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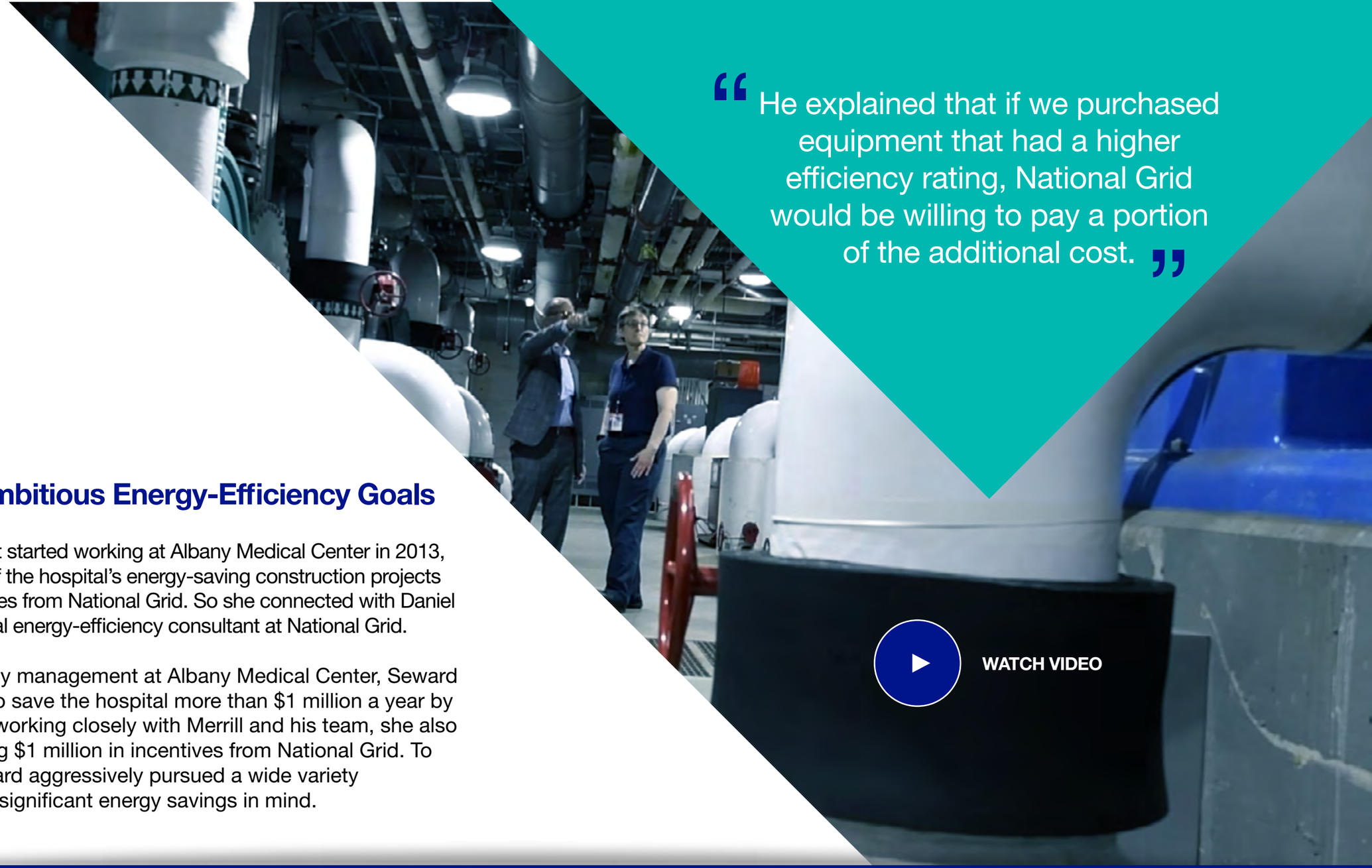
Albany Medical Center's Partnership with National Grid Adds More Efficiency to Facilities



> “He explained that if we purchased equipment that had a higher efficiency rating, National Grid would be willing to pay a portion of the additional cost.”

