

CLEAN DIESEL TECHNOLOGIES INC  
Form 10-K  
March 27, 2013

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

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**FORM 10-K**

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**For the fiscal year ended: December 31, 2012**

**or**

**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.: 001-33710**

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**CLEAN DIESEL TECHNOLOGIES, INC.**

(Exact name of registrant as specified in its charter)

**06-1393453**

(I.R.S. Employer)

**Delaware**

Identification No.)

(State or other jurisdiction of  
incorporation or organization

**4567 Telephone Road, Suite 100**

**Ventura, CA 93003**

(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: **(805) 639-9458**

Securities registered pursuant to Section 12(b):

<u>Title of each class</u>	<u>Name of each exchange on which registered</u>
Common Stock, \$0.01 par value	The NASDAQ Stock Market LLC

Securities registered pursuant to Section 12(g): None

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Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in rule 405 of the Securities Act.  
Yes \_\_\_ No X

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 \_\_\_ No X

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 X No \_\_\_

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes X  
\_ No \_\_\_

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. X

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.

Large Accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
(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 Exchange Act). Yes \_\_\_ No X

The aggregate market value of the common equity held by non-affiliates of the registrant, computed by reference to the closing price as of the last business day of the registrant's most recently completed second fiscal quarter, June 30, 2012, was \$13,385,462. This calculation does not reflect a determination that persons are affiliates for any other purposes. The registrant does not have non-voting common stock outstanding.

As of March 22, 2013, the outstanding number of shares of the registrant's common stock, par value \$0.01 per share, was 7,303,069.

**Documents incorporated by reference:**

The registrant has incorporated by reference in Part III of this report on Form 10-K portions of its definitive Proxy Statement for the 2013 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission

within 120 days after the end of the registrant's fiscal year.

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**CLEAN DIESEL TECHNOLOGIES, INC.**

**Annual Report on Form 10-K  
For the Year Ended December 31, 2012**

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### **CAUTIONARY STATEMENT CONCERNING FORWARD-LOOKING STATEMENTS**

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, adopted pursuant to the Private Securities Litigation Reform Act of 1995. Forward-looking statements involve risks and uncertainties, as well as assumptions that could cause our results to differ materially from those expressed or implied by such forward-looking statements. Forward-looking statements generally are identified by the words “may,” “will,” “project,” “might,” “expects,” “anticipates,” “believes,” “intends,” “estimates,” “should,” “could,” “would,” “strategy,” “plan,” or the negative of these words or other words or expressions of similar meaning. All statements, other than statements of historical fact, are statements that could be deemed forward-looking statements. These forward-looking statements are based on information available to us, are current only as of the date on which the statements are made, and are subject to numerous risks and uncertainties that could cause our actual results, performance, prospects or opportunities to differ materially from those expressed in, or implied by, the forward-looking statements. For a discussion of such risks and uncertainties, please see the discussion under the caption “Risk Factors” contained in this Annual Report on Form 10-K and in other information contained in this annual report and our publicly available filings with the Securities and Exchange Commission. You should not place undue reliance on any forward-looking statements. Except as otherwise required by federal securities laws, we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events, changed circumstances or any other reason.

### **EXPLANATORY NOTE**

The terms “CDTi” or the “Company” or “we,” “our” and “us” means Clean Diesel Technologies, Inc. and its consolidated subsidiaries as of the date of this Annual Report on Form 10-K.

### **TRADEMARKS**

The Clean Diesel Technologies name with logo, CDT logo, CDTi name with logo, CSI<sup>®</sup>, CATALYTIC SOLUTIONS<sup>®</sup>, CSI logo, ARIS<sup>®</sup>, BARETRAP<sup>®</sup>, CATRAP<sup>®</sup>, COMBICLEAN<sup>®</sup>, COMBIFILTER<sup>®</sup>, MPC<sup>®</sup>, PATFLUID<sup>®</sup>, PLATINUM PLUS<sup>®</sup>, PURIFIER and design, PURIFILTER<sup>®</sup>, PURIMUFFLER<sup>®</sup>, TERMINOX<sup>®</sup> and UNIKAT<sup>®</sup>, among others, are registered or unregistered trademarks of Clean Diesel (including its subsidiaries).

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### PART I

#### ITEM 1. BUSINESS

##### Overview

We are a Delaware corporation formed in 1994 as a wholly-owned subsidiary of Fuel Tech, Inc., a Delaware corporation (formerly known as Fuel-Tech N.V., a Netherlands Antilles limited liability company) (“Fuel Tech”), and were spun off by Fuel Tech in a rights offering in December 1995. Since inception, and as set forth below, we have developed a substantial portfolio of patents and related proprietary rights and extensive technological know-how.

On October 15, 2010, we completed a business combination with Catalytic Solutions, Inc. (“CSI”), a California corporation formed in 1996, when our wholly-owned subsidiary, CDTI Merger Sub, Inc., merged with and into CSI. We refer to this transaction as the “Merger.” The Merger was accounted for as a reverse acquisition and, as a result, our Company’s (the legal acquirer) consolidated financial statements are now those of CSI (the accounting acquirer), with the assets, liabilities, revenues and expenses of CDTI being included effective from October 15, 2010, the closing date of the Merger. From November 22, 2006 through the closing date of the Merger, CSI’s common stock was listed on the AIM of the London Stock Exchange (AIM: CTS and CTSU).

We are a technology-focused, leading global manufacturer and distributor of heavy duty diesel and light duty vehicle emissions control systems and products to major automakers, integrators and retrofitters. We have over 30 years of experience in the heavy duty diesel systems market and proven technical and manufacturing competence in the light duty vehicle catalyst market meeting auto makers’ stringent requirements. Our business is driven by increasingly stringent global emission standards for internal combustion engines, which are major sources of a variety of harmful pollutants.

We are headquartered in Ventura, California and have operations in the United States, Canada, the United Kingdom, France, Japan and Sweden as well as a European joint venture and an Asian investment. Our heavy duty diesel systems and products are manufactured at our facilities in Reno, Nevada; Thornhill, Canada; and Malmö, Sweden and our proprietary catalyst products are manufactured at our facility in Oxnard, California.

##### Our Divisions

We operate in two primary divisions: our Heavy Duty Diesel Systems division and our Catalyst division.

- ***Heavy Duty Diesel Systems:*** Our Heavy Duty Diesel Systems division specializes in the design and manufacture of verified exhaust emissions control solutions. This division offers a full range of products for the verified retrofit and non-retrofit original equipment manufacturer, or OEM, and aftermarket markets through its distribution/dealer network and direct sales. Our Purifilter<sup>®</sup>, Purifier<sup>™</sup>, Combifilter<sup>®</sup>, Cattrap<sup>®</sup> and Actifilter<sup>™</sup> products, along with our catalyst technologies, are used to reduce exhaust emissions created by on-road, off-road and stationary diesel, and alternative fuel engines including propane and natural gas. We also provide Platinum Plus<sup>®</sup> fuel-borne catalyst technology, ARIS<sup>®</sup> airless return flow system technology and exhaust gas recirculation with selective catalyst reduction technologies.

Sales of emission control systems by our Heavy Duty Diesel Systems division are driven by the regulation of diesel emissions, particularly in the State of California. The U.S. Environmental Protection Agency, or EPA, estimated in a 2010 report that more than 11 million diesel engines operating today do not meet its new clean diesel standards, yet the engines can operate for 20 to 30 years. In California, government mandates could lead to the long-term retrofitting

of nearly one million diesel vehicles at an estimated cost of over \$2 billion, according to a California Air Resources Board, or CARB, 2010 report.

With our strong intellectual property portfolio, backed by over 30 years experience in vehicle emissions control technologies, we believe we offer one of the industry's most comprehensive portfolios of evaluated and EPA- and CARB-verified systems for use in engine retrofit programs, as well as by regulators in several European countries.

- *Catalyst*: Our Catalyst division produces catalyst formulations to reduce emissions from gasoline, diesel and natural gas combustion engines. Using our proprietary MPC® technology, we have developed a family of unique high-performance catalysts — with base-metals or low platinum group metal and zero-platinum group metal content — to provide increased catalytic function and value for technology-driven automotive industry customers. Our technical and manufacturing competence in the light duty vehicle market is aimed at meeting auto makers' most stringent requirements, and we have supplied over ten million parts to light duty vehicle customers since 1996. Our Catalyst division also provides catalyst formulations for our Heavy Duty Diesel Systems division.

Globally, the emission control catalyst market is estimated to reach \$7.7 billion by 2017, according to a report issued by Global Industry Analysts, Inc. in 2012. We expect growth in this division to be driven by increased sales to existing customers, including Honda, new OEM and aftermarket customers and internally to our Heavy Duty Diesel Systems division as well as through expansion into vertical markets that require emission reducing or low-platinum group metal and zero-platinum group metal- based technologies.

Financial information about our divisions can be found in Management's Discussion and Analysis of Financial Condition and Results of Operations and in Note 18 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. Financial information by geographic region is also included in Note 18 to our consolidated financial statements.

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### **Market Overview**

Regulatory standards have been adopted worldwide to control the toxic emissions of nitrogen oxide, particulate matter, carbon monoxide and carbon dioxide, from on- and off-road internal combustion engine exhaust. Because standards put in place by the EPA, CARB and other international regulators continue to become more restrictive, we view the markets for our products as continually expanding. According to a 2010 EPA study, on-road vehicles and off-road mobile sources (mostly gasoline and diesel engines) combined accounted for the largest emissions of nitrogen oxide and carbon monoxide in the United States, representing approximately 58% and 82%, respectively. The same study lists the combined sources as the second largest source of volatile organic compounds, at approximately 38%. The global market for catalyst materials to support emission control is estimated to exceed \$7 billion by 2017, while we believe the heavy duty diesel retrofit market is expected to grow to several hundred million.

Our heavy duty diesel systems and catalyst products are designed specifically to deal with emissions of nitrogen oxide, which produces smog; particulate matter (commonly referred to as soot), that contains over 40 known cancer-causing compounds according to CARB; volatile organic compounds, many of which are known to cause adverse health effects; and carbon monoxide, which reduces oxygen delivery within the body.

### ***Light duty vehicle regulations***

In 1970, the U.S. Congress passed the Clean Air Act, which required a 90% reduction in emissions from new automobiles by 1975, and resulted in the introduction of the first generation catalytic converter. In 1985, the EPA mandated stringent emission standards for diesel-fueled trucks and busses to begin in 1991 and 1994. Since that time, emissions regulations have continued to progress toward increasingly stringent control measures in geographic regions that still fail to attain the National Ambient Air Quality Standards. These regions are known as non-attainment areas. Additionally, CARB has put in place even tougher emission standards, and is often seen as a leader by other U.S. states when adopting their own emissions control regulations. Many European countries have been even more aggressive in implementing emissions controls. Although control measures have reduced pollutant emissions per vehicle over the past 40 years, the number of cars and trucks on the road and the miles they are driven have increased significantly in the United States. According to the EPA, the total vehicle miles people travel in the United States increased 178% between 1970 and 2005 and continues to increase. In the United States, there are more than 210 million cars and light duty trucks on the road.

As emissions standards have progressed, light duty vehicle manufacturers have moved to increasingly more advanced emission control technologies. Industry standards call for three-way catalytic converters that allow for simultaneous conversion of the three criteria pollutants: hydrocarbons, carbon monoxide and nitrogen oxide. In late 1998, to address light duty vehicle emissions, CARB adopted the Low Emission Vehicle II, or LEV II, program, which was followed by the EPA's Tier 2 program. Europe implemented similar regulations under Euro III (effective 2000), Euro IV (effective 2005), and Euro V (effective 2009). We currently supply our catalyst products featuring our proprietary MPC<sup>®</sup> technology to OEMs such as Honda, who's 2014 Plug-in Hybrid Accord was recently approved by CARB as the first gasoline-powered car to meet what is known as the SULEV20 standard, the most stringent standard in the nation.

### ***Diesel engine regulations***

The EPA has identified reducing emissions from diesel engines as one of the most important air quality challenges facing the United States today. According to a 2011 report prepared by the American Lung Association in California, over 90% of California residents live in areas with serious air quality problems, largely due to the transportation

sector. Additionally, analysis in the report in California shows that vehicles meeting current tailpipe standards will cause \$14.5 billion in public health and societal costs annually. In Europe, according to their website, the World Health Organization estimates that particulate matter claims an average of 8.6 months from the life of every person and that €58-161 billion could be saved if deaths from particulate matter pollution were reduced, noting that diesel combustion contributes 1/3 of total emissions of particulate matter less than 2.5 micrometers in diameter, or PM<sub>2.5</sub>. To address these issues, policies have been implemented in major markets across the globe that have significantly reduced diesel emissions relative to prior regulations. Increased regulations are expected to further reduce emissions levels.

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### *Regulatory programs driving the market — United States*

The EPA has established the National Clean Diesel Campaign in order to promote diesel emission reduction strategies and oversee regulatory programs that address new diesel engines as well as other innovative programs to address the millions of diesel engines already in use. Retrofitting of this fleet is estimated by the EPA to cost approximately \$7 billion, according to a 2005 National Clean Diesel Campaign fact sheet.

In the United States, heavy duty diesel retrofits have been driven primarily by subsidy programs supported under the Diesel Emissions Reduction Act, or DERA, the American Recovery and Reconstruction Act, or ARRA, Proposition 1B in California, the U.S. Department of Transportation's Congestion Mitigation and Air Quality Improvement program, or CMAQ, as well as various other state and local programs. The DERA program gave the EPA new grant and loan authority for promoting diesel emission reductions and authorized appropriations to the agency of up to \$200 million per year for 2007 through 2011. Congress appropriated funds for the first time under this program in 2008 in the amount of \$49.2 million. In addition, \$300 million was appropriated under ARRA, \$120 million was appropriated for 2009 through 2010 and \$49.9 million for 2011. In 2010, a DERA program bill was passed, providing authorization of up to \$100 million each year for the program from 2012 through 2016, subject to annual appropriations by Congress. In 2012, \$29.9 million was appropriated by Congress for the program. In several states, the DERA funding has been supplemented by local funds. California's Proposition 1B provided for \$1 billion in bond funds for a variety of emission reduction priorities, including heavy duty diesel retrofits. The purpose of the CMAQ program is to fund transportation projects or programs that will contribute to the attainment or maintenance of the national ambient air quality standards, or NAAQS, for ozone, carbon monoxide and particulate matter. Under this program, federal funding for emission reduction has been provided to states at an average of approximately \$1.6 billion to \$1.8 billion per year between 2005 and 2009. Funding under this program continues.

Several U.S. state, county and city governments have ongoing retrofit programs for on- and off-road diesel engines. As with many environmental issues, California has been a leader in driving increasingly tough emissions standards for heavy duty diesel vehicles. Historically, most retrofitting in California has been done voluntarily with support from grant programs like those outlined above. In 2010, California passed the Truck and Bus Regulation, which mandates that all 1996 through 2006 diesel trucks in Class 7 (gross vehicle weight of 26,001-33,000 pounds) and Class 8 (gross vehicle weight greater than 33,000 pounds) be retrofitted with diesel particulate filters, if not so equipped, to meet state emission standards between 2012 and 2016, with 90% required by 2014. We estimate that this rule will require well over 100,000 heavy duty diesel trucks to be replaced or retrofitted.

### *Global emissions regulations strengthening — Europe, Asia-Pacific, and others*

In Europe, air quality standards have been set within the European Union. One method being used to address increased air quality standards is the establishment of LEZs, 206 of which are in operation in 10 countries as of December 5, 2012 with others being planned in Europe and Asia. LEZs are areas or roads where vehicles are banned, or charged, if engine emissions exceed a set level. Stricter London LEZ regulations, which went into effect in early 2012, resulted in the successful retrofit of an estimated 17,000 heavy duty diesel vehicles during 2011 and early 2012. We believe our emission reduction systems were used to retrofit approximately 20% of those vehicles.

According to a 2012 Global Industry Analysts, Inc. report, developing markets such as Asia-Pacific, trailed closely by Latin America, are poised to experience robust growth in coming years in the midst of economic development and growing environmental concerns. Growth in these regions would also result from continued increase in the number of new motor vehicles registered. Another driving factor includes the growing number of countries, which are following

the developed countries' lead in adopting increasingly more stringent motor vehicle emission control programs.

We view the U.S. and European legislation and developing markets, requiring significant reduction in particulate matter and nitrogen oxide emissions from on- and off-road diesel vehicles, as providing an opportunity for growth of both our heavy duty diesel retrofit systems and catalyst products. Catalysts using traditional technology generally require high platinum group metal loadings to comply with these standards, and diesel engine manufacturers are very concerned about the high price of these units. We believe our low- and zero-platinum group metals catalyst products are able to effectively address this concern. Additionally, we believe that fleet owners and operators complying with existing on-road legislation and regulations will continue to seek out more cost-effective suppliers for existing retrofit technology applications.

### **Competitive Advantages**

Through persistent technology development, we maintain a broad portfolio of emission control products ranging from catalysts to complete retrofit or OEM systems. We believe that our technologies and products represent a fundamentally different solution, and the following competitive strengths position us as a leading global provider of emission control products and systems.

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### ***Broad Portfolio of Verified Heavy Duty Diesel Systems***

We believe we offer one of the industry's most comprehensive portfolios of system products that have been evaluated and verified (approved) by the EPA and CARB, as well as regulators in several European countries, for use in engine retrofit programs. Additionally, we have a thorough understanding of the verification process and the demonstrated ability to obtain broad verifications of products for use in the retrofit market.

Current techniques for retrofitting diesel engines to meet emissions standards require the use of several methods, including:

- *Diesel Oxidation Catalyst ("DOC")*: Used to break down pollutants in the exhaust stream, turning them into less harmful compounds. When combined with our closed crankcase ventilation system, our AZ Purifier™ and AZ Purimuffler® DOCs can reduce particulate matter by up to 40%. Our line of DOC products also includes DZ and EZ Purifier™.
- *Diesel Particulate Filter ("DPF")*: Used to remove particulate matter from diesel engine exhaust. Our systems can reduce particulate matter by up to 90% or more. Our products are sold under the Purifilter®, Purifier™, Cattrap®, Combifilter® and Actifilter™ brand names.
- *Selective Catalytic Reduction ("SCR")*: An after-treatment process in which urea is injected into the exhaust stream to chemically react with nitrogen oxide to create diatomic nitrogen, carbon dioxide, and water. Our SCR systems reduce up to 90% of nitrogen oxide and can meet EPA and Euro standards.
- *Urea Injection*: Reducing agents are injected into the exhaust stream for applications such as (i) lean nitrogen oxide traps, (ii) catalyzed diesel particulate filter regeneration systems, and (iii) urea injection for selective catalytic reduction. Our patented Advanced Reagent Injection System, or ARIS®, for selective catalytic reduction reduces nitrogen oxide by up to 90%.
- *Enhanced Gas Recirculation ("EGR")*: Reduces nitrogen oxide when starting a cold engine and re-circulates part of the exhaust gas stream to reduce engine-out nitrogen oxide emissions. Used in combination with SCR to meet the strictest nitrogen oxide reduction criteria. We have patented intellectual property holdings for the design and implementation of EGR/SCR systems and have licensed these patents to several industry providers.
- *Closed Crankcase Ventilation Systems*: Assist in elevating the level of exhaust emission reduction by eliminating crankcase emissions. Our closed crankcase ventilation system is a truly closed crankcase ventilation system that effectively eliminates 100% of crankcase emissions at all times.

### ***Superior Catalyst Performance***

Our proprietary MPC® technology enables us to produce catalytic coatings capable of significantly better catalytic performance than previously available. We have achieved this demonstrated performance advantage by creating a catalyst using unique nanostructures with superior stability under prolonged exposure to high temperatures. This nanostructure technology enables the oxide catalysts in its compounds to resist sintering, or fusing, thereby maintaining a high catalytic surface area. As a result, in heavy duty diesel and automotive applications, our catalyst formulations are able to maintain high levels of performance over time using substantially lower – or zero – platinum group metals than products previously available.

*Catalyst Cost Advantage*

In the automotive market in particular, where platinum group metal costs represent a large portion of manufacturers' costs, a significant benefit of our catalyst technology is that it offers performance equal to or exceeding that of competing catalytic coatings with up to a 60% reduction in platinum group metal loadings — platinum, palladium and rhodium. The cost of platinum group metals has trended up over the past 15 years due to growing demand and limited supply. In 2012, the average troy ounce costs of platinum group metals were \$644 for palladium, \$1,551 for platinum and \$1,270 for rhodium compared to the base metals used in certain of our catalysts that cost less than \$1 per troy ounce.

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### ***Highly Customizable Catalyst Formulations***

Our proprietary MPC® technology is a design approach, as opposed to a single chemical formulation. We have developed this technology since inception as a platform that can be tailored for a range of different industrial catalyst applications. Specifically, our formulations can be tailored in two distinct ways. First, the oxide compounds used in our formulations can be adapted for specific applications by adding to them, or doping them with, a wide range of chemical elements, a process known as tuning. By contrast, the catalyst offerings of our competitors can be tuned only by adjusting the platinum group metal content. Second, we are able to vary the mixtures of our compounds to create customized solutions for specific applications. In the emissions control market, these two independent design mechanisms allow for customization and optimization for different vehicle platforms within the auto industry, complex heavy duty diesel equipment for OEMs, aftermarket and retrofit markets, and for different applications in the energy sector, such as selective catalytic reduction nitrogen oxide control for industrial and utility boilers, process heaters, gas turbines and generator sets. In addition, the material science underlying our MPC® technology could have applications where reduction in platinum group metals would provide cost advantages. These could include applications in the fuel cell, petrochemical and refinery, and thermoelectric industries.

### ***Proven Durability***

Our products and systems have undergone substantial laboratory and field testing by our existing and prospective customers and have demonstrated their durability and reliability in a wide range of applications in actual use for many years. In addition, our products and systems have achieved numerous certifications and meet or exceed industry standards. Of particular note, our Catalyst division has supplied over 10 million catalyst parts to light duty vehicle customers since 1996.

### ***Compatibility with Existing Manufacturing Infrastructure and Operating Specifications***

Catalytic converters using our catalyst products are compatible with existing automotive manufacturing processes as well as specific vehicle operating specifications. There is no need for our customers to change their manufacturing operations, processes, or how their products operate in order to utilize our proprietary technology. Our heavy duty diesel emission control products and solutions are engineered to each customer's specific application and designed to deliver custom and industry-leading solutions that meet or exceed environmental mandates.

### **Strategy**

Our strategy is to grow a diversified, vertically integrated emissions control business. We are focused on certain segments of the light duty vehicle and heavy duty diesel market that will benefit most from our catalyst technology and strengths in the heavy duty diesel systems space. Key elements of our growth strategy include:

- *Vertical Integration.* We expect to continue to leverage our vertical integration to provide a variety of operational benefits within each of our divisions, including reduced manufacturing and delivery times, lower costs, direct sourcing of raw materials and improved quality control. By leveraging our vertical integration, we believe we can provide significant added value to our customers through our full range of service offerings, including catalyst design and customization, subsystem concept design and application engineering, product prototyping and development, and efficient pre-production, short-run and high-volume manufacturing. Additionally, we expect that our ability to supply our own manufactured catalyst products to our Heavy Duty Diesel Systems division, a capability that is unique in the emission control industry, will help drive improvements in gross margin.

- *Capitalize on growing market for heavy duty diesel systems.* We believe the heavy duty diesel market should grow substantially over the next decade as new emission reduction targets for particulate matter and nitrogen oxide reduction are legislated in North America and Europe, and similar legislation is enacted in major countries such as China and India. We intend to focus on developing sustainable, repeat business for our heavy duty diesel systems products through increased sales resources and increased coverage. In addition, in the near term, we plan to continue to invest in our sales and distribution networks in North America, particularly in California, where near-term retrofit programs are expected to result in increased demand for our heavy duty diesel systems. With a broad array of existing products, new products in the pipeline and the benefit of our catalyst technology, we expect to benefit from this market growth. Our distribution channels include over 125 distributors and dealers worldwide, nearly 100 of which are in the United States.
- *Focused growth of catalyst business.* Over the last several years, our Catalyst division has made several advances in low- and zero-platinum group metal technology, as well as in the ability to tailor catalyst performance to particular environments. In addition, our catalyst technology has been proven to provide benefit outside the traditional light duty vehicle and gasoline markets such as the heavy duty diesel markets, including through our own Heavy Duty Diesel Systems division. Our Catalyst division intends to focus on gaining more business from existing light duty vehicle customers and on selectively acquiring new customers who value the benefits of our technology. In addition, this division plans to increase its presence in the growing on- and off-road heavy duty diesel catalyst markets through organic growth and key partnerships.
- *Partnerships and acquisitions.* We plan to seek partnerships that may encompass technology sharing, manufacturing or distribution in order to expand our presence in the catalyst and heavy duty diesel on- and off-road markets. Opportunities to monetize our intellectual property estate outside these areas may be pursued through sale and licensing or partnerships to maximize the return on our investment. We have a commercial joint venture with Pirelli & C. Ambiente SpA (described below under “—Sales and Marketing—Pirelli Joint Venture”) and our Catalyst division has an investment in Asia (described below under “—Sales and Marketing—Asian Investment”). Our Heavy Duty Diesel Systems division has been strengthened through the expansion of our North American distribution channel and through partnerships with major companies operating in the on-road heavy duty diesel market (e.g., Navistar and PACCAR). We may selectively enter into new partnerships to acquire new technologies or distribution capabilities, as well as to expand our presence in industries outside of emissions control such as the fuel cell, petrochemical and refinery and thermoelectric industries. In addition, given the fragmented nature of this industry, we will continue to evaluate the acquisition of complementary businesses.
- *Technology licensing and sale.* We have on occasion licensed some of our various technologies to third parties for royalties and fees. We intend to further develop this source of revenue in order to better monetize our technology and intellectual property portfolio.

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### **Technology**

We have succeeded in developing a world-class technology portfolio to meet and exceed regulatory emission standards around the globe. In particular, our MPC<sup>®</sup> and Platinum Plus<sup>®</sup> fuel-borne catalyst technologies, as well as our diesel particulate filter and selective catalytic reduction system design and packaging know-how, are at the core of our business.

Our Catalyst technologies include:

#### MPC<sup>®</sup>

We have developed and patented intellectual property rights to a novel technology for creating and manufacturing catalysts known as mixed phase catalyst (MPC<sup>®</sup>). This technology involves the self-assembly of a ceramic oxide matrix with catalytic metals precisely positioned within three-dimensional structures. The MPC<sup>®</sup> design gives our catalyst products two critical attributes that differentiate them from competing offerings: superior stability that allows heat, resistance and high performance with very low levels of precious metals; and base metal activation that allows base metals to be used instead of costly platinum group metals without compromising catalytic performance.

#### Platinum Plus<sup>®</sup>

We have developed and patented our Platinum Plus<sup>®</sup> fuel-borne catalyst as a diesel fuel soluble additive, which contains minute amounts of organo-metallic platinum and cerium catalysts. Platinum Plus<sup>®</sup> enables rapid conversion of particulate matter from diesel engines when coupled with a diesel particulate filter. It also improves combustion, which acts to reduce engine-out emissions. Platinum Plus<sup>®</sup> fuel-borne catalyst takes catalytic action into engine cylinders where it improves combustion, thereby reducing particulates, unburned hydrocarbons and carbon monoxide emissions. Thus, Platinum Plus<sup>®</sup> fuel-borne catalyst lends itself to a wide range of enabling solutions including diesel particulate filtration, low emission biodiesel, carbon reduction and exhaust emission reduction. Environmentally conscious corporations and fleets can utilize this solution to voluntarily reduce emissions.

Our selective catalytic reduction systems design and packaging know-how includes:

#### ARIS<sup>®</sup>

We have developed technology for selective catalytic reduction using urea, which is a highly effective method of reducing oxides of nitrogen. ARIS<sup>®</sup> technology forms a key part of the selective catalytic reduction system and is an advanced, computer-controlled, reagent injection system. Our ARIS<sup>®</sup> technology applies to single-fluid systems, methods of control and the combination of selective catalytic reduction with exhaust gas recirculation technology. It covers a concept for injecting urea into the engine exhaust where it reacts across a catalyst to reduce oxides of nitrogen and water vapor. ARIS<sup>®</sup> technology also provides reliable hydrocarbon (HC) injection into the exhaust stream for applications including lean NOx traps, reformer systems and diesel particulate filter active regeneration. Effective heat removal and reliable, trouble-free fuel injection for durable exhaust emissions systems performance is a paramount consideration for designing OEM and retrofit solutions. We have numerous U.S. and corresponding international patents on the use of ARIS<sup>®</sup> technology.

#### Exhaust Gas Recirculation and Selective Catalytic Reduction

Exhaust Gas Recirculation, or EGR, and Selective Catalytic Reduction, or SCR, are technologies developed in the global transportation industry by manufacturers of diesel powered equipment. In order to meet the standards of oxides of nitrogen emissions defined by the EPA and other global environmental regulation agencies. In 1997, we developed and patented the concept of combined use of EGR and SCR to minimize emissions and take advantage of the benefits each can bring in terms of oxides of nitrogen reduction. As legislation tightens across the globe, we believe EGR in combination with SCR is a key solution to meet strict oxides of nitrogen solutions. Previously seen as competing approaches, combined EGR/SCR allows users to meet strict oxides of nitrogen levels outlined by the U.S. 2010 and Euro 6/VI emission standards. The EGR system can be activated to reduce oxides of nitrogen when starting a cold engine. The SCR operates at a higher temperature when the catalyst is fully active and at low EGR rates. With both EGR and SCR in place, engines can be fine-tuned to optimize fuel efficiency and deliver greater emissions reduction. We have intellectual property holdings for the design and implementation of these combination systems and have licensed these patents to several industry providers.

We protect our proprietary technologies, along with our other intellectual property, through the use of patents, trade secrets and registered and common law trademarks. See “— Intellectual Property” below.

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### Products

#### *Heavy Duty Diesel Systems Division*

Our Heavy Duty Diesel Systems division offers a full range of products globally for OEM, occupational health driven and verified retrofit markets for the reduction of exhaust emissions of on-road, off-road and stationary diesel and alternative fuel engines including propane and natural gas. These division products include diesel oxidation catalysts, diesel particulate filters, closed crankcase ventilation systems, exhaust gas recirculation/selective catalytic reduction technologies, alternative fuel products and exhaust accessories.

