

DISTRIBUTED ENERGY SYSTEMS CORP

Form 10-K

March 16, 2005

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# SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

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## FORM 10-K

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FOR ANNUAL AND TRANSITION REPORTS  
PURSUANT TO SECTIONS 13 OR 15(d) OF THE  
SECURITIES EXCHANGE ACT OF 1934

(Mark One)

FOR ANNUAL AND TRANSITION REPORTS PURSUANT TO SECTION 13 OR 15(d) OF THE  
SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2004

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 Number 000-50453

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# DISTRIBUTED ENERGY SYSTEMS CORP.

(Exact name of Registrant as specified in its charter)

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**Delaware**  
(State or Other Jurisdiction of  
Incorporation or Organization)

**20-0177690**  
(I.R.S. Employer  
Identification No.)

**10 TECHNOLOGY DRIVE, WALLINGFORD, CT 06492**

(Address of principal executive offices)

**Registrant's telephone number, including area code (203) 678-2000**

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

**None**

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

**Common Stock, \$.01 par value**

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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  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.

Indicate by check mark whether the Registration is an accelerated filer (as defined in Rule 12b-2 of the Act). Yes  No

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The aggregate market value of the voting stock held by non-affiliates of the Registrant on June 30, 2004 was approximately \$91 million based on the price of the last reported sale as reported by The Nasdaq Stock Market on June 30, 2004. The number of shares outstanding of the Registrant's Common Stock on March 10, 2005 was 35,828,538.

### DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement in connection with the annual meeting of the stockholders to be held on June 9, 2005 are incorporated by reference in Part III hereof.

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*This report contains forward-looking statements for purposes of the safe harbor provisions under The Private Securities Litigation Reform Act of 1995. Statements contained herein that are not statements of historical fact may be deemed to be forward-looking information. Without limiting the foregoing, words such as anticipates, believes, could, estimate, expect, intend, may, might, should, will, and words of these words or similar words are intended to identify forward-looking information. You should read these statements carefully, because Distributed Energy Systems Corp.'s actual results may differ materially from those indicated by these forward-looking statements as a result of various important factors. We disclaim any obligation to update these forward-looking statements. Our actual results could differ significantly from those anticipated in these forward looking statements as a result of certain factors, including those set forth below under Legal Proceedings, Management's Discussion and Analysis of Financial Condition and Results of Operations - Certain Factors That May Affect Future Results, and critical accounting policies set forth below under Management's Discussion and Analysis of Financial Condition and Results of Operations - Critical Accounting Policies. You should also carefully review the risks outlined in other documents that we file from time to time with the Securities and Exchange Commission, including our Quarterly Reports on Form 10-Q that we file in 2005.*

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### **ITEM 1. Business**

#### **General**

The Company's annual report on Form 10-K, quarterly reports on Form 10-Q, and other periodic filings are available free of charge through the Investors section of the Company's Internet website (<http://www.distributed-energy.com>) as soon as practicable after such material is electronically filed with, or furnished to, the Securities and Exchange Commission.

On December 10, 2003, subsidiaries of Distributed Energy Systems Corp. ( Distributed Energy ) were merged into Proton Energy Systems, Inc. ( Proton ) and Northern Power Systems, Inc. ( Northern ). The merger was accounted for as a purchase of Northern by Distributed Energy. The consolidated financial statements for years prior to 2003 presented in this annual report Form 10-K are Proton's consolidated financial statements.

#### **Distributed Energy's Business**

Formed in May 2003, Distributed Energy is creating and delivering products and solutions to the new energy marketplace, giving users greater control over their energy cost, quality, and reliability. Distributed Energy was formed as the parent company of two established businesses: Proton Energy Systems, Inc. and Northern Power Systems, Inc. Proton develops advanced technology related to hydrogen production and fuel cell applications. Northern designs and integrates projects that meet critical energy needs with an array of proven technologies, including renewables, advanced combustion and batteries. Distributed Energy believes the acquisition of Northern's project integration experience will strengthen Proton's near-term capabilities, accelerate entry into early energy-related markets and contribute to advancing Proton's vision of producing hydrogen from renewable sources. The combined companies offer small-scale, on-site energy and industrial gas solutions. As Distributed Energy operating



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units, Proton and Northern are delivering practical energy solutions and the business platforms for capitalizing on the changing energy landscape. In the longer term, Distributed Energy may identify and fund other initiatives, implementing new strategic acquisitions, joint ventures, and alliances that meet emerging customer and investor needs. Financial information concerning Distributed Energy, including revenues from external customers, profit and loss, and assets is contained in the financial statements and the notes thereto included elsewhere in this report.

## **Northern s Business**

### *Overview*

Since 1974, Northern or its predecessors has been engaged in the business of designing, building and installing both stand-alone and grid-connected electric power systems for industrial, commercial and government customers. These power systems are referred to generically as distributed generation, meaning power is generated at the location where it is used rather than from a large central generating facility. Northern s generating systems convert energy derived from wind, sunlight, oil, natural gas, and biofuels into electricity, using reliable power generation technologies integrated with custom controls and power electronics. Northern has installed over 900 systems in more than 50 countries. Northern is a full service systems integrator and provides engineering, procurement and construction, or EPC, services, including site analysis, project and financial assessment, feasibility studies, system design, installation, commissioning, maintenance, operations, monitoring and control. Northern uses on-site metering and data collection to engineer and design the proper balance of energy source, power generation, energy storage and controls for each system. In addition to Northern s core EPC services, Northern is engaged in the development of new proprietary products and system architectures for application in the distributed generation market in both stand-alone and grid-connected systems.

Northern believes that in recent years there has been a convergence of market, policy and technology trends that will hasten the adoption of distributed generation in both domestic and international markets. These trends include insufficient or inadequate power quality and reliability from the current electric grid, growing concern about the effects of energy production and use on human health and the environment, and high electricity prices in key regions. In addition, there are increasing government regulations and financial incentives focused on the deployment of distributed and renewable energy resources. For example, several states, including California, New Jersey, New York and most of New England, have recently established renewable energy production requirements that utilities serving customers in these states must meet, which has created a financial value for Renewable Energy Credits (RECs). Many of these same states, have also enacted various financial incentive programs to reduce the capital cost of distributed generation systems for commercial and industrial customers. These combine to create a variety of tax credits and funding mechanisms at both the federal and state level that encourage the distributed generation and renewable energy markets. Concurrent with these market and policy trends, distributed generation and renewable energy technologies have expanded in scope of application, improved in efficiency and reliability, and declined in price to the point that the end user energy consumer has more viable alternatives to grid power today than it did just a few years ago.

Northern intends to focus on three complementary growth strategies: accelerating growth in Northern s core EPC business; developing proprietary products and architectures for the distributed generation market that may be deployed through Northern s EPC business, sold through external channels to market, or sold/licensed as intellectual property; and establishing an aftermarket operations and maintenance service business for Northern s and other DG systems. The first strategy is designed to provide strong and stable growth in Northern s revenues and margins. The second fundamentally strengthens Northern s position in the market by creating proprietary products and architectures that offer features and functions not available from other suppliers, and the third strategy represents new reoccurring revenue opportunities with high margins that increase our presence in the market and provide an enhanced service offering. All these growth strategies capitalize on expected growth of the distributed generation market as a result of increased recognition of the benefits of networked distributed generation systems.

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Northern derives contract revenues from government sponsored research and development contracts and from commercial customers. For government sponsored research and development contracts which are fixed price, fixed-price-incentive, or cost-reimbursement contracts which do not require Northern to meet specific obligations, revenue is recorded as work is performed. For those research and development contracts which require Northern to meet specified obligations, including delivery and acceptance obligations, amounts advanced are recognized as contract liabilities until such obligations are met. Once the obligations are met, the amounts are recognized as contract revenue.

Northern principally generates commercial contract revenue from projects in its remote infrastructure, on-site generation, and renewable energy field product lines. For projects which do not require Northern to meet specific delivery and acceptance obligations or whose duration is expected to be greater than three months, revenue is recognized utilizing the percentage-of-completion method, which is based on the relationship of costs incurred to total estimated contract costs. For all other commercial contracts, Northern recognizes revenue under the completed contract method.

### *Principal Services and Products*

*EPC Services.* Northern's primary focus is on providing distributed power systems for commercial, industrial and government clients that are built or delivered complete and ready to operate. In its EPC business, Northern acts primarily as a full service systems integrator using third party products and technologies. Distributed generation technologies installed by Northern range from gas turbines, reciprocating engines, microturbines, Sterling (external combustion) engines, wind turbines, photovoltaics, fuel cells and ancillary balance of plant equipment to make a complete system. Fuel for our engine-based systems include typical natural gas applications and also biogas, waste oils and landfill gas. Northern typically designs a power system to meet customer specifications, procures key components from third parties, and then builds, installs and commissions the system. With the emergence of our Aftermarket Service Business we also continue our relationship with the customer as their O&M provider as well.

Northern focuses on two markets within the distributed generation industry: integrated power systems and on-site power systems.

### *Integrated Power Systems*

Northern delivers integrated power systems for specific purpose applications in locations where power is unavailable, unreliable or insufficient. These systems provide power for oil pipelines, offshore oil and gas platforms, telecommunications facilities, and remote military, Homeland Security and scientific installations. Northern develops both autonomous stand-alone power systems as well as grid-connected backup power systems for clients in this market. Northern has provided critical power systems for three large crude oil pipelines: the Caspian Pipeline in Kazakhstan and Russia; the Esso Chad Cameroon Pipeline in Africa; and the Baku-Tblisi-Ceyhan Pipeline in Azerbaijan and Georgia. Recently Northern has been servicing clients for gas projects on Sakhalin Island, Russia and an oil pipeline in Papua New Guinea. Clients in this market include some of the world's largest oil companies and engineering construction firms.

Northern has also supplied high reliability power systems to the telecommunications industry for over three decades. Applications include remote microwave repeater sites, cellular base stations and repeater stations, emergency wireless communications networks and obstruction lighting systems. Clients include some of the largest U.S. and international telecommunications providers.



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### *On-Site Power Systems*

Northern also designs and delivers on-site power systems for commercial, institutional and industrial facilities dependent upon the local utility grid and project economics. These systems address three critical objectives for commercial, industrial and government customers: reduced operating costs, increased power reliability and power security, and decreased environmental impact. Northern's on-site power systems are designed to reduce energy costs through higher generation efficiencies and heat recovery, increase power availability through critical load support, and reduce pollution through the use of high efficiency cogeneration technologies and renewable energy.

Northern has recently built, or is currently building, on-site generation systems for a variety of commercial and industrial customers. These systems are mostly natural gas and biogas cogeneration units, and their electrical generating capacity ranges from 120 kilowatts up to 3.5 megawatts.

Most systems built by Northern for clients in this market employ reciprocating engine generators or turbine generators fueled by natural gas, landfill gas or other biogases. Most systems are also designed to recapture waste heat from the engines and process it through heat exchangers, steam generators or absorption chillers to meet the clients' space heating, process steam or cooling needs; this is known as cogeneration or trigeneration. In this market sector, Northern is increasingly targeting large companies with multiple facilities and project opportunities. Examples include large commercial real estate developers who own multiple large properties in major metropolitan areas, and large industrial concerns with multiple manufacturing, distribution and research facilities around the country or the world.

Northern is expanding its on-site power systems business by providing aftermarket operations and maintenance services to customers as well as other on-site power systems built by third parties. Northern believes these services will enhance its product offering, help ensure the equipment is operated and maintained to provide the highest level of customer service and reduce Northern's overall project warranty expense.

### *On-Site Renewably Powered Systems*

Northern has provided solar and wind power systems for government and commercial clients for more than a quarter century. Northern is pursuing EPC opportunities in both grid-connected and isolated grid applications of wind and solar technologies. Northern is also involved with projects demonstrating the ability to produce hydrogen using renewable energy sources and to use fuel cells as part of the power solution.

### *Research and Development*

In addition to its EPC services, Northern is engaged in the development of advanced power systems products and technology. Northern is developing distributed generation power controls, power conversion technology, and advanced power system architectures. These technologies include the design of power converter-based DG interconnection systems for network grid applications and the development of a universal DG interface systems with utility protection and anti-islanding features for use in a variety of applications. The result of this work will be proprietary products and proprietary system architectures available for Northern's EPC business that provide advanced features and functions to our customers.

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Northern believes individual DG systems can be configured into high performance multi DG systems using Northern's MicroGrid power network architecture. In cooperation with a Vermont utility, Northern is currently building a demonstration system using its proprietary MicroGrid power network architecture to link diverse power generating sources with multiple users through an interface system to the main utility grid. Northern's MicroGrid architecture is designed to provide end user customers with power quality, availability, and efficiency levels not currently available from conventional utility power sources.

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Northern is also pursuing research and development focused on developing advanced wind turbines employing direct drive technology. Northern wind turbine designs include its NW100, a 100 kW system designed for extreme environments, which is being deployed at remote villages in Alaska. In cooperation with DOE the current NW100 design is being modified for temperate climates, which will significantly expand its market potential. Northern is also engaged in the development of Megawatt scale wind turbines with direct drive permanent magnet generator technology licensed from General Dynamics, coupled with Northern's large scale power converter technology. This program, supported by the Department of Energy/National Renewable Energy Laboratory, is advancing the state-of-the-art in wind turbine drive train technology and is creating commercial opportunities for Northern in the growing wind energy market. Northern believes it is developing wind turbine technology and products with increased reliability and efficiency, and reduced cost of energy. .

Northern seeks to obtain external funding for its target R&D efforts in order to offset internal development costs wherever possible. Northern has recently received funding from the U.S. Department of Energy, the National Renewable Energy Laboratory, The Counsel for Energy Reliability and Transmission Systems (CERTS), and the California Energy Commission in support of its programs.

Northern incurred approximately \$1,019,000 of research and development expenses in the twelve months ended December 31, 2004, and approximately \$57,000 in 2003 in the period after the Acquisition on December 10, 2003.

### *Intellectual Property*

Northern's growth strategy depends in part on the development of proprietary products and technologies. Northern relies on patent, trade secret, trademark and copyright law to protect its intellectual property. Northern has two currently active issued U.S. patent, covering wind turbine control and power distribution technologies. Northern also seeks to protect its proprietary intellectual property, including intellectual property that may not be patented or patentable, in part by confidentiality agreements with its strategic partners and employees. Northern can provide no assurance that these agreements will not be breached, that it will have adequate remedies for any breach or that such persons or institutions will not assert rights to intellectual property arising out of these relationships. In the event that these protective measures are not adequate, Northern's business, results of operations and financial condition could be materially and adversely affected.

### *Competition*

As a system integrator, Northern is positioned in the middle of the supply chain between the power equipment manufacturers and the commercial and industrial end users. Although Northern believes the system integrator role in the distributed generation market has been underserved, a number of companies have entered the market in recent years to fill this gap. Northern faces competition from a variety of firms, including equipment manufacturers, distributors, packagers, other system integrators, general contractors, engineering firms, project developers, and energy services companies, such as GE Power Systems, Black and Veatch, Invensys, DTE Energy Technologies, Encorp, PowerLight, and Chevron Energy Solutions. Northern competes with these types of firms on several bases, particularly price and performance.

With its engineering capabilities and project skills, Northern believes it has a competitive advantage over newer entrants to the distributed generation market. Also, unlike manufacturers who typically offer one power technology to meet a number of different needs, Northern offers a custom engineered solution

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utilizing appropriate technologies for each specific application backed up by a project management team and post commission service capabilities. Northern believes its project management skills are more typically found in suppliers serving the markets for larger power system projects.

However, many of Northern's current and potential competitors have, or are affiliated with companies that have, longer operating histories and greater financial, technical, sales, marketing and other resources, as well as greater name recognition and a larger customer base, than Northern. As a result, they may be better able to develop and deploy new technologies and respond to new customer requirements, or devote greater resources to business and product development, promotion, sales, financing and support of their products and services, than Northern. There is no assurance that Northern will be able to compete successfully in the future.

### *Sales and Marketing*

Northern's sales force is divided into two separate units: (1) the industrial infrastructure sales unit; and (2) the onsite generation sales unit. The industrial infrastructure sales unit sells integrated power systems for remote primary and backup power applications primarily to the oil and gas, telecommunications and government markets. Northern customers in this market may be either the multinational oil or telecommunications companies or the engineering construction firms they hire as general contractors for large construction projects such as pipelines. Most projects are awarded through a competitive bidding process. In this segment, Northern sells its products and services primarily through an internal direct sales force with offices in Vermont and Texas. The internal sales force develops relationships with buyers, project managers and other procurement agents, identifies project opportunities, and responds to requests for proposals. In this market, Northern competes primarily on technical and fulfillment capability and secondarily on price. Northern also augments its internal sales force through relationships with independent sales representatives, equipment vendors and technology partners.

Northern's onsite generation sales unit sells onsite power systems, for primary power applications in parallel to the utility grid, to customers in the manufacturing, commercial and institutional facilities, distributed generation, and digital economy markets. The onsite generation sales unit is an internal direct sales force with offices in Vermont, New York, and California. This sales force has developed both formal and informal relationships with independent sales representatives, equipment vendors and distributors, engineering firms, mechanical and electrical contractors, property management firms, energy consultants and others that provide access to additional project opportunities. Members of this sales unit also participate in trade groups, industry coalitions, and environmental advocacy groups, as well as regional and national trade shows and conferences on energy, distributed generation, renewable technologies, and climate change. All these activities generate numerous sales opportunities; however, in this emerging market the sales cycle is very long and the ratio of prospects converted into contracts is very low.

### *Employees*

As of December 31, 2004, Northern had a total staff of approximately 155 persons, of which approximately 65% were engineers, scientists or other degreed professionals. None of Northern's employees are represented by a labor union. Northern considers its relations with its employees to be excellent.

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### **Proton's Business**

#### *The Company*

Proton was founded in 1996 to design, develop and manufacture proton exchange membrane, or PEM, electrochemical products. Proton's proprietary PEM technology is embodied in two families of products: hydrogen generators and regenerative fuel cell systems. Proton's hydrogen generators produce hydrogen from electricity and water in a clean and efficient process. Proton is currently manufacturing and delivering models of its hydrogen generators to customers for use in commercial applications. Proton's regenerative fuel cell systems, currently being developed, will combine Proton's hydrogen generation technology with a fuel cell power generator to create an energy device that is able to produce and store hydrogen fuel that it can later use to generate electricity. By providing the hydrogen fuel used by fuel cells, Proton's core PEM electrolysis technology can enable fuel cells to function not only as power generating devices, but also as energy storage devices.

Proton is designing its products to meet the needs of customers in both near-term and longer-term markets. Proton's hydrogen generators have been designed to address the existing demand for industrial hydrogen in a variety of manufacturing, power plant, research and laboratory applications, which Proton believes are more cost effectively and safely served with an on-site generator as opposed to conventionally delivered bottled hydrogen. In the longer term, as fuel cell markets develop, Proton believes its hydrogen generators can be a key component of the hydrogen supply infrastructure that will be needed to provide the hydrogen used by fuel cells in transportation, stationary power generation and portable power generation applications. Proton is developing its regenerative fuel cell systems to address the demand for highly reliable backup power systems. In particular, the increased use of computers, computer networks and communications networks are all creating an increase in the demand for highly reliable backup power to avoid the costs and lost revenue associated with power disruptions. In addition, Proton believes that in the longer term its regenerative fuel cell systems may enable renewable energy solutions by facilitating the storage of energy produced by non-depleting, non-polluting energy sources, such as solar, wind and hydroelectric power.

Proton believes it is among the first companies to manufacture and deliver systems incorporating PEM technology for use in commercial applications. Proton has delivered HOGEN 40 and GC series hydrogen generators to domestic and international customers for use in industrial and research applications. In 2004, Proton began delivering a larger HOGEN H series hydrogen generator. These generators are designed for use in power plants and other industrial applications requiring higher hydrogen output. These units can be sized to produce various outputs in the 80 to 240 standard cubic foot range.

Earlier in the development cycle, Proton's cell stacks, an important component of its generators, had in some cases suffered from limited life and reliability problems and required replacement in the field. In 2003, Proton worked to improve its stack design and manufacturing processes to increase the longevity and reliability of its cell stacks and to replace cell stacks in customer units. Although production and shipment of HOGEN® 40 series hydrogen generators was suspended for a portion of 2003, production and shipment of these units resumed in the second quarter of 2003. Performance of cell stacks in 2004 improved to the point where Proton now believes its current cell stack design will meet the reliability and product life requirement of its industrial markets.

In the longer term, Proton believes its PEM hydrogen generation technology will be an important part of the infrastructure needed to provide hydrogen for fuel cell vehicles. Proton research and product development efforts include the development of a high-pressure hydrogen generator, capable of providing hydrogen for a fuel cell vehicle. This product will be based on Proton's industrial hydrogen generator platform and Proton anticipates the majority of product development funding to come from government or other third party sources. Proton's goal for 2005 is to deliver additional units for field trial testing by early adopters and to gather important technical data in real world applications.

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For product sales for which adequate product warranty information exists, Proton records revenue when a firm sales agreement is in place, delivery has occurred, sales price is fixed or determinable, and

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collectibility is reasonably assured. If customer acceptance of products is not assured, revenue is recorded only upon formal customer acceptance. Customer acceptance provisions included in Proton's product sales agreements include written acceptance from the customer, acceptance upon servicing and installation of the equipment, and acceptance after a period of time. For all product sales where adequate product warranty information does not yet exist, Proton defers revenue and costs until the expiration of the product warranty period.

Proton also intends to further develop applications for its UNIGEN regenerative fuel cell technology. Proton has built regenerative fuel cell systems for the DOE/SEP Program, NASA, the Connecticut Clean Energy Program, and the Naval Research Laboratory as well as for internal research and product development programs. Proton's goal for 2005 is to continue advancing the technology through demonstration programs funded by government and other third party sources. These systems are being designed to have the scale and technical attributes necessary to serve a broad range of commercial applications.

Government and private development contracts have supported the development and commercialization of our hydrogen generators and regenerative fuel cell systems. Proton intends to continue to seek government and other third party support to fund the majority of its UNIGEN design and product development work. Proton has ongoing development contracts in 2004 with the Connecticut Clean Energy Fund, the Missile Defense Agency, DARPA, NASA, and the Department of Energy.

Proton derives contract revenues from government sponsored research and development contracts and from commercial customers. For government sponsored research and development contracts which are fixed price, fixed-price-incentive, or cost-reimbursement contracts which do not require Proton to meet specific obligations, revenue is recorded as work is performed. For those research and development contracts which require Proton to meet specified obligations, including delivery and acceptance obligations, amounts advanced are recognized as contract liabilities until such obligations are met. Once the obligations are met, the amounts are recognized as contract revenue.

Proton has a 100,000 square foot facility in Wallingford, Connecticut, which is projected to accommodate the anticipated growth of its business over the next several years. This building consolidates the corporate headquarters of Distributed Energy, as well as Proton's research, product development, and manufacturing activities. The Company is in the process of leasing up to 25,000 square feet of under-utilized office space to offset the cost of the current building in Wallingford, Connecticut.

## *Products*

*Hydrogen Generators.* Proton's HOGEN hydrogen generators convert water and electricity into high purity, pressurized hydrogen gas, using PEM electrolysis. PEM electrolysis is a process in which water is divided into its component elements to produce pure hydrogen gas, with oxygen and heat as the only by-products. Many users can connect Proton's hydrogen generators directly to existing water and electrical sources, allowing them to be installed and used in a wide range of locations.

Proton has shipped commercial models of its HOGEN GC, HOGEN S or 40 series, and HOGEN H series hydrogen generators with production capacities from 300 cc per minute up to 240 cubic feet per hour of hydrogen. Proton's HOGEN GC series hydrogen generators are compact, about the size of a personal computer, and designed to sit on a countertop for use in laboratory applications. Proton's HOGEN S series units are freestanding, roughly the size of a household washing machine, and are intended for indoor placement. Proton's HOGEN H series hydrogen generator is a larger freestanding unit, approximately 6.5 ft. (h) x 6.5 ft. (l) x 3 ft. (w), with a weatherized design suitable for indoor or outdoor placement. Proton intends to increase production of its commercial HOGEN GC, S and H hydrogen generators in 2005.





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Proton is currently developing high-pressure hydrogen generation modules capable of supplying the hydrogen fueling needs of fuel cell vehicles and other hydrogen power applications. Proton anticipates the high-pressure modules to be largely based on the designs of Proton's industrial hydrogen generators. These generators will be appropriately scaled and designed to operate at typical gas station locations using ordinary water and electricity. Proton will continue development and testing of this product in 2005, mostly under government or third party sponsorship.

An important feature of Proton's hydrogen production technology is the ability to produce hydrogen at pressure without mechanical compression. Proton's current commercial products produce hydrogen at pressures up to 225 psi. Proton's prototype HIPRESS PEM cell stack designs have produced high-purity hydrogen at pressures up to 3,000 psi without mechanical compression using solid state compression within the electrochemical cell stack. Proton believes its ability to generate higher pressure hydrogen will be an important feature in future fuel cell vehicle fueling applications. Proton plans to continue research and development of high-pressure cell stack technology for potential use in current and future products as market conditions dictate, mostly under government or third party sponsorship.

The cost of manufacturing Proton's PEM cell stacks and hydrogen generators is still relatively high and Proton expects to continue to invest in internal research and product development to reduce costs. Proton currently sells commercial units into high value applications requiring industrial hydrogen. Proton believes higher volumes, cheaper materials, more refined production processes, as well as other potential technologies, will enable it to reduce the cost of its cell stack and hydrogen generators. As Proton reduces its costs, it believes its products will become competitive in additional applications and markets.

*Regenerative Fuel Cell Systems.* The UNIGEN regenerative fuel cell systems Proton is developing will integrate Proton's core PEM hydrogen generation technology with PEM fuel cell technology to create a power quality device that produces hydrogen from water and electricity, stores the hydrogen, and later uses the hydrogen as fuel for the production of electricity. In the hydrogen generation or electrolysis mode, the regenerative fuel cell works like a hydrogen generator, producing hydrogen, which is stored. In the power generation or fuel cell mode, the process is reversed and the stored hydrogen is combined with air to produce electricity efficiently and without any harmful by-products. Proton's regenerative fuel cell architecture is designed to use fuel cells produced by other developers and manufacturers to enable their fuel cells to become energy storage devices.

Proton has several development and demonstration programs with potential customers including Emerson Electric and the Connecticut Clean Energy Fund to show the potential applications of the UNIGEN product. Proton believes early applications for this product will be in remote locations and high value backup power applications. The success of this product will depend, among other things, upon continued development and cost reduction by Proton and other fuel cell developers. Proton expects to continue research and product development of these systems and will seek to have government and third party sources fund the majority of the development.

### *Proton's Strategy*

Proton's objective is to be a leader in harnessing PEM electrolysis technology for a number of commercial applications. Proton's strategy for achieving this objective includes the following elements:

*Leverage Technological Position.* In developing PEM technology, Proton has focused on two key areas: the development of PEM hydrogen generators and the development of regenerative fuel cell systems. Proton believes these technologies provide it with the opportunity to develop innovative products that address attractive markets. In addition, Proton's technology is complementary to other fuel cell technologies and could enable the commercial use of other fuel cell products, such as vehicular fuel cells,



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by providing a hydrogen delivery infrastructure. For example, Proton's hydrogen generators could be deployed at fueling sites to provide hydrogen for fuel cell vehicle fleets. As a result, Proton believes it is also well positioned to benefit from further developments by other fuel cell developers and from increases in demand for their fuel cell products. Proton intends to maintain its technology leadership in PEM-based hydrogen generation and regenerative fuel cell system technology by continuing to develop its core technology and commercial manufacturing processes, reduce product cost, and improve the design and features of its products.

*Focus on Near-Term Market Opportunities.* Proton believes it is among the first companies to manufacture and deliver systems incorporating PEM technology for use in commercial applications. Proton intends to focus on designing and marketing its hydrogen generation products for near-term industrial applications. Proton believes the industrial gas market is an attractive market because it is well developed and Proton's hydrogen generator products offer cost, security, and safety advantages to users that currently rely on conventionally delivered hydrogen. Proton's focus on near-term market opportunities will continue to reinforce Proton's emphasis on the commercial application of PEM technology.

Proton will also focus on demonstration and research opportunities from interested third party and government sources for our regenerative fuel cells and high-pressure hydrogen generators. These opportunities help advance Proton's technology and, in some cases, provide field test experience.

*Continued Focus on Cost Reduction and Cell Stack Durability.* Given Proton's focus on commercial applications for PEM technology, design and manufacturing improvements are a critical element of Proton's product development efforts. The cost of manufacturing Proton's PEM cell stacks and hydrogen generators is still relatively high. Proton intends to continue to focus on reducing the cost of manufacturing its products through the simplification of product designs, identification and use of lower cost materials and components, development of long-term relationships with third-party component and raw material suppliers, use of new technologies and processes, and lean manufacturing processes and techniques.

The durability and longevity of Proton's cell stacks are also critical success factors. Proton believes its current cell stack design will meet the reliability and product life requirement of its industrial markets. Proton plans to focus on improving cell stack designs and manufacturing processes to increase the endurance and reliability of its commercial hydrogen generators.

