

4th Annual  
NORTHERN ILLINOIS  
RENEWABLE  
 ENERGY  
SUMMIT & EXPO

***“Industrial and Commercial Energy Efficiency”***

Today's Northern Illinois Energy Summit and Expo (NI-Expo) provides significant and unique networking opportunities and information as it relates to Energy Efficiency Technologies. It is important to understand competitiveness and jobs growth comes from efficient operations which in turn, creates funding for reinvestment to build our region's future. Typically, this type of event is limited to larger cities and universities. Having such an affair take place in Rockford is essential in showcasing this region's Leadership in Innovation.

**Education, Exhibits, Real World Applications**

October 6, 2016  
Radisson Hotel and Conference Center  
Rockford, Illinois

## Event Presenters



**Northern Illinois University**

*Learning Today, Leading Tomorrow*

## Event Sponsors



### Event Booth Displays

Woodward, Inc.  
Alpha Controls LLC.  
Rock Valley College

### Event Table Displays

Chicago Rockford International Airport  
Rockford Housing Authority  
Crescent Electric/Cree Lighting  
Larson and Darby/USBG  
Ballard Engineering  
Rockford Park District  
Eigerlab  
Nicor

### Event Guest Displays

Illinois Department of Commerce  
and Economic Opportunity  
University of Illinois-Extension  
EPA Energy Star Program  
Illinois Green Economy Network  
Midwest Energy Research Consortium  
Fast Pitch Energy Entrepreneur  
Rock Valley College Student Programs  
Rockford Area Economic  
Development Council  
Illinois Solar Energy Association

*In-Kind Donations* provided by Rockford Litho Center, Gene Hertenstein Graphic Design and MarketWorks

## Event Topic: Making Energy Work as Hard as You Do The Current State of Midwest Energy Programs and a Look into the Near Future

Our event goal is to drive awareness of the importance of energy efficiency to our region's competitiveness.

8:30 AM Registration and Networking

9:00 AM Welcome and Comments

- ◆ **Dr. Omar A. Ghrayeb: Dean of Northern Illinois University College of Engineering and Engineering Technology**

- ◆ **Congresswoman Cheri Bustos, US Representative, Illinois Congressional 17th District**

9:30 AM **Jason Vogelbaugh, Director of Energy Solutions, Alpha Controls and Services LLC.**

How your commercial or industrial facility can save 40% utilizing energy efficiency practices. Our presenter will discuss how the use of applied technologies focused on the retrofit of existing HVAC and Control systems, as well as the use of energy efficiency standards, can increase overall energy savings.

10:15 AM Morning Break & Exhibits

10:45 AM **Richard Tonielli, Senior Energy Program Manager, Commonwealth Edison**

"Efficiency Education" Why 'Energy Matters' From simple retrofits, to the re-commissioning of facilities; what to do in order to prioritize investments and apply for utility incentives.

11:30 AM Break & Exhibits

11:45 AM Buffet Lunch

12:10 PM Concurrent Leadership Awards and Speaker introduction

12:30 PM **Mr. Harry Moser "Reshoring Initiative"**

US/Midwest Energy Costs, Stability and Reliability as Competitive Advantages

1:30 PM Public Break and Exhibits

2:30 PM Roundtable Discussion

- ◆ **Leader Dr. Kevin Martin, Northern Illinois University.**

This will be a roundtable open dialogue and then a question and answer session.

Companies Represented and Subjects to be covered:

**Gary G. Powers, BSME, PE, CEM President and CEO — Hawkeye Energy Solutions**

Measurement and Verification, for considering Energy Efficiency Options

**Nick Shkordoff, Group Vice President and General Manager for Ideal Industries, Inc.**

Lighting and Controls

**Maria Dierking, CEM, Director of Account Management — Mechanical Inc.**

HVAC Systems

3:30 PM Recap: Prize Drawing

- ◆ "Biolite Camping Solar Charger and Storage System" \$100 Value

3:30 PM Social Time & Exhibitor Booth Tear down

# GUEST SPEAKERS

## **Congresswoman Cheri Bustos**

*US Representative, Illinois Congressional 17th District*

Cheri Bustos considers it an honor to represent the hardworking families of Illinois' 17th Congressional District which includes Western, Central and Northern Illinois.