#### Diesel Oxidation Catalysts

A diesel oxidation catalyst is a device that utilizes a chemical process in order to break down pollutants from diesel engines in the exhaust stream, turning them into less harmful components. They are normally a honeycomb shaped configuration coated in a catalyst designed to trigger a chemical reaction to reduce gaseous emissions and particulate matter. A diesel oxidation catalyst is an excellent example of a device that can be utilized to upgrade a diesel engine or “retrofit” it in order to pollute less. Diesel oxidation catalysts typically reduce emissions of particulate matter by 20% to 40% or more and gaseous emissions by 50% to 70%. Our line of diesel oxidation catalysts includes AZ Purifier,<sup>TM</sup>AZ Purimuffler<sup>®</sup> and DZ and EZ Purifier.<sup>TM</sup>

- AZ Purifier<sup>TM</sup> and AZ Purimuffler<sup>®</sup> diesel oxidation catalysts, when combined with our closed crankcase ventilation systems, increase EPA verified particulate matter reduction to 40% for most 1991 to 2004 medium and heavy duty on-road engine applications.
- DZ and EZ Purifier<sup>TM</sup> diesel oxidation catalysts, supported on a metallic substrate, afford exceptional resistance to vibration and the lowest possible exhaust backpressure. Our DZ series of diesel oxidation catalysts were the first in the industry to feature quick release band clamps. This allows the center body to be readily removed for periodic engine-out opacity measurements or for purifier cleaning. The DZ Purifier<sup>TM</sup> is also available with modular add-on DMS and DMXS silencers. The EZ Purifier<sup>TM</sup> offers the same metallic substrate based catalyst as the DZ Purifier<sup>TM</sup> but in an all-welded purifier to afford the most compact size and lower cost. These types of products are typically industry standard on underground mining equipment.

#### Diesel Particulate Filters

A diesel particulate filter is a device designed to remove diesel particulate matter, or soot, from the exhaust of diesel engines. Diesel particulate filters typically remove more than 85% to 90% of the soot found in diesel emissions. Diesel-powered vehicles that are equipped with a diesel particulate filter emit no visible black carbon emissions from the exhaust pipe and are far less harmful to the environment and the general health of people in the vicinity. A diesel particulate filter system collects the soot from the engine in the filter and then oxidizes, or “burns-off,” the collected soot to effectively clean itself in a process called regeneration. Periodically the filter can become filled with compounds that cannot be oxidized and the filter must be removed and cleaned of the non-combustible components through the use of an approved cleaning machine. Diesel particulate filter systems utilize two methodologies to regenerate the filter: (1) passive filter regeneration, which uses heat generated by the exhaust to oxidize soot; or (2) active filter regeneration, where external energy sources are employed to initiate filter regeneration. We market both passively and actively regenerating diesel particulate filters under the Purifilter<sup>®</sup>, Combifilter<sup>®</sup>, Purifier,<sup>TM</sup> Actifilter<sup>TM</sup> and Cattra<sup>®</sup> brand names.

- Purifilter® was the first passively regenerating diesel particulate filter to attain an industry-leading 90% particulate matter emissions reduction credit value from the EPA. We believe our Purifilter® is more effective than competing products as it is manufactured with a silicon carbide substrate and precious metal catalyst coating, providing superior filtration and durability compared to other diesel particulate filter materials. Under common operating conditions, Purifilter® automatically oxidizes accumulated particles. CARB verified Purifilter® as a Level 3+ reduction technology, reducing particulate emissions by at least 85%.
- Combifilter® is an actively regenerated diesel particulate system that typically removes over 90% of particulate matter while reducing nitrogen dioxide emissions. The system is comprised of electric heating elements integrated with a diesel particulate filter and silencer assembly. Periodically the system is plugged into an off-board regeneration control panel or station to energize the electric heating elements to regenerate the filter when the vehicle is not in service. Unlike passively regenerating diesel particulate filters that rely on minimum exhaust temperature conditions to initiate the catalytic oxidation of accumulated soot, Combifilter®-equipped engines are simply plugged in when not in service to heat the filter to a temperature where oxygen can directly oxidize the soot. Ideal applications include underground coal mining, material handling, landfill, and off-road municipal fleets.
- Purifilter® Plus combines the advanced diesel particulate filter technology of Purifilter® with the electrical heating elements of Combifilter®. The system can be engaged when needed to perform through diesel particulate filter regeneration – maximizing vehicle uptime across a variety of highway and urban drive cycle applications. Verified by CARB as a Level 3+ reduction technology, this combination increases Purifilter® tolerance of colder duty cycles or duty cycle variations and provides a proactive fleet management tool that improves vehicle uptime and insures low backpressure and peak fuel economy. Periodic active regeneration via connection to a common off-board regeneration station allows on-board filter service that virtually eliminates the need to remove a diesel particulate filter except for de-ashing at 1,500 engine hour intervals. Purifilter® Plus provides fleet managers the ability to readily maintain optimum vehicle performance and uptime while minimizing diesel particulate filter maintenance. This system is ideal for centrally-located fleets and fleets where trucks have access to off-board regeneration control panels like cargo handling at ports, school buses or rental construction fleets that need a quick way to insure the condition of diesel particulate filters installed on rental equipment to a wide variety of customers with different equipment uses.
- Purifilter® EGR is a passively regenerating diesel particulate filter that is compatible with a variety of EGR (exhaust gas recirculation)-equipped vehicles as well as those without EGR systems. Purifilter® EGR uses the silicon carbide filter media from our other field-proven Purifilter® models and augments it with our proprietary MPC® technology, an upstream diesel oxidation catalyst and highly-efficient thermal insulation. As a result, the CARB-verified Purifilter® EGR provides up to 85% particulate matter reduction and highly-effective exhaust heat retention for effective regeneration performance at reduced exhaust temperatures. Due to its advanced design, Purifilter® EGR offers capabilities that minimize potential failure points and unit installation time versus competitive diesel particulate filters.
- Purifier™ e4 systems combine modern durable filter hardware with a choice of catalytic technologies to suit driving styles and duty cycles. This allows operation over a much greater range of conditions compared to traditional filter solutions, especially in low-temperature applications – very typical of London-centric operators. Our Purifier™ family of diesel particulate filters include: Purifier™ e4 Urban, which combines our Platinum Plus® fuel-borne catalyst technology with a passive regeneration filtration system for demanding applications such as high sulfur or urban environments; Purifier™ e4 Highway system, which combines a filter catalyzed with our unique MPC® technology with a diesel oxidation catalyst to provide a durable, high-performance, low-maintenance solution ideal for fleets in mixed and highway operating conditions; and Purifier™ e4 Hybrid, which combines our Purifier™ e4 Highway system with our Platinum Plus® fuel-borne catalyst technology to provide the best possible passive

regeneration performance for the most demanding urban operations.

- Actifilter™ DB is a diesel particulate filter system which efficiently removes particulate matter from diesel exhaust gas by up to 96% and also functions as a silencer. The collected soot is burned off using an integrated diesel burner while the vehicle is idling. The filter is mounted horizontally in the exhaust system in place of the original silencer. A control unit is installed on the vehicle close to the diesel particulate filter and is connected to the engine's fuel return line and to the engine's battery. Regeneration takes place in a controlled manner. At a preset backpressure or preset operation time, a dash mounted display indicates to the driver that it is time for regeneration. The vehicle is then driven to a suitable place for regeneration, the engine is left to idle and regeneration is initiated by pressing a button on the display unit. Actifilter™ DB can also be combined with our diesel oxidation catalyst to reduce gaseous pollutants such as carbon monoxide and hydrocarbons.
- Cattrap® is a passively regenerating diesel particulate filter designed specifically for mining and other heavy industrial applications. Cattrap® employs an advanced base metal soot ignition catalyst system that eliminates diesel particulate emissions by 85%, while actually reducing toxic nitrogen dioxide emissions. Because it is listed on the U.S. Mine Safety Health Administration (MSHA) Table 2 List of Diesel Particulate Matter Control Technologies, our Cattrap® can be employed in mining environments where most other diesel particulate filters cannot due to the limits of nitrogen dioxide increase placed on underground devices.

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### Closed Crankcase Ventilation Systems

Unlike exhaust emissions, crankcase gases on pre-2010 model year engines would normally escape into the environment through the crankcase vent tube. Newer engines are now mandated to employ crankcase ventilation. Contaminated crankcase emissions are a serious problem for diesel engine owners and the environment. These emissions are a result of gas escaping past the piston rings due to high cylinder pressure into the crankcase. In the crankcase, these gases are contaminated with oil mist, water, etc. These contaminated emissions escape through the engine breather into the engine compartment and the engine intake system or into the environment in general. Closed crankcase ventilation systems assist in elevating the level of exhaust emission reduction by eliminating crankcase emissions.

In combination with select emission control solutions, our verified closed crankcase ventilation system elevates the level of exhaust emission reduction by eliminating crankcase emissions. Unlike exhaust emissions, crankcase gases normally escape into the environment through the crankcase vent tube. Our closed crankcase ventilation system is a truly closed crankcase ventilation system that effectively eliminates 100% of crankcase emissions at all times. The system is designed to improve passenger compartment air quality, which is particularly important in all types of buses (school, shuttle, urban, etc.), as well as refuse and municipal fleets, while improving air quality for personnel working in the vicinity of an operating piece of equipment. In addition, the system increases efficiency by reducing fouling in the engine compartment of charge air coolers, radiators, etc. Closed crankcase ventilation systems have been proven by the EPA to reduce pollutants released from closed crankcases when combined with a diesel oxidation catalyst, by up to 40%. When paired with a diesel oxidation catalyst, our closed crankcase ventilation systems can lead to a cleaner engine environment, improve vehicle and equipment reliability with less need for maintenance, keep the engine compartment as well as components cleaner, and, reduce the use of oil and lower vehicle operating costs. Our line of closed crankcase ventilation systems are EPA verified in connection with our AZ Purifier™ and AZ Purimuffler® diesel oxidation catalyst products, helping customers not only lower emissions, but lower operating costs as well.

### Alternative Fuel Products

We design and supply verified products to address the emissions issues of liquefied petroleum gas and compressed natural gas fueled engines used in industrial applications such as forklifts, aerial platforms, etc.

- We have been providing three-way catalyst technology in both integrated muffler form and catalytic converter style to OEMs and manufacturers of record since the inception of the Large Spark Ignited Regulation by the EPA and CARB. We have the capability to work with manufacturers of record through initial catalyst screening, rapid prototyping, rapid aging and thorough durability analysis. Our ability to provide turnkey solutions and leverage cutting-edge technology for reducing platinum group metals stabilizes cost and cost fluctuation through a platform program.
- We also offer a two-Way Purimuffler® product for liquefied petroleum gas, and gasoline industrial engines. The two-Way Purimuffler® product features a built-in tube, referred to as a venturi, which introduces additional air into the catalytic muffler to insure high conversion of deadly carbon monoxide and reduction of hydrocarbon odors over the catalyst while preventing excessive exhaust temperatures.

### Exhaust Accessories and Specialty Parts

We manufacture a wide array of exhaust accessories including connectors, elbows, mounting brackets, clamps, exhaust stacks and guards, and intake air components. These exhaust accessories are used as aftermarket replacement

components or in the installation of OEM and verified retrofit products.

- CombiClean® systems utilizes economical, safe and environmentally friendly technology developed to clean diesel filters, whether it is a passive filter, or active, cordierite or silicon carbide filter. The cleaning process uses a gradual temperature increase with a constant air supply during the regeneration process in order to prevent damage to catalytic coatings and substrate materials. These systems are typically contained within stand alone units with protective enclosures to prevent injury due to accidental contact with hot surfaces and to prevent employee exposure to suspended air particles.
- Back Pressure Monitor and Logger provides onboard monitoring of retrofitted emissions control systems, providing the operator notification of required maintenance. The Back Pressure Monitor and Logger also logs information for diagnostic purposes to facilitate engine and emission control system maintenance and reduce downtime.

We also manufacture and distribute large diesel and natural gas exhaust and intake parts as well as fenders, catalytic converter components, numerous brackets, guards and clamps for mounting and sealing components. We also produce exhaust and intake components for racing enthusiasts and manufacture intake and exhaust components for off-road and mining equipment as well as diesel and natural gas generators. We have the ability to react quickly to requests for quotes and the manufacture of specialty items. We manufacture components in carbon, aluminized and stainless steel.

### ***Catalyst Division***

Our Catalyst division currently produces catalyst formulations for gasoline, diesel and natural gas induced emissions that offer superior performance, proven durability and cost effectiveness for multiple markets and a wide range of applications. The Catalyst division products include catalysts for gasoline (light duty vehicle) engines, diesel engines and for energy applications.

#### Catalysts for Gasoline (Light Duty Vehicle) Engines

Three-way catalytic converters have been the primary emission control technology on light-duty gasoline vehicles since the early 1980's. Our technology for light duty vehicles significantly improves catalytic performance, is highly durable and cost-effective. We have developed unique nanostructures that are extremely thermally stable and resistant to sintering. Catalytic converters using our technology have superior catalytic performance, can cost substantially less as a result of significantly reduced platinum group metal or zero-platinum group metal loadings, have comparable or better durability and are physically and operationally compatible with all existing manufacturing processes and operating requirements. Our solution is based on industry-leading, patent-protected technology and a scalable manufacturing business model.

#### Catalysts for Diesel Engines

Diesel engines are more durable and are more fuel efficient than gasoline engines, but can pollute significantly more. Current techniques for diesel engines to meet emissions standards require the use of several methods, including diesel oxidation catalysts, catalyzed diesel particulate filters and selective catalytic reduction systems. We have been producing diesel oxidation catalysts since 2000. We offer a full range of catalyst products for the control of carbon monoxide, hydrocarbons, particulate matter and nitrogen oxide in light and heavy duty applications.

#### Catalysts for Energy Applications

We have developed and can manufacture catalysts for use in selective catalytic reduction and carbon monoxide reduction systems, which are used to reduce nitrogen oxide and carbon monoxide emissions from natural gas and

petroleum gas burning utility plants, industrial process plants, OEMs, refineries, food processors, product manufacturers and universities. Our customized catalysts provide design flexibility and our proprietary MPC<sup>®</sup> coating technology allows for optimal temperature operation of the plant and an overall superior system design when compared to existing technologies. We have achieved this demonstrated performance advantage by creating a catalyst using unique nanostructures with superior stability under prolonged exposure to high temperatures.

In addition to the portfolio of products already developed from our proprietary MPC<sup>®</sup> technology platform, we have a pipeline of new products under development. We are working on the next generation of our current product offerings and in growing the portfolio of zero-platinum group metal products and verified technologies.

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### **Other potential applications**

Our disruptive and unique MPC<sup>®</sup> technology provides a number of potential vertical market opportunities for us that we are focused on pursuing. These opportunities arise from our ability to reduce the use of platinum group metals and even eliminate the platinum group metal content. Other than the emission reduction market, we believe that the fuel cells market, petrochemicals catalyst market and the thermoelectric market may provide us the opportunity to use our MPC<sup>®</sup> technology to develop and sell or license products.

## **Sales and Marketing**

We sell our heavy duty diesel system products to customers worldwide through a network of over 125 dealers and distributors as well as directly to OEM customers. The dealers and distributors receive a discount from list price or a commission, which varies depending on the product sold. Customers purchase these heavy duty diesel system products to reduce emissions for either retrofit or OEM applications. Retrofit applications generally involve funded projects that use “approved systems” that are one-off in nature. Typical retrofit end-user customers include school districts, municipalities and other fleet operators. OEM customers include manufacturers of heavy duty diesel equipment, such as mining equipment, vehicles, generator sets and construction equipment. The market for our heavy duty diesel systems products is heavily influenced by government funding of emissions control projects. In addition, adoption and implementation of diesel emission control regulations drives demand for our products.

The catalyst industry is mainly comprised of a few suppliers serving large, sophisticated customers such as automobile manufacturers. Purchase cycles for catalysts tend to be long, resulting in generally predictable and stable revenue streams. Catalysts are technology intensive products that have a profound effect on the performance of the large, expensive systems in which they are embedded. Extensive interaction is required between catalyst manufacturers and their customers in the course of developing an effective, reliable catalyst for a particular application. For this reason it would appear that even the largest customers prefer to work with only two or three preferred catalyst suppliers on a specific application. The collaboration required for catalyst development and the technical hurdles involved in making effective and reliable catalysts create barriers to entry and provide an opportunity for catalyst manufacturers to earn attractive margins. We are an approved supplier of catalysts for major automotive manufacturers, such as Honda. In addition, the Catalyst division targets large heavy duty diesel engine manufacturers as potential buyers of our catalyst products and explores potential vertical markets for utilization of our technologies. Our Heavy Duty Diesel Systems division is also a customer of our catalyst products.

A significant portion of Catalyst division sales to external customers in 2012 and 2011 were made to Honda. Sales to Honda represented 75% and 56% of Catalyst division revenues and 30% and 19% of consolidated revenues for the years ended December 31, 2012 and 2011, respectively. A significant loss in sales to Honda could have a material adverse effect on our business.

Our total backlog of confirmed orders was approximately \$4.7 million at December 31, 2012 and \$7.8 million at December 31, 2011. We expect to fulfill the confirmed orders as of December 31, 2012 during 2013.

### *Asian Investment*

We have an investment in TC Catalyst Incorporated (“TCC”), an entity that manufactures and distributes catalysts in the Asia-Pacific territories including, among other countries, China, Japan and South Korea. In 2009, we sold and transferred specific three-way catalyst technology and intellectual property for use in the defined area to our investment partner in TCC, Tanaka Kikinzoku Kogyo Kabushiki Kaisha (“TKK”), who agreed to provide that intellectual property to TCC on a royalty-free basis.

#### *Pirelli Joint Venture*

In February 2013, we entered into a joint venture agreement (the “Joint Venture Agreement”) with Pirelli to form a joint venture entity, Eco Emission Enterprise Srl (E CUBE) under the laws of Italy (the “Joint Venture”), to jointly sell our emission control products in Europe and the CIS countries. The Joint Venture Agreement provides that we and Pirelli will each hold 50% of the total issued share capital of the Joint Venture. Operations under the Joint Venture began in March 2013.

#### **Competition**

Our Heavy Duty Diesel Systems division competes directly against other companies that market verified products. In North America, our key competitors with verified products include: Donaldson Company, Inc., ESW, Inc., Hug Filtersystems and Johnson Matthey plc. In Europe, we compete with a number of companies, including Dinex Exhausts Ltd, Eminox Ltd, Huss Group and HJS Emission Technology.

The catalyst industry is concentrated with a few major competitors as a result of continuing consolidation through acquisitions. The major competitors are diversified enterprises with catalysts representing one of several lines of business. Our Catalyst division competes directly against BASF GmbH, Johnson Matthey plc and Umicore Limited Liability Company.

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### **Manufacturing Operations**

Our Heavy Duty Diesel Systems division engineers our emissions control products to customer-specific applications. We believe that this approach reduces installation or assembly time and optimizes operating uptime. Our Heavy Duty Diesel Systems division works as the customer's partner to deliver custom, industry-leading solutions that address each customer's particular environmental mandates. Our heavy duty diesel systems are designed and manufactured in facilities located in Reno, Nevada; Thornhill, Ontario; and Malmö, Sweden.

Our Catalyst division developed an innovative and sophisticated manufacturing process for coating substrates using our MPC<sup>®</sup> catalytic coatings. The manufacturing process consists of mixing specially formulated catalytic coatings, applying the coatings to ceramic substrates, then firing the coated substrates in a furnace. The process of mixing and applying the various types of coatings onto high cell density substrates is complex and requires sophisticated manufacturing technology. We have been manufacturing automotive catalysts since 1999. Our manufacturing lines are designed to provide a high level of quality control at every step of the unique manufacturing process. We manufacture our proprietary catalyst products in our manufacturing facility in Oxnard, California.

We maintain ISO 9001:2008, ISO/TS 16949:2009 and ISO 14001:2004 certifications.

Our raw material requirements vary by division. Our Catalyst division purchases ceramic substrates that we coat with specialty formulated catalysts comprised of platinum group metals and various chemicals. Platinum group metals are either provided on a consignment basis by the customers of the division or are purchased by us on behalf of the customer. Our Heavy Duty Diesel Systems division purchases filters, filters coated with catalysts and other materials to manufacture our emission systems, which are purchased from third party suppliers as well as internally from our Catalyst division.

### **Intellectual Property**

Our intellectual property includes patent rights, trade secrets and registered and common law trademarks. Historically, we have primarily protected our intellectual property, particularly in the area of three-way catalysts (and particularly in the automotive area) by maintaining our innovative technology as trade secrets. We believe that the protection provided by trade secrets for our intellectual property was the most suitable protection available for the automotive industry where our business initially started and in which we currently sell our commercial products. Our automotive competitors largely rely on trade secret protection for their innovative technology.

Since we began pursuing additional catalyst markets, we have sought patent protection in relation to any new industries and new countries in which we expect to do business. We currently have 162 issued patents and 53 pending applications covering the following main technologies: fundamental catalyst formulations based on perovskite mixed metal oxides applicable to all catalyst markets, Mixed Phase Catalyst (MPC<sup>®</sup>) technology, platinum group metal-free catalyzed diesel particulate filter, selective catalytic reduction, diesel oxidation catalyst, zero-platinum group metal three-way catalyst formulations, fuel-borne catalysts, exhaust gas recirculation with selective catalytic reduction and exhaust systems for diesel engines incorporating particulate filters.

We have conducted an analysis of our technologies and intellectual property and have decided to aggressively patent our important technologies going forward. While we continue to rely on a combination of trade secrets, know-how, trademark registrations, confidentiality and other agreements with employees, customers, partners and others, we intend to strengthen our position through the prosecution of patents to protect our intellectual property rights pertaining to our products and technology.

We currently have registered trademarks for the Clean Diesel Technologies name with logo, CDT logo, CDTi name with logo, CSI<sup>®</sup>, CATALYTIC SOLUTIONS<sup>®</sup>, CSI logo, ARIS<sup>®</sup>, BARETRAP<sup>®</sup>, CATTRAP<sup>®</sup>, COMBICLEAN<sup>®</sup>, COMBIFILTER<sup>®</sup>, MPC<sup>®</sup>, PATFLUID<sup>®</sup>, PLATINUM PLUS<sup>®</sup>, PURIFIER and design, PURIFILTER<sup>®</sup>, PURIMUFFLER<sup>®</sup>, TERMINOX<sup>®</sup> and UNIKAT<sup>®</sup>.



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### **Regulations**

We are committed to complying with all federal, state and international environmental laws governing production, use, transport and disposal of substances and control of emissions. In addition to governing our manufacturing and other operations, these laws often impact the development of our emissions control products, including, but not limited to, required compliance with emissions standards applicable to new product diesel, gasoline and alternative fuel engines. These regulations include those developed in Japan, in the United States by the EPA and CARB and in the E.U. by the European Environment Agency.

Many of our products must receive regulatory approval prior to sale. In the United States, regulatory approval is obtained from the EPA or CARB through a verification process. The verification process includes a thorough technical review of the technology as well as tightly controlled testing to quantify statistically significant levels of emission reductions. For example, the EPA verification process begins with a verification application and a test plan. Once this is completed, the testing phase begins and is then followed by a data analysis to determine if the technology qualifies for verification. Once a technology is placed on the verified technologies list and 500 units are sold, the manufacturer is responsible for conducting in-use testing and reporting of results to the EPA. Similar product approval schemes exist in other countries around the world.

### **Research and Development**

Our research and development in catalyst technology has resulted in a broad array of products for the light duty vehicle and heavy duty diesel markets. Our greatest strength in the catalyst business lies in the technical sophistication and cost-to-performance ratio of our products. Product development in our Heavy Duty Diesel Systems division has resulted in a broad family of verified products and systems. We credit our accomplishments to strong engineering capabilities, an experienced team, streamlined product development processes and solid experience in the verification and approval process. We seek to acquire competitive advantage through the use of customized catalysts for our emission control systems. We spent approximately \$6.7 million and \$7.4 million on research and development activities in the years ended December 31, 2012 and 2011, respectively.

### **Employees**

As of December 31, 2012, we had 162 full time employees and 2 part time employees. None of our employees is a party to a collective bargaining agreement. We also retain outside consultants and sales and marketing consultants and agents.

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

*We are subject to risks and uncertainties that may affect our future financial performance and our stock price. Some of the risks and uncertainties that may cause our financial performance to vary or that may materially or adversely affect our financial performance or stock price are discussed below. Any of these risks, as well as other risks and uncertainties not known to us or that we believe to be immaterial, could harm our financial condition, results of operations or cash flows. You should carefully consider the risks described below in addition to the cautionary statements and risk factors described elsewhere and the other information contained in this Annual report on Form 10-K and in our other filings with the SEC, including subsequent reports on Form 10-K and 8-K, before deciding to purchase, hold, or sell our stock.*

### **Risks Related to Our Financial Condition**

***We have incurred losses and have not experienced positive cash flow from operations in the past and our ability to achieve profitability and positive cash flow from operations, or finance negative cash flow from operations, could depend on reductions in our operating costs, which may not be achievable, or from increased sales, which may not occur.***

Each of CDTI and CSI has suffered losses from operations since inception. We had an accumulated deficit of \$174.6 million and \$165.0 million as of December 31, 2012 and 2011, respectively. Additionally, we have historically operated with negative cash flow from operations. We had operating cash flow deficits from continuing operations of \$0.2 million and \$14.6 million for the years ended December 31, 2012 and 2011, respectively. Although we may identify areas where economies can be effected, whether or not we will be successful in realizing these cost-savings, as well as when we are able to effect these economies and the overall restructuring costs we may incur cannot be known at this time. In addition, while we have identified revenue opportunities that if realized would positively affect our cash flows, there is no assurance that such opportunities will be realized. All of these will be important factors in determining whether we will have sufficient cash resources available to maintain our operations for any appreciable length of time. In the event that we are unable to generate revenues or raise additional funds, we may be required to delay, reduce or severely curtail our operations or otherwise impede our on-going business efforts, which could have a material adverse effect on our business, operating results, financial condition and long-term prospects.

***We are putting significant amounts of working capital at risk in order to pursue selected growth opportunities. If we are unable to realize the benefits of the investments in our inventory or timely utilize the inventory for other opportunities, it could have a material adverse effect on our business, financial condition and results of operations.***

We are pursuing revenue generating opportunities relating to special government mandated retrofit programs such as those in California and potentially others in various jurisdictions in North America, Europe and Asia. Opportunities such as these require cash investment in operating expenses and working capital such as inventory and receivables prior to realizing profits and cash from sales. If we are not successful in accessing cash resources to make these investments we may miss out on these opportunities. Further, if we are not successful in generating sufficient sales from these opportunities, we will not realize the benefits of the investments in inventory, which would have an adverse effect on our business, financial condition and results of operations.

***Funding from our existing equity line of credit may be limited or be insufficient to implement our growth plans.***

Under our purchase agreement (the "Purchase Agreement") with Lincoln Park Capital ("LPC"), we may direct LPC to purchase up to \$10.0 million worth of shares of our common stock over a 30 month period generally in amounts of up to \$0.5 million every business day, which amounts may be increased under certain circumstances. We currently have registered 1,702,836 shares for purchase shares under the agreement. The aggregate number of shares issued pursuant to the Purchase Agreement is limited to 1,434,994 shares of common stock (19.99% of the outstanding shares of our common stock on October 7, 2011, the date of the Purchase Agreement) (the "Exchange Cap"), unless and until shareholder approval is obtained. The Exchange Cap is not applicable for at-market transactions, defined as when the average price for all shares purchased pursuant to the Purchase Agreement is greater than or equal the signing price per the agreement of \$2.76 plus \$0.254, or \$3.014 per share. Assuming a purchase price of \$2.14 per share (the closing sale price of our common stock on March 22, 2013) and the purchase by LPC of the full 1,702,836 currently registered purchase shares, proceeds to us would be \$3.6 million. If the purchase was limited to the Exchange Cap of 1,434,994 shares, proceeds to us would be \$3.1 million. The extent to which we rely on LPC as a source of funding will depend on a number of factors including, the amount, if any, of additional working capital needed, the prevailing market price of our common stock and the extent to which we are able to secure working capital from other sources. If we are unable to sell enough of our products to finance our working capital requirements and if sufficient funding from LPC were to prove unavailable or prohibitively dilutive, we would need to secure another source of funding. Even if we sell all \$10.0 million worth of shares of our common stock under the Purchase Agreement to LPC, there can be no assurance this would be sufficient to fully implement our growth plans in all cases.



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***If the revenues from our growth opportunities and operations are below expectations or delayed, we could require additional working capital in order to maintain our operations.***

We have historically relied on outside sources of funding in the form of debt or equity. Although we have a demand credit facility backed by our receivables and inventory, there is no guarantee that we will be able to borrow to the full limit of \$7.5 million if the lender chooses not to finance a portion of our receivables or inventory. Additionally, the lender may terminate the facility at any time. We were successful in raising \$10.2 million through a public offering of shares in July 2011 but there is no guarantee that should the need arise, we will be able to do so again.

Any required additional funding may be in the form of debt financing or a private or public offering of equity securities. We believe that debt financing would be difficult to obtain because of our limited assets and cash flows as well as current general economic conditions. Any additional offering of shares of our common stock or of securities convertible into shares of our common stock may result in further dilution to our existing stockholders. Our ability to consummate a financing will depend not only on our ability to achieve positive operating results, but also on conditions then prevailing in the relevant capital markets. There can be no assurance that such funding will be available if needed, or on acceptable terms. In the event that we are unable to raise such funds, we may be required to delay, reduce or severely curtail our operations or otherwise impede our on-going business efforts, which could have a material adverse effect on our business, operating results, financial condition and long-term prospects.

***Future growth of our business depends, in part, on the general availability of funding for emissions control programs, as well as enforcement of existing emissions-related environmental regulations and further tightening of emission standards worldwide.***

Future growth of our business depends in part on the general availability of funding for emissions control programs, which can be affected for economic as well as political reasons. For example, in light of the recent budget crisis in California, funding was not available for a state-funded emissions control project for off-road diesel equipment and its start date was pushed back. Additionally, funding for the EPA's Diesel Emissions Reductions Act, or DERA, for 2013 and beyond remains uncertain as budget discussions continue to be debated in the U.S. Congress. Funding for these types of emissions control projects drives demand for our products. If such funding is not available, it can negatively affect our future growth prospects. In addition to funding, we also expect that our future business growth will be driven, in part, by the enforcement of existing emissions-related environmental regulations and tightening of emissions standards worldwide. If such standards do not continue to become stricter or are loosened or are not enforced by governmental authorities due to commercial and business pressure or otherwise, it could have a material adverse effect on our business, operating results, financial condition and long-term prospects.