*Develop Key Strategic Relationships.* Proton is beginning to establish strategic relationships with leading companies in its target markets. The strategic relationships Proton develops may include joint development efforts as well as sales and marketing agreements. At present, Proton is in preliminary discussions with potential partners, including industrial gas suppliers and distributors, energy producers, fuel cell manufacturers, system integrators and ancillary component manufacturers. In seeking to develop strategic relationships, Proton will focus on partners that can provide it with distribution channels for its products and assist Proton in the design, development and manufacture of new products. Proton believes that its demonstrated capabilities in PEM technology and its focus on creating commercial applications make Proton an attractive potential partner for many established companies seeking to gain access to PEM related technology.

*Position Technology for Longer-Term Opportunities.* Proton believes it is well positioned to take advantage of growth in the markets for fuel cell applications and renewable energy technologies. If fuel cell applications achieve commercial acceptance, Proton's hydrogen generators can be a key component of the hydrogen supply infrastructure that will be required. Proton intends to work with leading energy and power companies to position its hydrogen generators for automotive fueling applications. With respect to renewable power, the need to overcome the inherent intermittent nature of renewable power

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will become even more important. Accordingly, Proton plans to work with renewable energy companies to explore and develop energy storage applications using our regenerative fuel cell architecture. Proton has modified demonstration units of its HOGEN generators to operate using intermittent electricity from renewable energy sources. Proton believes this will help position it for future renewable/sustainable power markets.

### *Technology*

*PEM-Based Hydrogen Generators.* Proton's hydrogen generators are electrochemical devices that convert water and electricity into hydrogen gas using a process known as PEM electrolysis. The core of a hydrogen generator is an electrolysis cell consisting of a solid electrolyte, also known as a proton exchange membrane. Catalyst material is bonded to both sides of the membrane, forming two electrodes. To generate hydrogen, water is introduced to one side of the membrane and voltage is applied to the electrodes. This process divides the water into protons, electrons and oxygen. The protons are drawn through the proton exchange membrane and recombined with the electrons at the opposite side of the membrane to form hydrogen. The oxygen is removed from the cells with the excess water flow. This process produces hydrogen with a high level of purity and at significant pressures.

A single electrolysis cell is typically integrated into a complete cell assembly that includes flow field structures that provide mechanical support, conduct current and provide a means to introduce water and remove gases. These cell assemblies are stacked and compressed between two end plates along with other support components to form a complete cell stack. The hydrogen production capability of a cell stack is approximately proportional to the area of each cell, the number of cells in the stack and the electric current supplied.

*PEM-Based Fuel Cell Power Generators.* In a PEM fuel cell, which is very similar to Proton's PEM electrolysis cell, the opposite reaction occurs. To generate electricity, hydrogen and air, or oxygen, are introduced to opposite sides of the cell. The hydrogen passes over an electrode structure adjacent to the proton exchange membrane, where it is divided into its component protons and electrons. When the electrons are separated from the protons, the electrons are conducted in the form of a usable electric current. The protons travel through the proton exchange membrane and recombine with the electrons and oxygen to produce water.

To form a complete fuel cell stack, individual PEM fuel cells are stacked and compressed between two end plates. The electrical power production capability of a cell stack is approximately proportional to the area of each cell and the number of cells in the stack. In applications requiring stand-alone one-way fuel cells, Proton is using fuel cells supplied by third parties in demonstration projects.

Proton's regenerative fuel cell systems incorporate the ability to support both an electrolysis reaction and a fuel cell reaction. Proton's proprietary design operates in the electrolysis mode by using water and electricity to generate hydrogen at elevated pressure and then reverses the process and consumes the hydrogen with air to generate electricity. The resulting product functions like a rechargeable battery in which hydrogen is produced through electrolysis, stored and then used for power generation. Because Proton's regenerative fuel cell systems use hydrogen produced through electrolysis rather than extracted from hydrocarbon fuels using a high temperature process called reforming, electricity can be produced at room temperature, without lengthy start-up times or carbon-based emissions and in areas where fossil fuels such as natural gas, propane or gasoline are not available.

Proton's regenerative fuel cell systems can be configured using one or two PEM stacks. The one-stack approach uses Proton's proprietary design, which allows a single cell to operate alternately in both the electrolysis mode and the fuel cell modes. These reversible fuel cells are under development by Proton and may have cost and weight advantages over a discrete system. Proton's two-stack regenerative fuel



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cell system is configured by using separate cell stacks for the electrolysis and fuel cell reaction. Proton currently manufactures its own electrolysis stacks for testing in these systems. Proton is using fuel cell stacks from other fuel cell developers in demonstration projects for potential incorporation into its regenerative systems.

### *Distribution and Marketing*

Proton sells its hydrogen generators through a combination of distribution arrangements with third parties and direct sales by Proton personnel. Proton's hydrogen generators are appropriate for small and medium volume hydrogen users. Proton is focusing its sales and marketing efforts on the channels that these customers use to purchase their gases and equipment. Proton is selling HOGEN hydrogen generators to several of the world's leading industrial gas providers to place at their customer sites. In addition, Proton has established distributor and agent relationships serving end users in the US, UK, Western and Eastern Europe, China, Japan, India and Mexico. Proton has established relationships with manufacturers and equipment representatives that sell specific models of our hydrogen generator products. Proton intends to expand its sales and distribution arrangements with industrial gas suppliers and distributors, as well as original equipment manufacturers.

As the market to supply hydrogen fuel for fuel cell vehicles develops, Proton also plans, where possible, to leverage existing distribution channels. Proton believes that existing energy suppliers will need to begin supplying new forms of automotive fuel as fuel cell vehicles (FCVs) come to market. Accordingly, Proton intends to establish relationships with major energy or industrial gas companies to explore ways of supplying its hydrogen generators for installation at local service stations. In addition, Proton believes that automobile manufacturers providing introductory and fleet FCVs will be interested in Proton's refueling technology and therefore Proton will seek to establish relationships with these manufacturers.

Currently, backup power equipment is sold by a few large manufacturers to commercial end users through diverse reseller networks, including integrators and qualified resellers. In the future, Proton plans to sell its backup power products to these existing manufacturers, integrators and qualified resellers.

### *Manufacturing*

Proton is currently manufacturing hydrogen generators at its facility in Wallingford, Connecticut. Key aspects of this process include formulation of Proton's proprietary catalysts, deposition of the catalyst on the proton exchange membrane and fabrication of cells into cell stacks. The balance of the manufacturing process consists of integrating cell stacks into systems that perform fluids and electrical management of the electrochemical process.

Proton purchases raw proton exchange membrane material from Dupont, although Proton has identified other companies it believes are capable of providing suitable membrane material. Proton purchases the other components used in its systems from third-party suppliers. Proton regularly consults with its suppliers to evaluate ways to lower the cost of other components or subassemblies while meeting the performance needs of its products. In this regard, Proton has considered and will continue to evaluate the option of having subassemblies that it currently produces in-house produced to its specifications by others if lower costs can be achieved.

In 2004, Proton successfully completed its annual ISO 9001:2000 audit. Proton believes this registration, a quality assurance model for companies that design, produce, install and service products as part of their business will provide Proton with an advantage over competitors that

are not ISO 9001:2000 registered. In some cases, this registration is a condition of doing business with customers.

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### *Proprietary Technology and Intellectual Property*

Proton has developed proprietary technology relating to various aspects of its electrolysis cells, regenerative fuel cell systems and related systems. These include:

membrane processing technology,

electrolysis catalytic electrode formulation reversible fuel cells,

fuel cell stack designs that operate on pure oxygen with no purge,

high-pressure cell structures that simplify overall system implementation,

integrated system designs for both hydrogen generators and regenerative fuel cell system,

multiple stack generator configurations that allow for expandable generation platforms, and

electrical interface to renewable technologies for hydrogen generators

Proton seeks to maintain its technology leadership position by aggressively protecting intellectual property assets using patent, trade secret, trademark and copyright law. Proton's protection of these assets has continued to accelerate and Proton has to date been issued 31 U.S. patents and three European patents, covering aspects of its hydrogen generation equipment and electrolysis cell designs. Proton continues to aggressively seek intellectual property protection in the U.S. and internationally. Proton's pending patent applications cover not only its current electrolysis products, but also technologies it has developed related to fuel cells, backup and renewable power systems and hydrogen fueling systems.

In addition to Proton's patented assets, Proton's intellectual property position has also grown to include manufacturing processes and know-how, which are enhancing Proton's next generation products and cost reduction efforts. Proton also seeks to protect its proprietary intellectual property in part through confidentiality agreements with its strategic partners and employees. Proton cannot ensure that these agreements will not be breached, that it will have adequate remedies for any breach or that such persons or institutions will not assert rights to intellectual property arising out of these relationships.

Proton incurred approximately \$5.2 million, \$7.7 million, and \$8.8 million in research and development expenditures for the years ended December 31, 2004, 2003, and 2002, respectively.

### *Competition*



Proton's hydrogen generators will compete with current suppliers of delivered hydrogen, and with other manufacturers of on-site hydrogen generators. Competitors in the delivered hydrogen market include Airgas, Air Liquide, Air Products and Chemicals, Linde and Praxair. Proton's hydrogen generators will also compete with older generations of electrolysis-based hydrogen generation equipment sold by Hydrogenics Corporation, Norsk Hydro, Teledyne Energy Systems and other companies. These competing systems are generally larger in size than Proton's generators. Some of these systems require manual operation and supervision, most contain hazardous liquid electrolyte and some require the assistance of mechanical compressors to produce hydrogen at pressure.

There are a number of companies located in the United States, Canada and abroad that are developing PEM fuel cell technology. These companies include Avista Labs, Ballard Power Systems, General Motors, Giner, Honda, Toyota, Sanyo, Idatech, Nuvera, Plug Power, Toyota and UT Fuel Cells. Although Proton believes these companies are currently primarily targeting vehicular and residential applications, they could decide to enter the hydrogen generation and backup power markets Proton intends to address. Proton may also encounter competition from companies that have developed or are developing fuel cells based on non-PEM technology, as well as other distributed hydrogen generation technologies.

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Many of Proton's competitors have substantially greater financial, research and development and marketing capabilities than Proton does. In addition, as the backup power and hydrogen fuel markets develop, other large industrial companies may enter these fields and compete with Proton.

### *Employees*

As of December 31, 2004, Proton had approximately 86 employees, of whom approximately 55% were engineers, scientists, and other degreed professionals. None of Proton's employees are represented by a labor union. Proton considers its relations with its employees to be excellent.

### **Customers**

For the years ended December 31, 2004 and 2003, contract revenue from government-sponsored agencies accounted for approximately 23% and 29% of total Company revenue, respectively. For the year ended December 31, 2004 and 2003, sales to one international customer totaled approximately 11% and 18% of total Company revenue, respectively. At December 31, 2004 and 2003, accounts receivable from government-sponsored agencies accounted for approximately 23% and 18% of total Company accounts receivable, respectively. At December 31, 2004, accounts receivable from one customer, Honeywell Inc., accounted for approximately 15% of total Company accounts receivable. At December 31, 2003, accounts receivable from two customers, British Petroleum Exploration and National Renewable Lab accounted for approximately 29% and 12%, respectively, of total Company accounts receivable. For financial information concerning geographic areas of Distributed Energy's business, see Item 17 of the notes to the financial statements included elsewhere in this report.

### **Backlog**

Our backlog as of December 31, 2004 was approximately \$25 million. The backlog reflects orders that we considered firm, however, cancellations may occur and will be reflected in our backlog when known. As of December 31, 2003, we did not have significant backlog.

### **ITEM 2. *Properties***

In 2001, Proton purchased approximately 44 acres of land located in Wallingford, Connecticut to build its new facility. In December 2001, Technology Drive LLC, a limited liability company wholly owned by Proton, entered into a \$6,975,000 loan agreement with a major financial institution in connection with the construction of the facility. Under the terms of the loan, the business assets of Technology Drive LLC, including the land and building, are subject to lien.

In 2002, Proton completed the construction of the new facility and the relocation of its corporate offices. In the first half of 2003, Proton completed the consolidation of its operations by relocating the remainder of its research and development and manufacturing functions from its leased Rocky Hill, Connecticut facility to the new 100,000 square foot facility. The Rocky Hill, Connecticut facility lease expired in April 2004.

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Northern's principal executive offices are located in Waitsfield, Vermont. Northern owns a 13,000 square foot facility that currently houses research activities. Additional sales offices are located in leased space in Burlington, Vermont and San Francisco, California. In the fourth quarter of 2003, Northern substantially completed its new 28,500 square foot headquarters building adjacent to its existing Waitsfield, Vermont, this new facility currently houses research, manufacturing, and administrative activities and part of its sales force.

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In 2002, Northern began construction of a new facility. In March 2003, Northern entered into a financing agreement with the Vermont Economic Development Authority (VEDA) regarding the purchase, construction, sale, and lease of a new facility. In March 2003, a condominium association, Northern Power Systems Commercial Condominium Association, Inc. (NPS Condo Association), was formed for the purpose of managing the land, building, and improvements related to the new facility. Northern owns 50% of the NPS Condo Association and has the ability to exercise significant influence over the NPS Condo Association. Northern transferred certain property and development rights under NPS Condo Association to the Central Vermont Economic Development Corporation (CVEDC). In consideration, CVEDC secured a \$2,790,000 loan from VEDA to complete the facility and lease back such facility to Northern. The terms of the lease include an initial term of ten years, lease payments equal to the debt payments plus an administrative fee, and a purchase option for Northern equal to the outstanding loan amount. Northern has guaranteed the CVEDC loan, is responsible for all cost overruns in relation to construction of the new facility, is required to maintain certain levels of insurance over the facility, is required to maintain \$150,000 of restricted cash for performance under the agreements and indemnifies CVEDC from liability or lawsuit relating to the facility. The agreement also contains a clause requiring repayment of the loan in the event of a material adverse change in Northern's business.

**ITEM 3. *Legal Proceedings***

Between July 3, 2001 and August 29, 2001, four purported class action lawsuits were filed in the United States District Court for the Southern District of New York against Proton and several of its officers and directors as well as against the underwriters who handled the September 28, 2000 initial public offering ( IPO ) of common stock. All of the complaints were filed allegedly on behalf of persons who purchased the Proton's common stock from September 28, 2000 through and including December 6, 2000. The complaints are similar, and allege that Proton's IPO registration statement and final prospectus contained material misrepresentations and/or omissions related, in part, to excessive and undisclosed commissions allegedly received by the underwriters from investors to whom the underwriters allegedly allocated shares of the IPO. On April 19, 2002, a single Consolidated Amended Complaint was filed, reiterating in one pleading the allegations contained in the previously filed separate actions, including the alleged class period of September 28, 2000 through and including December 6, 2000. On July 15, 2002 the Company joined in an omnibus motion to dismiss the lawsuits filed by all issuer defendants named in similar actions which challenges the legal sufficiency of the plaintiffs' claims, including those in the consolidated amended complaint. Plaintiffs opposed the motion and the Court heard oral argument on the motion in November 2002. On February 19, 2003, the Court issued an Opinion and Order, granting in part and denying in part the motion to dismiss as to the Company. In addition, in August 2002, the plaintiffs agreed to dismiss without prejudice all of the individual defendants from the consolidated complaint. An order to that effect was entered by the Court in October 2002.

A special Litigation Committee of the Board of Directors has authorized the Company to negotiate a settlement of the pending claims substantially consistent with a Memorandum of Understanding, which was negotiated among class plaintiffs, all issuer defendants and their insurers. The parties negotiated a settlement which is subject to approval by the Court. On February 15, 2005, the Court issued an Opinion and Order preliminarily approving the settlement, provided that the defendants and plaintiffs agree to a modification narrowing the scope of the bar order set forth in the original settlement. The Company believes it has meritorious defenses to the claims made in the complaints and, if the settlement is not finalized and approved, Proton intends to contest the lawsuits vigorously. However, there can be no assurances that we will be successful, and an adverse resolution of the lawsuits could have a material adverse effect on our financial position and results of operation in the period in which the lawsuits are resolved. Proton is not presently able to reasonably estimate potential losses, if any, related to the lawsuits. In addition, the costs to us of defending any litigation or other proceeding, even if resolved in our favor, could be substantial.

**Table of Contents****ITEM 4. Submission of Matters to a Vote of Security Holders**

Not Applicable

**Executive Officers and Directors**

Distributed Energy Systems Corp. s executive officers and directors, and their ages as of December 31, 2004, are as follows:

<u>Name</u>	<u>Age</u>	<u>Title</u>
Walter W. Schroeder	56	President of Distributed Energy and director
Clint Coleman	56	President of Northern
Darren R. Jamison	38	Chief Operating Officer of Northern
Mark E. Murray	53	President of Proton
Robert J. Friedland	39	Senior vice president
John A. Glidden	41	Vice president finance
Robert W. Shaw, Jr.	63	Chairman of the board of directors
Gerald B. Ostroski	63	Director
Philip R. Sharp	62	Director
James H. Ozanne	61	Director
Paul F. Koepp	55	Director
Theodore Stern	75	Director

**Walter W. Schroeder**, one of Proton s founders, has served as Proton s chief executive officer, and as a director, since Proton s founding in August 1996. From 1991 to August 1996, Mr. Schroeder served as an officer of AES Corp., an independent power company. From 1986 to 1991, Mr. Schroeder was a vice president in the investment banking division of Goldman Sachs & Co. Mr. Schroeder holds BS and MS degrees from Massachusetts Institute of Technology.

**Clint Coleman** joined Northern in 1980 as Northern s Chief Engineer and was named president of Northern in 1994. Mr. Coleman became a director of Northern in 1997. Mr. Coleman holds an MS in Mechanical Engineering from the University of Nevada, Reno and a BS in Wood Science and Technology from Colorado State University.

**Darren R. Jamison** joined Northern in February 2004 as the executive vice president of operations and was named chief operating officer in December 2004. Prior to joining Northern, Mr. Jamison was employed by Stewart & Stevenson, an industrial distribution and manufacturing company. Mr. Jamison held a variety of positions during his 12-year career at that company, last serving as the vice president and general manager of the distributed energy solutions division. In this position, he led the development of a bundled distributed energy solutions business. Mr. Jamison holds a B.A. from Seattle University.

**Mark E. Murray** joined Proton as president in 2004. Mr. Murray served as vice president, PCA, Stanadyne Corporation from 2001 to 2004. From 1999 to 2000 he was the principal of Industrial Market Strategies. From 1978 until 1998 he was employed by FAG Bearings OHA, a

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German-based rolling element bearing company, in a variety of positions, last serving as executive vice president, sales and marketing, Western Hemisphere. Mr. Murray holds a BS Mechanical Engineer from the University of Minnesota and a MBA from the University of Pittsburgh.

**Robert J. Friedland**, one of Proton's founders, has served as senior vice president, hydrogen technology since November 2003. From February 2003 to November 2003 Mr. Friedland was our senior vice president of strategic sourcing. From September 2001 to February 2003 Mr. Friedland was our senior vice president of products and manufacturing. From our founding in August 1996 through September 2001,

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Mr. Friedland served as our vice president of operations. From 1995 to August 1996, Mr. Friedland served as a program operations manager for United Technologies Corporation, a diversified aerospace and building systems company. Mr. Friedland holds a BS in mechanical engineering from Syracuse University and an MBA from Rensselaer Polytechnic Institute.

**John A. Glidden** has served as Proton's vice president finance since November 1997. From July 1996 to November 1997, Mr. Glidden served as a financial manager for United Technologies. From 1987 to July 1996, Mr. Glidden served as a senior financial planning analyst for United Technologies. Mr. Glidden holds a BS in business administration from Central Connecticut State University and an MS in international management from Rensselaer Polytechnic Institute.

**Robert W. Shaw, Jr.** served as Proton's chairman of the board of directors since Proton's founding in August 1996 and continues to serve as chairman of Distributed Energy Systems Corp. after the merger with Northern. Dr. Shaw has served as president of Arete Corporation, a private investment firm, since March 1997. From 1983 to 1997, Dr. Shaw served as president of Arete Ventures, Inc., a private investment firm he founded to invest in the fields of modular/dispersed power generation, renewable power generation and specialty materials. Prior to that time, Dr. Shaw was a senior vice president and director of Booz Allen & Hamilton, a consulting firm, where he founded the firm's energy division. Dr. Shaw holds BEP and MS degrees from Cornell University, an MPA from American University and a PhD in applied physics from Stanford University. In addition, he serves as a director of Evergreen Solar, Inc., a public company which makes photovoltaic products, and of CellTech Power, Inc. and H2Gen Innovations, Inc., each a private power technology company.

**Gerald B. Ostroski** has served as a director since February 1999. Mr. Ostroski has served as vice president of Minnesota Power, Inc. since January 1982 until his retirement from that firm as Vice President, Emerging Technology Investments in July of 2002. During his tenure at Minnesota Power, Mr. Ostroski also served as president of Minnesota Power's Synertec subsidiary and served as a director or officer of several other Minnesota Power subsidiaries. He also served on the Board of Directors of the Minnesota High Technology Association, and serves on and chaired the University of Minnesota's Natural Resources Research Institute Industry Advisory Board. Prior to his retirement, Mr. Ostroski was a registered professional engineer, licensed in Minnesota and North Dakota. Mr. Ostroski holds a BSEE from the University of Wisconsin.

**Philip R. Sharp** has served as a director since March 1999. Dr. Sharp has served as a lecturer at the John F. Kennedy School of Government of Harvard University since February 1995. From July 1995 to February 1998, Dr. Sharp also served as director of Harvard University's Institute of Politics, and is currently a member of the Institute's senior advisory board. From 1975 to 1995, Dr. Sharp served as a member of the U.S. House of Representatives, representing the second district of Indiana. He was a member of the House Energy and Commerce Committee and the Interior Committee. Dr. Sharp also chaired the Subcommittee on Fossil and Synthetic Fuels and the Energy and Power Subcommittee. Dr. Sharp holds a BSFS in foreign service and a PhD in government from Georgetown University. He serves as a director of Cinergy Corp. and the Electric Power Research Institute.

**James H. Ozanne** has served as a director since September 2002. Mr. Ozanne is chairman of Greenrange Partners, a venture capital investment company. He was previously chairman of Nations Financial Holdings Corporation, president and chief executive officer of US West Capital Corporation and executive vice president of General Electric Capital Corporation. He became a director of FSA Holdings in January 1990 and was vice chairman from May 1998 to July 2000. Mr. Ozanne also serves as non-executive chairman Select Portfolio Serving, Inc.

**Paul F. Koeppe** joined Northern as a director in 1998. Prior to his retirement in 2001, Mr. Koeppe served as Executive Vice President of American Superconductor, an electricity solutions company. Mr. Koeppe

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joined American Superconductor in 1997, in connection with the acquisition of Superconductivity, Inc., a manufacturer of superconducting magnetic energy storage systems which Mr. Koeppe founded and served as President. From 1993 to 1995, Mr. Koeppe was Acting CEO and Chairman of the Executive Committee of the board of directors of Best Power, Inc., a supplier of uninterruptible power supply packages. Mr. Koeppe holds an Associate of Science Degree in Electrical Power Technology and an Associate of Arts Degree in Materials Management, both earned at Lakeshore Technical College, and a Bachelor of Arts Degree in Business and Economics earned at Lakeland College.

*Theodore Stern* joined Northern as a director in 1998. Mr. Stern is the Chairman of the Board of Directors of UCN Inc., a telecommunications provider. Mr. Stern was Chief Executive Officer of UCN Inc. until January 1, 2005. Mr. Stern was Senior Executive Vice President and a member of the board of directors of Westinghouse Electric Corp., where he was responsible for the electrical utility and environmental system businesses. Mr. Stern holds a B.S. in Mechanical Engineering from Pratt Institute and an M.S. in Mathematics from New York University. Between 1998 and 2000, Mr. Stern was a management consultant operating as a sole proprietor of Strategy Advisors Group.

**Part II****ITEM 5. Market for Registrant's Common Stock and Related Stockholder Matters**

The range of high and low sales prices per share of our common stock (and for Proton common stock prior to December 11, 2003) as reported on the NASDAQ National Market under the symbols PRTN and DESC for 2004 and 2003 is shown below:

<u>Year and Quarter</u>	<u>High</u>	<u>Low</u>
<b>2004</b>		
First Quarter	\$ 4.18	\$ 2.73
Second Quarter	4.98	2.56
Third Quarter	2.80	1.54
Fourth Quarter	2.74	1.71
<b>2003</b>		
First Quarter	\$ 3.25	\$ 2.46
Second Quarter	3.70	2.13
Third Quarter	3.05	1.76
Fourth Quarter	3.33	2.51

The Company made a cash distribution of \$1.00 per share payable on June 20, 2003 to shareholders of record as of June 6, 2003. The distribution was recorded as a reduction to additional paid-in capital, in that the distribution represented a return of capital. The Company does not intend to pay cash dividends in the foreseeable future.

As of March 3, 2005 there were approximately 13,000 stockholders of record.

***Use of Proceeds***



On October 4, 2000, Proton closed an initial public offering of its common stock. The effective date of the Securities Act registration statement for which the use of proceeds information is being disclosed was September 28, 2000, and the Commission file number assigned to the registration statement is 333-39748.

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After deducting underwriting discounts and commissions and offering expenses, our net proceeds from the offering were approximately \$125.8 million. The net proceeds have been allocated for general corporate purposes and capital expenditures, including purchase of equipment for and leasehold improvements to our planned manufacturing facility, and the possible acquisition of businesses, products or technologies that are complementary to our business. As of December 31, 2004, approximately \$66.5 million of the net proceeds of the offering had been used to fund operations and purchase fixed assets and \$20.3 million has been used in the acquisition of Northern (the Acquisition). The remaining net proceeds are invested in U.S. Government and Agency securities. We made a cash distribution of \$1.00 per share payable on June 20, 2003 to stockholders of record as of June 6, 2003. The aggregate amount of this distribution was \$33,927,297. We have also raised additional funding through means other than our initial public offering. At December 31, 2004, our cash and marketable securities balance is approximately \$59.1 million. No other portion of the proceeds of Proton's initial public offering were paid directly or indirectly to any director, officer or general partner of us or our associates, persons owning ten percent or more of any class of our equity securities, or an affiliate of us.

***Equity Compensation Plan Information***

The following table sets forth, as of December 31, 2004, the number of securities outstanding under our equity compensation plans, the weighted average exercise price of such securities and the number of securities available for grant under these plans:

**Equity Compensation Plan Information as of December 31, 2004**

	a	b	c
	Number of Shares to be Issued Upon Exercise of Outstanding Options	Weighted-Average Exercise Price of Outstanding Options	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (excluding Column (a))
<b>Plan Category</b>			
Equity Compensation Plans Approved by Shareholders:			
Employee Stock Purchase Plan		\$	105,077
1996, 1998, 2000 and 2003 Stock Option Plans	3,130,950	\$ 6.33	1,845,146
Equity Compensation Plans Not Approved by Shareholders:			
None		\$	

***Purchases of Equity Securities***

During 2004, 39,833 warrants were exercised utilizing the cashless exercise feature of the warrant, resulting in the issuance of 6,034 shares of common stock.

**ITEM 6. Selected Financial Data**

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The data set forth below should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and our financial statements and notes thereto included elsewhere in this report. The selected financial data for 2003 include the full year of Proton's operations and the period from December 11, 2003 through December 31, 2003 for Northern and Distributed Energy.

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	Year Ended December 31,				
	2004	2003	2002	2001	2000
	(in thousands, except per share data)				
<b>Statement of Operations Data:</b>					
Revenue:					
Contract revenue	\$ 19,408	\$ 2,965	\$ 3,445	\$ 1,215	\$ 644
Product revenue	3,052	1,229	1,269	1,753	56
<b>Total revenue</b>	<b>22,460</b>	<b>4,194</b>	<b>4,714</b>	<b>2,968</b>	<b>700</b>
Costs and expenses:					
Costs of contract revenue	17,202	3,301	2,355	1,001	396
Costs of production	4,293	2,223	5,019	2,553	248
Research and development	6,254	7,716	8,793	6,500	3,227
Selling, general and administrative	17,953	10,024	7,853	6,931	4,518
	45,702	23,264	24,020	16,985	8,389
Loss from operations	(23,242)	(19,070)	(19,306)	(14,017)	(7,689)
Interest income	1,143	2,535	5,894	8,954	4,199
Interest expense	(335)	(243)	(92)	(4)	
Gain on sale of marketable securities and other	(4)	10	24	113	
<b>Net loss</b>	<b>(22,438)</b>	<b>(16,768)</b>	<b>(13,480)</b>	<b>(4,954)</b>	<b>(3,490)</b>
Deemed preferred dividends and accretion					(52,691)
<b>Net loss attributable to common stockholders</b>	<b>\$ (22,438)</b>	<b>\$ (16,768)</b>	<b>\$ (13,480)</b>	<b>\$ (4,954)</b>	<b>\$ (56,181)</b>
<b>Basic and diluted net loss per share attributable to common stockholders</b>	<b>\$ (0.63)</b>	<b>\$ (0.50)</b>	<b>\$ (0.40)</b>	<b>\$ (0.15)</b>	<b>\$ (5.92)</b>
<b>Shares used in computing basic and diluted net loss per share attributable to common stockholders</b>	<b>35,465</b>	<b>33,830</b>	<b>33,347</b>	<b>33,161</b>	<b>9,484</b>
<b>Balance Sheet Data:</b>					
Cash, cash equivalents and marketable securities	\$ 59,135	\$ 73,848	\$ 150,359	\$ 167,220	\$ 174,749
Working capital	58,902	76,804	156,099	169,253	176,856
Total assets	124,571	144,032	176,305	181,868	180,752
Current liabilities	16,307	13,636	7,577	4,675	2,445
Long-term liabilities	8,830	9,283	6,441	1,166	
Total stockholders' equity	99,434	121,113	162,287	176,027	178,307

**ITEM 7. Management's Discussion and Analysis of Financial Condition and Results of Operations**

The following discussion and analysis should be read in conjunction with Distributed Energy's financial statements and notes thereto appearing elsewhere in this joint proxy statement/prospectus. This discussion and analysis contains forward-looking statements that involve substantial risks and uncertainties. You can identify these statements by forward-looking words such as anticipate, believe, could, estimate, expect, intend, may, plan, potential, should, will, and would or similar words. You should read statements that contain these words carefully because they discuss Distributed Energy's future expectations and contain projections of its future results of operation or of its financial position or state other forward-looking information. However, there may be events in the future that Distributed Energy is unable to predict accurately or control. The factors in the section entitled "Risk Factors" and the section below entitled "Critical Accounting Judgments and Estimates" provide examples of

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risks, uncertainties and events that may cause Distributed Energy's actual results to differ materially from the expectations described in Distributed Energy's forward-looking statements.