Now in her second term, Cheri has focused on job creation, strengthening our economy and building a stronger middle class. She has been a relentless advocate for veterans and for working women and families, and she has worked with Democrats and Republicans on common sense solutions to cut government waste, fraud and abuse so we can strengthen Medicare and expand Social Security.

Cheri is a leader in the "Make It in America" plan to create more good-paying jobs in our community and has led an effort to ensure American flags purchased with federal dollars are 100% made in America.

She believes that all of our children deserve the opportunity to reach their full potential and is the reason why she's worked to invest in our schools, make college more accessible and affordable, and fought to improve workforce development programs. With a focus on launching the next industrial revolution in Illinois, Cheri successfully worked to bring the first-of-its-kind Digital Manufacturing Labs to our state. These public-private partnership hubs, which connect entrepreneurs and innovators with businesses, educators and government, have the potential to create thousands of jobs across the state.

As a Member of the House Agriculture Committee, she worked across the aisle to pass the first long-term Farm Bill in years. And through her service on the House Transportation and Infrastructure Committee, Cheri also worked to pass the first long-term highway bill in a decade so we can get Illinoisans back to work rebuilding our roads, bridges, rail lines, airports and waterways.

In 2015, Bustos accepted a leadership post as a Senior Whip. In this leadership role, Cheri uses her position to fight for policies that will advance American manufacturing, ensure women's economic security and grow our middle-class.

Cheri earned her Bachelor's Degree in Political Science from the University of Maryland, and a Master's Degree in journalism from the University of Illinois. She also attended Illinois College in Jacksonville, where both her parents and son graduated. An accomplished basketball and volleyball player, Cheri was inducted into the Illinois College Sports Hall of Fame in 1994.

## **Dr. Omar A. Ghrayeb**

*Dean of Northern Illinois University College of Engineering and Engineering Technology*

In 2001, Dr. Omar Ghrayeb began teaching at Northern Illinois University (NIU) in the department of Industrial and Systems Engineering. He served as chair of the department from 2006 until 2012.

Under his direction, enrollment in the program nearly doubled and the curriculum was updated. He also established partnerships with several major corporations including Caterpillar, Motorola and UPS. In 2010 he took on the role of Associate Dean in the College of Engineering and Engineering Technology. In that position he helped increase enrollment in the college by more than 40 percent, developed partnerships with feeder community colleges across the northern Illinois region, and restructured advising in the college. On June 30th of this year, Dr. Ghrayeb was named interim Dean of NIU's College of Engineering and Engineering Technology.

Dr. Ghrayeb holds a PhD in Industrial Engineering from New Mexico State University, has been published in several international journals, is a senior member of the Institute of International Education, and has attracted more than \$2 million in funding for his research.

## **Jason Vogelbaugh**

*Director of Energy Solutions for Alpha Controls and Services*

Jason Vogelbaugh received a B.S. in Architecture from the University of Illinois and later a Masters of Architecture and M.S. in Civil Engineering. For the past 16 years he has worked for Alpha Controls & Services, a partner of Schneider Electric. His area of expertise is in development of financially justified energy efficiency projects for commercial and industrial facilities. Projects are developed using ASHRAE standards that focus on life cycle cost and promote utility incentives.

## **Richard (Rick) Tonielli**

*Senior Energy Program Manager, Commonwealth Edison*

Rick is a Graduate of Kellogg School of Management at Northwestern University (MBA) and has a MS Degree in Environmental Engineering from the University of Illinois Urbana Champaign. Rick is an energy efficiency professional with extensive corporate and government experience in strategy, marketing and product and program management.

# GUEST SPEAKERS

## Harry Moser

*MS Engineering-MIT, MBA-University of Chicago, Founder of the Reshoring Initiative*

Harry founded the Reshoring Initiative to bring manufacturing jobs back to the U.S. He worked for GF AgieCharmilles, starting as President in 1985 and retiring as Chairman Emeritus in 2010. Largely due to the success of the Reshoring Initiative, Harry was inducted into the Industry Week Manufacturing Hall of Fame in 2010 and was named *Quality Magazine's Quality Professional of the Year* for 2012. Harry participated actively in President Obama's Insourcing Forum at the White House in 2012, won The Economist debate on outsourcing and off shoring in 2013, and received the Manufacturing Leadership Council's Industry Advocacy Award in 2014.

