user will not have to choose between acceleration, torque or vehicle speed.

Motor Controllers

The controller houses all the components necessary to control the powering of a vehicle, in one easy-to-install package. Our main component is an inverter, which converts DC electricity to AC electricity. We also offers optional controllers for the air conditioning, power steering and heat pumps, 12VDC/24VDC DC-to-DC converter for vehicle auxiliary loads such as cell phones, radio, lights, and a 6.6kW AC-to-DC on-board conductive charger which allows for direct 110 VAC or 220 VAC battery charging. These are located in the same housing as the controller, thus extra interconnects are not required. This approach simplifies the vehicle wiring harness and increases system reliability.

Using our proprietary Windows based software package, vehicle interfaces and control parameters can be programmed in-vehicle. Real-time vehicle performance parameters can be monitored and collected.

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Drive Systems

The Enova drive system family currently includes a 120/60kW peak series hybrid system, a 240/120kW peak series hybrid system, a 90kW peak mild, pre-transmission parallel hybrid system, a 90kW peak post-transmission parallel hybrid systems and our 80kW peak pre-transmission parallel hybrid system.

The Enova hybrid-electric drive systems are based on the component building blocks of the electric drive family, including the motor, controller and optional components. As an example, the 120/60 kW series hybrid system uses the 120kW electric drive components to propel the vehicle, and uses a 60kW diesel generator (genset) to generate power while the vehicle is in operation. This synergy of design reduces the development cost of our hybrid systems by taking advantage of existing designs. The diesel genset has been designed to take advantage of many different models of internal combustion engines for greater penetration into the burgeoning heavy-duty hybrid vehicle markets. Enova s genset will accept any engine with an industry standard bell housing and flywheel. Enova s control protocols are designed to easily interface with any standard engine controller with analog throttle inputs. Accessories for these drives include battery management, chargers and 12-volt power supplies, as for the electric drive family.

Our hybrid systems are designed to work with a variety of hybrid power generation technologies. In our 120/60kW hybrid system, an internal combustion engine connected to a motor and motor controller performs the power generation. Other power options include liquid fueled turbines, such as the Capstone system, fuel cells, such as the Hydrogenics or Ballard system, or many others. In all of these examples, Enova s battery management system provides the power management to allow for proper power control.

Drive System Accessories

Enova s drive system accessories range from battery management systems to hybrid controllers, to rapid charging systems. These critical components are designed to complement the drive system family by providing the elements necessary to create a complete technical solution for alternative energy drive systems.

Enova s drive system accessories are not only integral, but also are the perfect complement to our drive systems and are designed to provide our customers with a Complete Solution to their drive system needs.

Battery Care Unit

Enova s Battery Care Unit (BCU) monitors, manages, protects, and reports on the condition of the vehicles battery pack. It controls and manages battery performance, temperature, voltage and current to avoid harm to the batteries, to the entire system, and to the driver, operator and passengers. It also allows for monitoring for service to the battery and drive system. The BCU reports state-of-charge, amp hours and kilowatt-hours.

The BCU monitors the battery pack voltage and 28 additional individual voltages with a range of 0 to 18vDC. Optional expansion modules allow 28 additional inputs per module, with up to 16 modules permitted. The BCU has eight user-programmable outputs and four user-programmable inputs to allow full integration into the vehicle. These can be used to customize input and output parameters, and to provide for other custom monitoring and battery pack control. The device is approximately 7.1 inches by 4.3 inches by 1.6 inches.

The BCU directly interfaces with the hybrid and other drive systems, and controls the Safety Disconnect Unit (SDU). It is capable of supporting any battery technology, and provides each type with optimized charging and protection algorithms. An internal real-time clock allows the BCU to wake up at user-specified times to initiate battery charging or pack monitoring. A precision shunt allows it to offer a wide dynamic range for monitoring charging and motoring

current, without the errors commonly associated with other types of sensors.

The non-volatile RAM allows the BCU to update, store and report key battery pack parameters such as amp hours, kilowatt-hours and state of change. Using Enova s proprietary Windows -based diagnostic software, the BCU control parameters can be programmed live in-vehicle. Additionally, battery performance can be monitored in real-time. Reports can be output to a laptop computer for precise results and customer friendly usage.

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Control Unit

Enova has reconfigured its Battery Care Unit to perform the critical role of hybrid controller. The Hybrid Control Unit (HCU) continuously monitors the condition of the battery pack through communications with the BCU, monitors the driver commands through communications with the motor controller, and the state of the hybrid generator. Based upon the data received, the HCU provides continuous updates to the hybrid generator with instructions on mode of operation and power level. This innovative control loop ensures that the entire system is optimized to provide quick response to driver commands while providing the best possible system efficiency.

Safety Disconnect Unit

The Safety Disconnect Unit (SDU) is under the control of the BCU, and allows vehicle systems to gracefully connect and disconnect from the battery pack, when necessary, to prevent damage or harm. It also protects the battery pack during charging, protects it from surges, and constantly verifies that the battery pack is isolated from the vehicle chassis. In the event a ground isolation fault is detected, the BCU commands the SDU to break the battery connection thus ensuring a safe environment for the vehicle and operator. The SDU is available in two configurations to match the requirements of the drive systems.

High Voltage Disconnect Unit

The High Voltage Disconnect Unit (HVDU) is a reduced feature version of the Safety Disconnect Unit. The pre-charge board has been eliminated in order to provide a lower cost method of safely switching high voltage systems on the vehicle that do not require the soft start feature.

Wiring Harness Connector Kits

We provide complete mating connector kits to help the vehicle OEM with their production process. By using the Enova supplied kit the vehicle manufacturer is ensuring that they will have all of the necessary connectors to complete the vehicle build.

Distributed Power Generation for Industrial/Commercial/Residential Applications

Enova s distributed generation products are virtually identical in system configuration to that of a series hybrid vehicle, including a controller and battery management. For this market segment, we intend to provide DC-DC and DC-AC power conversion components to convert power supplied by batteries, fuel cells, generators and turbines to AC power that will be used by the end customer. Additionally, our BCU will provide power management functions to control the entire system. The main difference is that the 3-phase AC power typically supplied to the motor for propulsion power is, in this case, sent to the customer to supply power for their household or business.

20kW bi-directional Fuel Cell Power Conditioning System

Enova s 20kW bi-directional Fuel Cell Power Conditioning System, originally designed to meet the demands of an automotive Fuel Cell propulsion system, is now being applied to the stationary market for distributed generation applications.

This unique unit, not much larger than a conventional briefcase, provides a transparent interface between the Fuel Cell or Turbine, the battery pack, accessory loads, and the output load. Fast response time allows the output load to be serviced without interruption while the Fuel Cell or Turbine ramps up. This unit is designed to interface directly with the Master Controller of the Stationary Generation System over a CAN bus. Other communications protocols

supported are SAE J-1850, RS-232, and RS-485.

Fuel Cell Management Unit

Enova has reconfigured its Battery Management Unit to perform the functions required to monitor, manage, and report on the status of a Fuel Cell Stack. The FCU monitors the fuel cell voltage and 28 additional individual voltages with a range of 0 to 18vDC. Optional expansion modules allow 28 additional inputs per module, with up to 16 modules permitted. The FCU has eight (8) user-programmable outputs and four (4) user-programmable inputs to

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allow full integration into the distributed generation system. These can be used to customize input and output parameters, and to provide for other custom monitoring and battery pack control. The device is approximately 7.1 inches by 4.3 inches by 1.6 inches.

Manufacturing Strategy

We have developed a multi-tiered manufacturing strategy that allows us to meet the market s demand for high quality production goods while optimizing cost of goods sold across the spectrum of low to high volumes. At the core of this strategy is a strong reliance on pre-selected highly qualified outside manufacturing houses that specialize in various aspects of the manufacturing process. This closely managed outsourcing strategy helps Enova control product costs while also minimizing fixed costs within the organization.

All tiers of manufacturing of electronic components begin with a complete engineering design package that includes a drawing tree, bill of material, electrical and mechanical drawings, and control software where appropriate. The control software and the design package are internally reviewed, validated, and released through our configuration management process.