### **Overview**

Formed in May 2003, Distributed Energy Systems Corp. is creating and delivering innovative products and solutions to the energy marketplace, giving users greater control over their energy cost, quality, and

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reliability. Distributed Energy was formed as the parent company of two established businesses: Proton Energy Systems, Inc. ( Proton ) and Northern Power Systems, Inc. ( Northern ). Distributed Energy believes the acquisition of Northern s project integration experience will strengthen Proton s near-term capabilities, accelerate entry into early energy-related markets and contribute to advancing Proton s vision of producing hydrogen from renewable sources.

Proton was founded in 1996 to design, develop and manufacture PEM electrochemical products for commercial applications. Proton s proprietary PEM technology is incorporated in two families of products: hydrogen generators, which Proton is currently manufacturing and delivering to commercial customers, and regenerative fuel cell systems, which Proton is currently developing.

Northern was incorporated in Delaware in December 1997 to design, manufacture and install reliable, cost-efficient distributed generation power systems using fossil fuel, solar energy and wind energy. Northern was originally founded in 1974 under the name of North Wind Power Company. Northern also develops, manufactures and installs utility grade wind turbines. Northern sells its products to domestic and international customers.

Distributed Energy expects to incur additional operating losses in 2005 and cannot predict when it will become profitable, if ever.

The following significant events occurred in 2004:

We were selected, through our Northern subsidiary, to negotiate for a cooperative research agreement with the U.S. Department of Energy s (DOE) National Renewable Energy Laboratory to develop a 2 Megawatt (MW) direct drive wind turbine for low wind speed sites. The wind energy project is proposed at a value of approximately \$8.3 million over a four-year period.

Northern was selected by SC Johnson to engineer, build, and commission a \$6.0 million turnkey combined heat and power (CHP) system that will provide critical load support for manufacturing operations at the company s Waxdale Plant in Racine, Wisconsin.

Northern signed a \$2.0 million cooperative research agreement with the U.S. Department of Energy (DOE) to advance the development of the company s NorthWind(R) 100 (NW 100) wind turbine.

Northern was selected by SHM Partners for the engineering, construction and installation of a \$1.9 million turnkey custom designed, on-site combined heat and power (CHP) system to be located at 550 North Brand Boulevard in Glendale, California.

Aarhus United USA Inc. awarded Northern a contract for a \$1.7 million turnkey on-site power system that will use the oil distillate and waste byproduct of Aarhus s vegetable oil processing operations as fuel.

Northern was awarded a \$1.9 million contract from Anchorage-based Alaska Village Electric Cooperative (AVEC) for seven of Northern s NorthWind(R) 100 wind turbines.

Northern was selected to provide integrated power systems for two major projects along a pipeline on Sakhalin Island located in the Russian Far East. Under the terms of two separate contracts valued in the aggregate at approximately \$5 million, Northern will provide its field-proven GridTie and TeleCycle systems at several locations onshore along the pipeline and offshore on the platforms.



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Northern was awarded a \$4.1 million contract for a 1.6 MW on-site combined heat and power (CHP) system at 717 5th Avenue in New York City.

We announced the successful startup of two of Proton's new HOGEN H series onsite hydrogen generator at Mirant Corp.'s Zeeland, MI power plant. Proton also received its first four commercial orders for the HOGEN H series hydrogen generators.

Proton received \$1.1 million in additional funding to continue its Phase II project with the Naval Research Laboratory, or NRL, for advanced fuel cell technology development.

We signed a three-year cooperative agreement with the U.S. Department of Energy (DOE) for a potential \$3.8 million research project to develop methods to reduce the cost of high-pressure hydrogen generation from Proton Exchange Membrane (PEM) electrolysis. Air Products and Chemicals, Inc., has been selected by Proton to be a subcontractor to optimize the compression, storage and dispensing module for systems intended to supply hydrogen to fuel cell vehicles.

Air Products announced the collaboration with Proton on two fueling stations for demonstration projects by the California South Coast Air Quality Management District.

We announced the appointment of Mark Murray as President of Proton.

## **Critical Accounting Judgments and Estimates**

Distributed Energy's discussion and analysis of its financial condition and results of operations is based upon its consolidated financial statements, which have been prepared by Distributed Energy in accordance with accounting principles generally accepted in the United States of America. The preparation of these consolidated financial statements requires Distributed Energy to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses, and disclosure of contingent assets and liabilities. Distributed Energy's estimates include those related to revenue recognition, investments, income taxes, depreciable lives of equipment, warranty obligations and contingency accruals. Distributed Energy bases its estimates on historical experience and on various other assumptions that it believes to be reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions. For a complete description of Distributed Energy's accounting policies, see Note 2 to Distributed Energy's consolidated financial statements included in this Form 10-K. The audit committee of Distributed Energy's board of directors has discussed Distributed Energy's critical accounting policies with management and Distributed Energy's independent accountants.

Distributed Energy's critical accounting policies include the following:

### *Revenue Recognition Product Revenue*

For product sales for which adequate product warranty information exists, the Company records revenue when a firm sales agreement is in place, delivery has occurred, sales price is fixed or determinable, and collectibility is reasonably assured. If customer acceptance of products is not assured, revenue is recorded only upon formal customer acceptance. Customer acceptance provisions included in the Company's product sales agreements include written acceptance from the customer, acceptance upon servicing and installation of the equipment, and acceptance after a period of time. For all product sales where adequate product warranty information does not yet exist, the Company defers revenue and costs until the expiration of the product warranty period.





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The Company currently defers revenue on H series and HOGEN 40 delivered products until the related warranty costs are estimable at the time of delivery. The Company only defers production costs on its delivered products to the extent that such production costs are not in excess of the sales price and realization is reasonably assured.

The Company also deferred revenue and costs on its HOGEN 380 products until the expiration of the product warranty period. In the second quarter of 2004 the Company curtailed the production of its HOGEN 380 series hydrogen generators. The HOGEN 380 series has been partially replaced by the HOGEN H series. At December 31, 2004 no HOGEN 380 units were under warranty. No future sales of HOGEN 380 products are anticipated.

In the fourth quarter of 2003, the Company determined that it had adequate product warranty information and experience to begin recognizing product revenue related to sales of its laboratory hydrogen generators with a one-year warranty upon shipment. In the first quarter of 2004, the Company began selling its laboratory hydrogen generators with two-year warranties. Accordingly, revenues and costs on such units are being deferred until the Company can estimate its two-year warranty costs.

The Company also earns revenue from the rental of its HOGEN products. The Company accounts for the agreements as operating leases under the provisions of Statement of Financial Accounting Standards (SFAS) No. 13, Accounting for Leases. The agreements are cancelable at any time by either party without penalty. Rental revenue is recognized monthly over the term of the rental agreement.

### *Revenue Recognition Contract Revenue*

Contract costs may be incurred over a period of several months to several years, and the estimation of these costs requires management's judgment. The long-term nature and complexity of these contracts can affect the Company's ability to estimate costs precisely. As a result, the Company reviews and updates its costs estimates on a quarterly basis or when circumstances change and warrant a modification to a previous estimate. Losses expected to be incurred on contracts in progress are charged to operations in the period such losses are determined.

The Company derives contract revenues from government sponsored research and development contracts and from commercial customers. For government sponsored research and development contracts which are fixed price, fixed-price-incentive, or cost-reimbursement contracts which do not require the Company to meet specific obligations, revenue is recorded as work is performed. For those research and development contracts which require the Company to meet specified obligations, including delivery and acceptance obligations, amounts advanced are recognized as contract liabilities until such obligations are met. Once the obligations are met, the amounts are recognized as contract revenue.

The Company principally generates commercial contract revenue from projects in its remote infrastructure, on-site generation, and renewable energy field product lines. For projects which do not require the Company to meet specific delivery and acceptance obligations or whose duration is expected to be greater than three months, revenue is recognized utilizing the percentage-of-completion method, which is based on the relationship of costs incurred to total estimated contract costs. For all other commercial contracts, the Company recognizes revenue under the completed contract method.

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### *Warranty Costs*

The Company's warranty policy is limited to replacement parts and services and generally expires one year from date of shipment or contract completion, except with respect to laboratory hydrogen generators, where the warranty period is two years. Estimated warranty obligations are recorded in the period in which the related revenue is recognized. The Company quantifies and records an estimate for warranty related costs based on the Company's actual historical warranty experience and the current repair costs. Adjustments are made to accruals as warranty claim data and historical experience warrant. Should the Company experience actual repair costs that are higher than the estimated repair costs used to calculate the provision, the Company's operating results for the period or periods in which such additional costs materialize will be adversely impacted.

### *Inventory*

Inventory is recorded at the lower of cost or market value. Cost is determined by the first-in, first-out method. This policy requires Distributed Energy to write down its inventory for the difference between the cost of inventory and the estimated market value to reflect assumptions about future demand and market conditions. If future demand and market conditions become less favorable than anticipated or if our ability to realize value on our inventory is less favorable than assumed, additional inventory write-downs may be required.

### *Goodwill and Intangible Assets*

The Company has adopted the provisions of Statement of Financial Accounting Standards ( SFAS ) No. 141, Business Combinations and SFAS No. 142, Goodwill and Other Intangible Assets, applicable to business combinations completed after June 30, 2001. These standards require the use of the purchase method of accounting for business combinations, set forth the accounting for the initial recognition of acquired intangible assets and goodwill, and describe the accounting for intangible assets and goodwill subsequent to initial recognition. Under the provisions of these standards, goodwill and intangible assets deemed to have indefinite lives are no longer subject to amortization. All other intangible assets are amortized over their estimated useful lives. Goodwill and intangible assets are subject to annual impairment testing and will also be tested for impairment between annual tests if changes in circumstances indicate that the carrying amount may be impaired. This testing compares carrying values to fair values and if the carrying value of these assets is less than the fair value an impairment loss is recognized for the amount of the difference.

### *Long-lived Assets*

The Company evaluates potential impairment of long-lived assets and long-lived assets to be disposed of in accordance with Statement of Financial Accounting Standards ( SFAS ) No. 144, Accounting for the Impairment or Disposal of Long-Lived Assets . SFAS No. 144 establishes procedures for the review of recoverability and measurement of impairment, if necessary, of long-lived assets held and used by an entity. SFAS No. 144 requires that those assets be reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be fully recoverable. SFAS No. 144 requires that impaired long-lived assets be written down to their fair value.

### *Stock-Based Compensation*

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Statement of Financial Accounting Standards (SFAS) No. 123, Accounting for Stock-Based Compensation, as amended by SFAS No. 148, Accounting for Stock-Based Compensation Transition and Disclosure, prescribes accounting and reporting standards for all stock-based compensation plans, including employee stock option plans. As permitted by SFAS No. 123, Distributed Energy has elected to continue to account for stock-based compensation issued to employees using the intrinsic value method in accordance with Accounting Principles Board (APB) Opinion No. 25, Accounting for Stock Issued to

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Employees, and related Interpretations. Under APB 25, compensation expense is computed to the extent that the fair market value of the underlying stock on the date of grant exceeds the exercise price of the employee stock option or stock award. Compensation so computed is then recognized over the vesting period.

The Company accounts for stock based compensation issued to non-employees in accordance with SFAS 123 and the consensus in Emerging Issues Task Force ( EITF ) 96-18. These pronouncements require the fair value of equity instruments given as consideration for services rendered be recognized as a non-cash charge to income over the shorter of the vesting or service period. The equity instruments must be revalued on each subsequent reporting date until performance is complete with a cumulative catch-up adjustment recognized for any changes in their fair value. In the event that we are required to record compensation expense that is currently only being disclosed under SFAS 123, an adjustment to decrease net income in such period would result.

The following table highlights the impact that each of the various assumptions has on determining the fair value of an option or award when using an option-pricing model:

**Impact of Inputs to Value of Equity Instrument**

<b>Volatility of Stock</b>	Higher the volatility	Higher the value
<b>Expected Term</b>	Longer the term	Higher the value
<b>Risk Free Rate</b>	Higher the rate	Higher the value
<b>Dividend Yield</b>	Lower the yield	Higher the value
<b>Exercise Price</b>	Lower the exercise price (A)	Higher the value
<b>Stock Price (fair value)</b>	Higher the stock price	Higher the value

(A) presumes exercise is less than fair value

**Recent Accounting Pronouncements**

In December 2004, the FASB issued FASB SFAS No. 123 (revised 2004), Share-Based Payment, which is a revision of SFAS No. 123, Accounting for Stock-Based Compensation. SFAS No. 123(R) supersedes APB Opinion No. 25, Accounting for Stock Issued to Employees, and amends SFAS No. 95, Statement of Cash Flows. Generally, the approach in SFAS No. 123(R) is similar to the approach described in SFAS No. 123. However, SFAS No. 123(R) requires all share-based payments to employees, including grants of employee stock options, to be recognized in the income statement based on their fair values. Pro forma disclosure is no longer an alternative. The new standard will be effective for the Company in the quarter beginning July 1, 2005. The Company has not yet completed its evaluation but expects the adoption to have a material effect on its consolidated financial statements.

In November 2004, the FASB issued FASB SFAS No. 151, Inventory Costs an amendment of ARB No. 43, Chapter 4. SFAS No. 151 is effective for inventory costs incurred during fiscal years beginning after June 15, 2005. This Statement amends the guidance in ARB No. 43, Chapter 4, Inventory Pricing, to clarify the accounting for abnormal amounts of idle facility expense, freight, handling costs, and wasted material (spoilage). Paragraph 5 of ARB 43, Chapter 4, previously stated under some circumstances, items such as idle facility expense, excessive spoilage, double freight, and rehandling costs may be so abnormal as to require treatment as current period charges. This Statement requires that those items be recognized as current-period charges regardless of whether they meet the criterion of so abnormal. In addition, this Statement requires that allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. The Company does not expect the adoption of this standard to have a material effect on its consolidated financial statements.



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In January 2003, the Financial Accounting Standards Board ( FASB ) issued Interpretation No. 46 ( FIN 46 ), Consolidation of Variable Interest Entities, an interpretation of ARB 51. The primary objectives of this interpretation are to provide guidance on the identification of entities for which control is achieved through means other than through voting rights ( variable interest entities ) and how to determine when and which business enterprise (the primary beneficiary ) should consolidate the variable interest entity. This new model for consolidation applies to an entity in which either (i) the equity investors (if any) do not have a controlling financial interest; or (ii) the equity investment at risk is insufficient to finance that entity's activities without receiving additional subordinated financial support from other parties. In addition, FIN 46 requires that the primary beneficiary, as well as all other enterprises with a significant variable interest in a variable interest entity, make additional disclosures. Certain disclosure requirements of FIN 46 were effective for financial statements issued after January 31, 2003.

In December 2003, the FASB issued FIN 46 (revised December 2003), Consolidation of Variable Interest Entities ( FIN 46-R ) to address certain FIN 46 implementation issues. The effective dates and impact of FIN 46 and FIN 46-R as related to us are as follows:

Special purpose entities ( SPEs ) and Non-SPEs created prior to January 1, 2004. We must apply the provisions of FIN 46-R at the beginning of the first interim or annual reporting period beginning after December 15, 2004.

All entities, regardless of whether a SPE, that were created subsequent to December 31, 2003. The provisions of FIN 46 were applicable for variable interests in entities obtained after December 31, 2003. We are required to adopt FIN 46-R at the end of the first interim or annual reporting period ending after March 15, 2004.

The adoption of the provisions applicable to SPEs and all other variable interests had no impact on our consolidated financial statements.

## **Results of Operations**

The results of operations for 2003 include the full year of Proton's operations and the period from December 11, 2003 through December 31, 2003 for Northern and Distributed Energy.

### ***Comparison of the Years 2004 and 2003***

*Contract revenue.* Contract revenue increased from \$3.0 million for the twelve months ended December 31, 2003 to \$19.4 million for the comparable period in 2004. Of this increase \$15.6 million was due to the inclusion of contract revenue of our Northern subsidiary, acquired in December 2003. Additionally, in 2004 Proton's contract revenues increased by \$847,000 over the comparable period in 2003. The increase in 2004 is attributable to the number of active Proton contracts increasing from eight to ten in the comparable periods, respectively. In the future, we expect to continue to generate revenue from government sponsored research and development contracts to supplement our research and development efforts.

*Product revenue.* Product revenue increased from \$1.2 million for the twelve months ended December 31, 2003 to \$3.1 million for the comparable period in 2004. The increase is primarily attributable to the recognition of previously deferred revenue of \$2.0 million and \$525,000 related to our HOGEN 40 and 380 series units, respectively, upon expiration of the product warranty. The recognition of the HOGEN 40 and 380 series revenues is offset by a \$924,000 decrease in revenues recognized on our laboratory generator products. The Company began recording revenue on laboratory generator units upon shipment in the fourth quarter of 2003. These units were sold with a one-year warranty

period. During 2004, the Company commenced selling laboratory units with two-year warranties. Accordingly, revenues on such



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units are being deferred until the expiration of the warranty period or the Company can estimate its two-year warranty costs, resulting in decreased laboratory generator revenue during the period. Service, rental and other revenue increased approximately \$187,000 for the twelve months ended December 31, 2004 over the comparable period in 2003, with the majority of this increase attributable to the HOGEN 40 series service and rental revenues.

*Units shipped.* Total hydrogen generator units shipped increased from 128 for the twelve months ended December 31, 2003 to 130 for the comparable period in 2004. Shipments of the HOGEN 40 series units decreased from 42 in 2003 to 34 in 2004. Shipments of our laboratory generator units decreased from 86 in 2003 to 81 in 2004. Shipments of our H-series units totaled 15 in 2004. Total revenue deferred in the 2004 related to units shipped was approximately \$3.7 million. Total revenue deferred in 2003 related to units shipped was approximately \$1.5 million. Total costs deferred in 2004 related to units shipped was approximately \$3.1 million. Total costs deferred in 2003 related to units shipped was approximately \$1.4 million.

*Costs of contract revenue.* Costs of contract revenue increased from \$3.3 million for the twelve months ended December 31, 2003 to \$17.2 million for the comparable period in 2004. The increase in 2004 was due primarily to the inclusion of our Northern subsidiary's contract costs of \$14.8 million. Proton's costs of contract revenue increased approximately \$40,000 year to year. This slight increase was attributable to Proton's efforts to seek larger contracts which allow for increased cost recovery and improved margins. Cost of Proton's contract revenue as a percentage of contract revenue decreased from 111% in 2003 to 80% in 2004.

*Costs of production.* Costs of production increased from \$2.2 million for the twelve months ended December 31, 2003 to \$4.3 million for the comparable period in 2004. The 2004 costs include an increase of previously deferred costs of approximately \$1.7 million and \$400,000 related to the HOGEN 40 and 380 series units, respectively, upon expiration of the product warranty. The recognition of the previously deferred costs on the HOGEN 40 and 380 series units is offset by a \$1.1 million decrease in costs incurred on our laboratory generator products. The Company began recording revenue on laboratory generator units upon shipment in the fourth quarter of 2003. These units were sold with a one-year warranty period. During 2004, the Company commenced selling laboratory units with two-year warranties. Accordingly, costs on such units are being deferred until the Company can estimate its two-year warranty costs. As a result, laboratory generator costs of production and warranty accrual related expenditures decreased during the period. The increase in 2004 also includes an increase of \$200,000 related to lower of cost or market adjustments associated primarily with our HOGEN H series units. Warranty costs (other than laboratory generator units) increased approximately \$432,000, primarily due to an increase in warranty costs related to our HOGEN 380 units and a reduction adjustment in 2003 of \$199,000 related to our cell stack replacement program. Service and spare parts costs increased approximately \$222,000 due primarily to an increased number of HOGEN 40 series units in the field pursuant to recent efforts by the Company to grow this part of the business. Rental and other costs increased approximately \$45,000 in 2004, primarily related to our HOGEN 40 units. We expect costs of production to decrease as a percentage of revenue in the future as we continue to refine our processes and reduce our material costs, however, costs of production could increase if warranty experience deteriorates.

*Research and development expenses.* Research and development expenses decreased from \$7.7 million for the twelve months ended December 31, 2003 to \$6.3 million for the comparable period in 2004. The decrease is attributable to a \$2.4 million decrease in Proton's research and development activities offset by the inclusion of \$1 million related to Northern's research and development efforts in 2004. Proton's 2004 decrease is attributable to: lower personnel-related costs of \$2.0 million, as a result of headcount reductions, attrition, and fewer active R&D projects which decreased material and related costs

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approximately \$1.0 million; these decreases were offset by reduced cost share 2004 of \$450,000 related to our Connecticut Clean Energy Fund agreement, and other expenditure increases of approximately \$206,000, primarily associated with increased depreciation charges resulting from the capitalization of certain project assets. We expect our research and development expenses to remain level or decrease for the next twelve months.

*Selling, general and administrative expenses.* General and administrative expenses increased from \$10.0 million for the twelve months ended December 31, 2003 to \$17.9 million for the comparable period in 2004. The increase in 2004 was due primarily to the inclusion of our Northern subsidiary's general and administrative costs of \$8.8 million. The remaining variance is due to the following factors associated with the Company's Connecticut location: Lower personnel costs of approximately \$190,000, due primarily to attrition in the first quarter of 2004 in senior management and management positions. These positions were filled later in 2004 or have been eliminated; decreased legal expenses of approximately \$389,000, due primarily to higher legal expenses in 2003 for the acquisition of Northern; decreased facility related expenses of approximately \$191,000; decreased other expenditures of approximately \$104,000, primarily tax related expenditures and other acquisition related expenditures. These decreased expenditures are offset by increased accounting expenses of approximately \$474,000, primarily related to Sarbanes-Oxley compliance efforts; increased marketing related expenditures of approximately \$149,000, due primarily to the introduction of our HOGEN H series product and increased HOGEN 40 series efforts; and, the inclusion in 2004 of approximately \$185,000 related to certain HOGEN 380 series asset impairment charges which resulted from the Company's decision to curtail production of its HOGEN 380 series hydrogen generators in the second quarter of 2004.

*Interest income.* Interest income decreased from \$2.5 million for the twelve months ended December 31, 2003 to \$1.1 million for the comparable period in 2004. The decrease resulted from decreased cash and marketable securities balances as well as lower average interest rates. The average cash and marketable securities balances for 2004 and 2003 were approximately \$66.2 million and \$114.9 million, respectively. The average interest rate for 2004 and 2003 was approximately 1.7% and 2.2%, respectively.

*Interest expense.* Interest expense increased from \$243,000 for the twelve months ended December 31, 2003 to \$335,000 for the comparable period in 2004. The increase was the result of an increased average debt balance, due primarily to the inclusion Northern's capital lease obligation.

## ***Comparison of Years 2003 and 2002***

*Contract revenue.* Contract revenue decreased from \$3.4 million for the twelve months ended December 31, 2002 to \$3.0 million for the comparable period in 2003. The amount in 2003 includes \$0.9 million related to Northern's distributed generation power systems. The decrease was due to the cessation of research and development activity under the Naval Research Laboratory (NRL) contract, which was substantially completed in December 2002.

*Product revenue.* Product revenue decreased from \$1.3 million for the twelve months ended December 31, 2002 to \$1.2 million for the comparable period in 2003. In the fourth quarter of 2003, laboratory hydrogen generator revenues began to be recognized upon shipment. The revenue in 2003 accordingly, represents laboratory hydrogen generator revenue recognized upon expiration of the warranty period of \$564,000, previously deferred laboratory hydrogen generator revenue recognized within the warranty period of \$378,000, fourth quarter laboratory hydrogen generator revenue of \$70,000 and spare parts sales and other revenue of \$216,000. Included in 2002 product revenue is HOGEN 40 product revenue of \$999,000, laboratory hydrogen generator revenue of \$237,000, and spare part sales and other revenue of \$62,000.

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During the fourth quarter of 2001, the Company determined that sufficient warranty history existed to begin recognizing revenue upon delivery of its HOGEN 40 units. Accordingly, during the first three quarters of 2002, the Company recognized revenue and the related cost of sales upon delivery of its HOGEN 40 units. In the fourth quarter of 2002, we discovered performance issues relating to the operation of cell stacks and associated sensors in our HOGEN 40 series units. Our investigation revealed the presence of previously unknown pinholes in cell membranes in the field that resulted in hydrogen leakage and cell failure. As a result, we determined that recognizing revenue on shipment of our HOGEN 40 series units was no longer appropriate because of significant uncertainty surrounding the reliability of the existing design of the PEM electrolyzer ( cell stack ) within our HOGEN 40 series generators. We made modifications to the existing cell stack design to improve its performance and determined to defer product revenue until we have compiled sufficient warranty history on units containing modified cell stacks. For this reason, product revenue from HOGEN 40 series shipments made subsequent to September 30, 2002 is deferred until the expiration of the product warranty period.

*Hydrogen generator units shipped.* Total units shipped (excluding shipments under the STM contract) decreased from 152 in 2002 to 128 in 2003. Shipments of the HOGEN 40 series units increased from 34 in 2002 to 42 in 2003. Total revenue deferred in 2003 related to these units shipped was approximately \$1.5 million. Shipments of our laboratory hydrogen generator series units decreased from 118 units in 2002 to 86 units in 2003. During 2003 the Company was in the process of replacing HOGEN 40 series cell stacks in accordance with its cell stack replacement program described below and in Note 7 of the financial statements. For this reason, production and selling efforts with respect to the HOGEN 40 series units were curtailed. The decrease in laboratory hydrogen generator units resulted from the termination of the Company's agreement with Matheson Tri-Gas, Inc. in January 2003, under which the Company agreed not to resume selling or marketing the units until June 30, 2003. Total revenue deferred in the 2003 related to units shipped was approximately \$1.5 million. Total revenue deferred in 2002 related to units shipped was approximately \$1.5 million. Total costs deferred in 2003 related to units shipped was approximately \$1.4 million. Total costs deferred in 2002 related to units shipped was approximately \$1.3 million.

*Costs of contract revenue.* Costs of contract revenue increased from \$2.4 million for the twelve months ended December 31, 2002 to \$3.3 million for the comparable period in 2003. The amount for 2003 includes \$1.0 million related to Northern's distributed generation power systems contracts for the period December 11, 2003 to December 31, 2003. Costs of contract revenue as a percentage of contract revenue increased from 67% in 2002 to 111% in 2003. The increase in costs of contract revenue, and increase in costs of contract revenue as a percentage of contract revenue, in 2003 was due primarily to the mix of contracts during those time periods, and specifically to the cessation of Proton's research and development activity under the NRL contract which was substantially completed in December 2002. Proton's contracts are generally cost share arrangements, under which Proton is reimbursed only for an agreed portion of its costs incurred to perform under the contract. The NRL contract is a cost plus fixed fee contract, under which Proton is reimbursed for allowable incurred costs plus a fixed fee. In general, Proton is reimbursed for a greater percentage of its costs incurred under a cost plus fixed fee contract than under a cost share arrangement.

*Costs of production.* Costs of production decreased from \$5.0 million for the twelve months ended December 31, 2002 to \$2.2 million for the comparable period in 2003. Costs of production as a percentage of product revenue decreased from 393% in 2002 to 177% in 2003. The amounts in 2002 and 2003 reflect costs associated with manufacturing and delivering Proton's hydrogen generators as well as warranty costs on units in the field. The decrease in costs of production in 2003, both in absolute terms and as a percentage of product revenue, was primarily due to \$2.5 million in costs incurred in 2002 to address performance problems relating to the operation of cell stacks and associated sensors in the HOGEN 40 series units, and much of our production efforts during the first two quarters of 2003 were remedying the problems in our HOGEN 40 products referred to previously. In 2003, costs of production includes approximately \$378,000 of previously deferred cost recognized concurrent with the recognition of revenue associated with our laboratory hydrogen generators.