Harry is a frequent speaker at IEDC, state and regional ED events. He consults with IEDC, Pennsylvania and Mississippi on Reshoring. He is frequently quoted in the Wall Street Journal, Forbes, New Yorker and USA Today and seen or heard on Fox Business, Market Watch and other national TV and radio programs. He received a BS in Mechanical Engineering and an MS in Engineering at MIT in 1967 and an MBA from University of Chicago in 1981.

## Dr. Kevin Martin

*Northern Illinois University, Institute for the Study of the Environment, Sustainability and Energy*

Dr. Kevin Martin and Dr. William Mills, professors in NIU's Department of Engineering and Engineering Technology, lead the Building Energy Efficiency and Management (BEEAM) laboratory.

Students and faculty working with this lab focus on building energy efficiency through research on building technologies including lighting systems, variable frequency drives (VFDs), and solar photovoltaic energy resources.

The BEEAM laboratory is used to teach students energy auditing concepts and to research spectrally enhanced lighting and LED luminaire design, application specific energy reductions from VFDs, and passive solar tracking systems.

## Gary G. Powers

*BSME, PE, CEM President and CEO - Hawkeye Energy Solutions*

Hawkeye Energy Solutions is led by President and CEO, Gary Powers. Gary is a degreed Mechanical Engineer (Marquette University, 1987) and registered Professional Engineer in the states of Illinois and Indiana. As a Certified Energy Manager, Gary has managed and reduced utility costs for countless facilities ranging from large manufacturing plants to multi-location retail franchises.

With over 29 years of experience in the design and implementation of building systems, Gary has overseen literally hundreds of projects in Chicago and Northwest Indiana. Experience, integrity and professionalism describe Gary and the engineers at Hawkeye Energy Solutions.

## Nick Shkordoff

*Group Vice President and General Manager for Ideal Industries, Inc.*

Nick Shkordoff is originally from Canada and is a graduate of the Engineering program at the University of Manitoba. Currently Nick is the Group Vice President and General Manager for Ideal Industries' new Advanced Wireless Solutions business. Nick started his career with Ideal in 2000 as President of the Canadian business. He then took over as President of APP, an Ideal Industries Inc company near Boston in 2007. APP is a worldwide company that specializes in unique and innovative power connectors. In 2011, Nick became the leader of the North American electrical business for Ideal. His new role as head of AWS has led to the company establishing itself as a key player in the wireless technology needed to provide solutions for energy management in many varied applications.

## Maria Dierking

*CEM, MBA, Director of Account Management - Mechanical, Inc.*

Maria is a graduate from the University of Maryland University College with an MBA in International Global Studies and from the University of Texas with an Architectural Engineering degree. She has been with Mechanical Inc. since 2014. Prior to that, she was a hospital project and energy engineer for four years.

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“Actively focusing on lead manufacturing and innovation in clean and renewable energy will put the Rockford region ahead of the curve in sustainable practices.”

— Sunil Puri

*First Midwest Group, Founder and President*

# 2016 LEADERSHIP BY EXAMPLE AWARD WINNERS

Congratulations to all of this year's winners who are leaders in sustainable energy management and demonstrate increasingly cost-effective and technologically advanced solutions to energy sustainability

## Chairman's Energy Conservation Award

**Rock River Water Reclamation District** is a high-performance LEED-certified facility — an example of environmentally responsible forward thinking. The design explores the creative use of daylight harvesting to contribute to a healthy work environment. The building is made energy efficient by water source heat pumps utilizing the effluent water generated by operations. An additional opportunity to reduce energy and improve plant performance was identified and mixers were installed in the aeration basins which reduced blower energy draw from 860 kW to 521 kW after six of the eight mixers were installed. The total mixer power draw with all eight in service was only 39kW.

### Indoor Sports Center at Mercyhealth

**Sportscore Two** designed by Larson and Darby, includes many energy efficient features. These include tight envelope construction (energy efficient Sandwich Panels used in the walls allow for tight envelope construction improving overall energy efficiency of the structure), radiant floor heating (using a high efficiency condensing boiler to provide heat at ground level where most needed), demand control ventilation (based upon occupancy) and destratification fans (low speed high volume fans used to reduce air stratification at upper levels of the building). Lighting savings include high efficiency LED lighting, lighting control (using lights in zones and at varying levels) and 360 Degree Natural lighting. Insulated Kalwall panels around the entire building will allow natural daylight into the building while providing an insulated barrier against outside temperatures.