For prototyping, electronic files for manufacturing circuit cards are generated and sent to pre-qualified circuit card manufactures. The vendors selected for this phase of manufacturing are specialists in low volume. They are able to provide quantities as small as a single square meter of circuit card. The completed circuit cards are inspected and populated by in our own prototype and low volume manufacturing facility. From circuit cards and other components sub assemblies are created and tested. Finally, a complete unit is assembled and tested.

For low volume manufacturing, where volumes are less than 10 to 20 units, the process is similar to that for prototyping. In this case however, the manufacturing of the entire circuit card is performed by an outside vendor. The circuit vendors selected for this phase are specialists in low volume circuit card manufacturing, automated component population, and testing. Upon receipt, the completed circuit cards are inspected and, together with other components, sub assemblies are created and tested. Finally, a complete unit is assembled and tested.

For higher volume manufacturing Enova has established strategic alliances with ISO certified manufacturers that can take on all aspects of the process from component sourcing to circuit card assembly, component assembly, final unit assembly and test. These completed components and units are shipped to our facility to where complete drive systems that meet the customer s unique requirements are packaged and shipped. In order to make this process as smooth as possible, Enova conducts a training session with the contract manufacturer here at our facility that covers the new product, assembly and test instructions, as well as the design package.

As our market continues to grow and individual customers begin to order higher quantities of fixed drive system configurations, we intend to transition to a system where the final assembly is drop shipped directly to the end customer. This critical concept has already been discussed with our strategic manufacturing partners and they are prepared to execute this change upon our request. In light of our efforts to grow market share in our target markets and penetrate emerging ones, the Company acknowledged the principal barrier to commercialization of our drive systems is cost. The high cost of engineering proprietary software and hardware for our drive systems is high because economies of production in specialized hybrid drive system component parts, batteries, and vehicle integration have not been achieved. Therefore, the cost of our products and engineering services are currently higher than our gasoline and diesel competitor counterparts. We also believe maturation into commercialization of our drive systems will result in decreases to our long run average costs of materials and services as volume increases over time.

Our manufacturing strategy for mechanical components is somewhat more straightforward due to the nature of the final assemblies. ISO-900X certified contract manufacturers are in place that assemble and test motors to our

specification. These motors are shipped to our facility where they are mated with the appropriate gear reduction unit. For low volume manufacturing where the annual volume is less than 50 75 units, the gear units are assembled and tested in our prototype and low volume manufacturing facility. Completed motor/gear assemblies are tested at our facility and shipped out to the end customer as part of a complete drive system.

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For higher volume manufacturing we intend to transition the entire process of motor and gear assembly and test to a qualified contract manufacturer. Strategic manufacturing partners have been identified and are prepared to ramp up at our request.

Competitive Conditions

Competition within the mobile and stationary hybrid power sector is still somewhat fragmented, although there are indications of some consolidation at this time. The market is still divided into very large players such as Allison, Siemens, BAE and Eaton; or smaller competitors such as ISE Corporation, Azure Dynamics, Odyne Corporation, and others. The larger companies tend to still focus on single solutions but maintain the capital and wherewithal to aggressively market such. The smaller competitors offer a more diversified product line, but do not have the market presence to generate significant penetration at this juncture.

Our research and experience has indicated that our target market segments certainly focus on price, but would buy based on reliability, performance and quality support when presented the life-cycle business model for EV-HEV technologies for their application.

The competition to develop and market electric, hybrid and fuel cell powered vehicles has accelerated during the last year and we expect this trend to continue as newly elected administrations and governments in our target markets adapt initiatives that curb green house gas emissions. The competition consists of development stage companies as well as major U.S. and international companies. Our future prospects are highly dependent upon the successful development and introduction of new products that are responsive to market needs and can be manufactured and sold at a profit. There can be no assurance that we will be able to successfully develop or market any such products.

The development of hybrid-electric and alternative fuel vehicles, such as compressed natural gas, fuel cells and hybrid cars poses a competitive threat to our markets for low emission vehicles or LEVs but not in markets where government mandates call for zero emission vehicles or ZEVs. Enova is involved in the development of hybrid vehicles and fuel cell systems in order to meet future requirements and applications.

Various providers of electric vehicles have proposed products or offer products for sale in this emerging market. These products encompass a wide variety of technologies aimed at both consumer and commercial markets. The critical role of technology in this market is demonstrated through several product offerings. As the industry matures, key technologies and capabilities are expected to play critical competitive roles. Our goal is to position ourselves as a long term competitor in this industry by focusing on electric, hybrid and fuel cell powered drive systems and related sub systems, component integration, technology application and strategic alliances.

In the near term and beyond, we believe that governments will require manufacturers of engines to lower their products emissions substantially. The emerging technology in Hybrid Electric drive-trains can bring down emissions, while at the same time saving on fuel costs.

We believe the Hybrid Vehicle market is poised for growth over the medium and long term and that Enova Systems products are ready to participate in this market, although a slowdown from OEM customers was experienced since the second half of 2008. Enova is positioned to capitalize on demands being placed on the market by offering solutions. Enova believes that our competitive advantages include:

Providing a full product line of power management, power conversion, and system integration

Providing products that allow the hardware to be software programmable and configurable

Offering a product line designed for the most advanced new fuel systems: electric, hybrid, fuel cell, microturbine powered vehicles, and battery, fuel cell, microturbine stationary power applications

Providing fully integrated, drop-in energy management and conversion system in one box

Providing scaleable modules

Offering systems with reduced footprint and weight, high functionality and low cost characteristics essential for all market applications due to our aerospace engineering experience

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Meeting changing and sophisticated requirements of emerging alternative power markets and applications

Positioning ourselves as a strategic ally with our global customer base, manufacturers and our R&D partners. By building a business based on long-standing relationships with satisfied clients such as International Truck and Engine, First Auto Works, Wright Group, Tanfield, and Hyundai, we simultaneously build defenses against competition. Teaming with recognized global manufacturers allows Enova to avoid utilizing resources for manufacturing infrastructure as well as exploit Hyundai s years of engineering expertise at relatively low costs.

Research and Development

Enova maintains a strategy of continual enhancement of its current product line and development of more efficient and reliable products for the ever-changing alternative energy sectors. Management believes R&D must be continued in order to be remain competitive, minimize production cost and meet our customers specifications. Because microprocessors and other components continue to advance in speed, miniaturization and reduction of cost, we must re-examine its designs to take advantage of such developments. Enova endeavors to fund its R&D through customer contracts where applicable. We will, however provide internal funding where technology developed is critical to our future.

We are currently focusing our development efforts primarily in the following areas:

Power Control and Drive Systems and related technologies for vehicle applications

Heavy Duty Drive System development for Buses; Trucks, Industrial, Military and Marine applications

Technical and product development under DOE/DOT/DOD contracts

Customized application of 12kW and 18kW Chargers

Fuel Cell Generation system power management and process control

Stationary Power Management and Conversion and related technologies

Systems Integration of these technologies , and

OEM Technical and Product development

For the years ended December 31, 2008, and 2007, we spent $2,505,000, and $1,947,000, respectively, on internal research and development activities. Enova is continually evaluating and updating the technology and equipment used in developing each of its products. The power management and conversion industry utilizes rapidly changing technology and we will endeavor to modernize our current products as well as continue to develop new leading edge technologies to maintain our competitive edge in the market.

Intellectual Property

Enova currently holds three U.S. patents and has one patent pending, relating to power management and control. We also have trademarks or service marks in the United States and have been filing for international patents as well. We continually review and append our protection of proprietary technology. We continue to place emphasis on the

development and acquisition of patentable technology. A majority of our intellectual property is contained within our software which we believe is best protected under trade secret intellectual property law. Under such provisions, Enova does not have to publish its proprietary code in order to maintain protection.

We maintain an internal review and compensation process to encourage our employees to create new patentable technologies. The status of patents involves complex legal and factual questions, and the breadth of claims allowed is uncertain. Accordingly, there can be no assurance that patent applications filed by us will result in patents being issued. Moreover, there can be no assurance that third parties will not assert claims against us with respect to existing and future products. Although we intend to vigorously protect our rights, there can be no assurance that these measures will be successful. In the event of litigation to determine the validity of any third party claims, such litigation could result in significant expense to Enova. Additionally, the laws of certain countries in

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which our products are or may be developed, manufactured or sold may not protect our products and intellectual property rights to the same extent as the laws of the United States.