***Foreign currency fluctuations could impact financial performance.***

Because of our activities in the U.K., Europe, Canada, South Africa and Asia, we are exposed to fluctuations in foreign currency rates. We may manage the risk to such exposure by entering into foreign currency futures and option contracts of which there were none in 2012 or 2011. Foreign currency fluctuations may have a significant effect on our operations in the future.

***The Merger adversely affected our ability to take advantage of the significant U.S. federal tax loss carryforwards and tax credits accumulated.***

In connection with the Merger, we performed a study to evaluate the status of net operating loss carryforwards as a result of the Merger. Because the Merger caused an “ownership change” (as defined for U.S. federal income tax purposes) as of the date of the Merger, our ability to use our net operating losses and credits in future tax years has been significantly limited. In addition, due to the “ownership change,” our federal research and development credits have also been limited and, consequently, we do not anticipate being able to use any of these credits that existed as of the date of the Merger in future tax years. Our limited ability to use these net operating losses and tax credits as a result of the Merger could have an adverse effect on our results of operations.

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### **Risks Related to Our Business**

*Historically, we have been dependent on a few major customers, particularly Honda, for a significant portion of our revenue and the revenue could decline if we are unable to maintain or develop relationships with current or potential customers, or if such customers reduce demand for our products.*

Historically, each of CDTI and CSI derived a significant portion of its respective revenue from a limited number of customers. For the years ended December 31, 2012 and 2011, sales to Honda, our largest customer, accounted for approximately 30% and 19%, respectively, of our revenue. We intend to establish long-term relationships with existing customers and continue to expand our customer base. While we diligently seek to become less dependent on any single customer, it is likely that certain business relationships may result in one or more customers contributing to a significant portion of our revenue in any given year for the foreseeable future. In addition, because our relationships with our customers are based on purchase orders rather than long-term formal supply agreements, we are exposed to the risk of reduced sales if such customers reduce demand for our products. Reduced demand may arise for a variety of reasons over which we have no control, such as slowdowns in vehicle production due to economic concerns, or as a result of the effects of natural disasters, including earthquakes and/or tsunamis. The loss of one or more of our significant customers, or reduced demand from one or more of our significant customers, would result in an adverse effect on our revenue, and could affect our ability to become profitable or our ability to continue our business operations.

*We have entered into contractual agreements in connection with the sale of certain of our assets, which may expose us to liability for claims for indemnification under such agreements.*

In the ordinary course of our business, we have entered into various agreements by which we may be obligated to indemnify the other party with respect to certain matters. Generally, these indemnification provisions are included in contracts arising in the normal course of business under which we customarily agree to hold the indemnified party harmless against losses arising from a breach of the contract terms. Payments by us under such indemnification clauses are generally conditioned on the other party making a claim. Such claims are generally subject to challenge by us and to dispute resolution procedures specified in the particular contract. Further, our obligations under these arrangements may be limited in terms of time and/or amount and, in some instances, we may have recourse against third parties for certain payments made by us. It is not possible to predict the maximum potential amount of future payments under these indemnification agreements due to the conditional nature of our obligations and the unique facts of each particular agreement.

*We depend on intellectual property and the failure to protect our intellectual property could adversely affect our future growth and success.*

We rely on patent, trademark and copyright law, trade secret protection, and confidentiality and other agreements with employees, customers, partners and others to protect our intellectual property. However, some of our intellectual property is not covered by any patent or patent application, and, despite precautions, it may be possible for third parties to obtain and use our intellectual property without authorization.

We do not know whether any patents will be issued from pending or future patent applications or whether the scope of the issued patents is sufficiently broad to protect our technologies or processes. Moreover, patent applications and issued patents may be challenged or invalidated. We could incur substantial costs in prosecuting or defending patent infringement suits. Furthermore, the laws of some foreign countries may not protect intellectual property rights to the

same extent as do the laws of the United States.

The patents protecting our proprietary technologies expire after a period of time. Currently, our patents have expiration dates ranging from 2013 through 2032. Although we have attempted to incorporate technology from our core patents into specific patented product applications, product designs and packaging to extend the lives of our patents, there can be no assurance that this building block approach will be successful in protecting our proprietary technology. If we are not successful in protecting our proprietary technology, it could have a material adverse effect on our business, financial condition and results of operations.

As part of our confidentiality procedures, we generally have entered into nondisclosure agreements with employees, consultants and corporate partners. We also have attempted to control access to and distribution of our technologies, documentation and other proprietary information. We plan to continue these procedures. Despite these procedures, third parties could copy or otherwise obtain and make unauthorized use of our technologies or independently develop similar technologies. The steps that we have taken and that may occur in the future might not prevent misappropriation of our solutions or technologies, particularly in foreign countries where laws or law enforcement practices may not protect the proprietary rights as fully as in the United States.

There can be no assurance that we will be successful in protecting our proprietary rights. For example, from time to time we have become aware of competing technologies employed by third parties which may be covered by one or more of our patents. In such situations, we may seek to grant licenses to such third parties or seek to stop the infringement, including through the threat of legal action. There is no assurance that we would be successful in negotiating a license agreement on favorable terms, if at all, or able to stop the infringement. Any infringement upon our intellectual property rights could have an adverse effect on our ability to develop and sell commercially competitive systems and components.

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***If we fail to obtain the right to use the intellectual property rights of others which are necessary to operate our business, our ability to succeed will be adversely affected.***

From time to time we may choose to or be required to license technology or intellectual property from third parties in connection with the development of our products. We cannot assure you that third-party licenses will be available to us on commercially reasonable terms, if at all. Generally, a license, if granted, would include payments of up-front fees, ongoing royalties or both. These payments or other terms could have a significant adverse impact on our results of operations. The inability to obtain a necessary third-party license required for our product offerings or to develop new products and product enhancements could require us to substitute technology of lower quality or performance standards, or of greater cost, either of which could adversely affect our business. If we are not able to obtain licenses from third parties, if necessary, then we may also be subject to litigation to defend against infringement claims from these third parties. Our competitors may be able to obtain licenses or cross-license their technology on better terms than we can, which could put us at a competitive disadvantage. If we are unable to obtain or maintain any third-party license required to develop new products and product enhancements, on favorable terms, our results of operations may be harmed.

***If third parties claim that our products infringe upon their intellectual property rights, we may be forced to expend significant financial resources and management time litigating such claims and our operating results could suffer.***

Third parties may claim that our products and systems infringe upon third-party patents and other intellectual property rights. Identifying third-party patent rights can be particularly difficult, notably because patent applications are generally not published until up to 18 months after their filing dates. If a competitor were to challenge our patents, or assert that our products or processes infringe their patent or other intellectual property rights, we could incur substantial litigation costs, be forced to make expensive product modifications, pay substantial damages or even be forced to cease some operations. Third-party infringement claims, regardless of their outcome, would not only drain financial resources but also divert the time and effort of management and could result in customers or potential customers deferring or limiting their purchase or use of the affected products or services until resolution of the litigation.

***Failure of one or more key suppliers to timely deliver could prevent, delay or limit us from supplying products. Delays in delivery times for platinum group metal purchases could also result in losses due to fluctuations in prices. Delays in the delivery times and cost impact of the world-wide shortage of rare earth metals could delay us from supplying products and could result in lower profits.***

Due to customer demands and specifications, we are required to source critical materials and components such as ceramic substrates from single suppliers. In 2012 and 2011, our three largest suppliers accounted for over 30% of our raw material purchases. Failure of one or more of the key suppliers to deliver timely could prevent, delay or limit us from supplying products because we would be required to qualify an alternative supplier. For certain products and customers, we are required to purchase platinum group metal materials. As commodities, platinum group metal materials are subject to daily price fluctuations and significant volatility, based on global market conditions. Historically, the cost of platinum group metals used in the manufacturing process has been passed through to the customer. This limits the economic risk of changes in market prices to platinum group metal usage in excess of nominal amounts allowed by the customer. However, going forward there can be no assurance that we will continue to be successful in passing platinum group metal price risk onto our current and future customers to minimize the risk of financial loss. Additionally, platinum group metal material is accounted for as inventory and therefore subject to lower

of cost or market adjustments on a regular basis at the end of accounting periods. A drop in market prices relative to the purchase price of platinum group metal could result in a write-down of inventory. Due to the high value of platinum group metal materials, special measures have been taken to secure and insure the inventory. There is a risk that these measures may be inadequate and expose us to financial loss. We utilize rare earth metals in the production of some of our catalysts. Due to a reduction in export from China of these materials, there has been a world-wide shortage, leading to a lack of supply and higher prices. We risk delays in shipment due to this constrained supply and potentially lower margins if we are unable to pass the increased costs on to our customers.

***Qualified management, marketing, and sales personnel are difficult to locate, hire and train, and if we cannot attract and retain qualified personnel, it will harm the ability of the business to grow.***

Our success depends, in part, on our ability to retain current key personnel, attract and retain future key personnel, additional qualified management, marketing, scientific, and engineering personnel, and develop and maintain relationships with research institutions and other outside consultants. Competition for qualified management, technical, sales and marketing employees is intense. In addition, some employees might leave our Company and go to work for competitors. The loss of key personnel or the inability to hire or retain qualified personnel, or the failure to assimilate effectively such personnel could have a material adverse effect on our business, operating results and financial condition.



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***We may not be able to successfully market new products that are developed or obtain direct or indirect verification or approval of our new products.***

Some of our catalyst products and heavy duty diesel systems are still in the development or testing stage with targeted customers. We are developing technologies in these areas that are intended to have a commercial application, however, there is no guarantee that such technologies will actually result in any commercial applications. In addition, we plan to market other emissions reduction devices used in combination with our current products. There are numerous development and verification issues that may preclude the introduction of these products for commercial sale. These proposed operations are subject to all of the risks inherent in a developing business enterprise, including the likelihood of continued operating losses. If we are unable to demonstrate the feasibility of these proposed commercial applications and products or obtain verification or approval for the products from regulatory agencies, we may have to abandon the products or alter our business plan. Such modifications to our business plan will likely delay achievement of revenue milestones and profitability.

***Any liability for environmental harm or damages resulting from technical faults or failures of our products could be substantial and could materially adversely affect our business and results of operations.***

Customers rely upon our products to meet emissions control standards imposed upon them by government. Failure of our products to meet such standards could expose us to claims from customers. Our products are also integrated into goods used by consumers and therefore a malfunction or the inadequate design of our products could result in product liability claims. Any liability for environmental harm or damages resulting from technical faults or failures 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, which would materially impact our financial condition and operating results.

### **Risks Related to Our Industry**

***We face constant changes in governmental standards by which our products are evaluated.***

We believe that, due to the constant focus on the environment and clean air standards throughout the world, a requirement in the future to adhere to new and more stringent regulations both domestically and abroad is possible as governmental agencies seek to improve standards required for certification of products intended to promote clean air. In the event our products fail to meet these ever-changing standards, some or all of our products may become obsolete.

***We face competition and technological advances by competitors.***

There is significant competition among companies that provide solutions for pollutant emissions from diesel engines. Several companies market products that compete directly with our products. Other companies offer products that potential customers may consider to be acceptable alternatives to our products and services, including products that are verified by the EPA, the CARB or other environmental authorities. We face direct competition from companies with greater financial, technological, manufacturing and personnel resources. Newly developed products could be more effective and cost-efficient than our current or future products. We also face indirect competition from vehicles using alternative fuels, such as methanol, hydrogen, ethanol and electricity.

***Our results may fluctuate due to certain regulatory, marketing and competitive factors over which we have little or no control.***

The factors listed below, some of which we cannot control, may cause our revenue and results of operations to fluctuate significantly:

- Actions taken by regulatory bodies relating to the verification, registration or health effects of our products;
- The extent to which our products obtain market acceptance;
- The timing and size of customer purchases;
- Customer concerns about the stability of our business, which could cause them to seek alternatives to our solutions and products; and
- Increases in raw material costs, particularly platinum group metals and rare earth metals.

***Future growth of our business depends, in part, on market acceptance of our catalyst products, successful verification of our products and retention of our verifications.***

While we believe that there exists a viable market for our developing catalyst products, there can be no assurance that such technology will succeed as an alternative to competitors' existing and new products. The development of a market for the products is affected by many factors, some of which are beyond our control. The adoption cycles of our key customers are lengthy and require extensive interaction with the customer to develop an effective and reliable catalyst for a particular application. While we continue to develop and test products with key customers, there can be no guarantee that all such products will be accepted and commercialized. Our relationships with our customers are based on purchase orders rather than long-term formal supply agreements. Generally, once a catalyst has successfully completed the testing and certification stage for a particular application, it is generally the only catalyst used on that application and therefore unlikely that, unless there are any defects, the customer will try to replace that catalyst with a competing product. However, our customers usually have alternate suppliers for their products and there is no assurance that we will continue to win the business. Also, although we work with our customers to obtain product verifications in accordance with their projected production requirements, there is no guarantee that we will be able to receive all necessary approvals for our catalysts by the time a customer needs such products, or that a customer will not accelerate its requirements. If we are not successful in having verified catalyst products to meet customer requirements, it will have a negative effect on our revenues, which could have a material adverse effect on our results of operations.

If a market fails to develop or develops more slowly than anticipated, we may be unable to recover the costs we will have incurred in the development of our products and may never achieve profitability. In addition, we cannot guarantee that we will continue to develop, manufacture or market our products or components if market conditions do not support the continuation of the product or component.

We believe that it is an essential requirement of the U.S. retrofit market that emissions control products and systems are verified under the EPA and/or CARB protocols to qualify for funding from the EPA and/or CARB programs. Funding for these emissions control products and systems is generally limited to those products and technologies that have already been verified. Verification is also useful for commercial acceptability. Notably, EPA verifications were withdrawn on two of our products in January 2009 because available test results were not accepted by the EPA as meeting new emissions testing requirements for nitrogen dioxide (NO<sub>2</sub>) measurement. As a general matter, we have no assurance that our products will be verified by the CARB or that such a verification will be acceptable to the EPA. If we are not able to obtain or maintain necessary product verifications, it will limit our ability to commercialize such products, which could have a negative effect on our revenues and on our results of operations.



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***New metal standards, lower environmental limits or stricter regulation for health reasons of platinum or cerium could be adopted and affect use of our products.***

New standards or environmental limits on the use of platinum or cerium metal by a governmental agency could adversely affect our ability to use our Platinum Plus<sup>®</sup> fuel-borne catalyst in some applications. In addition, the CARB requires “multimedia” assessment (air, water, soil) of the fuel-borne catalyst. The EPA could require a “Tier III” test of the Platinum Plus<sup>®</sup> fuel-borne catalyst at any time to determine additional health effects of platinum or cerium, which tests may involve additional costs beyond our current resources. Government or regulatory bodies in other countries where we sell our Platinum Plus<sup>®</sup> fuel-borne catalyst could adopt similar limits or regulations.

**Risks Related to Our Common Stock**

***One of our shareholders holds a large percentage of our outstanding common stock, and, should they choose to do so, may have significant influence over the outcome of corporate actions requiring stockholder approval.***

Approximately 519,196 shares of our outstanding common stock is held by Special Situations Funds, which acquired such shares of our common stock in our July 2011 underwritten public offering. Accordingly, such investor, should it choose to do so, may be able to significantly influence the outcome of any corporate transaction or other matter submitted to our stockholders for approval, including the election of directors, any merger, consolidation or sale of all or substantially all of our assets or any other significant corporate transaction, such that Special Situations Funds could delay or prevent a change of control of our company, even if such a change of control would benefit our other stockholders. The interests of such investor may differ from the interests of our other stockholders.

***The price of our common stock may be adversely affected by the sale by us or our shareholders of a significant number of new common shares.***

The sale, or availability for sale, of substantial amounts of our common stock could adversely affect the market price of our common stock and could impair our ability to raise additional working capital through the sale of equity securities. On July 5, 2011, we issued 3,053,750 shares of our common stock in an underwritten public offering. On October 15, 2010, we issued (or reserved for issuance) an aggregate 2,287,872 shares of our common stock and warrants to purchase an additional 666,583 shares of our common stock, each on a post-split basis after eliminating fractional shares, in connection with the Merger. We also issued 109,020 shares and warrants to purchase an additional 166,666 shares of our common stock, each on a post-split basis after eliminating fractional shares, in a Regulation S offering, as well as 32,414 shares and warrants to purchase an additional 14,863 shares, each on a post-split basis after eliminating fractional shares, as compensation for services rendered in connection with the Merger and our Regulation S offering. Resales of these shares by the holders thereof (some of whom received registered shares and some of whom have registration rights) or resale of the shares received upon exercise of the warrants could contribute to downward pressure on the trading price of our stock.

In addition, to provide us with additional flexibility to access capital markets for general corporate purposes, we filed a shelf registration statement which was declared effective by the SEC on May 21, 2012. The shelf registration statement permits us to sell, from time to time, up to an aggregate \$50.0 million of various securities, including common stock, preferred stock warrants to purchase common stock or preferred stock and units consisting of one or more shares of common stock, shares of preferred stock, warrants or any combination of such securities. To the extent that we raise additional capital by issuing equity securities under our shelf registration statement, our stockholders may experience dilution. Any dilution or potential dilution may cause our stockholders to sell their shares, which would contribute to a downward movement in the trading price of our stock.

***The sale of our common stock to LPC may cause dilution and the sale of the shares of common stock acquired by LPC could cause the price of our common stock to decline.***

In connection with entering into the Purchase Agreement with LPC in October 2011, we authorized the issuance to LPC of up to \$10,000,000 worth of shares of our common stock, plus 120,741 shares of common stock as commitment shares. As of the date of this Annual Report on Form 10-K, we have not sold any shares to LPC under the Purchase Agreement. The number of shares ultimately offered for sale by LPC is dependent upon the number of shares purchased by LPC under the Purchase Agreement. The purchase price for the common stock to be sold to LPC pursuant to the Purchase Agreement will fluctuate based on the price of our common stock. If we do sell shares to LPC, LPC may offer and sell 1,823,577 shares over a period of up to 30 months from December 2011 pursuant to an effective registration statement. Depending upon market liquidity at the time, a sale of the 1,823,577 registered shares, or additional shares we register or which LPC sells other than by means of a registration statement, at any given time could cause the trading price of our common stock to decline. We can elect to direct purchases in our sole discretion. After LPC has acquired such shares, it may sell all, some or none of such shares. Therefore, sales to LPC by us under the Purchase Agreement may result in substantial dilution to the interests of other holders of our common stock. The sale of a substantial number of shares of our common stock by LPC, or anticipation of such sales, could make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect sales.

***The risk of dilution, perceived or actual, may contribute to downward pressure on the trading price of our stock.***

We have outstanding warrants and stock options to purchase shares of our common stock, and it is contemplated that additional shares or options to acquire shares of our common stock will be issued. The exercise of these securities will result in the issuance of additional shares of our common stock. We may also issue additional shares of our common stock or securities exercisable for or convertible into shares of our common stock, whether in the public market or in a private placement to fund our operations, or as compensation. These issuances, particularly where the exercise price or purchase price is less than the current trading price for our common stock, could be viewed as dilutive to the holders of our common stock. The risk of dilution, perceived or actual, may cause existing stockholders to sell their shares of stock, which would contribute to a decrease in the price of shares of our common stock. In that regard, downward pressure on the trading price of our common stock may also cause investors to engage in short sales, which would further contribute to downward pressure on the trading price of our stock.

***There has been and may continue to be significant volatility in the volume and price of our common stock on the NASDAQ Capital Market and an investment in our stock could suffer a decline in value.***

CDTI's common stock began trading on the NASDAQ Capital Market effective October 3, 2007. In the period immediately following the Merger and the reverse stock split, we experienced significantly higher trading volume than typical for our Company. Unusual trading volume in our shares has continued to occur from time to time. For example, the trading volume in our common stock exceeded seven million shares on March 12, 2012 and exceeded two million shares on March 13, 2012, whereas the average trading volume for the three weeks prior to those dates was 100,062 shares per day. The market price of our common stock also has been and may continue to be highly volatile. During the last two weeks of October 2010 following the Merger and the reverse stock split, the price for a share of our common stock ranged from as low as \$1.50 per share to as high as \$44.38 per share. On March 22, 2013, the closing price for a share of our common stock was \$2.14 per share. Factors, including announcements of technological innovations by us or other companies, regulatory matters, new or existing products or procedures, concerns about our financial position, operations results, litigation, government regulation, developments or disputes relating to agreements, patents or proprietary rights, may have a significant impact on the market volume and price of our stock.

As a publicly traded company, CDTi is assessed periodically by securities analysts. Changes in assessments by such analysts may increase the volatility of our stock price and may result in a decline in value if the assessments are

negative.

***We have not paid and do not intend to pay dividends on shares of our common stock.***

We have not paid dividends on our common stock since inception, and do not intend to pay any dividends to our stockholders in the foreseeable future. We intend to reinvest earnings, if any, in the development and expansion of our business.

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### **ITEM 1B. UNRESOLVED STAFF COMMENTS**

None.

### **ITEM 2. PROPERTIES**

We occupy approximately 3,955 square feet of office space at 4567 Telephone Road, Suite 100, Ventura, California, under a lease agreement that expires on August 31, 2015 for our corporate headquarters.

Our Heavy Duty Diesel Systems division uses approximately 51,000 square feet of space in Ontario, Canada under a lease agreement that expires on December 31, 2018 for administrative, research and development, manufacturing, sales and marketing functions; approximately 54,000 square feet of space in Reno, Nevada under a lease agreement that expires on January 31, 2017 for sales and manufacturing purposes; approximately 225 square feet in Surrey, United Kingdom (outside London) for administrative and sales and marketing under a lease agreement that expires on November 25, 2013; and approximately 5,515 square feet of office space in Bridgeport, Connecticut under a lease agreement that expires on December 31, 2015, which served as our corporate headquarters prior to the Merger. We have exercised our early termination right to cancel our Bridgeport, Connecticut office lease and have ceased use of the space in December 2012. The early termination right allows us to cancel on December 31, 2013 with at least nine months' advanced written notice along with an early termination fee of \$45,960; the landlord's unamortized portion of construction costs with seven percent interest thereon; brokerage fees and attorney fees. We also own a 6,700 square foot condominium in Malmö, Sweden that our Heavy Duty Diesel Systems division uses for administrative, research and development and European sales and marketing.

Our Catalyst division uses approximately 52,000 square feet of space in Oxnard, California under three separate lease agreements, two that expire on December 31, 2013 and one that expires on April 30, 2015, for manufacturing and research and development. This space includes a warehouse that is also used for shipping and receiving. Our Catalyst division also leases approximately 767 square feet of space in Tokyo, Japan under a lease agreement that expires on June 15, 2013, which is used for sales and marketing purposes.

We do not anticipate the need to acquire additional space in the near future and consider our current capacity to be sufficient for current operations and projected growth. As such, we do not expect that our rental costs will increase substantially from the amounts historically paid in 2012.

### **ITEM 3. LEGAL PROCEEDINGS**

See Note 17, "Commitments and Contingencies" to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

### **ITEM 4. MINE SAFETY DISCLOSURES**

Not applicable.

**Table of Contents****Part II****ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES*****Market Information***

Our common stock is traded on The NASDAQ Capital Market under the symbol “CDTI.” For a 20-trading day period immediately following the Merger and the one-for-six reverse stock split, both of which took effect October 15, 2010, it temporarily traded under the symbol “CDTID” in accordance with NASDAQ’s rules.

The following table sets forth the high and low prices of our common stock on The NASDAQ Capital Market for each of the periods listed. Prices indicated below with respect to our share price include inter-dealer prices, without retail mark up, mark down or commission and may not necessarily represent actual transactions.

		<b>NASDAQ Capital Market</b>	
		<b>High</b>	<b>Low</b>
	<b><u>2011</u></b>		
1 <sup>st</sup> Quarter		\$11.69	\$ 5.16
2 <sup>nd</sup> Quarter		\$11.20	\$ 3.61
3 <sup>rd</sup> Quarter		\$ 8.00	\$ 2.16
4 <sup>th</sup> Quarter		\$ 4.54	\$ 1.50
	<b><u>2012</u></b>		
1 <sup>st</sup> Quarter		\$ 5.28	\$ 2.69
2 <sup>nd</sup> Quarter		\$ 4.20	\$ 1.93
3 <sup>rd</sup> Quarter		\$ 3.35	\$ 2.00
4 <sup>th</sup> Quarter		\$ 3.04	\$ 2.00

***Holdings***

At March 22, 2013, there were 294 holders of record of our common stock, which excludes stockholders whose shares were held by brokerage firms, depositories and other institutional firms in “street name” for their customers.

***Dividends***

No dividends have been paid on our common stock and we do not anticipate paying dividends in the foreseeable future.

***Issuances of Unregistered Securities***

On November 26, 2012, we issued 23,149 restricted shares of our common stock to MDB Capital Group LLC as compensation for management consulting and advisory services. The value of the stock was based on the closing price of our common stock on November 26, 2012, which was \$2.16 per share. Such shares were issued pursuant to the exemption from registration contained in Section 4(2) of the Securities Act of 1933, as amended. MDB Capital Group LLC had adequate access to information about our company through their relationship with our company or through information provided to them and represented its intention to acquire the securities for investment only and not with a

view to or for sale in connection with any distribution thereof and appropriate legends were affixed to the certificates representing such shares.

All other sales of unregistered securities during the period covered by this Annual Report on Form 10-K have been previously reported.

*Issuer Purchases of Equity Securities*

No shares were repurchased during the fourth quarter ended December 31, 2012.

**ITEM 6. SELECTED FINANCIAL DATA**

Not applicable.

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

*The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements, the accuracy of which involves risks and uncertainties, see “Cautionary Statement Concerning Forward-Looking Statements.” Our actual results could differ materially from those anticipated in these forward-looking statements for many reasons, as a result of many important factors, including those set forth in Part I – Item 1A “Risk Factors”.*

*All percentage amounts and ratios in this Management’s Discussion and Analysis of Financial Condition and Results of Operations were calculated using the underlying data in thousands.*

## **Overview**

We are a technology-focused, leading global manufacturer and distributor of heavy duty diesel and light duty vehicle emissions control systems and products to major automakers, integrators and retrofitters. We have over 30 years of experience in the heavy duty diesel systems market and proven technical and manufacturing competence in the light duty vehicle catalyst market meeting auto makers’ stringent requirements. Our business is driven by increasingly stringent global emission standards for internal combustion engines, which are major sources of a variety of harmful pollutants.

We organize our operations in two primary divisions: our Heavy Duty Diesel Systems division and our Catalyst division.

*Heavy Duty Diesel Systems:* Our Heavy Duty Diesel Systems division specializes in the design and manufacture of verified exhaust emissions control solutions. This division offers a full range of products for the verified retrofit and non-retrofit original equipment manufacturer, or OEM, and aftermarket markets through its distribution/dealer network and direct sales. Our Purifilter<sup>®</sup>, Purifier<sup>™</sup>, Combifilter<sup>®</sup>, Cattrap<sup>®</sup> and Actifilter<sup>™</sup> products, along with our catalyst technologies, are used to reduce exhaust emissions created by on-road, off-road and stationary diesel and alternative fuel engines including propane and natural gas. Revenues from our Heavy Duty Diesel Systems division accounted for approximately 67% and 77% of the total consolidated revenues for the years ended December 31, 2012 and 2011, respectively.

*Catalyst:* Our Catalyst division produces catalyst formulations to reduce emissions from gasoline, diesel and natural gas combustion engines. Using our proprietary MPC<sup>®</sup> technology, we have developed a family of unique high-performance catalysts — with base-metals or low-platinum group metal and zero-platinum group metal content — to provide increased catalytic function and value for technology-driven automotive industry customers. Our technical and manufacturing competence in the light duty vehicle market is aimed at meeting auto makers’ most stringent requirements, and we have supplied over ten million parts to light duty vehicle customers since 1996. Our Catalyst division also provides catalyst formulations for our Heavy Duty Diesel Systems division. Revenues from our Catalyst division accounted for approximately 33% and 23% of the total consolidated revenues for the years ended December 31, 2012 and 2011, respectively.

## **Sources of Revenues and Expenses**

***Revenues***

We generate revenues primarily from the sale of our emission control systems and products. We generally recognize revenues from the sale of our emission control systems and products upon shipment of these products to our customers. However, for certain customers, where risk of loss transfers at the destination (typically the customer's warehouse), revenue is recognized when the products are delivered to the destination.

***Cost of revenues***

Cost of revenues consists primarily of direct costs for the manufacture of emission control systems and products, including cost of raw materials, costs of leasing and operating manufacturing facilities and wages and benefits paid to personnel involved in production, manufacturing quality control, testing and supply chain management. In addition, cost of revenues include normal scrap and shrinkage associated with the manufacturing process and a expense from write down of obsolete and slow moving inventory. We include the direct material costs and factory labor as well as factory overhead expense in the cost of revenue. Indirect factory expense includes the costs of freight (inbound and outbound for direct material and finished goods), purchasing and receiving, inspection, testing, warehousing, utilities and depreciation of facilities and equipment utilized in the production and distribution of products.

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### ***Selling, general and administrative expenses***

Selling, general and administrative expense includes the salary and benefits for sales, marketing and administrative staff as well as samples provided at no-cost to customers, marketing materials, travel, legal, accounting and other professional fees, corporate expenses, regulatory fees and bad debt. Also included is any depreciation related to assets utilized in the selling, marketing and general and administrative functions as well as amortization of acquired intangible assets.

### ***Research and development expenses***

Research and development expenses consist of costs associated with research related to new product development and product enhancement expenditures. Research and development costs also include costs associated with getting our heavy duty diesel systems verified and approved for sale by the EPA, the CARB and other regulatory authorities. These expenses include the salary and benefits for the research and development staff as well as travel, research materials, testing and legal expense related to patenting intellectual property. Also included is any depreciation related to assets utilized in the development of new products.

### ***Other income (expense)***

Total other income (expense) primarily reflects interest expense, including amortization of debt discounts and premiums and amortization of debt issuance costs, as well as changes in the fair value of our liability classified warrants. It also includes loss on foreign exchange and interest income.

### **Critical Accounting Policies and Estimates**

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires the use of estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosures in the financial statements. Critical accounting policies are those accounting policies that may be material due to the levels of subjectivity and judgment necessary to account for highly uncertain matters or the susceptibility of such matters to change, and that have a material impact on financial condition or operating performance. While we base our estimates and judgments on our experience and on various other factors that we believe to be reasonable under the circumstances, actual results may differ from these estimates under different assumptions or conditions. We believe the following critical accounting policies used in the preparation of our financial statements require significant judgments and estimates. For additional information relating to these and other accounting policies, see Note 2 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

### ***Revenue Recognition***

We generally recognize revenue when products are shipped and the customer takes ownership and assumes risk of loss, collection of the related receivable is reasonably assured, persuasive evidence of an arrangement exists, and the sales price is fixed or determinable. When terms of sale include subjective customer acceptance criteria, we defer revenue until the acceptance criteria are met. Concurrent with the shipment of the product, we accrue estimated product return reserves. Critical judgments include the determination of whether or not customer acceptance criteria are perfunctory or inconsequential. The determination of whether or not the customer acceptance terms are perfunctory or inconsequential impacts the amount and timing of the revenue that we recognize.