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In January 2003, our exclusive laboratory generator distribution agreement with Matheson Tri-Gas, Inc., was jointly terminated by agreement with Matheson Tri-Gas. Under the terms of the settlement agreement Proton agreed to continue to support units under warranty, provide spare parts for five years, sell an additional 55 laboratory hydrogen generators to Matheson Tri-Gas, and not sell or market laboratory hydrogen generators before June 30, 2003. Through December 31, 2003, under its agreement with Matheson Tri-Gas, Inc., Proton recognized costs in excess of its contracted sales price in the amount of \$752,000.

*Research and development expenses.* Research and development expenses decreased from \$8.8 million for the twelve months ended December 31, 2002 to \$7.7 million for the comparable period in 2003. The decrease was due to a decrease in Proton's research and development activities related to its PEM technology in regenerative fuel cell systems and hydrogen generators. These research and development activities primarily related to salaries and benefits for research and development staff and materials to support research and development projects. Specifically, the Company increased development efforts in the HOGEN H series area by \$3.2 million, but this increase was offset by decreases in the following areas: backup power (\$1.1 million), HOGEN 380 series (\$1.0 million), refueler (\$0.8 million), laboratory generators (\$0.7 million), and renewables/combustion (\$0.5 million). In addition, in 2003 the Company recorded an offset to expenses of \$675,000 resulting from payments under Proton's agreement with the Connecticut Clean Energy Fund.

*Selling, general and administrative expenses.* General and administrative expenses increased from \$7.9 million for the twelve months ended December 31, 2002 to \$10.1 million for the comparable period in 2003. The \$2.2 million increase in 2003 is attributable to the following: \$0.4 million of expenses related to Northern from December 11, 2003 to December 31, 2003, \$0.1 million for a stock compensation charge related to Distributed Energy options issued to Northern employees on the merger date, \$0.4 million increase in salaries and benefits, \$0.4 million increase in professional fees primarily related to the Northern transaction, \$0.3 million increase in facility-related expenses, and a \$0.2 million increase in selling expenses.

*Interest income.* Interest income decreased from \$5.9 million for 2002 to \$2.5 million for the comparable period in 2003. The decrease resulted from lower cash and marketable securities balances as well as lower average interest rates. The average cash and marketable securities balances for 2003 and 2002 were approximately \$114.9 million and \$158.5 million, respectively. The decreased cash and marketable securities balances were largely due to the \$33.9 cash distribution in June 2003. The average interest rates for 2003 and 2002 were approximately 2.2% and 3.7%, respectively.

*Interest expense.* Distributed Energy recorded interest expense of \$243,000 for the twelve months ended December 31, 2003, compared to \$92,000 for the comparable period in 2002. The increase in interest expense in 2003 relates to a full year of debt service associated with Distributed Energy's Wallingford facility loan. Construction was completed in 2002.

## **Factors Affecting Results of Operations**

The Company's contract and product revenues are subject to fluctuations, which may be material. The Company's revenues and operating results may fluctuate from quarter to quarter because: (i) the Company's sales cycle is relatively long, (ii) the size of orders may vary significantly, (iii) the availability of financing for customers in some countries is variable, (iv) customers may postpone or cancel orders, and (v) economic, political and market conditions in some markets change with minimal notice and affect the timing and size of orders. Because the Company's operating expenses are based on anticipated

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revenue levels and a high percentage of the Company's operating costs are relatively fixed, variations in the timing of revenue recognition may result in significant fluctuations in operating results from period to period.

### **Liquidity and Capital Resources**

Since its inception in August 1996 through December 2004, Proton has financed its operations through convertible preferred stock issuances and an initial public offering that, in total, raised approximately \$187.4 million. As of December 31, 2004, Distributed Energy had \$59.1 million in cash, cash equivalents and marketable securities.

In December 2001, Technology Drive LLC, a limited liability company wholly owned by Proton, entered into a \$6,975,000 loan agreement with a major financial institution, in connection with the construction of Proton's new facility in Wallingford, Connecticut. As of December 31, 2004, \$6,090,232 was outstanding under this agreement. Under the terms of the loan, the business assets of Technology Drive LLC, including the land and building, are subject to lien. The loan agreement was structured as a one-year construction loan with monthly payments of interest only until December 2002 at which time the loan converted to a seven-year term note. The term note amortizes based upon a fifteen-year schedule with a final lump sum payment due at the maturity date of December 31, 2009. The note is guaranteed by Proton and bears interest at the one month LIBOR plus 2.375% (4.655% at December 31, 2004). In connection with the construction of Proton's new Wallingford facility, Proton entered into a sales and use tax exemption program with the Connecticut Development Authority. As part of that program, Proton has approximately \$419,000 of restricted cash in escrow. Maturities under the debt at December 31, 2004 are as follows: 2005 \$366,600; 2006 \$382,800; 2007 \$400,200; 2008 \$418,200; and 2009 \$4,522,432.

At December 31, 2004 Proton has guaranteed approximately \$900,000 of performance bonds issued by a financial institution on behalf of Northern. Northern, in connection with its new debt facility and in support of certain of its commercial contracts, also maintains approximately \$150,000 of restricted cash. These amounts are included within restricted cash as part of current assets.

In March 2003, a condominium association, Northern Power Systems Commercial Condominium Association, Inc. (NPS Condo Association), was formed for the purpose of managing the land, building, and improvements related to Northern's new facility. Northern owns 50% of the NPS Condo Association and has the ability to exercise significant influence over the NPS Condo Association. The Company transferred certain property and development rights under NPS Condo Assoc to the Central Vermont Economic Development Corporation (CVEDC). In consideration, CVEDC secured a \$2,790,000 loan from the Vermont Economic Development Authority (VEDA) to complete the facility and lease back the facility to Northern. The terms of the lease include an initial term of ten years, lease payments equal to the debt payments plus an administrative fee, and a purchase option for Northern equal to the outstanding loan amount. Northern has guaranteed the CVEDC loan, is responsible for all cost overruns in relation to construction of the new facility, is required to maintain certain levels of insurance over the facility, is required to maintain \$150,000 of restricted cash for performance under the agreements and indemnifies CVEDC from liability or lawsuit relating to the facility. The agreement also contains a material adverse change clause. Maturities under the capital lease obligation at December 31, 2004 are as follows: 2005 \$107,686; 2006 \$110,961; 2007 \$114,336; 2008 \$117,814; 2009 \$121,937; 2010 and thereafter \$2,076,869.

Cash used in operating activities was \$18.1 million for the year ended December 31, 2004 and was primarily attributable to the Company's net loss and increases in accounts receivable, inventory and deferred costs, decreases in accounts payable and accrued expenses, offset primarily by increases in billings in excess of costs. Cash used in operating activities was \$13.9 million for the year ended

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December 31, 2003 and was primarily attributable to the Company's net loss and increases in accounts payable and accrued expenses, offset by decreases in inventories and deferred costs and increases in deferred revenues and contract advances.

Cash provided by investing activities was \$19.9 million for the year ended December 31, 2004 and was primarily attributable to proceeds from the maturity of marketable securities offset by purchases of marketable securities, and decreased restricted cash. Cash provided by investing activities was \$35.8 million for the year ended December 31, 2003 and was primarily attributable to proceeds from the maturity of marketable securities offset by purchases of marketable securities, cash paid for the acquisition of Northern and increases in restricted cash.

Cash used in financing activities was \$215,000 for the year ended December 31, 2004 and was primarily attributable to debt principal payments, offset by proceeds from common stock activity. Cash used in financing activities was \$34.1 million for the year ended December 31, 2003 and was primarily attributable to Proton's \$1 per share cash distribution to stockholders.

Distributed Energy anticipates that its cash and marketable securities on hand as of December 31, 2004 will be adequate to fund its operations, working capital and capital expenditure requirements for at least the next 12 months. Over the next 12 months, Distributed Energy expects to continue to fund the production of its hydrogen generators and fund on-going project costs as well as continuing its research and development activities. Distributed Energy cannot ensure that it will not require additional financing to fund its operations or that, if required, any further financing will be available to Distributed Energy on acceptable terms, or at all. If sufficient funds are not available, Distributed Energy may be required to delay, reduce or eliminate some of its research and development, manufacturing, or contract programs. The terms of any additional financing may require Distributed Energy to relinquish rights to its technologies or potential products or other assets.

**Contractual Obligations**

The following is a summary of Distributed Energy's contractual obligations as of December 31, 2004:

<b>Contractual Obligations</b>	<b>Total</b>	<b>Less than 1 Year</b>	<b>2-3 Years</b>	<b>4-5 Years</b>	<b>After 5 Years</b>
Long-term debt	6,090,232	366,600	783,000	4,940,632	
Capital lease	2,648,869	107,686	225,297	239,211	2,076,675
Operating leases	268,081	199,270	62,295	6,516	
<b>Total contractual obligations</b>	<b>9,007,182</b>	<b>673,556</b>	<b>1,070,592</b>	<b>5,186,359</b>	<b>2,076,675</b>

**Certain Factors That May Affect Future Results**

The following important factors, among others, could cause actual results to differ materially from those indicated by forward-looking statements made in this Annual Report on Form 10-K and presented elsewhere by management from time to time.

*Distributed Energy's future success is uncertain because of its limited operating history and project based business.*

Distributed Energy faces many risks and uncertainties. If it is unsuccessful in addressing these risks and uncertainties, it may be unable to generate revenue and grow its business. Proton was formed in 1996 to research and develop PEM electrochemical products. Distributed Energy's Proton Subsidiary, began shipping late-stage development models of its hydrogen generators in 1999 and has not yet manufactured commercial regenerative fuel cell systems. Accordingly, there is only a limited basis upon which you can

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evaluate Proton's business and prospects, and Proton's future success is uncertain. You should consider the challenges, expenses, delays and other difficulties typically involved in the establishment of a new business, including the continued development of Proton's products, development of fully functioning manufacturing operations, refinement of processes and components for Proton's commercial products, recruitment of qualified personnel, ability to manufacture a product which meets cost, reliability and efficiency needs, and achievement of market acceptance for Proton's products.

As an engineering, procurement and construction contractor, Distributed Energy's Northern subsidiary, designs and builds a relatively small number of projects for a small number of customers each year. For many of these customers, Northern will deliver a single system with little or no opportunity for repeat business. A small number of very large projects often accounts for the majority of Northern's revenue in any given year. Sales cycles are very long and projects can be delayed or cancelled for reasons beyond Northern's control. Implementation of large projects can take over twelve months. During that time, numerous factors can contribute to cost overruns and schedule delays that impact profitability. Generally accepted accounting principles require Northern to defer revenue on a significant portion of its contracts until the project is completed. As a result of these factors and others discussed later in this section, Northern's revenue and operating results may vary significantly from year to year and from quarter to quarter within a year.

*Distributed Energy has incurred, and expects to continue to incur, substantial losses, and may never become profitable.*

Distributed Energy has incurred substantial losses since it was founded and anticipates it will continue to incur substantial losses in the future. As of December 31, 2004, Distributed Energy had an accumulated deficit of approximately \$119.7 million. Distributed Energy cannot predict when it will operate profitably, if ever. Distributed Energy expects to continue to incur expenses related to research and development activities, expansion of its manufacturing facilities and general administrative functions. As a result, Distributed Energy anticipates that it will continue to incur losses until it can cost-effectively produce and sell Proton hydrogen generators or achieve enough business at favorable margins at Northern. Even if Distributed Energy does achieve profitability, Distributed Energy may be unable to sustain or increase its profitability in the future.

*Proton has experienced performance problems with its hydrogen generators.*

Proton has experienced performance problems with certain components of its hydrogen generators, specifically hydrogen sensor modules, power supplies, and cell stacks, which have required component replacement. Further problems related to these or other components may occur and require additional corrective measures. If Proton is unable to solve these problems, potential purchasers of Proton products may decline to purchase them. In addition, if Proton's hydrogen generators fail after purchase, Proton's warranty exposure would increase, resulting in higher costs.

*Proton may not be able to generate revenue in the future if it does not complete the development of its regenerative fuel cell systems.*

Proton's regenerative fuel cell systems are still in the development stage. Proton does not know when or whether it will successfully complete research and development of commercial regenerative fuel cell systems. If Proton is unable to develop commercial regenerative fuel cell systems, it may not be able to generate future revenue and may not recover the losses it has incurred in attempting to develop these products. If Proton experiences delays in meeting its development milestones or if its regenerative fuel cell systems exhibit technical defects or cannot meet cost or performance goals, including output, useful life and reliability goals, potential purchasers of Proton's regenerative fuel cell systems may decline to purchase them or choose alternative technologies. Proton may be unable to make the substantial





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technological advances necessary to produce commercial regenerative fuel cell systems that provide the features and performance specifications required by customers at a competitive price. For example, Proton must identify improved hydrogen storage technologies and fuel cell module structures. If Proton is unable to successfully complete these development activities, Proton may be unable to commercially market its regenerative fuel cell systems. In some cases, Proton is attempting to expedite its development efforts by utilizing third parties for important engineering work. These third parties include vendors of hydrogen storage, purification systems, power supply and control components. If these third parties are unable to successfully complete their development activities on Proton's behalf, Proton may be unable to commercially market its regenerative fuel cell systems.

*Proton may not be able to grow its business if it does not achieve widespread commercial acceptance of its hydrogen generators in the market for delivered hydrogen.*

Proton intends to market its hydrogen generators to small and medium volume users of delivered hydrogen. Proton's business depends on the widespread commercial acceptance of its hydrogen generators, and Proton may be unable to grow its business if Proton's targeted customers do not purchase substantial numbers of Proton's hydrogen generators. Proton's targeted customers, or the distributors whom Proton intends to use to market to these customers, may not purchase Proton's hydrogen generators at all or in sufficient quantities to support the growth of Proton's business. Proton's hydrogen generators will require its target customers to make a substantial initial investment, currently ranging from approximately \$10,000 to \$135,000 per unit for Proton's HOGEN GC, S and H series models. Proton's method of supplying hydrogen by producing it on-site using PEM electrolysis represents a significant departure from conventional means of supplying hydrogen to end users. PEM electrolysis is a new and unproven technology in the markets Proton is targeting, and Proton does not know if its targeted customers will accept Proton's product. Proton is also working to develop and implement design improvements to extend the life of its cell stack components. If Proton is unable to successfully complete these activities, sales of its hydrogen generators may be reduced.

*The success of Proton's hydrogen generators as a fuel source for PEM fuel cells depends upon the development of a mass market for PEM fuel cells, and Proton may not be able to generate revenue in the future if this market does not develop.*

Proton also intends to market its hydrogen generators for use as fuel generators for PEM fuel cells in a variety of applications, in particular fuel cell vehicles. If a mass market for PEM fuel cells fails to develop or develops more slowly than Proton anticipates, Proton may be unable to generate revenue in the future and recover the losses it will have incurred in the development of its hydrogen generators. PEM fuel cells represent an emerging commercial market, and Proton does not know whether end users will want to use them. The development of a mass market for PEM fuel cells may be affected by many factors outside of Proton's control, including:

the emergence of newer, more competitive technologies;

the cost competitiveness of PEM fuel cells compared to existing and new technologies;

the future cost of hydrogen;

regulatory requirements;

consumer perceptions of the safety, reliability and functionality of PEM fuel cells;

consumer willingness to try a new product; and

government funding for development.

In addition, the sole market for vehicular PEM fuel cells is and will continue to be car, bus and other vehicle manufacturers. Automobile manufacturers' interest in vehicular PEM fuel cells has been driven in

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large part by environmental laws and regulations concerning vehicle emission requirements that have been enacted in California and some northeastern states. If these laws and regulations are not kept in force or do not become widely adopted, the demand for vehicular PEM fuel cells may be limited. Further, automobile manufacturers may be able to use other technologies to meet their regulatory requirements, such as batteries, low emission internal combustion engines and hybrid internal combustion/battery engines. Even if automobile manufacturers decide to develop vehicles powered by PEM fuel cells, it may be many years before substantial numbers of vehicles powered by PEM fuel cell systems are manufactured. Further, there are several other technologies that may be used to generate hydrogen, such as hydrocarbon reforming, and there remains a strong possibility that Proton's means of generating hydrogen will not be used to supply fuel to fuel cells.

*Proton may be unable to increase its revenue in the future if the use of renewable energy does not increase.*

Proton anticipates that one of the primary uses of its regenerative fuel cell systems will be for storing energy produced by renewable power sources, such as solar, wind and hydroelectric power. If the demand for renewable energy develops more slowly than Proton anticipates, Proton's ability to sell its regenerative fuel cell systems could be impaired, and Proton may be unable to grow its business. The market for renewable energy is still in an early stage of development and the demand for renewable energy will remain limited until the cost of producing energy from renewable sources is substantially reduced. Power from renewable energy sources currently costs significantly more than power derived from nonrenewable sources, such as coal and oil. The growth of the renewable energy market will be dependent on many factors that are outside of Proton's control, such as the emergence of new, more cost-effective power technologies and products, and domestic and international regulatory requirements.

*Proton expects to incur significant expenses in expanding its manufacturing facilities and production, and Proton may not be successful in these efforts.*

Proton has expanded its manufacturing facilities in anticipation of increased demand for its products. If this demand does not materialize, Proton will not generate sufficient revenue to offset the costs of maintaining and operating these facilities, which could increase Proton's losses and prevent Proton from growing its business. Proton expects to expand production and may experience delays or problems in its expected expansion that could compromise its ability to increase its sales and grow its business. Factors that could delay or prevent Proton's expected production expansion include:

the inability to purchase parts or components in adequate quantities or sufficient quality, including sole source vendors;

the cost of raw materials;

the failure to increase assembly and test operations;

the failure to hire and train additional manufacturing personnel; and

the failure to develop and implement manufacturing processes and equipment.

*If Proton fails to successfully manufacture its products in commercial quantities, it may not be able to increase revenue.*

To be financially successful, Proton will have to manufacture its products in commercial quantities at acceptable costs while also preserving the quality levels achieved in manufacturing these products in limited quantities. This presents a number of technological and engineering challenges. Proton may not be successful in developing product designs and manufacturing processes that permit manufacture of its hydrogen generators and regenerative fuel cell systems in commercial quantities at commercially

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acceptable costs while preserving quality. Currently, Proton sells some of its products for less than it costs to produce them. In addition, Proton may incur significant manufacturing costs and may experience unforeseen delays and expenses in its product design and manufacturing efforts. If the commercialization of Proton's products is delayed, potential purchasers may also decline to purchase them or choose alternative technologies, both of which could impair Proton's ability to generate revenue in the future.

***If Proton's suppliers do not supply it with a sufficient amount and quality of components at acceptable prices, Proton may not be able to manufacture its products commercially.***

Although Proton generally attempts to use standard components for its products, the proton exchange membrane material, hydrogen purification system, and customer designed power supplies used in Proton's products are currently available only from limited sources. Some of Proton's suppliers are small and medium size companies which may not be able to increase production in an acceptable time period or at acceptable prices. Also, Proton may be unable to purchase components of adequate quality or that meet its cost requirements. In addition, to the extent these components are proprietary products of Proton's suppliers, or the processes used by Proton's suppliers to manufacture these components are proprietary, Proton may be unable to obtain comparable components from alternative suppliers. Proton may experience delays in production of its products and its business and financial results would suffer if it fails to identify alternate suppliers, or if Proton's supply is interrupted or reduced or there is a significant increase in cost.

In addition, platinum is a key component of Proton's PEM fuel cells. Platinum is a scarce natural resource and Proton is dependent upon a sufficient supply of this commodity. Proton may not be able to produce commercial products, or the cost of producing products may significantly increase, if there are any shortages in the supply of platinum.

***Proton may be unable to sell its products and generate revenue if it fails to establish distribution relationships.***

Because Proton intends to sell some of its products through third-party distributors or industrial gas companies, the financial benefits to Proton of commercializing its products will be dependent on the efforts of others. Proton intends to enter into additional distribution agreements or other collaborative relationships to market and sell its products. If Proton is unable to enter into additional distribution agreements, or if its third-party distributors do not successfully market and sell its products, Proton may be unable to generate revenue and grow its business. Proton may seek to establish relationships with third-party distributors who also indirectly compete with Proton. For example, Proton has targeted industrial gas suppliers as potential distributors of its hydrogen generators. Because industrial gas suppliers currently sell hydrogen in delivered form, adoption by their customers of Proton's hydrogen generation products could cause them to experience declining demand for delivered hydrogen. For this reason, industrial gas suppliers may be reluctant to become distributors of Proton's hydrogen generators. In addition, Proton's third-party distributors may require Proton to provide volume price discounts and other allowances, or customize its products, either of which could reduce the potential profitability of these relationships.

***Proton has historically focused on research and development activities and has limited experience in marketing, selling and servicing its products.***

Proton has primarily focused on the research and development of its hydrogen generators and regenerative fuel cell systems. Consequently, Proton's management team has limited experience directing the commercialization efforts that are essential to Proton's future success. To date, Proton only has limited experience marketing, selling and servicing its hydrogen generators, and no experience marketing, selling or servicing its regenerative fuel cell systems. Furthermore, there are very few people anywhere



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who have significant experience marketing, selling or servicing PEM electrochemical products. Proton will have to expand its marketing and sales organization as well as its maintenance and support capability. Proton may not be successful in its efforts to market and service its products, which would compromise its ability to increase revenue.

*Because Northern's projects have a very lengthy sales cycle and are often competitively bid, Northern may expend significant resources on potential customers and projects without achieving actual sales.*

Northern has depended on a small number of large projects for a majority of its revenue in any given year. Contracts for many of these large projects are awarded by competitive bid. The sales cycle from identification of a project opportunity to award of a contract often exceeds one year. With multiple other bidders on most large project opportunities, Northern often cannot accurately assess its probability of winning the contract prior to its award by the customer. Most large domestic distributed generation project opportunities are discretionary purchases for the customer, and as a result, at the end of the sales cycle many such projects may never materialize for reasons beyond Northern's control. During this lengthy sales cycle, Northern may incur significant expense and expend significant management effort. These factors make it very difficult for Northern to generate firm backlog well in advance of the actual projects and to accurately forecast future sales. If Northern's sales forecasts from a specific project or customer for a particular period are not realized in that period, it may be unable to compensate for the shortfall, which could harm its operating results.

*Northern conducts business in many countries that are politically and economically unstable.*

The potential for political unrest, acts of terrorism and war, and economic collapse exists in many countries in which Northern does business. The occurrence of any such events at or near the site of Northern's projects could lead to delay, cancellation, or significant damage to Northern's projects or equipment. The occurrence of any such events could also cause harm, injury or death to Northern personnel working on such projects. Any such events could expose Northern to significant liabilities and would therefore adversely impact Northern's operating results and growth.

*If Northern fails to develop and commercialize new products and technology, it may not be able to increase its revenues.*

While Northern does not derive any revenue from the sale of any products today, its business plan contemplates that a portion of its future revenue will be derived from the sale and/or licensing of new wind turbine and power electronics products which are currently under development and not yet commercially available. Many of these future products and technologies are based on new and unproven designs and it is difficult to predict whether they will be commercially viable. If Northern fails to successfully develop and commercialize these products and technologies, it will be unable to recover the investments it has made in their development and will be unable to grow its revenue from their sales and/or licensing. In addition, Northern is likely to face significant competition in the market for these future products. Many of Northern's competitors in the markets for these products are larger and better capitalized than Northern, are better established with a worldwide presence, and are already selling competing products in these markets. New technology developments or cost reductions in existing technologies may delay or prevent the development and/or sale of some or all of Northern's planned products or make its planned products uncompetitive or obsolete.

*Northern may not be able to grow its revenues in the future if a sustainable market for distributed generation does not develop.*



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Northern's future growth is based in part on increased use of distributed generation technologies. Distributed generation is an emerging market, and it is difficult to predict the rate at which it will

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develop. If a sustainable market for distributed generation fails to develop or develops more slowly than Northern anticipates, its ability to grow and achieve profitability will be negatively impacted. Many of the factors that influence the rate of adoption of distributed generation technologies are out of Northern's control. Some such factors that Northern cannot control are:

utility electric rates;

changes in federal, state and local regulatory requirements;

changes in federal and state incentives and subsidies;

cost, quality, performance and availability of the alternative generating technologies that Northern uses in its onsite power systems;

costs and availability of natural gas and other fuels used in alternative generating technologies;

changes in commercial and industrial customers' perceptions regarding distributed generation

availability of financing for distributed generation vendors, developers and users;

economic downturns and related reductions in capital spending; and

demand for and valuation of emissions trading credits generated by distributed generation systems.

***Northern's future growth depends on its ability to provide distributed generation systems that deliver electricity at a price that is competitive with the utility grid; significant declines in the price of utility delivered electricity or Northern's inability to continue to reduce the cost of its distributed generation systems could reduce demand for its services and products.***

Northern competes mainly on price per delivered kilowatt hour of electricity to the end user. In its domestic markets, Northern is competing against the cost of electricity delivered by the local utilities through the electric grid. The cost of electricity varies widely from utility to utility and from state to state and is subject to change based on factors beyond Northern's control. Northern cannot accurately predict what future electric rates will be and whether or not it can compete effectively against these rates.

The cost per delivered kilowatt hour of electricity generated by Northern's onsite power systems is also based primarily on the following three factors: the cost of the underlying generating technologies, the cost of financing, and the cost of fuel. All these factors are outside of Northern's control.

Costs of alternative generating technologies like solar panels, wind turbines, fuel cells and microturbines have generally been falling over the past several years, but there can be no assurances that they will continue to fall in the future. Without federal or state subsidies or incentives, the

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cost of these technologies is often not competitive with traditional generating technologies or the cost of utility power. If the costs of these alternative technologies do not continue to fall or subsidies are no longer available, Northern's ability to sell its systems and services based on these technologies will be diminished.

Financing costs are critical to the cost competitiveness of renewable energy systems in particular, because, since the fuel from the wind or sun is free, they represent the single largest operating cost. Financing costs are also highly variable and subject to change beyond Northern's control.

For reciprocating engine or turbines based power systems, fuel is the largest operating cost. The predominant fuel for these systems is natural gas. The price of natural gas has been highly volatile and is currently projected to remain high for years to come based on increased demand and limited domestic supply. Sustained high gas prices reduce the economic benefit of the onsite power systems Northern sells and may therefore result in reduced sales and revenue growth for Northern.

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***Because Northern's sales are reliant in part on federal and state subsidies and incentives, any reduction in federal and state subsidy programs could harm Northern's business.***

Northern's domestic market for distributed generation systems currently benefits from many federal and state programs designed to promote increased use of renewable and alternative generating technologies. The federal government, for example, offers tax credits for energy produced by wind and solar generators. States like California, New York, New Jersey, Connecticut and Massachusetts offer cash incentives which reduce the initial capital cost to customers who invest in renewable and distributed generation systems. All these federal and state incentive and subsidy programs have specific expiration dates and there can be no assurance that these programs will be extended. Termination of these programs may have an adverse impact on Northern's future growth. Also, given the economic downturn and resulting budget deficits, funding for many of the state programs is at risk of being diverted to other needs.

***Decreases in the price of oil and gas could reduce demand for Northern's systems, which would have an adverse impact on its revenues, results of operations and financial condition.***

A large portion of Northern's current revenue is generated from the sale of remote power systems to the international oil and gas industry for use on remote pipelines and offshore platforms. Demand for Northern's power systems from this market segment depends in part on the current and future commodity price of oil and gas. Higher oil and gas prices stimulate increased development of remote oil and gas fields and related infrastructure, which in turn stimulates increased demand for remote power systems of the type Northern supplies. Conversely, lower oil and gas prices would reduce demand for Northern's systems and have a negative impact on its growth.

***Northern depends on a small number of customers, and termination of a project by one or more of these customers could harm Northern's business***

Typically the sales to these customers come from single contracts to provide highly specialized onsite power systems custom designed and built to meet their specifications. Because such a high percentage of Northern's sales are concentrated in so few contracts, failure on the part of Northern or Northern's customers to perform or deliver on any one of these contracts could have a major impact on Northern's annual operating results. In addition, most of Northern's customer contracts are terminable on short notice. This high concentration of sales in a small number of customers also subjects Northern to a high degree of customer credit risk and risk of non-performance by its vendors. A single vendor's late delivery of a key component required for a project, for example, could significantly delay Northern's completion of the project and might trigger liquidated or consequential damages or other penalties as may be stipulated in Northern's contracts with its customers.

***Continued uncertainty in domestic and world economies and energy markets may limit Northern's growth.***

Current uncertainty among Northern's target customers over the health of the economy and its impact on their business has restricted their capital spending and made it harder for Northern to sell its systems and services. Other market uncertainties that also impact Northern's ability to increase sales include the future of deregulation of the domestic electricity market, the future price of oil and natural gas, political instability in the Middle East and other regions where it does business, and domestic and international policy responses to the threat of global warming.

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***Northern relies on third party suppliers and subcontractors for certain components and services, and Northern could suffer losses if these suppliers and subcontractors fail to fulfill its needs.***

While most of Northern's components are available from multiple suppliers, many new technologies that Northern uses in its systems are only available from a very limited number of suppliers and in some cases only a single supplier. Often Northern's suppliers custom build components to Northern's specifications for use in a particular project and delayed deliveries, poor quality and warranty issues can delay its projects, reduce its profits and damage its relationships with its end customers. Particularly for newer technologies, technical and financial problems of the manufacturer could also delay Northern's projects, increase its costs and even cause customers to terminate Northern's contracts if Northern's vendors are unable to deliver the key components or technology on which its projects are based.