WATCH VIDEO

Hospital Sets Ambitious Energy-Efficiency Goals

When Karen Seward first started working at Albany Medical Center in 2013, she noticed that many of the hospital’s energy-saving construction projects might qualify for incentives from National Grid. So she connected with Daniel Merrill, a lead commercial energy-efficiency consultant at National Grid.

As the director of energy management at Albany Medical Center, Seward set an ambitious goal to save the hospital more than $1 million a year by conserving energy. By working closely with Merrill and his team, she also wanted to aim at getting $1 million in incentives from National Grid. To achieve that goal, Seward aggressively pursued a wide variety of capital projects with significant energy savings in mind.

CHILLER PLANT | DESICCANT UNITS | VARIABLE-SPEED DRIVES | LED FIXTURES | STEAM TRAPS | PARTNERSHIP

The Recommissioning of the Hospital's Chiller Plant

Albany Medical Center's chiller plant uses new energy-efficient centrifugal chillers to cool the entire hospital.

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The Project

One of the largest projects Seward tackled was the recommissioning of the hospital's chiller plant. Centrifugal chillers provide the cooling for the entire hospital and are critically important for patient comfort, as well as controlling infection and air quality in clinic space and operating rooms.

Taking into account future expansion plans, the aging chillers were nearing the end of their useful life, and the hospital's staff were strategically working on plans to upgrade the plant without causing too much disruption to the hospital's operations.

At the time, the chiller plant had four 1,200-ton constant-speed-drive chillers. The hospital was also able to rely on two new 560-ton variable-speed-drive chillers in a recently completed cogeneration plant.

Seward partnered with National Grid early in the planning stages to discuss the project, identify how it could be done in stages, and in a way that was most energy efficient.

> "When the hospital was done installing the chillers and all the variable-speed drives, the motor upgrades and more, it led to approximately **3.3 million kWh** in annual savings."

The Results

After the installation of the variable-speed chillers, the hospital spent the next four years upsizing the piping to match the new capacity of the chiller plant and then replaced each of the chillers one by one.