Enova s success depends in part on its ability to protect its proprietary technologies. Enova s pending or future patent applications may not be approved and the claims covered by such applications may be reduced. If allowed, patents may not be of sufficient scope or strength, others may independently develop similar technologies or products, duplicate any of Enova s products or design around its patents, and the patents may not provide Enova with competitive advantages. Further, patents held by third parties may prevent the commercialization of products incorporating Enova s technologies or third parties may challenge or seek to narrow, invalidate or circumvent any of Enova s pending or future patents. Enova also believes that foreign patents, if obtained, and the protection afforded by such foreign patents and foreign intellectual property laws, may be more limited than that provided under United States patents and intellectual property laws. Litigation, which could result in substantial costs and diversion of effort by Enova, may also be necessary to enforce any patents issued or licensed to Enova or to determine the scope and validity of third-party proprietary rights. Any such litigation, regardless of outcome, could be expensive and time-consuming, and adverse determinations in any such litigation could seriously harm Enova s business.

Enova relies on unpatented trade secrets and know-how and proprietary technological innovation and expertise which are protected in part by confidentiality and invention assignment agreements with its employees, advisors and consultants and non-disclosure agreements with certain of its suppliers and distributors. If these agreements are breached, Enova may not have adequate remedies for any breach and Enova s unpatented proprietary intellectual property may otherwise become known or independently discovered by competitors. Further, the laws of certain foreign countries may not protect Enova s products or intellectual property rights to the same extent as do the laws of the United States.

Employees

As of December 31, 2008, we had 53 full time employees and workforce reductions to 36 employees as of February 28, 2009. In addition, we employ one individual as an independent contractor engaged on a monthly basis.

Available Information

We file electronically with the SEC our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934. We make available free of charge on or through our website copies of these reports as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The SEC maintains an internet site that contains reports, proxy and information statements and other information regarding our filings at www.sec.gov. You may also read and copy any of our materials filed with the SEC at the SEC s Public Reference Room at 100 F Street, NE, Washington, DC 20549. Information regarding the operation of the Public Reference Room can be obtained by calling the SEC at 1-800-SEC-0330. Our website address is www.enovasystems.com. Information found on, or that can be accessed through, our website is not incorporated by reference into this annual report.

ITEM 1A. ***RISK FACTORS***

The statements in this Section describe the major risks to our business and should be considered carefully. In addition, these statements constitute our cautionary statements under the Private Securities Litigation Reform Act of 1995.

This annual report on Form 10-K, including the documents that we incorporate by reference, contains statements indicating expectations about future performance and other forward-looking statements that involve risks and

uncertainties. We usually use words such as may, will, should, expect, plan, anticipate, believe, estimate, future, intend, potential, or continue or the negative of these terms or similar expressions to identify forward-looki statements. These statements appear throughout the Form 10-K and are statements regarding our current intent, belief, or expectation, primarily with respect to our operations and related industry developments. Examples of these statements include, but are not limited to, statements regarding the following: our expansion plans, our future operating expenses, our future losses, our future expenditures for

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research and development and the sufficiency of our cash resources. You should not place undue reliance on these forward-looking statements, which apply only as of the date of this annual report. Our actual results could differ materially from those anticipated in these forward-looking statements for many reasons, including the risks faced by us and described in this Risk Factors section and elsewhere in this annual report.

We cannot guarantee that any forward-looking statement will be realized, although we believe we have been prudent in our plans and assumptions. Achievement of future results is subject to risks, uncertainties and potentially inaccurate assumptions. Should known or unknown risks or uncertainties materialize, or should underlying assumptions prove inaccurate, actual results could differ materially from past results and those anticipated, estimated or projected. You should bear this in mind as you consider forward-looking statements.

We undertake no obligation to publicly update forward-looking statements, whether as a result of new information, future events or otherwise. You are advised, however, to consult any further disclosures we make on related subjects in our 10-Q and 8-K reports to the SEC. Also note that we provide the following cautionary discussion of risks, uncertainties and possibly inaccurate assumptions relevant to our businesses. These are factors that, individually or in the aggregate, we think could cause our actual results to differ materially from expected and historical results. We note these factors for investors as permitted by the Private Securities Litigation Reform Act of 1995. You should understand that it is not possible to predict or identify all such factors. Consequently, you should not consider the following to be a complete discussion of all potential risks or uncertainties.

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 our accumulated deficit was $129,663,000 as of December 31, 2008. It is likely that we will continue to incur substantial net operating losses 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. In fiscal year ended December 31, 2008, Tanfield accounted for 28% of our total revenues. Based upon public announcement by Tanfield in July 2008, we expect fewer orders from Tanfield for 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. At December 31, 2008, the five highest outstanding accounts receivable balances totaled $1,256,000 which represents 87% of our gross accounts receivable. 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

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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.

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 (CARB) 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

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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.

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.

ITEM 1B. *UNRESOLVED STAFF COMMENTS*

Not applicable.

ITEM 2. *PROPERTIES*

Our corporate offices are located at an office and manufacturing facility at 1560 West 190th Street, Torrance, California. We lease this 43,000 square foot office and manufacturing facility. Enova rents offices in Hawaii and Michigan on a month-to-month basis. Enova s corporate offices were previously leased and located at a different address in Torrance, California. This lease terminated on February 28, 2008.

ITEM 3. *LEGAL PROCEEDINGS*

We are subject to a number of lawsuits, investigations and disputes (some of which involve substantial amounts claimed) arising out of the conduct of our business, including matters relating to commercial transactions. We

recognize a liability for any contingency that is probable of occurrence and reasonably estimable. We continually assess the likelihood of adverse outcomes in these matters, as well as potential ranges of probable losses (taking into consideration any insurance recoveries), based on a careful analysis of each matter with the assistance of outside legal counsel and, if applicable, other experts.

Given the uncertainty inherent in litigation, we do not believe it is possible to develop estimates of the range of reasonably possible loss in excess of current accruals for these matters. Considering our past experience and

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existing accruals, we do not expect the outcome of these matters, either individually or in the aggregate, to have a material adverse effect on our consolidated financial position. Because most contingencies are resolved over long periods of time, potential liabilities are subject to change due to new developments, changes in settlement strategy or the impact of evidentiary requirements, which could cause us to pay damage awards or settlements (or become subject to equitable remedies) that could have a material adverse effect on our results of operations or operating cash flows in the periods recognized or paid.

In December 2008, a contractor, Arens Controls Company, L.L.C., filed suit in the Northern District of Illinois of the U.S. District Court, alleging that a breach of contract occurred on purchase commitments for inventory purchased on our behalf. Enova notified the contractor of cancellation of the order, at which time it was required to mitigate all associated exposure. We assert that the contractor did not, in good faith, mitigate such exposure and we intend to contest this matter vigorously. Accordingly, we do not believe that a liability is reasonably estimable with respect to this claim and we have not recorded a provision for this claim on our financial statements.

ITEM 4. *SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS*

No matters were submitted to a vote of security holders during the fourth quarter of 2008.

PART II

ITEM 5. *MARKET FOR REGISTRANT S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES*

NYSE Euronext Acquisition of the American Stock Exchange

On October 1, 2008, NYSE Euronext completed its acquisition of the American Stock Exchange (AMEX), where our shares of common stock were traded. As a result of this acquisition, our common shares are now traded on the NYSE Amex which is an exchange-regulated market. The NYSE Amex is regulated by Euronext. The AMEX requirements are still in effect for Enova and no changes to company compliance requirements have resulted pursuant to the acquisition of the AMEX by NYSE Euronext.

Shares of our common stock now trade on the NYSE Amex under the same and previous trading symbol ENA and on the London Stock Exchange AIM Market under the symbol ENVS.L or ENV.L . The following table sets forth the high and low bid closing prices of our Common Stock as reflected on the NYSE Amex. Our common stock became listed on the AMEX on August 29, 2006.

	Common Stock	
	High Price	Low Price
Calendar 2008		
Fourth Quarter	$ 2.20	$ 0.35
Third Quarter	$ 3.87	$ 1.85
Second Quarter	$ 5.58	$ 3.80
First Quarter	$ 4.86	$ 3.51
Calendar 2007		
Fourth Quarter	$ 4.95	$ 3.20
Third Quarter	$ 7.12	$ 3.20

Second Quarter	$ 8.07	$ 4.58
First Quarter	$ 4.83	$ 3.08

As of December 31, 2008, there were approximately 251 holders of record of our Common Stock. As of December 31, 2008, 100 shareholders, many of whom are also Common Stock shareholders, held our Series A Preferred Stock. As of December 31 2008, approximately 32 shareholders held our Series B Preferred Stock. The number of holders of record excludes beneficial holders whose shares are held in the name of nominees or trustees.