Particularly in Northern's domestic commercial and industrial projects, Northern relies heavily on electrical, mechanical, civil and structural subcontractors to build and install its systems at its customers' facilities based on detailed specifications and drawings that Northern provide. Often these subcontracted services account for a high percentage of the overall project cost. Northern's subcontractors' failure to perform their services in a timely and quality manner can lead to significant schedule delays, increased costs and performance issues on Northern's projects. These issues can potentially trigger penalties in Northern's contracts, increase its warranty exposure, reduce its profits and damage its relationships with its customers if not managed appropriately.

***Northern may not be able to develop and/or retain relationships with strategic partners.***

Northern currently works with a number of strategic partners that facilitate and enhance many aspects of its business, including technology development, component supply, sales lead generation, engineering support, and project installation. Northern must continue to expand these relationships and develop new relationships in order to grow its current project based business and its future product based business. Failure to do so would negatively impact Northern's future sales growth and operating results.

***Northern's projects are subject to varying levels of sales and other taxes and Northern therefore incurs significant potential tax liability.***

Northern has sold and continues to sell its power systems in numerous local, state and foreign jurisdictions. Each jurisdiction's sales and income tax rules and regulations are different and evolving. Northern and its advisors often must make subjective judgments as to whether or not it has established tax nexus in certain jurisdictions where it sells its services and systems and as to whether and how much tax is due on these sales. Northern may be audited at any time by any jurisdiction where it has done business and may be required to pay additional taxes, penalties and interest. There can be no assurances that Northern has not or will not incur additional tax liabilities over and above what is currently recognized in its audited financial statements.

***Undetected and unanticipated defects in Northern's distributed generation systems could increase Northern's costs and harm its reputation.***

Distributed generation systems designed and installed by Northern often use new and untested technologies. Many of these new technologies have limited operating histories and may be subject to malfunction or failure when subjected to prolonged use in non-test conditions. Should these new technologies fail to perform as specified by their vendors, Northern may incur additional warranty and other costs and its relationships with its customers may suffer. Also, many vendors of these new technologies have limited financial resources and may not be able to adequately support their products in the field. All these issues would reduce Northern's growth and profitability.



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***Northern depends on government contracts for a portion of its revenue and profits.***

Northern's government contracts relate to research and development on renewable energy technologies, hybrid system architectures, and advanced power electronics. Changes in government policy toward distributed generation or budget restrictions may reduce or eliminate funding for these types of research and development activities. There can be no assurance that Northern's current contracts will be fully funded or that Northern will be able to secure additional government contracts for similar activities in the future. Northern is also subject to annual audits of its incurred costs on its government contracts by the Defense Contracting Audit Agency. If Northern's actual overhead cost included in its incurred costs are less than the allowable overhead costs billed on these contracts, Northern may be required to refund the excess overhead costs to the government upon completion of the DCAA audit. Such a refund would negatively impact Northern's financial position and its revenue and profits in the year in which such costs were incurred.

***If Distributed Energy fails to retain its key personnel and attract and retain additional qualified personnel, it may be unable to develop its products and generate revenue.***

Distributed Energy's success depends upon the continued service of its executive officers and other key employees such as manufacturing and research and development personnel. The loss of any of Distributed Energy's executive officers or key employees, especially Walter W. Schroeder, Mark Murray, or Clint Coleman could impair Distributed Energy's ability to pursue its growth strategy. Distributed Energy does not have employment agreements with any of its key executives. Distributed Energy may not be able to attract, assimilate or retain additional highly qualified personnel in the future.

***Distributed Energy currently faces and will continue to face significant competition, which could cause it to lose sales or render its products and services uncompetitive or obsolete.***

The markets for delivered hydrogen and reliable backup power are highly competitive. There are a number of companies located in the United States, Canada and abroad that deliver hydrogen, sell hydrogen generation equipment or are developing PEM fuel cell technology. Many of these companies have substantially greater resources than Proton does. Each of these companies has the potential to capture market share in the markets Proton intends to address, which could cause Proton to lose sales and prevent Proton from growing its business. New developments in technology may also delay or prevent the development or sale of some or all of Proton's products or make its products uncompetitive or obsolete. If this were to occur, Proton would not be able to generate sufficient revenue to offset the cost of developing its hydrogen generators and regenerative fuel cell systems.

Proton's regenerative fuel cell systems are one of a number of power technology products being developed today to provide high quality, highly reliable backup power to the existing electric transmission system, or grid. These products include advanced batteries, ultracapacitors, microturbines, flywheels, internal combustion generator sets, superconducting magnetic energy storage devices, other fuel cell types and fuel cells using alternative hydrogen supply applications. Improvements are also being made to the existing electric grid. Technological advances in power technology products and improvements in the electric grid may reduce the attractiveness of Proton's regenerative fuel cell systems.

As the markets for PEM fuel-cell related products, on-site hydrogen generation and backup power develop, other large industrial companies may enter these fields and compete with Proton. These large industrial companies may have the research and development, manufacturing, marketing and sales resources necessary to commercialize hydrogen generators and regenerative fuel cell systems more quickly and effectively than Proton does.

The distributed generation market is also highly competitive and evolving rapidly. Northern faces a wide variety of competitors, including equipment manufacturers, distributors, packagers, system integrators, general contractors, engineering firms, project developers, and energy service companies. Many of



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Northern's competitors are significantly larger and better capitalized than Northern, and therefore may be able to devote more resources to the following activities that allow them to establish a competitive advantage in the marketplace:

sales and marketing of their products and services;

seller financing for the sale of their product or services;

development and commercialization of new technologies;

partnering and other collaborative efforts with sales channel partners, vendors and technology providers;

expanded design, engineering and other fulfillment and service capabilities; and

systems and other infrastructure development that reduces costs.

***Distributed Energy depends on its intellectual property, and Distributed Energy's failure to protect it could enable competitors to market products with similar features that may reduce demand for Distributed Energy's products.***

If Distributed Energy is unable to protect its intellectual property, Distributed Energy's competitors could use its intellectual property to market products similar to its products, which could reduce demand for Distributed Energy's products. Distributed Energy's success depends substantially upon the internally developed technology that is incorporated in its products. Distributed Energy may be unable to prevent unauthorized parties from attempting to copy or otherwise obtain and use its products or technology. Policing unauthorized use of Distributed Energy's technology is difficult, and Distributed Energy may not be able to prevent misappropriation of its technology, particularly in foreign countries where the laws may not protect Distributed Energy's intellectual property as fully as those in the United States. Others may circumvent the trade secrets, trademarks and copyrights that Distributed Energy owns, and any of the U.S. patents or foreign patents owned by Distributed Energy or subsequently issued to Distributed Energy may be invalidated, circumvented, challenged or rendered unenforceable. In addition, Distributed Energy may not be issued any patents as a result of its pending and future patent applications, and any patents issued to Distributed Energy may not have the breadth of claim coverage sought by Distributed Energy.

Most of Distributed Energy's intellectual property is not covered by any patent or patent application. Distributed Energy seeks to protect this proprietary intellectual property, which includes intellectual property that may not be patented or patentable, in part by confidentiality agreements with its distributors and employees. These agreements afford only limited protection and may not provide Distributed Energy with adequate remedies for any breach or prevent other persons or institutions from asserting rights to intellectual property arising out of these relationships.

***Distributed Energy could incur substantial costs defending its intellectual property from infringement by others.***

Unauthorized parties may attempt to copy aspects of Distributed Energy's products or to obtain and use its proprietary information. Litigation may be necessary to enforce Distributed Energy's intellectual property rights, to protect its trade secrets and to determine the validity and scope

of the proprietary rights of others. Any litigation could result in substantial costs and diversion of resources with no assurance of success.

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*Distributed Energy could incur substantial costs defending against claims that its products infringe on the proprietary rights of others.*

The patent situation in the field of PEM fuel cell technology is complex. A large number of patents, including overlapping patents, relating to this technology have been granted worldwide. Distributed Energy is aware of patents in the fuel cell architecture field held by potential competitors and other third parties, including Ballard Power Systems, General Motors, Giner, H-Power, Oronzio deNora Impianti Electrochemical, Packard Instrument, Plug Power, Shinko Pantec, Siemens, Toyota, United Technologies and Whatman. Third parties could claim infringement by Proton with respect to these patents or other patents or proprietary rights, and Proton may not prevail in any such proceeding.

Northern is aware of a patent held by General Electric with respect to variable-speed wind turbines. If Northern incorporates variable-speed wind turbine technology into future wind-related generation products and is not able to design and engineer non-infringing technology, it may be required to license this technology from General Electric. If Northern is unsuccessful in developing non-infringing technologies, it may be required to cease or redirect its development efforts or obtain licensing, royalty or other agreements. There can be no assurance that Northern can obtain such licensing or other agreements on favorable terms or at all, in which case Northern's ability to execute its business plan, grow its sales and generate a profit may be adversely affected.

In addition, some of Distributed Energy's employees are parties to assignment of invention and nondisclosure agreements with their former employers. These agreements generally grant the former employer rights to technology developed by the employee while employed by the former employer and prohibit disclosure of that technology or other employer information to third parties. Distributed Energy cannot assure that such employers will not assert claims against Distributed Energy or its employees alleging a breach of those agreements or other violations of their proprietary rights or alleging rights to inventions by Distributed Energy's employees, or that Distributed Energy would prevail in any such proceeding.

Any infringement claim against Distributed Energy, whether meritorious or not, could:

be time-consuming;

result in costly litigation or arbitration and diversion of technical and management personnel; or

require Distributed Energy to develop non-infringing technology or to enter into royalty or licensing agreements.

Distributed Energy might not be successful in developing non-infringing technologies. Royalty or licensing agreements, if required, may not be available on terms acceptable to Distributed Energy, or at all, and could significantly harm its business and operating results. A successful claim of infringement against Distributed Energy or its failure or inability to license the infringed or similar technology could require Distributed Energy to pay substantial damages and could harm its business because it would not be able to sell the affected product without redeveloping the product or incurring significant additional expense. In addition, to the extent Distributed Energy agrees to indemnify customers or other third parties against infringement of the intellectual property rights of others, a claim of infringement could require Distributed Energy to incur substantial time, effort and expense to indemnify these customers and third parties and could disrupt or terminate their ability to use, market or sell Distributed Energy's products.

*Distributed Energy may be exposed to lawsuits and other claims if its products or systems malfunction or fail, which could increase Distributed Energy's expenses, harm its reputation and prevent Distributed Energy from growing its business.*

Any liability for damages resulting from malfunctions or failures of Distributed Energy's products or systems could be substantial and could increase Distributed Energy's expenses and prevent Distributed

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Energy from growing its business. In particular, hydrogen is a flammable gas and can pose safety risks if not handled properly. Proton has experienced instances with its products where hydrogen appears to have caused a flame that burned several components in the system. Further investigation of this unit revealed the presence of pinholes in the cell membranes, resulting in hydrogen leakage and cell failure. Although Proton has taken steps to improve safety and reliability in its products, Proton cannot be certain that future similar instances will not occur. In addition, Proton's products may require modifications to operate properly under extreme temperatures. Potential customers will also rely upon Proton's products for critical needs, such as backup power. A malfunction of Proton's products could result in significant tort or warranty claims. In addition, a well-publicized actual or perceived problem could adversely affect the market's perception of Proton's products. This could result in a decline in demand for Proton's products, which would reduce Proton's revenue and harm its business.

Northern's standard power system warranty includes a one-year warranty period for defects in design, materials and workmanship of its systems. Northern has not provided guarantees of the performance of its systems to date but may be required to do so in the future. Most of its systems are custom designed to individual customers' specifications and may include new and unproven technologies, system architectures, and component configurations. Many of its systems are also located in very remote locations with extremely harsh climates that are difficult and expensive to access. The possibility of system failures could cause Northern to incur significant expense to redesign, reengineer, repair and/or replace defective systems or system components. Furthermore, Northern projects often have high visibility in its target markets, so that any such failures could damage its reputation and limit future sales in these markets.

### ***Government regulations may impair Distributed Energy's ability to market and sell its products.***

Distributed Energy's products and projects are potentially subject to federal, local and foreign laws and regulations governing, among other things, emissions to air as well as laws relating to occupational health and safety. Distributed Energy may incur substantial costs or liabilities in complying with governmental regulations. Distributed Energy's potential customers must also comply with numerous laws and regulations, which could affect their interest in Distributed Energy's products and projects. Distributed Energy could incur potentially significant expenditures in complying with environmental and health and safety laws, regulations and requirements that may be adopted or imposed in the future.

Electricity generation and delivery are both heavily regulated by federal and state governments. While deregulation and restructuring of the U.S. electric industry may ultimately expand the market for distributed generation systems of the type that Northern sells, recent problems associated with deregulation in key domestic markets like California may impose additional barriers to distributed generation. California and other states, for example, allow utilities to impose exit fees, standby charges and other penalties on customers who install distributed generation systems. Federal and state regulations regarding air quality and interconnection to the utility grid also impose additional costs and potential liabilities on our business. Changes in these regulations could reduce or eliminate Northern's access to certain of its target markets.

### ***Distributed Energy's failure to manage growth could harm its business.***

Distributed Energy intends to introduce new products, increase its production capacity and develop additional distributor relationships. If Distributed Energy is successful, a significant strain on its senior management team and other resources may result. In addition, Distributed Energy may be required to hire additional senior management personnel. Distributed Energy's ability to manage growth will depend in part on its ability to continue to enhance its operating, financial and management information systems. Distributed Energy's personnel, systems and controls may be unable to support its growth.

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*Distributed Energy may not be able to obtain sufficient funds to grow its business.*

Proton and Northern have regularly needed to raise funds to operate their businesses. It may become necessary to raise additional funds to achieve full commercialization of some or all of its products. Northern's project-based business requires a significant amount of capital in order to increase the number and size of projects it can undertake and therefore increase its revenues. If Distributed Energy is unable to raise additional funds when needed, the ability of Proton and Northern to operate and grow their businesses could be impaired. Distributed Energy does not know whether it will be able to secure additional funding or funding on terms acceptable to it. Distributed Energy's ability to obtain additional funding will be subject to a number of factors, including market conditions, its operating performance and investor sentiment. These factors may make the timing, amount, terms and conditions of additional funding unattractive. If Distributed Energy issues additional equity securities, existing stockholders may experience dilution or be subordinated to any rights, preferences or privileges granted to the new equity holders.

*Distributed Energy's revenue and operating results may fluctuate significantly as a result of factors outside of Distributed Energy's control, which could cause the market price of its common stock to decline.*

Distributed Energy expects its revenue and operating results to vary significantly from quarter to quarter. As a result, quarterly comparisons of Distributed Energy's financial results are not necessarily meaningful and should not be relied on as an indication of Distributed Energy's future performance. In addition, due to Distributed Energy's stage of development, it cannot predict its future revenue or results of operations accurately. As a consequence, Distributed Energy's operating results may fall below the expectations of securities analysts and investors, which could cause the price of Distributed Energy's common stock to decline. Factors that may affect Distributed Energy's operating results include:

the status of development of Distributed Energy's technology, products and manufacturing capabilities;

the cost of raw materials and key components;

warranty and service cost for products in the field;

the introduction, timing and market acceptance of new products introduced by Distributed Energy or its competitors;

the development of strategic relationships and distribution channels;

general economic conditions, which can affect customers' capital investments and the length of sales cycles;

the development of vehicular PEM fuel cells and renewable energy markets; and

government regulation.

Distributed Energy expects to make significant investments in all areas of its business, particularly in research and product development and in expanding its manufacturing capability. Because the investments associated with these activities are relatively fixed in the short-term,

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Distributed Energy may be unable to adjust its spending quickly enough to offset any unexpected shortfall in its revenue growth. In addition, because Distributed Energy is in the very early stages of selling its products and has a limited number of customers, Distributed Energy expects its order flow to be uneven from period to period.

*Distributed Energy may not receive the full amount of our backlog, which could harm our business.*

Our backlog was approximately \$25 million as of December 31, 2004. Our backlog includes orders under contracts that in some cases extend for several years. Our estimate of the portion of the backlog as

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of December 31, 2004 from which we expect to recognize revenue in fiscal 2005 is likely to be inaccurate because the receipt and timing of any revenue is subject to various contingencies, many of which are beyond our control. In addition, we may never realize revenue from some of the engagements that are included in our backlog. The actual accrual of revenue on engagements included in backlog may never occur or may change because a contract could be reduced, modified, or terminated early. If we fail to realize revenue from engagements included in our backlog as of December 31, 2004, our revenue and operating results for fiscal 2005 as well as future reporting periods may be materially harmed.

*Distributed Energy's current or planned international operations subject its business to additional risks, which could cause revenues to decline.*

In the past, Northern has generated a majority of its revenue from sales of remote power projects in the oil and gas and telecommunications markets. Many of these projects are sold to foreign entities and are delivered to locations outside of the United States, such as the Middle East, Eurasia, Africa, and South America. Selling Northern's services internationally exposes it to many additional costs, risks, and potential liabilities, which, if improperly managed, could limit its ability to grow in these markets and adversely impact its operating results. In addition Proton intends to market its hydrogen generators to small and medium volume users of delivered hydrogen worldwide. Proton's business depends on the widespread commercial acceptance of its hydrogen generators, and Proton may be unable to grow its business if Proton's targeted customers do not purchase substantial numbers of Proton's hydrogen generators. Proton's targeted customers, or the distributors whom Proton intends to use to market to these customers, may not purchase Proton's hydrogen generators at all or in sufficient quantities to support the growth of Proton's business. Costs, risks and potential liabilities faced by distributed energy as a result of international operations include:

complying with the commercial and legal requirements of foreign markets, particularly in developing countries;

obtaining and/or enforcing intellectual property protection;

overcoming trade barriers such as duties, tariffs and taxes;

enforcing contract terms and conditions;

collecting receivables; and

managing operations and staff across disparate geographic areas.

In addition, a change in the value of the U.S. dollar may make Distributed Energy's services and products less competitive in international markets.

*Because Distributed Energy relies on third parties to fund a portion of its research and development relating to new products, any decrease in such third party funding could limit its ability to develop new products.*



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Distributed Energy receives significant external funding from the Department of Energy, the National Renewable Energy Laboratory and other public and private entities for the development of its proprietary products and technology. Changes in government policy toward distributed generation, alternative energy, or budget restrictions may reduce or eliminate funding from these sources for these types of research and development activities. If such funding was discontinued, Distributed Energy may not have sufficient internal funding to continue with these development efforts and may therefore have to reduce its development of these products, delay their development or abandon them altogether. Discontinuation or delay in its development of proprietary products and technology could limit Distributed Energy's ability to execute its business plan and may have an adverse impact on its ability to increase revenues and generate a profit. Distributed Energy is also subject to annual audits of its incurred costs on its

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government contracts by the Defense Contracting Audit Agency, or DCAA, and other agencies. If Distributed Energy's actual overhead cost included in its incurred costs are less than the allowable overhead costs billed on these contracts, Distributed Energy may be required to refund the excess overhead costs to the government upon completion of the DCAA audit. Such refunds would negatively impact Distributed Energy's financial position and its revenue and profits in the year in which such costs were incurred.

*The anticipated benefits of the merger may not be realized in a timely fashion, or at all, and Distributed Energy's operations may be adversely affected.*

The success of the merger of Proton and Northern into Distributed Energy will depend, in part, on Distributed Energy's ability to realize the growth opportunities and synergies of combining Proton and Northern and to effectively utilize the resources of the combined companies following the merger.

*Distributed Energy's stock price is likely to be highly volatile and may result in substantial losses for investors purchasing shares.*

The market price of Distributed Energy's common stock is likely to be highly volatile. The stock market in general, and the market for technology-related stocks in particular, has been highly volatile. As a result, investors in Distributed Energy's common stock may experience a decrease in the value of their common stock regardless of Distributed Energy's operating performance or prospects. Distributed Energy's common stock may not trade at the same levels as other technology-related stocks and technology-related stocks in general may not sustain their current market prices. In addition, an active public market for Distributed Energy's securities may not be sustained.

The trading price of Distributed Energy's common stock could be subject to wide fluctuations in response to:

Distributed Energy's perceived prospects;

variations in Distributed Energy's operating results and achievement of key business targets;

changes in securities analysts' recommendations or earnings estimates;

differences between Distributed Energy's reported results and those expected by investors and securities analysts;

announcements of new products by Distributed Energy or its competitors;

market reaction to any acquisition, joint venture or strategic investments announced by Distributed Energy or its competitors; and

general economic or stock market conditions unrelated to Distributed Energy's operating performance.

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In the past, securities class action litigation has often been instituted against companies following periods of volatility in their stock price. This type of litigation could result in substantial costs and divert management's attention and resources.

***Distributed Energy's executive officers, directors and their affiliates hold a large percentage of Distributed Energy's stock and their interests may differ from other stockholders.***

Distributed Energy's directors, executive officers and individuals or entities affiliated with Distributed Energy's directors as a group beneficially own, approximately 12% of Proton's outstanding common stock at December 31, 2004. If these stockholders choose to act or vote together, they will have the power to significantly influence the election of Distributed Energy's directors, and the approval of any other action requiring the approval of Distributed Energy's stockholders, including any amendments to

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Distributed Energy's certificate of incorporation and mergers or sales of substantially all of Distributed Energy's assets. In addition, without the consent of these stockholders, Distributed Energy could be prevented from entering into transactions that could be beneficial to it or its other stockholders. Also, third parties could be discouraged from making a tender offer or bid to acquire Distributed Energy at a price per share that is above the then-current market price.

***The provisions of Distributed Energy's certificate of incorporation and bylaws and Delaware law could inhibit a takeover that stockholders may consider favorable and diminish the voting rights of the holders of Distributed Energy common stock.***

There are provisions in Distributed Energy's certificate of incorporation and bylaws that make it more difficult for a third party to acquire, or attempt to acquire, control of Distributed Energy, even if a change in control may be considered favorable by Distributed Energy's stockholders. For example, Distributed Energy's board of directors has the authority to issue up to 5,000,000 shares of preferred stock. The board of directors can fix the price, rights, preferences, privileges and restrictions of the preferred stock without any further vote or action by Distributed Energy stockholders. The issuance of shares of preferred stock may delay or prevent a change in control transaction. As a result, the market price of Distributed Energy's common stock and the voting and other rights of its stockholders may be adversely affected. The issuance of shares of preferred stock may result in the loss of voting control to other stockholders.

Distributed Energy's certificate of incorporation and bylaws contain other provisions that could have an anti-takeover effect, including:

only one of the three classes of directors is elected each year;

stockholders have limited ability to remove directors;

stockholders cannot take actions by written consent;

stockholders cannot call a special meeting of stockholders; and

stockholders must give advance notice to nominate directors or submit proposals for consideration at stockholder meetings.

In addition, Distributed Energy is subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law, which regulates corporate acquisitions. These provisions could discourage potential acquisition proposals and could delay or prevent a change in control transaction. They could also have the effect of discouraging others from making tender offers for Distributed Energy's common stock. These provisions may also prevent changes in Distributed Energy's management.

***Distributed Energy's failure to comply with NASDAQ's listing standards could result in its delisting by NASDAQ from the NASDAQ National Market and severely limit the ability to sell Distributed Energy's common stock.***

Distributed Energy's common stock is traded on the NASDAQ National Market. Under NASDAQ's listing maintenance standards, if the closing bid price of Distributed Energy common stock is under \$1.00 per share for 30 consecutive trading days, NASDAQ will notify Distributed

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Energy that it may be delisted from the NASDAQ National Market. If the closing bid price of Distributed Energy common stock does not thereafter regain compliance for a minimum of 10 consecutive trading days during the 90 days following notification by NASDAQ, NASDAQ may delist Distributed Energy's common stock from trading on the NASDAQ National Market. There can be no assurance that Distributed Energy's common stock will remain eligible for trading on the NASDAQ National Market. In addition, if Distributed Energy's common stock is delisted, Distributed Energy's stockholders would not be able to sell Distributed Energy common stock on the NASDAQ National Market, and their ability to sell any of Distributed Energy's common stock would be severely if not completely limited.

**Table of Contents****ITEM 7A. Quantitative and Qualitative Disclosures About Market Risk**

See also the risk factors as discussed in Item 7. We invest in marketable securities consisting of U.S. government and agency securities that are held by two major banking institutions. Distributed Energy's marketable securities portfolio of approximately \$53.1 million includes five callable agency securities with a fair market value totaling approximately \$26.5 million. These securities generate a higher relative rate of interest for Distributed Energy; in return, the embedded call option gives the issuer the right to buy back the security. Interest rate risk is the major price risk facing our investment portfolio. Such exposure can subject us to economic losses due to changes in the level or volatility of interest rates. Generally, as interest rates rise, prices for fixed income instruments will fall. As rates decline the inverse is true. We attempt to mitigate this risk by investing in high quality issues of short duration. We do not expect any material loss from our marketable securities investments and believe that our potential interest rate exposure is not material.

The following table provides information about the Distributed Energy's financial instruments that are sensitive to changes in interest rates:

	<b>Fair Value of Investments</b>		
	<b>At Expected Maturity Date</b>		
	<b>2005</b>	<b>2006</b>	<b>Total</b>
<b>Investments</b>			
Fixed rate investments	\$ 42,094,506	\$ 11,050,600	\$ 53,145,106
Average interest	1.71%	2.24%	1.82%

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**ITEM 8. Financial Statements and Supplementary Data**

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**Report of Independent Registered Public Accounting Firm**

To the Board of Directors and

Stockholders of Distributed Energy Systems Corp.:

We have completed an integrated audit of Distributed Energy Systems Corp.'s 2004 consolidated financial statements and of its internal control over financial reporting as of December 31, 2004 and audits of its 2003 and 2002 consolidated financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Our opinions, based on our audits, are presented below.

**Consolidated financial statements and financial statement schedule**

In our opinion, the consolidated financial statements listed in the index appearing under Item 15(a)(1) present fairly, in all material respects, the financial position of Distributed Energy Systems Corp. and its subsidiaries at December 31, 2004 and 2003, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2004 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the index appearing under Item 15(a)(2) presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. These financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and financial statement schedule based on our audits. We conducted our audits of these statements 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 of financial statements 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, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

**Internal control over financial reporting**

Also, in our opinion, management's assessment, included in Management's Report on Internal Control Over Financial Reporting appearing under Item 9A, that the Company maintained effective internal control over financial reporting as of December 31, 2004 based on criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), is fairly stated, in all material respects, based on those criteria. Furthermore, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2004, based on criteria established in Internal Control - Integrated Framework issued by the COSO. The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting. Our responsibility is to express opinions on management's assessment and on the effectiveness of the Company's internal control over financial reporting based on our audit. We conducted our audit of internal control over financial reporting 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 effective internal control over financial reporting was maintained in all material respects. An audit of internal control over financial reporting includes obtaining an understanding of internal control over financial reporting, evaluating management's assessment, testing and evaluating the design and operating effectiveness of internal control, and performing such other procedures as we consider necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinions.





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A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) 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 its 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.

*/s/ PricewaterhouseCoopers LLP*

Hartford, Connecticut  
March 15, 2005

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## DISTRIBUTED ENERGY SYSTEMS CORP.

## CONSOLIDATED BALANCE SHEETS

	<u>December 31,</u> <u>2004</u>	<u>December 31,</u> <u>2003</u>
<b><u>ASSETS</u></b>		
Current assets:		
Cash and cash equivalents	\$ 5,989,896	\$ 4,275,468
Marketable securities (Note 3)	53,145,106	69,572,423
Current portion of restricted cash (Note 2)	1,062,549	5,387,457
Accounts receivable, less allowances of \$184,948 and \$163,973, respectively	5,289,880	3,352,183
Costs in excess of billings on contracts in progress	719,103	421,355
Inventories (Note 4)	4,115,269	2,519,720
Deferred costs (Note 7)	3,731,140	3,321,550
Interest receivable	265,170	754,643
Other current assets	891,756	834,775
	<u>75,209,869</u>	<u>90,439,574</u>
Total current assets		
Fixed assets, net (Note 5)	20,244,045	21,726,948
Long-term portion of restricted cash (Note 2)	419,250	1,370,777
Intangible assets, net (Notes 2, 8 and 10)	3,782,115	5,515,996
Goodwill (Notes 2, 8 and 10)	24,755,962	24,755,962
Other assets, net	159,488	222,227
	<u>24,400,860</u>	<u>23,591,910</u>
Total assets	<u>\$ 124,570,729</u>	<u>\$ 144,031,484</u>
<b><u>LIABILITIES AND STOCKHOLDERS' EQUITY</u></b>		
Current liabilities:		
Current portion of long-term debt (Note 11)	\$ 366,600	\$ 350,400
Current portion of capital lease (Notes 5 and 11)	107,686	89,794
Accounts payable	3,742,794	2,901,720
Accrued expenses (Notes 6 and 14)	1,179,140	4,153,747
Accrued compensation	2,036,906	1,130,009
Accrued taxes (Note 14)	558,642	1,043,619
Billings in excess of costs on contracts in progress	3,590,580	158,606
Deferred revenue (Note 7)	4,301,545	3,557,124
Customer advances	423,629	251,031
	<u>16,307,522</u>	<u>13,636,050</u>
Total current liabilities		
Long term liabilities:		
Deferred tax liability (Notes 8 and 15)	564,775	564,775
Long-term debt (Note 11)	5,723,632	6,090,232
Long-term portion of capital lease (Notes 5 and 11)	2,541,183	2,627,525
	<u>8,829,590</u>	<u>9,282,532</u>
Total liabilities	<u>25,137,112</u>	<u>22,918,582</u>
Commitments and contingencies (Note 14)		

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Stockholders' equity (Note 12):

Preferred stock, undesignated, \$.01 par value per share; 5,000,000 shares authorized; no shares issued or outstanding		
Common stock, \$.01 par value; 65,000,000 shares authorized; 35,609,794 and 35,356,848 shares issued and outstanding, respectively	356,098	353,568
Additional paid-in capital	220,129,697	220,207,640
Unearned compensation	(1,023,738)	(2,277,860)
Accumulated other comprehensive income (Note 3)	(358,087)	62,408
Accumulated deficit	(119,670,353)	(97,232,854)
	<u>                    </u>	<u>                    </u>
Total stockholders' equity	99,433,617	121,112,902
	<u>                    </u>	<u>                    </u>
Total liabilities and stockholders' equity	\$ 124,570,729	\$ 144,031,484
	<u>                    </u>	<u>                    </u>

The accompanying notes are an integral part of the consolidated financial statements.

