

Connecticut Department of Administrative Service  
165 Capital Avenue  
Hartford, CT 06103

September 14, 2012

Re: State of Connecticut RFP for Performance Contracting # 12PSX0153

Dear Evaluation Committee,

On behalf of the entire Siemens' workforce, including our nearly 1,000 employees in Connecticut, I want to thank you for the opportunity to present Siemens as an ideal partner for the Qualified Energy Service Provider (QESP) for the State of Connecticut and its municipalities as you work to implement Public Act 11-80. Public Act 11-80 is a tremendous legislative achievement that will confirm Connecticut's position as a national leader in sustainability and renewable energy, unleash public and private investment, grow the state economy, create jobs and save money for municipalities and citizens alike.

At Siemens, we produce technologies and solutions that contribute to making the world a cleaner, more efficient place to live and work. We are ranked #1 on the Dow Jones Sustainability Index in the Diversified Industrial sector and had the third highest score on the Carbon Disclosure Leadership Index. Our renewable energy products range from innovative wind turbines that rank the most reliable in the world to major photovoltaic projects and the most advanced technologies for solar-thermal power plants. Our medical equipment and services allow earlier detection of illnesses such as cancer more quickly and reliably. Our railway transportation technologies and products, such as our light rail vehicles, reduce CO2 emissions while reducing energy costs for the rail operator. And Siemens operates the world's single-source leader of automation technology that helps manufacturing and processes business stay on task while operating at energy efficient levels.

We know that while sustainability issues are primarily public challenges, they will largely be solved through public-private partnerships. We've been partnering with cities and states throughout our 164 year history. In fact, Siemens invented the first electric train, the first traffic light, and put the first electric lights into cities. We apply these innovative technologies to help cities and states become more competitive from an infrastructure standpoint—and we figure out ways to help them pay for it through mechanisms like performance contracting. As a global company with its own financial services arm, Siemens can make the initial investment for infrastructure upgrades. Cities and states can pay us back out of savings realized. Siemens will contractually guarantee the savings, commit to paying for any shortfall and sign a long-term service agreement ensuring that we will always be there for maintenance and operation, wherever and whenever required.

It is this combination of superior technologies and service that will make Siemens an ideal partner for Connecticut's prime initiative for job creation and growth. In the last five years alone, Siemens has invested hundreds of millions of dollars in the U.S. and created thousands of clean energy jobs. We know that as difficult as these economic times are, the answers to the challenges Connecticut faces are largely here. The technology is here. And methods of getting this done, even without a lot of up-front capital, have been developed, and put to work successfully.

We salute your leadership, which we need today more than ever before, and we look forward to becoming a trusted partner for you in the months and years to come.

Sincerely,



Eric Spiegel  
President and CEO of Siemens Corporation

**EXECUTIVE SUMMARY**

Siemens is pleased to present our response to the Connecticut Department of Administrative Services (DAS) Combined Request for Qualifications and Request for Proposals (RFQ/P) 12PSX0153 seeking to Qualify Energy Service Providers (QESP) for Performance Contracting Services for the State of Connecticut Agencies and Municipalities. Siemens is honored to have the opportunity to assist the State of Connecticut's municipalities and agencies to develop and implement successful performance contracts statewide as a means to implement comprehensive energy efficiency projects in existing buildings and create jobs here in Connecticut.



As one of Connecticut's QESP partners, Siemens will deliver unparalleled Performance Contracting project know how to ensure that project challenges are met, issues resolved and objectives achieved. We recognize that maintaining quality environments for students, staff and facility occupants is critical. We have extensive experience delivering seamless, sustainable, energy and water efficiency solutions across the country, but in particular, in Connecticut. Reflected in our local references, you will see our success in achieving goals and exceeding expectations delivering comprehensive energy efficiency projects in Connecticut's existing buildings. We look forward to helping the State of Connecticut achieve its full energy efficiency potential. Together, we will implement sustainability solutions that will continue helping to meet the needs of its citizens and stakeholders while enhancing the comfort for students, staff and facility occupants for years to come.

The State of Connecticut's agencies and municipalities will realize the following benefits with Siemens as their QESPC partner:

- Modernize facilities in a timely and cost effective manner without disrupting day to day operations
- Address needed water & wastewater infrastructure improvements including water meters and automatic meter reading
- Offer a solar solution designed, financed, owned, and maintained by Siemens at a rate significantly lower than current market rates (Siemens Solar PPA)
- Improve operating efficiencies without sacrificing quality of service
- Implement a fiscally responsible, guaranteed solution
- Gain a more comprehensive solution through Siemens' procurement power and expertise in deep energy retrofits

**Over \$2B in current Performance Guarantees**

**Statement of CT DAS Combined Request for Qualifications and Proposals for Qualified Energy Service Providers for Performance Contracting Services**

The following RFQ/P response illustrates what truly distinguishes Siemens as a total solution provider for the State of Connecticut:

**Experience – Strong Local Presence**

Siemens’ local office is located in Cromwell, CT. There are over 853 employees in Connecticut, working from nine locations throughout the State. In addition to local resources, Siemens can also draw additional resources from our New England District which employs over 3,000 employees.

- Tenured local team has implemented project for more than a decade in existing buildings, schools, and cities, all over Connecticut.
- In-depth understanding of requirements and regulations for Connecticut performance contracts in accordance with 2011 Connecticut Public Act 80, Section 123.
- All projects successfully implemented and validated.

After a careful vetting process, Waterbury Hospital selected Siemens to help it meet its energy and infrastructure goals. Siemens was selected, according to Administrative Director of Engineering and Facilities Steve Jalowiec, “because it was one of only a few providers with the capabilities and experience required for the demanding job and also offered a strong local presence and a track-record of successful projects.”

**Expertise – Effective Connecticut Partnerships**

- Proven solutions for cities implemented with local expertise beyond lighting and HVAC.
- Siemens has implemented over \$50 million in guaranteed energy performance contracts within the State of Connecticut over the last 5 years.
- Accreditations: Connecticut Conference of Municipalities (CCM) Energy Efficiency Selected Program Partner, U.S. Leagues of Cities and Towns, NAESCO, Clinton Climate Initiative (CCI) partner, Energy Services Coalition, Connecticut Association of School Business Officials, US Conference of Mayors.

“Siemens went above and beyond assisting us to receive the 2009 Association of Energy Engineers Best Energy Project in Municipal Facilities in Connecticut Award.” Eric Hood Director of Public Works Town of Cromwell, CT.

**Flexibility**

- It’s your project! You are in control. We are your partner.
- Vendor neutrality. Siemens proves this on every project.

Direct financing for projects can be provided by Siemens Financial Services or from a range of other providers offering total flexibility. A Siemens dedicated Procurement Manager for your project ensures best value for each individual Energy-Savings Measure (ESM) implemented. Combining the national procurement strength of Siemens and local vendors ensures best value for our customers while growing jobs in Connecticut.

**Experience: It Starts With Our Customers**

We encourage you to call our customers. You will discover satisfaction, passion, and support rarely achieved in the marketplace. In addition to branch level interviews of our customers for feedback, we use independent research firms to contact facility management and engineers to obtain unbiased perspectives. Over the past four years, we received the highest customer satisfaction scores in the industry.

The Naugatuck school district is now saving \$1 million annually in energy costs after implementing over \$12 million in improvements to borough schools over the past six years. "Working with Siemens, we cut our electric bill in half, a 51 percent reduction." said Controller Wayne McAllister. "We have also reduced oil consumption by 26 percent and natural gas by 29 percent. That is very, very admirable."

**Expertise: Getting the Greatest Value**

We offer the broadest range of solutions in the industry, going beyond basic mechanical and lighting retrofits. Our solutions, routinely deep energy retrofits, include automatic meter reading coupled with water meter upgrades, building envelope/weatherization improvements, water conservation upgrades, co-generation, and alternative fuels solutions. As a manufacturer of water & wastewater products, lighting products, electrical equipment, HVAC controls, energy management systems, fire alarm and security systems, closed circuit television, and renewable/alternative energy solutions

Siemens offers more direct solutions than anyone, delivering manufacturer direct pricing to provide the most cost effective and best in class energy retrofits. This, combined with our global buying power to obtain significant discounts on third-party equipment through national agreements, means substantial savings for State agencies and municipalities.

In June 2009, the Bridgeport Housing Authority (BHA) entered into a performance contract with Siemens Building Technologies, Inc., for energy efficiency and other improvements to single- and multi-unit federally-funded public housing throughout the BHA system. United Illuminating contributed approximately \$1.8 million in rebates, materials, and other contributions to the project.

**Flexibility: It's Your Project**

Our philosophy to performance contracting is vendor and product neutral. There are numerous projects where we installed and utilized competitors' equipment and services. However, Siemens can provide solutions for almost every infrastructure need in which all expertise lies within the Siemens family of companies.

**Financial Stability and Security**

Siemens is a, Fortune 50 Corporation with open financial statements that show outstanding financial stability and security. Our Financial Services Group provides additional flexibility and financing alternatives that no other financial institution offers. Siemens is a strong global and local leader in financial growth and stability. In today's economy, it's important to understand the financial security of your QESP as a long-term partner.

**Energy Savings Guarantees**

The guarantee is the key component that sets performance contracting apart from standard low bid construction projects. A QESP's guarantee is only as good as its financial stability. Siemens provides first-party (as opposed to third-party) guarantees. We personally back our Performance Contracts with 121 years of financial stability. Our track record shows that we make our performance guarantee results 99.84% of the time; you can be confident you will get a check directly from Siemens if we miss the mark.

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

Siemens has one of the most comprehensive offerings in the Industry. Rather than reading the details about the various technologies and solutions, we invite you to select the links below for a firsthand account from Industry experts on a variety of topics.

**Energy-efficient technology for the entire building:**

HVAC systems and products from Siemens can effectively reduce your operating costs thanks to their extremely efficient use of energy. This means you can achieve up to 30% savings\*, while still maintaining a comfortable room climate.

<http://www.youtube.com/watch?v=Sn3aRBJAqDw&feature=relmfu>

**Smart buildings - the future of building technology**

Movie "smart buildings - the future of building technology" A study on the future of building technology shows that requirements are undergoing lasting changes. Which changes are coming up and how Building Technologies is dealing with these changes is shown in this movie.

<http://www.youtube.com/watch?v=gCuPx9shWT0&feature=relmfu>

**How the Smart Grid will power Electric Cars: eMobility**

We believe the thinking will move towards active participation in the energy grid. Smart solutions, buildings and electrical infrastructures will actively contribute to maximum overall efficiency. View our vision of eMobility.

<http://www.youtube.com/watch?v=nTRwVLXkMck&feature=relmfu>

**What Exactly is a Smart Grid?**

David Pacyna, Senior Vice President and General Manager of Siemens Energy, explains how a Smart Grid can help consumers save money, clean up the environment and create more jobs. A smart grid delivers electricity from suppliers to consumers using digital technology to save energy and cost.

America operates about 157,000 miles of high voltage (greater 230kV) electric transmission lines. While electricity demand increased by about 25% since 1990, construction of transmission facilities decreased about 30%. It is estimated that power outages and disturbances cost the economy from \$25 to \$180 billion annually.

<http://www.youtube.com/watch?v=yXrBkVUrChk&feature=relmfu>

**Sustainable Development for Urban Infrastructures:**

An interactive web page that provides a complete overview of the technologies and solutions from Siemens to help States, Cities, Towns and Municipalities design, develop and implement sustainable solutions for all facets of State, Cities, Towns and Municipal buildings, facilities and infrastructure.

<http://www.siemens.com/entry/cc/en/urbanization.htm>

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

Yours sincerely,



**Jerry Drummond** - Sales Team Leader, CT State, Municipalities & K-12 Schools

*Jerry Drummond*



**John Lanzoni** - Account Executive, CT Water & Wastewater Treatment

*John Lanzoni*



**Lisa Schoonerman** - Account Executive, CT Healthcare & Higher Education

*Lisa Schoonerman*



**Dan Smith** - Account Executive, CT Renewable & Alternative Energy Developer

*Daniel W Smith*

Siemens Industry, Inc.  
Infrastructure & Cities Sector  
104 Sebeth Drive  
Cromwell, CT 06416  
860-754-1239

## TABLE OF CONTENTS

Section	Page No.
2. Project History	
2.1 Related Experience .....	8
2.2 Market Sector Involvement .....	49
2.3 Project List.....	51
2.4 Project References .....	54
3. Qualifications	
3.1 History and Focus of Company .....	87
3.2 Financial Soundness and Stability of the Company .....	88
3.3 Connecticut Licensed Professional Engineer .....	94
3.4 Industry Accreditations.....	94
3.5 General Scope of Services.....	95
4. Technical Approach	
4.1 Deep Energy Retrofits .....	131
4.2 Investment-Grade Energy Audit (IGEA) .....	132
4.3 Standards of Comfort.....	133
4.4 Baseline Calculation Methodology .....	133
4.5 Baseline Adjustment .....	136
4.6 Energy Star Portfolio Manager.....	137
4.7 Measurement and Verification (M&V) .....	137
4.8 Commissioning.....	137
5. Management and Staffing Approach	
5.1 Project Management and Coordination .....	138
5.2 Personnel and Staffing .....	142
6. Cost and Pricing.....	144
7. ESPCP Participation and Compliance	
7.1 Marketing and Promotion of ESPCP.....	150
7.2 Compliance with ESPCP Requirements.....	150

## 2. Project History

### 2.1 Related Experience

#### **EXPERIENCE OF FIRM**

Siemens Industry, Inc. has been in existence for over 121 years, and working closely with owners, consultants and contractors in the Northeast for over 60 years. We have provided performance-based solutions since 1985. We have sold, installed and project managed tens of billions of dollars of work on construction projects.

In the United States, Siemens Industry, Inc. has helped more than 500 customers realize more than \$2.0 billion in energy and operational savings over the past 10 years.

Siemens Industry Inc.  
Building Technologies Division  
104 Sebeth Drive  
Cromwell, CT 06416

Headquartered outside Chicago, in Buffalo Grove, Ill., Siemens Industry, Inc. is one of 4 Siemens operating sectors in the United States and is a leading single-source provider of cost-effective facility performance solutions for the comfort, life safety, and security of some of the most technically advanced buildings in the world. In North America, Siemens Building Technologies employs approximately 8,000 people and provides local service from more than 100 locations coast-to-coast. Worldwide, Siemens Building Technologies has 28,000 employees and operates from more than 500 locations in 51 countries. Globally, Siemens Building Technologies has over 360,000 customers.

- Siemens Industry, Inc. has implemented more than 1,000 Guaranteed Performance-based Solutions projects for our customers, updating thousands of buildings with the latest energy savings technologies.
- We have negotiated more than \$3 billion in energy supply contracts on behalf of our customers.
- Siemens Industry, Inc. is proud of the fact that our shortfall payments to customers are less than one-quarter of one percent of our gross guarantees.

**Staffing and Personnel Information**

Siemens Building Technologies, Inc. has more than 300 professionals in the United States specifically dedicated to delivering Energy and Environmental Solutions to our customers every day. There are thousands of other employees supporting this core group. A breakdown of personnel in key function

Includes:

Function	Staff
Sales and Sales Management	100
Operations and Project Management	80
Energy Engineering	90
Support, Measurement and Verification and other Functions	30

**NAESCO Accreditation and other Pre-Qualifiers**

Our NAESCO certificate, press release and certificate of appreciation from the Department of Energy Rebuild America program can be found at the end of this section.

**Siemens’ total capabilities; they include but are not limited to descriptions in the follow areas:**

- Technical solution capabilities including in-house engineering, design and construction
- Energy Performance Contracting
- In-house maintenance and service of systems and/or equipment installed as part of a performance contract
- Project management
- Customer training programs
- Specialized capabilities, i.e. fire alarm, security and indoor air quality
- Lighting
- HVAC
- Automation

At Siemens, our mission is to help our customers manage their central plant and buildings’ energy costs, improve reliability, and enhance performance while having a positive impact on the environment. We recognize that high performance buildings make for high performance business. Energy is the lifeline of your facility — Energy is vital to your business.

From energy procurement to efficient system design and installation, from energy generation to comprehensive auditing and performance reporting — Siemens has the answers.

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

Our strategic energy solutions can help you manage your facility’s energy needs throughout a building’s life-cycle. Siemens customers can expect:

- Greater predictability and management of energy budgets
- Energy supply options and management
- Dependable, flexible and clean energy systems and operations
- Improved facility and energy performance
- Innovative environmental solutions

**Siemens U.S. Companies: National Offerings**

• Utility Metering Services	• Smart Grid/Micro Grid
• Variable Frequency Drives	• Financial Services
• Power Generation	• Solar Technologies
• Lighting Products-Osram Sylvania	• Wind Turbines
• Power Transmission Devices	• Gas Turbines
• Fuel Cells	• Water and Waste Water
• Intelligent Parking Solutions	• Electric Charging Stations



**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

**For Immediate Release:**

**Contact: Katie Williams**  
(847) 941-5621

**SIEMENS ENERGY DIRECTOR ELECTED 2004-2005 NAESCO PRESIDENT**

BUFFALO GROVE, Ill. (Dec. 18, 2003) – Bob Dixon, senior director of Energy Services and Solutions at Siemens Building Technologies, Inc., was recently elected the 2004-2005 president of the National Association of Energy Service Companies (NAESCO).

“It is an honor to serve in such an important capacity for an organization that represents the interests of the entire energy services industry,” said Dixon.

NAESCO is a national trade association comprised of energy service companies, utilities, equipment manufacturers and suppliers, financial institutions and other organizations. The association provides leadership in the energy services companies industry by examining economic factors, new policies and legislation, cutting-edge technologies, as well as the growth and development of the energy services industry as a whole.

As president, Dixon will represent the energy services industry and convey the value of energy conservation to governmental leadership and the business community. He will also address business issues that may effect the health of the industry, as well as represent all stakeholder interests as they match up with energy conservation efforts

“I hope in my time as president, I can achieve all the goals we set, as well as continue to increase the number of public sector and individual members in the association.”