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Dividend Policy

To date, we have neither declared nor paid any cash dividends on shares of our Common Stock or Series A or B Preferred Stock. We presently intend to retain all future earnings for our business and do not anticipate paying cash dividends on our Common Stock or Series A or B Preferred Stock in the foreseeable future. We are required to pay dividends on our Series A and B Preferred Stock before dividends may be paid on any shares of Common Stock. At December 31, 2008, Enova had an accumulated deficit of approximately $129,663,000 and, until this deficit is eliminated, will be prohibited from paying dividends on any class of stock except out of net profits, unless it meets certain asset and other tests under Section 500 et. seq. of the California Corporations Code.

ITEM 6. ***SELECTED FINANCIAL DATA***

The following selected financial data tables set forth selected financial data for the years ended December 31, 2008, 2007, 2006, 2005, and 2004. The statement of operations data and balance sheet data for and as of the years ended December 31, 2008, 2007, 2006, 2005, and 2004 are derived from the audited financial statements of Enova. The following selected financial data should be read in conjunction with Management s Discussion and Analysis of Financial Condition and Results of Operations and the Financial Statements, including the notes thereto, appearing elsewhere in this Form 10-K.

	For and as of the Years Ended December 31,				
	2008	2007	2006	2005	2004
	(In thousands, except per share data)				
Statement of Operations Data					
Net revenues	$ 6,443	$ 9,175	$ 1,666	$ 6,084	$ 2,554
Cost of revenues	8,224	10,313	2,900	6,001	2,239
Gross profit (loss)	(1,781)	(1,138)	(1,234)	83	315
Operating expenses					
Research and development	2,505	1,947	1,363	804	925
Selling, general and administrative	8,692	6,428	4,178	2,870	2,325
Total operating expense	11,197	8,375	5,541	3,674	3,250
Other income and expense					
Interest and financing fees, net	202	343	550	13	(255)
Equity in losses of non-consolidated joint venture	(118)	(177)	(3)	(118)	(192)
Gain on debt restructuring			1,392	1,569	
Total other income, net	84	166	1,939	1,464	(447)
Net loss	$ (12,894)	$ (9,347)	$ (4,836)	$ (2,127)	$ (3,382)
Per common share:					
Basic and diluted loss per share	$ (0.66)	$ (0.59)	$ (0.33)	$ (0.18)	$ (0.38)
	19,660	15,796	14,802	11,644	8,832

Weighted average number of common shares outstanding					
Balance Sheet Data					
Total assets	$ 19,242	$ 21,173	$ 15,730	$ 21,973	$ 5,888
Long-term debt	$ 1,263	$ 1,306	$ 1,295	$ 2,321	$ 3,341
Shareholders equity	$ 14,143	$ 14,177	$ 11,964	$ 16,604	$ 103

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ITEM 7. *MANAGEMENT S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS*

You should read this Management s Discussion and Analysis of Financial Condition and Results of Operations in conjunction with our 2008 Financial Statements and accompanying Notes. The matters addressed in this Management s Discussion and Analysis of Financial Condition and Results of Operations, may contain certain forward-looking statements involving risks and uncertainties.

Overview

Enova Systems believes it is a leading supplier of efficient, environmentally-friendly digital power components and systems products in conjunction with our associated engineering services. Our core competencies are focused on the development and commercialization of power management and conversion systems for mobile and stationary applications. Enova applies unique enabling technologies in the areas of alternative energy propulsion systems for light and heavy-duty vehicles as well as power conditioning and management systems for distributed generation systems. Our products can be found in a variety of OEM vehicles including those from Hyundai Motor Company and Ford Motor Company, trucks and buses for First Auto Works of China, WrightBus and Optare Plc of the U.K. and the U.S. Military, as well as digital power systems for EDO, Hydrogenics and UTC Fuel Cells, a division of United Technologies.

We continue to support IC Corp. in their efforts to maximize exposure in the hybrid school bus market. We have been involved in large shows in Albany, NY and Reno, NV, Chicago, IL, Washington, DC, smaller venues throughout the Midwest as well as in Birmingham in the United Kingdom. The exposure via shows and direct interface was aggressively pursued throughout the remainder of 2008, in an effort to promote IC Corp. s production intent for hybrid school buses. As a result of these continued domestic efforts, the Company expanded throughout the North American continent and has delivered hybrid school buses to Canada and Mexico through IC Corp.

Some notable highlights of Enova s accomplishments in 2008 are:

In cooperation with International Truck and Engine (IC Corp), we delivered a plug-in hybrid bus to Denali National Park for use in transporting visitors. The IC Corp bus included our unique post-transmission parallel hybrid drive technology. We believe the utilization of our products in environments such as National Parks further demonstrates the diverse opportunities for our drive system. The delivery of this plug-in hybrid bus is part of the continued worldwide sales growth of our drive system technology for commercial and transit buses. According to results from recent independent third-party dynamometer testing, our IC Corporation plug-in hybrid bus is cleaner than standard diesel buses as they reduce carbon dioxide emissions by as much as 40 percent, nitrogen oxide by up to 20 percent and particulate matter by as much as 30 percent.

The Internal Revenue Service (IRS) granted several IC Corp school and commercial buses equipped with Enova s Charge Depleting Hybrid Drive System for the Qualified Heavy Hybrid Vehicles tax credit. Qualifying Heavy Hybrid vehicles are new vehicles with a gross vehicle weight in excess of 8,500 pounds that meet the definition of a qualifying hybrid vehicle. A qualifying hybrid vehicle means a motor vehicle which draws propulsion energy from onboard sources of stored energy which are both an internal combustion or heat engine using consumable fuel, and a rechargeable energy storage system. The 2008 and 2009 Navistar IC Bus Model PB10500 CE Series Hybrid School Buses as well as the 2008 and 2009 Navistar IC Bus Model PB10500 CE Commercial Buses, both equipped with Enova s Charge Depleting Hybrid Drive Systems with gross vehicle weights ranges from 14,001 26,000 lbs. and 26,001 33,000 lbs. are eligible for $6,000 and $12,000 tax credits, respectively.

Enova management visited First Auto Works of China s (FAW) research and development center and FAW s affiliate electronics manufacturer in China, to further develop the basis for a continued cooperation on hybrid transit buses, and potentially on other FAW vehicles. In addition, Enova completed twenty (20) successful trials of our pre-transmission hybrid drive systems. These trials were completed on passenger routes within the Olympic sector during the Beijing Olympics. As a result of these trials, additional orders have been placed for our pre-transmission hybrid-electric drive from FAW. The FAW hybrid-electric City

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Bus is a vehicle that is built by the Wuxi division of FAW Bus & Coach. The factory is now set to begin mass production of the new hybrid municipal transit bus which is designed for China s increasingly popular Bus Rapid Transit (BRT) systems and traditional inner city mass transit routes. This new model, for which FAW has 10 proprietary patents, delivers a fuel economy increase of 38% and an emissions reduction of 30%, compared to traditional diesel buses.

Optare Plc (Optare) engaged Enova to develop two different prototype transit buses for a new UK bus manufacturer. These vehicles were delivered in the third quarter of 2008. The plug-in hybrid diesel-electric and full-electric vehicles will use the latest lithium ion battery technology to provide maximum vehicle range and fuel efficiency. Enova s electric and hybrid drive system solutions include fully integrated on-board or stationary battery charging systems. The Enova drive systems and chargers will were featured in two, new Optare transit buses which debuted in the fourth quarter of 2008 at the Euro Bus Expo in Birmingham, UK.

In September 2008, the material weakness in our inventory process was remediated and management asserted that internal controls over financial reporting were operating effectively as of September 30, 2008. Management asserts that our internal controls over financial reporting were also operating effectively as of December 31, 2008 or the date of this Form 10-K annual report as referenced in Item 9A of Part II herein.