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## DISTRIBUTED ENERGY SYSTEMS CORP.

## CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2004	2003	2002
Contract revenue	\$ 19,408,230	\$ 2,965,466	\$ 3,444,546
Product revenue	3,051,689	1,228,682	1,269,500
<b>Total revenues</b>	<b>22,459,919</b>	<b>4,194,148</b>	<b>4,714,046</b>
Costs and expenses:			
Costs of contract revenue	17,201,528	3,301,170	2,355,091
Costs of production	4,293,119	2,223,037	5,019,428
Research and development	6,253,459	7,716,326	8,792,735
Selling, general and administrative	17,953,439	10,024,223	7,852,938
<b>Total costs and expenses</b>	<b>45,701,545</b>	<b>23,264,756</b>	<b>24,020,192</b>
Loss from operations	(23,241,626)	(19,070,608)	(19,306,146)
Interest income	1,143,047	2,535,360	5,894,331
Interest expense	(334,768)	(242,756)	(91,785)
Loss on foreign exchange	(4,152)	(1,159)	
Gain on sale of marketable securities		11,458	23,759
<b>Net loss</b>	<b>\$ (22,437,499)</b>	<b>\$ (16,767,705)</b>	<b>\$ (13,479,841)</b>
Basic and diluted net loss per share	\$ (0.63)	\$ (0.50)	\$ (0.40)
Shares used in computing basic and diluted net loss per share	35,464,988	33,829,983	33,346,794

The accompanying notes are an integral part of the consolidated financial statements.

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## DISTRIBUTED ENERGY SYSTEMS CORP.

## CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS EQUITY AND COMPREHENSIVE LOSS

	Common Stock		Additional Paid-In Capital	Unearned Compensation	Accumulated Other Comprehensive Income	Accumulated Deficit	Total Stockholders Equity	Total Comprehensive Loss
	Shares	Amount						
Balance at December 31, 2001	33,228,495	332,285	242,034,880	(1,447,629)	2,092,949	(66,985,308)	176,027,177	
Issuance of common stock	32,571	326	74,183				74,509	
Issuance of common stock upon exercises of stock options	190,018	1,900	45,689				47,589	
Unearned compensation related to stock option grants			(129,051)	129,051				
Amortization of unearned compensation				658,412			658,412	
Change in unrealized gain on marketable securities (Note 3)					(1,040,940)		(1,040,940)	(1,040,940)
Net loss						(13,479,841)	(13,479,841)	(13,479,841)
<b>Total comprehensive loss</b>								<b>(14,520,781)</b>
Balance at December 31, 2002	33,451,084	334,511	242,025,701	(660,166)	1,052,009	(80,465,149)	162,286,906	
Issuance of common stock	33,436	334	69,717				70,051	
Issuance of common stock upon exercises of stock options	468,324	4,683	115,527				120,210	
Issuance of common stock for merger consideration	1,404,004	14,040	3,903,131				3,917,171	
Issuance of stock options for merger consideration			4,308,063	(2,280,004)			2,028,059	
Issuance of warrants for merger consideration			3,751,878				3,751,878	
Amortization of unearned compensation			(117,247)	662,310			545,063	
Issuance of stock option awards			78,167				78,167	
Return of capital			(33,927,297)				(33,927,297)	
Change in unrealized gain on marketable securities (Note 3)					(989,601)		(989,601)	(989,601)
Net loss						(16,767,705)	(16,767,705)	(16,767,705)
<b>Total comprehensive loss</b>								<b>\$ (17,757,306)</b>
Balance at December 31, 2003	35,356,848	\$ 353,568	\$ 220,207,640	\$ (2,277,860)	\$ 62,408	\$ (97,232,854)	\$ 121,112,902	
Issuance of common stock	63,137	631	114,868				115,500	
Issuance of common stock upon exercises of stock options	183,775	1,838	86,616				88,454	
Issuance of common stock upon exercises of warrants	6,034	60	(60)					
			(283,543)	1,254,122			970,579	

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Amortization of unearned compensation								
Issuance of stock option awards			4,176				4,176	
Change in unrealized gain on marketable securities (Note 3)				(420,494)			(420,494)	(420,494)
Net loss					(22,437,499)		(22,437,499)	(22,437,499)
<b>Total comprehensive loss</b>								<b>\$ (22,857,993)</b>
Balance at December 31, 2004	35,609,794	\$ 356,098	\$ 220,129,697	\$ (1,023,738)	\$ (358,087)	\$ (119,670,353)	\$ 99,433,617	

The accompanying notes are an integral part of the consolidated financial statements.

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## DISTRIBUTED ENERGY SYSTEMS CORP.

## CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2004	2003	2002
<b>Cash flows from operating activities:</b>			
Net loss	\$ (22,437,499)	\$ (16,767,705)	\$ (13,479,841)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	3,820,628	1,729,905	987,340
Provision for bad debts	53,929	70,800	
Amortization of premiums on marketable securities	466,556	1,329,589	1,329,041
Non-cash stock-based expense	974,754	623,230	658,412
Impairment of assets (Note 2)	184,642		
Loss on disposal of assets		21,555	187,467
Gain from sale of marketable securities		(11,458)	(23,759)
Changes in operating assets and liabilities, excluding effect of acquisition:			
Accounts receivable	(1,991,626)	711	136,680
Inventories and deferred costs	(1,929,421)	711,618	(2,751,470)
Costs in excess of billings	(297,748)	(309,147)	
Interest receivable and other current assets	432,492	763,744	278,402
Other assets	35,709	(12,740)	(16,950)
Accounts payable and accrued expenses	(1,226,636)	(2,573,892)	1,328,689
Accrued taxes payable	(484,977)	(11,903)	72,097
Billings in excess of costs	3,431,974	(662)	
Deferred revenue and contract advances	917,019	565,599	1,362,872
<b>Net cash used in operating activities</b>	<b>(18,050,204)</b>	<b>(13,870,756)</b>	<b>(9,931,020)</b>
<b>Cash flows from investing activities:</b>			
Purchases of fixed assets	(837,174)	(1,753,584)	(10,564,827)
Proceeds from the sale of fixed assets		10,558	15,058
Purchases of marketable securities	(78,273,734)	(261,441,061)	(104,965,136)
Proceeds from maturities and sales of marketable securities	93,814,000	323,504,940	134,057,881
Cash paid for acquisition, including transaction costs, net of cash acquired		(18,662,166)	
Restricted cash	5,276,435	(5,855,364)	
Proceeds from repayment of related party note			244,276
<b>Net cash provided by investing activities</b>	<b>19,979,527</b>	<b>35,803,323</b>	<b>18,787,252</b>
<b>Cash flows from financing activities:</b>			
Borrowings from long-term debt	20,757		5,610,032
Debt principal payments	(439,607)	(335,400)	
Payment of long-term debt origination costs			(9,924)
Proceeds from sale of common stock, net	115,500	70,051	74,509
Proceeds from exercise of stock options	88,455	120,210	47,589
Return of capital		(33,927,297)	
<b>Net cash (used in) provided by financing activities</b>	<b>(214,895)</b>	<b>(34,072,436)</b>	<b>5,722,206</b>



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Net (decrease) increase in cash	1,714,428	(12,139,869)	14,578,438
Cash and cash equivalents at beginning of year	4,275,468	16,415,337	1,836,899
Cash and cash equivalents at end of year	\$ 5,989,896	\$ 4,275,468	\$ 16,415,337
Cash paid during the year for interest	\$ 312,985	\$ 242,210	\$ 171,466

**Supplemental schedule of non-cash investing and financing activities**

In December 2003, the Company purchased all of the capital stock of Northern for a combination of cash, Distributed Energy stock, options and warrants, as described in Note 8 to the consolidated financial statements. In conjunction with the acquisition, liabilities were assumed as follows:

Fair value of assets acquired	\$ 41,248,253
Cash paid, including transaction costs	(20,294,803)
Fair value of common stock	(3,917,171)
Fair value of options	(4,308,063)
Fair value of warrants	(3,751,878)
Liabilities assumed	8,976,338

The accompanying notes are an integral part of the consolidated financial statements.

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**DISTRIBUTED ENERGY SYSTEMS CORP.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**1. FORMATION AND OPERATIONS OF THE COMPANY**

Distributed Energy Systems Corp. (the Company or Distributed Energy) was incorporated in Delaware on May 19, 2003 to create and deliver products and solutions to the new energy marketplace, giving users greater control over their energy cost, quality, and reliability. Distributed Energy brings together two established businesses: Proton Energy Systems, Inc. (Proton) and Northern Power Systems, Inc. (Northern). Together, as subsidiaries of Distributed Energy, Proton and Northern offer an array of practical energy technologies, including Proton's advanced hydrogen generation products and Northern's renewable and fossil-fuel power systems.

On December 10, 2003, Distributed Energy announced the completion of its acquisition of Northern (the Acquisition). The acquisition was accounted for as a purchase of Northern by Distributed Energy; Proton was merged into Distributed Energy as a subsidiary. As part of the acquisition, each outstanding share of Proton was exchanged for a share of Distributed Energy common stock. At the close of market on December 10, 2003, the NASDAQ National Market ceased trading of Proton shares. Effective December 11, 2003, NASDAQ began trading shares of Distributed Energy on the National Market under the ticker symbol DESC. The results of operations of Northern have been included in the financial statements of the Company as of December 11, 2003.

**2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

Significant accounting policies followed in the preparation of these financial statements are as follows:

*Principles of Consolidation*

The consolidated financial statements include the accounts of Distributed Energy and its wholly owned subsidiaries, Proton and Northern after elimination of significant intercompany transactions. The financial statements of Proton include the accounts of its wholly owned limited liability company, Technology Drive LLC, after elimination of significant intercompany transactions. The financial statements of Northern include the accounts of its wholly owned limited liability company, NPS Condo Association, after elimination of significant intercompany transactions.

*Use of Estimates in the Preparation of Financial Statements*

The preparation of financial statements in conformity with generally accepted accounting principles in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the dates of the financial statements and the reported amounts of revenue and expenses during the reporting periods. On an ongoing basis, Distributed Energy evaluates its estimates and judgments, including those related to revenue recognition, the costs to complete

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contracts and valuation allowances (specifically inventory lower-of-cost-or-market and other allowances); accounting for patent legal defense costs; the valuation of goodwill, other intangible assets and tangible long-lived assets, estimates used in accounting for acquisitions; assumptions used in valuing stock-based compensation instruments, evaluation of loss contingencies; and valuation allowances for deferred tax assets. Actual amounts could differ significantly from these estimates. Distributed Energy bases its estimates and judgments on historical experience and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities and the amounts of revenue and expenses that are not readily apparent from other sources.

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### *Revenue Recognition*

The Company generates revenue from two principal sources: product sales and long-term contracts.

#### **Product Revenue:**

For product sales for which adequate product warranty information exists, the Company records revenue when a firm sales agreement is in place, delivery has occurred, sales price is fixed or determinable, and collectibility is reasonably assured. If customer acceptance of products is not assured, revenue is recorded only upon formal customer acceptance. Customer acceptance provisions included in the Company's product sales agreements include written acceptance from the customer, and acceptance upon servicing and installation of the equipment. For all product sales where adequate product warranty experience does not yet exist, the Company defers revenue and related costs until the expiration of the product warranty period.

During the fourth quarter of 2001, the Company determined that sufficient warranty history existed to begin recognizing revenue upon delivery of its HOGEN 40 units. Accordingly, during the first three quarters of 2002, the Company recognized revenue and the related cost of sales upon delivery of its HOGEN 40 units. In the fourth quarter of 2002, the Company discovered performance issues related to the operation of cell stacks and associated sensor in its HOGEN 40 series units. Due to the significant uncertainty surrounding the reliability of the HOGEN 40 series units, the Company determined that it would no longer be appropriate to record revenue on the HOGEN 40 series units upon shipment. The Company has modified the cell stack design and addressed the performance issues. Due to these factors, beginning in the fourth quarter of 2002, the Company has deferred revenue and costs on its HOGEN 40 units until the expiration of the product warranty period.

The Company will continue to defer revenue and costs on H series and HOGEN 40 series delivered products until the related warranty costs are estimable at the time of delivery. The Company only defers production costs on its delivered products to the extent that such production costs are not in excess of the sales price and realization is reasonably assured.

The Company also deferred revenue and costs on its HOGEN 380 series products until the expiration of the product warranty period. In the second quarter of 2004 the Company curtailed the production of its HOGEN 380 series hydrogen generators. The HOGEN 380 series has been partially replaced by the HOGEN H series. At December 31, 2004 no HOGEN 380 series units remained under warranty.

In the fourth quarter of 2003, the Company determined that it had adequate product warranty information and experience to begin recognizing product revenue related to sales of its laboratory hydrogen generators upon shipment. As a result the Company recognized into revenue previously deferred revenue of \$378,000. In the first quarter of 2004, the Company began selling its laboratory hydrogen generators with two-year warranties. Accordingly, revenues and costs on such units are being deferred until the Company can estimate expected costs of a two-year warranty.

The Company also earns revenue from the rental of its HOGEN products. The Company accounts for the agreements as operating leases under the provisions of Statement of Financial Accounting Standards (SFAS) No. 13, Accounting for Leases. The agreements are cancelable at any time by either party without penalty. Rental revenue is recognized monthly over the term of the rental agreement. Rental revenue and cost of rental revenue are contained in the product revenue line and cost of production line of the statement of operations, respectively. Rental revenue for the twelve months ended December 31, 2004 and 2003 was approximately \$128,000 and \$53,000, respectively, costs of these related rentals

was approximately \$117,000 and \$51,000, respectively.

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### **Contract Revenue:**

The Company derives contract revenues from government sponsored research and development contracts and from commercial customers. For government sponsored research and development contracts which are fixed price, fixed-price-incentive, or cost-reimbursement contracts which do not require the Company to meet specific obligations, revenue is recorded as work is performed. For those research and development contracts which require the Company to meet specified obligations, including delivery and acceptance obligations, amounts advanced are recognized as contract liabilities until such obligations are met. Once the obligations are met, the amounts are recognized as contract revenue.

The Company principally generates commercial contract revenue from projects in its remote infrastructure, on-site generation, and renewable energy field product lines. For projects which do not require the Company to meet specific delivery and acceptance obligations or whose duration is expected to be greater than three months, revenue is recognized utilizing the percentage-of-completion method, which is based on the relationship of costs incurred to total estimated contract costs. For all other commercial contracts, the Company recognizes revenue under the completed contract method.

Adjustments to cost estimates are made periodically and losses expected to be incurred on contracts in progress are charged to operations in the period such losses are determined. The aggregate of costs incurred and income recognized on uncompleted contracts accounted for under percentage of completion method in excess of related billings and deferred costs on contracts accounted for under the completed contract method of accounting are shown as current assets. The aggregate of billings on uncompleted contracts accounted for under percentage of completion method in excess of related costs incurred and income recognized and deferred revenue are shown as current liabilities. At December 31, 2004 and 2003 deferred costs related to contracts being accounted for under the completed contract method were \$626,113 and \$889,120, respectively. At December 31, 2004 and 2003 deferred revenue related to contracts being accounted for under the completed contract method was \$721,224 and \$642,130.

### *Shipping and Handling Costs*

All costs incurred in the shipping and handling of customers' goods are included in cost of production and cost of contract revenue.

### *Cash and Cash Equivalents*

The Company considers all highly liquid investments purchased with original maturity dates of three months or less as of the purchase date to be cash equivalents. The Company invests excess cash primarily in a money market account at a major banking institution, which is subject to credit and market risk.

### *Restricted Cash*

As part of the Acquisition, approximately \$2.9 million of the purchase price was set aside by Distributed Energy in an escrow account, two-thirds of which was paid one year from the acquisition date (December 10, 2004) and the remainder is payable December 10, 2005.

At December 31, 2004 and 2003 Proton has approximately \$900,000 and \$3.0 million, respectively, of performance bonds issued by financial institutions on behalf of Northern. Northern, in connection with its debt facility and in support of certain of its commercial contracts, also maintains approximately \$150,000 and \$484,000, respectively, of restricted cash at December 31, 2004. These amounts are included within restricted cash as part of current assets.

In connection with the construction of its Wallingford facility, Proton entered into a sales and use tax exemption program with the Connecticut Development Authority. As part of that program, Proton was required to place cash in escrow. This restricted cash of \$419,250 is included within restricted cash as part of long-term assets.

**Table of Contents***Marketable Securities*

The Company classifies its entire investment portfolio as available for sale as defined in SFAS No. 115, Accounting for Certain Investments in Debt and Equity Securities. At December 31, 2004 and 2003 the Company's investment portfolio consisted of U.S. government and agency securities that are held by two major banking institutions.

Securities are carried at fair value with the unrealized appreciation (loss) reported as a separate component of stockholders' equity under the caption total comprehensive income (loss). The specific identification method was used to determine cost in computing the unrealized gain or loss. If the Company determines that such losses are other than temporary, they will be charged to earnings.

*Fair Value of Financial Instruments*

The Company's financial instruments, including cash, cash equivalents, accounts receivable, and accounts payable are carried at cost, which approximates their fair value because of the short-term maturity of these instruments. The carrying amounts of the Company's loan payable and capital lease obligation approximate the fair value of such instruments based upon management's best estimate of interest rates that would be available to the Company for similar debt obligations.

*Comprehensive Income (Loss)*

Comprehensive income (loss) is defined as changes in equity other than transactions resulting from investments by owners and distributions to owners.

Detail on unrealized gains and losses and amounts of gains and losses reclassified out of accumulated other comprehensive loss are as follows:

	<u>2004</u>	<u>2003</u>	<u>2002</u>
Net loss	\$ (22,437,499)	\$ (16,767,705)	\$ (13,479,841)
Reclassification adjustments for gains included in net loss		(11,458)	(23,759)
Unrealized gain (loss) arising during the year	(420,494)	(978,143)	(1,017,181)
<b>Total comprehensive loss</b>	<b>\$ (22,857,993)</b>	<b>\$ (17,757,306)</b>	<b>\$ (14,520,781)</b>

*Allowance for Doubtful Accounts*



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The Company evaluates credit risk on its accounts receivable and estimates an allowance for doubtful accounts accordingly. The Company evaluates the adequacy of the allowance for doubtful accounts on a periodic basis. The evaluation includes historical loss experience, adverse situations that may affect a customer's ability to repay, and prevailing economic conditions. The Company makes adjustments to its allowance if the evaluation of allowance requirements differs from the actual aggregate reserve. This evaluation is inherently subjective and estimates may be revised as more information becomes available.

**Table of Contents***Inventory*

Inventory is recorded at the lower of cost or market value. Cost is determined by the first-in, first-out method. The Company evaluates the adequacy of its inventory reserves on a periodic basis. The evaluation includes a review of quantities of materials on hand in excess of requirements based upon current and estimated future product offerings. This evaluation is inherently subjective and estimates may be revised as more information becomes available.

*Fixed Assets*

Fixed assets are stated at cost and are depreciated using the straight-line method over the following estimated useful lives by asset category:

<u>Asset Category</u>	<u>Estimated Useful Life</u>
Buildings	30 years
Capital lease asset	30 years
Machinery and equipment	7 years
Leasehold improvements	Shorter of remaining life of lease or 7 years
Office furniture, fixtures and equipment	3-7 years
Rental Equipment	3 years

When assets are sold or retired, the related cost and accumulated depreciation are removed from their respective accounts and any resulting gain or loss is included in income. The Company periodically reviews the carrying value of its fixed assets to assess recoverability based upon the expectation of non-discounted future cash flows. Prior to the Acquisition, Northern capitalized \$47,000 of interest related to the construction of the Company's new Vermont facility; this facility is the only capital lease asset. The Company capitalized \$101,810 of interest for the year ended December 31, 2002, related to the construction of the Company's Wallingford, Connecticut facility. No interest was capitalized in 2004 or 2003.

*Long-lived Assets*

The Company evaluates potential impairment of long-lived assets and long-lived assets to be disposed of in accordance with Statement of Financial Accounting Standards (SFAS) No. 144, Accounting for the Impairment or Disposal of Long-Lived Assets. SFAS No. 144 establishes procedures for the review of recoverability and measurement of impairment, if necessary, of long-lived assets held and used by an entity. SFAS No. 144 requires that those assets be reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be fully recoverable. SFAS No. 144 requires that impaired long-lived assets be written down to their fair value. During the second quarter of 2004, the Company decided to curtail production of its HOGEN 380 series hydrogen generators. As a result, the Company, within the Proton segment, reduced the carrying value of two assets, a plating line and a field service test unit, to an estimated nominal fair value. The fair value was determined based on anticipated sales proceeds. The Company recognized an impairment loss of approximately \$185,000 in 2004, which is included in general and administrative expenses in the accompanying consolidated statements of operations.

*Goodwill and Intangible Assets*

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As part of the Acquisition, the Company recorded approximately \$24.8 million of goodwill and \$5.7 million in intangible assets. Goodwill represents costs in excess of fair values assigned to the underlying net assets of the acquired business. Intangible assets include acquired technologies, backlog, trade name, and non-compete agreements. Of the \$5.7 million in intangible assets, \$4.2 million are intangible assets with a useful life ranging from 1-7 years and \$1.5 million are intangible assets with indefinite lives. The intangible assets balance, net of amortization, is \$3.8 and \$5.5 million at December 31, 2004 and 2003, respectively.

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The Company has adopted the provisions of Statement of Financial Accounting Standards ( SFAS ) No. 141, Business Combinations and SFAS No. 142, Goodwill and Other Intangible Assets. These standards require the use of the purchase method of accounting for business combinations, set forth the accounting for the initial recognition of acquired intangible assets and goodwill, and describe the accounting for intangible assets and goodwill subsequent to initial recognition. Under the provisions of these standards, goodwill and certain intangible assets are deemed to have indefinite lives and are no longer subject to amortization. All other intangible assets are amortized over their estimated useful lives. SFAS 142 requires that goodwill be tested for impairment at the reporting unit level (operating segment or one level below an operating segment) on an annual basis or more frequently in certain circumstances. The performance of the test involves a two-step process. The first step of the impairment test involves comparing the fair value of the Company's reporting units with the reporting unit's carrying amount, including goodwill. The Company generally determines the fair value of its reporting units using the expected present value of future cash flows, giving consideration to the market comparable approach. If the carrying amount of the Company's reporting units exceeds the reporting unit's fair value, the Company performs the second step of the goodwill impairment test to determine the amount of impairment loss. The second step of the goodwill impairment test involves comparing the implied fair value of the Company's reporting unit's goodwill with the carrying amount of that goodwill. Intangible assets to be held and used are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Determination of recoverability is based on an estimate of undiscounted future cash flows resulting from the use of the asset and its eventual disposition. Measurement of any impairment loss for intangible assets that management expects to hold and use is based on the amount the carrying value exceeds the fair value of the asset.

The Company has assessed the useful lives of its existing intangible assets, other than goodwill, and believes that estimated useful lives remain appropriate. In addition, the Company has determined that Northern operates as one reporting unit. As a result, the fair value of Northern at December 31, 2004 was determined using the Discounted Cash Flow Method. As the fair value of Northern was in excess of the carrying value of Northern, the Company concluded that its goodwill was not impaired.

### *Research and Development*

Research and development costs are expensed as incurred.

### *Warranty Costs*

The Company's warranty policy is limited to replacement parts and services and generally expires one year from date of shipment or contract completion, except with respect to laboratory hydrogen generators, where the warranty period is two years. Estimated warranty obligations are recorded in the period in which the related revenue is recognized. The Company quantifies and records an estimate for warranty related costs based on the Company's actual historical warranty experience and the current repair costs. Adjustments are made to accruals as warranty claim data and historical experience warrant. Should the Company experience actual repair costs that are higher than the estimated repair costs used to calculate the provision, the Company's operating results for the period or periods in which such additional costs materialize will be adversely impacted.

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The changes in accrued product and service warranties for the years ended December 31, 2003 and 2004 are as follows:

Balance as of January 1, 2003	\$ 85,935
Warranties assumed in Acquisition	254,681
Warranties issued in 2003	56,418
Adjustments to provision	(14,179)
Warranty claims	(56,565)
	<hr/>
Balance as of December 31, 2003	\$ 326,290
	<hr/>
Balance as of January 1, 2004	\$ 326,290
Warranties issued in 2004	415,626
Adjustments to provision	57,390
Warranty claims	(526,279)
	<hr/>
Balance as of December 31, 2004	\$ 273,027
	<hr/>

*Income Taxes*

The Company uses the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between the carrying amounts and the tax basis of assets and liabilities. A valuation allowance is established against net deferred tax assets if, based on the weight of available evidence, it is more likely than not that some or all of the net deferred tax assets will not be realized.

*Concentration of Risks*

Concentration of credit risk exists with respect to cash and cash equivalents, accounts receivable, investments and vendors. The Company maintains its cash and cash equivalents and investments with high quality financial institutions. At times, amounts may exceed federally insured deposit limits. In addition, certain critical product components are only available from one source for which the source maintains proprietary rights.

For the years ended December 31, 2004 and 2003, contract revenue from government-sponsored agencies accounted for approximately 23% and 29% of total revenue, respectively. For the years ended December 31, 2004 and 2003, sales to one international customer totaled approximately 11% and 18% of total revenue, respectively. At December 31, 2004 and 2003, accounts receivable from government-sponsored agencies accounted for approximately 23% and 18% of total accounts receivable, respectively. At December 31, 2004, accounts receivable from one customer accounted for approximately 15% of total accounts receivable. At December 31, 2003, accounts receivable from two customers accounted for approximately 29% and 12%, respectively, of total accounts receivable.

At December 31, 2004 and 2003, unbilled accounts receivable from government-sponsored agencies was \$0 and \$13,934, respectively. All of these receivables are considered trade receivables, include no retainage amounts, had no uncertainty surrounding ultimate realization, and were all expected to be paid within one year. For the years ended December 31, 2004 and 2003, one customer comprised 10% and 68% of product

revenue, respectively.

*Loss per Share*

Basic EPS is calculated by dividing income or loss attributable to common stockholders by the weighted average common shares outstanding. Diluted EPS is calculated by adjusting weighted average common

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shares outstanding by assuming conversion of all potentially dilutive shares. In periods of net loss as recorded, no effect is given to potentially dilutive securities, since the effect would be antidilutive. No effect has been given to the assumed exercise of 1,790,646, 389,079, and 781,562 common stock options outstanding for the years ended December 31, 2004, 2003, and 2002, respectively, and 50,000 stock warrants outstanding in each period since the effect would be antidilutive for all reporting periods.

*Segment Reporting*

The Company, subsequent to the December 10, 2003 Acquisition, operates in two reportable segments, Proton Energy Systems, Inc., and Northern Power Systems, Inc., as defined in Note 17, determined in accordance with SFAS No. 131, Disclosure about Segments of an Enterprise and Related Information. The consolidated results of operations for 2003 include the full year of Proton's operations and the period from December 11, 2003 through December 31, 2003 for Northern and Distributed Energy, the holding company.

*Stock-Based Compensation*

Statement of Financial Accounting Standards (SFAS) No. 123, Accounting for Stock-Based Compensation, as amended by SFAS No. 148, Accounting for Stock-Based Compensation Transition and Disclosure, prescribes accounting and reporting standards for all stock-based compensation plans, including employee stock option plans. As permitted by SFAS No. 123, the Company has elected to continue to account for stock-based compensation issued to employees using the intrinsic value method in accordance with Accounting Principles Board (APB) Opinion No. 25, Accounting for Stock Issued to Employees, and related Interpretations. Under APB 25, compensation expense is computed to the extent that the fair market value of the underlying stock on the date of grant exceeds the exercise price of the employee stock option or stock award. Compensation so computed is then recognized over the vesting period.

