



NYSERDA Awards \$1.8 Million to Rensselaer Polytechnic Institute to Boost Efficiency of Supercomputing Center

Upgraded Power and Cooling Infrastructure Will Enable Greener, More Powerful Supercomputers and Reduce the Center's Annual Electricity Costs by \$1 Million

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The New York State Energy Research and Development Authority (NYSERDA) today announced \$1.8 million in funding to Rensselaer Polytechnic Institute for critical upgrades to the electrical and mechanical infrastructure of the university's supercomputing center, the Computational Center for Nanotechnology Innovations (CCNI). NYSERDA and Rensselaer officials met at the supercomputing center today to announce the funding.

These upgrades to CCNI's power and cooling infrastructure support the operation of the center's high performance computers. Rensselaer recently transitioned its supercomputing research activities to a powerful IBM Blue Gene/Q supercomputer system, which is four times faster and uses half the amount of energy as its predecessor.

The new Blue Gene/Q system and infrastructure upgrades are expected to save Rensselaer more than \$1 million in electricity costs annually. The NYSERDA-funded improvements play an important role in this energy efficiency and help Rensselaer increase its computation capabilities per watt of power. Additionally, these upgrades will enable and support any future expansion of CCNI.

A partnership between Rensselaer and IBM, the CCNI supercomputing center has enabled industrial, government and academic researchers in New York State and across the nation to tackle scientific and technological challenges related to advanced manufacturing, health care, renewable energy systems and many other areas.

The new IBM Blue Gene/Q supercomputers and other improvements at CCNI are expected to reduce the energy usage at Rensselaer by more than 15 million kilowatt hours (kWh) of electricity annually—about the equivalent of powering 2,100 average-sized homes for one year.

The \$1.8 million in funding was provided through Governor Andrew M. Cuomo's Regional Council initiative. Last year, a total of \$738 million was awarded through the Consolidated Funding Application (CFA) for job creation and community development projects consistent with each region's strategic plans.

The funding was provided through NYSERDA's Industrial and Process Efficiency (IPE) Program, which provides up to \$5 million in financial incentives to manufacturers and data centers that enhance productivity and energy efficiency. Eligible projects include those that enhance processes, increase manufacturing output, improve IT efficiency and minimize energy use in building support systems.

"This funding will allow Rensselaer to reduce its energy footprint without compromising its ability to support world-class computational research. As the nation's oldest technological research university, Rensselaer has a rich history of educational innovation, a proven commitment to providing top-quality instruction and a tradition of preparing students to succeed," said Francis J. Murray Jr., President and CEO, NYSERDA. *"Through our collective efforts to fulfill Governor Cuomo's vision of a clean tech economy, we are ensuring New York State is a national leader in energy efficiency and education."*



“Rensselaer is at the forefront of applying high performance computing to today’s most challenging and complex problems, including energy, health, food, water, and national security, and the linked challenges of climate change and allocation of scarce resources. Finding solutions involves massive amounts of data, and requires complex computations, driven by ever-more powerful supercomputers,” said Rensselaer Polytechnic Institute President Shirley Ann Jackson. *“As we dramatically increase the computational power of our supercomputers, we also must reduce the energy requirements. We are working both sides of this equation by partnering with IBM to use more energy efficient computers, and benefitting from the support of NYSERDA to upgrade the power and cooling systems required to handle the increasing computational capacity.”*

Senator Neil Breslin said, *“I want to applaud this critical support that NYSERDA is providing to continue improving the 21st century infrastructure of RPI’s supercomputing center. It is this type of strategic and intelligent investment that will continue to make the University and the Capital Region more competitive in the global market.”*

“Without question, RPI is a true academic and economic asset for our Capital District. Supporting projects such as the University’s supercomputing center is a smart investment in our region’s high-tech future and the good-paying jobs we need to keep our kids here. I support and appreciate NYSERDA’s awarding this funding to help RPI continue its innovative breakthroughs in supercomputing, while minimizing the project’s associated environmental and energy footprint. This initiative is a win-win for our Capital District,” said Senator Kathleen A. Marchione.

“It is encouraging to witness investment from NYSERDA but also from RPI in this ever evolving demand and growth for computer capacity, which impacts industrial and academic research in the University’s Computational Center for Nanotechnology Innovations. Having recently visited the center, I am amazed and impressed with the abilities of the RPI supercomputer program, and I am excited that this investment will lead to greater opportunity as well as a large savings in energy utilization and cost,” said Assemblymember John T. McDonald III.

“The partnership between RPI and NYSERDA to upgrade the electrical and mechanical infrastructure of the University’s supercomputing center once again highlights that the Capital Region is home to a world renowned research center focused on global technological advances. Funding from NYSERDA will not only lower energy costs for the University, but will help continue to attract top academic, scientific and industrial leaders from across the globe. RPI will now be better equipped to compete in a changing global economy,” said Assemblymember Steve McLaughlin.

Along with boosting academic research, CCNI is a resource for the growing number of companies that can benefit from using high-performance computing as a way to create and sustain competitive advantage. Rensselaer experts assist companies in translating their design, engineering, and/or manufacturing challenges into problems that can be tackled by a supercomputer. Working with a range of businesses, from Fortune 50 firms to small start-ups, CCNI researchers help companies decrease product development cycle times, improve quality of products, reduce costs, and in doing so boost their ability to compete in the global marketplace— all without having to invest in or acquire their own supercomputing systems.

About NYSERDA

NYSERDA, a public benefit corporation, offers objective information and analysis, innovative programs, technical expertise, and funding to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce their reliance on fossil fuels. NYSERDA professionals work to protect our environment and create clean-energy jobs. NYSERDA has been developing partnerships to advance innovative energy solutions in New York since 1975.



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