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**MGHPCC, Universities and City of Holyoke to Launch New England’s**

**First Experimental, Solar-Powered Data Center**

*“Mass Net Zero Data Center” Will Facilitate Research into Minimizing*

*Environmental Impact of High Energy-Using Computer Centers*

Holyoke, Massachusetts, Wednesday, Feb. 24, 2016 –The Massachusetts Green High Performance Computing Center (MGHPCC), its member universities and the City of Holyoke will launch Friday the Mass Net Zero Data Center (MassNZ) -- an experimental, solar-powered, micro data center that is the first of its kind in New England. **The ribbon cutting will take place at 10:15 a.m., Friday, Feb. 26, 2016 at the MGHPCC, located at 100 Bigelow Street in Holyoke, Massachusetts.**

“We are excited to be part of a collaboration with such enormous implications,” said Chancellor Kumble R. Subbaswamy of UMass Amherst, one of the MGHPCC’s founding institutions. “Data centers play an indispensable role in our increasingly connected world, but they are voracious users of energy. MassNZ is a hands-on research and educational resource that will help us understand how to decrease a data center’s energy footprint and increase its use of renewable energy in an era when we are striving to reduce dependence on fossil fuels.”

The MassNZ and MGHPCC facilities will work in collaboration with Holyoke Gas and Electric (HG&E), the municipally-owned utility that serves the City of Holyoke. The principal investigators for MassNZ are Christopher Hill, Principal Research Engineer and Director of Research Computing at the Massachusetts Institute of Technology’s Program in Atmospheres, Oceans and Climate, and Professor Prashant Shenoy of the UMass Amherst College of Information and Computer Sciences. HG&E’s participation in MassNZ is part of a distributed energy storage demonstration project undertaken in partnership with Boston-based startup Sparkplug Power.

“There are three major obstacles to research in sustainable data center design: availability of experimental infrastructure to enable realistic prototyping and evaluation, availability of realistic use cases from a state-of-the-art green data center, and real-time visibility into the utility infrastructure that provides data center power,” said Hill. “The MassNZ addresses all three.”

“Despite numerous advances in data center design, many challenges remain unaddressed,” said Shenoy. “How should a data center incorporate renewable sources of energy? How should future data centers interface with a smart electric grid to intelligently reduce their electricity bills? How should we design green HPC applications that intelligently manage power use?”

MassNZ is an extension of the Engaging-1 project, an initiative by the MGHPCC founding universities, led by Chris Hill, that started with a $1.6M National Science Foundation (NSF) grant for a shared computing resource and has grown to support collaborations involving hundreds of researchers and students at MGHPCC founding members Boston University, the Massachusetts Institute of Technology, Northeastern University, UMass and other institutions.

“MassNZ reinforces Holyoke’s growing reputation as a leader in green energy, a hotbed of innovation and a magnet for academic and industrial investment,” said Holyoke Mayor Alex B. Morse. “It will also serve as an educational asset for local high schools and community colleges.”

The 200-square-foot MassNZ micro data center is located adjacent to the MGHPCC, a 15 megawatt, LEED Platinum data center. Solar panels located next to the micro facility provide power. Inside it are renewable cooling systems as well as batteries and micro-flywheels for energy storage. MassNZ will also house a variety of different server, storage and network systems.

Both MassNZ and the MGHPCC will generate power, cooling and workload data that will be used by researchers to investigate data center integration with a smart electric grid; machine learning-based, data-driven modeling of sustainable data centers; and the design of High Performance Computing applications that exploit novel power-management techniques. MassNZ is spurring a number of research collaborations that hope to utilize and extend its goals, in partnership with Boston University, Northeastern University and Williams College.

“MassNZ is a great example of the kind of collaboration that the founding MGHPCC universities envisioned” said MGHPCC Executive Director John Goodhue. “It also expands the ability of the MGHPCC to serve as a living laboratory for research in sustainable data center design.”

Partial funding for the MassNZ testbed was provided by a MGHPCC seed grant and a grant from the NSF[[1]](#footnote-1). The HG&E distributed energy storage demonstration project is supported by grants from the American Public Power Association and the Massachusetts Clean Energy Center.

**About the Massachusetts Green High Performance Computing Center**

The Massachusetts Green High Performance Computing Center (MGHPCC) is a ground-breaking collaboration of five of the state’s most research-intensive universities, state government and private industry — the most significant collaboration among government, industry and public and private universities in the history of the Commonwealth, and the first facility in the nation of its kind. The 90,000-square-foot computing facility in Holyoke, Massachusetts, opened in November 2012. Funding was provided by the five member universities -- Boston University, Harvard University, the Massachusetts Institute of Technology, Northeastern University and the University of Massachusetts -- the Commonwealth of Massachusetts, Cisco, EMC, and the Federal New Markets Tax Credit program. The member universities will fund the ongoing operation of the MGHPCC. For more information on the Massachusetts High Performance Computing Center, visit <http://www.mghpcc.org>.

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