Nominated by the NAESCO Board of Directors, Dixon officially became president at the NAESCO 20<sup>th</sup> Annual Conference held in New Orleans Nov. 19-21, 2003.

With more than 27 years of experience in building systems, facility operations and energy conservation, Dixon’s experiences include program development, sales, project, service and organization management.

He has a degree in Mechanical Engineering from California Polytechnic State University and is a graduate of the Minnesota Executive Program at the University of Minnesota. Prior to his appointment as NAESCO President, he served on the Executive Committee of the Board of Directors for NAESCO.

Siemens Building Technologies has negotiated over \$3 billion in energy supply contracts and has guaranteed over \$1 billion in energy savings since 1995. It is an industry leader in energy supply, consulting and conservation.

Headquartered in Buffalo Grove, Ill., Siemens Building Technologies, Inc., is one of 14 Siemens operating companies in the United States and is a leading single-source provider of cost-effective facility performance solutions for the comfort, life safety and security of some of the most technically advanced buildings in the world. In North America, SBT employs 8,500 people and provides local service from more than 100 locations coast-to-coast.



## Certificate of Accreditation

This is to certify that

**Siemens Industry, Inc.  
Building Technologies Division**

has participated in the Accreditation Program and Review and has been recognized by the National Association of Energy Service Companies to be an Accredited Energy Service Provider.

James Dixon  
Chairman

Terry E. Singer  
Executive Director

November 2011  
Certification of Accreditation covers a period of 18 months from date of issuance.  
Accredited since 1996.

2.1.1 Design, engineering, installation, maintenance and repairs associated with energy-savings performance contracts

**Siemens' Technical Capabilities**

The Siemens' personnel, who will be dedicated to The State of Connecticut, will have an excellent understanding of the existing conditions, mechanical workings and the specific needs of the buildings and facilities. This provides Siemens the ability to analyze and recommend improvements specific to the customer, maximizing the utility savings and improving the operational conditions. Siemens' Energy Solutions team will work closely with Connecticut customer's technical team and combine our expertise to deliver the best possible project.

At each stage of development, every potential water and Energy-Savings Measure will be thoroughly analyzed to determine its feasibility and then presented to stakeholders with a guarantee of water/energy savings specific to the measure. We also will investigate and analyze facility improvements that may not necessarily save energy, but will solve problems for Connecticut customers. Specifically, we will propose the installation of any measure that will reduce operational costs while having a positive impact on the occupants and working environment at the facilities. Siemens and the Connecticut teams will work together to finalize the scope of improvements and generate a guaranteed self-funding program that provides as many solutions as possible.

Keeping pace with changing technologies for water and energy consuming equipment, control systems technology and building operations requires professional training and assistance. The continued efficiency of these systems becomes more dependent on knowledgeable operating personnel who have a complete understanding of the latest practices and procedures. Siemens has developed a variety of comprehensive training programs and workshops for building operation and management professionals to ensure that they are kept abreast of this information.

**Siemens Performance Contract Business Process Overview**

**Project Development Process**

Facility audits provide the basis of an energy saving performance contract project. Siemens approaches the analysis of a building, a process such as water or waste water, street lighting or other client assets for energy conservation with a hands-on approach by investing engineering time to understand the building operation and conferring with the owner to develop viable cost reduction alternatives. This includes the desire for on-site generation.

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

The important elements in developing energy cost saving projects are outlined below.

**Specialized Teams with Experience**

We use a team of engineers to evaluate the buildings' operation and functions through extensive onsite investigations and interviews with facility personnel. The engineering study is led by a registered professional engineer with years of experience in not only energy studies, but also building design and maintenance operations. Supporting the lead engineer is a team composed of specialists and engineers in lighting, mechanical design, control systems and service maintenance.

**Initial Interviews and Utility Data Collection**

In each building, the lead engineer conducts a preliminary walk-through with the building maintenance supervisor or facility engineer. This provides an overview of building operation and an opportunity to review the facility staff's concerns in each building. The building utility bills are collected and totaled to determine the building's energy efficiency. This provides an index to compare to similar buildings in the region and to identify which buildings have the potential for energy savings. Based on the interviews about a building's operation and its utility cost index, buildings are identified that have potential energy savings opportunities and warrant detailed energy studies. The lead energy engineer uses the information collected to develop a preliminary list of Energy-Savings Measures (ESMs).

**Investment Grade Energy Audit**

The engineering team conducts an Investment Grade Energy Audit (IGEA) on all buildings, processes and other energy assets where potential savings are identified. The energy engineers and specialists perform the following during this study phase:

- Building personnel are interviewed to determine building operation schedules.
- Problem areas that are a concern for the staff are investigated.
- Buildings are surveyed on a room-by-room basis.
- Building lighting is surveyed to provide an accurate count of the lighting fixture quantities and power consumption. Light levels are measured and alternative lighting design options are evaluated.
- Mechanical rooms are inspected during normal and unoccupied periods.
- Detailed investigation identifies equipment operation status and conditions.
- Powerhouse operations are reviewed and discussed with plant supervisors and operating engineers.

Based on the survey data, the engineering team performs preliminary calculations of savings and installed costs to determine the viability of each ESM. The energy engineering supervisor performs a quality review of the proposed ESMs to ensure they meet the owner's criteria and will solve comfort problems and building concerns identified during the detailed interviews of building personnel. The result of this review is the ESM list.

**Owner Feedback and Input**

We feel input from facility owners is important in developing a successful energy program. Owner feedback and input includes the following:

- ESM list is presented to the owner for review.
- Projected budget costs are presented with estimated paybacks.
- Facility plans and upcoming projects are reviewed for potential synergies.
- Detailed study findings are discussed for owner review.
- Other facility needs are discussed for possible cost savings.

## Statement of CT DAS Combined Request for Qualifications and Proposals for Qualified Energy Service Providers for Performance Contracting Services

---

The result of this important step is to refine the list of ESMs to an economically viable package of facility solutions that meet the owner's needs and provide an efficient facility.

### Final Program Development

Effective energy cost saving projects require thorough development to achieve the desired results. Siemens engineers perform the following tasks during the final program development:

- Engineered solutions are developed for each ESM selected by the owner.
- Subcontractors and consultants are utilized to ensure "real world" installations.
- Final detailed energy savings calculations are performed for each ESM.
- Detailed cost estimates are developed for each ESM.
- Energy Engineering Supervisor conducts final quality review to ensure energy savings are proper and the program addresses the owner's needs and concerns.
- Engineering and Sales team develops final list of ESMs for the owner to consider as a base project package and cost effective alternatives.

### **Project Management Process**

Project management is critical to the success of an energy saving project. Siemens takes project management to the next level by ensuring that the facilities achieve the performance desired, as well as by managing all of the typical construction and project activities.

Following are some of the key success factors in managing an energy cost saving project:

### The Importance of Communication

Good communication between Siemens and the owner is absolutely essential. Upon receipt of a contract, a communication process is immediately established. Cell phones, pagers, home phones, email and voice mail information is provided. The owner is always able to contact us — 24 hours per day, 7 days per week.

Each project begins with a kick-off meeting where the project is discussed and expectations are understood. For example, we want the owner's thoughts on:

- Locations for trailers and materials.
- Safety concerns for residents, students, maintenance staff, employees and contractors.
- Logistics of deliveries, truck routing, cranes, etc.
- Events, activities and schedules to work around, and any other ways in which disruptions can be minimized.
- Monitoring and documenting quality control, progress meetings, billing, etc.

We will conduct regularly scheduled progress meetings with the owner. Progress reports will be issued and meeting minutes will be kept.

#### Maintaining the Project Schedule

We understand the importance of maintaining a project schedule. Owners rely upon the schedule to coordinate their business activities, and we respect that. Our project managers establish a project schedule, fully documented using Microsoft Project, and use that schedule as a tool to stay organized, communicate with the owner and contractors, schedule the delivery of materials, and determine project manpower loading requirements. This project scheduling procedure allows us to seamlessly coordinate our activities with the ongoing business of the facility.

For Example...

...we were contracted to replace a vital surgery air-handling unit at a community hospital. The majority of their surgery suites depend on this unit, and downtime would have a very dramatic effect on patient care and the hospital's ability to generate revenue. The project required field demolition of the old unit, ductwork modification and assembly of the new unit. Additionally, we were required to provide temporary cooling to allow the central sterile operation to function while the main unit was being replaced. Traditional project scheduling called for a three-week timeline. After evaluating many different scenarios, a plan was formulated that allowed the unit to be back in service in only six days.

The process started Friday evening after the last surgery and continued around the clock until it was completed on the following Thursday. Mechanical, electrical, sheet metal and insulation workers were synchronized from shift-to-shift so no time was lost. A complex schedule was executed flawlessly and dozens of workers were orchestrated to avoid logistical conflicts.

Our ability to assemble and implement this accelerated schedule saved the hospital in excess of \$800,000 in lost revenue by bringing surgeries back online sooner than anticipated.

#### Minimizing Disruptions

We are sensitive to our customers' business. Whether providing, education, community or other vital services, your business must continue uninterrupted during a construction project. Our project managers anticipate how the different stages of a construction project may potentially interrupt the owner's ability to conduct their business, and take preventive measures to ensure that this does not happen.

For Example...

...one Siemens customer, a chemical company, had the desire to upgrade their entire HVAC system, add an air-handling unit and condenser, and modify existing ductwork in one of their analytical lab buildings – ALL work done while the facility remained fully operational and occupied. Siemens was able to provide the solution that they desired: Our project manager coordinated the construction activities in a way that did not disrupt the daily activities of the researchers within the facility.

#### Problem Solving Authority

An additional benefit provided by Siemens project managers is their ability to solve problems. Our project managers are empowered to make critical decisions, which greatly contribute to the success of our projects. When implementing facility improvements as part of an energy cost saving project, Siemens is the architect, engineer, construction manager and contractor. Our project managers have direct and immediate access to the project engineers, and the authority to make decisions that might normally take days or even weeks to go through the traditional channels of approval. The end result is that the project can move along expeditiously and without conflict.

### Building Performance Optimization Process

Energy Savings Performance Contracts provide building owners with superior facility performance due to the comprehensive process of designing and commissioning optimized systems.

Project managers are responsible for this process. Project managers are charged with much more than starting up equipment. They are responsible for making sure that the new systems provide the proper performance and results, energy efficiency, comfort standards, operational improvements, code compliance and air quality just to name a few.

Project managers must tune systems for proper performance as well as make sure that the various building systems interact with one another properly. Individual systems may seem to start, stop and run properly, however many individual systems working together comprise the facility. It is imperative to the overall facility performance that the entire facility is optimized.

Facility optimization is a science in and of itself. The success of an energy savings performance contract hinges upon this process, and Siemens has some of the best and most experienced project managers in the industry in charge of this process.

### Closing the Project

The closeout phase of a project should document and complete any and all open issues that remain when the project is nearing completion.

Siemens project managers assemble detailed completion lists through a variety of resources. Siemens design engineers, third-party design consultants, the project manager's records, and the owner's observations are just some of the resources used to gather the information necessary to ensure that all aspects of the project are 100% complete.

Operation and maintenance manuals are assembled and distributed when all items are finalized. These manuals include detailed information on all products and installations provided, including vendor listings and part numbers.

Owner training is one of the most important aspects of project completion. Siemens prides itself in being able to customize a training package that will coincide with the varying experience levels within your organization.

### Experienced Personnel

Most importantly, Siemens has the right people to manage the project. Our staff of project managers is experienced in delivering energy cost saving projects that meet and exceed customers' expectations.

Our project managers have managed tens of billions of dollars in projects including everything from government facilities to private commercial office buildings, from hospitals to universities, and so on. As is evident in reviewing their qualifications and experience, our project managers have learned from hands-on experience in a wide range of facilities.

### Measurement and Verification Process

Measurement and Verification services are some of the most important services that we provide to our customers. These services employ a process that is applied to all energy savings projects to ensure the improvements we provide function correctly and deliver the savings estimated for the program. Our most experienced engineers (Measurement and Verification Engineers) use computerized diagnostic tools to measure and track the savings of our projects. Tools that the engineer uses include technologies that automatically call and collect information from the building for analysis at our offices. The customer is contacted immediately if a problem is detected. Reports are generated and reviewed with our customers. If corrective actions are needed or significant changes have occurred, the Measurement and Verification Engineer schedules a review meeting where a corrective action plan is put together to preserve the project savings and occupant comfort.

#### General Problem Resolution

Problems will come to the project's Measurement and Verification engineer in various ways. Most problems are uncovered through proactive monitoring and investigation. Some problems are identified via staff complaints at the customer's site.

#### Remote Diagnostics

Our engineer will access the direct digital control system remotely to inspect present operation and review past operation, via previously trended data. Remote diagnostic analysis is extremely valuable in early identification of energy, comfort and air quality problems, especially in buildings with critical temperature control.

#### Operator Discussion

One key to our past success has been good communication between our energy engineer and the maintenance staff. If a question has emerged due to operator action, we contact the person who made the changes to understand why those changes were made. If changes were made to compensate for a malfunctioning system, we will help uncover the cause of the malfunction and assist in fixing it. If changes were made due to lack of operator knowledge, we will educate the operator on how to operate the system properly and explain the impact changes can have on system performance. Some problems cannot be solved through remote diagnostics or operator discussion. In these cases, we will resolve the problem during an onsite inspection.

#### Management Discussion

We record issues affecting building performance and include this documentation in quarterly reports. For more pressing issues, we call the owner's management representative to keep them abreast of issues significantly affecting the program results.

#### Quarterly Reports

Energy savings results will be summarized into reports on a quarterly basis and emailed to you. These reports will trend the operation of the facility and validate the savings realized. Following are the subjects in the reports:

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

Energy Savings

- Run Times & Equipment Status: You will receive measured and verified information on your equipment for the most current three-month period.
- Motor run time (fans, pumps, chillers, etc.) with guaranteed savings, actual savings and net difference per motor.
- Lighting with guaranteed savings, actual savings and net difference per retrofit type.
- Power factor correction savings.
- Utility rate change savings.

Comfort

- Building with digital controls.
- Notes on problem/resolution with comfort that we investigated during the past quarter.

Illumination

- Notes on problem/resolution with comfort that we investigated during the past quarter.

Annual Energy Reports

The annual reports will contain the same information as the quarterly reports, but trended and summarized for a 12-month timeframe.

Measurement and Verification Service Limitations

We will include in our performance guarantee agreement the labor to insure all guarantees as described above except for maintenance of the equipment.

**Approach to Project Training**

Project Training is an essential element of a successful energy savings project. Your most knowledgeable employees will understand the cause/effect of building troubles. With this knowledge they can act quickly to preserve comfort and safety for all of the building occupants. The training process that we provide is designed to provide the most effective path to developing employee competency.

The Process

We utilize the following process to provide the training your employees need to maintain a successful guaranteed savings program:

- Assess employees' knowledge and competency levels.
- Select and design the training programs needed.
- Train employees according to the design of the program (onsite and/or offsite).
- Test employees' knowledge as it applies to the facility.
- Update employees' knowledge at periodic intervals to stay current with new codes & improved processes.

Our Commitment

To assure we know your training needs would not be wise. Through the course of developing the energy savings project we will review with you your training needs. We will develop a course of action to ensure that your staff has the required knowledge to maintain your equipment and facility systems. The training can be incorporated into the performance contract to ensure successful project completion and energy cost savings.

### Service Support Capabilities

Our mission is to create outstanding customer value by partnering with customers to improve energy efficiency and facility performance. We work with our customers to help them achieve their business objectives and better serve the needs of their customers.

We have highly qualified engineers, mechanics, pipefitters and specialists on our staff. Together we form a team providing a high level of preventive maintenance, ensuring the integrity of equipment and optimal performance of facilities. We are a full service provider, with 24-hour emergency service available, 7 days a week. Our on-call rotations make sure that our service personnel are available to you in the event of an emergency.

We guarantee 1-hour response time online, and 4-hour response time onsite. All of our service personnel have well maintained vehicles stocked with repair parts and tools for minimal downtime. We also have a large inventory of parts in our warehouse.

Our Account Engineers work closely with their assigned service customers, providing ongoing consultation, quick resolution of problems and quality assurance of service.

For four consecutive years, the Building Technologies Division of Siemens has received the highest scores in customer satisfaction compared to our competitors. We are proud to receive such high recognition from our customers and are committed to continuing this level of service.

### Technical Solution Capabilities

#### Auditing

Siemens will perform an in depth survey of equipment and building infrastructure condition. We will review the types of systems, the control and operating characteristics of each, and the reliability and maintenance issues that may be of concern.

#### Design

Siemens works closely with architectural/design consultants to complete the most efficient design on the central plant expansion as well as each conservation measure considered. The design scope will include submission of complete engineering design, drawings, and project specifications.

#### Construction

Once the design phase of each project is completed, including plans and specifications, Siemens will seek competitive pricing for all equipment, installation subcontracts and major purchases. We will procure all items to be used in the implementation of the project and be fully responsible for the final product delivered to you.

### Operations/Maintenance

Siemens has the capability to provide maintenance on all equipment being furnished as part of this performance contract. We will work with you to evaluate the maintenance that is needed within your facility to insure proper equipment operation and maintenance. The proper approach or a combination of approaches with the help of your team will be determined after further study and our mutual agreement.

Siemens local office is less than an hour from The State of Connecticut. In addition, we have multiple technicians who live even closer, making us an ideal partner for The State of Connecticut.

Siemens Industry Inc.,  
Building Technologies Division  
104 Sebethe Drive  
Cromwell, CT 06416

### Measurement and Verification

Our approach to Measurement and Verification aligns with the International Performance Measurement & Verification Protocol. More detailed information may be found at [www.impvp.org](http://www.impvp.org).