***Allowance for Doubtful Accounts***

The allowance for doubtful accounts involves estimates based on management's judgment, review of individual receivables and analysis of historical bad debts. We monitor collections and payments from our customers and maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. We also assess current economic trends that might impact the level of credit losses in the future. If the financial condition of our customers were to deteriorate, resulting in difficulties in their ability to make payments as they become due, additional allowances could be required, which would have a negative effect on our earnings and working capital.

***Inventory Valuation***

Inventory is stated at the lower of cost or market. Cost is determined on the first-in, first-out method. We write down inventory for slow-moving and obsolete inventory based on assessments of future demands, market conditions and customers who are expected to reduce purchasing requirements as a result of experiencing financial difficulties.

Such assessments require the exercise of significant judgment by management. If these factors were to become less favorable than those projected, additional inventory write-downs could be required, which would have a negative effect on our earnings and working capital.

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### ***Product Warranty Reserves***

We provide warranties on certain of our Heavy Diesel Division products for varying periods. Generally, the warranty periods range from one to five years and may also contain mileage limitations. We provide for the estimated cost of product warranties in cost of sales, at the time product revenue is recognized. Warranty costs are estimated primarily using historical warranty information in conjunction with current engineering assessments applied to our expected repair or replacement costs. The adequacy of the provision is assessed at each quarter end. Should actual performance rates or repair costs differ from estimates, revision to the estimated warranty liability would be required, which would have a negative effect on our earnings and working capital.

### ***Accounting for Income Taxes***

Our income tax expense is dependent on the profitability of our various international subsidiaries including Canada, Sweden and the United Kingdom. These subsidiaries are subject to income taxation based on local tax laws in these countries. Our U.S. operations have continually incurred losses since inception.

Our annual tax expense is based on our income, statutory tax rates and tax planning opportunities available to us in the various jurisdictions in which we operate. Tax laws are complex and subject to different interpretations by the taxpayer and respective governmental taxing authorities. Significant judgment is required in determining our tax expense and in evaluating our tax positions including evaluating uncertainties. We recognize the effect of income tax positions only if those positions are more likely than not of being sustained. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs. We record interest and penalties related to unrecognized tax benefit in income tax expense. We review our tax positions quarterly and adjust the balances as new information becomes available. If these factors were to become less favorable than those projected, or if there are changes in the tax laws in the jurisdictions in which we operate, there could be an increase in tax expense and a resulting decrease in our earnings and working capital.

Deferred income tax assets represent amounts available to reduce income taxes payable on taxable income in future years. Such assets arise because of temporary differences between the financial reporting and tax bases of assets and liabilities, as well as from net operating loss and tax credit carry-forwards. We evaluate the recoverability of these future tax deductions by assessing the adequacy of future expected taxable income from all sources, including reversal of taxable temporary differences, forecasted operating earnings and available tax planning strategies. These sources of income inherently rely on estimates. To provide insight, we use our historical experience and our short and long-range business forecasts. We believe it is more likely than not that a portion of the deferred income tax assets may expire unused and have established a valuation allowance against them. Although realization is not assured for the remaining deferred income tax assets, primarily related to foreign tax jurisdictions, we believe it is more likely than not that the deferred tax assets will be fully recoverable within the applicable statutory expiration periods. However, deferred tax assets could be reduced in the near term if our estimates of taxable income in certain jurisdictions are significantly reduced or available tax planning strategies are no longer viable.

### ***Goodwill***

We test goodwill for impairment at the reporting unit level at least annually, as of October 31, using a two-step process, and more frequently upon the occurrence of certain triggering events. Our Engine Control Systems reporting unit, which is within our Heavy Duty Diesel Systems reporting segment, has goodwill subject to impairment testing, which totalled \$6.1 million and \$6.0 million at December 31, 2012 and 2011, respectively. Goodwill impairment

testing requires us to estimate the fair value of the reporting unit. The estimate of fair value is based on internally developed assumptions approximating those that a market participant would use in valuing the reporting unit. We derived the estimated fair value of the Engine Control Systems reporting unit at October 31, 2012 from a blending of market and income approach models. We utilized a weighting of 50% and 50% between the market and income approaches, respectively. Significant assumptions used in deriving the fair value of the reporting unit under the income approach included: annual revenue growth over the next five years ranging from 3.0% to 40.0%, long-term revenue growth of 3% and a discount rate of 26.0%. Significant assumptions used in deriving the fair value of the reporting unit under the market approach included: average multiples of 0.74 times on revenue and 4.5 times on EBITDA. The discount rate of 26.0% was developed based on a weighted cost of capital (WACC) analysis. Within the WACC analysis, the cost of equity assumption was developed using the Capital Asset Pricing Model (CAPM). The inputs in both the CAPM and the cost of debt assumption utilized in the WACC were developed for our Engine Control Systems business reporting unit using data from comparable companies. The revenue growth rates used are higher than our historical growth patterns and consider future growth potential identified by management, however, there is no assurance such growth will be achieved. In addition, we considered the overall fair value of our reporting units as compared to our market capitalization. Because the estimated fair value of the reporting unit substantially exceeded its carrying value, we determined that no goodwill impairment existed as of December 31, 2012. However, it is reasonably possible that future results may differ from the estimates made during 2012 and future impairment tests may result in a different conclusion for the goodwill of our Engine Controls Systems reporting unit. In addition, the use of different estimates or assumptions by management could lead to different results. Our estimate of fair value of the reporting unit is sensitive to certain factors, including but not limited to the following: movements in our share price, changes in discount rates and our cost of capital, growth of the reporting unit's revenue, cost structure of the reporting unit, successful completion of research and development, capital expenditures, customer acceptance of new products, competition, general economic conditions and approval of the reporting unit's product by regulatory agencies.

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### ***Impairment of Long-Lived Assets Other Than Goodwill***

We evaluate long-lived assets, including intangible assets other than goodwill, for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. An impairment is considered to exist if the total estimated future cash flows on an undiscounted basis are less than the carrying amount of the assets. If an impairment does exist, we measure the impairment loss and record it based on discounted estimated future cash flows. In estimating future cash flows, we group assets at the lowest level for which there are identifiable cash flows that are largely independent of cash flows from other asset groups. Considerable judgment is necessary to estimate the fair value of the assets and, accordingly, actual results could vary significantly from such estimates. Our most significant estimates and judgments relating to the long-lived asset impairments include the timing and amount of projected future cash flows. These estimates and judgments are based upon, among other things, certain assumptions about expected future operating performance and growth rates and other factors, actual results of which may vary significantly.

In 2012, we considered whether any events or changes in circumstance indicated that the carrying amount of our long-lived assets may not be recoverable and concluded that no such triggering event had occurred during 2012 that would lead us to believe that the assets were impaired. Therefore, no further testing was performed. To the extent additional events or changes in circumstances occur, we may conclude that a non-cash impairment charge against earnings is required, which could have an adverse effect on its financial condition and results of operations.

### ***Stock-Based Compensation Expense***

We account for stock-based compensation using fair value recognition and record stock-based compensation as a charge to earnings net of the estimated impact of forfeited awards. As such, we recognize stock-based compensation cost only for those stock-based awards that are estimated to ultimately vest over their requisite service period, based on the vesting provisions of the individual grants.

The process of estimating the fair value of stock-based compensation awards and recognizing stock-based compensation cost over their requisite service period involves significant assumptions and judgments. We estimate the fair value of stock option awards on the date of grant using the Black-Scholes option-pricing model, which requires that we make certain assumptions regarding: (i) the expected volatility in the market price of our common stock; (ii) dividend yield; (iii) risk-free interest rates; and (iv) the period of time employees are expected to hold the award prior to exercise (referred to as the expected holding period). As a result, if we revise our assumptions and estimates, our stock-based compensation expense could change materially for future grants.

### **Recently Issued Accounting Guidance**

In December 2011, the FASB issued Accounting Standards Update (“ASU”) 2011-11, “Disclosures about Offsetting Assets and Liabilities,” which requires an entity to disclose information about offsetting and related arrangements to enable users of its financial statements to understand the effect of those arrangements on its financial position. ASU No. 2011-11 is effective for annual and interim periods beginning on or after January 1, 2013. Retrospective application is required. The guidance concerns disclosure only and will not have an impact on our financial position or results of operations.

In February 2013, the FASB issued ASU 2013-02, "Comprehensive Income (Topic 220): Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income," which requires disclosure of significant amounts

reclassified out of accumulated other comprehensive income by component and their corresponding effect on the respective line items of net income. This guidance is effective for reporting periods beginning after December 15, 2012 and is not expected to have a material impact on our consolidated financial statements or financial statement disclosures.

For additional discussion regarding these, and other recent accounting pronouncements, see Note 2 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

## **Recent Developments**

### ***Joint Venture Agreement with Pirelli & C. Ambiente SpA***

On February 19, 2013, we entered into the Joint Venture Agreement with Pirelli to form the Joint Venture to jointly sell our emission control products in Europe and the CIS countries. The Joint Venture Agreement provides that we and Pirelli will each hold 50% of the total issued share capital of the Joint Venture. In conjunction with the formation and operation of the Joint Venture, we and Pirelli have each agreed to an initial contribution of €50,000 (approximately \$67,000) to the Joint Venture. Future contributions from us and Pirelli will be provided to the Joint Venture in the form of cash or shareholders loans, from time to time as necessary.

### ***Amendment to 6% Shareholder Note Due 2013***

On January 30, 2013, we and Kanis S.A. entered into an amendment to amend certain terms of our outstanding 6% note due 2013. As amended, the maturity date was changed from June 30, 2013 to June 30, 2015. In addition, the payment premium due under this note was changed from a range of \$100,000 to \$200,000, based proportionally on the number of days that the loan remains outstanding, to a fixed amount of \$250,000, with \$100,000 payable on June 30, 2013 and the remaining \$150,000 payable at maturity on June 30, 2015. Finally, the interest rate was changed from 6% to 8% as of June 30, 2013. For more information relating to the terms of this note see “— Description of Indebtedness” below and Note 9 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

### ***Letter Agreement related to 8% subordinated convertible note due 2016***

On January 30, 2013, we and Kanis S.A. entered into a letter agreement regarding our outstanding 8% subordinated convertible note due 2016 whereby Kanis S.A. has agreed not to accelerate the maturity of these notes during the 2013 calendar year. For more information relating to the terms of our 8% subordinated convertible note due 2016, see “— Description of Indebtedness” below and Note 9 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

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### ***Amendment to FGI Credit Facility***

On August 15, 2012, we and FGI agreed to amend our FGI Facility. As amended, the initial term was extended from February 14, 2013 to August 15, 2015 and may be extended at our option for additional one-year terms. Pursuant to the amendment, the inventory sublimit amount was increased from \$1.0 million to the lesser of \$2.0 million or 50% of the aggregate purchase price paid for accounts receivable purchased under the FGI facility. Also pursuant to the amendment, the interest rate on advances or borrowings under the FGI Facility was reduced from the greater of (i) 7.50% per annum and (ii) 2.50% per annum above the Wall Street Journal “prime rate” to the greater of (i) 6.50% per annum and (ii) 2.50% per annum above the prime rate, as defined. In addition, the monthly collateral fees were reduced from 0.44% to 0.30% per month on the face amount of eligible receivables as to which advances have been made and from 0.55% to 0.38% per month on borrowings against inventory, if any. For more information relating to the terms of the FGI Facility, see “— Description of Indebtedness” below and Note 9 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

### ***Issuance of \$3.0 Million 8% Shareholder Note Due 2015***

On July 27, 2012, we executed a Loan Commitment Letter with Kanis S.A., pursuant to which we issued a promissory note in the principal amount of \$3.0 million. The unsecured promissory note bears interest at 8% per annum, payable quarterly in arrears. The promissory note has a stated maturity of three years from the date of issuance. There is no prepayment penalty or premium. For more information relating to the terms of this promissory note, see “— Description of Indebtedness” below and Note 9 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

### ***Shelf Registration***

On May 15, 2012, we filed a Shelf Registration which was declared effective by the SEC on May 21, 2012. The Shelf Registration permits us to sell, from time to time, up to an aggregate of \$50.0 million of various securities, including common stock, preferred stock, warrants to purchase common stock or preferred stock and units consisting of one or more shares of common stock, shares of preferred stock, warrants, or any combination of such securities. The Shelf Registration is intended to provide us with additional flexibility to access capital markets for general corporate purposes, subject to market conditions and our capital needs.

### **Factors Affecting Future Results**

#### ***Factors Affecting our Heavy Duty Diesel Systems Division***

The nature of our business and, in particular, our Heavy Duty Diesel Systems division, is heavily influenced by government funding of emissions control projects and increased diesel emission control regulations and mandates. Compliance with these regulatory initiatives drives demand for our products and the timing of implementation of emission reduction projects.

Emission reduction programs are often one-off, or have staggered compliance dates, which mean they do not generally result in a regular source of recurring revenues for our company. For example, London, U.K. had mandated that certain heavy duty diesel vehicles entering the London Low Emissions Zone (or LEZ) were required to meet certain emission standards by January 2012. We believe that approximately 20,000 such vehicles were required to have a retrofit emission control device installed on the vehicle by year-end 2011. In December 2011, the regulator extended the deadline for compliance into the first quarter of 2012. We believe that the bulk of the vehicles were

retrofitted in the fourth quarter of 2011, with sales of our products of approximately \$6 million in the fourth quarter and \$8 million in the full year 2011. However, due to the extension, we recorded additional sales of \$4.3 million and \$1.0 million in the first and second quarters of 2012, respectively. This program is now virtually complete and as such, we do not expect sales in London in 2013. In addition, CARB has mandated that all Class 7 and Class 8 heavy diesel trucks meet certain emission targets by 2016, with interim targets established for 2011, 2012 and 2013, such that 90% of current operating diesel trucks will be required to meet these targets by 2014. We estimate that this rule will require well over 100,000 heavy duty diesel trucks to be replaced or retrofitted. According to industry estimates, approximately 66,000 vehicles have elected or will elect to retrofit between 2011 and 2015. We believe that the rate of adoption of electing to retrofit by truck owners as well as the overall level of retrofit activity and our ability to gain sales are dependent upon several factors, including the level of enforcement of the mandate by CARB, the level of new truck acquisitions by truck owners and also our success in attaining the required verifications and approvals for products currently under review by CARB. In 2012, we experienced a slower than anticipated ramp up in adoption by truck owners, a delay in enforcement by CARB and a delay in verification for a product which was under review by CARB. This resulted in weaker than expected sales in 2012. CARB began to actively enforce the regulation in the latter part of 2012. In January 2013, we received the product verification from CARB. In addition, a key competitor exited the market. We continue to pursue this retrofit opportunity aggressively and expect sales in California in 2013 to be higher than in 2012. However, the rate of adoption, industry projections pertaining to the overall market opportunity remain uncertain and could result in fluctuations in revenue and working capital requirements from quarter-to-quarter next year.

#### ***Factors Affecting our Catalyst Division***

Because the customers of our Catalyst division are primarily OEM auto makers, our business is also affected by macroeconomic factors that impact the automotive industry generally, which can result in increased or decreased purchases of vehicles, and consequently demand for our products. Sales to our largest OEM auto customer were positively impacted during 2012 due to increased vehicle shipments, expansion of our catalysts onto new vehicle platforms, increased purchasing by the customer to build initial stock of parts for a new model and an increase in pass through sales of rare earth materials due to increased prices of these materials. In addition, our sales and gross margins are also impacted by the pass through sales of rare earth materials and the extent to which the price increases are shared with our customer. Through June 2012, the customer was reimbursing us substantially the full amount actually spent by us on these materials. For the balance of the year, our customer reimbursed us partially, pending the agreement on a formula for this reimbursement which is based on formulae established by this customer with other vendors. A formula has been agreed to between our customer and us for all shipments going forward from January 1, 2013. Based on this agreed formula, reimbursement from our customer is expected to approach our costs as we deplete existing higher priced inventory levels. We expect that this will result in improved margins as 2013 progresses. However, this formula is based on published indices of rare earth prices and as such we could experience margin reductions if the formula does not accurately reflect our actual costs.

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### *Supply of Catalyst Division Products to Heavy Duty Diesel Systems Division*

Our strategy is to progressively utilize the products of our Catalyst division in the products of our Heavy Duty Diesel Systems division. We anticipate that our intercompany sales of catalysts will increase compared to historical levels, as our planned new products are approved by the regulatory agencies and begin to generate sales. While this will not impact our reported sales, we believe that the manufacturing gross margin associated with these sales will improve our total gross margin.

### *Impact of the Pirelli Joint Venture*

In February 2013, we announced the Joint Venture with Pirelli (See “—Recent Developments—Joint Venture Agreement with Pirelli & C. Ambiente SpA” above). The purpose of the Joint Venture is to market and sell products manufactured by both CDTi and Pirelli in Europe and the CIS countries. As such, both partners will sell products to the Joint Venture which will earn a commission to market and sell these products. All existing CDTi business in Sweden and the UK will now be conducted through the joint venture. As a result, we will experience a decline in prices and hence gross margins realized on our sales to the Joint Venture. Offsetting this decline in gross margins, will be a reduction in infrastructure costs in Europe since we will reduce sales, marketing and administrative activities in Europe as the majority of these activities will now be handled by the Joint Venture. We expect the price and margin impact to begin in the late first quarter. Our infrastructure reduction is expected to be largely completed by the end of 2013. Lastly, it is the expectation of both partners that the Joint Venture will result in additional business for both companies’ products over the next several years.

## **Results of Operations**

### *Comparison of the Year Ended December 31, 2012 to the Year Ended December 31, 2011*

#### *Revenues*

The table below and the tables in the discussion that follow are based upon the way we analyze our business. See Note 18 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for additional information about our divisions.

			<b>Year Ended December 31</b>		<b>\$ Change</b>	<b>% Change</b>
	<b>2012</b>	<b>% of Total Revenue</b>	<b>2011</b>	<b>% of Total Revenue</b>		
<b>(Dollars in millions)</b>						
Heavy Duty Diesel Systems	\$ 40.7	67.2%	\$ 47.4	77.0%	\$ (6.7)	(14.3)%
Catalyst	24.3	40.2%	20.8	33.7%	3.5	17.0%
Intercompany revenue	(4.5)	(7.4)%	(6.6)	(10.7)%	2.1	(33.0)%
Total revenue	\$ 60.5	100.0%	\$ 61.6	100.0%	\$ (1.1)	(1.7)%

Total revenue for the year ended December 31, 2012 decreased by \$1.1 million, or 1.7%, to \$60.5 million from \$61.6 million for the year ended December 31, 2011.

Revenues for our Heavy Duty Diesel Systems division for the year ended December 31, 2012 decreased \$6.7 million, or 14.3%, to \$40.7 million from \$47.4 million for the year ended December 31, 2011. The decrease was due to decreased retrofit sales of \$6.3 million and decreased non-retrofit sales of \$0.4 million. Retrofit sales decreased \$2.4 million in the London LEZ and decreased \$3.9 million in North America. Significant programs in North America included California, New Jersey and Texas. California sales of \$9.8 million continued to be weak compared to expectations and were down \$2.4 million year over year as we benefited from a CARB early compliance incentive program that was implemented in the second and third quarters of 2011. Sales increased \$3.1 million under the New Jersey Department of Environmental Protection Mandatory Diesel Retrofit Program, increased \$1.0 million for the retrofit of school buses in the State of Texas and decreased \$5.7 million related to the retrofit of school buses in New York and other northeastern states. Non-retrofit sales decreased due to a decline in European mining and material handling sales partially offset by an increase in sales of fuel-borne catalysts in Europe.

Revenues for our Catalyst division for the year ended December 31, 2012 increased \$3.5 million, or 17.0%, to \$24.3 million from \$20.8 million for the year ended December 31, 2011. Excluding intercompany revenue, sales for this division increased \$5.6 million, or 40.5%, to \$19.8 million for the year ended December 31, 2012 as compared to \$14.2 million for the year ended December 31, 2011. The increase was in part due to the recognition of \$1.0 million in revenue in 2012 upon completion of performance under a contract to provide equipment, engineering and support services to assist our investment partner in the Asia Pacific, TKK, in establishing operations in China to manufacture automotive and exhaust emission products for the China market. The remaining increase was due to an increase in sales to our Japanese OEM customer of \$6.4 million, partially offset by a reduction of \$1.8 million in sales to other OEM customers in 2012 as compared to 2011.

We eliminate intercompany sales by the Catalyst division to our Heavy Duty Diesel Systems division in consolidation.

**Table of Contents***Cost of revenues*

Cost of revenues increased by \$1.8 million, or 4.1%, to \$45.8 million for the year ended December 31, 2012 compared to \$44.0 million for the year ended December 31, 2011. The primary reason for the increase in costs was higher product sales volume in our Catalyst division and increases in costs for rare earth materials which peaked in the first half of 2012. Additionally, we incurred \$1.3 million in expense related to inventory obsolescence and write-downs primarily related to the London LEZ program which is largely complete (see “—Factors Affecting Future Results” above).

*Gross Profit*

The following table shows our gross profit and gross margin (gross profit as a percentage of revenues) by division for the periods indicated.

	2012		Year Ended December 31 2011		\$ Change	% Change
		% of Revenue (1)		% of Revenue (1)		
			(Dollars in millions)			
Heavy Duty Diesel Systems	\$ 10.9	27.0%	\$ 13.0	27.4%	\$ (2.1)	(15.6)%
Catalyst	3.7	15.3%	4.9	23.7%	(1.2)	(24.7)%
Intercompany elimination	0.1		(0.3)		0.4	NM
Total gross profit	\$ 14.7	24.3%	\$ 17.6	28.5%	\$ (2.9)	(16.3)%

(1) Division calculation based on division revenue; total based on total revenue.

Gross profit for the year ended December 31, 2012 decreased by \$2.9 million, or 16.3%, to \$14.7 million from \$17.6 million for the year ended December 31, 2011. Gross margin decreased to 24.3% for the year ended December 31, 2012 from 28.5% for the year ended December 31, 2011.

The decrease in gross margin for our Heavy Duty Diesel Systems division to 27.0% for the year ended December 31, 2012 from 27.4% for the year ended December 31, 2011 is a result of the write-down of inventory related to the phase down of the London LEZ and to an increase in warranty expense related to increased sales of more complex diesel particulate filters, partially offset by favorable product mix due to increased sales of higher margin products in North America and lower sales of lower margin products in the United Kingdom in 2012 as compared to 2011.

Gross margin for our Catalyst division decreased from 23.7% for the year ended December 31, 2011 to 15.3% for the year ended December 31, 2012. Excluding the impact of the TKK contract, as discussed above, gross margins for our Catalyst division decreased to 12.8% for the year ended December 31, 2012 from 23.7% for the year ended December 31, 2011. This decrease in gross margin is a result of the escalation of prices of rare earth materials that we use in our catalysts. One of our OEM customers provides price adjustments to isolate us from the impact of rare earth cost increases, but that addition solely covers cost without any additional profit. Through June 2012, that customer was reimbursing us the full amount actually spent by us on these materials. For the balance of the year, our customer reimbursed us for our rare earth material costs based upon a formula that did not fully reflect our cost basis. Further, due to worldwide supply constraints on rare earth materials, we secured supply to insure adequate availability to meet

our OEM customer demand. When rare earth material prices declined during the year, our OEM customer's formula provided for reduced reimbursements while we were still consuming the materials previously secured to protect supply. In addition to our customer reimbursements being less than actual cost, the rare earth reimbursements are without profit, hence are dilutive to our margins. Our Catalyst division margins were also impacted by product mix. In 2011, 31.9% of the Catalyst division sales were intercompany diesel catalyst sales as compared to 18.3% in 2012. Diesel intercompany sales are typically at a higher margin than OEM sales.

### *Operating Expenses*

The following table shows our operating expenses and operating expenses as a percentage of revenues for the periods indicated.

			Year Ended December 31		\$ Change	% Change
	2012	% of Total Revenue	2011	% of Total Revenue		
(Dollars in millions)						
Selling, general and administrative	\$ 14.9	24.7%	\$ 16.7	27.1%	\$ (1.8)	(10.5)%
Research and development	6.7	11.1%	7.4	12.0%	(0.7)	(9.2)%
Severance and other charges	0.9	1.4%			0.9	NM
Total operating expenses	\$ 22.5	37.2%	\$ 24.1	39.1%	\$ (1.6)	(6.4)%

For the year ended December 31, 2012, operating expenses decreased by \$1.6 million, or 6.4%, to \$22.5 million from \$24.1 million for the year ended December 31, 2011. Included in the year ended December 31, 2012 is \$0.6 million in severance expense related to the elimination of several positions at both the Heavy Duty Diesel Systems and Catalyst divisions and \$0.3 million in other charges related to the exit from facilities in the fourth quarter of 2012.

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### *Selling, general and administrative expenses*

For the year ended December 31, 2012, selling, general and administrative expenses decreased by \$1.8 million, or 10.5%, to \$14.9 million from \$16.7 million for the year ended December 31, 2011. This decrease is primarily a result of a \$0.8 million reduction in stock based compensation, \$0.6 million in reduced costs due to the downsizing of operations in the United Kingdom, \$0.6 million in reduced legal, accounting and other public company expenses, all of which were partially offset by \$0.3 million in recruiting and relocation expense related to the hiring of key executives and \$0.1 million of other decreases.

Selling, general and administrative expenses as a percentage of revenues decreased to 24.7% in the year ended December 31, 2012 compared to 27.1% in the year ended December 31, 2011.

### *Research and development expenses*

For the year ended December 31, 2012, research and development expenses decreased by \$0.7 million, or 9.2%, to \$6.7 million from \$7.4 million for the year ended December 31, 2011. The decrease is primarily a result of \$0.4 million in reduced costs due to the downsizing of operations in the United Kingdom, \$0.5 million in reduced Catalyst division scale-up expense which were higher in 2011 for London LEZ and new OEM models, \$0.3 million in increased product verification costs primarily related to new products for California and \$0.1 million in other decreases. As a percentage of revenues, research and development expenses were 11.1% in the year ended December 31, 2012, compared to 12.0% in the year ended December 31, 2011.

### *Severance and other charges*

During 2012, we initiated actions to streamline both our facilities and our workforce. These actions were deemed necessary to meet the demands of the markets we serve and our economic environment and to improve our profitability. We recorded \$0.6 million in costs related to the termination of 41 employees throughout North America, Europe, the United Kingdom and Asia. We also incurred \$0.2 million in lease termination costs related to the exit of a lease in North America and \$0.1 million asset impairment expense related to the exit of this facility as well as to the exit of a leased facility in the United Kingdom.

### *Other expense, net*

	<b>Year Ended December 31</b>			
	<b>% of</b>		<b>% of</b>	
	<b>2012</b>	<b>Total Revenue</b>	<b>2011</b>	<b>Total Revenue</b>
	<b>(Dollars in millions)</b>			
Interest expense	\$ (1.5)	(2.4)%	\$ (1.2)	(2.0)%
Gain on change in fair value of liability-classified warrants	0.1	0.1%	1.1	1.8%
Foreign currency exchange losses	(0.5)	(0.8)%	(0.4)	(0.6)%
All other, net	(0.3)	(0.5)%	0.1	0.1%

Total other expense	\$	(2.2)	(3.6)%	\$	(0.4)	(0.7)%
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For the year ended December 31, 2012, we incurred interest expense of \$1.5 million compared to \$1.2 million in the year ended December 31, 2011. The increase in interest expense was due to an increase in shareholder notes outstanding in 2012 as compared to 2011 and to higher average balances outstanding under our credit facilities partially offset by lower interest rates on borrowings under the FGI facility pursuant to the amendment of the agreement in August 2012. We also incurred an aggregate \$0.2 million related to the amortization of note discounts and premiums and debt issuance costs in each of the years ended December 31, 2012 and 2011.

For the year ended December 31, 2012, there was a gain of \$0.1 million related to the change in fair value of liability classified common stock warrants compared to a gain of \$1.1 million in the year ended December 31, 2011. For information regarding the fair value of these warrants, see Note 11 to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K. The year ended December 31, 2012 included a \$0.5 million exchange loss related primarily to changes in value of the Canadian dollar in relation to the U.S. dollar as compared to a loss of \$0.4 million in the year ended December 31, 2011.

#### *Income taxes*

For the year ended December 31, 2012, we had income tax benefit from continuing operations of \$0.4 million compared to tax expense of \$0.3 million for the year ended December 31, 2011. The effective income tax rate for continuing operations was 3.6% for the year ended December 31, 2012, compared with (4.2%) for the year ended December 31, 2011. The difference between our effective tax rate and the U.S. statutory tax rate for the year ended December 31, 2012 is primarily related to the valuation allowance offsetting the deferred tax assets in both the U.S. and U.K. jurisdictions as well as to a foreign tax rate differential related to Sweden and Canada. In addition, the Canadian entity incurred operating losses in the current year compared to an operating profit in the prior year, and as such is recording an income tax benefit. Lastly, as of December 31, 2012 we recorded an income tax benefit, associated with the elimination of a portion of the ASC 740 tax liability of \$0.1 million. The difference between our effective tax rate and the U.S. statutory tax rate for the year-ended December 31, 2011 is primarily related to the valuation allowance offsetting the deferred tax assets in both the U.S. and U.K. jurisdictions as well as to a foreign rate tax differential related to Sweden and Canada. In addition, during 2011 the Canadian entity had minor operating profit but due to the ability to generate research & development credits they were able to generate excess credits, resulting in an income tax benefit.

#### *Net loss*

For the foregoing reasons, we had a net loss of \$9.7 million for the year ended December 31, 2012 compared to a net loss of \$7.3 million for the year ended December 31, 2011. Excluding amounts related to discontinued operations, we had a net loss from continuing operations of \$9.7 million for the year ended December 31, 2012 compared to a net loss from continuing operations of \$7.2 million for the year ended December 31, 2011. We continue to have legal and other expenses related to the 2009 divestiture of the assets of Applied Utility Systems ("AUS"). We record these activities as discontinued operations. For additional information relating to AUS, see Note 15 to the consolidated financial statements included elsewhere within this Annual Report on Form 10-K.