Enova s product focus is digital power management and power conversion systems. Its software, firmware, and hardware manage and control the power that drives either a vehicle or stationary device(s). They convert the power into the appropriate forms required by the vehicle or device and manage the flow of this energy to optimize efficiency and provide protection for both the system and its users. Our products and systems are the enabling technologies for power systems.

The latest state-of-the-art technologies in hybrid vehicles, fuel cell and micro turbine based systems, and stationary power generation, all require some type of power management and conversion mechanism. Enova Systems supplies these essential components. Enova drive systems are fuel-neutral, meaning that they have the ability to utilize any type of fuel, including diesel, liquid natural gas or bio-diesel fuels. We also develop, design and produce power management and power conversion components for stationary power generation both on-site distributed power and on-site telecommunications back-up power applications. Additionally, Enova performs significant research and development to augment and support others and our internal related product development efforts.

Our products are production-engineered. This means they are designed so they can be commercially produced (i.e., all formats and files are designed with manufacturability in mind, from the start). For the automotive market, Enova designs its products to ISO 9000 manufacturing and quality standards. We believe Enova s redundancy of systems and rigorous quality standards result in high performance and reduced risk. For every component and piece of hardware, there are detailed performance specifications. Each piece is tested and evaluated against these specifications, which enhances and confirms the value of the systems to OEM customers. Our engineering services focus on system integration support for product sales and custom product design.

In light of our efforts to grow market share in our target markets and penetrate emerging ones, the Company acknowledges the principal barrier to commercialization of our drive systems is cost. The high cost of engineering proprietary software and hardware for our drive systems is high because economies of production in specialized hybrid drive system component parts, batteries, and vehicle integration have not been achieved. Therefore, the cost of our products and engineering services are currently higher than our gasoline and diesel competitor counterparts. We also believe maturation into commercialization of our drive systems will result in decreases to our long run average costs of materials and services as volume increases over time.

Critical Accounting Policies

The following represents a summary of our critical accounting policies, defined as those policies that we believe: (a) are the most important to the portrayal of our financial condition and results of operations and (b) involve inherently uncertain issues which require management s most difficult, subjective or complex judgments.

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Cash and cash equivalents Cash consists of currency held at reputable financial institutions. Short-term, highly liquid investments with an original maturity of three months or less are considered cash equivalents.

Allowance for doubtful accounts The allowance for doubtful accounts is the Company s best estimate of the amount of probable credit losses in the Company s existing accounts receivable; however, changes in circumstances relating to accounts receivable may result in a requirement for additional allowances in the future. Past due balances over 90 days and other higher risk amounts are reviewed individually for collectibility. If the financial condition of the Company s customers were to deteriorate resulting in an impairment of their ability to make payment, additional allowances may be required. In addition, the Company maintains a general reserve for all invoices by applying a percentage based on the age category. Account balances are charged against the allowance after all collection efforts have been exhausted and the potential for recovery is considered remote.

Inventory Inventories are priced at the lower of cost or market utilizing the first-in, first-out (FIFO) cost flow assumption. We maintain a perpetual inventory system and continuously record the quantity on-hand and standard cost for each product, including purchased components, subassemblies and finished goods. We maintain the integrity of perpetual inventory records through periodic physical counts of quantities on hand. Finished goods are reported as inventories until the point of transfer to the customer. Generally, title transfer is documented in the terms of sale.

Inventory reserve We maintain an allowance against inventory for the potential future obsolescence or excess inventory. A substantial decrease in expected demand for our products, or decreases in our selling prices could lead to excess or overvalued inventories and could require us to substantially increase our allowance for excess inventory. If future customer demand or market conditions are less favorable than our projections, additional inventory write-downs may be required and would be reflected in cost of revenues in the period the revision is made.

Property and Equipment Property and equipment are stated at cost and depreciated over the estimated useful lives of the related assets, which range from three to seven years using the straight-line method for financial statement purposes. The Company uses other depreciation methods (generally, accelerated depreciation methods) for tax purposes where appropriate. Amortization of leasehold improvements is computed using the straight-line method over the shorter of the remaining lease term or the estimated useful lives of the improvements.

Repairs and maintenance are expensed as incurred. Expenditures that increase the value or productive capacity of assets are capitalized. When property and equipment are retired, sold, or otherwise disposed of, the asset s cost and related accumulated depreciation are removed from the accounts and any gain or loss is included in operations.

Impairment of Long-Lived Assets The Company assesses the impairment of its long-lived assets periodically in accordance with the provisions of Statement of Financial Accounting Standards (SFAS) 144, Accounting for the Impairment and Disposal of Long-Lived Assets . The Company reviews the carrying value of property and equipment for impairment whenever events and circumstances indicate that the carrying value of an asset may not be recoverable from the estimated future cash flows expected to result from its use and eventual disposition. In cases where undiscounted expected future cash flows are less than the carrying value, an impairment loss is recognized equal to an amount by which the carrying value exceeds the fair value of assets. The factors considered by management in performing this assessment include current operating results, trends, and prospects, as well as the effects of obsolescence, demand, competition, and other economic factors. Long-lived assets that management commits to sell or abandon are reported at the lower of carrying amount or fair value less cost to sell.

Equity Method Investment Investment in ITC, a joint venture (see Note 1) is accounted for by the equity method. Under the equity method of accounting, an investee company s accounts are not reflected within the Company s balance sheets or statements of operations; however, the Company s share of the earnings or losses of the investee company is reflected in the caption Equity losses in non-consolidated joint venture in the statements of operations.

The Company s carrying value in an equity method joint venture company is reflected in the caption Investment in non-consolidated joint venture in the Company s balance sheets.

Stock-Based Compensation The Company calculates stock-based compensation expense in accordance with SFAS No. 123 revised, Share-Based Payment (SFAS 123(R)). This pronouncement requires the measurement and recognition of compensation expense for all share-based payment awards made to employees and directors, including employee stock options to be based on estimated fair values. The Company also applies the

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provisions sets forth in the Securities and Exchange Commission s Staff Accounting Bulletin 107 (SAB 107) relating to its adoption of SFAS 123(R). The Company adopted SFAS 123(R) using the modified prospective transition method, which requires the application of the accounting standard as of the beginning in 2006.

The Company s determination of estimated fair value of share-based awards utilizes the Black-Scholes option-pricing model. The Black-Scholes model is affected by the Company s stock price as well as assumptions regarding certain highly complex and subjective variables. These variables include, but are not limited to; the Company s expected stock price volatility over the term of the awards as well as actual and projected employee stock option exercise behaviors. Prior to the adoption of SFAS 123(R), the Company accounted for stock-based awards to employees and directors using the intrinsic value method in accordance with Accounting Principles Board Opinion 25, *Accounting for Stock Issued to Employees* (APB 25).

Revenue recognition The Company manufactures proprietary products and other products based on design specifications provided by its customers. The Company recognizes revenue only when all of the following criteria have been met:

Persuasive evidence of an arrangement exists;

Delivery has occurred or services have been rendered;

The fee for the arrangement is fixed or determinable; and

Collectibility is reasonably assured.

Persuasive Evidence of an Arrangement The Company documents all terms of an arrangement in a written contract signed by the customer prior to recognizing revenue.

Delivery Has Occurred or Services Have Been Rendered The Company performs all services or delivers all products prior to recognizing revenue. Professional consulting and engineering services are considered to be performed when the services are complete. Equipment is considered delivered upon delivery to a customer s designated location. In certain instances, the customer elects to take title upon shipment.

The Fee for the Arrangement is Fixed or Determinable Prior to recognizing revenue, a customer s fee is either fixed or determinable under the terms of the written contract. Fees professional consulting services, engineering services and equipment sales are fixed under the terms of the written contract. The customer s fee is negotiated at the outset of the arrangement and is not subject to refund or adjustment during the initial term of the arrangement.

Collectibility is Reasonably Assured The Company determines that collectibility is reasonably assured prior to recognizing revenue. Collectibility is assessed on a customer-by-customer basis based on criteria outlined by management. New customers are subject to a credit review process, which evaluates the customer s financial position and ultimately its ability to pay. The Company does not enter into arrangements unless collectibility is reasonably assured at the outset. Existing customers are subject to ongoing credit evaluations based on payment history and other factors. If it is determined during the arrangement that collectibility is not reasonably assured, revenue is recognized on a cash basis. Additionally, in accordance with the Securities and Exchange Commission s Staff Accounting Bulletin No. 104 (SAB 104), amounts received upfront for engineering or development fees under multiple-element arrangements are deferred and recognized over the period of committed services or performance, if such arrangements require the Company to provide on-going services or performance. All amounts received under collaborative research agreements or research and development contracts are nonrefundable, regardless of the success of the underlying research.

