

COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK

ENVIRONMENTAL STEWARDSHIP

September 14, 2012

To whom it may concern,

Columbia has implemented a Green Data Center program with support from the New York State Energy Research and Development Authority (NYSERDA). The Green Data Center initiatives include energy-use measurement and monitoring, server consolidation and the purchase of high density computing equipment—that focuses on maximizing computing capacity (i.e. number of computer operations and amount of data storage) per watt, thereby increasing energy efficiency. These efforts will help Columbia to meet its commitments to reduce the university's carbon footprint. Project information and tips are blogged by the CUIT group at <http://blogs.cuit.columbia.edu/greendc/>.

Additionally, the University has developed a shared High Performance Computing facility that has focused on green procurement of computer servers as well as energy efficient performance achieved through resource sharing.

These unique, innovative initiatives have helped advance sustainability within CUIT and reduced energy consumption and carbon emissions. Both the Green Data Center is not currently a common practice nor is it covered elsewhere in the STARS report.

Respectfully,



Cathy Resler

Manager, Columbia University Environmental Stewardship

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Courtesy of Alan Crosswell, CUIT- Table: Documents energy reduction over a one year period that represents a 96.4 MTCE reduction

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| Average IT Power Demand Load Reduction | 14.34 | kW |
| Annual kWh reduction due to IT equip (24h, 365d) | 125,601 | kWh |
| Total Facility Power Demand Reduction (PUE of 2.01) | 28.82 | kW |
| Total Annual kWh reduction | 252,458 | kWh |
| Estimated Annual Cost Savings (\$.185 per kWh) | \$46,705 | |
| Total Facility Carbon Footprint Reduction | 96.4 | Metric Tons of CO2 Equivalent* |
| <i>*Calculated using 0.00038180 MTCE/kWh</i> | | |