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### **Liquidity and Capital Resources**

Historically, the revenue that we have generated has not been sufficient to fund our operating requirements and debt servicing needs. Notably, we have suffered recurring losses since inception. As of December 31, 2012, we had an accumulated deficit of approximately \$174.6 million compared to \$165.0 million at December 31, 2011. We have also had negative cash flows from operations from inception through the year ended December 31, 2011. For the year ended December 31, 2012, we used \$0.2 million of cash for continuing operations compared to cash used of \$14.6 million for the year ended December 31, 2011. We had \$6.9 million in cash at December 31, 2012 compared to \$3.5 million in cash at December 31, 2011, and total current liabilities of \$15.7 million at December 31, 2012 compared to \$15.8 million at December 31, 2011.

At December 31, 2012, \$3.3 million of our cash was held by foreign subsidiaries in Canada, Sweden and the United Kingdom. We do not intend to repatriate any amount of this cash to the United States as it will be used to fund our subsidiaries' continued operations. If we decide to repatriate unremitted foreign earnings in the future, it could have negative tax implications.

Our primary sources of liquidity in recent years have been asset sales, credit facilities and other borrowings and equity sales. We took several steps in 2011 to improve our liquidity position. In February 2011, we entered into a \$7.5 million secured demand financing facility with FGI backed by our receivables and inventory and repaid our previous demand facility with Fifth Third Bank. On August 15, 2012, the FGI Facility was amended and the initial term was extended from February 14, 2013 to August 15, 2015 and may be extended at our option for additional one-year terms. However, FGI can cancel the facility at any time. For details regarding the FGI facility, see “—Description of Indebtedness” below and Note 9 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. At December 31, 2012, we had \$5.5 million in borrowings outstanding with \$2.0 million available under our FGI credit facility, subject to the availability of eligible accounts receivable and inventory balances for collateral. However, there is no guarantee that we will be able to borrow to the full limit of \$7.5 million if FGI chooses not to finance a portion of our receivables or inventory. Additionally, FGI can cancel the facility at any time. In May 2011, we issued \$3.0 million of our 8% subordinated convertible notes to a shareholder. Additionally, on July 5, 2011, we closed a public offering in which we sold 3,053,750 shares of common stock and received \$10.2 million in net proceeds from the offering after deducting underwriting discounts and commissions and offering expenses.

We continue to pursue revenue generating opportunities relating to special government mandated retrofit programs in California and potentially others in various jurisdictions domestically and internationally. Opportunities such as these require cash investment in operating expenses and working capital such as inventory and receivables prior to realizing profits and cash from sales. To address the potential need for capital, in October 2011, we signed a purchase agreement, together with a registration rights agreement, with LPC, whereby LPC has agreed to purchase up to \$10.0 million of our common stock over a 30-month period. We have registered 1,823,577 shares related to the transaction, 40,247 shares of which were issued to LPC as a commitment fee; 80,494 shares may be issued to LPC as an additional commitment fee on a pro rata basis as up to \$10.0 million of our common stock is purchased by LPC; and 1,702,836 represent shares that we may sell to LPC under the Purchase Agreement. We have the right, in our sole discretion, over a 30-month period to sell shares of our common stock to LPC in amounts of up to \$0.5 million to up to \$1.5 million per sale, depending on certain conditions as set forth in the Purchase Agreement, up to the aggregate amount of \$10.0 million. We currently have registered 1,702,836 shares for purchase shares under the agreement. The aggregate number of shares issued pursuant to the purchase agreement is limited to 1,434,994 shares of common stock

(19.99% of the outstanding shares of our common stock on October 7, 2011, the date of the purchase agreement) (the "Exchange Cap"), unless and until shareholder approval is obtained. The Exchange Cap is not applicable for at-market transactions, defined as when the average price for all shares purchased pursuant to the purchase agreement is greater than or equal the signing price per the agreement of \$2.76 plus \$0.254, or \$3.014 per share. Assuming a purchase price of \$2.14 per share (the closing sale price of our common stock on March 22, 2013) and the purchase by LPC of the full 1,702,836 currently registered purchase shares, proceeds to us would be \$3.6 million. If the purchase was limited to the Exchange Cap of 1,434,994 shares, proceeds to us would be \$3.1 million. We expect to use the proceeds received under the Purchase Agreement for working capital and general corporate purposes. There have been no sales to date under this arrangement.

In addition, on May 15, 2012, we filed a shelf registration statement on Form S-3 with the SEC (the "Shelf Registration"). The Shelf Registration was declared effective by the SEC on May 21, 2012. The shelf registration statement permits us to sell, from time to time, up to an aggregate of \$50.0 million of various securities, including common stock, preferred stock, warrants to purchase common stock or preferred stock and units consisting of one or more shares of common stock, shares of preferred stock, warrants, or any combination of such securities. The registration statement is intended to provide us with additional flexibility to access capital markets for general corporate purposes, subject to market conditions and our capital needs.

On July 27, 2012, we entered into a Loan Commitment Letter with Kanis S.A. pursuant to which we issued a promissory note in the principal amount of \$3.0 million. The promissory note bears interest at 8% per annum which is payable quarterly in arrears and matures on July 27, 2015. See "—Description of Indebtedness" below and Note 9 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

On January 30, 2013, we and Kanis S.A. entered into an amendment to amend certain terms of our outstanding 6% note due 2013. As amended, the maturity date of this note was changed from June 30, 2013 to June 30, 2015. In addition, the payment premium due under this note was changed from a range of \$100,000 to \$200,000, based proportionally on the number of days that the loan remains outstanding, to a fixed amount of \$250,000, with \$100,000 payable on June 30, 2013 and the remaining \$150,000 payable at maturity on June 30, 2015. Finally, the interest rate was changed from 6% to 8% as of June 30, 2013. Also on January 30, 2013, we and Kanis S.A. entered into a letter agreement regarding our outstanding 8% subordinated convertible note due 2016 whereby Kanis S.A. has agreed not to accelerate the maturity of these notes during the 2013 calendar year.

Due to actions taken to improve our liquidity, including the availability with FGI and LPC, as discussed above, management believes that we will have access to sufficient working capital to sustain operations through at least the next twelve months. However, no assurances can be provided that we will have sufficient cash and credit to sustain operations or that we will, if necessary, be able to raise additional capital or reduce discretionary spending to provide the required liquidity. In the meantime, we intend to continue to manage our cash in a manner designed to ensure that we have adequate cash to fund our operations for the foreseeable future.

The following table summarizes our cash flows for the years ended December 31, 2012 and 2011.

<b>Year Ended December 31</b>			
<b>2012</b>	<b>2011</b>	<b>\$ Change</b>	<b>% Change</b>
<b>(Dollars in millions)</b>			

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Cash (used in) provided by:

Operating activities	\$ (0.2)	\$ (14.6)	\$ 14.4	98.9%
Investing activities	\$ (0.1)	\$ (0.5)	\$ 0.4	83.2%
Financing activities	\$ 3.7	\$ 13.8	\$ (10.1)	(72.9)%

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### *Cash used in operating activities*

Our largest source of operating cash flows is cash collections from our customers following the sale of our products and services. Our primary uses of cash for operating activities are for purchasing inventory in support of the products that we sell, personnel related expenditures, facilities costs and payments for general operating matters.

Cash used in operating activities in the year ended December 31, 2012 was \$0.2 million, an improvement of \$14.4 million from the year ended December 31, 2011, when our operating activities used \$14.6 million of cash. The lower cash used in operating activities for continuing operations in 2012 resulted primarily from collections in 2012 on higher fourth quarter 2011 sales in the Heavy Duty Diesel Systems business and to the build-up in inventories in 2011 primarily related to the London LEZ project which was completed in the first half of 2012, as discussed above. These decreases in cash used were partially offset by an increase in net loss from continuing operations primarily due to a decrease in product sales in the Heavy Duty Diesel division and to the impact of rare earth price increases in the Catalyst division partially offset by lower operating expenses, as discussed above.

### *Cash used in investing activities*

Our cash flows from investing activities primarily relate to asset sales and acquisitions, our Asian investment as well as capital expenditures and other assets to support our growth plans.

Net cash used in investing activities was \$0.1 million in the year ended December 31, 2012 compared to \$0.5 million used in investing activities in the year ended December 31, 2011. Cash used in investing activities in the year ended December 31, 2012 consists of cash used of \$0.2 million for purchases of property and equipment partially offset by repayments received of \$0.1 million on a loan to our Asian investment. Cash used in the year ended December 31, 2011 consisted of \$0.6 million in purchases of property and equipment partially offset by \$0.1 million in loan repayments from our Asian investment.

### *Cash provided by financing activities*

Since inception, we have financed our net operating cash usage through a combination of financing activities such as issuance of equity or debt and investing activities such as sale of intellectual property or other assets. Changes in our cash flows from financing activities primarily relate to borrowings and payments under debt obligations.

Net cash provided by financing activities was \$3.7 million in the year ended December 31, 2012, compared to cash provided of \$13.8 million in the year ended December 31, 2011. Cash provided by financing activities in the year ended December 31, 2012 includes proceeds of \$3.0 million on the issuance of 8% notes, a \$0.9 million increase in borrowings under our line of credit with FGI and \$0.2 million in debt issuance and shelf registration costs. Cash provided by financing activities in the year ended December 31, 2011 includes net proceeds of \$10.2 million from the issuance of common stock in a public offering, proceeds of \$3.0 million on the issuance of secured convertible notes, \$2.0 million in increased borrowings under credit facilities and \$0.4 million in proceeds from the exercise of common stock warrants, all of which were partially offset by \$1.6 million in payment of a settlement obligation pursuant to the October 20, 2010 settlement agreement with respect to litigation and other disputes in connection with our purchase of

AUS assets in August 2006, and the payment of \$0.2 million in debt issuance costs.

### Description of Indebtedness

Our outstanding borrowing at December 31, 2012 and December 31, 2011 are summarized as follows:

	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
	<b>(Dollars in millions)</b>	
Line of credit	\$ 5.5	\$ 4.5
6% shareholder note due 2013	1.6	1.5
8% subordinated convertible shareholder notes due 2016	3.0	3.0
8% shareholder note due 2015	3.0	
Capital lease obligations		0.1
Total borrowings	\$ 13.1	\$ 9.1

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### *Line of Credit with FGI*

On February 14, 2011, we and certain of our subsidiaries (the “Credit Subsidiaries”) entered into separate Sale and Security Agreements with FGI to provide for a \$7.5 million secured demand facility backed by our receivables and inventory (the “FGI Facility”). We and the Credit Subsidiaries also entered into guarantees to guarantee the performance of their obligations under the Sale and Security Agreements. We also granted FGI a first lien collateral interest in substantially all of our assets. On August 15, 2012, we and FGI agreed to amend the FGI Facility. As amended, the initial term was extended from February 14, 2013 to August 15, 2015 and may be extended at our option for additional one-year terms. However, FGI can cancel the facility at any time.

Under the FGI facility, as amended, FGI can elect to purchase eligible accounts receivables from us and the Credit Subsidiaries at up to 80% of the value of such receivables (retaining a 20% reserve). At FGI’s election, FGI may advance us up to 80% of the value of any purchased accounts receivable, subject to the \$7.5 million limit. Reserves retained by FGI on any purchased receivable are expected to be refunded to us net of interest and fees on advances once the receivables are collected from customers. We may also borrow against eligible inventory up to the inventory sublimit as determined by FGI subject to the aggregate \$7.5 million limit under the FGI Facility and certain other conditions. Pursuant to the amendment, the inventory sublimit amount was increased from \$1.0 million to the lesser of \$2.0 million or 50% of the aggregate purchase price paid for accounts receivable purchased under the FGI facility.

Under the amendment, the interest rate on advances or borrowings under the FGI Facility was reduced from the greater of (i) 7.50% per annum and (ii) 2.50% per annum above the Wall Street Journal “prime rate” to the greater of (i) 6.50% per annum and (ii) 2.50% per annum above the prime rate, as defined. Any advances or borrowings under the FGI Facility are due on demand. We also agreed to pay FGI collateral management fees. As amended, the monthly collateral fees were reduced from 0.44% to 0.30% per month on the face amount of eligible receivables as to which advances have been made and from 0.55% to 0.38% per month on borrowings against inventory, if any. At any time outstanding advances or borrowings under the FGI facility are less than \$2.4 million, we agreed to pay FGI standby fees of (i) the interest rate on the difference between \$2.4 million and the average outstanding amounts and (ii) 0.44% per month on 80% of the amount by which our advances or borrowings are less than the agreed \$2.4 million minimum.

We account for the sale of accounts receivable under the FGI facility as a secured borrowing with a pledge of the subject receivables as collateral. At December 31, 2012, we had \$4.4 million of gross accounts receivable pledged to FGI as collateral for short-term debt in the amount of \$3.5 million. At December 31, 2012, we also had \$2.0 million in borrowings outstanding against eligible inventory. We were in compliance with the terms of the FGI Facility at December 31, 2012.

We paid FGI a one-time facility fee of \$75,000 upon entry into the FGI Facility and \$75,000 upon amending the FGI facility. Also, if we terminate the FGI facility prior to the last day of the initial term, as extended, or any additional term, we must pay a termination fee of 2% of the facility limit then in effect. No termination fee will be due if we notify FGI of our intent to terminate within 10 days of FGI increasing the reserve percentage for accounts to greater than 40% for more than 30 consecutive days. FGI may terminate the facility at any time. As such, the facility and amendment fees were expensed when incurred. The termination fee is not payable upon a termination by FGI or upon non-renewal.

### *6% Shareholder Note Due 2013*

On December 30, 2010, we executed a Loan Commitment Letter with Kanis S.A., a shareholder of our company, pursuant to which Kanis S.A. loaned us \$1.5 million. The unsecured loan bears interest on the unpaid principal at a rate of 6% per annum, with interest only payable quarterly on each March 31, June 30, September 30 and December 31, commencing March 31, 2011 and matures on June 30, 2013. In addition to principal and accrued interest, we are obligated to pay Kanis S.A. at maturity a "Payment Premium" ranging from \$100,000 to \$200,000 based proportionally on the number of days that the loan remains outstanding. There is no prepayment penalty. The loan originally matured on June 30, 2013. On January 30, 2013, we and Kanis S.A. agreed to amend certain terms of the loan to change the maturity date from June 30, 2013 to June 30, 2015 and to increase the interest rate from 6% to 8% beginning on June 30, 2013. In addition, the payment premium due under this note was changed to a fixed amount of \$250,000 with \$100,000 payable on June 30, 2013 and the remaining amount payable at maturity on June 30, 2015.

In connection with the loan, we issued Kanis S.A. warrants to acquire 25,000 shares of our common stock at \$10.40 per share. These warrants are exercisable on or after June 30, 2013 and expire on the earlier of (x) June 30, 2016 and (y) the date that is 30 days after we give notice to the warrant holder that the market value of one share of our common stock has exceeded 130% of the exercise price of the warrant for 10 consecutive days, which 10 consecutive days commence on or after June 30, 2013. We have recorded the relative estimated fair value of these warrants as a discount from the loan amount and are amortizing the discount using the effective interest method over the term of the loan.

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### ***8% Subordinated Convertible Notes Due 2016***

On May 6, 2011, we issued to Kanis S.A \$3.0 million aggregate principal amount of our subordinated convertible notes. The notes bear interest at a rate of 8% per annum, which is payable quarterly in arrears. The notes have a stated maturity of five years from the date of issuance. The original agreement allowed for the acceleration of the maturity of the notes if: (i) we were in breach of the notes or other agreements with Kanis S.A., or (ii) Kanis S.A. provided written notice, not less than 30 days prior to such date, that it elected to accelerate the maturity to a date not earlier than November 11, 2012. On February 16, 2012, the agreement was amended to modify the early redemption date from November 11, 2012 to May 12, 2013.

We may be required to redeem all or a portion of the notes at any time on or after May 12, 2013 on not less than 30 days prior written notice at a purchase price in cash equal to 100% of the principal amount of the notes to be purchased plus any accrued but unpaid interest through the date of redemption. We also have the option to redeem the notes at any time at a price equal to 100% of the face amount plus accrued and unpaid interest through the date of redemption. There is no prepayment penalty. We used the net proceeds from the sale of the notes for general working capital purposes. The subordinated convertible notes are unsecured obligations and are subordinated to our existing and future secured indebtedness.

On July 27, 2012, we and Kanis S.A. further amended the terms of the Notes to modify the conversion feature. As amended, the outstanding principal balance of, and accrued and unpaid interest on, the Notes are convertible, at the option of Kanis S.A. at any time upon written notice given not less than 75 calendar days prior to the date of conversion, into no more than 250,000 shares of Company common stock at a conversion price of \$4.00 per share.

On January 30, 2013, we and Kanis S.A. entered into a letter agreement regarding the Notes whereby Kanis S.A. agreed not to accelerate the maturity of these convertible notes during the 2013 calendar year.

In connection with the February 16, 2012 amendment, we issued to Kanis S.A., warrants to acquire 5,000 shares of our common stock at \$3.80 per share. The warrants are exercisable on or after August 16, 2014 and expire on the earlier of (x) August 16, 2017 and (y) that date that is 30 days after we give notice to the warrant holder that the market value of one share of our common stock has exceeded 130% of the exercise price of the warrant for 10 consecutive days, which 10 consecutive days commence on or after August 16, 2014. We did not receive any cash consideration for the issuance of the warrants. We relied on the private placement exemption provided by Regulation S.

### ***8% Shareholder Note Due 2015***

On July 27, 2012, we executed a Loan Commitment Letter with Kanis S.A., pursuant to which we issued a promissory note in the principal amount of \$3.0 million. The unsecured promissory note bears interest at 8% per annum, payable quarterly in arrears. The promissory note has a stated maturity of three years from the date of issuance. There is no prepayment penalty or premium.

In connection with the issuance of the promissory note, on July 27, 2012, we issued Kanis S.A. a warrant to acquire 45,000 shares of our common stock at \$2.09 per share, a third of which became exercisable on the issuance date and the remainder will vest as to one third on each of the first and second anniversaries of the issuance date. This warrant expires on July 27, 2018. We did not receive any cash consideration for the issuance of this warrant, which

was issued in reliance upon the private placement exemption provided by Regulation S.

### **Capital Expenditures**

As of December 31, 2012, we had no material commitments for capital expenditures and no material commitments are anticipated in the near future.

### **Off-Balance Sheet Arrangements**

As of December 31, 2012 and 2011, we had no off-balance sheet arrangements.

### **Commitments and Contingencies**

As of December 31, 2012 and 2011, other than office leases, employment agreements with key executive officers and the obligation to fund our portion (5%) of the losses of our Asian investment, we had no material commitments other than the liabilities reflected in our consolidated financial statement included elsewhere in this Annual Report on Form 10-K.

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

Not applicable.

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

See “Index to Financial Statements,” located on page F-1 of this Annual Report on Form 10-K.

**ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

There have been no changes in or disagreements with the Company’s accountants on any accounting or financial disclosure issues, except that, as previously reported, our Audit Committee determined to replace KPMG LLP with BDO USA, LLP as the Company’s independent registered public accountant beginning with the year ending December 31, 2012.

**ITEM 9A. CONTROLS AND PROCEDURES**

**Disclosure Controls and Procedures.**

In evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Annual Report on Form 10-K. Based on that evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that our disclosure controls and procedures were effective, at the reasonable assurance level, as of the end of the period covered by this report to ensure that information we are required to disclose in reports that we file or submit under the Securities Exchange Act of 1934 (1) is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms, and (2) is accumulated and communicated to management, including our Chief Executive Officer and our Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

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### **Management's Annual Report on Internal Control over Financial Reporting**

Management is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control over financial reporting is a process designed under the supervision of the Chief Executive Officer and Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our financial statements for external reporting purposes in accordance with U.S. generally accepted accounting principles, or GAAP. A company's internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and the directors of the company; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2012. Management based this assessment on criteria for effective internal control over financial reporting described in *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Management's assessment included an evaluation of the design of our internal control over financial reporting and testing of the operational effectiveness of its internal control over financial reporting. Management reviewed the results of its assessment with the Audit Committee of our Board of Directors.

Based on this assessment, management determined that, as of December 31, 2012, we maintained effective internal control over financial reporting.

### **Changes in Internal Control over Financial Reporting**

There were no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting during our fourth fiscal quarter of 2012.

### **Auditor's Attestation**

This annual report does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by our registered public accounting firm pursuant to rules of the Securities and Exchange Commission that permit us to provide only management's report in this annual report.

**ITEM 9B. OTHER INFORMATION**

None.

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**Part III**

**ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE**

Information required by this item regarding our directors and executive officers will be set forth under the captions “Election of Directors,” “Directors and Executive Officers of CDTi,” “Section 16(a) Beneficial Ownership Reporting Compliance,” “Committees of the Board,” “Audit Committee” and “Audit Committee Financial Experts” in our proxy statement related to the 2013 annual meeting of shareholders and is incorporated by reference. Information regarding our directors is available on our Internet site under “Investor Relations” as follows: <http://www.cdti.com>.

We have adopted a Code of Ethics and Business Conduct that applies to all employees, officers and directors, including the Chief Executive Officer and Chief Financial Officer. A copy of the code is available free of charge on written or telephone request to the Chief Financial Officer at 4567 Telephone Road, Suite 100, Ventura, California 93003 or +1 805 639 9461. The Code may also be viewed on our website under “Investor Relations” as follows: <http://www.cdti.com>.

**ITEM 11. EXECUTIVE COMPENSATION**

Information required by this item will be set forth under the caption “Executive Compensation” and “Director Compensation” in the proxy statement related to the 2013 annual meeting of stockholders and is incorporated by reference.

**ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**

Information required by this item will be set forth under the caption “Principal Stockholders and Stock Ownership of Management” and “Equity Compensation Plan Information” in the proxy statement related to the 2013 annual meeting of stockholders and is incorporated by reference.

**ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE**

Information required by this item will be set forth under the captions “Transactions with Related Parties” and “Director Independence” in the proxy statement related to the 2013 annual meeting of stockholders and is incorporated by reference.

**ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES**

Information required by this item will be set forth under the caption “Audit Fees” in the proxy statement related to the 2013 annual meeting of stockholders and is incorporated by reference.

**Part IV**

**ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES**

(a) Exhibits and Financial Statement Schedules:

(1) Financial Statements

See “Index to Financial Statements” located on page F-1 of this Annual Report on Form 10-K.

(2) Financial Statement Schedules

Not applicable

(3) Exhibits

See the exhibit index included herein.

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**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

CLEAN DIESEL TECHNOLOGIES, INC.

March 27, 2013  
Date

By: /s/ R. Craig Breese  
R. Craig Breese  
Chief Executive Officer and  
Director

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the registrant and in the capacities and on the dates indicated below.

/s/ R. Craig Breese R. Craig Breese	Chief Executive Officer and Director (Principal Executive Officer)	Date: March 27, 2013
/s/ Nikhil A. Mehta Nikhil A. Mehta	Chief Financial Officer (Principal Financial Officer)	Date: March 27, 2013
/s/ David E. Shea David E. Shea	Controller (Principal Accounting Officer)	Date: March 27, 2013
/s/ Alexander (“Hap”) Ellis III Alexander (“Hap”) Ellis III	Chairman	Date: March 27, 2013
s/ Charles F. Call Charles F. Call	Vice Chairman	Date: March 27, 2013
/s/ Bernard H. (“Bud”) Cherry Bernard H. (“Bud”) Cherry	Director	Date: March 27, 2013

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/s/ Charles R. Engles, Ph.D.  
Charles R. Engles, Ph.D.

Director

Date: March 27, 2013

/s/ Derek R. Gray  
Derek R. Gray

Director

Date: March 27, 2013

/s/ Mungo Park  
Mungo Park

Director

Date: March 27, 2013

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**CLEAN DIESEL TECHNOLOGIES, INC.**

**Index to Financial Statements**

**Audited Consolidated Financial Statements**

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**Report of Independent Registered Public Accounting Firm**

Board of Directors and Stockholders

Clean Diesel Technologies, Inc.

Ventura, California

We have audited the accompanying consolidated balance sheet of Clean Diesel Technologies, Inc. as of December 31, 2012 and the related consolidated statements of operations and comprehensive loss, stockholders' equity, and cash flows for the year 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 audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are 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 audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of 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 statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statements presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Clean Diesel Technologies, Inc. at December 31, 2012, and the results of its operations and its cash flows for the year then ended, in conformity with accounting principles generally accepted in the United States of America.

/s/ BDO USA, LLP

BDO USA, LLP

Los Angeles, California

March 27, 2013

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**Report of Independent Registered Public Accounting Firm**

The Board of Directors and Stockholders

Clean Diesel Technologies, Inc.:

We have audited the accompanying consolidated balance sheet of Clean Diesel Technologies, Inc. and subsidiaries (the Company) as of December 31, 2011, and the related consolidated statements of operations and comprehensive loss, stockholders' equity, and cash flows for the year then ended. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. 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 audit provides a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Clean Diesel Technologies, Inc. and subsidiaries as of December 31, 2011, and the results of their operations and their cash flows for the year then ended in conformity with U.S. generally accepted accounting principles.

/s/ KPMG LLP

Los Angeles, California  
March 29, 2012

**Table of Contents****CLEAN DIESEL TECHNOLOGIES, INC.****Consolidated Balance Sheets****(in thousands, except share and per share amounts)**

	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
<b>ASSETS</b>		
Current assets:		
Cash	\$ 6,878	\$ 3,471
Accounts receivable, net	5,470	11,695
Inventories	8,697	10,288
Prepaid expenses and other current assets	1,757	1,664
Total current assets	22,802	27,118
Property and equipment, net	2,000	2,649
Intangible assets, net	4,369	4,999
Goodwill	6,087	5,955
Other assets	183	394
Total assets	\$ 35,441	\$ 41,115
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Line of credit	\$ 5,476	\$ 4,527
Shareholder notes payable	100	
Accounts payable	5,608	5,952
Accrued expenses and other current liabilities	4,514	5,015
Income taxes payable	22	274
Total current liabilities	15,720	15,768
Shareholder notes payable, noncurrent	7,478	4,520
Capital lease obligation	-	17
Deferred tax liability	797	942
Total liabilities	23,995	21,247
Commitment and contingencies (Note 17)		
Stockholders' equity		
Preferred stock par value \$0.01 per share: authorized 100,000; no shares issued and outstanding		
Common stock, par value \$0.01 per share: authorized 24,000,000 and 12,000,000 shares at December 31, 2012 and 2011, respectively; issued and	73	72
Overview		87

outstanding 7,254,464 and 7,218,807 shares at December 31, 2012 and 2011, respectively

Additional paid-in capital	186,106	185,473
Accumulated other comprehensive loss	(112)	(716)
Accumulated deficit	(174,621)	(164,961)
Total stockholders' equity	11,446	19,868
Total liabilities and stockholders' equity	\$ 35,441	\$ 41,115

See accompanying notes to the consolidated financial statements.

**Table of Contents****CLEAN DIESEL TECHNOLOGIES, INC.****Consolidated Statements of Operations and Comprehensive Loss****(in thousands, except per share amounts)**

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Revenues	\$ 60,537	\$ 61,607
Cost of revenues	45,816	44,023
Gross profit	14,721	17,584
Operating expenses:		
Selling, general and administrative (including stock-based compensation expense of \$456 and \$1,280)	14,946	16,699
Research and development (including stock-based compensation expense of \$76 and \$215)	6,723	7,408
Severance and other charges	889	
Total operating expenses	22,558	24,107
Loss from operations	(7,837)	(6,523)
Other income (expense):		
Interest income	11	17
Interest expense	(1,479)	(1,228)
Other (expense) income, net	(756)	805
Total other expense	(2,224)	(406)
Loss from continuing operations before income taxes	(10,061)	(6,929)
Income tax (benefit) expense from continuing operations	(367)	291
Net loss from continuing operations	(9,694)	(7,220)
Discontinued operations:		
Income (loss) from operations of discontinued Energy Systems Division	57	(89)
Income tax expense from discontinued operations	23	2
Net income (loss) from discontinued operations	34	(91)
Net loss	\$ (9,660)	\$ (7,311)
Foreign currency translation adjustments	604	(477)
Comprehensive loss	\$ (9,056)	\$ (7,788)

Basic and diluted net loss per share:

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Net loss from continuing operations per share	\$	(1.34)	\$	(1.30)
Net loss from discontinued operations per share		-		(0.01)
Net loss per share	\$	(1.34)	\$	(1.31)
Weighted-average number of common shares outstanding – basic and diluted		7,227		5,574

See accompanying notes to the consolidated financial statements.

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**Table of Contents****CLEAN DIESEL TECHNOLOGIES, INC.****Consolidated Statements of Stockholders' Equity****(in thousands)**

	<b>Common Stock</b>		<b>Additional</b>	<b>Accumulated</b>	<b>Accumulated Deficit</b>	<b>Total Stockholders' Equity</b>
	<b>Shares</b>	<b>Amount</b>	<b>Paid-In Capital</b>	<b>Other Comprehensive Loss</b>		
Balance at December 31, 2010	3,959	\$ 40	\$ 173,262	\$ (239)	\$(157,650)	\$ 15,413
Net loss					(7,311)	(7,311)
Other comprehensive loss				(477)		(477)
Proceeds from equity offering, net of costs of \$1,271	3,054	31	10,150			10,181
Commitment shares issued to Lincoln Park Capital	40		134			134
Consultant stock based compensation expense			56			56
Stock based compensation plans	116	1	1,438			1,439
Exercise of stock warrants	50		433			433
Balance at December 31, 2011	7,219	72	185,473	(716)	(164,961)	19,868
Net loss					(9,660)	(9,660)
Other comprehensive income				604		604
Issuance of warrants with shareholder note			70			70
Stock based compensation plans	12	1	569			570
Consultant stock based compensation expense	23		(6)			(6)
Balance at December 31, 2012	7,254	\$ 73	\$ 186,106	\$ (112)	\$(174,621)	\$ 11,446

See accompanying notes to the consolidated financial statements.