Pursuant to Emerging Issues Task Force (EITF) of the Financial Accounting Standards Board Issue 00-21. EITF Issue 00-21 addressed the accounting for arrangements that involve the delivery or performance of multiple products, services and/or rights to use assets. Specifically, Issue 00-21 requires the recognition of revenue from milestone payments over the remaining minimum period of performance obligations. As required, the Company applies the principles of Issue 00-21 to multiple element agreements.

The Company also recognizes engineering and construction contract revenues using the percentage-of-completion method, based primarily on contract costs incurred to date compared with total estimated contract costs.

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Customer-furnished materials, labor, and equipment, and in certain cases subcontractor materials, labor, and equipment, are included in revenues and cost of revenues when management believes that the company is responsible for the ultimate acceptability of the project. Contracts are segmented between types of services, such as engineering and construction, and accordingly, gross margin related to each activity is recognized as those separate services are rendered.

Changes to total estimated contract costs or losses, if any, are recognized in the period in which they are determined. Claims against customers are recognized as revenue upon settlement. Revenues recognized in excess of amounts received are classified as current assets under contract work-in-progress. Amounts billed to clients in excess of revenues recognized to date are classified as current liabilities on contracts.

Changes in project performance and conditions, estimated profitability, and final contract settlements may result in future revisions to engineering and development contract costs and revenue.

These accounting policies were applied consistently for all periods presented. Our operating results would be affected if other alternatives were used. Information about the impact on our operating results is included in the footnotes to our financial statements.

Several other factors related to the Company may have a significant impact on our operating results from year to year. For example, the accounting rules governing the timing of revenue recognition related to product contracts are complex and it can be difficult to estimate when we will recognize revenue generated by a given transaction. Factors such as acceptance of services provided, payment terms, creditworthiness of the customer, and timing of delivery or acceptance of our products often cause revenues related to sales generated in one period to be deferred and recognized in later periods. For arrangements in which services revenue is deferred, related direct and incremental costs may also be deferred.

Research and Development In accordance with SFAS No. 2, Accounting for Research Development Costs research, development, and engineering costs are expensed in the year incurred. Costs of significantly altering existing technology are expensed as incurred.

Recent Accounting Pronouncements

In December 2007, the FASB issued SFAS No. 141R, Business Combinations (SFAS 141R) which establishes principles and requirements for how the acquirer of a business recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, and any noncontrolling interest in the acquiree. The statement also provides guidance for recognizing and measuring the goodwill acquired in the business combination and determines what information to disclose to enable users of the financial statement to evaluate the nature and financial effects of the business combination. SFAS 141R is effective for financial statements issued for fiscal years beginning after December 15, 2008. Accordingly, any business combinations the Company engages in will be recorded and disclosed following existing GAAP until January 1, 2009. The Company does not expect SFAS 141R will have an impact on its financial statements when effective, but the nature and magnitude of the specific effects will depend upon the nature, terms and size of the acquisitions the Company consummates after the effective date. The Company is evaluating the impact of this standard and currently does not expect it to have a significant impact on its financial position, results of operations or cash flows.

In December 2007, the FASB issued SFAS No. 160, Noncontrolling Interests in Consolidated Financial Statements, an amendment of ARB No. 51 (SFAS 160). SFAS 160 introduces significant changes in the accounting and reporting for business acquisitions and noncontrolling interest (NCI) in a subsidiary. SFAS 160 also changes the accounting for and reporting for the deconsolidation of a subsidiary. Companies are required to adopt the new standard for fiscal

years beginning after January 1, 2009. The Company is evaluating the impact of this standard and currently does not expect it to have a significant impact on its financial position, results of operations or cash flows.

In February 2008, The FASB issued FSP No. 140-3, Accounting for Transfers of Financial Assets and Repurchase Financing Transactions (FSP No. 140-3). FSP No. 140-3 clarifies repurchase financing, which is a repurchase agreement that relates to a previously transferred financial asset between the same counterparties (or consolidated affiliates of either counterparty), that is entered into contemporaneously with, or in contemplation of,

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the initial transfer. FSP No. 140-3 is effective for fiscal years beginning after November 15, 2008 and interim periods within those fiscal years. The Company is evaluating the impact of this standard and currently does not expect the adoption of FSP No. 140-3 to have a significant impact on its financial position, cash flows and results of operations.

In September 2006, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards (SFAS) No. 157, Fair Value Measurements. The Statement defines fair value, establishes a framework for measuring fair value in generally accepted accounting principles and expands disclosure related to the use of fair value measures in financial statements. The provisions of SFAS No. 157 were to be effective for fiscal years beginning after November 15, 2007. On February 6, 2008, the FASB agreed to defer the effective date of SFAS No. 157 for one year for certain nonfinancial assets and nonfinancial liabilities, except those that are recognized or disclosed at fair value in the financial statements on a recurring basis (at least annually). Effective January 1, 2008, the Company adopted SFAS No. 157 except as it applies to those nonfinancial assets and nonfinancial liabilities. The adoption of SFAS No. 157 did not have significant impact on its financial position, cash flows and results of operations.

In February 2007, the FASB issued SFAS No. 159 , The Fair Value Option for Financial Assets and Financial Liabilities including an amendment of FASB Statement No. 115 (SFAS 159). SFAS 159 permits entities to measure many financial instruments and certain other items at fair value. Effective January 1, 2008, the Company adopted SFAS No. 159, The Fair Value Option for Financial Assets and Financial Liabilities including an amendment of FASB Statement No. 115. SFAS No. 159 allows an entity the irrevocable option to elect fair value for the initial and subsequent measurement of certain financial assets and liabilities under an instrument-by-instrument election. Subsequent measurements for the financial assets and liabilities an entity elects to fair value will be recognized in the results of operations. SFAS No. 159 also establishes additional disclosure requirements. The Company did not elect the fair value option under SFAS No. 159 for any of its financial assets or liabilities upon adoption. The adoption of SFAS No. 159 did not have a significant impact on its financial position, cash flows and results of operations.

In March 2008, the FASB issued SFAS No. 161 Disclosures about Derivative Instruments and Hedging Activities an amendment of FASB Statement No. 133 (SFAS 161). SFAS 161 requires qualitative disclosures about objectives and strategies for using derivatives, quantitative disclosures about fair value amounts of and gains and losses on derivative instruments, and disclosures about credit-risk-related contingent features in derivative agreements. Companies are required to adopt the new standard for be effective for financial statements issued for fiscal years and interim periods beginning after November 15, 2008. The Company does not expect the adoption of SFAS 161 to have a significant impact on its financial position, results of operations or cash flows.

In June 2007 the FASB ratified EITF No. 07-3, Accounting for Nonrefundable Advance Payments for Goods or Services to Be Used in Future Research and Development Activities (EITF 07-3) which requires non-refundable advance payments for goods and services to be used in future research and development activities to be recorded as an asset and the payments to be expensed when the research and development activities are performed. EITF 07-3 is effective for fiscal years beginning after December 15, 2007. Effective January 1, 2008, the Company adopted EITF 07-3. The adoption of EITF 07-3 did not have a significant impact on its financial position, results of operations or cash flows.

In April 2008, the FASB issued FASB Staff Position (FSP) No. FAS 142-3, Determination of the Useful Life of Intangible Assets, (FSP 142-3). The intent of this FSP is to improve consistency between the useful life of a recognized intangible asset under SFAS No. 142, Goodwill and Other Intangible Assets (SFAS No. 142), and the period of expected cash flows used to measure the fair value of the intangible asset under SFAS No. 141R. FSP No. 142-3 will require that the determination of the useful life of intangible assets acquired after the effective date of this FSP shall include assumptions regarding renewal or extension, regardless of whether such arrangements have explicit renewal or extension provisions, based on an entity s historical experience in renewing or extending such arrangements. In addition, FSP No. 142-3 requires expanded disclosures regarding intangible assets existing as of

each reporting period. FSP 142-3 is effective for financial statements issued for fiscal years beginning after December 15, 2008, and interim periods within those years. The Company does not expect the adoption of FSP 142-3 to have a significant impact on its financial position, results of operations or cash flows.

