

UNIVERSITY *of* MISSOURI

OFFICE OF THE PROVOST
ECONOMIC DEVELOPMENT

STATEMENT OF SUPPORT
OF
ARG INVESTMENT LLC AND GREENTECH RESEARCH FOUNDATION, INC D/B/A GREENM3
BY
UNIVERSITY OF MISSOURI
COLUMBIA, MISSOURI
MARCH 1, 2010

WHEREAS, Internet commerce, social networking, mobile computing devices and search engines have created vast new opportunities for instantaneous communications and marketing that produces consistent innovations and parallel increased demands on the information energy infrastructure, and;

WHEREAS, data centers represent the physical core of the computing cloud which has shown a geometric growth in response to the consumers increased demands for information, and whose transformation into a information utility poses a challenge to both sustained economic expansion and ecological stewardship, and;

WHEREAS, data centers and their supportive ancillary networks have evolved from being located near computing centers to near abundant and redundant power sources to future sites that provide for all of those requirements plus the ability to produce energy and renewable/green energy while adhering to sustainable design principles, and;

WHEREAS, data centers require knowledge and economic capital intensive investments; these investments create jobs directly and indirectly and serve as an incubator for 21st Century cluster development that become foundational assets for regional and statewide economic and technological growth.

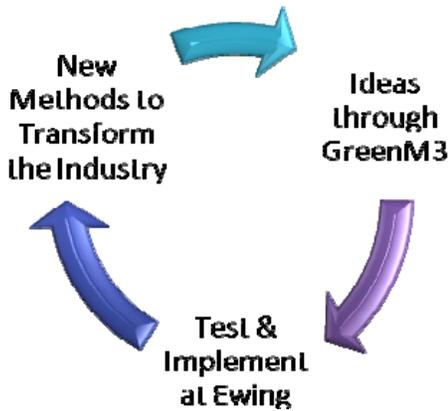
WHEREAS, the disruptive and transformative nature of computer driven communications and commerce is little understood and creates an environment of extreme risk and opportunity, the harnessing, of which, can only be accomplished through applied research from a consortium of successful market operators and research specialists; there is a common need shared within the industry for a clearing-house or central hub of research needed to advance data center operation, and;

WHEREAS, the Greentech Research Foundation, Inc (GreenM3), Non-Profit Organization (NPO) is established as an independent and objective source that will contribute to the step change advancement of data center and ancillary services operations that strives to provide a platform for stable, secure, efficient and sustainable state-of-the-art operations that can be replicated world-wide, accomplished through public/private investment and;



WHEREAS, The Curators of the University of Missouri on behalf of the University of Missouri – Columbia (the University of Missouri, or MU) has charted a course for strategic advancements in disciplines of strength known as Missouri Advantage, including renewable energy, disruptive and transformative technology, and new media. MU wishes to enter into a mutually beneficial relationship and provide research capacity, doctorate and post-doctorate placement and coordination to commercialize technologies that advance ecological stewardship, market efficiencies and economic development, and;

WHEREAS, ARG Investments LLC, a Missouri based company, (ARG) desires to build a technology campus and innovation-led development at Ewing Business Park, Columbia, Missouri as well as foster improvement in the global data center and cloud-computing space through its not-for-profit partner Greentech Research Foundation, Inc (GreenM3), including the following actions and initiatives:



- **Facilitating Data Center Advancement:** With not-for-profit partner, GreenM3, a nonprofit organization, the team is dedicated to developing and sharing best practices for total sustainability, to reduce the carbon impact and water use in power generation, building, data center operations, and education. Collaboration with members of the Industry Advisory Council, led by Michael J. Manos of Nokia, will be facilitated by GreenM3 and Enginuity Worldwide LLC, an innovation-based business.
- **Implementing the Best and Most Compelling Innovation:** Data Centers can be at the nexus of cloud computing, mobile devices, and renewable energy with the right team of people. Based on business model frameworks, and by using an operating business park as the vessel for technology implementation, the technology improvements are more likely to uncover step-change advances and

facilitate industry adoption.

- **Communicating the Advances:** Exchange information at www.greenm3.com and other social networking and viral pathways, applying an Open Source view to systems, models, and methods developed by the partners at the Ewing Business Park.
- **Partnering with Educational Institutions:** Work to provide research capacity, graduate, doctorate and post-doctorate placement and to provide worker training and hands-on learning for smoothing the transition from disruptive to transformative. Seek additional teaching and research partners in the region and across the world to join in the conversation of innovation.

The areas of of interest for the data center industry are synchronized with the most compelling topics facing our nation. The current nexus opportunity is in the combination of Cloud Computing, Sustainable Design Efficiencies, Mobile Devices, and Renewable Energy and Research. All of these are the highest growth category in these economic times but are being worked on independently. In the same way that the Mizzou Advantage is looking to leverage multiple strengths, Ewing is engaging in multiple opportunities that converge to define new opportunities.