**Table of Contents****CLEAN DIESEL TECHNOLOGIES, INC.****Consolidated Statements of Cash Flows****(in thousands)**

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Cash flows from operating activities:		
Net loss	\$ (9,660)	\$ (7,311)
(Income) loss from discontinued operations	(34)	91
Adjustment to reconcile net loss to cash used in operating activities:		
Depreciation and amortization	1,430	1,748
Write-down for excess and obsolete inventory	1,279	96
Provision for doubtful accounts	53	45
Stock-based compensation expense	532	1,495
Gain on change in fair value of liability-classified warrants	(90)	(1,099)
Amortization of debt discount and accretion of debt payment premium	128	110
Amortization of debt issuance costs	108	125
Loss on foreign currency transactions	119	297
Income from unconsolidated affiliate	(27)	(60)
Deferred income taxes	(171)	(134)
Loss (gain) on disposal of property and equipment	178	(24)
Changes in operating assets and liabilities:		
Accounts receivable	6,409	(6,532)
Inventories	483	(5,328)
Prepaid expenses and other assets	(191)	82
Accounts payable	(428)	1,458
Income taxes	(252)	(117)
Accrued expenses and other current liabilities	(64)	505
Cash used in operating activities of continuing operations	(198)	(14,553)
Cash provided by (used in) operating activities of discontinued operations	38	(70)
Net cash used in operating activities	(160)	(14,623)
Cash flows from investing activities:		

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Purchases of property and equipment	(236)		(619)
Repayments on loans to unconsolidated affiliate	129		51
Proceeds from sale of property and equipment	18		37
Net cash used in investing activities	(89)		(531)
Cash flows from financing activities:			
Net borrowings under demand line of credit	948		4,527
Repayment of line of credit			(2,540)
Proceeds from issuance of shareholder notes payable	3,000		3,000
Proceeds from issuance of common stock			10,181
Payment for shelf registration costs	(94)		
Proceeds from exercise of warrants			394
Payment of settlement obligation			(1,575)
Repayment of capital lease obligation	(11)		(29)
Payments for debt issuance costs	(108)		(165)
Net cash provided by financing activities	3,735		13,793
Effect of exchange rates on cash	(79)		(175)
Net change in cash	3,407		(1,536)
Cash at beginning of the year	3,471		5,007
Cash at end of the year	\$ 6,878		\$ 3,471
Supplemental disclosures:			
Cash paid for interest	\$ 1,140		\$ 1,017
Cash paid for income taxes	\$ 105		\$ 181

See accompanying notes to the consolidated financial statements.

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**CLEAN DIESEL TECHNOLOGIES, INC.**

**Notes to Consolidated Financial Statements**

**1. Organization**

***a. Description of Business***

Clean Diesel Technologies, Inc. (“CDTi” or the “Company”) is a global manufacturer and distributor of heavy duty diesel and light duty vehicle emissions control systems and products to major automakers and retrofitters. CDTi’s business is driven by increasingly stringent global emission standards for internal combustion engines, which are major sources of a variety of harmful pollutants. It has operations in the United States, Canada, the United Kingdom, France, Japan and Sweden as well as an Asian investment.

***b. Merger***

On October 15, 2010, Clean Diesel Technologies, Inc. consummated a business combination (the “Merger”) with Catalytic Solutions, Inc. (“CSI”). For accounting purposes, the Merger was accounted for as a reverse acquisition with CSI considered the acquirer. References to the “Company” prior to the Merger refer to the operations of CSI and its consolidated subsidiaries and subsequent to the Merger to the combined operations of the merged company and its consolidated subsidiaries.

***c. Liquidity***

The Company has suffered recurring losses and negative cash flows from operations since inception, resulting in an accumulated deficit of \$174.6 million at December 31, 2012. The Company has funded its operations through equity sales, debt and bank borrowings.

The Company has a \$7.5 million secured demand facility backed by its receivables and inventory with Faunus Group International, Inc. (“FGI”). At December 31, 2012, the Company had \$5.5 million in borrowings outstanding under this facility with \$2.0 million available, subject to the availability of eligible accounts receivable and inventory balances for collateral. There is no guarantee that the Company will be able to borrow to the full limit of \$7.5 million if FGI chooses not to finance a portion of its receivables or inventory. Additionally, FGI can cancel the facility at any time.

The Company also has a purchase agreement with Lincoln Park Capital (“LPC”), under which the Company has the right, in its sole discretion, over a 30-month period to sell up to \$10.0 million in common stock to LPC in amounts of up to \$0.5 million to up to \$1.5 million per sale, depending on certain conditions as set forth in the purchase agreement. The Company currently has registered 1,702,836 shares for purchase shares under the agreement. However, the aggregate number of shares issued pursuant to the purchase agreement is limited to 1,434,994 shares of common stock (19.99% of the outstanding shares of the Company’s common stock on October 7, 2011, the date of the purchase agreement) (the “Exchange Cap”), unless and until shareholder approval is obtained. The Exchange Cap is not applicable for at-market transactions, defined as when the average price for all shares purchased pursuant to the purchase agreement is greater than or equal the signing price per the agreement of \$2.76 plus \$0.254, or \$3.014 per share. Assuming a purchase price of \$2.17 per share (the closing sale price of the Company’s common stock on December 31, 2012) and the purchase by LPC of the full 1,702,836 currently registered purchase shares, proceeds to

the Company would be \$3.7 million. If the purchase was limited to the Exchange Cap of 1,434,994 shares, the proceeds to the Company would be \$3.1 million. There have been no sales to date under this arrangement.

On May 15, 2012, the Company filed a shelf registration statement on Form S-3 with the SEC (the "Shelf Registration") which was declared effective by the SEC on May 21, 2012. The Shelf Registration permits the Company to sell, from time to time, up to an aggregate of \$50.0 million of various securities. See Note 10.

On July 27, 2012, the Company entered into a Loan Commitment Letter with Kanis S.A. pursuant to which the Company issued a promissory note in the principal amount of \$3.0 million. The promissory note bears interest at 8% per annum which is payable quarterly in arrears and matures on July 27, 2015. See Note 9.

On January 30, 2013, the Company and Kanis S.A. agreed to amend certain terms of the Company's outstanding 6% shareholder note due 2013 to change the maturity date from June 30, 2013 to June 30, 2015 and to increase the interest rate from 6% to 8% beginning on June 30, 2013. In addition, the payment premium due under this note was changed from a range of \$100,000 to \$200,000, based proportionally on the number of days that the loan remains outstanding, to a fixed amount of \$250,000 with \$100,000 payable on June 30, 2013 and the remaining amount payable at maturity on June 30, 2015. See Notes 9 and 19.

Also on January 30, 2013, the Company and Kanis S.A. entered into a letter agreement regarding the Company's 8% subordinated convertible notes due 2016 whereby Kanis S.A. agreed not to accelerate the maturity of these convertible notes during the 2013 calendar year. See Notes 9 and 18.

At December 31, 2012, the Company had \$6.9 million in cash. Due to the proceeds from the note issued in July 2012 and availability under the secured demand facility with FGI and the purchase agreement with LPC, management believes that the Company will have access to sufficient working capital to sustain operations through at least the next twelve months. However, there is no assurance that, if necessary, the Company will be able to raise additional capital or reduce discretionary spending to provide the required liquidity.

**Table of Contents****CLEAN DIESEL TECHNOLOGIES, INC.****Notes to Consolidated Financial Statements****2. Summary of Significant Accounting Policies****a. Principles of Consolidation**

The consolidated financial statements include the financial statements of the Company and its wholly owned subsidiaries. All significant inter-company balances and transactions have been eliminated in consolidation.

**b. Concentration of Risk**

For the periods presented below, certain customers accounted for 10% or more of the Company's revenues as follows:

Customer	Years Ended December 31,	
	2012	2011
A	30%	19%

Customer A is an automotive original equipment manufacturer ("OEM") and sales to this customer are within the Catalyst segment.

For the periods presented below, certain customers accounted for 10% or more of the Company's accounts receivable balance as follows:

Customer	December 31,	
	2012	2011
A	31%	10%
B	12%	3%
C		11%
D	2%	14%

Customer A above is an automotive OEM, customers B and C are diesel system distributors and customer D is a diesel systems installer.

For the periods presented below, certain vendors accounted for 10% or more of the Company's raw material purchases as follows:

**Years Ended**

Vendor	December 31,	
	2012	2011
A	14%	17%
B	11%	8%
C	8%	11%
D	11%	5%

Vendor A above is a catalyst supplier, vendors B and C are substrate suppliers and vendor D is a rare earth material supplier.

*c. Use of Estimates*

The preparation of financial statements in conformity with accounting principles generally accepted in the United States (“U.S. GAAP”) requires management of the Company to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent liabilities. These estimates and assumptions are based on management’s best estimates and judgment. On an ongoing basis, the Company evaluates its estimates and assumptions, including those related to impairment of goodwill and long-lived assets, stock-based compensation, the fair value of financial instruments including warrants, allowance for doubtful accounts, inventory valuation, taxes and contingent and accrued liabilities. The Company bases its estimates on historical experience and various other factors, including the current economic environment, which it believes to be reasonable under the circumstances. Estimates and assumptions are adjusted when facts and circumstances dictate. Actual results may differ from these estimates under different assumptions and conditions. Management believes that the estimates are reasonable.

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**CLEAN DIESEL TECHNOLOGIES, INC.**

**Notes to Consolidated Financial Statements**

***d. Cash***

Cash of \$6.9 million and \$3.5 million at December 31, 2012 and 2011, respectively, consist of cash balances on hand and on deposit at banks. Cash on deposit at banks at times may exceed the FDIC limits. The Company believes no significant concentration of credit risk exists with respect to these cash balances.

***e. Accounts Receivable***

Accounts receivable are recorded at the invoiced amount and do not bear interest. Accounts receivable are presented net of a reserve for doubtful accounts of \$0.4 million and \$0.3 million at December 31, 2012 and 2011, respectively. 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. The Company determines the allowance based on historical write-off experience and past due balances over 60 days that are reviewed individually for collectability. Account balances are charged off against the allowance after all means of collection have been exhausted and the potential for recovery is considered remote. The Company does not have any off balance sheet credit exposure related to its customer.

***f. Inventories***

Inventories are stated at the lower of cost (FIFO method) or market (net realizable value). Finished goods inventory includes materials, labor and manufacturing overhead. The Company establishes provisions for inventory that is obsolete or when quantities on hand are in excess of estimated forecasted demand. The creation of such provisions results in a write-down of inventory to net realizable value and a charge to cost of sales. Aggregate inventory write downs were \$1.3 million and \$0.1 million for the years ended December 31, 2012 and 2011, respectively.

The Company's inventory includes precious metals (platinum, palladium and rhodium) for use in the manufacturing of catalysts. The precious metals are valued at the lower of cost or market, consistent with the Company's other inventory. Included in raw material at December 31, 2012 and 2011 are precious metals of \$0.8 million and \$0.6 million, respectively.

***g. Property and Equipment***

Property and equipment is capitalized at cost and is stated at cost less accumulated depreciation and amortization. Depreciation and amortization is determined using the straight line method over the estimated useful lives of the various asset classes. Machinery and equipment are depreciated over 2 to 10 years; furniture and fixtures, computer hardware and software and vehicles are depreciated over 2 to 5 years. Property and equipment held under capital leases and leasehold improvements are amortized over the shorter of estimated useful lives or the lease term. Repairs and maintenance are charged to expense as incurred and major replacements or betterments are capitalized. Depreciation expense was \$0.7 million and \$0.8 million for the years ended December 31, 2012 and 2011,

respectively.

***h. Goodwill and Intangible Assets***

Goodwill is the excess of the purchase price of an acquired entity over the fair value of net identified tangible and intangible assets acquired and is recorded in the reporting unit (operating segment or one level below operating segment) that is expected to benefit from the business combination. Goodwill is not amortized, but rather tested for impairment at least annually or more often whenever events or circumstances indicate that goodwill might be impaired. The Company performs its annual impairment test as of October 31.

Goodwill is tested at the reporting unit level using a two-step impairment test. The first step is to compare the fair value of the reporting unit to its carrying value, including goodwill. If the carrying value of the reporting unit exceeds the fair value, a second step is performed in order to determine the amount of impairment loss, if any. The second step compares the implied fair value of the reporting unit's goodwill with the carrying amount of that goodwill. If the carrying amount of the reporting unit's goodwill exceeds its implied fair value, an impairment charge is recognized in an amount equal to that excess. Prior to performing the two-step impairment test, the Company may make a qualitative assessment of the likelihood of goodwill impairment in order to determine whether a detailed quantitative analysis is required.

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**CLEAN DIESEL TECHNOLOGIES, INC.**

**Notes to Consolidated Financial Statements**

The Company's Engine Control Systems reporting unit, which is within its Heavy Duty Diesel Systems reporting segment, contains all of the Company's allocated goodwill. The Company performed Step 1 of the annual impairment test as of October 31, 2012 and determined that the fair value of the Company's reporting unit (as determined using income and market approaches) was substantially greater than the carrying amount of the respective reporting unit, including goodwill, and Step 2 was not necessary; therefore, there was no impairment to the carrying amount of the reporting unit's goodwill. The Company has recorded no impairment charges to date for this goodwill. The Company also determined that no subsequent events through December 31, 2012 triggered additional impairment testing; however, it is reasonably possible that future impairment tests may result in a different conclusion for the goodwill of the Engine Control Systems reporting unit. The estimate of fair value of the reporting units is sensitive to certain factors including but not limited to the following: movements in the Company's share price, changes in discount rates and its cost of capital, growth of the reporting unit's revenue, cost structure of the reporting unit, successful completion of research and development and customer acceptance of new products, expected changes in emissions regulations and approval of the reporting unit's product by regulatory agencies.

The Company's intangible assets consist of trade names, acquired patents and technology, and customer relationships and have finite lives. Intangible assets are carried at cost, less accumulated amortization. Amortization is computed on a straight-line or accelerated basis over the estimated useful lives of the respective assets, ranging from 4 to 20 years. Amortization expense was \$0.7 million and \$0.9 million for the years ended December 31, 2012 and 2011, respectively.

***i. Long Lived Assets***

Assets such as property and equipment and amortizable intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. An impairment loss is recognized when the sum of the expected undiscounted future net cash flows of an asset or asset group is less than its carrying amount and is measured as the amount by which the carrying amount of the asset or asset group exceeds its fair value.

***j. Warrants and Derivative Liabilities***

The Company accounts for the issuance of Company derivative equity instruments in accordance with Accounting Standards Codification (ASC) 815-40 "Derivative and Hedging." The Company reviews common stock purchase warrants at each balance sheet date based upon the characteristics and provision of each particular instrument and classified them on the balance sheet as:

- Equity if they (i) require physical settlement or net-share settlement, or (ii) give the Company a choice of net-cash settlement or settlement in the Company's own shares (physical settlement or net-share settlement), or as
- Assets or liabilities if they (i) require net-cash settlement (including a requirement to net-cash settle the contract if an event occurs and if that event is outside the Company's control), or (ii) give the counterparty a choice of net-cash

settlement or settlement in shares (physical settlement of net-share settlement).

The Company assesses classification of common stock purchase warrants and other freestanding derivatives at each reporting date to determine whether a change in classification between assets and liabilities and equity is required.

***k. Income Taxes***

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. A valuation allowance against deferred tax assets is required if, based on the weight of available evidence, it is more likely than not that some portion or all of the deferred tax assets will not be realized. The valuation allowance should be sufficient to reduce the deferred tax assets to the amount that is more likely than not to be realized.

The Company recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs. The Company records interest and penalties related to unrecognized tax benefit in income tax expense.

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**CLEAN DIESEL TECHNOLOGIES, INC.**

**Notes to Consolidated Financial Statements**

***l. Revenue Recognition***

Revenues are derived primarily from the sale of products. The Company generally recognizes revenue when products are shipped and the customer takes ownership and assumes risk of loss, collection of the relevant receivable is reasonably assured, persuasive evidence of an arrangement exists and the sales price is fixed or determinable. There are certain customers where risk of loss transfers at destination point and revenue is recognized when product is delivered to the destination. For these customers, revenue is recognized upon receipt at the customer's warehouse.

***m. Cost of Revenue***

Cost of revenue includes direct material costs and factory labor as well as factory overhead expense. Indirect factory expense includes the costs of freight (inbound and outbound for direct materials and finished goods respectively), purchasing and receiving, inspection, testing, warehousing, utilities and depreciation of facilities and equipment utilized in the production and distribution of products.

***n. Selling, General and Administrative Expense***

Selling, general and administrative expense includes the salary and benefits for sales, marketing and administrative staff as well as samples provided at no-cost to customers, marketing materials, travel, legal, accounting and tax consulting. Also included is any depreciation related to assets utilized in selling, general and administrative functions.

***o. Research and Development***

Research and development costs are generally expensed as incurred. These expenses include the salary and benefits for the research and development staff as well as travel, research materials, testing and legal expense related to patenting intellectual property. Also included is any depreciation related to assets utilized in the development of new products.

***p. Stock-Based Compensation***

Equity awards consist of stock options and restricted stock units ("RSUs"). The Company measures the compensation cost for all stock-based awards at fair value on the date of grant and recognizes it on a straight-line basis over the service period for awards expected to vest.

The Company measures the fair value of stock options using the Black-Scholes option-pricing model and certain assumptions, including the expected life of the stock options, an expected forfeiture rate and the expected volatility of its common stock. The fair value of RSUs is based on the closing price of the Company's common stock on the grant date.

***q. Product Warranty***

The Company provides for the estimated cost of product warranties in cost of sales, at the time product revenue is recognized. Warranty costs are estimated primarily using historical warranty information in conjunction with current engineering assessments applied to the Company's expected repair or replacement costs.

*r. Foreign Currency*

The functional currency of the Heavy Duty Diesel Systems division's Engine Control Systems Limited subsidiary in Canada is the Canadian dollar, while that of its subsidiary Engine Control Systems Europe AB in Sweden is the Swedish krona and the division's Clean Diesel Technologies Limited UK subsidiary, is the British pound sterling. The functional currency of the Catalyst division's Japanese branch office and Asian investment is the Japanese Yen. Accordingly, the assets and liabilities of the foreign locations are translated into U.S. dollars at period-end exchange rates. Revenue and expense accounts are translated at the average exchange rates for the period. The resulting foreign currency exchange adjustments are charged or credited directly to other comprehensive income or loss as a separate component of stockholders' equity. Unrealized foreign currency exchange gains and losses on certain intercompany transactions that are of a long-term investment nature (i.e. settlement is not planned or anticipated in the foreseeable future) are also recorded in other comprehensive income or loss in stockholders' equity. Accumulated other comprehensive loss contained only foreign currency translation adjustments as of December 31, 2012 and 2011.

**Table of Contents****CLEAN DIESEL TECHNOLOGIES, INC.****Notes to Consolidated Financial Statements**

The Company has exposure to multiple currencies. The primary exposure is between the U.S. dollar, the Canadian dollar, the Euro, British pounds sterling and Swedish krona. Gains and losses arising from transactions denominated in currencies other than the functional currency of the entity are included in other income (expense) in the consolidated statements of operations. Gains and losses arising from transactions denominated in foreign currencies are primarily related to inter-company loans that have been determined to be temporary in nature, cash, accounts receivable and accounts payable denominated in non-functional currencies.

**s. *Net Loss per Share***

Basic net loss per share is computed using the weighted average number of common shares outstanding during the period. Diluted net loss per share is computed using the weighted average number of common shares and dilutive potential common shares. Dilutive potential common shares include employee stock options and RSUs and warrants and debt that are convertible into the Company's common stock.

Diluted net loss per share excludes certain dilutive potential common shares outstanding as their effect is anti-dilutive. Because the Company incurred net losses in the years ended December 31, 2012 and 2011, the effect of potentially dilutive securities has been excluded in the computation of net loss per share and net loss from continuing operations per share as their impact would be anti-dilutive. Potential common stock equivalents excluded consist of the following (in thousands):

	<b>Years Ended December 31,</b>	
	<b>2012</b>	<b>2011</b>
Common stock options	786	302
RSUs	167	25
Warrants	923	930
Convertible notes	250	370
Total	2,126	1,627

**t. *Fair Value Measurements***

Fair value is defined as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset and liability. As a basis for considering such assumptions, a fair value hierarchy has been established that prioritizes the inputs used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurement) and the lowest priority to unobservable inputs (level 3 measurements). The three levels of the fair value hierarchy are as follows:

- Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities;

- Level 2: Inputs other than quoted prices included within Level 1 that are either directly or indirectly observable including quoted prices for similar instruments in active markets and quoted prices for identical or similar instruments in markets that are not active; and
- Level 3: Unobservable inputs in which little or no market activity exists, therefore requiring an entity to develop its own assumptions about the assumptions that market participants would use in pricing.

The Company records its liability-classified warrants at fair value in accordance with the fair value measurement framework. See Note 11.

***u. Fair Value of Financial Instruments***

ASC Topic 825, "Financial Instruments," requires disclosure of the fair value of financial instruments for which the determination of fair value is practicable. The fair values of the Company's cash, trade accounts receivable, prepaid expenses and other current assets, accounts payable and accrued expenses and other current liabilities approximate carrying values due to the short maturity of these instruments. The fair value of borrowings under the line of credit approximates their carrying value due to the variable interest rates. The fair value of shareholder notes payable, noncurrent, calculated using level 3 inputs, including a Black-Scholes option-pricing model to value the debt's conversion factor, a Monte Carlo simulation model to value warrants and a net present value model is \$7.5 million at December 31, 2012.

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**CLEAN DIESEL TECHNOLOGIES, INC.**

**Notes to Consolidated Financial Statements**

**v. *Reclassifications***

Certain prior-period amounts have been reclassified to conform to the current period presentation. These changes had no impact on the previously reported consolidated results of operations or stockholders' equity.

**w. *Recently Adopted Accounting Guidance***

In May 2011, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2011-04, "Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and International Financial Reporting Standards ("IFRS')." This pronouncement was issued to provide a consistent definition of fair value and ensure that the fair value measurement and disclosure requirements are similar between U.S. GAAP and IFRS. ASU 2011-04 changes certain fair value measurement principles and enhances the disclosure requirements particularly for Level 3 fair value measurements. This pronouncement is effective for reporting periods beginning after December 15, 2011. The guidance concerns disclosure only and adoption did not have an impact on our financial position or results of operations.

In June 2011, the FASB issued ASU No. 2011-05, "Presentation of Comprehensive Income" which was issued to enhance comparability between entities that report under U.S. GAAP and IFRS, and to provide a more consistent method of presenting non-owner transactions that affect an entity's equity. ASU 2011-05 eliminates the option to report other comprehensive income and its components in the statement of changes in stockholders' equity and requires an entity to present the total of comprehensive income, the components of net income and the components of other comprehensive income either in a single continuous statement or in two separate but consecutive statements. This pronouncement is effective for reporting periods beginning after December 15, 2011 and full retrospective application is required. The guidance concerns disclosure only and adoption did not have an impact on our financial position or results of operations.

**x. *Recently Issued Accounting Guidance***

In December 2011, the FASB issued Accounting Standards Update ASU No. 2011-11, "Disclosures about Offsetting Assets and Liabilities," which requires an entity to disclose information about offsetting and related arrangements to enable users of its financial statements to understand the effect of those arrangements on its financial position. ASU No. 2011-11 is effective for annual and interim periods beginning on or after January 1, 2013. Retrospective application is required. The guidance concerns disclosure only and will not have an impact on the Company's financial position or results of operations.

In February 2013, the FASB issued ASU No. 2013-02, "Comprehensive Income (Topic 220): Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income," which requires disclosure of significant amounts reclassified out of accumulated other comprehensive income by component and their corresponding effect on the respective line items of net income. This guidance is effective for reporting periods beginning after December 15, 2012 and is not expected to have a material impact on our consolidated financial statements or financial statement disclosures.

**3. Inventories**

Inventories consist of the following (in thousands):

	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Raw materials	\$ 4,340	\$ 4,135
Work in progress	1,815	3,790
Finished goods	2,542	2,363
	<b>\$ 8,697</b>	<b>\$ 10,288</b>

**4. Property and Equipment**

Property and equipment consists of the following (in thousands):

	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Buildings and improvements	\$ 855	\$ 825
Furniture and fixtures	2,357	2,387
Computer hardware and software	1,477	1,456
Machinery and equipment	12,269	12,182
Vehicles	37	33
	16,995	16,883
Less accumulated depreciation	(14,995)	(14,234)
	<b>\$ 2,000</b>	<b>\$ 2,649</b>

**Table of Contents****CLEAN DIESEL TECHNOLOGIES, INC.****Notes to Consolidated Financial Statements****5. Goodwill and Intangible Assets***Goodwill*

The Company's Engine Control Systems reporting unit, which is within its Heavy Duty Diesel Systems reporting segment, contains all of the Company's allocated goodwill. The changes in the carrying amount of goodwill are as follows (in thousands):

Balance at December 31, 2010	\$ 6,040
Effect of translation adjustment	(85)
Balance at December 31, 2011	5,955
Effect of translation adjustment	132
Balance at December 31, 2012	\$ 6,087

*Intangible Assets*

Intangible assets consist of the following (in thousands):

	Useful Life	December 31,	
		2012	2011
	in Years		
Trade name	15 – 20	\$ 1,404	\$ 1,387
Patents and know-how	5 – 12	5,072	4,987
Customer relationships	4 – 8	1,269	1,236
		7,745	7,610
Less accumulated amortization		(3,376)	(2,611)
		\$ 4,369	\$ 4,999

Estimated amortization expense for existing intangible assets for each of the next five years is as follows (in thousands):

Years ending December 31:	
2013	\$ 711
2014	711
2015	706
2016	552
2017	540
Overview	109

**6. Accrued Expenses and Other Current Liabilities**

Accrued expenses and other current liabilities consist of the following (in thousands):

	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Accrued salaries and benefits	\$ 1,347	\$ 1,486
Accrued severance and other charges	490	--
Sales tax payable	216	566
Accrued warranty	665	645
Deferred revenue	--	650
Liability for consigned precious metals	694	652
Warrant liability	10	100
Other	1,092	916
	<b>\$ 4,514</b>	<b>\$ 5,015</b>

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On May 2, 2011, the Company entered into an agreement with Tanaka Kikinzoku Kogyo K.K. ("TKK"), its investment partner in the Asia Pacific region, to provide equipment, engineering and support services to assist in TKK's establishment of manufacturing operations in China under a joint venture between TKK and a Chinese entity for the purpose of manufacturing and selling diesel and automotive exhaust emission products in the China market. The Company received an up-front payment of \$0.6 million which was included in deferred revenue at December 31, 2011. In September 2012, the Company and TKK entered into an amendment to the agreement reducing the scope of services under the contract resulting in a change in the total value of the contract from \$1.5 million to \$1.0 million.

The Company accounted for this contract under ASC 605-35, "Revenue Recognition – Construction-type and Production-type Contracts" under the completed-contract method. As of December 31, 2012, the Company has completed its obligations under the agreement, as amended. As such, the Company has recognized \$1.0 million in revenue, including the \$0.6 million previously deferred, and \$0.3 million in cost of revenues in the year ended December 31, 2012.

**7. Severance and Other Charges**

During 2012, the Company initiated actions to streamline both its facilities and its workforce. These actions were deemed necessary to meet the demands of the markets served by the Company and the economic environment and to improve profitability. The Company terminated 41 employees throughout North America, Europe, the United Kingdom and Asia. The Company also incurred lease termination costs related to the exit of a lease in North America and asset impairment expense related to the exit of this facility as well as to the exit of a leased facility in the United Kingdom.

Costs incurred related to these measures are as follows (in thousands):

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Employee severance expense	\$ 572	
Lease termination costs	184	
Asset impairment	133	
Total severance and other charges	\$ 889	

The following summarizes the activity in the Company's accrual for severance and other charges (in thousands):

<b>Severance</b>	<b>Lease Exit</b>	<b>Other</b>	<b>Total</b>
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		<b>Costs</b>	<b>Charges</b>		
Accrual at December 31, 2011	\$	-	\$	\$	
Provision in 2012		572	184	133	889
Payments and other settlements in 2012		(266)		(133)	(399)
Accrual at December 31, 2012	\$	306	\$	\$	490

The Company expects to pay substantially all of these amounts during the year ended December 31, 2013.

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**Table of Contents****CLEAN DIESEL TECHNOLOGIES, INC.****Notes to Consolidated Financial Statements****8. Accrued Warranty**

Accrued warranty is as follows (in thousands):

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Balance at beginning of year	\$ 645	\$ 466
Accrued warranty expense	728	517
Warranty claims paid	(725)	(330)
Translation adjustment	17	(8)
Balance at end of year	\$ 665	\$ 645

**9. Debt**

Debt consists of the following (in thousands):

	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Line of credit with FGI	\$ 5,476	\$ 4,527
6% shareholder note due 2013	1,638	1,520
8% subordinated convertible shareholder notes due 2016	3,000	3,000
8% shareholder note due 2015	2,940	
Capital lease obligation		17
	13,054	9,064
Less current portion	(5,576)	(4,527)
	\$ 7,478	\$ 4,537

In accounting for the classification of its outstanding debt as of December 31, 2012, the Company considered the guidance in ASC 470-10-45. On January 30, 2013, the Company and Kanis S.A. agreed to amend certain terms of its 6% shareholder note due 2013 including changing the maturity date from June 30, 2013 to June 30, 2015. Also on January 30, 2013, the Company and Kanis S.A. entered into a letter agreement regarding the 8% subordinated convertible shareholder notes due 2016 whereby Kanis S.A. agreed not to accelerate the maturity of these convertible notes during the 2013 calendar year. As the Company has effectively refinanced these short-term obligations on a long-term basis subsequent to the balance sheet date, the amounts have been reflected as a component of shareholder notes payable, noncurrent in the consolidated balance sheet as of December 31, 2012. See below and in Note 19 for further discussion on the amendment and letter agreement.

Debt discounts relate to warrants issued with shareholder notes. The relative fair value of such warrants are recorded as a discount from the note amount and amortized using the effective interest method over the term of the note. The aggregate amount of unamortized debt discount was \$0.1 million at December 31, 2012 and 2011.

*Line of Credit with Fifth Third Bank*

The Company had a demand revolving credit line through Fifth Third Bank with a maximum principal amount at December 31, 2010 of Canadian \$6.0 million and availability based upon eligible accounts receivable and inventory. The entire debt due to Fifth Third Bank was repaid with the completion of the financing facility with FGI on February 16, 2011.

*Line of Credit with FGI*

On February 14, 2011, the Company and certain of its subsidiaries (the “Credit Subsidiaries”) entered into Sale and Security Agreements with FGI to provide for a \$7.5 million secured demand facility backed by its receivables and inventory (the “FGI Facility”). The Company and the Credit Subsidiaries also entered into guarantees to guarantee the performance of their obligations under the Sale and Security Agreements. The Company also granted FGI a first lien collateral interest in substantially all of its assets. On August 15, 2012, the Company and FGI agreed to amend the FGI Facility. As amended, the initial term was extended from February 14, 2013 to August 15, 2015 and may be extended at the Company’s option for additional one-year terms. However, FGI can cancel the facility at any time.