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In May 2008, the FASB issued Financial Accounting Standard (FAS) No. 162, The Hierarchy of Generally Accepted Accounting Principles. The statement is intended to improve financial reporting by identifying a consistent hierarchy for selecting accounting principles to be used in preparing financial statements that are prepared in conformance with generally accepted accounting principles. Unlike Statement on Auditing Standards (SAS) No. 69, The Meaning of Present in Conformity With GAAP, FAS No. 162 is directed to the entity rather than the auditor. The statement is effective 60 days following the SEC s approval of the Public Company Accounting Oversight Board (PCAOB) amendments to AU Section 411, The Meaning of Present Fairly in Conformity with GAAP, and is not expected to have any impact on the Company s results of operations, financial condition or liquidity.

In June 2007, the FASB ratified Emerging Issues Task Force (EITF) Issue No. 06-11 (EITF Issue No. 06-11), Accounting for Income Tax Benefits of Dividends on Shared-Based Payment Awards . EITF Issue No 06-11 requires that tax benefits generated by dividends paid during the vesting period on certain equity- classified share-based compensation awards be treated as additional paid-in capital and included in a pool of excess tax benefits available to absorb tax deficiencies from share-based payment awards. EITF Issue No. 06-11 is effective beginning with the 2009 fiscal year. The Company does not expect it to have a significant impact on its financial position, results of operations or cash flows.

Results of Operations

Years Ended December 31, 2008 and 2007

Net Revenues. Net revenues of $6,443,000 for the twelve months ended December 31, 2008 decreased by $2,732,000 or 30% from $9,175,000 during the same period in 2007. The decrease was primarily due to a 60% reduction in sales to Tanfield Group Plc (Tanfield), our largest customer, which included the Company s authorization of a sales return totaling $515,000 for P90 systems in July 2008. In 2008, Tanfield, IC Corporation and HCATT comprised 28%, 13% and 22%, respectively of our 2008 revenues. In the prior year, the share of 2007 revenues attributable to Tanfield, IC Corporation and HCATT were 52%, 15% and 8%, respectively. The Company concentrated on support of several major customers in our migration to a first phase production company through 2007 and the first half of 2008. The change in the economic environment and the slow down in sales volume from major customers has led management to pursue development contracts with several new customers during the second half of the year, such as Optare Plc and the Darwen Group.

Cost of Revenues. Cost of revenues were $8,224,000 for the year ended December 31, 2008, compared to $10,313,000 for the year ended December 31, 2007, a decrease of $2,089,000, or 20%. The cost of revenues decreased in proportion with sales, with the exception that the Company recorded a charge of $803,000 resulting from evaluation of slow moving inventory in light of changes in our customer demands. Cost of revenues consists of component and material costs, direct labor costs, integration costs and overhead related to manufacturing our products. Product development costs incurred in the performance of engineering development contracts for the U.S. Government and private companies are charged to cost of sales. Our customers continue to require additional integration and support services to customize, integrate, and evaluate our products. We believe that a portion of these costs are initial, one-time costs for these customers and anticipate similar costs to be incurred with respect to new customers as we gain additional market share. Customers who have been using our products over one year do not typically incur this same type of initial costs.

Gross Margin. The gross margin for the year ended December 31, 2008 was negative 28% compared to a negative 12% in the prior year. In 2008, we continued efforts to manage product costs through our production process. However, gross margins declined compared to the prior year due to an increase in the inventory reserve as well as reduced margins experienced in the second half of 2008 compared to improvements achieved due to record sales volumes in the second half of 2007. The Company experienced its largest ever overall shipment volume of 384 units

in 2007, which fell to 224 units in 2008.

Research and Development Expenses. Research and development expenses consist primarily of personnel, facilities, equipment and supplies for our research and development activities. Non-funded development costs are reported as research and development expense. Research and development expense increased during the year ended December 31, 2008 to $2,505,000 from $1,947,000 for the same period in 2007, an increase of $558,000 or 29%. We continue to enhance our technologies to be more universally adaptable to the requirements of our current and

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prospective customers. By modifying our software and firmware, we believe we will be able to provide a more comprehensive, adaptive and effective solution to a larger base of customers and applications. Major initiatives in 2008 revolved around additional resources towards implementation of new battery technologies, software development of engine stop for hybrid buses, and continuous improvement of key components such as chargers. We will continue to research and develop new technologies and products, both internally and in conjunction with our alliance partners and other manufacturers as we deem beneficial to our global growth strategy.

Selling, General and Administrative Expenses. Selling, general and administrative expenses consist primarily of sales and marketing costs, including consulting fees and expenses for travel, trade shows and promotional activities and personnel and related costs for the quality and field service functions and general corporate functions, including finance, strategic and business development, human resources, IT and MRP implementation, accounting reserves and legal costs. Selling, general and administrative expenses increased by $2,264,000, or 35%, during the year ended December 31, 2008 to $8,692,000 from $6,428,000 in the prior year. During the first quarter of 2008, we moved into our new facility, resulting in an increase in costs for the move and rent for the year. In addition, we incurred consultant and internal labor charges of approximately $250,000 with respect to standardization efforts associated with Section 404 of the Sarbanes-Oxley Act of 2002 and the International Organization for Standardization (ISO 9001 and 14001) certification,. To improve customer service after record 2007 sales, we devoted significant resources to the Field Service function, adding up to nearly $750,000 in costs for the year. We also incurred additional non-cash, stock compensation charges of $279,000 associated with option grants and stock issuances when comparing 2008 versus 2007, as well as an increase in the allowance for doubtful accounts of $575,000.

Interest and Financing Fees, Net. For the year ended December 31, 2008, interest and financing fees income was $202,000, a decrease of $141,000, or 41%, from $343,000, in 2007. The decrease is a result of a lower average cash balance through the latter half of 2008, when compared to the average cash balance during 2007 as well as lower prevailing money market rates in comparison to the same period in the prior year.

Equity in losses of non-consolidated joint venture. For the year ended December 31, 2008, ITC generated a net loss of approximately $296,000, resulting in a charge to Enova of $118,000 utilizing the equity method of accounting for our interest in the pro-rata share of losses attributable to this investment, which represents a decrease of $59,000, or 33%, from $177,000 for the same period in 2007.

Liquidity and Capital Resources

We have experienced losses primarily attributable to research, development, marketing and other costs associated with our strategic plan as an international developer and supplier of electric propulsion and power management systems and components. Cash flows from operations have not been sufficient to meet our obligations. Therefore, we have had to raise funds through several financing transactions. At least until we reach breakeven volume in sales and develop and/or acquire the capability to manufacture and sell our products profitably, we will need to continue to rely on cash from external financing sources. Our operations during the year ended December 31, 2008 were financed by product sales, working capital reserves and equity capital raises. At fiscal year end, the Company had $7,324,000 of cash and cash equivalents and short term investments.

We have a secured revolving credit facility from Union Bank of California for $2,000,000. The credit facility expires on June 30, 2009. As of December 31, 2008, $1,800,000 was available under the credit facility as a $200,000 irrevocable letter of credit was issued by Union bank in favor of our landlord with respect to the lease of our new corporate headquarters. The credit facility is secured by a $2,000,000 certificate of deposit. The interest rate is the certificate of deposit rate plus 1.25% with interest payable monthly and the principal due at maturity.

Net cash used in operating activities was $13,582,000 for the year ended December 31, 2008 compared to $10,561,000 for the prior year ended December 31, 2007. Cash used in operating activities was affected mostly by the cost of revenue, R&D, personnel and general operating costs, as well as an increase in inventory balances. Non-cash items included expenses for stock-based compensation, depreciation and amortization, inventory valuation reserve, bad debt expense, equity losses in our non-consolidated joint venture, and issuance of common stock for services.

Net cash used in investing activities was $3,524,000 for the year ended December 31, 2008 compared to net cash provided of $4,485,000 in the prior year. Cash used in investing activities in 2008 was attributed to leasehold

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improvements and fixed asset purchases associated with our move into a new facility and the purchase of a certificate of deposit of $2,000,000 used as security for the revolving credit facility referenced above. Cash provided by investing activities in 2007 was attributed to the maturity of a certificate of deposit of $5,000,000 and purchases of $515,000 of property and equipment.