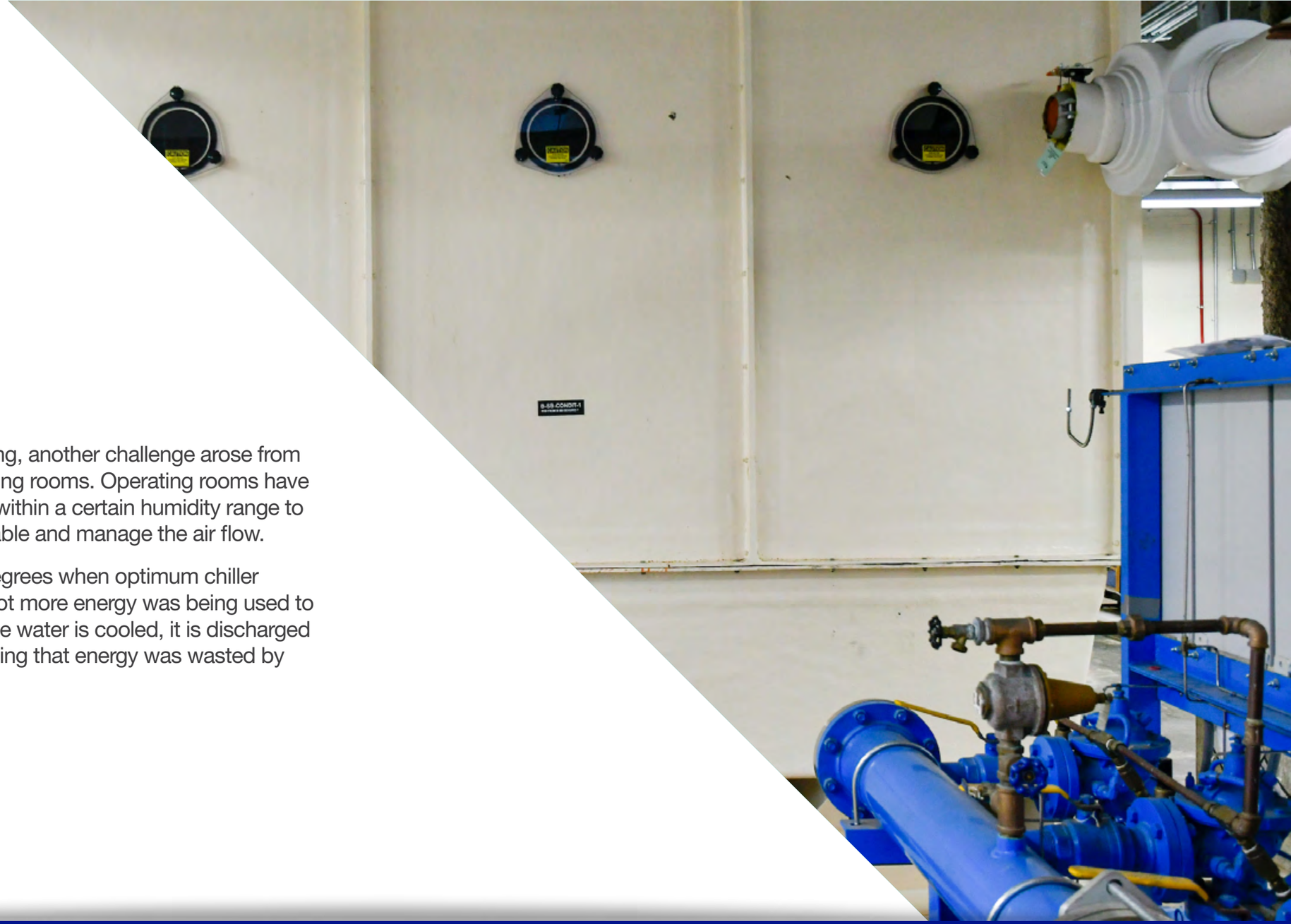
The savings were immediate. From 2018 to 2019, Albany Medical Center saw a two percent reduction in energy usage—approximately 1.2 million kWh per year and about $100,000 in savings. By 2019 to 2020, the hospital reduced its energy usage by another 1.2 million kWh, saving another $100,000 annually.

The hospital spent $1.75 million on the new chillers and, by choosing to buy more energy-efficient equipment, received $420,584 in National Grid incentives.

Controlling Humidity in the Operating Rooms

Albany Medical Center's largest desiccant unit controls humidity in 20 operating rooms.

CHILLER PLANT | DESICCANT UNITS | VARIABLE-SPEED DRIVES | LED FIXTURES | STEAM TRAPS | PARTNERSHIP



The Project

While the chiller plant project was happening, another challenge arose from the doctors and staff working in the operating rooms. Operating rooms have to be set at certain temperatures and also within a certain humidity range to control infection, keep occupants comfortable and manage the air flow.

By operating the chiller plant at 38 to 40 degrees when optimum chiller performance is 45-degree chilled water, a lot more energy was being used to overcool that water. On top of that, once the water is cooled, it is discharged at 55 degrees to the operating room, meaning that energy was wasted by using steam coils to reheat the water.

MORE THAN

1M kWh

in electric savings

The Results

National Grid estimated that installing three desiccant units, at a cost of $1 million, would save the hospital one million kWh per year. The largest of the three was specifically designed to serve 20 operating rooms.

$215,000 worth of National Grid incentives helped to offset the cost of the project and reduced the hospital's operating expenses even further with gas savings of 392,000 therms and electric savings of 1,090,000 kWh.

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Variable-Speed Drives Play Key Role in Energy Efficiency

Karen Seward, director of energy management, and Bob Dalton, plant supervisor at Albany Medical Center, discuss the benefits of the variable-speed drives installed at the hospital.