### Training

Siemens provides complete training in the areas of building operation, efficiency, and maintenance. It is Siemens' philosophy that your employees must be knowledgeable of the systems being installed in order to efficiently operate those systems. A person on-site may prove to be the most beneficial approach to training on all new systems, for managing the building automation system and general training on HVAC equipment.

### Financing

A guiding factor in performance contracting is identifying, developing and applying all for available capital or external funding resources. Siemens can help you determine the proper funding mechanism to minimize financing costs, which can help you implement more Energy-Savings Measures. Whatever the appropriate funding mechanism is, tax-exempt municipal lease through a conduit, lease-to-own, or a combination of various options or terms Siemens can provide it for you or guide you through the process on your own, should you desire. Siemens Financial Services has an office and employees in Norwalk, CT.

**Energy Price and Risk Management**

Siemens can provide professional management of your energy supply, including consulting and strategic energy planning. Services include:

- Energy procurement and management
- Energy market analysis, risk assessment and budgeting
- Energy rate and tariff analysis
- Alternative fuel research and options
- Green power purchasing
- RFP, RFI, and RFQ process management and contract negotiations.



**Energy Conservation and Optimization**

Siemens can implement and manage facility improvements to optimize your energy operations, with guaranteed financial and performance-based results. Services include:

- Energy saving facility improvement measures
- Continuous energy commissioning
- Detailed energy audits, analysis and benchmarking
- Funding options and performance guarantees

**Energy Reliability and Security**

Siemens can design and install on-site energy systems that ensure a reliable, secure and clean energy source for your facility. Services include:

- Electrical generation
- Co-generation
- Uninterruptible power sources
- Back-up energy generation
- Alternative and renewable fuel sources

**Environmental Responsibility**

Siemens can incorporate and implement sustainable practices into your facility including building design, energy optimization and indoor environmental air quality. Services include:

- Environmental monitoring and benchmarking
- Indoor environmental quality – diagnostics and remediation
- Green building guidance and certification - LEED® certification and management; ENERGY STAR® benchmarking and certification
- Minimized environmental impact of your facility
- On-site green energy generation
- Waste-to-energy

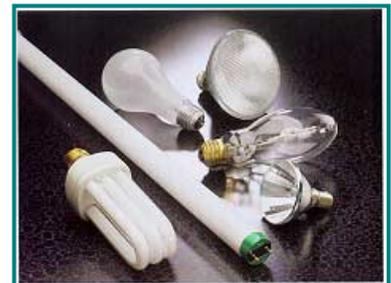
**Expertise in Systems**

**Energy Efficiency and Facility Improvement Measure Capabilities**

The following provides an overview of Siemens’ technical and engineering capabilities for energy efficiency improvements that will be investigated during the audit phase. This section will introduce the types of technologies proposed and the philosophy behind their application. Please be aware that this is a general overview and that economic parameters may impact the final project scope.

**Lighting Improvements**

Lighting system re-designs, retrofits, and replacements will be a major part of most energy savings performance contracts. Lighting is the most apparent of the energy using systems in facilities and has a considerable effect on perceived quality, appearance, operating performance, and operating costs. Effective and economical lighting solutions will contribute substantially to the project’s success.



Siemens lighting solutions include:

- Interior and exterior lighting replacement and/or retrofits
- Lighting control improvements
- Occupancy Sensors
- LED exit sign, interior and exterior installation
- Daylighting controls/Daylight harvesting

### OSRAM SYLVANIA is a Siemens Company

OSRAM SYLVANIA manufactures and markets a wide range of lighting products for consumers and corporate customers in the automotive, computer, and aerospace markets, as well as many other worldwide industries.

As the world's second largest lamp and materials manufacturer, OSRAM SYLVANIA produces 3.3 million energy-saving lamps every business day. From America's oldest battleship to one of its greatest natural wonders, and vast parklands to bustling city streets, hospitals, college campuses and K-12 school districts nationwide, OSRAM SYLVANIA, delivers solutions that light the world, and illuminate the way to our customers' success.

### Lighting Controls

Siemens Building Technologies has provided clients with various lighting control solutions. Systems, which monitor who enters the building and activates only the lights they need to get to their office and get their work done. We have provided occupancy sensors, which activate lights when you enter the room and do not shut off lights until you leave the room as well as day-lighting solutions, which measure the amount of light and switch a portion of lights or dim the lights to accentuate the daylight provided from nature.

### Energy Management System/Building Automation Controls (EMS/BAS)

Siemens can provide you with a world-class building automation system. We have always prided ourselves on maximizing our customers' investment in our products by allowing for a migration path to continue using your older control panels as we upgrade our system architecture. We can provide system integration solutions for a fully integrated EMS/BAS control system controlling and monitoring multiple suppliers, third party mechanical and electrical equipment (chillers, boilers, drives, meters, etc.), lighting and even security and life safety systems. The EMS/BAS is the cornerstone of the Measurement and Verification plan. If you have standardized on a competitive system, your existing system will be expanded, allowing you even more value out of the technology and products in which you have already invested.

### Mechanical Systems

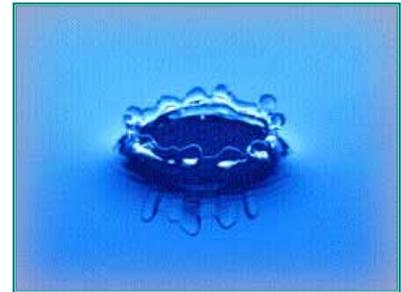
Siemens evaluates and determines the most effective strategy to employ with respect to your facility's major mechanical systems. The following equipment may be modified, replaced, repaired, or optimized, based on such factors as condition, performance and reliability:

- Chillers
- Boiler Systems
- Heat Recovery Systems
- Compressed Air Systems
- Cooling Towers
- Insulation Solutions
- Economizer Systems
- Vibration Analysis
- Refrigerators and Freezers
- Ground Source Heat Pumps
- Boiler Conversions
- High Efficiency Window A/C
- HVAC Systems
- VAV Systems
- Makeup Ventilation Air Units
- Fans and Pumps
- Humidification & Dehumidification

### Water Conservation Technology

Siemens provides expertise in improving buildings by increasing efficiency in water system components and efficiency in water usage, both in domestic water systems and HVAC systems. Clean water sources, supply and cost are issues throughout the world, now and increasingly in the future. Some of the areas for implementation of water technologies include the following:

- Domestic use in bathrooms by faucets, water closets, urinals, showers and baths
- Low volume water closets
- Low flow showerheads and faucet laminar flow restrictors
- Cooling tower make-up water
- Condenser cooling for air conditions, chillers, refrigeration compressors
- Compressor cooling
- Floor and equipment washing
- Boiler make-up water and steam trap losses
- Kitchen use and dishwashers
- Swimming pool water consumption control techniques
- Floor drain priming systems
- Leak detection - underground and in-buildings
- Industrial Water Treatment Facilities
- Irrigation Technologies
- Ultraviolet Light and Ozone Technologies
- Water meters with automatic meter reading



**Water & Wastewater Solutions:**

Water is our planet’s most valuable natural resource. Yet, as populations continue to grow; many municipalities are faced with growing concerns about the availability of usable water to meet the demand. Even in areas where the water is plentiful, it must often be purified before it is acceptable for drinking. As the cost of water treatment increases and standards grow increasingly more complex, Siemens Water Technologies is the partner to choose for supplying and managing your water and wastewater treatment needs.



Using the Performance Contracting model, Siemens Building Technologies has designed, developed and implemented comprehensive solutions to upgrade inefficient blowers, replace coarse bubble diffusers with fine bubble diffusers, and automate and optimize Dissolved Oxygen (DO) control systems to improve the digestion process. We can leverage the strength and depth of our industry expertise to provide the widest range of products, services and solutions to improve the efficiency and operational performance of treatment facilities.

Siemens Water Technologies provides the most comprehensive, cost-effective and reliable treatment systems and services. We offer everything from emergency water supply and conventional water treatment processes to wastewater reuse systems, membrane bioreactors, UV disinfection systems and RO cleaning contracts. These products and services are designed to help keep your city safe, or your company profitable. From single products to entire systems coupled with integrated services to make your plant operate reliably, we're with you. And we provide you with the tools to succeed. Like conventional water filtration, membrane filtration, clarification and disinfection, as a packaged water plant or a custom designed solution.

**Alternative Fuel Sources:**

As a company founded and built on innovation, Siemens strives to be on the leading edge of technology. With the cost of conventional energy resources skyrocketing, our company is developing and deploying technologies and solutions for sustainable and in some cases re-useable resources to develop alternative fuel and energy sources. Some key examples of those technologies are as follows:

- Compressed Natural Gas as a Fuel for Fleet Vehicles (see section 3.5.3.1 for expanded details).
- Bio Diesel created from brown grease not spent vegetable oil. The caveat here is that today brown grease has to be disposed of at either a landfill or through a contracted hauling service and incinerated.
- A bio mass product produced form dried wastewater sludge.
- Bio gas generated from wastewater sludge digestion. This bio gas can now be deployed in several ways: a building heat source, fuel for a cogeneration system or fuel from a sludge drying process.

### **Electric Motor Systems**

Electric motors can account for up to half of the electricity use in commercial and institutional buildings. HVAC and refrigeration systems, pumps, blowers, lift systems and other motor driven equipment represent energy savings opportunities. Siemens manufactures rewinds and repairs motor systems. Either a program of attrition replacement/upgrade or a systematic district-wide changeover to premium-efficiency motors should be considered. The most efficient premium-efficiency motors are not off the shelf items, so motor replacement must be planned prior to failure. Included with electrical motors, variable frequency drives also provide energy savings.

### **Thermography**

Thermography is the scanning of an object in order to gather its heat content with respect to its surrounding environment. Thermography can show hot spots in electrical panels or heat losses around doors, windows or even areas where you suspect a steam leak underground. This technology can be used for preventive maintenance of electrical equipment or to detect poor status of insulation systems.

### **Building Envelope/Weatherization and Miscellaneous**

Energy conservation savings measures that are less frequently utilized but should be included in a comprehensive program include building envelope/weatherization modifications such as improved weatherization with more efficient insulation, window replacement and new roofing materials. Electric peak-shaving systems, thermal storage, and electrical power (transmission and distribution) system improvements also may provide significant savings.

### **Operations & Maintenance / Retro-Commissioning**

Through discussions with your facilities services staff and site inspections, Siemens energy engineers will determine the most effective strategy to employ with respect to the following:

- Steam Trap Maintenance and Replacements
- HVAC Damper and Controller repair or replacement
- Steam, Hot Water, and Chilled Water Valve Replacements
- Piping System Insulation Repair and Replacement
- Package Air Conditioning Unit Replacement
- Utility Distribution Renovations and repair
- Lighting Conversions and Control Solutions

### Indoor Air Quality

To address many facets of indoor air quality, Siemens created IAQuest, a truly compete indoor air quality service. IAQuest brings the combined strengths of health industry professionals and multi-disciplinary engineers to address IAQ with a comprehensive approach. Services include:

- Education and Training
- Building Audits
- Preventative Maintenance
- Air filtration
- Process re-engineering
- Complete retrofits
- Demand-control ventilation
- Ventilation system operations reporting
- Structural changes
- Procedures implementation
- Mold and Lab Testing
- Industrial Hygienists on Staff



### Laboratory Solutions

Siemens Building Technologies has provided laboratory solutions such as fume hood controls, face velocity monitoring, lab hood certification, lab pressurization and temperature and humidity trending and controls.

### Solar Power

Integration of solar electric panels into building facades and roof structures gives architects and developers exciting new choices for building materials that actually produce electric power while adding aesthetic value. Large grid-support power stations of 100-500 kW are being viewed by utilities around the world as a cost-effective method for solving summer peaking problems and improving customer service. This is normally provided through a Siemens owned Power Purchase Agreement which has Siemens designing, building, owning, operating and maintaining the system for the term of the agreement (up to 20 years).

### Fuel Cell Technologies

Siemens Westinghouse is a world leader in fuel cell technology. Siemens Westinghouse’s Solid Oxide Fuels Cells are the most efficient fuel cells on the market and are more efficient than the older technology molten carbonate models. This technology provides pure high quality power with an energy source from Hydrogen (Methane CH<sub>4</sub>-Natural Gas) with the only emission being water and heat. We also have several national partners that we can investigate if this fits into the hospital’s financial goals for the energy project.

### Cogeneration Technologies

Siemens Westinghouse and Siemens Building Technologies are leaders in cogeneration technology. In areas of the country (North East and West Coasts) where the cost of electricity is over five times the cost of fuel, Siemens has provided multiple cogeneration solutions for our clients. Our partnerships can provide micro-turbines, which integrate with multiple Siemens systems.

Siemens Building Technologies is the only company who can provide expertise in all types of Distributed Generation Technologies.



### Wind Power

A barren test site 65 miles north of Las Vegas may not look like the best place to start fixing California's energy problems, but Siemens is betting that the site has a lot more to offer than meets the eye. Siemens is the turnkey contractor of one of the world's largest wind-to-energy facilities on the 664-acre parcel. When completed, it is expected to generate up to 260 megawatts -- enough to fuel a city of 260,000 residents. Siemens managed the project's design, construction and installation.

### Utilities Procurement

Siemens provides expertise, established reputation and unbiased advice to help you reduce utility costs via competitive procurement, rate negotiation, technical support, and staff training programs. We know how to identify cost-effective opportunities and develop customized solutions for you, completely independent of who supplies the energy to your facility. Led by the energy industry's foremost authorities on competitive retail energy procurement, we offer the best approach to total energy management. We have extensive experience in analyzing and negotiating energy purchase agreements on the supply side. Procurement includes electricity, natural gas / coal / fuel oil, steam / chilled water, and water / sewer. Siemens also negotiates for utility rebates, incentives, and subsidies.



**Environmental & Related Services**

Siemens selects partner organizations that are experts in environmental engineering. They look for improvement and compliance in the following:

- Analyze rainwater runoff, landscape watering, and wastewater for opportunities in ground and wastewater reclamation.
- Look for natural solutions to reduction in building loads and heat transmission such as the addition of trees and/or the addition of natural materials to buildings.
- Indoor air quality, building exhaust air, and process emissions compliance and reduction programs.
- Asbestos abatement investigation and removal.
- Industrial hygiene
- Hazardous materials disposal and recycling
- Health physics



**Information and Communication Systems**

Siemens is the world's number one provider of wire-line network communication systems and the third largest supplier of mobile phones. Voice, data and multimedia communications are converging at lightning speed, even as deregulation is making the U.S. information and communications market far more competitive and complex for both private enterprises and public entities. Siemens is looking beyond traditional ways of doing business to deliver practical, integrated solutions that make the competitive difference. Technologies include wireless networking, distance learning, voice over Internet provided applications, web technologies, and information storage and retrieval systems.

**Fire Alarm & Life Safety**

Siemens life safety systems meet the life safety and compliance needs of your facility. We can recommend a system design to meet your individual facility needs and provide solutions to interface with other critical building systems. System inspection, testing and preventive maintenance are available to reduce false alarms, minimize litigation exposure, prolong system life and document compliance.

**Security**

Security applications include access control, video surveillance, closed-circuit television and intrusion detection. These security systems can be integrated with building automation controls, lighting, fire and HVAC systems for more efficient facility management. For example, ventilation rates in a library can be tied directly to the number of building occupants as recorded by the “card-less entry” system. Or, a building’s lights and HVAC systems start whenever the first person enters the building, and stop when the last person leaves rather than time-of-day scheduling.

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

**Local In-House Services and Support**

Below is an overview of the company’s local capabilities to support the services and technologies implemented by the Hospital as well as detailed descriptions of the types of services and programs we offer.

**Local Connecticut Office Services**

• Mechanical Services	• Building Audits
• Building Modeling	• Financing
• Design and Equipment Selection	• Project Management
• Solution Installation	• Preventive Maintenance
• Training	• Measurement and Verification
• Air Balancing & Commissioning	• Medical Gas Certification
• Pneumatic Controls	• Energy Management
• Direct Digital Controls	• Indoor Air Quality Testing
• Laboratory Certification & Design	• Fire & Life Safety Services
• Water Treatment Services	• Security Services
• Computer Networking Services	• Laundry Consulting & Installation
• Regulatory Compliance Assistance	• Custodial Consulting
• Lighting Services	• Steam Trap Services
• Central Power Plant Additions	• Variable Frequency Drives

**Connecticut Partnered Local Services**

• Mechanical Contractors Services	• Electrical Contractor Services
• Consulting Engineering	• Water Treatment & Conservation
• Co-Generation Design Services	• Local Financing Services
• Hazardous Waste Disposal	• Utility Procurement
• Water Treatment Services	• Environmental / Compliance

**Siemens National Centers of Excellence**

• Waste Management Services	• Industrial Hygienists On Staff
• Additional Project Management	• Financing
• Training	• Energy Supply Consultation
• Laboratory Certification & Design	• Indoor Air Quality Testing
• Water Treatment Services	• Fire & Life Safety Services
• Computer Networking Services	• Security Services
• Regulatory Compliance Assistance	• Laundry Consulting & Installation
• Metering Solutions	• Custodial Consulting

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

2.1.2 Conversions to a different energy or fuel source, associated with a comprehensive energy efficiency retrofit

Siemens will provide a comprehensive, unbiased evaluation of various available energy types and make recommendations for facility managers regarding fuel option strategies. Facility personnel will be provided with written reports detailing the advantages and disadvantages of different fuel options. Included in the summary report will be issues regarding fuel availability, storage concerns, pricing and transportation, and utility rate and tariff considerations.

Some of the questions you may have that Siemens can provide assistance with are:

- Is it less costly to burn natural gas or fuel oil?
- Does it pay to have a backup fuel supply?
- What are my options if my fuel supply is interrupted?
- How long will interruptions last?
- How many interruptions per year are expected?
- What kind of notification time will I receive?
- What if I don't have enough backup supply to make it through the interruption period?