Net cash provided by financing activities totaled $11,945,000 for the year ended December 31, 2008, compared to net cash provided of $10,949,000 for the year ended December 31, 2007. During the first and second quarters of 2008, we raised capital through two placements of common stock. On April 3, 2008, we sold 2,131,274 shares of common stock at 195 pence sterling per share (approximately US$3.91 per share) to certain eligible offshore investors. We received approximately 3,990,000 pounds sterling or approximately $7,784,000 in net proceeds. On May 1, 2008, we sold 1,273,700 shares of common stock for $3.91 per share to certain accredited investors, resulting in net proceeds of approximately $4,704,000.

Short term investments increased by $2,000,000 in 2008 compared to 2007. The company purchased a $2,000,000 certificate of deposit to secure a credit facility of $2,000,000 with Union Bank.

Accounts receivable decreased by $3,448,000, or 81%, from $4,256,000 at December 31, 2007 to $808,000 at December 31, 2008 due to reduced revenue and increased collection efforts in 2008.

Inventory increased from $3,565,000 as of December 31, 2007 to $7,649,000 as of December 31, 2008, representing a 115% increase in the balance. The increase was a result of inventory purchases through the third quarter of 2008 as the Company took delivery of product in anticipation of sales volume from key customers.

Prepaid expenses and other current assets decreased by $242,000, or 53%, from the December 31, 2007 balance of $457,000. The decrease is primarily attributable to deposits made in prior years being released in 2008.

Property and equipment increased by $959,000 or 110%, net of accumulated depreciation, to $1,829,000 as of December 31, 2008 from the prior year balance of $870,000. The increase was primarily due to the investment in leasehold improvements for the new facility moved in to during the first quarter of 2008 and continued planned purchases of computers, furniture, office equipment, software, production tooling, machinery and equipment associated with the expansion. These increases were consistent with the Company s progression to a production stage.

Intangible assets decreased by $5,000 during 2008 from $70,000 at December 31, 2007. Enova did not recognize any additional intellectual property assets, including patents and trademarks, during 2008. The change in the balance was a result of the amortization of the patents.

Accounts payable decreased by $1,285,000, or 68%, from $1,877,000 at December 31, 2007 to $592,000 at December 31, 2008. The accounts payable balance was reduced through the second half of the year as the company decreased purchase volumes in-line with changes in anticipated sales volume.

Enova reported $0 of deferred revenue at December 31, 2008, compared to a deferred revenue balance at December 31, 2007 of $101,000, which the Company recognized into revenue.

Accrued payroll and related expenses decreased by $385,000, or 57%, from $680,000 at December 31, 2007 to $295,000 at December 31, 2008, due to decreased personnel costs in light of the Company s reorganization efforts during 2008.

Other accrued expenses and payables decreased by $204,000 during 2008, from $2,063,000 at December 31, 2007. The decrease is primarily attributable to a decline in accruals for inventory receipts due to lower sales activity in the

latter half of 2008.

Accrued interest increased by $118,000 from $874,000 at December 31, 2007 to $992,000. The majority of the increase is associated with the interest accrued on the $1.2 million note due the Credit Managers Association of California (CMAC).

ITEM 7A. ***QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK***

Not applicable.

ITEM 8. ***FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA***

ENOVA SYSTEMS, INC.

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December 31, 2008 and 2007

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders
Enova Systems, Inc.:

We have audited the balance sheets of Enova Systems, Inc. as of December 31, 2008 and 2007, and the related statements of operations, stockholders equity and cash flows for the years then ended. These financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statement is free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for expressing an opinion on the effectiveness of the Company s internal control over financial reporting. Accordingly, we express no such opinion. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statement. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Enova Systems, Inc. as of December 31, 2008 and 2007, and the results of its operations and its cash flows for the years then ended, in conformity with U.S. generally accepted accounting principles.

/s/ PMB Helin Donovan, LLP

Irvine, California
March 31, 2009

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ENOVA SYSTEMS, INC.

BALANCE SHEETS

	December 31, 2008	December 31, 2007
ASSETS		
Current assets:		
Cash and cash equivalents	$ 5,324,000	$ 10,485,000
Short term investments	2,000,000	
Accounts receivable, net	808,000	4,256,000
Inventories and supplies, net	7,649,000	3,565,000
Prepaid expenses and other current assets	215,000	457,000
Total current assets	15,996,000	18,763,000
Property and equipment, net	1,829,000	870,000
Investment in non-consolidated joint venture	1,352,000	1,470,000
Intangible assets, net	65,000	70,000
Total assets	$ 19,242,000	$ 21,173,000
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities:		
Accounts payable	$ 592,000	$ 1,877,000
Deferred revenues		101,000
Accrued payroll and related expenses	295,000	680,000
Other accrued expenses	1,859,000	2,063,000
Current portion of notes payable	98,000	95,000
Total current liabilities	2,844,000	4,816,000
Accrued interest payable	992,000	874,000
Notes payable, net of current portion	1,263,000	1,306,000
Total liabilities	5,099,000	6,996,000
Commitments and contingencies (Note 10)		
Stockholders equity:		
Series A convertible preferred stock no par value, 30,000,000 shares authorized; 2,652,000 shares issued and outstanding; liquidating preference at $0.60 per share as of December 31, 2008 and 2007	530,000	530,000
Series B convertible preferred stock no par value, 5,000,000 shares authorized; 546,000 shares issued and outstanding; liquidating preference at $2 per share as of December 31, 2008 and 2007	1,094,000	1,094,000
Common stock no par value, 750,000,000 shares authorized; 20,817,000 and 17,182,000 shares issued and outstanding as of December 31, 2008 and 2007, respectively	134,233,000	122,000,000

Stock notes receivable for the sale of preferred stock		
Additional paid-in capital	7,949,000	7,322,000
Accumulated deficit	(129,663,000)	(116,769,000)
Total stockholders equity	14,143,000	14,177,000
Total liabilities and stockholders equity	$ 19,242,000	$ 21,173,000

The accompanying notes are an integral part of these financial statements.

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ENOVA SYSTEMS, INC.

STATEMENTS OF OPERATIONS

	For the Years Ended December 31,	
	2008	**2007**
Revenues	$ 6,443,000	$ 9,175,000
Cost of revenues	8,224,000	10,313,000
Gross loss	(1,781,000)	(1,138,000)
Operating expenses		
Research and development	2,505,000	1,947,000
Selling, general & administrative	8,692,000	6,428,000
Total operating expenses	11,197,000	8,375,000
Operating loss	(12,978,000)	(9,513,000)
Other income and (expense)		
Interest and financing fees, net	202,000	343,000
Equity in losses of non-consolidated joint venture	(118,000)	(177,000)
Total other income, net	84,000	166,000
Net loss	$ (12,894,000)	$ (9,347,000)
Basic and diluted loss per share	$ (0.66)	$ (0.59)
Weighted average number of common shares outstanding	19,660,000	15,796,000

The accompanying notes are an integral part of these financial statements.

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ENOVA SYSTEMS, INC.

STATEMENTS OF STOCKHOLDERS EQUITY

Convertible Preferred Stock								
Series A		Series B		Common Stock		Notes Receivable for the Sale of Preferred	Additional Paid-in	Accumulated
ares	Amount	Shares	Amount	Shares	Amount	Stock	Capital	Deficit
52,000	$ 530,000	1,185,000	$ 2,432,000	14,848,000	$ 109,496,000	$ (27,000)	$ 6,955,000	$ (107,422,00
		(639,000)	(1,338,000)	28,000	1,338,000			
				44,000	193,000			
				2,218,000	10,767,000			
				28,000	138,000			
				16,000	68,000			
							367,000	
						27,000		
								(9,347,00
52,000	$ 530,000	546,000	$ 1,094,000	17,182,000	$ 122,000,000	$	$ 7,322,000	$ (116,769,00
				3,430,000	12,008,000			
				153,000	174,000			

				52,000	51,000			
							627,000	
								(12,894,00
52,000	$ 530,000	546,000	$ 1,094,000	20,817,000	$ 134,233,000	$	$ 7,949,000	$ (129,663,00