THEREFORE, BE IT RESOLVED; that MU, Missouri’s Land-Grant University, an internationally recognized research and educational institution, and an institution with numerous successful relationships with business, desires to support the State of Missouri, any community in the State, and the ARG and GreenM3in the successful development of Ewing Business Park and serve as a long-term supporter in the success of the operation.

BE IT FURTHER RESOLVED; that MU offers the following capabilities for ARG and GreenM3’s use to garner consideration for tenants and advances at Ewing Business Park.

I. SINGLE POINT OF CONTACT AND CORPORATE OFFICE

University of Missouri will make available the Vice Provost of Economic Development, or his designee, as single point of contact for ARG & GreenM3 through its Office of Economic Development and can provide meeting space for ARG & GreenM3 with on-campus contacts.

II. UNIVERSITY OF MISSOURI TEAM

University of Missouri can establish a high-level administrative response team to assure responsiveness and delivery of requested services and programs.

The team can consist of the appropriate administrators or their designees from the list below:

- Chancellor
- Provost
- Vice Provost for Economic Development
- Vice Chancellor for Research
- Vice Chancellor for Administrative Services
- Vice Provost for Undergraduate Studies
- Vice Provost and Director of Cooperative Extension
- Dean from various MU Colleges and Schools
- Key Center Directors
- Other Administrative or Technical Staff as needed

This team can meet periodically with ARG & GreenM3 administrators to further the success of the relationship and provide a continuous communication network.

III. EDUCATION AND WORKFORCE DEVELOPMENT CAPABILITIES AVAILABLE

- **Recruiting**

MU can provide recruiting support for new and experienced Scientific, Engineering, Management, and Technical Employees and recruiting access to nationally ranked academic programs in the areas of: life sciences; advanced manufacturing; business management; agri-business, information technology, including analytical chemistry; biology; computer science; software engineering; biomedical engineering and technology; mechanical engineering; chemical engineering; computer graphics; logistics and distribution; industrial engineering, medicine, radiopharmaceuticals, life sciences. MU can coordinate recruiting needs for new graduates and experienced alumni from MU through its HireMizzouTigers.com website and nine college career service centers to assist ARG & GreenM3 recruiting needs.

- **Internships, Co-ops, Student Employment**

MU can work with ARG & GreenM3 to gain access to undergraduate and graduate students to fill internship, co-op needs, and employment opportunities. See the employer tab at www.career.missouri.edu.

- **In-plant Education and Training Programs**

MU can provide access to credit and non-credit programs through its MU Direct distance education (www.mudirect.missouri.edu), MU' Independent Study program (www.cdis.missouri.edu/university.aspx), Extension's Continuing Education programs, (www.extension.missouri.edu/planofwork/education.htm), Mizzou's Online offerings (www.online.missouri.edu), Mizzou's in the Evening (www.Evening.missouri.edu) Extension's Business Development Programs (www.missouribusiness.net) and Missouri's Training Institute (MTI.missouri.edu). Faculty and departments are available to discuss

customized training programs for ARG & GreenM3. Programs can be made available to employees in plant either via the Internet or in custom designed courses or programs on site.

- **Video Conferencing**

Videoconferencing facilities are available on campus at MU, around the state through our TeleCenter Network (www.telecenter.missouri.edu), and through select University of Missouri Extension offices.

- **Conference Facilities and Coordinator Services**

MU offers complete conference planning and coordination services on or off campus through the MU Conference Office (www.muconf.missouri.edu).

IV. RESEARCH AND DISCOVERY BENEFITS OF A RELATIONSHIP COULD INCLUDE:

- **Master Research/Collaboration Contract**

A Master Research Agreement can be drafted and signed to cover contractual aspects of the relationship. This can facilitate multiple projects that ARG & GreenM3 wishes to pursue with MU.

- **Jointly leveraging R&D capabilities**

Both ARG & Green M3 and MU have strong research skills and infrastructures. By jointly leveraging the capabilities of both entities, difficult problems can be solved quickly and possible competitive federal funds could be acquired together. MU will work with ARG & GreenM3 to develop a positive working interaction.

- **Direct access to University of Missouri's vast Library System**

MU has an outstanding library system. Its electronic files and knowledge acquisition are among the best in the country. MU can assist ARG & GreenM3 in its interest in accessing this resource.

- **Facilitate Faculty Access**

MU has a large, technically oriented faculty whose expertise covers a wide range of disciplines including software development, materials research, communication and signal processing, wireless communications, automatic control systems, sensors, mathematics/statistics, customer service, manufacturing technologies and business management skills. MU can help arrange contacts between ARG & GreenM3 and faculty experts.

- **Research Facilities**

MU has state-of-the-art equipment and laboratories. MU can make available to ARG & GreenM3 the use of special research equipment and facilities if such use does not conflict with university research and/or educational programs. MU can make available a list of specialized equipment and facilities. Each piece of individual equipment or facility will have a negotiated cost.