2.1.3 Post-installation project monitoring, data collection and reporting of savings

**Measurement and Verification**

The determination of energy savings requires both accurate measurement and replicable methodology, known as a measurement and verification protocol. Good measurement and verification practices allow project performance risks to be understood, managed and allocated among all parties.

The Siemens Measurement and Verification (M&V) process is compliant with the Federal Energy Management Program (FEMP), International Performance Measurement and Verification Protocol (IPMVP2007/2010), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Guideline 14.

There are two elements in our M&V process:

- Verifying the potential of the Energy-Savings Measures (ESMs) to perform and generate energy savings. This requires confirmation that the baseline conditions were accurately defined, the proper equipment/systems were installed, that they are performing to specification and that they have the potential to generate the predicted energy savings.
- Verifying the ESM's performance- determining the actual energy savings achieved by the installed ESM.

Our approach to verifying baseline and post-installation conditions can include inspection, spot measurement testing, utility bill comparison, modeling and commissioning activities.

There are five guarantee options to measure and verify savings:

**Option A – Retrofit Isolation:** Key Parameter Measurement. Savings are determined by field measurement of the key performance parameter(s) which define the energy use of the ESM’s affected system(s) and/or the success of the project. Measurement frequency ranges from short-term to continuous, depending on the expected variations in the measured parameter and the length of the reporting period. Parameters not selected for field measurement are estimated. Estimates can be based on historical data, manufacturer’s specifications or engineering judgment. Documentation of the source or justification of the estimated parameter is required. The plausible savings error arising from estimation rather than measurement is evaluated.

**Option B – Retrofit Isolation:** All Parameter Measurement. Savings are determined by field measurement of the energy use of the ESM-affected system. Measurement frequency ranges from short-term to continuous, depending on the expected variations in the savings and the length of the reporting period.

**Option C – Whole Facility:** Savings are determined by measuring energy use at the whole facility or sub-facility level. Continuous measurements of the entire facility’s energy use are taken throughout the reporting period.

**Option D – Calibrated Simulation:** Savings are determined through simulation of the energy use of the whole facility or of a sub-facility. Simulation routines are demonstrated to adequately model actual energy performance measured in the facility. This option usually requires considerable skill in calibrated simulation.

**Option E – Stipulated:** This option is the method of measurement and verification applicable to ESMs consisting either of Operational Savings or where the end-use capacity or operational efficiency; demand, energy consumption or power level; or manufacturer’s measurements, industry standard efficiencies or operating hours are known in advance, and used in a calculation or analysis method that will stipulate the outcome. Both the customer and Siemens agree to the stipulated inputs and outcome(s) of the analysis methodology. Based on the established analytical methodology, the savings stipulated will be achieved upon completion of the ESM and no further measurements or calculations will be performed during the performance guarantee period.

Selection of a Measurement and Verification Methodology

The first four of the five measurement and verification options are allowed under the International Performance Measurement & Verification Protocol – 2007/2010 and differ in the level and duration of the retrofit verification measurements. Options A and B focus at the system or equipment level, while Options C and D use measurements taken at the whole building, whole-facility level or through use of the computer model used to calculate the energy savings. Options A and B use short- or long-term measurements, while Options C and D use continuous or regular interval measurements during the term of the project and model recalibration. No one approach is inherently superior. Each approach has advantages and disadvantages based on site-specific factors and the needs and expectations of the customer.

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

Examples:

- The installation of temporary metering equipment on the chilled-water systems of facilities with HVAC improvements establishes the operating hours and loads and energy draws of the affected equipment/systems as a function of some external parameter such as outside air temperature.
- The use of customer-defined, stipulated operating hours for facilities and/or the installation of light-logging equipment and the use of one-time measured fixture wattages (as described below) on the lighting systems makes Option A the appropriate choice for lighting measures.
- The installation of energy management and control system equipment on the systems makes Option B the appropriate choice for controls measures.

Our preference is to perform M&V using the most accurate and least costly option that proves to the customer that energy savings have been met. This approach lowers the total cost of the M&V plan, leaving more dollars available to perform more facility improvements.

#### Measurement and Verification Adjustments

Many commonly approved programs exist that adjust the Base Period Data based on weather and operational conditions during the Annual Savings Period to estimate the energy and energy costs of the facility had Siemens not performed the work. The result is the “Adjusted Baseline”.

Siemens will adjust utility savings for variations in utility consumption due to (1) Local weather conditions, (2) Occupancy level changes, hours of operations, (3) Structural modifications, modifications to utility consuming equipment, (4) Damaged or malfunctioning equipment, and (5) Any deviations from the proposed operating schedules.

There may be other changes in the facility’s usage and operation for which a calculated adjustment is necessary. Siemens may propose an adjustment procedure based upon acceptable engineering practices to account for any such changes.

Other issues specific to the project that may cause the baseline to be adjusted would include conversions of equipment to a different fuel or source. Other identified issues will be thoroughly discussed during the audit and engineering phase of the project.

#### Adjustment for Weather Variations

Siemens may employ Metrix®, industry standard regression analysis software to determine the adjustments necessary to account for the effects of weather and billing cycles. This regression analysis methodology is capable of making adjustments for changes in base load, heating degree-days, cooling degree-days, and up to three other variables. The inclusion of any variables is mutually agreed upon by Siemens and the customer and is supported by regression analysis documentation. In addition, some consumption may be allocated to tuning period modifications if any are defined. The inputs and outputs to the equation vary depending on whether the equation is being applied to the pre-retrofit tuning period or the post-retrofit tracking period.

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

A Measurement and Verification Program (M&V) is required for all Siemens performance contracting projects. The M&V covers the cost of the ongoing Measurement and Verification program. The M&V may be cancelled at the customer's direction after the mandatory period required by law. Should the customer elect to cancel the M&V, the energy savings are no longer guaranteed.

**2.1.4 Overall project management and qualifications**

A performance contract requires a management plan with an understanding of the entire process, including, but not limited to, the actual construction.

Siemens views performance contracting as a long-term partnership through all phases of the process. Therefore, the Siemens energy team's approach to performance contracting is a very structured and municipal-centric process that follows five steps from initial audit to ongoing Measurement and Verification. Our approach is extremely effective in as much as it brings together complimentary skill sets from within our organizations to seamlessly develop, implement and monitor each energy project.

Once selected as the energy performance contracting provider, our project management team, along with our strategic partners, will mobilize immediately to begin the performance contracting services.

For the installation and management of the project, Siemens will utilize its base of experienced and talented people who have demonstrated expertise with similar programs. All of our energy savings contracts include an on-site project manager for a single focal point of responsibility for all aspects of the construction contract. This person will apply technical knowledge, people and communication skills, and management talent in an on-site, pro-active manner, and together with Siemens' Operations staff, will ensure that our contract commitments to the client are met on time, within budget and at the quality expected in each area of the project.

All Siemens personnel have maintained a successful track record for timely installation of projects and customer satisfaction. All of the various functions necessary for successful completion of a site project will be coordinated by the project manager including subcontracting, training, education, payment flows, quality assurance, and communications with all entities including the maintenance staff, building operators, residents, students, etc.

**Project Administration Specific to Project Management**

The core of project administration is management. It is a system for controlling project elements and situations to your advantage. The purpose of project administration is to increase job productivity by establishing proactive, rather than reactive, management methods.

Effective administration provides a system that actively anticipates and prevents potential problems, saving everyone on the project team from having to react to one unforeseen incident after another. On a poorly organized project, people spend as much time "putting out fires" as they do installing energy saving systems. The company earns customer satisfaction on the amount of productive work it does each day, not on the number of internal problems it corrects. Therefore, it is no surprise that unorganized projects lose both customer satisfaction and money.

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

Siemens excels in the area of project management. We take pride in our ability to complete jobs on time, within budget, and at the quality deserved by our customers. We encourage you to contact any of our partners in the performance contracting market for concurrence.

Project administration is one of Siemens outstanding performance areas. This is accomplished through strict job supervision.

**The essential goals and responsibilities of a Siemens Project Manager are:**

1. *To organize and direct the efforts of the project team for maximum success by:*
  - ▶ Breaking down the project into achievable, trackable tasks.
  - ▶ Develop a detailed project plan/schedule with input from the customer.
  - ▶ Assigning specific responsibilities to individuals.
  - ▶ Establishing a chain of command and ensuring that everyone always has the information, tools, materials, manpower and cooperation they need to do their job.
  
2. *To establish a network for communications among all members of the project team and between the project team and the other parties involved in the project: building occupants, site managers, project owner, engineer and subcontractors, etc. This is accomplished by:*
  - ▶ Identifying who should be talking to whom.
  - ▶ Providing channels for communication, including reports and feedback systems.
  - ▶ Establishing a schedule of regular meetings.
  
3. *To devise and implement work methods that maximize productivity at all levels by:*
  - ▶ Applying the most productive methods for installation and material handling.
  - ▶ Employing labor and time-saving tools and techniques, properly managing project.
  - ▶ Resources such as labor, materials, installed equipment, tools and subcontractors.
  - ▶ Coordinating subcontract construction activities with the construction manager and all other associated trades on the job.
  
4. *To monitor and document job progress and events by:*
  - ▶ Implementing a practical, simple monitoring system that keeps the team apprised of all job situations, helps avoid surprises, and brings the entire team’s talents to bear in solving problems.
  - ▶ Using the job’s history and present status to forecast project progress-to-completion and to make adjustments to the project strategy as needed.

Siemens’ project manager will work with the account executive to coordinate all project activities during the audit phase. During the construction phase, the project manager will act as a single point of contact on behalf of Siemens with respect to all matters under the program and will become familiar with the progress and quality of the completed work.

The project manager will become familiar with the operating schedule of the facility and interface with the client's representative in scheduling work so as to have limited impact on building operation. The project manager will be responsible for coordinating the work of other trade subcontractors on the project. The project manager will take all actions necessary to perform the work, the Technical Support Program (the service contract), and calculate the guarantee.

#### 2.1.5 Securing long-term financing

##### **Financial Parameters/Approach**

Siemens has executed over \$2 billion in Performance Contracts, with approximately 75% of these contracts being financed. We have substantial experience in arranging financing for our customers through a number of sources with projects ranging from under \$500,000 to the tens of millions of dollars.

Your preference will dictate, but we have found that most entities use some form of tax-exempt financing, either from a local lender or from our sister company, Siemens Financial Services (SFS). Interest rate ranges between local lenders and SFS are nearly identical, but SFS has no associated fees or closing costs.

In addition to the cost of financing there are other characteristics that impact the total cost of the energy conservation projects, such as payment sequence. Siemens can adjust the timing of the payments so the project's savings cover the payments during each fiscal year. This ensures that our financial approach is indeed budget neutral.

##### **Funding Sources**

With our size, strength and experience Siemens has access to many traditional and non-traditional financing sources. This benefit is extremely valuable in today's challenging financial markets. We have direct access to the largest commercial banks as well as solid, stable investment banks in the New England area.

However, many of our customers have established relationships and/or master arrangements with financial institutions or investment firms. Again, it is our practice to understand our customer's preferences and work within those parameters.

There are several Federal financing programs that may be applicable to many of the stakeholders. These include Qualified Energy Conservation Bonds (QECB) which Siemens has experience locally with two customers taking advantage of this low cost financing and Qualified Zone Academy Bonds (QZAB) which is traditionally available only for public schools.

##### **Special Terms and Conditions**

The majority of financing types have standardized terms and conditions. Even though there is substantial standardization, differences exist among financial institutions. Once a financial system and source is decided upon, terms and conditions particular to that can be negotiated.

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

2.1.6 Financial stability

We include an excerpt from Siemens Annual Report 2011, which includes Consolidated Statements of Income, Consolidated Statements of Comprehensive Income, Consolidated Statements of Financial Position, Consolidated Statements of Cash Flow, Consolidated Statements of Changes in Equity and Notes to Consolidated Financial Statements for the fiscal years ended September 30, 2011 and 2010.

The Managing Board of Siemens AG is responsible for preparing the consolidated financial statements and management's discussion and analysis. Ernst & Young has audited the consolidated statements prepared by Siemens AG.

To view Siemens Annual Reports in their entirety, or to obtain additional financial information, please visit our website at [Investor Relations - Siemens Global Website](#).

## D. Consolidated Financial Statements

154	D.1	Consolidated Statements of Income			
155	D.2	Consolidated Statements of Comprehensive Income			
156	D.3	Consolidated Statements of Financial Position			
157	D.4	Consolidated Statements of Cash Flow			
158	D.5	Consolidated Statements of Changes in Equity			
160	D.6	Notes to Consolidated Financial Statements	160	Segment information (continuing operations)	196
			162	1 – Basis of presentation	196
			162	2 – Summary of significant accounting policies	199
			173	3 – Critical accounting estimates	210
			175	4 – Acquisitions, dispositions and discontinued operations	212
			181	5 – Restructuring expense	212
			181	6 – Other operating income	215
			182	7 – Other operating expense	216
			182	8 – Income (loss) from investments accounted for using the equity method, net	218
			183	9 – Interest income, interest expense and other financial income (expense), net	225
			184	10 – Income taxes	228
			186	11 – Available-for-sale financial assets	232
			187	12 – Trade and other receivables	232
			188	13 – Other current financial assets	237
			189	14 – Inventories	241
			189	15 – Other current assets	241
			189	16 – Goodwill	242
			192	17 – Other intangible assets	242
			193	18 – Property, plant and equipment	247
			194	19 – Investments accounted for using the equity method	247
			195	20 – Other financial assets	249
			196	21 – Other current financial liabilities	249
					251
					251
					252
					43
					List of subsidiaries and associated companies pursuant to Section 313 German Commercial Code (HGB)
266	D.7	Supervisory Board and Managing Board	266	D.7.1 Supervisory Board	
			270	D.7.2 Managing Board	

Due to rounding, numbers presented throughout these Consolidated Financial Statements may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures.

## D.1 Consolidated Statements of Income

For the fiscal years ended September 30, 2011 and 2010			
(in millions of €, per share amounts in €)	Note	2011	2010
Revenue		73,515	68,978
Cost of goods sold and services rendered		(51,388)	(48,977)
Gross profit		22,127	20,001
Research and development expenses		(3,925)	(3,558)
Marketing, selling and general administrative expenses		(10,297)	(9,666)
Other operating income	6	555	839
Other operating expense	7	(502)	(1,554)
Income (loss) from investments accounted for using the equity method, net	8	147	9
Interest income	9	2,207	2,045
Interest expense	9	(1,715)	(1,759)
Other financial income (expense), net	9	645	(383)
<b>Income from continuing operations before income taxes</b>		<b>9,242</b>	<b>5,974</b>
Income taxes	10	(2,231)	(1,712)
<b>Income from continuing operations</b>		<b>7,011</b>	<b>4,262</b>
Income (loss) from discontinued operations, net of income taxes	4	(690)	(194)
<b>Net income</b>		<b>6,321</b>	<b>4,068</b>
Attributable to:			
Non-controlling interests		176	169
Shareholders of Siemens AG		6,145	3,899
Basic earnings per share	36		
Income from continuing operations		7.82	4.72
Income (loss) from discontinued operations		(0.78)	(0.23)
<b>Net income</b>		<b>7.04</b>	<b>4.49</b>
Diluted earnings per share	36		
Income from continuing operations		7.73	4.57
Income (loss) from discontinued operations		(0.77)	(0.23)
<b>Net income</b>		<b>6.96</b>	<b>4.34</b>

The accompanying Notes are an integral part of these Consolidated Financial Statements.

## D.2 Consolidated Statements of Comprehensive Income

For the fiscal years ended September 30, 2011 and 2010			
(in millions of €)	Note	2011	2010
Net income		6,321	4,068
Currency translation differences		129	1,220
Available-for-sale financial assets	11	(59)	19
Derivative financial instruments	31/32	(121)	(149)
Actuarial gains and losses on pension plans and similar commitments	24	(65)	(2,054)
<b>Other comprehensive income, net of tax<sup>1</sup></b>		<b>(116)</b>	<b>(964)</b>
<b>Total comprehensive income</b>		<b>6,205</b>	<b>3,104</b>
Attributable to:			
Non-controlling interests		159	212
Shareholders of Siemens AG		6,036	2,892

<sup>1</sup> Includes income (expense) resulting from investments accounted for using the equity method of €8 million and €24 million, respectively, for the fiscal years ended September 30, 2011 and 2010.

The accompanying Notes are an integral part of these Consolidated Financial Statements.

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

## D.3 Consolidated Statements of Financial Position

As of September 30, 2011 and 2010			
(in millions of €)	Note	09/30/2011	09/30/2010
<b>Assets</b>			
<b>Current assets</b>			
Cash and cash equivalents		12,468	14,108
Available-for-sale financial assets	11	477	246
Trade and other receivables	12	14,847	15,502
Other current financial assets	13	2,899	2,610
Inventories	14	15,143	14,950
Income tax receivables		798	790
Other current assets	15	1,264	1,258
Assets classified as held for disposal	4	4,917	715
<b>Total current assets</b>		<b>52,813</b>	<b>50,179</b>
Goodwill	16	15,706	15,763
Other intangible assets	17	4,444	4,969
Property, plant and equipment	18	10,477	11,748
Investments accounted for using the equity method	19	4,966	4,724
Other financial assets	20	11,855	10,765
Deferred tax assets	10	3,206	3,940
Other assets		776	739
<b>Total assets</b>		<b>104,243</b>	<b>102,827</b>
<b>Liabilities and equity</b>			
<b>Current liabilities</b>			
Short-term debt and current maturities of long-term debt	23	3,660	2,416
Trade payables		7,677	7,899
Other current financial liabilities	21	2,247	1,401
Current provisions	25	5,168	5,138
Income tax payables		2,032	1,816
Other current liabilities	22	21,020	21,794
Liabilities associated with assets classified as held for disposal	4	1,756	146
<b>Total current liabilities</b>		<b>43,560</b>	<b>40,610</b>
Long-term debt	23	14,280	17,497
Pension plans and similar commitments	24	7,307	8,464
Deferred tax liabilities	10	595	577
Provisions	25	3,654	3,332
Other financial liabilities		824	971
Other liabilities	26	1,867	2,280
<b>Total liabilities</b>		<b>72,087</b>	<b>73,731</b>
<b>Equity</b>			
Common stock, no par value <sup>1</sup>		2,743	2,743
Additional paid-in capital		6,011	5,986
Retained earnings		25,881	22,998
Other components of equity		(68)	(8)
Treasury shares, at cost <sup>2</sup>		(3,037)	(3,373)
<b>Total equity attributable to shareholders of Siemens AG</b>		<b>31,530</b>	<b>28,346</b>
Non-controlling interests		626	750
<b>Total equity</b>		<b>32,156</b>	<b>29,096</b>
<b>Total liabilities and equity</b>		<b>104,243</b>	<b>102,827</b>

<sup>1</sup> Authorized: 1,117,803,421 and 1,111,513,421 shares, respectively. Issued: 914,203,421 and 914,203,421 shares, respectively.  
<sup>2</sup> 39,952,074 and 44,366,416 shares, respectively.