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### **CLEAN DIESEL TECHNOLOGIES, INC.**

#### **Notes to Consolidated Financial Statements**

Under the FGI Facility, as amended, FGI can elect to purchase eligible accounts receivables from the Company and the Credit Subsidiaries at up to 80% of the value of such receivables (retaining a 20% reserve). Purchased receivables are subject to full recourse to the Company in the event of nonpayment by the customer. FGI becomes responsible for the servicing and administration of the accounts receivable purchased. The Company is not obligated to offer accounts in any month and FGI has the right to decline to purchase any accounts. At FGI's election, FGI may advance the Company up to 80% of the value of any purchased accounts receivable, subject to the \$7.5 million limit. Reserves retained by FGI on any purchased receivable are expected to be refunded to the Company net of interest and fees on advances once the receivables are collected from customers. The Company may also borrow against eligible inventory up to the inventory sublimit as determined by FGI subject to the aggregate \$7.5 million limit under the FGI Facility and certain other conditions. Pursuant to the amendment, the inventory sublimit amount was increased from \$1.0 million to the lesser of \$2.0 million or 50% of the aggregate purchase price paid for accounts receivable purchased under the FGI facility.

The interest rate on advances or borrowings under the FGI Facility was reduced from the greater of (i) 7.50% per annum and (ii) 2.50% per annum above the Wall Street Journal "prime rate" to the greater of (i) 6.50% per annum and (ii) 2.50% per annum above the prime rate, as defined. Any advances or borrowings under the FGI Facility are due on demand. The Company also agreed to pay FGI collateral management fees. As amended, the monthly collateral fees were reduced from 0.44% to 0.30% per month on the face amount of eligible receivables as to which advances have been made and from 0.55% to 0.38% per month on borrowings against inventory, if any. At any time outstanding advances or borrowings under the FGI Facility are less than \$2.4 million, the Company agreed to pay FGI standby fees of (i) the interest rate on the difference between \$2.4 million and the average outstanding amounts and (ii) 0.44% per month on 80% of the amount by which advances or borrowings are less than the agreed \$2.4 million minimum.

The Company paid FGI a one-time facility fee of \$75,000 upon entry into the FGI Facility and \$75,000 upon amending the FGI facility. Also, if the Company terminates the FGI facility prior to the last day of the initial term, as extended, or any additional term, it must pay a termination fee of 2% of the facility limit then in effect. No termination fee will be due if the Company notifies FGI of its intent to terminate within 10 days of FGI increasing the reserve percentage for accounts to greater than 40% for more than 30 consecutive days. FGI may terminate the facility at any time. As such, the facility and amendment fees were expensed when incurred. The termination fee is not payable upon a termination by FGI or upon non-renewal.

The Company accounts for the sale of accounts receivable under the FGI Facility as a secured borrowing with a pledge of the subject receivables as collateral in accordance with ASC 860, "Transfers and Servicing." At December 31, 2012, the Company had \$4.4 million of gross accounts receivable pledged to FGI as collateral for short-term debt in the amount of \$3.5 million. At December 31, 2012, the Company also had \$2.0 million in borrowings outstanding against eligible inventory. The Company was in compliance with the terms of the FGI Facility at December 31, 2012. However, there is no guarantee that the Company will be able to borrow to the full limit of \$7.5 million if FGI chooses not to finance a portion of its receivables or inventory.

#### *Consideration Payable and Settlement Obligation*

At December 31, 2009, the Company had \$3.0 million of consideration due to the seller as part of the Applied Utility Systems acquisition. The consideration was originally due August 28, 2009 and accrued interest at 5.36%. On

October 20, 2010, the Company entered into a comprehensive agreement with the seller to end all outstanding litigation and arbitration claims and other disputes between the parties relating to the agreements entered into in connection with its purchase of Applied Utility Systems assets in August 2006 (the "Settlement Agreement"). As contemplated by the Settlement Agreement, on October 22, 2010, the Company paid \$1.5 million to the seller as consideration for the settlement. The Company also agreed to pay up to an additional \$2.0 million to the seller in eight equal installments through the period ending December 31, 2012. On January 4, 2011, using proceeds of the shareholder loan referred to below and cash on hand, the Company paid the seller \$1.6 million as satisfaction in full of its obligation.

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**CLEAN DIESEL TECHNOLOGIES, INC.**

**Notes to Consolidated Financial Statements**

*6% Shareholder Note Due 2013*

On December 30, 2010, the Company executed a Loan Commitment Letter with Kanis S.A., a shareholder of the Company, pursuant to which Kanis S.A. loaned the Company \$1.5 million. The loan is unsecured and bears interest on the unpaid principal at a rate of 6%, with interest only payable quarterly in arrears, commencing March 31, 2011. In addition to principal and accrued interest, the Company is obligated to pay Kanis S.A. at maturity a “Payment Premium” ranging from \$100,000 to \$200,000 based proportionally on the number of days that the loan remains outstanding. There is no prepayment penalty. The loan originally matured on June 30, 2013. On January 30, 2013, the Company and Kanis S.A. agreed to amend certain terms of the loan to change the maturity date from June 30, 2013 to June 30, 2015 and to increase the interest rate from 6% to 8% beginning on June 30, 2013. In addition, the payment premium due under this note was changed to a fixed amount of \$250,000 with \$100,000 payable on June 30, 2013 and the remaining amount payable at maturity on June 30, 2015. See Note 19.

In connection with the loan, the Company issued Kanis S.A. warrants to acquire 25,000 shares of its common stock at \$10.40 per share. The relative estimated fair value of such warrants represents a discount from the face amount of the loan and has been recorded as a discount from the loan amount. The discount is being amortized using the effective interest method over the term of the loan.

*8% Subordinated Convertible Shareholder Notes Due 2016*

On April 11, 2011, the Company entered into a Subordinated Convertible Notes Commitment Letter with Kanis S.A. that provides for the sale and issuance by the Company of 8% subordinated convertible notes (the “Notes”). As provided in the Commitment Letter, on May 6, 2011 Kanis S.A. purchased from the Company at par \$3.0 million aggregate principal amount of the Notes, which bear interest at a rate of 8% per annum, payable quarterly in arrears.

The Notes have a stated maturity of five years from the date of issuance. The original agreement allowed for the acceleration of the maturity of the Notes if: (i) the Company was in breach of the notes or other agreements with Kanis S.A., or (ii) Kanis S.A. provided written notice, not less than 30 days prior to such date, that it elected to accelerate the maturity to a date not earlier than November 11, 2012. On February 16, 2012, the Company and Kanis S.A. agreed to amend the terms of the Notes to modify the early redemption date from November 11, 2012 to May 12, 2013. The Notes also provide that the Company has the option to redeem the Notes at any time at a price equal to 100% of the face amount plus accrued and unpaid interest through the date of redemption. There is no prepayment penalty. The Notes are unsecured obligations of the Company and subordinated to existing and future secured indebtedness of the Company.

The outstanding principal balance of, plus accrued and unpaid interest on, the Notes were convertible into shares of the Company’s common stock at an initial conversion price equal to \$7.044 per share, which was 120% of the closing bid price per share of the Company’s common stock on April 8, 2011, into no more than 369,853 shares. The Company evaluated the Notes and determined that there were no embedded derivatives contained in the Notes that require separate accounting. Additionally, there was no beneficial conversion feature associated with the Notes since

the conversion price was not lower than the estimated fair market value of the Company's common stock on the issuance date. As such, the entire proceeds from the Notes are recorded as debt in the consolidated balance sheets.

On July 27, 2012, the Company and Kanis S.A. further amended the terms of the Notes to modify the conversion feature. As amended, the outstanding principal balance of, and accrued and unpaid interest on, the Notes are convertible, at the option of Kanis S.A. at any time upon written notice given not less than 75 calendar days prior to the date of conversion, into no more than 250,000 shares of the Company's common stock at a conversion price of \$4.00 per share. The Company evaluated the modification and determined that the modification was not substantial and did not qualify as a debt extinguishment. Accordingly, no gain or loss was recognized from the modification.

On January 30, 2013, the Company and Kanis S.A. entered into a letter agreement regarding the Notes whereby Kanis S.A. agreed not to accelerate the maturity of these convertible notes during the 2013 calendar year. See Note 19.

In connection with the February 16, 2012 amendment, the Company issued to Kanis S.A. warrants to acquire 5,000 shares of its common stock at \$3.80 per share. The warrants are exercisable on or after August 16, 2014 and expire on the earlier of (x) August 16, 2017 and (y) that date that is 30 days after the Company gives notice to the warrant holder that the market value of one share of its common stock has exceeded 130% of the exercise price of the warrant for 10 consecutive days, which 10 consecutive days commence on or after August 16, 2014. The Company did not receive any cash consideration for the issuance of the warrants. The Company relied on the private placement exemption provided by Regulation S.

#### *8% Shareholder Note Due 2015*

On July 27, 2012, the Company executed a Loan Commitment Letter with Kanis S.A., pursuant to which the Company issued a promissory note in the principal amount of \$3.0 million, which bears interest at 8% per annum, payable quarterly in arrears. The promissory note matures on July 27, 2015. There is no prepayment penalty or premium. The promissory note is unsecured.

In connection with promissory note, the Company issued Kanis S.A. a warrant to acquire 45,000 shares of its common stock at \$2.09 per share, a third of which become exercisable on the issuance date and each of the first and second anniversaries of the issuance date. This warrant expires on July 27, 2018. The Company did not receive any cash consideration for the issuance of this warrant, which was issued in reliance upon the private placement exemption provided by Regulation S. The relative estimated fair value of such warrant represents a discount from the face amount of the loan and has been recorded as a discount from the loan amount. The discount is being amortized using the effective interest method over the term of the loan. See note 11 regarding the valuation of the warrants.

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**CLEAN DIESEL TECHNOLOGIES, INC.**

**Notes to Consolidated Financial Statements**

Annual scheduled principal payments of debt based on earliest redemption date as of December 31, 2012 are (in thousands):

Years ending December 31:		
2013	\$	5,576
2014		3,000
2015		4,478
Total	\$	13,054

**10. Stockholders' Equity**

On May 23, 2012, the Company amended its Restated Certificate of Incorporation to increase the number of authorized shares of common stock to 24 million shares. At December 31, 2012, the Company had 24.1 million shares authorized, 24 million of which are \$0.01 par value common stock and 100,000 of which are \$0.01 par value preferred stock.

*Issuance of Common Stock*

On November 26, 2012, the Company issued 23,149 restricted shares of its common stock to MDB Capital Group LLC as payment for advisory services.

*Shelf Registration*

On May 15, 2012, the Company filed a Shelf Registration which was declared effective by the SEC on May 21, 2012. The Shelf Registration permits the Company to sell, from time to time, up to an aggregate of \$50.0 million of various securities, including common stock, preferred stock, warrants to purchase common stock or preferred stock and units consisting of one or more shares of common stock, shares of preferred stock, warrants, or any combination of such securities. The Shelf Registration is intended to provide the Company with additional flexibility to access capital markets for general corporate purposes, subject to market conditions and the Company's capital needs.

*Common Stock Purchase Agreement with LPC*

On October 7, 2011, the Company signed a Purchase Agreement with LPC, together with a Registration Rights Agreement, whereby LPC agreed to purchase up to \$10.0 million of the Company's common stock over a 30-month period. Pursuant to the Registration Rights Agreement, the Company filed a registration statement on Form S-1 with the SEC on October 13, 2011 covering 1,823,577 shares that have been issued or may be issued to LPC under the Purchase Agreement. Of the shares registered, 40,247 shares were issued to LPC as a commitment fee upon entering

into the Purchase Agreement; 80,494 shares may be issued to LPC pro rata as an additional commitment fee as up to \$10.0 million of our common stock is purchased by LPC; and 1,702,836 represent shares that the Company may sell to LPC under the Purchase Agreement. The registration statement related to the transaction was declared effective by the SEC on December 5, 2011. Accordingly, the Company has the right, in its sole discretion, over a 30-month period to sell shares of its common stock to LPC in amounts of up to \$0.5 million to up to \$1.5 million per sale, depending on certain conditions as set forth in the Purchase Agreement, up to the aggregate amount of \$10.0 million. The aggregate number of shares issued pursuant to the Purchase Agreement is limited to 1,434,994 shares of common stock (19.99% of the outstanding shares of the Company's common stock on October 7, 2011, the date of the Purchase Agreement) (the "Exchange Cap"), unless and until shareholder approval is obtained. The Exchange Cap is not applicable for at-market transactions, defined as when the average price for all shares purchased pursuant to the purchase agreement is greater than or equal the signing price of \$2.76 plus \$0.254, or \$3.014 per share. There have been no sales to date under this arrangement.

There are no upper limits to the price LPC may pay to purchase the Company's common stock and the purchase price of the shares related to the \$10.0 million of future funding will be based on the prevailing market prices of the Company's shares preceding the time of sales as computed in accordance with the Purchase Agreement without any fixed discount, with the Company controlling the timing and amount of future sales, if any, of shares to LPC. The purchase price per share is equal to the lesser of the lowest sales price of our common stock on the purchase date or the average of the three lowest closing sales prices of our common stock during the twelve consecutive business days prior to the date of the purchase by LPC.

LPC has agreed not to cause or engage in any manner whatsoever, any direct or indirect short selling or hedging of the Company's shares of common stock. The Company may terminate the Purchase Agreement at any time at its discretion without any cost or penalty. Any proceeds received by the Company under the Purchase Agreement are expected to be used for working capital and general corporate purposes.

**Table of Contents****CLEAN DIESEL TECHNOLOGIES, INC.****Notes to Consolidated Financial Statements***Public Offering of Common Stock*

In connection with the public offering by the Company and certain stockholders of 2,725,000 shares of the Company's common stock, the Company filed a registration statement on Form S-1 with the SEC, as supplemented by an additional registration statement on Form S-1, both of which were declared effective on June 28, 2011. On June 28, 2011, the Company entered into an underwriting agreement (the "Underwriting Agreement") with Roth Capital Partners, LLC, as representative of the underwriters names therein (the "Underwriters"). Pursuant to the terms and conditions of the Underwriting Agreement, the Company and the selling stockholders named in the Underwriting Agreement (the "Selling Stockholders") agreed to sell, and the Underwriters agreed to purchase, an aggregate 2,725,000 shares of the Company's common stock at a price of \$3.5208 per share representing a discount to the public offering price of \$3.75 per share. Of these 2,725,000 shares, 2,645,000 shares were offered by the Company and 80,000 shares were offered by the Selling Stockholders. The Underwriters were also granted an option to purchase up to an additional 408,750 shares of common stock from the Company within 30 days after the date of the Underwriting Agreement to cover over-allotments, if any. Such option was exercised in full on June 30, 2011.

On July 5, 2011, the Company closed the public offering in which it sold 3,053,750 shares, including 408,750 shares pursuant to the Underwriters over-allotment option, and the Selling Stockholders sold 80,000 shares. The shares were sold at a price of \$3.5208 per share, representing a discount to the public offering price of \$3.75 per share. The net proceeds of the offering to the Company were \$10.2 million after deducting underwriting discounts and commissions and offering expenses. The Company did not receive any proceeds from shares sold by the Selling Stockholders.

In accordance with the Underwriting Agreement, the Company issued the Underwriters warrants to purchase in the aggregate 61,076 shares of the Company's common stock (2.0% of the share issued by the Company in the offering) with an exercise price equal to \$4.50 (120% of the public offering price), and which have a term of not greater than five years from June 28, 2011 (the date of the final prospectus for the public offering). The warrants were accounted for as a cost of the offering and charged to stockholders' equity.

**11. Warrants**

From time to time, the Company issues warrants to purchase its common stock. These warrants have been issued for consulting services, in connection with the Company's issuance of debt and sales of its common stock.

Warrant activity is summarized as follows:

Shares	Weighted Average	Range of Exercise Prices
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		<b>Exercise Price</b>	
Outstanding at December 31, 2010	942,870	\$ 16.36	\$2.80 - \$169.47
Warrants issued	61,076	\$ 4.50	\$4.50
Warrants exercised	(49,779)	\$ 7.92	\$7.92
Warrants expired / forfeited	(24,253)	\$ 50.95	\$50.63 - \$60.00
Outstanding at December 31, 2011	929,914	\$ 15.13	\$2.80 - \$169.47
Warrants issued	50,000	\$ 2.26	\$2.09 - \$3.80
Warrants expired / forfeited	(56,824)	\$ 123.37	\$75.00– \$169.47
Outstanding at December 31, 2012	923,090	\$ 7.77	\$2.09 – \$48.90
Warrants exercisable at December 31, 2012	863,090	\$ 7.92	\$2.09 – \$48.90

The Company determines the grant-date fair value of warrants using the Black-Scholes option-pricing model unless the awards are subject to market conditions, in which case it uses a Monte Carlo simulation model, which utilizes multiple input variables to estimate the probability that market conditions will be achieved. Due to the significant change in the Company following the Merger, CDTi's pre-Merger historical price volatility was not considered representative of expected volatility going forward. Therefore, the Company has utilized an estimate based upon a weighted average of implied and historical volatility of a portfolio of peer companies and CDTi's post-Merger historical volatility for valuation of its warrants. The expected life is equal to the contractual life of the warrants.

Warrants issued in 2012 were issued in connection with the Company's issuance or modification of debt. See Note 9. Warrants issued in 2011 were issued to underwriters in connection with the public offering of the Company's common stock. See note 10.

The weighted-average assumptions and grant date fair value, determined using the Black-Scholes option-pricing model, for warrants issued in 2012 was as follows:

	<b>2012</b>
Expected volatility	91.6%
Risk-free interest rate	0.9%
Dividend yield	
Expected life in years	6.0
Weighted average grant date fair value	\$ 1.57

In 2011, the Company issued an aggregate 49,779 shares of common stock related to the exercise of warrants. The Company received cash proceeds of \$0.4 million related to these exercises.

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The following table summarizes information on warrants outstanding on December 31, 2012:

<b>Number</b>	<b>Exercise</b>	<b>Issuance</b>	<b>Expiration</b>
<b>Outstanding</b>	<b>Price</b>	<b>Date</b>	<b>Date</b>
7,577	\$48.90	9/26/03	9/25/2013
9,859	\$2.80	6/25/2008	10/1/2014
616,245	\$7.92	10/15/2010	10/15/2013
25,000	\$7.92	12/21/2010	12/21/2013
128,333	\$7.92	12/22/2010	12/22/2013
25,000	\$10.40	12/30/2010	6/30/2016
61,076	\$4.50	7/5/2011	6/28/2016
5,000	\$3.80	2/16/2012	8/16/2017
45,000	\$2.09	7/27/2012	7/27/2018

*Warrant Classification*

The Company evaluates warrants on issuance and at each reporting date to determine proper classification as equity or as a liability. The Company has 379,678 outstanding warrants issued to former CSI Class A shareholders in connection with the Merger that it is required to physically settle by delivering registered shares. In addition, while the relevant warrant agreement does not require cash settlement if the Company fails to maintain registration of the warrant shares, it does not specifically preclude cash settlement. Accordingly, the Company's agreement to deliver registered shares without express terms for settlement in the absence of continuous effective registration is presumed to create a liability to settle these warrants in cash, requiring liability classification. The contracts for the remaining warrants allow for settlement in unregistered shares and do not contain any other characteristics that would result in liability classification. Accordingly, these instruments have been classified in stockholders' equity in the accompanying consolidated balance sheets and are only valued on the issuance date and not subsequently revalued. The Company evaluated the balance sheet classification of all warrants at December 31, 2012 and noted no changes.

The liability-classified warrants are considered Level 3 in the fair value hierarchy because they are valued based on unobservable inputs. The Company determined the fair value of its liability-classified warrants using a Monte Carlo simulation model, which utilizes multiple input variables to estimate the probability that market conditions will be achieved. As noted above, the Company has utilized an estimate based upon a weighted average of implied and historical volatility of a portfolio of peer companies and CDTi's post-Merger historical volatility for valuation of its warrants. At December 31, 2012, the Company utilized an estimate based upon a weighted average of implied volatility of peer companies and CDTi's post-Merger historical volatility, with an increase in weighting toward CDTi's post-Merger historical volatility.

The assumptions used in the Monte Carlo simulation model were as follows:

	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Expected volatility	71.3%	58.8%
Risk-free interest rate	0.3%	0.7%
Closing price of Clean Diesel Technologies, Inc. common stock	\$ 2.17	\$ 2.80

The liability, which is included in accrued liabilities in the accompanying consolidated balance sheets, is remeasured at the end of each reporting period with changes in fair value recognized in other income (expense) in the consolidated statements of operations and comprehensive loss.

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**Table of Contents****CLEAN DIESEL TECHNOLOGIES, INC.****Notes to Consolidated Financial Statements**

The following is a reconciliation of the warrant liability measured at fair value using Level 3 inputs (in thousands):

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Balance at beginning of year	\$ 100	\$ 1,238
Exercise of common stock warrants		(39)
Remeasurement of common stock warrants	(90)	(1,099)
Balance at end of year	\$ 10	\$ 100

**12. Stock-Based Compensation**

The Clean Diesel Technologies, Inc. Stock Incentive Plan (formerly known as the Clean Diesel Technologies, Inc. 1994 Incentive Plan), as amended (the "Plan"), provides for the awarding of incentive stock options, non-qualified stock options, stock appreciation rights, restricted shares, performance awards, bonuses or other forms of share-based awards, or combinations of these to the Company's directors, officers, employees, consultants and advisors (except consultants or advisors in capital-raising transactions) as determined by the board of directors. At the Company's Annual Meeting of Shareholders held on May 23, 2012, the Company's shareholders approved certain amendments to the Plan, the most significant of which changed the Plan name, removed the evergreen provision and established a maximum number of 1.4 million shares to be reserved for issuance under the Plan, disallowed the repricing of outstanding stock options without shareholder approval, removed the ability to issue cash bonus awards under the Plan and modified the change in control provisions within the Plan. As of December 31, 2012, there were 524,896 shares available for future grants under the Plan.

Total stock-based compensation expense for both employee and non-employee awards for the years ended December 31, 2012 and 2011 was \$0.5 million and \$1.5 million, respectively.

*CEO Inducement Awards*

On March 8, 2012, the Compensation and Nominating Committee of the Company's Board of Directors (the "Compensation Committee") approved the grant of nonqualified stock options and RSUs to the Company's newly-appointed Chief Executive Officer and President. The grant was made outside of the Clean Diesel Technologies, Inc. Stock Incentive Plan as an inducement award without stockholder approval pursuant to Rule 5635(c)(4) of the NASDAQ Listing Rules. The Company granted 176,676 nonqualified stock options at an exercise price of \$2.83 per share. These options have a ten-year term, and vest 28% on the first anniversary of the date of grant and 9% quarterly thereafter. The Company filed a registration statement on Form S-8 with the Securities and

Exchange Commission registering the shares subject to the option grant on June 8, 2012. The Company also granted 58,892 RSUs at a fair value of \$2.83 per unit. These RSUs vest 28% on the first anniversary of the date of grant and 9% quarterly thereafter, beginning June 20, 2013.

#### *2012 Awards*

In 2012, the Compensation Committee approved the grant of long-term incentive awards to executive officers and other key employees consisting of a combination of nonqualified stock options and RSUs. The Company granted a total of 330,219 nonqualified stock options at a weighted average exercise price of \$2.97 per share, a third of which vest on February 22, 2013 (the "Initial Vesting Date") and each of the first and second anniversaries of the Initial Vesting Date. The Company also issued 113,255 RSUs at a weighted average fair value of \$2.95 per unit, a third of which generally vest on March 20, 2013 (the "Vesting Commencement Date") and each of the first and second anniversaries of the Vesting Commencement Date.

#### *2011 Awards*

On June 8, 2011, the Company granted 122,127 RSUs to executive officers and other key employees with a grant date fair value of \$6.17 per unit. Of these RSUs, 92,677 vested in full seven business days from the grant date. The remaining 29,450 of these RSUs are time-based and vest on the following schedule: 33.3% of the total number of RSUs vest seven days from the grant date and each of the first and second anniversaries of the grant date. On September 8, 2011, the Company granted 18,934 RSUs to an executive officer and other key employees with a grant date fair value of \$3.80. Of these RSUs, the 13,334 issued to the executive officer vested in full six business days from the grant date. The remaining 5,600 of these RSUs are time-based with 33.3% vesting on each of the first, second and third anniversaries of the grant date.

On March 17, 2011, the Company granted stock options covering a total 182,459 common shares with an option price of \$5.68, 50% of which vested on the date of grant and 50% on the first anniversary of the date of grant.

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## CLEAN DIESEL TECHNOLOGIES, INC.

## Notes to Consolidated Financial Statements

*Non-Employee Director Awards*

Each non-employee director is granted stock options covering 5,000 common shares each year, one twelfth of which vest each month over the following year.

*Stock Options*

Stock option activity is summarized as follows:

	<b>Options</b>	<b>Weighted Average Exercise Price</b>	<b>Weighted Average Remaining Contractual Term (in years)</b>	<b>Aggregate Intrinsic Value</b>
Outstanding at December 31, 2010	151,801	\$ 53.55		
Granted	207,459	\$ 5.35		
Expired	(57,626)	\$ 63.13		
Outstanding at December 31, 2011	301,634	\$ 18.57	7.93	
Granted	536,895	\$ 2.90		
Cancelled	(41,175)	\$ 3.06		
Expired	(11,368)	\$ 78.97		
Outstanding at December 31, 2012	785,986	\$ 7.81	8.48	
Exercisable at December 31, 2012	286,101	\$ 15.98	7.25	

The aggregate intrinsic value represents the difference between the exercise price and the Company's closing stock price on the last trading day of the year.

Stock options granted under the Plan typically expire ten years from the date of grant and are issued at a price equal to the fair market value of the underlying stock on the date of grant. The Company's board of directors may establish such vesting and other conditions with respect to options as it deems appropriate.

The Company estimates the fair value of stock options using a Black-Scholes option-pricing model. The weighted-average assumptions and grant date fair value for the years ended December 31, 2012 and 2011 were as follows:

	<b>2012</b>	<b>2011</b>
Expected volatility	84.0%	80.2%
Risk-free interest rate	1.1%	1.9%
Dividend yield		

Expected life in years		5.9		5.2
Weighted average grant date fair value	\$	2.04	\$	3.49

The expected term of the options has historically been based upon the historical term until exercise or expiration of all granted options. Due to the significant change in the Company following the Merger and significant change in the terms of the options granted, CDTI's pre-Merger historical exercise data was not considered to provide a reasonable basis for estimating the expected term for current option grants. As such, the expected term of stock options granted in 2012 and 2011 was determined using the "simplified method" as allowed under ASC 718-10-S99. "Compensation - Stock Compensation: Overall: SEC Materials." The "simplified method" calculates the expected term as the average of the vesting term and original contractual term of the options. Also, due to the significant change in the Company following the Merger, CDTI's pre-Merger historical price volatility was not considered representative of expected volatility going forward. Therefore, the Company utilized an estimate based upon the historical and implied volatility of a portfolio of peer companies. The risk-free interest rate is the constant maturity rate published by the U.S. Federal Reserve Board that corresponds to the expected term of the option. The dividend yield is assumed as 0% because the Company has not paid dividends and does not expect to pay dividends in the future.

Compensation costs for stock options that vest over time are recognized over the vesting period on a straight-line basis. As of December 31, 2012, the Company had \$0.7 million of unrecognized compensation cost related to stock option grants that remained to be recognized over vesting periods. These costs are expected to be recognized over a weighted average period of 2.1 years.

There was no cash received from option exercises under any share-based payment arrangements for the year ended December 31, 2012 or 2011.

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## CLEAN DIESEL TECHNOLOGIES, INC.

## Notes to Consolidated Financial Statements

*Restricted Stock Units*

RSU activity as follows:

	<b>Shares</b>	<b>Weighted Average Grant Date Fair Value</b>	<b>Aggregate Intrinsic Value</b>
Non-vested share units at December 31, 2010			
Granted	141,061	\$ 5.85	
Vested	(115,823)	\$ 5.90	
Non-vested share units at December 31, 2011	25,238	\$ 5.64	
Granted	172,147	\$ 2.91	
Vested	(12,508)	\$ 5.50	
Forfeited	(17,712)	\$ 3.35	
Non-vested share units at December 31, 2012	167,165	\$ 3.08	

For the years ended December 31, 2012 and 2011, the total estimated vest date fair value of restricted stock awards was \$0 and \$0.7 million, respectively. As of December 31, 2012, the Company had approximately \$0.4 million of unrecognized compensation expense, net of estimated forfeitures, related to RSUs, which will be recognized over a weighted average estimated remaining life of 2.1 years.

**13. Other (Expense) Income, Net**

Other (expense) income, net, consists of the following (in thousands):

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Gain on change in fair value of liability-classified warrants	\$ 90	\$ 1,099

Foreign currency exchange losses	(483)	(374)
All other, net	(363)	80
Total other (expense) income, net	\$ (756)	\$ 805

**14. Income Taxes**

(Loss) income from continuing operations before income taxes include the following components (in thousands):

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
U.S.-based operations	\$ (7,872)	\$ (7,614)
Non U.S.-based operations	(2,189)	685
	\$ (10,061)	\$ (6,929)

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Income tax expense (benefit) attributable to loss from continuing operations is summarized as follows (in thousands):

	<b>Current</b>	<b>Deferred</b>	<b>Total</b>
Year ended December 31, 2012:			
U.S. Federal	\$	\$	\$
State and local	16		16
Foreign	(212)	(171)	(383)
Total	\$ (196)	\$ (171)	\$ (367)
Year ended December 31, 2011:			
U.S. Federal	\$ 25	\$	\$ 25
State and local	15		15
Foreign	385	(134)	251
Total	\$ 425	\$ (134)	\$ 291

Income taxes attributable to loss from continuing operations differ from the amounts computed by applying the U.S. federal statutory rate of 34% to loss from continuing operations before income taxes as shown below (in thousands):

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Expected tax benefit	\$ (3,421)	\$ (2,356)
Net tax effects of:		
Foreign tax rate differential	408	89
State taxes, net of federal benefit	(529)	(864)
Return to provision adjustment	832	30
Research and other credits	(2)	(191)
Permanent difference on convertible notes and warrants	(31)	(374)
Permanent difference on deemed dividend		78
Other	73	(456)
Change in deferred tax asset valuation allowance	2,303	4,335
	\$ (367)	\$ 291

Deferred tax assets and liabilities consist of the following (in thousands):

	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Deferred tax assets:		
Research and development credits	\$ 1,707	\$ 1,658
Other credits	347	985
Operating loss carry forwards	10,562	8,428
Inventories	469	370
Allowance for doubtful accounts	563	107
Depreciation	246	107
Deferred research and development expenses for income tax	327	331
Non-cash compensation	706	546
Other	536	617
Total gross deferred tax assets	15,463	13,149
Valuation allowance	(14,906)	(12,603)
Net deferred tax assets	557	546
Deferred tax liabilities		
Other identifiable intangible assets	(1,354)	(1,488)
Total gross deferred tax liabilities	(1,354)	(1,488)
Net deferred tax liabilities	\$ (797)	\$ (942)

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The Company had approximately \$19.0 million and \$60.7 million of federal and state income tax net operating loss carryforwards at December 31, 2012, respectively. Future utilization of the net operating losses and credit carryforwards is subject to a substantial annual limitation due to ownership change limitations as required by Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the “Code”), as well as similar state limitations.