CHILLER PLANT | DESICCANT UNITS | VARIABLE-SPEED DRIVES | LED FIXTURES | STEAM TRAPS | PARTNERSHIP

The Project

Always looking for ways to improve energy efficiency, Albany Medical Center worked with National Grid to convert constant-speed drives to variable-speed drives (VSDs) over a span of eight years.

Variable-speed drives allow Albany Medical Center's maintenance team to remotely control equipment spread across the sprawling two-million-square-foot campus by speeding up or slowing down units as needed based on each building's load.

VSDs played an important role during COVID to keep the HVAC and chiller equipment at the hospital running efficiently.

$193,899
a year in savings

The Results

The installation of 73 variable-speed drives at the hospital over the past eight years cost the hospital $421,706. National Grid contributed $158,129 in incentives for the VSDs. More importantly, VSDs have saved the hospital approximately 1,772,000 kWh and $193,899 per year. They have also led to savings of approximately 93,444 therms per year with a value of $43,010.

LED Lighting Leads to Major Energy Savings

National Grid's Daniel Merrill talks energy efficiency with Albany Medical Center's Karen Seward underneath upgraded LED lighting.

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The Project

Lighting at Albany Medical Center is critically important to the doctors and how they can see their patients. They need to be able to see their patients' skin color to help with their diagnoses. Additionally, the lights can't be too harsh for a patient who is recovering; they need to deliver a soothing, calm and comfortable environment.

As Karen Seward and Daniel Merrill discussed the possibility of a lighting project at the hospital, there was an initial desire to continue using fluorescent lighting. National Grid helped to address concerns about new LED lighting technology by setting up a space that allowed hospital leadership and doctors to experience it for themselves and ultimately feel comfortable that the lights met patient and healthcare provider needs.