The accompanying Notes are an integral part of these Consolidated Financial Statements.

Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services

D.4 Consolidated Statements of Cash Flow

For the fiscal years ended September 30, 2011 and 2010			
(in millions of €)	Note	2011	2010
Cash flows from operating activities		7,011	4,262
Income from continuing operations			
Adjustments to reconcile net income to cash provided			
Amortization, deprecation and impairments <sup>1</sup>		2,638	3,743
Income taxes		2,231	1,712
Interest (income) expense, net		(491)	(286)
(Gains) losses on sales and disposals of businesses, intangibles and property, plant and equipment, net		(209)	(261)
(Gains) losses on sales of investments, net <sup>2</sup>		(1,019)	(72)
(Gains) losses on sales and impairments of current available-for-sale financial assets, net		(1)	13
(Income) losses from investments <sup>2</sup>		21	54
Other non-cash (income) expenses		70	(57)
Change in current assets and liabilities			
(increase) decrease in inventories		(1,135)	54
(Increase) decrease in trade and other receivables		(609)	(53)
(Increase) decrease in other current assets		(428)	(155)
Increase (decrease) in trade payables		668	(15)
Increase (decrease) in current provisions		56	551
Increase (decrease) in other current liabilities		748	997
Change in other assets and liabilities		(350)	(206)
Additions to assets held for rental in operating leases		(582)	(622)
Income taxes paid		(1,617)	(1,877)
Dividends received		267	529
Interest received		787	586
<b>Net cash provided by (used in) operating activities – continuing operations</b>		<b>8,056</b>	<b>8,997</b>
Net cash provided by (used in) operating activities – discontinued operations		(289)	352
<b>Net cash provided by (used in) operating activities – continuing and discontinued operations</b>		<b>7,767</b>	<b>9,349</b>
Cash flows from investing activities			
Additions to intangible assets and property, plant and equipment		(2,171)	(1,954)
Acquisitions, net of cash acquired		(300)	(434)
Purchases of investments <sup>2</sup>		(889)	(398)
Purchases of current available-for-sale financial assets		(102)	(138)
(Increase) decrease in receivables from financing activities		(1,770)	(192)
Proceeds and (payments) from sales of investments, intangibles and property, plant and equipment <sup>2</sup>		2,108	585
Proceeds and (payments) from disposals of businesses		177	172
Proceeds from sales of current available-for-sale financial assets		38	44
<b>Net cash provided by (used in) investing activities – continuing operations</b>		<b>(2,909)</b>	<b>(2,315)</b>
Net cash provided by (used in) investing activities – discontinued operations		(1,135)	(532)
<b>Net cash provided by (used in) investing activities – continuing and discontinued operations</b>		<b>(4,044)</b>	<b>(2,847)</b>
Cash flows from financing activities			
Proceeds from re-issuance of treasury stock and proceeds (payments) relating to other transactions with owners		(764)	147
Proceeds from issuance of long-term debt	23	113	–
Repayment of long-term debt (including current maturities of long-term debt)		(2,046)	(45)
Change in short-term debt and other financing activities		227	(725)
Interest paid		(475)	(437)
Dividends paid	27	(2,356)	(1,388)
Dividends paid to non-controlling interest holders		(158)	(191)
Financing discontinued operations <sup>3</sup>		(1,408)	(187)
<b>Net cash provided by (used in) financing activities – continuing operations</b>		<b>(6,867)</b>	<b>(2,826)</b>
Net cash provided by (used in) financing activities – discontinued operations		1,424	180
<b>Net cash provided by (used in) financing activities – continuing and discontinued operations</b>		<b>(5,443)</b>	<b>(2,646)</b>
Effect of exchange rates on cash and cash equivalents		5	167
Net increase (decrease) in cash and cash equivalents		(1,715)	4,023
Cash and cash equivalents at beginning of period		14,227	10,204
Cash and cash equivalents at end of period		12,512	14,227
Less: Cash and cash equivalents of assets classified as held for disposal and discontinued operations at end of period		44	119
<b>Cash and cash equivalents at end of period (Consolidated Statements of Financial Position)</b>		<b>12,468</b>	<b>14,108</b>

1. Amortization, deprecation and impairments, in fiscal 2010, include €1,145 million related to the goodwill impairment at Healthcare's Diagnostics Division.  
 2. Investments include equity instruments either classified as non-current available-for-sale financial assets, accounted for using the equity method or classified as held for disposal.  
 Purchases of investments includes certain loans to investees accounted for using the equity method.  
 3. Discontinued operations are financed principally through Corporate Treasury. The item Financing discontinued operations includes these inter-company financing transactions.

The accompanying Notes are an integral part of these Consolidated Financial Statements.

Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services

D.5 Consolidated Statements of Changes in Equity

For the fiscal years ended September 30, 2011 and 2010

(in millions of €)	Common stock	Additional paid-in capital	Retained earnings
Balance at October 1, 2009	2,743	5,946	22,646
Net income	–	–	3,029
Other comprehensive income, net of tax	–	–	(2,053) <sup>1</sup>
Dividends	–	–	(1,388)
Share-based payment	–	60	(19)
Re-issuance of treasury stock	–	(20)	–
Other changes in equity	–	–	(87)
<b>Balance at September 30, 2010</b>	<b>2,743</b>	<b>5,986</b>	<b>22,998</b>
Balance at October 1, 2010	2,743	5,986	22,998
Net income	–	–	6,145
Other comprehensive income, net of tax	–	–	(66) <sup>1</sup>
Dividends	–	–	(2,356)
Share-based payment	–	(3)	(17)
Re-issuance of treasury stock	–	28	–
Transactions with non-controlling interests <sup>2</sup>	–	–	(835)
Other changes in equity	–	–	12
<b>Balance at September 30, 2011</b>	<b>2,743</b>	<b>6,011</b>	<b>25,881</b>

- 1 Retained earnings includes actuarial gains and losses on pension plans and similar commitments of €(66) million and €(2,053) million, respectively, in the fiscal years ended September 30, 2011 and 2010.
- 2 In fiscal years ended September 30, 2011 and 2010, Other comprehensive income, net of tax, includes non-controlling interests of €1 million and €(1) million relating to Actuarial gains and losses on pension plans and similar commitments, €(5) million and €(4) million relating to Currency translation differences, €– million and €– million relating to Available-for-sale financial assets and €(3) million and €– million relating to Derivative financial instruments.
- 3 Includes the acquisition of additional subsidiary shares in Siemens Ltd., India.

The accompanying Notes are an integral part of these Consolidated Financial Statements.

Total comprehensive income								
Other components of equity								
	Currency translation differences	Available-for-sale financial assets	Derivative financial instruments	Total	Treasury shares at cost	Total equity attributable to shareholders of Siemens AG	Non-controlling interests	Total equity
	(1,294)	76	161	21,589	(3,632)	26,646	641	27,287
	–	–	–	3,899	–	3,899	169	4,068
	1,176	19	(149)	(1,007)	–	(1,007)	43	(964) <sup>2</sup>
	–	–	–	(1,388)	–	(1,388)	(183)	(1,571)
	–	–	–	(19)	–	41	–	41
	–	–	–	–	259	239	–	239
	3	–	–	(84)	–	(84)	80	(4)
	(115)	95	12	22,990	(3,373)	28,346	750	29,096
	(115)	95	12	22,990	(3,373)	28,346	750	29,096
	–	–	–	6,145	–	6,145	176	6,321
	134	(59)	(118)	(109)	–	(109)	(7)	(116) <sup>2</sup>
	–	–	–	(2,356)	–	(2,356)	(165)	(2,521)
	–	–	–	(17)	–	(20)	–	(20)
	–	–	–	–	336	364	–	364
	(17)	–	–	(852)	–	(852)	(122)	(974)
	–	–	–	12	–	12	(6)	6
	2	36	(106)	25,813	(3,037)	31,530	626	32,156

Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services

D.6 Notes to Consolidated Financial Statements

Segment information (continuing operations)

As of and for the fiscal years ended September 30, 2011 and 2010

(in millions of €)	New orders <sup>1</sup>		External revenue		Intersegment revenue		Total revenue	
	2011	2010	2011	2010	2011	2010	2011	2010
<b>Sectors</b>								
Industry	37,594	30,243	31,635	29,093	1,306	1,109	32,941	30,203
Energy	34,765	30,122	27,285	25,205	322	315	27,607	25,520
Healthcare	13,116	12,872	12,463	12,281	54	83	12,517	12,364
<b>Total Sectors</b>	<b>85,476</b>	<b>73,237</b>	<b>71,382</b>	<b>66,579</b>	<b>1,682</b>	<b>1,508</b>	<b>73,064</b>	<b>68,087</b>
Equity Investments	–	–	–	–	–	–	–	–
Financial Services (SFS)	961	787	908	724	54	63	961	787
<b>Reconciliation to Consolidated Financial Statements</b>								
Centrally managed portfolio activities	473	760	510	666	10	30	520	696
Siemens Real Estate (SRE) <sup>4</sup>	2,204	1,941	415	490	1,792	1,438	2,207	1,928
Corporate items and pensions	449	606	300	519	151	137	451	656
Eliminations, Corporate Treasury and other reconciling items	(3,982)	(3,275)	–	–	(3,689)	(3,176)	(3,689)	(3,176)
<b>Siemens</b>	<b>85,582</b>	<b>74,055</b>	<b>73,515</b>	<b>68,978</b>	<b>–</b>	<b>–</b>	<b>73,515</b>	<b>68,978</b>

- This supplementary information on New orders is provided on a voluntary basis. It is not part of the Consolidated Financial Statements subject to the audit opinion.
  - Profit of the Sectors as well as of Equity Investments and Centrally managed portfolio activities is earnings before financing interest, certain pension costs and income taxes. Certain other items not considered performance indicative by Management may be excluded. Profit of SFS and SRE is income before income taxes.
  - Assets of the Sectors as well as of Equity Investments and Centrally managed portfolio activities is defined as Total assets less income tax assets, less non-interest bearing liabilities other than tax liabilities. Assets of SFS and SRE is Total assets.
  - Free cash flow represents net cash provided by (used in) operating activities less additions to intangible assets and property, plant and equipment. Free cash flow of the Sectors, Equity Investments and Centrally managed portfolio activities primarily exclude income tax, financing interest and certain pension related payments and proceeds. Free cash flow of SFS, a financial services business, and of SRE includes related financing interest payments and proceeds, income tax payments and proceeds of SFS and SRE are excluded.
  - Amortization, depreciation and impairments contains amortization and impairments, net of reversals of impairments, of intangible assets other than goodwill as well as depreciation and impairments of property, plant and equipment, net of reversals of impairments.
  - As of September 30, 2010, Total assets of SRE amounts to €4,554 million after netting of certain intercompany finance receivables with certain intercompany finance liabilities.
- Due to rounding, numbers presented may not add up precisely to totals provided.

	Profit <sup>1</sup>		Assets <sup>2</sup>		Free cash flow <sup>4</sup>		Additions to intangible assets and property, plant and equipment		Amortization, depreciation and impairments <sup>5</sup>	
	2011	2010	09/30/2011	09/30/2010	2011	2010	2011	2010	2011	2010
	3,618	2,658	7,904	7,823	3,475	3,208	676	565	786	784
	4,141	3,361	1,257	805	2,937	4,322	634	579	525	447
	1,334	653	11,264	11,952	1,887	2,296	284	328	645	709
	<b>9,093</b>	<b>6,673</b>	<b>20,425</b>	<b>20,580</b>	<b>8,299</b>	<b>9,826</b>	<b>1,594</b>	<b>1,472</b>	<b>1,956</b>	<b>1,940</b>
	(26)	(191)	3,382	3,319	116	402	–	–	–	–
	428	443	14,602	12,506	344	330	60	95	265	334
	(40)	(169)	(397)	(457)	(86)	(155)	6	16	7	12
	150	250	4,974	5,067	(240)	9	453	328	272	296
	(273)	(702)	(9,141)	(9,644)	(1,168)	(1,069)	62	57	60	74
	(90)	(331)	70,398	71,455	(1,381)	(2,300)	(4)	(13)	(50)	(59)
	<b>9,242</b>	<b>5,974</b>	<b>104,243</b>	<b>102,827</b>	<b>5,885</b>	<b>7,043</b>	<b>2,171</b>	<b>1,954</b>	<b>2,510</b>	<b>2,598</b>

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

2.1.7 Projects of similar size and scope

Below is a listing of performance solutions projects similar to that which completed in the past five years in the New England area. Each of these projects was audited, designed, implemented and monitored by local personnel of Siemens Industry, Inc.

Project	City/State	Contract Value
Borough of Naugatuck (5 Phases):	Naugatuck, CT	\$11.5 Million
State of Rhode Island	Providence, RI	\$5.7 Million
City of Springfield	Springfield, MA	\$15 Million
Waterbury Housing Authority	Waterbury, CT	\$1.5 Million
South Middlesex Reg. Vocational H.S.	Framingham, MA	\$7.5 Million
Waterbury Hospital	Waterbury, CT	\$6.2 Million
Auburn Public Schools	Auburn, ME	\$2 Million
Kennebec Valley Consolidated Schools	Winslow, ME	\$500,000
Oxford Hills School District	Oxford, ME	\$3.6 Million
City of Concord	Concord, NH	\$1.5 Million
Wheaton College	Norton, MA	\$760,000
Franklin County Technical School	Turner Falls, MA	\$5 Million
Town of Cromwell	Cromwell, CT	\$1 Million
Town of Rowe	Rowe, MA	\$670,000
Town of Mansfield	Mansfield, CT	\$720,000
Maranacook Schools	Readfield, ME	\$1.6 Million
Wentworth Douglass Hospital	Dover, NH	\$2.5 Million
Minuteman Regional Vocational H.S.	Lexington, MA	\$4.9 Million
USPS Stamford Facility	Stamford, CT	\$375,000
USPS Waterbury Facility	Waterbury, CT	\$500,000
USPS Hartford Facility	Hartford, CT	\$1.1 Million
Bridgeport Housing Authority (3 projects)	Bridgeport, CT	\$20 Million
Brunswick School Department	Brunswick, ME	\$1 Million
Penobscot Valley Hospital	Lincoln, ME	\$1 Million
Town of Dedham	Dedham, MA	\$7 Million
City of Bridgeport	Bridgeport, CT	\$2 Million
BAE Merrimack	Merrimack, NH	\$1 Million
South Portland Schools	South Portland, ME	\$1.4 Million
Waterbury Housing Authority	Waterbury, CT	\$7.6 Million
Anna Maria College	Paxton, MA	\$1.6 Million
Concord Hospital	Concord, NH	\$4.1 Million
Bridgeport Hospital	Bridgeport, CT	\$6.6 Million
Town of Orange	Orange, MA	\$1.2 Million
Town of Deerfield	Deerfield, MA	\$500,000
Norwalk Housing Authority	Norwalk, CT	\$2.3 Million
City of South Portland	South Portland, ME	\$1.1 Million
Town of Gill	Gill, MA	\$270,000
Town of Montague	Montague, MA	\$335,000
Town of Sunderland	Sunderland, MA	\$375,000
Town of Belchertown	Belchertown, MA	\$3.2 Million
Town of Greenfield	Greenfield, MA	\$1.8 Million
Town and Schools of Hebron	Hebron, CT	\$1.3 Million

Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services

---

2.1.8 In-state projects and Connecticut-based subcontractors

Projects highlighted above are Connecticut projects. We are a locally run organization with a fully staffed office in Cromwell, CT. Within this office are local project managers with extensive knowledge of the contractors and suppliers in this area. These relationships allow us to procure the premier subcontractors and equipment at an exceptional value to the customer. We are not a virtual company, flying in project managers who do not understand the local market conditions or who the key local players are. We are local and have established good working relationships with many Connecticut-based subcontractors and suppliers.

2.1.9 United States Department of Energy programs



Siemens is an accredited **ENERGY STAR®** business partner. ENERGY STAR® is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy, helping us all save money and protect the environment through energy efficient products and practices.



**Federal Energy Management Pro**

Siemens is on the U.S. Department of Energy Qualified List for the Federal Energy Management Program.



**U.S. Department of Energy Rebuild America Program**

Siemens is a Strategic Business Partner to the U.S. Department of Energy Rebuild America Program.

2.1.10 Professional certifications

**NAESCO Accreditation**

NAESCO Accredited as an Energy Services Provider. The Building Technologies Division of Siemens Industry, Inc. has attained NAESCO re-accreditation through May 2013 as an Energy Service Provider, the highest obtainable level. Siemens has been accredited since 1996.

**Siemens Employee LEED® Accreditation**

We “walk the talk” with over **150 LEED®** credentialed professionals in North America, an established sustainability committee and current deployment of energy information management solutions in local offices. We are presently deploying energy monitoring and management solutions in all of our offices across the US including a green touch screen to communicate our sustainability efforts to our employees and customers.