The Company accounts for stock-based compensation issued to non-employees in accordance with SFAS 123 and the consensus in Emerging Issues Task Force ( EITF ) 96-18. These pronouncements require the fair value of equity instruments given as consideration for services rendered to be recognized as a non-cash charge to income over the shorter of the vesting or service period. The equity instruments must be revalued on each subsequent reporting date until performance is complete with a cumulative catch-up adjustment recognized for any changes in their fair value.

In the event the Company is required to record compensation expense that is currently only being disclosed under SFAS 123, an adjustment to increase net loss in such period would result. The following table illustrates the effect on net loss and loss per share had compensation costs for the stock-based compensation plan been determined based on grant date fair values of awards under the provisions of SFAS No. 123, for the years ended December 31:

	<u>2004</u>	<u>2003</u>	<u>2002</u>
Net loss:			
As reported	\$ (22,437,499)	\$ (16,767,705)	\$ (13,479,841)
Add: Stock-based employee compensation expense included in net loss	974,845	542,868	684,057
Less: Total stock-based employee compensation expense determined under fair value-based method for all awards	(5,583,468)	(5,180,606)	(6,299,739)

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Pro forma	\$ (27,046,122)	\$ (21,405,443)	\$ (19,095,523)
	<u>                    </u>	<u>                    </u>	<u>                    </u>
Net loss per share, basic and diluted			
As reported	\$ (0.63)	\$ (0.50)	\$ (0.40)
	<u>                    </u>	<u>                    </u>	<u>                    </u>
Pro forma	\$ (0.76)	\$ (0.63)	\$ (0.57)
	<u>                    </u>	<u>                    </u>	<u>                    </u>



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### *Recent Accounting Pronouncements*

In December 2004, the FASB issued FASB SFAS No. 123 (revised 2004), Share-Based Payment, which is a revision of SFAS No. 123, Accounting for Stock-Based Compensation. SFAS No. 123(R) supersedes APB Opinion No. 25, Accounting for Stock Issued to Employees, and amends SFAS No. 95, Statement of Cash Flows. Generally, the approach in SFAS No. 123(R) is similar to the approach described in SFAS No. 123. However, SFAS No. 123(R) requires all share-based payments to employees, including grants of employee stock options, to be recognized in the income statement based on their fair values. Pro forma disclosure is no longer an alternative. The new standard will be effective for the Company in the quarter beginning July 1, 2005. The Company has not yet completed its evaluation but expects the adoption to have a material effect on its consolidated financial statements.

In November 2004, the FASB issued FASB SFAS No. 151, Inventory Costs – an amendment of ARB No. 43, Chapter 4. SFAS No. 151 is effective for inventory costs incurred during fiscal years beginning after June 15, 2005. This Statement amends the guidance in ARB No. 43, Chapter 4, Inventory Pricing, to clarify the accounting for abnormal amounts of idle facility expense, freight, handling costs, and wasted material (spoilage). Paragraph 5 of ARB 43, Chapter 4, previously stated – under some circumstances, items such as idle facility expense, excessive spoilage, double freight, and rehandling costs may be so abnormal as to require treatment as current period charges – This Statement requires that those items be recognized as current-period charges regardless of whether they meet the criterion of – so abnormal. In addition, this Statement requires that allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. The Company does not expect the adoption of this standard to have a material effect on its consolidated financial statements.

In January 2003, the Financial Accounting Standards Board ( FASB ) issued Interpretation No. 46 ( FIN 46 ), Consolidation of Variable Interest Entities, an interpretation of ARB 51. The primary objectives of this interpretation are to provide guidance on the identification of entities for which control is achieved through means other than through voting rights ( variable interest entities ) and how to determine when and which business enterprise (the primary beneficiary ) should consolidate the variable interest entity. This new model for consolidation applies to an entity in which either (i) the equity investors (if any) do not have a controlling financial interest; or (ii) the equity investment at risk is insufficient to finance that entity's activities without receiving additional subordinated financial support from other parties. In addition, FIN 46 requires that the primary beneficiary, as well as all other enterprises with a significant variable interest in a variable interest entity, make additional disclosures. Certain disclosure requirements of FIN 46 were effective for financial statements issued after January 31, 2003.

In December 2003, the FASB issued FIN 46 (revised December 2003), Consolidation of Variable Interest Entities ( FIN 46-R ) to address certain FIN 46 implementation issues. The effective dates and impact of FIN 46 and FIN 46-R as related to us are as follows:

Special purpose entities ( SPEs ) and Non-SPEs created prior to January 1, 2004. We must apply the provisions of FIN 46-R at the beginning of the first interim or annual reporting period beginning after December 15, 2004.

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All entities, regardless of whether a SPE, that were created subsequent to December 31, 2003. The provisions of FIN 46 were applicable for variable interests in entities obtained after December 31, 2003. We are required to adopt FIN 46-R at the end of the first interim or annual reporting period ending after March 15, 2004.

The adoption of the provisions applicable to SPEs and all other variable interests had no impact on our consolidated financial statements.

*Reclassifications*

Certain reclassifications have been made to the 2003 and 2002 consolidated financial statements to conform to the 2004 presentation.

**3. MARKETABLE SECURITIES**

The following tables summarize investments:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
<b>December 31, 2004</b>				
U.S. government securities	\$ 53,503,193	\$	\$ (358,087)	\$ 53,145,106
<b>December 31, 2003</b>				
U.S. government securities	\$ 69,510,015	\$ 106,666	\$ (44,258)	\$ 69,572,423

As of December 31, 2004 and 2003, the approximate fair values of marketable securities by maturity date are as follows:

	2004	2003
Less than one year	\$ 42,094,506	\$ 46,174,423
One to five years	11,050,600	23,398,000

\$ 53,145,106	\$ 69,572,423
---------------	---------------

Securities are carried at fair value with the unrealized gains (losses) reported as a separate component of stockholders' equity. Proceeds from the sale of securities in 2004, 2003, and 2002 totaled \$0, \$14,748,456, and \$1,028,675 respectively. The cost was determined using the specific identification method and the resulting realized gains were \$0, \$11,458, and \$23,759 respectively. At December 31, 2004, the Company had five callable agency securities with a fair market value totaling approximately \$26.5 million, these securities are classified based on their original maturity dates. Additionally, four investments approximating \$18.3 million were called at par in 2004. These securities generate a higher relative rate of interest for the Company, in return for the issuer's right to call, at par value, the security before its maturity date.

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As of December 31, 2004, none of the Company's investments were determined to be other than temporarily impaired.

**4. INVENTORIES**

Inventories are as follows:

	December 31,	
	2004	2003
Raw materials	\$ 2,047,443	\$ 1,556,435
Work in process	1,458,574	722,607
Finished goods	609,252	240,678
	<u>\$ 4,115,269</u>	<u>\$ 2,519,720</u>

The above inventory amounts are shown net of reserves for obsolescence and shrinkage of \$477,812 and \$333,748 at December 31, 2004 and 2003, respectively.

**5. FIXED ASSETS**

	December 31,	
	2004	2003
Land	\$ 2,248,971	\$ 2,248,971
Buildings	10,568,016	10,568,016
Machinery and equipment	3,848,990	3,450,958
Leasehold improvements	368,225	368,225
Assets under capital lease	4,490,065	4,463,501
Office furniture, fixtures and equipment	3,626,980	3,380,623
Rental equipment	296,180	353,268
Construction in process	209,596	387,536
	<u>25,657,023</u>	<u>25,221,098</u>
Less: accumulated depreciation	(5,412,978)	(3,494,150)
	<u>\$ 20,244,045</u>	<u>\$ 21,726,948</u>

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Depreciation expense was \$1,916,583, \$1,548,871, and \$961,276 for the years ended December 31 2004, 2003 and 2002, respectively. Amortization of assets under capital lease for the years ended December 31, 2004 and 2003 was \$143,134 and \$7,650, respectively. Accumulated amortization of assets under capital lease at December 31, 2004 and 2003 is \$150,784 and \$7,650, respectively. The carrying value of rental equipment at December 31, 2004 and 2003 is \$168,975 and \$302,583, respectively.

**Table of Contents****6. ACCRUED EXPENSES**

Accrued expenses consist of the following:

	<b>December 31,</b>	
	<b>2004</b>	<b>2003</b>
Accrued merger consideration	\$	\$ 2,854,582
Accrued warranty	273,027	326,290
Accrued purchases	557,717	533,278
Other accruals	348,396	439,597
	<b>\$ 1,179,140</b>	<b>\$ 4,153,747</b>

**7. DEFERRED COSTS AND REVENUE****Product Revenue**

In the fourth quarter of 2002, the Company discovered performance issues relating to the operation of cell stacks and associated sensors in its HOGEN 40 series units. The Company's investigation of these issues revealed the presence of previously unknown pinholes in cell membranes in the field that resulted in hydrogen leakage and cell failure. As a result the Company determined that recognizing revenue on delivery of its HOGEN 40 series units was no longer appropriate because of the significant uncertainty surrounding the reliability of the existing design of the PEM electrolyzer ( cell stack ) within its HOGEN 40 series generators. The Company has made modifications to the cell stack design to improve its performance and will defer product revenue until either the expiration of the warranty period or the Company determines it has compiled sufficient warranty history to estimate the warranty costs. As such, product revenue from HOGEN 40 series deliveries made from the fourth quarter of 2002 onward has been deferred until the expiration of the product warranty period.

In the fourth quarter of 2003, the Company determined that it had adequate product warranty information and experience to begin recognizing product revenue related to sales of its laboratory hydrogen generators upon shipment. As a result the Company recognized previously deferred revenue of \$378,000. In the first quarter of 2004, the Company began selling its laboratory hydrogen generators with two-year warranties. Accordingly, revenues and costs on such units are being deferred until the Company can estimate its two-year warranty costs.

The Company will continue to defer revenue on shipments of its H series, HOGEN 40, and laboratory generator, sold with a two year warranty, hydrogen products until such units are past the product warranty period or until the Company has adequate warranty history. The Company had deferred product revenue of \$3.6 million and \$2.9 million as of December 31, 2004 and 2003 respectively. The Company had deferred product costs of \$3.1 million and \$2.4 million as of December 31, 2004 and 2003 respectively.

Contract Revenue

The Company principally generates contract revenue from commercial contracts as well as government-sponsored research and development contracts. For projects which do not require the Company to meet specific delivery and acceptance obligations and whose duration is expected to be greater than 3 months, the Company recognizes revenue utilizing the percentage-of-completion method, which is based on the relationship of costs incurred to total estimated contract costs. For all other contracts, the Company recognizes revenue under the completed contract method. Adjustments to cost estimates are made periodically and losses expected to be incurred on contracts in progress are charged to operations in the period such losses are determined. The aggregate of costs incurred and income recognized on uncompleted contracts accounted for under percentage of completion method in excess of related billings and deferred costs on contracts accounted for under the completed contract method of accounting are shown as current assets. The aggregate of billings on uncompleted contracts accounted for under percentage of completion method in excess of related costs incurred and income recognized and deferred

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revenue are shown as current liabilities. At December 31, 2004 and 2003 deferred costs related to contracts being accounted for under the completed contract method were \$626,113 and \$889,120, respectively. At December 31, 2004 and 2003 deferred revenue related to contracts being accounted for under the completed contract method was \$721,224 and \$642,130.

The information on costs and billings on contracts in progress accounted for under the percentage-of-completion is as follows:

	December 31,	
	2004	2003
Costs incurred and estimated earnings on contracts in progress	\$ 16,825,598	\$ 13,340,014
Less: billings to date	19,697,075	13,077,265
Costs and earnings (less than) in excess of billings, net	\$ (2,871,477)	\$ 262,749

	December 31,	
	2004	2003
Costs in excess of billings on contracts in progress	\$ 719,103	\$ 421,355
Billings in excess of costs on contracts in progress	(3,590,580)	(158,606)
Costs and earnings (less than) in excess of billings, net	\$ (2,871,477)	\$ 262,749

**8. ACQUISITION**

On December 10, 2003, Distributed Energy acquired Northern in exchange for 0.68 of a share of Distributed Energy common stock for each outstanding share of Northern's common stock, an amount of cash ranging from \$3.74 to \$5.84 cash per share for each outstanding share of Northern's common or preferred stock based on the respective elections made by the stockholders, options to purchase 2.01 shares of Distributed Energy common stock for each Northern common stock option outstanding, and warrants to purchase 0.51 shares of Distributed Energy common stock per outstanding share of Northern common and preferred stock and per share of outstanding stock subject to options (except those series D preferred shareholders that elected cash consideration only). These financial statements give effect to the mergers using the purchase method of accounting, a fair value of Distributed Energy common stock of \$2.79, and based upon the:

election of 670,000 Northern series D preferred stockholders to receive all cash

election of 1,310,000 Northern series D preferred stockholders to receive cash and warrants; and

election by 20,000 Northern series D preferred stockholders to receive consideration commensurate with that received by common stockholders.



The transaction resulted in the issuance of approximately 1.4 million shares of Distributed Energy common stock, representing approximately 4% of the outstanding common stock of Distributed Energy after the completion of the acquisition. The merger is a tax-free merger and has been accounted for as a purchase business combination.

The purchase price was allocated to the estimated fair value of the Northern assets acquired and liabilities assumed based on the Northern balance sheet at December 10, 2003.

Under the merger agreement, holders of Northern common stock and preferred stock received aggregate consideration of approximately \$19.0 million in cash and \$3.9 million in Distributed Energy common

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stock. In addition, Northern's common and preferred stockholders and optionholders received warrants to purchase an aggregate of approximately 2.1 million shares of Distributed Energy common stock and Northern's optionholders received options to purchase an aggregate of 1.6 million shares of Distributed Energy common stock. In addition, each outstanding share of Proton was exchanged for a share of Distributed Energy common stock.

The following table sets forth the calculation of the purchase price, including direct transaction costs:

Fair value of common stock	\$ 3,917,171
Fair value of options	4,308,063
Fair value of warrants	3,751,878
Cash	19,030,588
Transaction costs	1,264,215
	<u>\$ 32,271,915</u>

Under the purchase method of accounting, the total purchase price was allocated to Northern's net tangible and intangible assets based on their fair value as of December 10, 2003. The purchase price allocation at December 10, 2003 was as follows:

Cash acquired	\$ 1,632,638
Property and equipment	5,001,165
Accounts receivable, net	2,549,115
Deferred costs	854,511
Restricted cash	483,620
Other assets	301,242
Amortizable and unamortizable intangible assets acquired:	
Completed technologies	2,780,000
Contract backlog	1,370,000
Northern trade name	1,450,000
Non-compete agreements	70,000
Goodwill	24,755,962
	<u>41,248,253</u>
Total assets acquired	41,248,253
Accounts payable	(4,101,202)
Accrued expenses	(2,228,315)
Deferred revenue	(485,463)
Debt	(2,717,319)
Deferred tax liability	(564,775)
Other liabilities	(1,159,268)
Deferred stock-based compensation	2,280,004
	<u>\$ 32,271,915</u>
Net assets acquired	<u>\$ 32,271,915</u>

The amortizable intangible assets consisting of completed technologies, contract backlog, and non-compete agreements have useful lives not exceeding seven years. Due to an assumed indefinite life, the \$1,450,000 acquired intangible asset Northern trade name will not be amortized

and will be tested for impairment at least annually. The weighted average life of the amortizable intangible assets acquired was approximately 57 months at December 10, 2003.

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Goodwill represents the excess of the purchase price over the fair value of the net tangible and intangible assets acquired less liabilities assumed. In accordance with current accounting standards, the goodwill is not being amortized and will be tested for impairment as required by SFAS No. 142. Goodwill and other identifiable intangible assets are not deductible for tax purposes. At acquisition, deferred tax liabilities of \$2,295,539 were established for the difference between the assigned values of the acquired assets and liabilities, except goodwill, and their respective tax basis. The tax effects of the temporary differences of tangible and amortizable intangible assets of \$1,730,764 have been offset by the recognition of deferred tax assets for the tax effects of the carry forward losses of Northern.

The completed technologies intangible asset set forth above, all valued utilizing the Income Approach - Avoided Cost Method (the value of the Completed Technology is the estimated after-tax cost that would be incurred in the construction of new technology assuming an effective tax rate of 40%), consists of the following:

*NW100 Technology:* Northern developed the 100kW direct drive turbine in conjunction with NASA, the National Science Foundation and the Department of Energy to serve the needs of remote and isolated distributed generation systems located in extreme environments. The technology has an estimated remaining useful life of seven years.

*Software Tools:* Northern has developed a series of software tools for its own internal use. These software tools aid in the development and delivery of many of Northern's products and services. Management estimated the tools have a remaining useful life of three years; this estimate did not include possible future enhancements.

*Fleet Monitoring Software:* Northern's software system provides fleet level monitoring, dispatch, and asset aggregation functions that are needed to support a population of on-site distributed generation systems in the field. In addition, the software also incorporates a local human-machine interface, or HMI, module that obviates the need to purchase commercial HMI packages to provide that part of a distributed generation system. The technology has an estimated remaining useful life of two years.

*Power Electronics:* Northern has developed advanced power electronics equipment capable of networking distributed generation equipment together into high reliability local power networks. The estimated remaining useful life of the power electronics technology is seven years.

*Contract backlog:* Northern's contract backlog consists of contracts for integration services related to Northern's Industrial Infrastructure, Distributed Generation, Renewable Energy, and Energy Technology Laboratory markets. The Income Approach - Discounted Cash Flow Method was used to value Contract Backlog. A 14% discount rate was utilized, based on Northern's weighted average cost of capital reduced 4% due to the assumption of the asset being less risky due to its contractual nature. The estimated average remaining economic life of the Contact Backlog is one year.

*Northern Trade Name:* Trade names are considered to be important intangibles associated with the sales appeal and marketing of certain products and services. The Income Approach - Relief from Royalty Method - was used to value the Trade Name. The fair value of the Trade Name is represented by the present value of the stream of future estimated after-tax royalty payments, discounted at an 18% risk adjusted rate of return. Trade Name is assumed to have an indefinite life, based on management's intention to continue using the Northern name for the foreseeable future.

*Non-Compete/Non-Solicit Agreements:* In connection with the Acquisition, Messrs. Clint Coleman, Dan Reicher, and Jonathan Lynch entered into both Non-Compete and Non-Solicit Agreements (the



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Agreement ) with Proton. The fair value of each individual s Agreement was valued utilizing the Lost Profits Method. An 18% discount rate, based on Northern s weighted average cost of capital, was utilized in calculating the value of each Agreement. The estimated remaining useful life of each Agreement is five years.

The property and equipment acquired was valued utilizing the Cost Approach. The Income Approach was not used because an income stream could not be attributed to individual assets. The Cost approach was relied upon in order to arrive at Replacement Cost New ( RCN ) for the property and equipment. The RCN was estimated for the personal property assets by indexing the original costs based on the acquisition date. The result of this analysis was an aggregate increase in the property and equipment acquired of approximately \$224,000 to reflect its then current fair market value.

The fair value of the acquired contracts was determined based on the estimated selling price, reduced by the estimated costs to complete and an allowance for normal profit on those costs to complete. Accordingly, an increase of approximately \$314,000 was added to the deferred costs acquired.

**9. PRO FORMA INFORMATION (UNAUDITED)**

The results of operations of the acquired business have been included in the financial statements of the Company since the date of acquisition. The following unaudited pro forma information presents a summary of the results of operations of the Company assuming the acquisition of Northern occurred on January 1, 2003 and January 1, 2002:

	<b>Years Ended December 31,</b>	
	<b>2003</b>	<b>2002</b>
<b>Revenues:</b>		
Proton	\$ 3,313,923	\$ 4,714,046
Northern	23,405,058	6,921,462
Other	(49,311)	(39,482)
<b>Total revenues</b>	<b>\$ 26,669,670</b>	<b>\$ 11,596,026</b>
Net loss	\$ (27,706,072)	\$ (23,977,750)
Net loss per share basic and diluted	\$ (0.79)	\$ (0.69)

The unaudited pro forma results of operations are not necessarily indicative of the actual results that would have occurred had the transaction actually taken place at the beginning of these periods.

**Table of Contents****10. GOODWILL AND INTANGIBLE ASSETS**

Goodwill and identifiable intangible assets recorded on the balance sheet of Northern, the reportable segment to which all goodwill and intangibles of the Company are assigned, as of December 31, 2004 are comprised of the following:

	<u>Gross Amount</u>	<u>Accumulated Amortization</u>
Amortizable intangible assets		
NW Wind Technology	\$ 2,270,000	\$ (351,312)
Tools Technology	70,000	(25,272)
Fleet Monitoring Software	150,000	(81,250)
Power Electronics	290,000	(44,876)
Contract Backlog	1,370,000	(1,370,000)
Non-Compete Agreements	70,000	(15,175)
	<u>\$ 4,220,000</u>	<u>\$ (1,887,885)</u>
Unamortizable intangible assets		
Northern Trade Name	\$ 1,450,000	
Unamortizable goodwill	\$ 24,755,962	

Amortization of intangible assets for the years ended December 31, 2004 and 2003 was \$1,733,881 and \$154,004, respectively. The expected aggregate amortization expense for each of the next five years is as follows:

2005	\$ 471,794
2006	401,100
2007	379,716
2008	378,549
2009	365,712
	<u>\$ 1,996,871</u>

**11. DEBT**

In December 2001, Technology Drive LLC, a limited liability company, wholly owned by Proton, entered into a \$6,975,000 loan agreement with a major financial institution, in connection with the construction of Proton's new facility in Wallingford, Connecticut. Under the terms of the loan, the business assets of Technology Drive LLC, including the land and building, are subject to lien. The loan agreement was structured as a one-year construction loan with monthly payments of interest only until December 2002 at which time the loan converted to a seven-year term note. The term note amortizes based upon a fifteen-year schedule with a final lump sum payment due at the maturity date of December 31, 2009. The note is guaranteed by Proton Energy Systems, Inc., the managing member of Technology Drive LLC, and bears interest at the one-month LIBOR plus 2.375% (4.655% at December 31, 2004).

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At December 31, 2004, \$6,090,232 is outstanding under the note. The Company is required to comply with certain covenants including the maintenance of adequate insurance coverage and a liquidity covenant requiring the Company to maintain cash and marketable securities of not less than \$20 million. The loan contains certain subjective acceleration clauses, which upon the occurrence of an adverse change in the Company's financial position may cause amounts due under each of the agreements to become immediately due and payable. The Company has no indication that it is in default of any such clauses and therefore has classified its debt based on the scheduled repayment dates. In connection with the loan facility, the Company incurred approximately \$216,000 of loan origination costs. These costs are being amortized over the term of the loan. Amortization expense for each of the years ended December 31, 2004, 2003 and 2002 was approximately \$27,000, \$27,000 and \$26,000, respectively.



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Future maturities under these debt facilities at December 31, 2004 are as follows:

2005	\$ 366,600
2006	382,800
2007	400,200
2008	418,200
2009	4,522,432
	\$ 6,090,232

In 2002, Northern began construction of a new facility. In March 2003, Northern entered into a financing agreement with the Vermont Economic Development Authority (VEDA) regarding the purchase, construction, sale, and lease of a new facility. In March 2003, a condominium association, Northern Power Systems Commercial Condominium Association, Inc. (NPS Condo Association), was formed for the purpose of managing the land, building, and improvements related to the new facility. Northern owns 50% of the NPS Condo Association and has the ability to exercise significant influence over the NPS Condo Association. Northern transferred certain property and development rights under NPS Condo Association to the Central Vermont Economic Development Corporation (CVEDC). In consideration, CVEDC secured a \$2,790,000 loan from VEDA to complete the facility and lease back such facility to Northern. The terms of the lease include an initial term of ten years, lease payments equal to the debt payments plus an administrative fee, and a purchase option for Northern equal to the outstanding loan amount. Northern has guaranteed the CVEDC loan, is responsible for all cost overruns in relation to construction of the new facility, is required to maintain certain levels of insurance over the facility, is required to maintain \$150,000 of restricted cash for performance under the agreements and indemnifies CVEDC from liability or lawsuit relating to the facility. The agreement also contains a material adverse change clause. At December 31, 2004, \$2,648,869 is outstanding under the note. The asset and related obligation is treated as a capital lease.

Total payments under the capital lease are as follows:

2005	\$ 185,679
2006	185,679
2007	185,679
2008	185,679
2009	185,679
2010 and thereafter	2,259,504
	\$ 3,187,899
total payments	\$ 3,187,899
less: interest portion	(539,030)
	\$ 2,648,869

**12. CAPITAL STRUCTURE***Preferred Stock*

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The Company has a class of 5,000,000 authorized but undesignated shares of preferred stock, par value \$.01. No preferred shares have been issued.

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### *Common Stock*

The Company has authorized 65,000,000 shares of common stock, par value \$.01 per share.

In February 1998 in connection with a customer-sponsored research and development contract, Proton issued a warrant to purchase 50,000 shares of its common stock at a purchase price of \$1.10 per share. The fair value of the warrant was estimated using the Black-Scholes valuation method. The value was not considered significant. At December 31, 2004, the warrant was fully exercisable and expires in February 2008.

In December 2003 in connection with the Northern acquisition, the Company issued 1,404,004 shares of common stock to the shareholders of Northern. In addition, warrants to purchase 2,145,227 shares of the Company's common stock ( acquisition warrants ) at a purchase price of \$2.80 per share were also issued to Northern shareholders and option holders. The fair value of the acquisition warrants estimated using the Black-Scholes valuation method was determined to be approximately \$3,752,000, and was included in determining the calculation of the purchase price. The acquisition warrants are immediately exercisable and expire December 10, 2006. During 2004, 39,833 acquisition warrants were exercised utilizing the cashless exercise feature of the warrant, resulting in the issuance of 6,034 shares of common stock.

The acquisition warrants issued to Northern optionholders are subject to the Escrow Agreement issued in connection with the Northern acquisition. Two-thirds of these acquisition warrants were released from Escrow December 10, 2004. The remaining one-third is available for release from Escrow on December 10, 2005.

## **13. EMPLOYEE BENEFIT AND STOCK OPTION PLANS**

### *Stock Option Plan*

The Company has four stock option plans: the Proton 1996 Stock Option Plan (the 1996 Plan ), the Northern 1998 Stock Option Plan (the 1998 Plan ), the Proton 2000 Stock Option Plan (the 2000 Plan ) and the 2003 Stock Incentive Plan (the 2003 Plan ) (collectively the Plans ). The Company has reserved a total of 7,700,000 shares of common stock for issuance under the 1996, 1998, 2000 and 2003 Plans. Together the Plans provide for the grants of non-qualified and incentive stock options, restricted stock awards and other stock-based awards to its employees, officers, directors, consultants and advisors. As determined by the Board of Directors, options are generally granted at the fair market value of the common stock at the time of grant. However, the Board of Directors has determined that the exercise price for each incentive stock option shall not be less than the fair market value of the common stock at the time the incentive stock option is granted. Options generally vest ratably over four to five years and expire ten years from the date of grant.

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A summary of stock option activity for the years ended December 31, 2004, 2003 and 2002 under the Plans is as follows:

	<u>Shares</u>	<u>Weighted Average Exercise Price</u>
Outstanding at December 31, 2001 (829,801 exercisable)	3,168,861	\$ 8.18
Granted	1,133,989	4.66
Exercised	(190,018)	0.25
Cancelled or forfeited	(171,307)	9.64
	<u>3,941,525</u>	<u>7.49</u>
Outstanding at December 31, 2002 (1,409,010 exercisable)	3,941,525	7.49
Granted	2,142,651	0.88
Exercised	(468,324)	0.26
Cancelled or forfeited	(518,480)	8.97
	<u>5,097,372</u>	<u>5.22</u>
Outstanding at December 31, 2003 (2,371,376 exercisable)	5,097,372	5.22
Granted	1,017,251	2.80
Exercised	(183,775)	0.48
Cancelled or forfeited	(1,097,045)	4.54
	<u>4,833,803</u>	<u>\$ 5.05</u>
Outstanding at December 31, 2004 (3,130,950 exercisable)	4,833,803	\$ 5.05

In connection with the grant of certain stock options to employees during 2000 and 1999, the Company recorded unearned stock compensation representing the difference between the deemed fair market value of the common stock on the date of grant and the exercise price. Compensation related to options that vest over time was recorded as unearned compensation, a component of stockholders' equity, and is being amortized over the vesting periods of the related options. During the years ended December 31, 2004, 2003 and 2002, the Company recorded non-cash compensation expense relating to these options totaling \$128,064, \$400,255, and \$684,057, respectively. At December 31, 2004 and 2003, the unearned compensation balance is \$0 and \$138,838 respectively.

In connection with the grant of certain stock options to Northern optionholders as part of the merger consideration on December 10, 2003 (the merger options), the Company recorded unearned stock compensation representing the difference between the deemed fair market value of the common stock on the date of grant and the exercise price. Compensation related to merger options that vest over time was recorded as unearned compensation, a component of stockholders' equity, and is being amortized over the vesting periods of the related merger options. During the years ended December 31, 2004 and 2003 the Company recorded non-cash compensation expense relating to these merger options totaling \$846,781 and \$142,613, respectively. At December 31, 2004 the unearned compensation balance related to the merger options is \$1,023,738.