The Company performed a study to evaluate the status of net operating loss carryforwards as a result of the ownership change from the Merger. The results of the study provided that the merger caused an “ownership change” of the Company as defined for U.S. federal income tax purposes as of the date of the merger. The “ownership change” will significantly limit the use of the Company’s net operating losses and credits in future tax years. Of the \$19.0 million federal loss carryforwards approximately \$5.4 million of the loss will be subject to an annual limitation of \$0.4 million within the next 5 years and \$0.2 million for the following 15 years. The federal net operating loss carryforwards will expire in fiscal year 2032. As a result of the “ownership change” the federal research and development credits have been limited and based on the limitation the Company does not anticipate being able to use any of these credits that existed as of the date of the Merger in future tax years. Of the \$60.7 million of state net operating loss carryforwards approximately \$1.2 million of the loss will be subject to an annual limitation of \$0.1 for the next 20 years. The state net operating loss carryforwards will expire in fiscal year 2032. The Company has state research and development credits of \$2.4 million. Since the state credits have an indefinite life, the Company did not write them off even though it is also limited under Section 383. The Company has a full valuation allowance against the related deferred tax assets as it is more likely than not that they will not be realized by the Company.

In assessing the potential realization of deferred tax assets, consideration is given to whether it is more likely than not that some portion or all of the deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the Company attaining future taxable income during the periods in which those temporary differences become deductible. In addition, the utilization of net operating loss carryforwards may be limited due to restrictions imposed under applicable federal and state tax laws due to a change in ownership. Based upon the level of historical operating losses and future projections, management believes it is more likely than not that the Company will not realize the deferred tax assets.

The following changes occurred in the amount of unrecognized tax benefits including related interest and penalties (in thousands):

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Balance at beginning of year	\$ 529	\$ 473
Additions for current year tax provisions	41	56
Reduction for prior year tax provisions	(118)	

Balance at end of year	\$	452	\$	529
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If recognized, the entire amount of the unrecognized tax benefits would affect the effective tax rate.

As of December 31, 2012 and 2011, the Company had \$0.2 million and \$0.1 million, respectively, accrued for payment of interest and penalties related to unrecognized tax benefits.

The Company operates in multiple tax jurisdictions, both within and outside of the United States. Although the timing of the resolution and/or closure of audits is not certain, the Company does not believe it is reasonably possible that its unrecognized tax benefits would materially change in the next twelve months. The following tax years remain open to examination by the major domestic taxing jurisdictions to which it is subject:

	<b>Open Tax Years</b>
United States – Federal	2009 – 2012
United States – State	2008 – 2012
Canada	2007 – 2012
Sweden	2010 – 2012
United Kingdom	2008 - 2012

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### **CLEAN DIESEL TECHNOLOGIES, INC.**

#### **Notes to Consolidated Financial Statements**

#### **15. Sale of Energy Systems Division**

On October 1, 2009, the Company sold all significant assets of Applied Utility Systems, Inc., which comprised the Company's Energy Systems division, for up to \$10.0 million, including \$8.6 million in cash and contingent consideration of \$1.4 million. Of the contingent consideration, \$0.5 million was contingent upon Applied Utility Systems being awarded certain projects and \$0.9 million is retention against certain project and contract warranties and other obligations. The Company has not recognized any of the contingent consideration as of December 31, 2012 and will only do so if the contingencies are resolved favorably. The \$0.5 million of contingent consideration that was contingent on the award of certain projects was not earned and will not be paid.

The (loss) income, net of tax of the Energy Systems division is presented as discontinued operations. The Company continues to incur legal and other expenses related to this discontinued operation. In addition, the Company recorded gains of \$0.3 million and \$0.2 million in the years ended December 31, 2012 and 2011, respectively, related to recovery of awards from Benz Air litigation (see Note 17). There was no revenue included within discontinued operations for the years ended December 31, 2012 or 2011.

#### **16. TCC Investment**

In February 2008, the Company entered into an agreement with Tanaka Kikinzoku Kogyo K.K. (TKK) to form a new joint venture company, TC Catalyst Incorporated (TCC), a Japanese corporation. The joint venture is part of the Catalyst division. The Company entered the joint venture in order to improve its presence in Japan and Asia and strengthen its business flow into the Asian market.

In December 2008, the Company sold shares in TCC to TKK reducing its ownership to 30%. In December 2009, the Company agreed to sell and transfer specific three-way catalyst and zero platinum group metal patents to TKK for use in specific geographic regions. As part of the transaction, the Company also sold shares in TCC, which reduced its ownership in the joint venture to 5%. The Company remains contractually obligated to fund its portion of the losses of the joint venture based on its ownership percentage. TCC operates with a March 31 fiscal year-end.

The Company's investment in TCC is accounted for using the equity method as the Company still has significant influence over TCC as a result of having a seat on TCC's board and due to the technological interdependence between TCC and the Company. In February 2010, the Company entered into an agreement to loan 37.5 million JPY (approximately \$0.4 million) to TCC to fund continuing operations. As of December 31, 2010, the Company had loaned TCC 37.5 million JPY. If the loan is not repaid by TCC, it will offset the Company's obligation to fund its portion of TCC's losses. Given TCC's historical losses, the loan has been recorded as a reduction of such obligations. TCC has repaid 21.5 million JPY as of December 31, 2012.

At December 31, 2012, the Company's loan to TCC was \$0.2 million which was offset by the Company's share of accumulated losses in the amount of \$0.2 million.

#### **17. Commitments and Contingencies**

*Lease Commitments*

The Company leases certain equipment and facilities under operating leases that expire through 2018. The Company recognizes its minimum lease payments, including escalation clauses, on a straight-line basis over the minimum lease term of the lease. Rent expense was \$1.5 million in each of the years ended December 31, 2012 and 2011.

Future minimum lease payments under non-cancelable operating leases (with initial or remaining lease terms in excess of one year) as of December 31, 2012 are (in thousands):

Years ending December 31:		
2013	\$	1,207
2014		770
2015		706
2016		640
2017		410
Later years, through 2018		385
Total minimum lease payments	\$	4,118

*Legal Proceedings*

On September 30, 2008, Applied Utility Systems, Inc. ("AUS"), a former subsidiary of the Company, filed a complaint against Benz Air Engineering, Inc. ("Benz Air"). The Company sold the majority of the assets of AUS to Johnson Matthey ("JM") on October 1, 2009; however, this lawsuit was excluded from the sale. The complaint was amended on January 16, 2009, and asserted claims against Benz Air for breach of contract, common counts and slander. AUS was seeking \$0.2 million in damages, plus interest, costs and applicable penalties. In response to the complaint, Benz Air filed a cross-complaint on November 17, 2008, which named both AUS and the Company as defendants. The cross-complaint asserted claims against AUS and the Company for breach of oral contract, breach of express warranty, breach of implied warranty, negligent misrepresentation and intentional misrepresentation and was seeking not less than \$0.3 million in damages, plus interest, costs and punitive damages. The trial was concluded on July 29, 2011 with the jury awarding AUS \$0.2 million plus interest as well as an additional \$0.3 million for false statements. On October 18, 2011, the trial court granted Benz Air's motion and overturned the jury's verdict regarding the \$0.3 million for false statements, and denied Benz Air's motion to overturn the jury's verdict on the remaining counts. In addition, the trial court awarded the Company over \$0.5 million in attorney's fees. In the fourth quarter of 2011, the Company recorded a gain of \$0.2 million related to a partial recovery of the award from the Benz Air litigation. On July 31, 2012, the Company and Benz Air completed a global settlement agreement that provides for a cash payment by Benz Air of \$175,000, plus three individual payments of \$25,000 each to be paid on October 1, 2012, January 2, 2013, and April 1, 2013. On September 25, 2012, the Company received all three remaining cash payments from Benz Air and recorded a gain which is presented in discontinued operations in the accompanying condensed consolidated statement of operations. As a result, the Company has dismissed its lawsuit in this matter.

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### **CLEAN DIESEL TECHNOLOGIES, INC.**

#### **Notes to Consolidated Financial Statements**

On April 30, 2010, CDTi received a complaint from the Hartford, Connecticut office of the U.S. Department of Labor (“U.S. DOL”) under Section 806 of the Corporate and Criminal Fraud Accountability Act of 2001, Title VIII of the Sarbanes-Oxley Act of 2002, alleging that a former employee had been subject to discriminatory employment practices. CDTi’s Board of Directors terminated the employee’s employment on April 19, 2010. The complainant in this proceeding does not demand specific relief. However, the statute provides that a prevailing employee shall be entitled to all relief necessary to make the employee whole, including compensatory damages, which may be reinstatement, back pay with interest, front pay, and special damages such as attorney’s and expert witness fees. CDTi responded on June 14, 2010, denying the allegations of the complaint. On March 29, 2011, the U.S. DOL investigator assigned to this matter requested information and documentation regarding the former employee’s allegations and the Company provided responsive documents as requested. The Company also responded to additional requests from the U.S. DOL regarding electronic correspondence. On October 6, 2011, the U.S. DOL investigator requested that the Company provide additional information and requested interviews with certain individuals. The Company responded to those requests. On April 16, 2012, the U.S. DOL requested that the Company take part in non-binding mediation with the former employee. The Company has granted that request, but the former employee declined to participate in mediation. On July 17, 2012, the U.S. DOL conducted interviews of several former CDTi officers. On July 31, 2012, the Company submitted Supplemental Briefing to the U.S. DOL pertaining to the protections and applicability of Section 806 of the Sarbanes-Oxley Act of 2002. The U.S. DOL’s investigation is ongoing. Based upon current information, management, after consultation with legal counsel defending the Company’s interests, believes the ultimate disposition will have no material effect upon its financial position, results of operations, or cash flows.

BP Products North America (“BP”), a subsidiary of British Petroleum (BP p.l.c.) has made claims against JM as the parent company of and purchaser of AUS, pertaining to the Whiting Refinery SPS NOx Reduction Project. BP alleges JM is liable for default damages and various other set-offs to the contract price and has retained a significant portion of the contract amount, as well as made claims for additional damages. JM maintains that it fully performed its obligations under the contract, and BP has acted in bad faith and has inappropriately withheld the contract proceeds and is further liable for various other damages. On May 12, 2010, JM tendered to the Company a claim for indemnification under the Asset Purchase Agreement dated October 1, 2009, among JM, CSI and AUS. A recent mediation did not result in a settlement. On May 14, 2012, JM filed a lawsuit in California state court alleging breach of contract. On June 25, 2012, BP removed the case to federal court. On June 29, 2012, BP filed their Answer and Counterclaimed against JM for Breach of Contract. The Parties are now preparing for their initial disclosures. As litigation is still in early stages and discovery is only partially underway, the Company cannot provide a reasonable range of possible outcomes.

In addition to the foregoing, the Company is involved in legal proceedings from time to time in the ordinary course of its business. Management does not believe that any of these claims and proceedings against it is likely to have, individually or in the aggregate, a material adverse effect on the Company’s consolidated financial condition, results of operations or cash flows.

#### *Sales and Use Tax Audit*

The Company is undergoing a sales and use tax audit by the State of California on AUS for the period of 2007 through 2009. The audit has identified a project performed by the Company during that time period for which sales

tax was not collected and remitted and for which the State of California asserts that proper documentation of resale may not have been obtained and that the Company owes sales tax of \$1.3 million. The Company contends and believes that it received sufficient and proper documentation from its customer to support not collecting and remitting sales tax from that customer and is actively disputing the audit report with the State of California. Accordingly, no accrual has been recorded for this matter as the Company does not assess a loss as being probable. Should the Company not prevail in this matter, it has certain indemnifications from its customer related to sales tax and would pursue reimbursement from the customer for all assessments from the State.

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### 18. Segment Reporting

The Company has two division segments based on the products it delivers:

**Heavy Duty Diesel Systems division** — The Heavy Duty Diesel Systems division designs and manufactures verified exhaust emissions control solutions. This division offers a full range of products for the verified retrofit and OEM markets through its distributor/dealer network and direct sales. These products are used to reduce exhaust emissions created by on-road, off-road and stationary diesel and alternative fuel engines including propane and natural gas. The retrofit market in the U.S. is driven in particular by state and municipal environmental regulations and incentive funding for voluntary early compliance. The Heavy Duty Diesel Systems division derives significant revenues from retrofit with a portfolio of solutions verified by the California Air Resources Board and the United States Environmental Protection Agency.

**Catalyst division** — The Catalyst division produces catalyst formulations to reduce emissions from gasoline, diesel and natural gas combustion engines that are offered for multiple markets and a wide range of applications. A family of unique high-performance catalysts has been developed — with base-metals or low platinum group metal and zero platinum group metal content — to provide increased catalytic function and value for technology-driven automotive industry customers. The Catalyst division's technical and manufacturing competence in the light duty vehicle market is aimed at meeting auto makers' most stringent requirements, and it has supplied over ten million parts to light duty vehicle customers since 1996. The Catalyst division also provides catalyst formulations for the Company's Heavy Duty Diesel Systems division. Intersegment revenues are based on market prices.

**Corporate** — Corporate includes cost for personnel, insurance and public company expenses such as legal, audit and taxes that are not allocated down to the operating divisions.

**Discontinued operations** — In 2006, the Company purchased AUS, a provider of cost-effective, engineered solutions for the clean and efficient utilization of fossil fuels. AUS, referred to as the Company's Energy Systems division, provided emissions control and energy systems solutions for industrial and utility boilers, process heaters, gas turbines and generation sets used largely by major utilities, industrial process plants, OEMs, refineries, food processors, product manufacturers and universities. The Energy Systems division delivered integrated systems built for customers' specific combustion processes. As discussed in Note 15, this division was sold on October 1, 2009.

Summarized financial information for the Company's reportable segments is as follows (in thousands):

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
Net sales		
Heavy Duty Diesel Systems	\$ 40,666	\$ 47,460
Catalyst	24,322	20,789
Corporate		
Eliminations (1)	(4,451)	(6,642)
Total	\$ 60,537	\$ 61,607

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Income (loss) from operations		
Heavy Duty Diesel Systems	\$ (602)	\$ 1,449
Catalyst	(1,816)	(970)
Corporate	(5,469)	(6,677)
Eliminations	50	(325)
Total	\$ (7,837)	\$ (6,523)
Depreciation and amortization		
Heavy Duty Diesel Systems	\$ 1,238	\$ 1,536
Catalyst	192	212
Corporate		
Total	\$ 1,430	\$ 1,748
Capital expenditures		
Heavy Duty Diesel Systems	\$ 135	\$ 435
Catalyst	101	184
Corporate		
Total	\$ 236	\$ 619

**December 31,**

	<b>2012</b>	<b>2011</b>
Total assets		
Heavy Duty Diesel Systems	\$ 40,182	\$ 45,660
Catalyst	37,637	35,626
Discontinued operations	1,172	1,177
Eliminations	(43,550)	(41,348)
Total	\$ 35,441	\$ 41,115

(1) Elimination of Catalyst revenue related to sales to Heavy Duty diesel Systems

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Net sales by geographic region based on location of sales organization is as follows (in thousands):

	<b>Years Ended</b>	
	<b>December 31,</b>	
	<b>2012</b>	<b>2011</b>
United States	\$ 25,895	\$ 20,960
Canada	22,152	25,328
United Kingdom	6,691	8,172
Sweden	5,799	7,147
Total	\$ 60,537	\$ 61,607

Net fixed assets and total assets by geographic region as of December 31, 2012 and 2011 is as follows (in thousands):

	<b>Fixed Assets</b>		<b>Total Assets</b>	
	<b>2012</b>	<b>2011</b>	<b>2012</b>	<b>2011</b>
United States	\$ 616	\$ 960	\$ 15,353	\$ 12,409
Canada	1,278	1,438	15,681	17,808
United Kingdom		95	1,392	8,014
Sweden	106	156	3,015	2,884
Total	\$ 2,000	\$ 2,649	\$ 35,441	\$ 41,115

**19. Subsequent Events**

On February 19, 2013, the Company entered into a joint venture agreement (the “Joint Venture Agreement”) with Pirelli & C. Ambiente SpA (“Pirelli”) to form a joint venture entity, Eco Emission Enterprise Srl under the laws of Italy (the “Joint Venture”), through which the Company and Pirelli will jointly sell their emission control products in Europe and the CIS countries. The Joint Venture Agreement provides that the Company and Pirelli will each hold 50% of the total issued share capital of the Joint Venture. In conjunction with the formation and operation of the Joint Venture, the Company and Pirelli have each agreed to an initial contribution of €50,000 (approximately \$67,000) to the Joint Venture. Future contributions from the Company and Pirelli will be provided to the Joint Venture in the form of cash or shareholders loans, from time to time as necessary.

On January 30, 2013, the Company and Kanis S.A. entered into an amendment to amend certain terms of the Company’s outstanding 6% note due 2013. As amended, the maturity date of this note was changed from June 30,

2013 to June 30, 2015. In addition, the payment premium due under this note was changed from a range of \$100,000 to \$200,000, based proportionally on the number of days that the loan remains outstanding, to a fixed amount of \$250,000, with \$100,000 payable on June 30, 2013 and the remaining \$150,000 payable at maturity on June 30, 2015. Finally, the interest rate was changed from 6% to 8% as of June 30, 2013.

Also on January 30, 2013, the Company and Kanis S.A. entered into a letter agreement regarding the Company's outstanding 8% subordinated convertible note due 2016 whereby Kanis S.A. has agreed not to accelerate the maturity of these notes during the 2013 calendar year.

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**EXHIBIT INDEX**

<b>Exhibit No.</b>	<b>Description of Exhibit</b>
3.1	Restated Certificate of Incorporation of Clean Diesel Technologies, Inc. (incorporated by reference to Exhibit 3(i)(a) to CDTi's Annual report on Form 10-K for the year ended December 31, 2006 and filed on March 30, 2007).
3.2	Certificate of Amendment of Restated Certificate of Incorporation (incorporated by reference to Exhibit 3(i)(b) to CDTi's Registration Statement on Form S-1 (No. 333-144201) dated on June 29, 2007).
3.3	Certificate of Amendment of Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.3 to CDTi's Post-Effective Amendment No. 1 to Form S-4 on Form S-3 (No. 333-166865) filed on November 10, 2010).
3.4	Certificate of Amendment of Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to CDTi's Current Report on Form 8-K filed on May 24, 2012).
3.5	By-Laws of Clean Diesel Technologies, Inc. as amended through November 6, 2008 (incorporated by reference to Exhibit 3.1 to CDTi's Quarterly Report on Form 10-Q filed on November 10, 2008).
4.1	Specimen of Certificate for Clean Diesel Technologies, Inc. Common Stock (incorporated by reference to Exhibit 4.1 to CDTi's Post-Effective Amendment No. 1 to Form S-4 on Form S-3 (No. 333-166865) filed on November 10, 2010).
10.1	Form of Warrant issued to Innovator Capital, Ltd., dated October 15, 2010 (incorporated by reference to Exhibit 10.2 to CDTi's Annual Report on Form 10-K filed on March 31, 2011).
10.2	Form of Clean Diesel Technologies, Inc. Offshore Private Placement Commitment Letter, including Form of Warrant, dated May 2010 (incorporated by reference to Exhibit 10.4 to CDTi's Annual Report on Form 10-K filed on March 31, 2011).
10.3	Form of Warrant to purchase Common Stock (incorporated by reference to Exhibit 4.2 to CDTi's Post-Effective Amendment No. 1 to Form S-4 on Form S-3 (No. 333-166865) filed on November 10, 2010).
10.4	Loan Commitment Letter, dated December 30, 2010, between Kanis S.A. and Clean Diesel Technologies, Inc. (incorporated by reference to Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on January 5, 2011) as amended by the Amendment of Clean Diesel Technologies Inc.'s Loan Agreement dated December 30, 2010 between Kanis S.A. and Clean Diesel Technologies, Inc., dated January 30, 2013 (incorporated by reference to Exhibit 10.12 to CDTi's Current Report on Form 8-K filed on February 1, 2013).

- 10.5 Form of \$1,500,000 Promissory Note Dated December 30, 2010 (incorporated by reference to Schedule A to Loan Commitment Letter filed as Exhibit 10.1 to CDTi's current report on Form 8-K filed on January 5, 2011).
- 10.6 Form of Warrant issued to Kanis S.A., dated December 30, 2010 (incorporated by reference to Schedule B to Loan Commitment Letter filed as Exhibit 10.1 to CDTi's current report on Form 8-K filed on January 5, 2011).
- 10.7 Letter Agreement dated January 13, 2011 among Fifth Third Bank, Catalytic Solutions, Inc. and certain other direct or indirect subsidiaries of Clean Diesel Technologies, Inc. (incorporated by reference to Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on January 20, 2011).
- 10.8 Form of Agreement of Sale of Accounts and Security Agreement, dated February 14, 2011 between Faunus Group International, Inc. and Clean Diesel Technologies, Inc. (incorporated by reference to Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on February 16, 2011) as amended by the Omnibus Amendment to Sale of Accounts and Security Agreements and Guaranty Agreement dated August 15, 2012, among Clean Diesel Technologies, Inc., certain of its subsidiaries and Faunus Group International, Inc. (incorporated by reference to Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on August 21, 2012).
- 10.9 Form of Agreement Guaranty, dated February 14, 2011 between Faunus Group International, Inc. and Clean Diesel Technologies, Inc., Clean Diesel International LLC, Catalytic Solutions, Inc., Engine Control Systems, Ltd., Engine Control Systems Limited, Clean Diesel Technologies Limited, Engine Control Systems Europe AB, ECS Holdings, Inc., Catalytic Solutions Holdings, Inc. and CSI Aliso, Inc. (incorporated by reference to Exhibit 10.2 to CDTi's Current Report on Form 8-K filed on February 16, 2011) as amended by the Omnibus Amendment to Sale of Accounts and Security Agreements and Guaranty Agreement dated August 15, 2012, among Clean Diesel Technologies, Inc., certain of its subsidiaries and Faunus Group International, Inc. (incorporated by reference to Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on August 21, 2012).
- 10.10 Subordinated Convertible Notes Commitment Letter, dated April 11, 2011, between Kanis S.A. and Clean Diesel Technologies, Inc. (incorporated by reference to Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on April 13, 2011).
- 10.11 Form of \$3,000,000 promissory note, dated April 11, 2011 (included as Schedule B to Subordinated Convertible Notes Commitment Letter filed as Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on April 13, 2011) as amended by the Amendment of 8% Subordinated Convertible Promissory Note between Clean Diesel Technologies, Inc. and Kanis S.A., dated February 16, 2012 (incorporated by reference to Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on February 17, 2012), further amended by the Second Amendment of 8% Convertible Promissory Note, dated July 27, 2012, between Kanis S.A. and Clean Diesel Technologies, Inc. (incorporated by reference to Exhibit 10.3 to CDTi's Current Report on Form 8-K filed on August 2, 2012) and further amended by the Letter Agreement between Kanis S.A. and Clean Diesel Technologies, Inc. effective January 30, 2013 (incorporated by reference to Exhibit 10.2 to CDTi's Current Report on Form 8-K filed on February 1, 2013).
- 10.12 Form of Warrant issued to Kanis S.A., dated February 16, 2012 (incorporated by reference to Exhibit 10.2 to CDTi's Current Report on Form 8-K filed on February 17, 2012).
- 10.13 Form of Warrant issued on July 5, 2011 to the underwriters named in the Underwriting Agreement, dated June 28, 2011, by and among Clean Diesel Technologies, Inc., the selling stockholders named therein, and

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Roth Capital Partners, LLC, as the representative of the underwriters (incorporated by reference to Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on July 1, 2011).

- 10.14 Form of Purchase Agreement, dated October 7, 2011, by and among Clean Diesel Technologies, Inc. and Lincoln Park Capital Fund, LLC (incorporated by reference to Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on October 11, 2011).
- 10.15 Form of Registration Rights Agreement, dated October 7, 2011, by and among Clean Diesel Technologies, Inc. and Lincoln Park Capital Fund, LLC (incorporated by reference to Exhibit 10.2 of CDTi's Current Report on Form 8-K filed on October 11, 2011).
- 10.16 Loan Commitment Letter, dated July 27, 2012, between Kanis S.A. and Clean Diesel Technologies, Inc. (incorporated by reference to Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on August 2, 2012).
- 10.17 Form of \$3,000,000 Promissory Note, dated July 27, 2012, between Kanis S.A. and Clean Diesel Technologies, Inc. (incorporated by reference to Exhibit 10.2 to CDTi's Current Report on Form 8-K filed on August 2, 2012).
- 10.18 Form of Warrant issued to Kanis S.A., dated July 27, 2012 (incorporated by reference to Exhibit 10.4 to CDTi's Current Report on Form 8-K filed on August 2, 2012).
- 10.19# Joint Venture Agreement, dated February 19, 2013, between Pirelli & C. Ambiente SpA and Clean Diesel Technologies, Inc. (incorporated by reference to Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on February 25, 2013).
- 10.20† Employment Agreement dated March 8, 2012, between R. Craig Breese and Clean Diesel Technologies, Inc. (incorporated by reference to Exhibit 10.21 to CDTi's Annual Report on Form 10-K filed on March 29, 2012).

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- 10.21† Employment Agreement, dated October 17, 2006, between Charles F. Call and CSI (incorporated by reference to Exhibit 10.3 to Amendment No. 2 to CDTi's Registration Statement on Form S-4/A (No. 333-166865) filed on August 30, 2010).
- 10.22† Employment Agreement, dated May 2, 2012, between Nikhil A. Mehta and Clean Diesel Technologies, Inc. (incorporated by reference to Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on May 7, 2012).
- 10.23† Employment Agreement, dated October 17, 2006, between Stephen J. Golden, Ph.D., and CSI (incorporated by reference to Exhibit 10.5 to Amendment No. 2 to CDTi's Registration Statement on Form S-4/A (No. 333-166865) filed on August 30, 2010).
- 10.24† Employment Agreement effective January 16, 2009 between Dr. Daniel K. Skelton and Clean Diesel Technologies, Inc. (incorporated by reference to Exhibit 10(t) to CDTi's Annual Report on Form 10-K filed on March 25, 2010).
- 10.25† Stock Incentive Plan as amended through May 23, 2012 (incorporated by reference to Appendix A to CDTi's Definitive Proxy Statement filed on April 23, 2012).
- 10.26† Form of U.S. Participant Notice of Grant of Stock Option and Agreement (incorporated by reference to Exhibit 10.3 to CDTi's Form 10-Q filed on August 9, 2012).
- 10.27† Form of Non-U.S. Participant Notice of Grant of Stock Option and Agreement (incorporated by reference to Exhibit 10.4 to CDTi's Form 10-Q filed on August 9, 2012).
- 10.28† Form of Non-Employee Director Notice of Grant of Stock Option and Agreement (incorporated by reference to Exhibit 10.5 to CDTi's Form 10-Q filed on August 9, 2012).
- 10.29† Form of U.S. Participant Notice of Grant of Restricted Share Units and Agreement (incorporated by reference to Exhibit 10.6 to CDTi's Form 10-Q filed on August 9, 2012).
- 10.30† Form of Non-U.S. Participant Notice of Grant of Restricted Share Units and Agreement (incorporated by reference to Exhibit 10.7 to CDTi's Form 10-Q filed on August 9, 2012).
- 10.31† Management Short Term Incentive Plan (incorporated by reference to Exhibit 10.3 to CDTi's Current Report on Form 8-K filed on June 13, 2011).
- 10.32† Executive Long Term Incentive Plan (incorporated by reference to Exhibit 10.1 to CDTi's Current Report on Form 8-K filed on December 18, 2012).
- 10.33† New Employee Inducement Award Nonqualified Stock Option granted to Robert Craig Breese, dated March 8, 2012 (incorporated by reference to Exhibit 10.36 to CDTi's Annual Report on Form 10-K filed on March 29, 2012).
- 10.34† New Employee Inducement Award Restricted Share Units granted to Robert Craig Breese, dated March 8, 2012 (incorporated by reference to Exhibit 10.37 to CDTi's Annual Report on Form 10-K

filed on March 29, 2012).

- 16 Letter from KPMG, LLP to the Securities and Exchange Commission dated September 24, 2012 (incorporated by reference to Exhibit 16.1 to CDTi's Current Report on Form 8-K filed on September 24, 2012).
- 21\* Subsidiaries of Clean Diesel Technologies, Inc.
- 23.1\* Consent of BDO USA, LLP, Independent Registered Public Accounting Firm.
- 23.2\* Consent of KPMG LLP, Independent Registered Public Accounting Firm.
- 31.1\* Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 31.2\* Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 32\*\* Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- 101.INS\*\*\* XBRL Instance Document.
- 101.SCH\*\*\* XBRL Taxonomy Extension Schema Document.
- 101.CAL\*\*\* XBRL Taxonomy Extension Calculation Linkbase Document.
- 101.DEF\*\*\* XBRL Taxonomy Extension Definition Linkbase Document.
- 101.LAB\*\*\* XBRL Taxonomy Extension Label Linkbase Document.
- 101.PRE\*\*\* XBRL Taxonomy Extension Presentation Linkbase Document.

\* Filed herewith

\*\* Furnished herewith.

\*\*\* Furnished herewith. In accordance with Rule 406T of Regulation S-T, the information in these exhibits shall not be deemed to be "filed" for purposes of Section 18 of the Exchange Act, or otherwise subject to liability under that section, and shall not be incorporated by reference into any registration statement, prospectus or other document filed under the Securities Act of 1933, as amended, except as expressly set forth by specific reference in such filing.

† Indicates a management contract or compensatory plan or arrangement

# Certain confidential information contained in this exhibit was omitted by means of redacting a portion of the text and replacing it with an asterisk. This exhibit has been filed separately with the Secretary of the SEC without the redaction pursuant to Confidential Treatment Request under Rule 406 of the Securities Act.