**Statement of CT DAS Combined Request for Qualifications and Proposals for Qualified Energy Service Providers for Performance Contracting Services**

---

2.2 Market Sector Involvement

Describe your company’s expertise in each of the following market sectors and facility types:

- 2.2.1 State Agencies
- 2.2.2 Boards of Education
- 2.2.3 Higher education institutions – universities, colleges, and community colleges

**Siemens’ Dedication to Higher Education**

Siemens has been fortunate to assist over 1000 customers in implementing performance-based solutions resulting in over \$2 billion in savings. Our proven processes have been standardized as much as possible so that Siemens customers all over the world have the best chance of meeting and exceeding their goals for reducing energy and maintenance costs through a performance solutions project.

**Get ready to Hoop it Up! Siemens Sponsors College Basketball**



Annual March Madness Tournament - Fill out your brackets and put on your school colors, because Siemens is about to play ball. Follow your favorite college basketball team on the road to the men's college basketball championship and maybe--just maybe--it will hoist the Siemens Trophy as national champions. To increase brand awareness in the U.S., Siemens sponsors the prize of the tournament -- a handcrafted Waterford Crystal trophy. In addition to the Siemens Trophy, Siemens displays ads, signage and billboards on ESPN and ABC during the tourney.

**Commitment to the Education Marketplace**

Shrinking budgets, pressures to reduce tuition, competition for students and increasing deficits impact educational facilities. For managers of these facilities, these pressures compound their challenge of keeping aging buildings energy efficient and compliant with safety, security and environmental regulations. At Siemens, we understand these needs and are uniquely equipped to help. Siemens provides total building solutions; from design and financing through construction and on-going technical support. Our local experts are knowledgeable about public-sector funding as well as local and state building and renovation codes. And through our Performance-based Solutions, facility, capital and technology improvements can be made within existing budgets and without additional capital costs.

- 2.2.4 Municipalities with population between 100,000 and 150,000
- 2.2.5 Municipalities with population under 100,000 population

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

- 2.2.6 Specific government building types – K-12 school buildings, correctional facilities, hospitals, laboratories, dormitories, office buildings, recreational centers, libraries, and multi-family buildings

Siemens has extensive experience providing performance-based solutions in all market sectors, including those listed in items 2.2.1 through 2.2.6 above. Siemens believes that we must be experts in our customer’s business and have established the local sales force in vertical markets to better understand the individual needs of the marketplace. Siemens has done work in almost every State agency in the United States. Locally we have done work with municipalities as small as 5,000 residents (Rowe, MA) and as large as Bridgeport (Housing Authority) and Springfield, MA (City and School facilities).

These municipalities have all types of facilities including K-12 school buildings, office buildings. Below you will find listings of our Energy and Environmental Solutions sales over the past 11 years, as well as our percentage of vertical market business for FY 2010.

Energy and Environmental Solutions Sales (total U.S.):

<b>Fiscal Year</b>	<b>Sales (\$ million)</b>
2001	\$155
2002	\$196
2003	\$163
2004	\$237
2005	\$237
2006	\$356
2007	\$254
2008	\$345
2009	\$251
2010	\$345
2011	\$345

Percent of Performance Solutions business by vertical market FY 2010:

<b>Vertical Market</b>	<b>% of Sales</b>
K-12 Schools	13%
State/Local Government	30%
Public Housing	12%
Federal Government	10%
Higher Education	21%
Healthcare	7%
Industrial	4%
Commercial/Enterprise	3%

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

2.2.7 Other non-buildings, including but not limited to wastewater treatment facilities, water meter projects, traffic signals, and street lights

**Waste water treatment plants:** Siemens has designed, developed and implemented comprehensive solutions to upgrade inefficient blowers, replace coarse bubble diffusers with fine bubble diffusers, and automate and optimize Dissolved Oxygen (DO) control systems to improve the digestion process. We can leverage the strength and depth of our industry expertise to provide the widest range of products, services and solutions to improve the efficiency and operational performance of treatment facilities.

**Water facilities:** Surface waters from lakes, rivers and reservoirs present the most challenges to effectively treat and maintain to potable water standards. At each step of the treatment process, Siemens’ wide range of solutions provides reliable monitoring and control and disinfection to protect human health. In addition, water meters, as a mechanical device, have a limited useful life. As the unit wears the accuracy of the meter degrades thereby reducing revenues for the water utility. Siemens has developed a very comprehensive water meter upgrade program under the Performance Contracting model. This measure for a water utility has yielded significant benefits and shown positive results in over thirty (30) projects that have been implemented to date

**Traffic lighting:** The majority of our nation’s traffic lighting utilizes inexpensive but inefficient incandescent lighting, which not only consumes significant amounts of energy, but requires constant maintenance and replacement to ensure a smooth flow of traffic. A single intersection can cost up to \$900 per year in electricity cost alone. Siemens can provide a turnkey installation of LED modules on a wide range of traffic lighting and signals, converting inefficient incandescent traffic lighting and signals to high-efficiency LED technology. Significant benefits of LED lighting include utility savings, operational savings as well as safety.

**Street lighting:** As with traffic lighting, street lighting can be upgraded to the latest in high-efficient LED technology, providing the same benefits of utility savings, operational savings and safety. Siemens can assist with the procurement of the assets from the local utility, assist with rate changes and retrofits/replacement of the fixtures, provide on-going support to local residents through its 1 800 LIGHTS ON 24 hours service, reducing operating costs by as much as 50% while still maintaining or exceeding existing customer service requirements.

2.3 Project List

Using the format of the table below, list all energy-savings performance contract projects developed and implemented by your company within the past five years. Include only projects where work was directly performed by your company. If it is relevant to list projects performed under contract to another company, clearly identify the company with overall responsibility for that project and the project’s relevance to this item 2.3.

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

<b>Project Name</b>	<b>Facility Type</b>	<b>City &amp; State</b>	<b>Project Size (Dollars)</b>	<b>Project Size (Square Feet)</b>	<b>Year Completed</b>
Waterbury Hospital	Healthcare	Waterbury, CT	\$6,209,662	600,000	2006
State of Rhode Island	Municipal	Providence, RI	\$5,760,725	670,000	2007
City of Springfield Block A	Municipal	Springfield, MA	\$13,292,895	5,000,000	2007
Wentworth Douglass Hospital	Healthcare	Dover, NH	\$2,530,037	400,000	2008
Borough of Naugatuck PH4	Municipal	Naugatuck, CT	\$1,685,196	1,300,000	2008
Union 52 Vassalboro	K-12	Vassalboro, ME	\$526,894	200,000	2007
Maranacook Schools	K-12	Readfield, ME	\$1,632,335	450,000	2008
Wheaton College	Higher Ed	Norton, MA	\$762,176	300,000	2008
Borough of Naugatuck PH5	Municipal	Naugatuck, CT	\$3,346,953	1,300,000	2008
Franklin Co. Regional Votech	K-12	Turner Falls, MA	\$5,069,880	280,000	2009
Auburn Public Schools	K-12	Auburn, ME	\$1,959,673	500,000	2009
Town of Cromwell	Municipal	Cromwell, CT	\$1,051,850	150,000	2009
Town of Rowe	Municipal	Rowe, MA	\$676,002	125,000	2009
USPS Stamford Facility	Federal	Stamford, CT	\$376,632	1,000,000	2009
Brunswick School Dept.	K-12	Brunswick, ME	\$1,004,556	750,000	2009
Bridgeport Housing Authority	Housing Auth.	Bridgeport, CT	\$15,870,693	2,000,000	2010
Minuteman Regional H.S.	K-12	Lexington, MA	\$4,951,127	400,000	2010
USPS Waterbury Facility	Federal	Waterbury, CT	\$495,042	800,000	2009
USPS Hartford Facility	Federal	Hartford, CT	\$1,173,562	600,000	2009
Penobscot Valley Hospital	Healthcare	Lincoln, ME	\$1,067,608	300,000	2009
Town of Dedham	Municipal	Dedham, MA	\$7,156,306	2,000,000	2010
BAE Merrimack	Commercial	Merrimack, NH	\$1,099,000	675,000	2010

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

<b>Project Name</b>	<b>Facility Type</b>	<b>City &amp; State</b>	<b>Project Size (Dollars)</b>	<b>Project Size (Square Feet)</b>	<b>Year Completed</b>
Bridgeport Housing Harborview	Housing Auth.	Bridgeport, CT	\$2,041,560	250,000	2010
Bridgeport Housing Fireside	Housing Auth.	Bridgeport, CT	\$1,510,412	300,000	2010
Oxford Hills Schools	K-12	Oxford, ME	\$3,645,006	1,000,000	2011
Norwalk Housing LeRoy Downs	Housing Auth.	Norwalk, CT	\$1,298,944	250,000	2010
Norwalk Housing Senior Court	Housing Auth.	Norwalk, CT	\$660,653	200,000	2010
South Portland Schools	K-12	S. Portland, ME	\$1,472,000	800,000	2011
Waterbury Housing Authority	Housing Auth.	Waterbury, CT	\$7,607,837	1,100,000	2011
Waterbury Housing Authority	Housing Auth.	Waterbury, CT	\$1,679,125	250,000	2011
Anna Maria College	Higher Ed	Paxton, MA	\$1,666,124	1,200,000	2011
Concord Hospital	Healthcare	Concord, NH	\$4,101,662	600,000	2011
Bridgeport Hospital	Healthcare	Bridgeport, CT	\$6,600,090	700,000	2011
Town of Orange	Municipal	Orange, MA	\$1,242,527	300,000	2011
Town of Deerfield	Municipal	Deerfield, MA	\$497,384	200,000	2011
Norwalk Housing Authority	Housing Auth.	Norwalk, CT	\$2,324,743	800,000	2011
Town of Charlemont	Municipal	Charlemont, MA	\$169,480	75,000	2011
City of South Portland	Municipal	S. Portland, ME	\$1,133,564	200,000	2011
Town of Gill	Municipal	Gill, MA	\$268,435	100,000	2011
Town of Montague	Municipal	Montague, MA	\$336,131	100,000	2011
Town of Sunderland	Municipal	Sunderland, MA	\$376,817	110,000	2011
Town of Belchertown	Municipal	Belchertown, MA	\$3,277,616	1,500,000	2012
Town of Greenfield	Municipal	Greenfield, MA	\$1,845,709	900,000	2012
Town & Schools of Hebron, CT	Municipal/K12	Hebron, CT	\$1,200,000	452,000	2012
Manchester Hospital	Healthcare	Manchester, CT	\$4,930,396	485,000	2012

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

2.4 Project References

Provide detailed information on energy-savings performance contract projects your company completed that can be used for references. Expand on the information provided in the previous section to give details on individual projects. Include the following information on each project as a minimum:

- 2.4.1 Project Identification: Owner name, city/state, facility type (hospital, school, college, city, county, etc).
- 2.4.2 Contact Information: Names and contact information of owner(s) representatives who can serve as references.
- 2.4.3 Project Type: Energy-savings performance contract or other type.
- 2.4.4 Project Size: Number of buildings and total project square footage.
- 2.4.5 Project Dollar Amount: Total contract amount and the total project capital expenditure amount.
- 2.4.6 Source of Funding: A description of the source of funding used for the project and the company's role (if any) in securing that funding.
- 2.4.7 Project Dates: Actual dates of audit start and acceptance; Actual construction starting and ending dates.
- 2.4.8 Contract terms: A description of the type of contract, financing arrangement, and contract term.
- 2.4.9 Project Personnel: A list of the name(s) of individuals involved in the project, their role(s) and if these personnel will be assigned to Connecticut ESPCP projects.

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

2.4.10 Project Schedule: Indicate if project was completed on schedule and an explanation if not.

2.4.11 List of Improvements: The types of retrofits and operational improvements implemented related to energy, water and other cost savings.

2.4.12 Project Performance: The amounts of projected annual savings, guaranteed annual savings, and actual annual savings for each project in a table as shown below:

Units	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh							
kW							
MMBTU							
Gallons							
(Other)							

2.4.13 Measurement and Verification (M&V): A brief description of the M&V approach for each project including which savings were stipulated, if any.

2.4.14 Performance Guarantee: A description of the savings guarantee for each project and, if the guaranteed savings were not achieved, how the company compensated the entity that contracted for energy-savings performance contract services for any annual shortfall (e.g. pay funds to meet the guarantee, etc.)

2.4.15 Additional Comments: Comments on any special features, services, conditions, creative approaches, special needs of customer, etc. that may be relevant to the ESPCP and clientele.

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

**Borough of Naugatuck, CT  
Town Buildings and School Facilities**



**CUSTOMER NAME:** Naugatuck (6 Town and 11 School Facilities)  
229 Church Street  
Naugatuck, CT 06770

**SIZE OF PROJECT:** Phase One \$1.9 million (Municipal Lease - Siemens Finance)  
Phase Two \$2.9 million (Municipal Lease - Siemens Finance)  
Phase Three \$1.4 million (Municipal Lease - Siemens Finance)  
Phase Four \$1.7 million (Municipal Lease - Siemens Finance)  
Phase Five \$4.7 million (Municipal Lease – Bank of America)

**SCOPE OF WORK:** High Efficiency Boilers  
Phases One Through Five Steam Traps  
Condensate System Improvements  
Lighting  
Lighting Controls  
High Efficiency Chiller System  
Cooling Tower  
Energy Management System  
Electric Heat to Hot Water Conversion  
Variable speed drives  
Pool cover

**CONTRACTS SIGNED:** July 2004 (Phase One), March 2008 (Phase Five)

**PROJECT COMPLETION:** January 2005 (Phase One), July 2009 (Phase Five) scheduled

**REBATE AMOUNT:** Over \$300,000 electric (All Phases)

**ANNUAL GUARANTEED SAVINGS:** Over \$1,000,000 All Five Phases

**PROJECT TEAM** Jerry Drummond – Sales Team Leader  
Mark Buzzell – Project Developer  
Tim Stewart – Energy Engineer

**OWNER’S REPRESENTATIVE:** Mike Lynch, Director of Facilities  
**CONTACT INFORMATION:** 203-720-5265 or 203-910-5165

<b>Borough of Naugatuck (Phase 1)</b>	<b>Projected Annual Energy Savings</b>	<b>Guaranteed Annual Energy Savings</b>	<b>Actual Energy Savings Year 1</b>	<b>Actual Energy Savings Year 2</b>	<b>Actual Energy Savings Year 3</b>	<b>Actual Energy Savings Year 4</b>	<b>Actual Energy Savings Year 5</b>
kWh	888,539	888,539	888,539	888,539	888,539	888,539	888,539
kW							
Fuel Oil (Gal)							
Nat. Gas (Therms)	61,935	61,935	61,935	61,935	61,935	61,935	61,935
Water (kGal)							

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

**Town Facilities  
Cromwell, CT**



**CUSTOMER NAME:** Town of Cromwell (Five facilities)  
41 West Street  
Cromwell, CT 06416

**SIZE OF PROJECT:** Project Cost: \$1,051,850

**SCOPE OF WORK:** Lighting Retrofits  
Occupancy Sensors  
Boiler Installation – Condensing & Non-Condensing Boiler  
Chiller  
Face and bypass AHU’s  
Energy Management Systems Installation  
Premium Efficiency Motors  
Variable Frequency Drives  
Programmable Thermostats Installation  
Building Envelope (Weatherization) Improvements  
Vending Misers

**CONTRACTS SIGNED:** August 2008

**PROJECT COMPLETION:** August 2009

**REBATE AMOUNT:** \$41,000

**ANNUAL GUARANTEED SAVINGS:** Over \$76,000

**PROJECT TEAM** Jerry Drummond – Sales Team Leader  
Mike Coakley – Project Manager  
Vijay (VJ) Srinivasachari – Energy Engineer

**OWNER’S REPRESENTATIVE:** Eric Hood, Director of Public Works

**CONTACT INFORMATION:** (860) 632-3421



Town of Cromwell	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	349,346	332,469	398,529	398,529	332,470		
kW	517	507	517	517	506		
Fuel Oil (Gal)	1,227	1,100	4,213	4,213	3,682		
Nat. Gas (Therms)	16,522	15,057	13,460	13,460	12,261		

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

**Town and School Facilities  
Mansfield, CT**



*CUSTOMER NAME:* Town and School Facilities of Mansfield, CT  
4 South Eagleville Road  
Mansfield, CT 06268

*OWNER'S REPRESENTATIVE:* Bill Hammon – Director of Finance

*CONTACT INFORMATION:* (860) 429-3342

*SIZE OF PROJECT:* \$750,000 (Internally financed)

*SCOPE OF WORK:* Lighting Retrofits  
Lighting Control  
Centralized Energy Management System  
Centralized Computer Network Controller  
Heating System Improvements  
Plug Load Controls  
Building Envelope Improvements

*CONTRACT SIGNED:* June 2007

*PROJECT COMPLETION:* October 2007

*PROJECTED SAVINGS:* \$135,874 Annually

*UTILITY REBATE:* \$35,000

*PROJECT TEAM:* Jerry Drummond – Sales Team Leader  
Tim Stewart – Lead Energy Engineer  
George Chiavaras – Lead Project Manager

Town of Mansfield	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh		N/A					
kW		N/A					
Nat. Gas (Therms)		N/A					
Water (kGal)		N/A					

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

**Bridgeport Housing Authority  
Bridgeport, CT**



**CUSTOMER NAME:** Bridgeport Housing Authority  
150 Highland Ave  
Bridgeport, CT 06604

**SIZE OF PROJECT:** \$20.2 million

**SCOPE OF WORK:** High Efficiency Boilers  
Burner Replacement  
Steam Traps  
Condensate System Improvements  
Lighting  
Lighting Controls  
Energy Management System  
Weatherization  
Water Conservation  
New Rooftop Units for Common Areas  
Refrigerator Replacement (ENERGY STAR®)  
Window Replacement (ENERGY STAR®)  
Resident (20 residents) Training for Career Development