SAVINGS OF APPROXIMATELY

$240,000

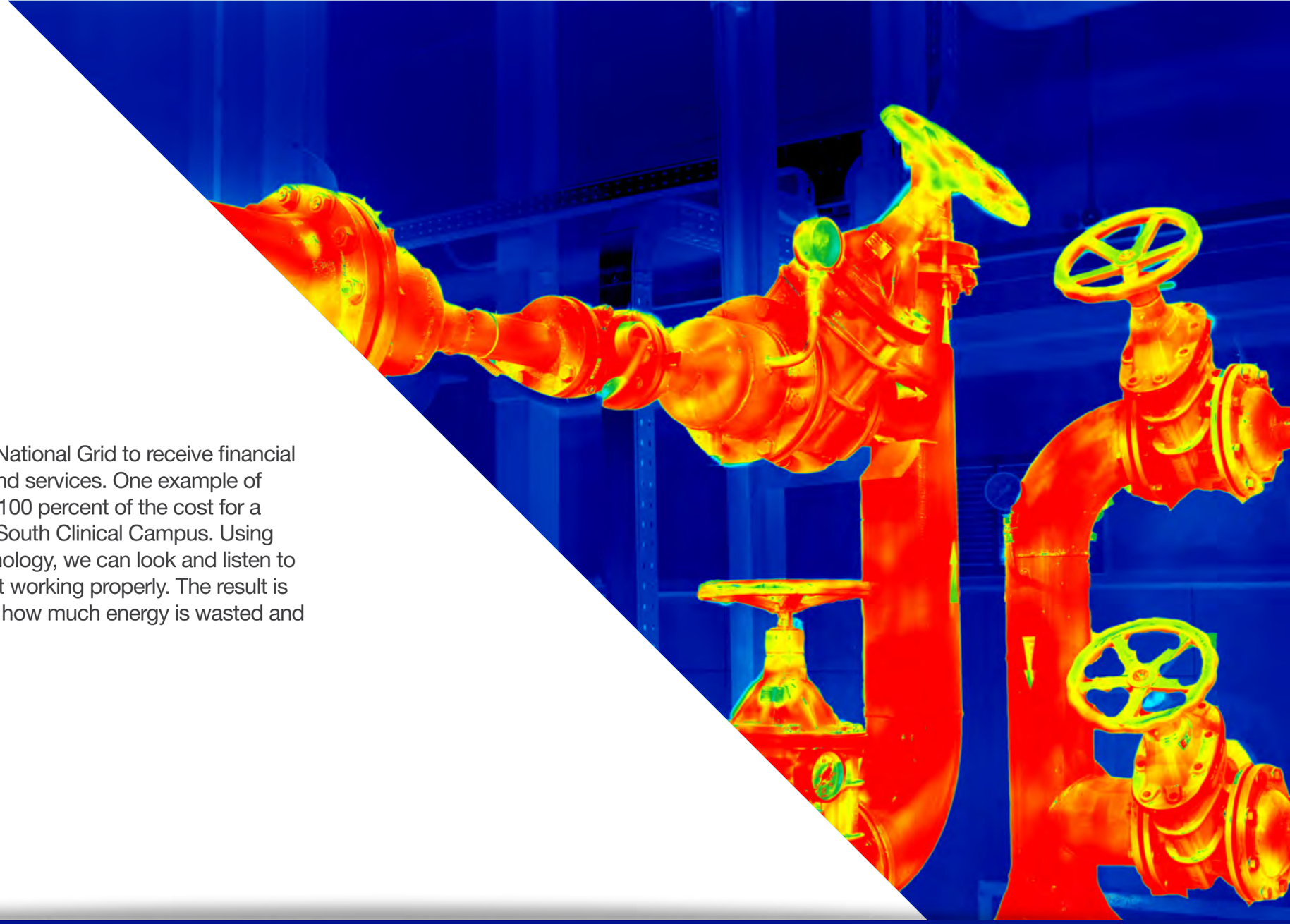
PER YEAR

The Results

Further lighting upgrades were made at some of the hospital's offsite locations, which reduced their electricity usage by approximately 50 percent. The switch to LED lighting in the parking garages as well as installing some sensors helped reduce electricity usage by 40 percent. Albany Medical Center ended up saving three million kWh per year by upgrading the lighting on the main site—a savings of approximately $240,000 per year.

Steam Trap Survey Identifies Wasted Energy

Leaky steam traps can cost a business thousands of dollars every year, but they don’t have to.



The Project

Albany Medical Center works closely with National Grid to receive financial incentives on energy-efficient equipment and services. One example of such service was when National Grid paid 100 percent of the cost for a $1,550 steam trap survey at the hospital's South Clinical Campus. Using both ultrasound and thermal imaging technology, we can look and listen to determine if a steam trap is defective or not working properly. The result is a report that details what traps have failed, how much energy is wasted and what fixes should be done.

NATIONAL GRID PROVIDED
INCENTIVES WORTH
$1,548

The Results

Repairs cost the hospital $2,097, but National Grid provided incentives worth $1,548 to offset the cost. Not only that, the hospital saved 3,000 therms per year and approximately $1,500 a year on their gas bill. Albany Medical Center plans to do another steam trap survey on its main campus sometime in the next year or two.

Partnership is the Key to Success

Robert Dalton, plant operator at Albany Medical Center, shows National Grid's Daniel Merrill how the chiller plant is operating and meeting the temperature needs across the hospital.

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Partnership is the Key to Success

All of these equipment upgrades have played a critical role in helping Albany Medical Center save more than a million dollars a year by conserving energy. Not only that, the hospital has received nearly $1.8 million in incentives from National Grid.

And these projects are just the beginning. Albany Medical Center's next goal is to bring its energy conservation efforts to hospitals that they have recently partnered with to form the Albany Med Health System. Karen Seward has set a goal to save at least another 10 percent at Albany Medical Center in the next few years and decrease energy usage at the offsite partner hospitals by 10 percent.

> "We have a team that I feel is solely dedicated to us even though they serve multiple other customers."

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CONTACT US

This customer success story is specific to Albany Medical Center. Energy savings, equipment, costs and incentives are subject to change and may vary by region.

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