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The following table summarizes additional information about stock options outstanding at December 31, 2004:

Range of Exercise Prices	Options Outstanding			Options Exercisable	
	Number Outstanding at December 31, 2004	Weighted Average Remaining Contractual Life (years)	Weighted Average Exercise Price	Number Exercisable at December 31, 2004	Weighted Average Exercise Price
\$ 0.05 - \$ 0.07	657,134	4.63	\$ 0.07	582,311	\$ 0.07
0.15 - 0.35	179,307	4.14	0.29	179,307	0.29
0.37 - 0.50	730,502	7.16	0.37	286,105	0.38
1.62 - 2.90	913,588	9.19	2.46	369,124	2.59
2.92 - 4.00	671,077	8.71	3.23	208,703	3.07
4.35 - 7.25	338,150	5.83	5.92	325,650	5.91
7.38 - 9.88	348,161	6.92	7.74	258,624	7.71
10.00 - 11.10	296,884	5.95	10.71	228,501	10.70
12.00 - 16.88	43,500	6.12	13.74	37,125	13.93
17.00 - 24.13	655,500	5.75	17.01	655,500	17.01
	<b>4,833,803</b>	<b>6.92</b>	<b>\$ 5.05</b>	<b>3,130,950</b>	<b>\$ 6.33</b>

The following table summarizes additional information about stock options granted during 2004:

	Number of Options Granted	Weighted Average Exercise Price	Weighted Average Fair Value at Grant Date
Options granted with an exercise price:			
Equal to fair market value	1,017,251	\$ 2.80	\$ 2.12

The fair value of each option grant is estimated on the date of grant using the Black Scholes option-pricing model with the following assumptions:

	2004	2003	2002
Risk free interest rate	3.07%-3.87%	2.58%-3.27%	2.94%-4.74%
Expected dividend yield	None	None	None
Expected life of option	5 years	5 years	5 years
Expected volatility	100%	100%	100%

The weighted average grant date fair value of options granted during 2004, 2003 and 2002 was \$2.12, \$2.55, and \$3.55, respectively.

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SFAS No. 123 requires the disclosure of pro forma net income and earnings per share had the Company adopted the fair value method as disclosed in Note 2. Under SFAS No. 123, the fair value of stock-based awards to employees is calculated through the use of option-pricing models. These models require subjective assumptions, including future stock price volatility and expected time to exercise, which greatly affect the calculated value.

No options were granted to non-employees in 2002. During the years ended December 31, 2004 and 2003 the Company granted fully vested, non-qualified stock options with a ten-year term, to non-employees to purchase 2,000 and 34,500 shares of common stock, respectively. The Company recognized compensation expense based on the fair value of these options of \$4,176 and \$78,167, respectively, for the years ended December 31, 2004 and 2003.

In September 2000, the Company granted non-statutory stock options to a non-employee to purchase 15,000 shares that vest over four years and expire at the end of ten years. Accounting for these options requires that they be revalued on each subsequent reporting date until performance is complete or vesting occurs with a cumulative catch-up adjustment recognized for any changes in fair value. Compensation related to these options was recorded as unearned compensation, a component of stockholders' deficit,

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and is being amortized over the vesting periods of the related options. As of December 31, 2004, all options have vested and no performance obligation remains. The unvested options at December 31, 2003 had an estimated fair value of \$7,463 or \$1.99 per share. The Company's results of operations for the year ended December 31, 2004 included a non-cash credit of \$4,267 for the amortization of the decrease in the fair value of these options. The Company's results of operations for the year ended December 31, 2003 included a non-cash charge of \$2,195 for the amortization of the fair value of these options. The Company's results of operations for the year ended December 31, 2002 included a non-cash credit of \$25,645 for the amortization of the decrease in the fair value of these options. At December 31, 2004 and 2003, the unearned compensation balance is \$0 and \$1,631, respectively.

The fair value of each non-employee option grant is estimated using the Black Scholes option-pricing model with the following assumptions:

	<u>2004</u>	<u>2003</u>	<u>2002</u>
Risk free interest rate	3.28%-4.22%	2.84%-4.53%	3.31%-5.26%
Expected dividend yield	None	None	None
Expected life of option	7-10 years	7-10 years	7-10 years
Expected volatility	100%	100%	100%

*2000 and 2003 Employee Stock Purchase Plan*

The Company has two Employee Stock Purchase Plans: the 2000 Employee Stock Purchase Plan (the 2000 ESPP Plan) and the 2003 Employee Stock Purchase Plan (the 2003 ESPP Plan) (collectively the ESPP Plans). A total of 250,000 shares of common stock are available for issuance under these ESPP Plans. Eligible employees can purchase common stock pursuant to payroll deductions at a price equal to 85% of the lower of the fair market value of the common stock at the beginning or end of each three-month offering period. Employee contributions are limited to 10% of an employee's eligible compensation not to exceed amounts allowed by the Internal Revenue Code. As of December 31, 2004, 2003, and 2002 63,137, 33,436 and 32,571 shares of common stock were issued for proceeds of \$115,500, \$70,051 and \$74,509, respectively. The Board of Directors of the Company determined that no additional shares will be issued under the 2000 ESPP Plan after December 31, 2003. As of December 31, 2004, 105,077 shares remained available for future issuance under the 2003 ESPP Plan.

*401(k) Plan*

In 1997, the Company established a 401(k) plan covering substantially all of its employees, subject to certain eligibility requirements. Participants have the option of contributing up to 15% of their annual compensation. In January 2002, the Company adopted a 50% match of employee contributions up to 6% of compensation. Employer matching contributions for the years ended December 31, 2004, 2003 and 2002 approximated \$301,000, \$183,000 and \$161,000, respectively.

**14. COMMITMENTS AND CONTINGENCIES**Contracts

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In November 1999, Proton entered into an agreement with Matheson Tri-Gas, Inc. ( Matheson ) to develop, market and distribute hydrogen generators to be used solely in laboratory applications. This agreement granted the distributor worldwide exclusivity to the commercial sale of this product during the fifteen-year term of the contract as long as the distributor met minimum purchases, as defined in the agreement. In January 2003, the exclusive distribution agreement with Matheson Tri-Gas, Inc., was jointly terminated. Under the terms of the settlement agreement Proton agreed to continue to support units under warranty, provide spare parts for five years, sell an additional 55 laboratory hydrogen generators, and agreed not to sell or market our own laboratory hydrogen generators under Proton s or any other brand name before June 30, 2003.



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In 2001, Proton entered into a 10-year agreement with STM Power, Inc. ( STM ) for the exclusive supply of high-pressure hydrogen replenishment systems for Stirling Cycle Engines. Under an initial purchase order relating to this agreement, STM agreed to provide \$395,000 for the product development and delivery of prototype hydrogen replenishment systems. In 2002, Proton received purchase orders totaling approximately \$550,000 for additional product development and delivery of 57 high-pressure hydrogen generators. The Company accounts for the STM contract in accordance with SOP 81-1, Accounting for Performance of Construction-Type and Certain Production-Type Contracts . In the fourth quarter of 2003, the Company recognized previously deferred revenue of \$958,000.

Also in 2001, Proton entered into an agreement with the Connecticut Clean Energy Fund ( CCEF ). The agreement provides Proton with financial assistance for up to \$1.5 million, \$600,000 under Phase I and \$900,000 under Phase II of the agreement, to accelerate commercial deployment of the UNIGEN product. Proton is required to repay CCEF 110% of the amounts advanced by them under the agreement beginning at such time as revenues from UNIGEN products reach \$25 million annually. However, prior to the achievement of milestones described in this agreement, these funds were subject to repayment provisions based upon the occurrence of certain events. These events include a failure to maintain a Connecticut presence, the purchase of a controlling interest in Proton by a third party, the sale of substantially all of Proton's assets, the consolidation or merger of Proton with a third party, or the granting of the exclusive license to a third party to manufacture or use the UNIGEN product line. Because of these repayment provisions, Proton records funds received as liabilities until it achieves the contract milestones, at which time such amounts are recognized as reductions in related costs and expenses.

In addition to Phase I and Phase II, CCEF agreed in September 2004 to provide \$890,000 of funding to Proton to design, build and conduct a 24-month demonstration of a 5kW Regenerative Fuel Cell (RFC) for a telecommunications site in southwestern Connecticut. Proton has recorded a \$283,012 advance related to this agreement in 2004. In October 2004, CCEF agreed to provide \$485,000 of funding for a 15kW RFC Backup Power unit for Wallingford Electric, and \$418,000 of funding for an upgrade to an existing RFC system at Mohegan Sun Casino's Energy, Environment, Economics, and Education Center. The following table sets forth the customer advances and milestone achievements utilized to offset certain costs and expenses incurred related to the UNIGEN product:

	<b>CCEF Advance Balance</b>
December 31, 2001	\$ 200,000
Advances	400,000
Milestone achieved	(600,000)
December 31, 2002	\$
Advances	900,000
Milestone achieved	(675,000)
December 31, 2003	\$ 225,000
Advances	283,012
Milestone achieved	(225,000)
December 31, 2004	\$ 283,012

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### **Warranty**

In October 2002, Proton learned of problems with sensor modules in its HOGEN 40 series units at customer locations that might have been affected by moisture blockage, thereby impairing the sensor's ability to detect the presence of hydrogen in the oxygen gas stream. Further investigation of these units revealed the presence of pinholes in the cell membranes, resulting in hydrogen leakage and cell failure. To address these problems, the Company contacted all of its HOGEN 40 series customers and arranged appropriate sensor testing and modifications. Since the initial recognition of this issue, the Company has replaced all but one last HOGEN 40 series sensor and cell stack component in the field, and has completed the development and implementation of design changes to prevent these and similar problems in the future. For the year ended December 31, 2002 the Company recorded \$2,462,000 for these service costs. Total expenditures related to this program amounted to \$0, \$1,878,000 and \$369,000 for the year ended December 31, 2004, 2003 and 2002, respectively. Additionally, in 2003 adjustments to the provision amounted to \$197,000. As of December 31, 2004 approximately \$23,000 remains accrued for these costs. The liability for such service costs reflects management's estimate, as of the date of this report, of the remaining cost of the program. The actual amount of such costs could be less than this accrual but they could also materially exceed the amount accrued.

### **Sales and Use Tax Relief Program Recapture**

In connection with the construction of its Wallingford facility, Proton entered into a Sales and Use Tax Relief Program Implementing Agreement (the "Agreement") with the Connecticut Development Authority (the "Authority"). The Agreement contains certain recapture clauses for relocation, early disposition/abandonment and employment threshold. The recapture clauses for relocation and early disposition/abandonment expire October 15, 2010; the employment threshold clause is subject to review by the Authority for the quarter ended December 31, 2006. The aggregate maximum dollar amount of all recaptured tax benefits and penalties payable by Proton to the Authority under the Agreement shall not exceed \$419,250 (the maximum sales and use tax benefit possible under the terms of the Agreement, plus a 7.5% penalty). Proton was required under the Agreement to place \$419,250 in escrow related to these recapture clauses. This \$419,250 is included within restricted cash as part of long-term assets.

### **Retainage Provisions**

Balances billed but not paid by the customer pursuant to retainage provisions in customer contracts are due either upon completion of the contracts and acceptance by the customer or expiration of the warranty period. At December 31, 2004 and 2003, the accounts receivable balance includes approximately \$45,000 and \$58,000, respectively, of retainage balances.

### **State Income, Sales, Property and Franchise Tax Accruals**

The Company has recorded, within current liabilities, a tax accrual of approximately \$433,000 and \$890,000 for certain state income and sales tax contingencies for which there may be exposure at December 31, 2004 and 2003, respectively. In addition, property and franchise tax accruals of approximately \$126,000 and \$154,000 are recorded within current liabilities at December 31, 2004 and 2003, respectively. The determination of the amount of the accrual requires significant judgment. The assumptions used in determining the estimate of the accrual is subject to change and the actual amount could be greater or less than the accrued amount.

### **Legal Proceedings**

Between July 3, 2001 and August 29, 2001, four purported class action lawsuits were filed in the United States District Court for the Southern District of New York against Proton and several of its officers and

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directors as well as against the underwriters who handled the September 28, 2000 initial public offering ( IPO ) of common stock. All of the complaints were filed allegedly on behalf of persons who purchased the Company's common stock from September 28, 2000 through and including December 6, 2000. The complaints are similar, and allege that Proton's IPO registration statement and final prospectus contained material misrepresentations and/or omissions related, in part, to excessive and undisclosed commissions allegedly received by the underwriters from investors to whom the underwriters allegedly allocated shares of the IPO. On April 19, 2002, a single Consolidated Amended Complaint was filed, reiterating in one pleading the allegations contained in the previously filed separate actions, including the alleged Class Period of September 28, 2000 through and including December 6, 2000. On July 15, 2002 Proton joined in an omnibus motion to dismiss the lawsuits filed by all issuer defendants named in similar actions which challenges the legal sufficiency of the plaintiffs' claims, including those in the consolidated amended complaint. Plaintiffs opposed the motion and the Court heard oral argument on the motion in November 2002. On February 19, 2003, the Court issued an Opinion and Order, granting in part and denying in part the motion to dismiss as to Proton. In addition, in August 2002, the plaintiffs agreed to dismiss without prejudice all of the individual defendants from the consolidated complaint. An order to that effect was entered by the Court in October 2002.

A special Litigation Committee of the Board of Directors has authorized the Company to negotiate a settlement of the pending claims substantially consistent with a Memorandum of Understanding, which was negotiated among class plaintiffs, all issuer defendants and their insurers. The parties negotiated a settlement which is subject to approval by the Court. On February 15, 2005, the Court issued an Opinion and Order preliminarily approving the settlement, provided that the defendants and plaintiffs agree to a modification narrowing the scope of the bar order set forth in the original settlement. The Company believes it has meritorious defenses to the claims made in the complaints and, if the settlement is not finalized and approved, Proton intends to contest the lawsuits vigorously. However, there can be no assurances that we will be successful, and an adverse resolution of the lawsuits could have a material adverse effect on our financial position and results of operation in the period in which the lawsuits are resolved. Proton is not presently able to reasonably estimate potential losses, if any, related to the lawsuits. In addition, the costs to us of defending any litigation or other proceeding, even if resolved in our favor, could be substantial.

**Operating Leases**

At December 31, 2004, the Company was committed under operating leases for its facilities extending into 2005. The Company also rents certain office equipment under operating leases.

Rent expense under the non-cancelable operating leases was approximately \$243,000, \$243,000, and \$320,000 for the years ended December 31, 2004, 2003 and 2002, respectively.

Minimum lease payments under the noncancelable leases at December 31, 2004 are as follows:

2005	\$ 199,270
2006	54,060
2007	8,235
2008	4,344
2009 and thereafter	2,172
	Total
	\$ 268,081

**Table of Contents****15. INCOME TAXES**

The Company's gross deferred tax assets and liabilities were as follows:

	December 31,	
	2004	2003
<b>Gross deferred tax assets:</b>		
Net operating loss carryforwards	\$ 28,310,000	\$ 21,004,000
Deferred compensation	1,121,000	1,081,000
Research and development tax credits	2,104,000	1,499,000
Deferred revenue	1,675,000	1,385,000
Inventory reserves	260,000	170,000
Warranty reserves	116,000	137,000
Bad debt reserves	72,000	63,000
Unrealized loss on marketable securities	139,000	
Accrued expenses and other	524,000	157,000
	<u>34,321,000</u>	<u>25,496,000</u>
<b>Gross deferred tax liabilities:</b>		
Amortizable intangibles at acquisition	908,000	1,584,000
Unamortizable intangible at acquisition	565,000	565,000
Fixed asset basis step-up at acquisition	87,000	87,000
Depreciation	343,000	445,000
Unrealized gain on marketable securities		24,000
Deferred costs	1,453,000	1,293,000
	<u>3,356,000</u>	<u>3,998,000</u>
Net deferred tax asset	30,965,000	21,498,000
Less: valuation allowance	(31,530,000)	(22,063,000)
Net deferred tax asset (liability)	<u>\$ (565,000)</u>	<u>\$ (565,000)</u>

The Company's effective income tax rate differed from the Federal statutory rate as follows:

	Years Ended December 31,		
	2004	2003	2002
Federal statutory rate	-34.0%	-34.0%	-34.0%
Deferred state taxes, net of federal benefit	-5.0%	-5.0%	-5.0%
Tax credits	0.0%	0.0%	0.0%

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Valuation allowance	<u>39.0%</u>	<u>39.0%</u>	<u>39.0%</u>
	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>

At December 31, 2004, the Company had approximately \$74.3 million of federal net operating loss carryforwards that expire beginning in the year 2011 through 2024 and approximately \$61.3 million of state net operating loss carryforwards that expire beginning in the year 2004 through 2024. For the years ended December 31, 2004, 2003 and 2002, the valuation allowance increased \$9,467,000, \$10,006,000, and \$6,899,000, respectively. The increase is attributable to the current year provision and is due primarily to the increase in net operating loss and research and development tax credit carryforwards.

The amount of the net operating loss and research and development tax credit carryforwards that may be utilized annually to offset future taxable income and tax liability may be limited as a result of certain ownership changes pursuant to Section 382 of the Internal Revenue Code.

**Table of Contents****16. RELATED PARTIES**

Northern has in the past engaged Paul Koepp, a stockholder and member of the board of directors of the Company, and formerly a member of the board of directors of Northern, as a consultant on general business strategy and intellectual property protection issues. No amounts were paid to Mr. Koepp from the Acquisition date through December 31, 2004.

**17. SEGMENT FINANCIAL DATA**

Management has chosen to organize its enterprise around differences in its two operating subsidiaries, Proton and Northern. Proton develops and manufactures proton exchange membrane, or PEM, electrochemical products. Northern designs, builds and installs both stand-alone and grid-connected electric power systems for industrial, commercial and government customers. For management reporting and control, the Company is divided into the operating segments as presented below. Each segment has general autonomy over its business operations.

Financial information as of and for the years ended December 31, 2004 and 2003 (all amounts in 000s) is summarized below. For the year ended December 31, 2002, Proton was the only segment and comparative information is not relevant.

	<u>2004</u>	<u>2003</u>
Revenues:		
Proton	\$ 5,984	\$ 3,314
Northern	16,476	880
Eliminations and other		
	<u>          </u>	<u>          </u>
Consolidated	<u>\$ 22,460</u>	<u>\$ 4,194</u>

Included within the Northern's revenues for the years ended December 31, 2004 and 2003, are sales to single international customers (Russia in 2004 and the United Kingdom in 2003) totaling approximately 11% and 18% of consolidated revenues, respectively. For the years ended December 31, 2004 and 2003, total revenue from international customers accounted for approximately 21% of consolidated revenues. The Company believes it has no risk of foreign dependence.

	<u>2004</u>	<u>2003</u>
Loss from operations:		
Proton	\$ (10,651)	\$ (18,338)
Northern	(8,195)	(723)
Eliminations and other	(4,395)	(10)
	<u>          </u>	<u>          </u>
Consolidated	<u>\$ (23,241)</u>	<u>\$ (19,071)</u>

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	<u>2004</u>	<u>2003</u>
Interest income:		
Proton	\$ 2	\$ 2,533
Northern	8	1
Eliminations and other	1,133	1
	<u>          </u>	<u>          </u>
Consolidated	<u>\$ 1,143</u>	<u>\$ 2,535</u>



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	<u>2004</u>	<u>2003</u>
Net loss:		
Proton	\$ (10,892)	\$ (16,035)
Northern	(8,283)	(727)
Eliminations and other	(3,262)	(6)
	<u>          </u>	<u>          </u>
Consolidated	\$ (22,437)	\$ (16,768)
	<u>          </u>	<u>          </u>
	<u>2004</u>	<u>2003</u>
Total assets:		
Proton	\$ 91,384	\$ 102,915
Northern	41,073	40,731
Eliminations and other	(7,886)	386
	<u>          </u>	<u>          </u>
Consolidated	\$ 124,571	\$ 144,032
	<u>          </u>	<u>          </u>

All the assets of the Company are located in the United States.

**18. SELECTED QUARTERLY FINANCIAL DATA (UNAUDITED)**

The following tables set forth certain unaudited quarterly statement of operations data for the eight quarters ended December 31, 2004. This data has been derived from unaudited financial statements that, in the Company's opinion, include all adjustments, consisting only of normal recurring adjustments, necessary for a fair presentation of such information when read in conjunction with the Company's consolidated financial statements and related notes. The selected financial data for 2003 include the full year of Proton's operations and the period from December 11, 2003 through December 31, 2003 for Northern and Distributed Energy. The operating results for any quarter are not necessarily indicative of results for any future period.

	<u>2004 Quarters</u>			
	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>
	Amounts in 000s except for per share amounts			
Revenues	\$ 1,954	\$ 4,321	\$ 4,820	\$ 11,365
Costs and expenses	8,911	10,362	10,843	15,585
Loss from operations	(6,957)	(6,041)	(6,023)	(4,220)
Net loss	(6,753)	(5,894)	(5,780)	(4,010)
Basic and diluted net loss per share attributable to common stockholders	(0.19)	(0.17)	(0.16)	(0.11)

	<u>2003 Quarters</u>			
	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>

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	Amounts in 000s except for per share amounts			
Revenues	\$ 173	\$ 452	\$ 593	\$ 2,976
Costs and expenses	5,632	4,329	5,402	7,902
Loss from operations	(5,459)	(3,877)	(4,809)	(4,926)
Net loss	(4,650)	(3,215)	(4,294)	(4,609)
Basic and diluted net loss per share attributable to common stockholders	(0.14)	(0.10)	(0.13)	(0.13)

**Table of Contents****Schedule II VALUATION AND QUALIFYING ACCOUNTS**

	<b>Allowance for Doubtful Accounts</b>	<b>Allowance for Inventory</b>
	<u>          </u>	<u>          </u>
<b>Year ended December 31, 2002:</b>		
Balance at beginning of year	\$	\$ 33,916
Charged to costs and expenses		561,251
Deductions and write-offs		(438,459)
Balance at end of year		156,708
	<u>          </u>	<u>          </u>
<b>Year ended December 31, 2003:</b>		
Balance at beginning of year		156,708
Increase from acquisition	93,173	
Charged to costs and expenses	70,800	431,418
Deductions and write-offs		(254,378)
Balance at end of year	163,973	333,748
	<u>          </u>	<u>          </u>
<b>Year ended December 31, 2004:</b>		
Balance at beginning of year	163,973	333,748
Charged to costs and expenses	53,929	258,875
Deductions and write-offs	(32,954)	(114,811)
Balance at end of year	\$ 184,948	\$ 477,812
	<u>          </u>	<u>          </u>

**ITEM 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure**

Not applicable.

**ITEM 9A. Controls and Procedures**

The Company's management, with the participation of the Company's chief executive officer and chief financial officer, evaluated the effectiveness of the Company's disclosure controls and procedures as of December 31, 2004. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit

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relationship of possible controls and procedures. Based on the evaluation of the Company's disclosure controls and procedures as of December 31, 2004, the Company's chief executive officer and chief financial officer concluded that, as of such date, the Company's disclosure controls and procedures were effective at the reasonable assurance level.

Management's report on the Company's internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) and the independent registered public accounting firm's related audit report are included in Item 8 of this Form 10-K and are incorporated herein by reference.

No change in the Company's internal control over financial reporting occurred during the fiscal quarter ended December 31, 2004 that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

### **ITEM 9B. Other Information**

Not applicable

## **Part III**

Certain information required by Part III is omitted from this Annual Report as we intend to file our definitive Proxy Statement for our Annual Meeting of Stockholders to be held on June 9, 2005, pursuant to Regulation 14A of the Securities Exchange Act of 1934, as amended, not later than 120 days after the end of the fiscal year covered by this Report, and certain information included in the Proxy Statement is incorporated herein by reference.

### **ITEM 10. Directors and Executive Officers of the Registrant**

The information required by this item will be incorporated by reference from our definitive Proxy Statement for our 2005 Annual Meeting of Stockholders to be filed pursuant to Regulation 14A (the "Proxy Statement") under the heading "I. Election of Directors"; provided that the Report of the Compensation Committee on Executive Compensation, the Report of the Audit Committee and the performance graph contained in the Proxy Statement shall not be deemed to be incorporated herein; and further provided that some of the information regarding our executive officers required by Item 401 of Regulation S-K has been included in Part I of this report.

We have adopted a code of ethics that applies to our directors, officers and employees, including our principal executive officers, principal financial officer, principal accounting officer, controller, or persons performing similar functions (the "senior financial officers"). A copy of this code of business conduct and ethics is posted on the investor relations portion of our website at <http://www.distributed-energy.com/investor/governance/GovernanceDocuments.html>. In the event the code of ethics is revised, or any waiver is granted under the code of ethics with respect to any director, executive officer or senior financial officer, notice of such revision or waiver will be posted on our website.

**ITEM 11. Executive Compensation**

The information required by this item will be incorporated by reference from the Proxy Statement under the headings Directors Compensation, Compensation Committee Interlocks and Insider Participation and Executive Compensation.

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**ITEM 12. Security Ownership of Certain Beneficial Owners and Management**

The information required by this item will be incorporated by reference from the Proxy Statement under the headings Security Ownership of Certain Beneficial Owners and Management.

**ITEM 13. Certain Relationships and Related Transactions**

The information required by this item will be incorporated by reference from the Proxy Statement under the heading Certain Relationships and Related Party Transactions.

**ITEM 14. Principal Accountant Fees and Services**

The information required by this item will be incorporated by reference from the Proxy Statement under the heading principal Accountant Fees.

**Part IV**

**ITEM 15. Exhibits and Financial Statement Schedules**

**(a) The following documents are filed as part of this Report:**

- 1. Financial Statements See Index to Financial Statements in Item 8 of this Report**
- 2. Financial Statement Schedules**

The following financial statement schedule of Distributed Energy has been included: Schedule II Valuation and Qualifying Accounts. All other schedules for which provision is made in the applicable accounting regulation of the Securities and Exchange Commission are not required under the related instructions or are inapplicable and therefore have been omitted.

- 3. Exhibits See Item 15(b) of this Report below.**

**(b) Exhibits**

<u>Exhibit</u>	<u>Description</u>
1.1 (a)	Third Amended and Restated Certificate of Incorporation of the Registrant
1.2 (a)	Amended and Restated By-Laws of the Registrant
4.1 (a)	Specimen common stock certificate
4.2 (a)	See Exhibits 3.1 and 3.2 for provisions of the Certificate of Incorporation and By-Laws of the Registrant defining the rights of holders of common stock of the Registrant
10.1 (a)	2003 Stock Incentive Plan
10.2 (a)	2003 Employee Stock Purchase Plan
10.3 (a)	Form of warrant for the purchase of common stock of the Registrant
10.4 (a)	Lease Agreement, dated March 28, 2003, between Northern Power Systems, Inc. and the Central Vermont Economic Development Corporation.
10.5 (a)	Construction Loan Agreement dated as of December 7, 2001 between Technology Drive, LLC, a limited liability company, wholly owned by us of the Registrant, and Webster Bank
10.6 (a)	Construction Mortgage Note dated as of December 7, 2001 between Technology Drive, LLC, a limited liability company, wholly owned by us of the Registrant, and Webster Bank
10.7 (a)	Open-End Construction Mortgage Deed and Security Agreement dated as of December 7, 2001 between Technology Drive, LLC, a limited liability company, wholly owned by us of the Registrant, and Webster Bank
10.8 (a)	Guaranty Agreement dated as of December 7, 2001 between the Registrant and Webster Bank.

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10.9 (b)	Agreement and Plan of Merger, dated as of May 22, 2003, as amended, by and among the registrant, Proton Energy Systems, Inc., Northern Power Systems, Inc., PES-1 Merger Sub, Inc., and PES-2 Merger Sub, Inc.
10.10(c)	Escrow Agreement, dated December 10, 2003, by and among the Registrant, Paul F. Koeppe, Philip Deutch, and Webster Bank
23.1	Consent of PricewaterhouseCoopers LLP
31	Certifications pursuant to 18 U.S.C. sec. 1350, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32	Certifications pursuant to 18 U.S.C. sec. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

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(a): Incorporated herein by reference to the identically numbered exhibit of the Company's registration statement on Form S-4, SEC File No. 333-108515.

(b): Incorporated herein by reference to exhibit 2.1 of the Company's registration statement on Form S-4, SEC File No. 333-108515.

(c): Incorporated herein by reference to exhibit 10.10 of the Company's annual report on Form 10-K for the fiscal year ended December 31, 2003.



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**SIGNATURES**

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

DISTRIBUTED ENERGY SYSTEMS CORP.

*/s/ Walter W. Schroeder*

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Walter W. Schroeder, President

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

<b><u>Signature</u></b>	<b><u>Capacity</u></b>	<b><u>Date</u></b>
<u>/s/ Walter W. Schroeder</u>	President and Director (Principal executive officer)	March 11, 2005
<u>/s/ Robert W. Shaw, Jr.</u>	Chairman of the Board and Director	March 11, 2005
<u>/s/ Gerald B. Ostroski</u>	Director	March 11, 2005
<u>/s/ James H. Ozanne</u>	Director	March 11, 2005
<u>/s/ Philip R. Sharp</u>	Director	March 11, 2005

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/s/ Paul F. Koeppe

Director

March 11, 2005

/s/ Theodore Stern

Director

March 11, 2005

/s/ John A. Glidden

Vice President of Finance

March 11, 2005

(Principal financial and accounting officer)