**CONTRACTS SIGNED:** August 2009

**PROJECT COMPLETION:** June 2010 (scheduled)

**REBATE AMOUNT:** Greater than \$1,500,000

**ANNUAL GUARANTEED SAVINGS:** \$1,539,073

**PROJECT TEAM:** Jerry Drummond – Sales Team Leader  
George Chiavaras – Project Manager  
Tim Stewart – Energy Engineer

**OWNER’S REPRESENTATIVE:** Jonas DeGuzman – Assistant Director of Planning

**CONTACT INFORMATION:** 203-337-8955



Bridgeport Housing Authority	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	879,159	837,637					
Nat. Gas (Therms)	302,665	288,370					
Water (kGal)	120,561	114,867					

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

**Norwalk Housing Authority**  
**Norwalk, CT**



*PROJECT DATES:* September 2003 – May 2004

*SIZE OF PROJECT:* \$1,665,406

*LIST OF IMPROVEMENTS:* Full Water Retrofit  
Lighting Retrofit  
Installation – new High Efficiency Boilers  
Weatherization Measures

*CONTRACT TERMS:* Guaranteed Savings

*SOURCE OF FUNDS:* Municipal Lease Agreement

*PROJECT SCHEDULE:* Completed on schedule

*PROJECT TEAM:* Rich Vailencourt, PE  
Canterbury Engineering  
Canterbury, CT

*OWNER'S REPRESENTATIVE:* Robert Colonese, Director of Construction

*CONTACT INFORMATION:* 203-838-8471 ext. 134

<b>Norwalk Housing</b>	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	151,663	144,500	211,112	284,038			
Fuel Oil (Gal)	4,352	4,146	5,777	8,062			
Nat. Gas (Therms)	66,845	63,688	51,168	28,318			
Water (kGal)	33,404	31,826	29,979	33,529			

**Manchester Hospital**

**Manchester, CT**



<i>PROJECT TYPE:</i>	Acute-Care Hospital
<i>PROJECT SIZE:</i>	449,026 (Sq.Ft.)
<i>PROJECT COST:</i>	\$4,930,396
<i>GUARANTEED ANNUAL SAVINGS:</i>	\$466,566
<i>SOURCE OF FUNDS:</i>	Guaranteed Savings, Tax-exempt lease (CHEFA)
<i>CONTRACT TERMS:</i>	10 years
<i>CONSTRUCTION START DATE:</i>	7/1/2012
<i>LIST OF IMPROVEMENTS:</i>	<p>Lighting Retrofits                      Lighting Occupancy Sensors                      Energy Management System (EMS) Upgrade                      Steam Boiler Replacements</p> <ul style="list-style-type: none"> <li>• (4) new high pressure 150 HP dual fuel (oil/gas)</li> <li>• Muira boilers</li> </ul> <p>New condensate tank and DA system                      Chiller Replacements</p> <ul style="list-style-type: none"> <li>• (2) 260T water cooled centrifugal chillers</li> </ul> <p>Sterilizer Condensate Tempering                      Steam Trap Replacements                      Steam System Improvements</p> <ul style="list-style-type: none"> <li>• Repair steam leaks</li> <li>• Insulate steam distribution systems</li> </ul>

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

Water Conservation

- Low flow plumbing fixtures
- Elimination of once through cooled systems

Vending Misers

Power Factor Correction

Variable Frequency Drives

Motor Replacement

Walk-in Cooler Controls

Kitchen Exhaust Hood Controls

Building Envelope Improvements

Attic Insulation

*OWNER'S REPRESENTATIVE:* Vinnie Defrancesco, Director Facilities & Engineering

*CONTACT INFORMATION:* (860) 646-1222

*PROJECT TEAM:* Lisa Schoonerman – Healthcare Solutions Manager  
Vijay Srinivasachari – Lead Energy Engineer  
George Chiavaras– Lead Project Developer

*OWNER'S REPRESENTATIVE:* Michael Veillette, Chief Finance Officer

*CONTACT INFORMATION:* (860) 646-1222

<b>Manchester Hospital</b>	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	1,418,469	1,333,994					
kW	3,686	3,686					
Nat. Gas (Therms)	211,042	196,095					
Water (kGal)	4,183	3,974					

**Bridgeport Hospital**

**Bridgeport, CT**



<i>PROJECT TYPE:</i>	Acute-Care Hospital
<i>PROJECT SIZE:</i>	698,809 (Sq.Ft.)
<i>PROJECT COST:</i>	\$6,600,089
<i>GUARANTEED ANNUAL SAVINGS:</i>	\$1,011,977
<i>SOURCE OF FUNDS:</i>	Guaranteed savings, tax-exempt lease (CHEFA)
<i>CONTRACT TERMS:</i>	10 years
<i>CONSTRUCTION START DATE:</i>	11/5/2010
<i>LIST OF IMPROVEMENTS:</i>	<p>Lighting Retrofits                      Lighting Occupancy Sensors                      Energy Management System (EMS) Upgrade                      Steam Boiler Replacements                      Steam Trap Replacements                      Steam System Improvements</p> <ul style="list-style-type: none"> <li>• Repair steam leaks</li> <li>• Repair condensate pumps</li> <li>• Insulate steam distribution systems</li> <li>• Install radiator control valves</li> </ul> <p>Water Conservation</p> <ul style="list-style-type: none"> <li>• Low flow plumbing fixtures</li> <li>• Elimination of once through cooled systems</li> </ul> <p>Plug Load Controls                      Variable Frequency Drives                      Motor Replacement                      TecoChill Heat Recovery System                      Building Envelope Improvements</p>



**Statement of CT DAS Combined Request for Qualifications and Proposals for Qualified Energy Service Providers for Performance Contracting Services**

---

*OWNER'S REPRESENTATIVE:* Peter Romano, Director, Facilities & Engineering  
*CONTACT INFORMATION:* (203) 384-3000

*OWNER'S REPRESENTATIVE:* Terry Cote, Administrative Director of Finance  
*CONTACT INFORMATION:* 203-384-3953

*PROJECT TEAM:* Lisa Schoonerman – Healthcare Solutions Manager  
 Vijay Srinivasachari – Lead Energy Engineer  
 George Chiavaras– Lead Project Developer

<b>Bridgeport Hospital</b>	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	2,977,090	2,656,985					
kW	1,883	1,740					
Therms	382,829	348,073					
Water (kGal)	13,334	12,218					

**Waterbury Hospital**

**Waterbury, CT**



<i>PROJECT TYPE:</i>	Acute-Care Hospital
<i>PROJECT SIZE:</i>	616,000 (Sq.Ft.)
<i>PROJECT COST:</i>	\$6,202,000
<i>GUARANTEED ANNUAL SAVINGS:</i>	\$1,020,116
<i>SOURCE OF FUNDS.</i>	Energy savings/ Off Balance Sheet Financing
<i>CONTRACT TERMS.</i>	10 years
<i>CONSTRUCTION START DATE:</i>	June, 2006
<i>CONSTRUCTION END DATE:</i>	November, 2007
<i>LIST OF IMPROVEMENTS:</i>	<p><u>Phase I:</u>            New Cooling Towers            Dolphin Water Treatment System</p> <p><u>Phase II:</u>            New Electric Centrifugal Chiller w/ VFD            Lighting Retrofits            Lighting Occupancy Sensors            Energy Management System (EMS) Upgrade            Power Factor Capacitance Correction            Steam Trap Replacements            Steam System Improvements</p> <ul style="list-style-type: none"> <li>• Repair steam leaks</li> <li>• Repair condensate pumps</li> <li>• Insulate steam distribution systems</li> <li>• Clean out mud legs</li> <li>• Install radiator control valves</li> </ul>



**Statement of CT DAS Combined Request for Qualifications and Proposals for Qualified Energy Service Providers for Performance Contracting Services**

---

Water Conservation

- Low flow plumbing fixtures
- Process equipment water conservation
- Elimination of once through water cooled systems

Laundry Ozone System

Plug Load Controls

Variable Frequency Drives

Replace Boiler Stack Economizer System

Building Envelope Improvements

HVAC Re-commissioning

Performance Assurance (10 year guaranteed savings)

*OWNER'S REPRESENTATIVE:* Fred Leffingwell, Vice President, Engineering

*CONTACT INFORMATION:* (203) 573-7319

*PROJECT TEAM:* Lisa Schoonerman – Healthcare Solutions Manager  
 Tim Stewart – Lead Energy Engineer  
 Hugh Leahy – Lead Project Developer

<b>Waterbury Hospital</b>	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	1,020,512	947,263	724,590	866,037	540,388	474,958	
Nat. Gas (Therms)	457,809	429,254	446,788	437,694	427,290	426,644	
Water (kGal)	29,507	28,276	13,761	13,761	14,114	14,113	

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

**Wheaton College**  
**Norton, MA**



*PROJECT TYPE:* Liberal Arts College

*PROJECT SIZE:* Phase 1: 4 buildings (Wallace Library, Everett Hall, Knapton Hall and Park Hall)

*PROJECT COST:* \$762,176

*SOURCE OF FUNDS:* Energy savings

*CONTRACT TERMS:* 10 years

*CONSTRUCTION START DATE:* June, 2007

*CONSTRUCTION END DATE:* February, 2008

*LIST OF IMPROVEMENTS:* Lighting and Lighting Controls  
Energy Management System (EMS) Installation  
PC Power Management  
Vending Machine Controls  
Building Envelope Improvements  
Water Conservation  
Variable Frequency Drives  
Premium Efficiency Motors  
Steam Trap Improvements

*GUARANTEED ANNUAL SAVINGS:* \$97,893

*TOTAL PROGRAM INVESTMENT:* \$762,176

*OWNER'S REPRESENTATIVE:* Rick Wallick, Chief Financial Officer

*CONTACT INFORMATION:* (508) 286-8208

*PROJECT TEAM:* Lisa Schoonerman – Account Executive  
Tim Stewart – Lead Energy Engineer  
Bob Pimentel – Lead Project Manager

Wheaton College	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	673,144	591,872	663,429	663,429	663,429	663,429	
kW	474	450	577	577	577	577	
Fuel Oil (Gal)	21,751	20,488	20,156	20,156	20,156	20,156	
Water (kGal)	343	340	340	340	340	340	

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**



*PROJECT TYPE:* Acute-Care Hospital

*PROJECT SIZE:* 275,000 (Sq.Ft.)

*PROJECT COST:* \$1,666,124

*GUARANTEED ANNUAL SAVINGS:* \$182,458

*SOURCE OF FUNDS:* Tax-exempt capital lease (CHEFA)

*CONTRACT TERMS:* 10 years

*CONSTRUCTION START DATE:* 11/5/2010

*LIST OF IMPROVEMENTS:* Lighting Retrofits  
Lighting Occupancy Sensors  
New Energy Management System (EMS)  
Water Conservation  
PC Power Management  
Vending Machine Controls  
Kitchen Exhaust Controller  
New Domestic Hot Water Systems  
Variable Frequency Drives  
Motor Replacement  
Building Envelope Improvements  
Performance Assurance (10 year guaranteed savings)

*OWNER'S REPRESENTATIVE:* Mark Collette, Director of Facilities

*CONTACT INFORMATION:* (508) 849-3230

*OWNER'S REPRESENTATIVE:* Cheryl Sleboda, Chief Finance Officer

*CONTACT INFORMATION:* (508) 849-3420

<b>Anna Maria College</b>	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	651,084	620,334					
kW	950	905					
Fuel Oil (Gal)	678,022	646,000					
Propane (Gal)	52	49					
Water (kGal)	18,913	18,020					

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

**City and School Facilities**

**Springfield, MA**



*CUSTOMER NAME:* City and Schools of Springfield, MA  
36 Court Street  
Springfield, MA 01103

*OWNER'S REPRESENTATIVE:* Patrick Sullivan – Dir. of Facilities Management

*CONTACT INFORMATION:* (413) 787-6444

*SIZE OF PROJECT:* \$15,000,000 (Municipal Bond)

*SCOPE OF WORK:* Boilers (High Efficiency Condensing and Steam)  
Lighting and Lighting Control  
Energy Management System  
Cogeneration  
Pool Covers  
High Efficiency Chiller  
Air Handler Replacement and Repair  
Centralized Computer Network Controller

*CONTRACT SIGNED:* March 2007

*PROJECT COMPLETION:* Scheduled October 2008

*UTILITY REBATE:* \$600,000 Guaranteed

*GUARANTEED AMOUNT:* \$1,174,843

*PROJECT TEAM:* Jerry Drummond – Sales Team Leader  
Hannes Klein – Lead Energy Engineer  
Mark Buzzell – Lead Project Developer

Town Springfield	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	1,659,380	1,571,716	1,583,405				
Fuel Oil (Gal)	529,963	504,730	536,604				
Nat. Gas (Therms)	-245,846	-290,864	-265,502				

**Greater New Bedford Regional  
Vocational Technical High School**



*CUSTOMER NAME:* Greater New Bedford Regional Vocational Technical High School  
1121 Ashley Boulevard  
New Bedford, MA 02745

*SIZE OF PROJECT:* \$3.25 million (Municipal Lease)

*SCOPE OF WORK:* Cogeneration  
Absorption Chiller  
Energy Management System  
Temperature Control improvements  
Steam Traps  
Lighting  
Lighting Controls  
Water Conservation  
Photovoltaic System  
Wind Turbine  
Curriculum Based Renewable Energy Program



*CONTRACT SIGNED:* June 2004

*PROJECT COMPLETION:* March 2005

*UTILITY REBATES:* \$395,000 electric, \$150,000 gas

*ANNUAL GUARANTEED SAVINGS:* \$286,734

*PROJECT TEAM:* Jerry Drummond, Sales Team Leader  
Rich Vaillencourt, PE  
Hugh Leahy, Project Manager

*OWNER'S REPRESENTATIVE:* Jim Igoe, Director of Facilities  
*CONTACT INFORMATION:* 508 998-3321 ext. 794

<b>New Bedford Vocational High School</b>	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	2,320,737	2,211,131					
Water (kGal)	2,339	2,229					

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

**Blue Hills Regional Vocational  
Technical High School**



*CUSTOMER NAME:* Blue Hills Regional Vocational Technical High School  
800 Randolph Street  
Canton, MA 02021

*OWNER'S REPRESENTATIVE:* Gene Mastro

*CONTACT INFORMATION:* 781- 828-5800

*SIZE OF PROJECT:* \$1,700,000 (Municipal Lease - Siemens Finance)

*SCOPE OF WORK:* Lighting  
Lighting Control  
High Efficiency Boilers  
Energy Management System  
Water Conservation  
Pool Cover

*CONTRACT SIGNED:* June 2004

*PROJECT COMPLETION:* October 2005 (scheduled)

*UTILITY REBATE:* \$200,000

*GUARANTEED AMOUNT:* \$165,000

*PROJECT TEAM:* Roland Butzke – Sales Account Executive  
Hannes Klein – Energy Engineer  
Hugh Leahy, Project Manager

<b>Blue Hills High Vocational School</b>	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	880,813	838,870	951,970				
kW	10	10	10				
Nat. Gas (Therms)	9,340	8,896	9,366				

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

**South Middlesex (Keefe) Regional  
Vocational Technical High School**



**CUSTOMER NAME:** South Middlesex (Keefe) Regional Vocational Technical High School  
750 Winter Street  
Framingham, MA 01702

**OWNER'S REPRESENTATIVE:** Mr. James [Jim] Lynch, Superintendent

**CONTACT INFORMATION:** 508-416-2200, email: [jlynch@jpkeefehs.org](mailto:jlynch@jpkeefehs.org)

**SIZE OF PROJECT:** \$7,450,000 (Municipal Lease - Siemens Finance)

**SCOPE OF WORK:** Lighting  
Lighting Control  
Energy Management System  
Water Conservation  
Pool Cover  
Absorption Chiller  
Air Handler Replacement and repair  
High Efficiency Boilers  
New Life Safety System

**CONTRACT SIGNED:** March 2006

**PROJECT COMPLETION:** October 2007

**UTILITY REBATE:** \$225,000 Guaranteed

**GUARANTEED AMOUNT:** \$486,000

**PROJECT TEAM:** Roland Butzke - Sales Account Executive  
Hannes Klein - Energy Engineer  
Bob Pimentel - Project Manager

Keefe Tech	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	1,275,436	1,236,225	1,275,436	1,285,996	1,285,996	1,366,502	
kW	2,007	1,923	2,007	2,007	2,007	2,007	
Nat. Gas (Therms)	217,739	209,953	217,739	213,026	210,192	203,595	
Water (kGal)	5,064,838	4,946,838	506,838	5,057,838	4,962,838	5,028,838	

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

**Franklin County Technical School**



*CUSTOMER NAME:* Franklin County Technical School  
82 Industrial Boulevard  
Turner Falls, MA 01376

*OWNER'S REPRESENTATIVE:* Russ Kaubris – Business Manager

*CONTACT INFORMATION:* (413) 863-9561 x117

*SIZE OF PROJECT:* \$5,069,880 (Municipal Lease)

*SCOPE OF WORK:* Rooftop Heating and Air Conditioning Units  
Lighting  
Lighting Controls  
Energy Management System  
High Efficiency Boilers  
Network Personal Computer Controller  
Kitchen Equipment Gas Conversion  
Equipment Re-commissioning  
Building Envelope  
Water Conservation  
Domestic Hot Water System Improvements  
Electric Re-heat Conversion to Hot Water  
Solar Hot Water

*CONTRACT SIGNED:* May 2008

*PROJECT COMPLETION:* Scheduled March 2009

*UTILITY REBATE:* No cost gas line to facility.  
Additional dollars negotiated by customer's consultant

*GUARANTEED AMOUNT:* \$349,301

*PROJECT TEAM:* Jerry Drummond – Sales Team Leader  
Hannes Klein – Energy Engineer  
Mark Buzzell - Project Manager