- **Teaching Facilities**

Use of MU teaching facilities is possible. This could include access to auditoriums and computer-based class rooms for short courses, national seminars, and other company education needs and programs.

- **Campus Incubator Space**

MU can provide space for ARG & GreenM3 on-campus contacts and leased space at our Incubator for a negotiated rate. MU presence will allow ARG & GreenM3™ to have a better understanding of MU resources, faculty, collaboration opportunities and research opportunities. ARG & GreenM3 personnel making frequent on-campus contacts would strengthen and broaden the relationship with faculty, students and programmatic capabilities.

V. TECHNICAL ASSISTANCE AND INFORMATION SERVICES AVAILABLE TO COMPANY:

- **Center for Cyber Security Research**

The establishment of the Center for Cyber Security Research (CCSR) leverages the nationally recognized expertise of MU researchers in Computer Science, Information Technology, Engineering, Learning and Education, Journalism, and Health Informatics (www.cs.missouri.edu/)

- **Center for Sustainable Energy**

The MU Center for Sustainable Energy was formed as collaboration between the College of Agriculture, Food and Natural Resources and the College of Engineering. Over 70 faculty members, from a wide variety of disciplines, are associated with the center. The Center focuses on five primary areas: energy policy and management, research, education and training, service, and commercialization (<http://bioenergy.expressacademic.org/>)

- **Center for Engineering Logistics and Distribution**

The Center for Engineering Logistics and Distribution (CELDi) is an Industry/University Cooperative Research Center sponsored by the National Science Foundation. CELDi is a multi-university research consortium with the University of Arkansas serving as the lead academic partner. The University of Arkansas partners with nine other universities (University of Oklahoma, Oklahoma State, University of Louisville, Lehigh, Clemson, Texas Tech, University of Missouri, Virginia Tech and Arizona State). Member organizations join CELDi through one of the ten sites, but share in the research output of all sites.

There are approximately 30 member organizations from the commercial, military and government sectors of the economy. Some member organizations are large (Wal-Mart) while others are smaller companies (SBIR companies). Research endeavors in CELDi are driven and sponsored by the member organizations in distribution, transportation, manufacturing, information technology, and software solutions. The mission of CELDi is to provide leading-edge logistics solutions to real-world problems and to leverage support to larger-issue opportunities.

- **Mobile Networking and Multimedia Communications Lab**

The Mobile Networking and Multimedia Communications Lab addresses research issues related to mobile networking, wireless sensor network, multimedia communication, network security, and multimedia security and digital rights management.

(<http://www.cs.missouri.edu/~mnmc/index.shtml>).

- **Distributed Computing and Sensor Networks Research Lab**

This lab addresses research issues related to wireless communications, mobile computing, consumer communication, and other multimedia, computing and sensor networks.

(<http://dcsn.cs.missouri.edu/index.htm>).

- **Center for Electromechanics and Energy Conversion**

Led by Associate Professor Greg Engel in electrical and computer engineering. At this center, MU researches and develops high power electromechanical and energy conversion devices.

- **Center for Thermal Management**

Led by Professor Bill Ma in mechanical and aerospace engineering, this Center tackles a vital component of electronic product development. This thermal management center researches novel low- cost cooling technologies.

- **Missouri Industrial Assessment Center**

The center provides services in energy efficiency for industries in the state. The aim is to promote best practices in energy efficiency, reusable energy, waste reduction and productivity through integration of activities involving MU, the state agencies, the University of Missouri Extension, the Manufacturing Extension Partnership program, the state-wide and local utilities and industrial associations. Specifically, we offer energy audit and productivity assessment to qualified small- to medium-sized manufacturing companies. (<http://iac.missouri.edu/>)

- **Missouri Small Business and Technology Development Centers (MO SBTDC)**

MO SBTDC provides individual company coaching and training programs to businesses in the areas of management, finance, marketing, human resources and technical services.

(www.missouribusiness.net)

- **Missouri Federal And State Technical (MO FAST)**

MO FAST provides assistance to businesses seeking federal funding for technology commercialization. MO FAST staff can help the company identify federal funding opportunities, connect with faculty expertise, assist with proposal preparation. Funding ranges from \$5,000 to over \$1 million. (www.missouribusiness.net/fast)

- **Missouri Procurement Assistance Centers (MO PTAC)**

MO PTAC provides businesses help with selling their product or services to the federal, state, and local governments. MO PTAC will provide bid matching services, bid preparation

assistance, procurement histories, and post contract administration.
(www.missouribusiness.net/ptac)

This statement expresses the support and intention of the University of Missouri, but does not create any binding legal or financial obligations on its part.



3/1/2010

Signature
Steve Wyatt, J.D.
Vice Provost for Economic Development
University of Missouri

Date