Franklin County Tech	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	921,923	841,763	1,026,734	1,000,347			
Fuel Oil (Gal)	72,404	70,415	72,404	72,404			
Nat. Gas (Therms)	-78,949	-77,654	-78,010	-77,912			
Propane (Gal)	6,190	6,190	6,190	6,190			
Water (kGal)	1,172	1,172	1,172	1,172			

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

**Wentworth Douglass Hospital  
Dover, NH**



<i>PROJECT TYPE:</i>	Acute-Care Hospital
<i>PROJECT SIZE:</i>	370,000 (Sq.Ft.)
<i>TOTAL PROGRAM INVESTMENT:</i>	\$2,558,065
<i>GUARANTEED ANNUAL SAVINGS:</i>	\$430,107
<i>SOURCE OF FUNDS:</i>	Combination of Capital Funds and Lease purchase
<i>CONTRACT TERM:</i>	7 years
<i>CONSTRUCTION START DATE:</i>	April, 2009
<i>CONSTRUCTION END DATE:</i>	December, 2009 (on schedule)
<i>LIST OF IMPROVEMENTS:</i>	<ul style="list-style-type: none"> <li>Lighting and Lighting Controls</li> <li>EMS Optimization</li> <li>Steam Trap Replacement</li> <li>Water Conservation</li> <li>Cooling Tower Water Meter Installation</li> <li>Kitchen Hood Controller</li> <li>Motor Replacement</li> <li>VFD Balancing – AHU-18</li> <li>Demand Control Ventilation</li> <li>Network Controllers</li> <li>Plugload Controllers</li> <li>Boiler Stack Economizers</li> <li>Roof Air Handling Replacement</li> <li>Retro-Commissioning</li> <li>Hub Room Air Conditioning Retrofit</li> <li>Power Factor Correction</li> <li>Air Handling Unit Replacement</li> <li>Cleaver Brooks Hawk Boiler Control</li> <li>Performance Assurance (7 yr guaranteed savings)</li> </ul>



**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

*OWNER'S REPRESENTATIVE:* Peter Walcek, Chief Financial Officer  
Dave Dagenais, Plant Operations Manager

*CONTACT INFORMATION:* (603) 742-5252

*PROJECT TEAM:* Lisa Schoonerman – Healthcare Solutions Manager  
Hannes Klein – Lead Energy Engineer  
Charlie Roman – Lead Project Developer

Phase II: Currently Under Review

<b>Wentworth Douglass Hospital</b>	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	2,577,712	1,840,525	2,436,841				
kW	2,995	2,995	2,995				
Nat. Gas (Therms)	166,456	148,927	157,124				
Water (kGal)	6,867	6,451	6,867				

**Penobscot Valley Hospital**

**Lincoln, ME**



<i>PROJECT TYPE:</i>	Acute-Care Hospital
<i>PROJECT SIZE:</i>	63,000 (Sq. Ft.)
<i>TOTAL PROGRAM INVESTMENT:</i>	\$1,061,530
<i>GUARANTEED ANNUAL SAVINGS:</i>	\$103,114
<i>SOURCE OF FUNDS:</i>	Lease purchase
<i>CONTRACT TERM:</i>	15 years
<i>CONSTRUCTION START DATE:</i>	July, 2009
<i>CONSTRUCTION END DATE:</i>	December, 2009 (on schedule)
<i>LIST OF IMPROVEMENTS:</i>	<p>Lighting and Lighting Controls</p> <p>Boiler Replacement</p> <ul style="list-style-type: none"> <li>● 2 Buderus Cast Iron Boilers</li> <li>● Riello modulating oil burners with electric ignition</li> <li>● 2 Roof Mounted Combustion air supply intake fans &amp; ductwork</li> <li>● New Boiler Chimneys, Metalbestos, insulated</li> <li>● New Duplex fuel oil transfer pump set</li> </ul> <p>EMS Optimization</p> <p>HVAC Re-commissioning</p> <p>RTU Replacement</p> <p>Domestic Hot Water System Boiler Replacement &amp; Steam Conversion</p> <p>Motors and Drives Replacement</p> <p>Demand Control Ventilation</p> <p>Ozone Laundry System</p> <p>Kitchen Hood Controls</p> <p>Compressed Air System Improvements</p> <p>Plugload Controllers</p> <p>HVAC System Replacement</p> <p>Performance Assurance (15 yr guaranteed savings)</p>



Statement of CT DAS Combined Request for Qualifications and Proposals for Qualified Energy Service Providers for Performance Contracting Services

OWNER'S REPRESENTATIVE: Dave Shannon, Chief Executive Officer  
Ann Marie Rush, Chief Financial Officer

CONTACT INFORMATION: (207) 794-3321

PROJECT TEAM: Lisa Schoonerman – Healthcare Solutions Manager  
Hannes Klein – Lead Energy Engineer  
Charlie Roman – Lead Project Developer

Penobscot Valley	Projected Annual Energy Savings	Guaranteed Annual Energy Savings	Actual Energy Savings Year 1	Actual Energy Savings Year 2	Actual Energy Savings Year 3	Actual Energy Savings Year 4	Actual Energy Savings Year 5
kWh	286,169	249,626	303,319	303,319			
Fuel Oil (Gal)	20,478	17,495	19,526	19,526			
Propane (Gal)	-3,247	-3,084	-3,084	-3,084			

**Town of Erie, New York**

**Includes various Town Buildings, Amherst Pepsi  
Center, Wastewater Treatment Plant**



*PROJECT TYPE:* Acute-Care Hospital

*PROJECT SIZE:* Library, Sheriff's Dept and South City's Waste Water Treatment Plant

*TYPE OF CONTRACT:* Guaranteed Savings

*LIBRARY:*

*TOTAL CONTRACT COST:* \$1,024,131

*SCOPE:* *Library:* Savings were achieved with the installation of an Energy Management System (EMS), energy efficient lighting, conversion of constant volume air-handling system to variable volume, installation of variable frequency drives on all air-handling units, supply and return fans, rebalancing of air systems, energy efficient motors, variable frequency drives on cooling tower fans and variable frequency drives on hot water pumps. Savings were mainly obtained from the lighting retrofit and the installation of variable frequency drives on all supply and return motors. Utilizing the new EMS, fan speeds are controlled based on time-of-day, reducing energy consumption.

*GUARANTEE:* *Library:* Total: \$1,356,800  
Guarantee through 4 Years: \$544,388  
Actual Savings through Year 4: \$742,168

*TERM:* *Library:* 10 YEARS

*SHERIFF'S DEPARTMENT:*

*TOTAL CONTRACT COST:* \$3,339,088

*SCOPE:* *Sheriff's Dept:* Project involved improvements at four different facilities including the Holding Center, Alden Correctional Facility, Medical Facility at 608 William and Medical Facility at 1500 Broadway. Work at the Holding Center included energy efficient lighting; installation of a new EMS; energy efficient motors; variable frequency drives on all air-handling units, cooling tower fans and glycol pumps; gas-fired cooking equipment installation; HVAC upgrades and a new fire alarm system. Work at the



**Town of Amherst, New York**  
**Includes various Town Buildings, Amherst Pepsi**  
**Center, Wastewater Treatment Plant**



<i>CUSTOMER NAME:</i>	Town of Amherst, New York (Includes various Town Buildings, Amherst Pepsi Center, Wastewater Treatment Plant)
<i>TOTAL CONTRACT COST:</i>	\$5.8 million (Municipal Lease)
<i>TYPE OF CONTRACT:</i>	Guaranteed Savings PC
<i>SCOPE OF WORK:</i>	<p><u>Phase I (Amherst Pepsi Center, Various Town Buildings)</u> Project involved improvements at multiple facilities. Most of the work included energy efficient lighting, installation of energy management systems, HVAC upgrades, high efficiency motors and new heating systems. The main facilities include a four-rink ice arena, Police &amp; Court, Community Center, Engineering Building, Shaw Museum, North Amherst Recreation Building, Highway Buildings and others. At the ice arena, innovative building solutions included Low Emissivity ceilings that reduce radiation by lowering the ceiling temperature and reducing heat transfer onto the ice, a system to automatically dim lights when the facility is not in full use, and replacement of an electric dehumidification system with a more efficient gas system (desiccant dehumidification) that eliminated facility fogging problems while saving energy.</p> <p><u>Phase II A (Libraries)</u> Project involved improvements at four different libraries including the Main Library, Clearfield Library, Eggertsville Library and Williamsville Library. Most of the work included energy efficient lighting at all facilities, installation of energy management systems, HVAC upgrades, high efficiency motors and new energy efficient boilers.</p> <p><u>Phase II B&amp;C (Waste Water Treatment Plant)</u> The Waste Water Treatment Plant consists of 33 buildings and various tanks, channels and other process structures. The project consisted of energy efficient lighting throughout the different plant facilities, HID lighting dimmers at different facilities where lighting remains operational at all times, electric-to-gas heat conversions, controls upgrades and installation of a 600 HP engine for one of the main sewage pumps. The sewage pump has a design flow of 36 MGD (million gallons per day). The new 600 HP natural gas engine driven pump is used as the base load pump and provides speed control of the pump. The waste heat from the engine jacket and exhaust is used to offset the space heating thermal loads for various buildings.</p>

**Statement of CT DAS Combined Request for Qualifications and Proposals for  
Qualified Energy Service Providers for Performance Contracting Services**

---

For Phase II C, energy savings were achieved with the installation of energy efficient motors ranging from 25 to 50 HP, SCADA system expansion and installation of a 600 HP gas engine on the cryogenic oxygen generation system to replace the existing 600 HP electrical motor. The new SCADA system provides a common communication highway and automatic load shedding capabilities. The new engine is fueled with natural gas and digester gas (Methane) produced onsite. This project makes full use of the excessive digester gas, which was otherwise flared off. Waste heat will be recovered from the engine jacket and exhaust and is primarily used to heat the hot water that maintains the digesters at 98 degrees F. Additional waste heat is then used to offset the space heating thermal loads for various buildings.

*ENERGY USE & COST PRIOR TO  
PROJECT IMPLEMENTATION:*

Electric:	31, 860, 515 kWh	\$2,695,569
Gas:	914, 135 CCF	\$552, 195

*LEVEL OF PROJECTED &  
ACTUAL ENERGY COST SAVINGS:  
PHASE I*

Total Guarantee:	\$1,767,050
Guarantee through I Yr:	\$176,705
Actual Savings through I Yr:	\$205,486

*PROJECTED SCHEDULE:  
PHASE I*

Projected:	5 months
Actual:	Completed on schedule

*LEVEL OF PROJECTED &  
ACTUAL ENERGY COST SAVINGS:  
PHASE IIA*

Total Guarantee:	\$401,534
Guarantee through I Yr.	\$36,686
Actual Savings through I Yr.	Not Complete

*PROJECT SCHEDULE:  
PHASE IIA*

Projected:	6 months
Actual:	Completed on schedule

*LEVEL OF PROJECT &  
ACTUAL ENERGY COST SAVINGS:  
PHASE IIB&C*

Total Guarantee:	\$2,790,712
Guarantee through I Yr.	\$244,018
Actual Savings through I Yr.	Not Complete

*PROJECT SCHEDULE:  
PHASE IIB&C*

Projected:	18 months
Actual:	Ongoing

*CONTACT:*

James I. Johnson, P.E., Assistant Town Engineer  
716-631-7154, email: jjohnson@amherst.ny.us

*PROJECT TEAM:*

Bill Storie, Account Executive  
John Partsch, Account Executive  
Barry Arbogast, Project Manager  
Mike Yacos, Service Sales Manager  
Michelle Gerace, Performance Assurance Engineer  
Bert Spaeth, Energy Eng., NYSERDA/ Rate Specialist  
Lisa Cuddeback, Energy Engineer, Utility Consultant  
Dan Schrecongost, C.J. Brown

SIEMENS

*Success Story*

Case Study

### Town of Amherst—Amherst, New York



Town of Amherst leaders continue environmental improvements with energy savings at 100-plus buildings.

**Profile:**

The Town of Amherst, with more than 116,500 residents (2000 census) is the largest suburb of Buffalo, New York. It has initiated numerous projects to protect the environment and preserve resources. These include energy conservation, waste recycling, composting and conversion of wastewater sludge into fertilizer.



**SIEMENS**

*Success Story*

**Town of Amherst**—Amherst, New York

**Susan Grelick, Amherst Town Supervisor**

*“Several years ago, we faced a choice—continue to run the Town’s critical facilities the way we always had or embrace a process improvement solution to achieve long-term savings for taxpayers. We chose the new solution.”*

**Client objective 1: Reduce energy costs and indoor environment at multiple Town facilities.**

**Client result:**

- Electric demand reduction programs saved more than \$1.7 million per year in energy costs.

**Client objective 2: Improve energy usage so that customers of Town libraries are more comfortable.**

**Client result:**

- Project saved \$401,000 in energy costs.
- New lighting provided illumination with less electric use.
- Improvements to HVAC system made indoor temperatures more comfortable and consistent.
- Automated system controls energy use without human intervention.

**Client objective 3: Improve operation and efficiency of Town wastewater treatment plant.**

**Client result:**

- Energy costs reduced by more than \$500,000 per year.
- Electricity usage reduced by 7.5 million kWh per year.
- Fiber optic system controls and manages energy usage throughout the wastewater plant’s 33 buildings.
- New technology allows plant to capture and recycle methane gas and use it to power some of the plant’s major functions.
- Heat recovery equipment installed provides 1.5 million BTUs of heat.
- Lighting dimmers installed.
- New high-efficiency electric motors installed.

**Siemens Industry Solutions:**

- Successfully completed improvements at Ice Arena, Police & Court Building, Community Center, Engineering Building, Shaw Museum, North Amherst Recreation Center, Clearfield Recreation Building, Highway Building, four libraries and others.
- Enhanced locations with energy efficient lighting, energy management systems, HVAC upgrades, high-efficiency motors and new energy efficient heating systems.
- Installed heat recovery equipment at wastewater plant to save Town the cost of purchasing natural gas from local utility.
- Secured incentives of more than \$1.3 million from the New York State Energy Research and Development Authority (NYSERDA) to help offset costs.
- Helped Town of Amherst become a national leader in innovative energy conservation.

## Siemens helps Glens Falls Wastewater Treatment Plant achieve compliance

### Background

The Glens Falls, New York, wastewater treatment plant serves Glen Falls from five plants in upstate New York. Additionally, the plants process solid waste from outside customers.

To remain compliant with the state's Department of Environmental Conservation (DEC) the five facilities required upgrades to their infrastructure, and partnered with Siemens Industry, Inc., as part of a five-year project.

### Objectives

The City established the following objectives for this project:

- Upgrade and improve the Plant infrastructure, including:
  - Sewage and metering systems
  - Monitoring and control of dams
  - Water pumping stations
- Achieve compliance with the DEC without requiring the city to bond, add to municipal debt, or raise taxes

### Solution

Siemens provided improvements to the city's five managed plants as part of a two-phase project:

### Phase 1:

- Rebuild mixing tanks
- Implement new mixers and belt filter presses
- Install a new system, including new DP and incinerator controls

### Phase 2:

- Install a UV disinfection system
- Expand the SCADA system
- Upgrade the fuels handling station, allowing the city to offset fuel oil consumption in the fluidized bed incinerator

A third phase of the project is currently under development, and will help increase plant revenues through improvements to the facility's cake receiving area. Failed HVAC systems will also be replaced as part of this third phase.

### Results

Siemens delivered the following projected savings for the City:

- Electric and fuel oil - \$190,000
- Maintenance - \$100,000
- Avoided landfill costs - \$121,000

The upgrades and improvements Siemens implemented also helped increase revenues for the City:

- Septage - \$110,000
- Liquid sludge - \$363,000

## Building Technologies

Answers for infrastructure.

**SIEMENS**

SIEMENS

Success Story

Rensselaer County Energy Project—Capital District – Eastern New York State

Case Study



Rensselaer County expects energy savings of more than \$430,000 per year with energy efficiency upgrades at several County facilities, and over \$180,000 per year of avoided maintenance and operational costs.

Profile:

In late 2008, Rensselaer County was faced with the same challenges of many municipalities: rising costs, tighter budgets and directives to reduce its operating impact on the environment. The history of the County dates back to the 1790s. While none of its government buildings are that old, many were long overdue for efficiency and energy improvements. Leaders decided to focus their efforts first on the County Office Building, then move on to the Wastewater Treatment Plant followed by Van Rensselaer Manor.



**SIEMENS**

*Success Story*

**Rensselaer County Energy Project—Capital District – Eastern New York State**

**Kathleen Jimino, County Executive**

*“We are always looking for ways to save taxpayer dollars. This project is achieving that as well as making Rensselaer County more ‘green.’”*

**Client objective 1: Reduce energy costs.**

**Client result:**

- Electricity, natural gas and fuel oil costs to be reduced by \$430,000 per year.
- 20-year contract will provide the County with a guarantee of ongoing savings.

**Client objective 2: Minimize upfront capital costs.**

**Client result:**

- No upfront capital required. Savings in energy spend will pay capital costs.
- Performance contract with Siemens guarantees savings.
- If savings fall short of contract guarantees, Siemens pays the difference.

**Client objective 3: Reduce environmental impact of County operations.**

**Client result:**

- Energy savings projected to reduce carbon dioxide emissions by 3.5 million pounds per year.

**Siemens Industry Solutions:**

- Upgrade HVAC equipment and controls.
- Replace 30-ton rooftop air-handling unit.
- Install controls and zone valves for space-heating hot water.
- Replace electric water heater with natural gas-fired unit.
- Replace space heating boilers with condensing units.
- Upgrade lighting.
- Improve building envelope.
- Replace WWTP sludge processing equipment with anaerobic digesters.
- Install new WWTP SCADA system.
- Expand capacity of on-site monofill.
- Install new methane gas-fired boilers.
- Install high efficiency motors and variable frequency drives.