**DeKalb County Courthouse** worked with Alpha Controls and Services to upgrade their outdoor lighting, recognizing that state-of-the-art lighting technology offers energy savings of about 50% over conventional lighting technologies, plus savings due to lower operations and maintenance. They went from seven 400W metal halide fixtures and two 200W metal halide fixtures to two 46W high lumen area lights, two 96W lumen area lights and six 146W high lumen lights. The wattage was reduced from 3,640 watts (including ballast load) to a combined 1,160 watts. An added benefit was that dead spots and dark areas were eliminated making the exterior of the building much safer.

**Mercyhealth** working with Alpha Controls and Services has instituted a revamp of the lighting at their Rockton Campus and Perryville Clinic facilities, resulting in great savings. Lighting was upgraded at the Rockton Campus employee parking lot, Rockton Campus sidewalks, Perryville Clinic parking lot pole fixtures,

Perryville Clinic building flood ground fixtures, Perryville Clinic flag pole ground fixtures, and the Perryville Clinic building flood pole mounted fixtures. The total wattage savings is 32,280. The annual electrical cost savings for the first two projects alone equals \$11,700.

**Woodward Rock Cut Campus** incorporated a number of energy-saving practices in their new building on Perryville Road in Loves Park. Stormwater runoff is collected for irrigation. Other bioswales aid stormwater absorption, the use of natives minimizes lawn expenses, natives are planted in parking and site areas, and displaced topsoil has been used in plantings and berms. Daylight is harvested through skylights, light wells, and translucent panels in conjunction with photo sensors, which turn off interior lighting when not required. Photovoltaic panels provide 30kW of renewable energy, and lighting automatically turns off during off hours to save energy. Lighting is provided by high efficiency lamps, ballasts, and LED lights to maximize energy savings. Facility temperature is programmed by zone and most air handling units include an energy recovery wheel, as well as containing a variable frequency drive (VFD so the equipment will not work harder than necessary. The chilled water and hot water systems are designed as variable primary flow systems, eliminating the need for several pumps, and there is a free cooling heat exchanger that will enable process cooling needs to be met in the winter without running chillers. Condensing boilers are over 90% efficient, and the heating hot water system has an automatic supply temperature reset to reduce hot water temperature based on outdoor temperature.

## Renewable Energy Innovation in Business Award

**RockTown Social**, a new boutique hotel owned by Joseph James Partners and designed by Larson and Darby, will be located in the repurposed Millennium Center at Chestnut and Madison in downtown Rockford. A number of energy-saving initiatives are incorporated into the building design. The roof is changed to white to allow 400 solar panels in the future. The VRF is a cutting edge HVAC system, and the building is being converted to all LED inside to reduce lighting loads by 50%. Parking lot lighting will also be converted to LED to increase safety for guests at night and reduce light pollution. There will be two Level 2 Telefonix electric charging stations for guests with retractable cords for the snow. Handicapped accessibility will be improved, and bike racks will be installed for people exploring Rockford. The project is designed to be a social hub for the city.

## Renewable Energy Rural or Residential Initiative Award

**David Martindale**, who serves as President of Ballard Engineering by day, spends free time serving as a volunteer to assist in installing solar systems at various home schools in the region. He does this on his own time, using donated inverters given to Freedom Field by Danfoss. He has assisted with five installations from Rockford to Stockton, and is helping to educate and advance the cause of renewable energy to all ages.

## Renewable Energy Urban Initiative Award

**Prairie Street Brewhouse** is one of the area's most historical architectural treasures. When the old brewery building on the Rock River was converted into a Brewhouse by Gary Anderson and Associates, the owners and operators decided to make the operation as energy-efficient as possible. The building uses geothermal for heating and cooling – it even keeps the beer cold!! More recently, the lighting was overhauled with the installation of LED lighting through ComEd's energy-efficiency program.

**304 Main Street** was built as an insurance company in the early 1900's. The Classic Revival building is being repurposed by Gary Anderson and Associates (architects) for the expansion of downtown business Transatlantic Connection (TAC). TAC supplies gauges and preventive maintenance tools and services for the machine tool industry. The engineering company has 10 employees, but is growing out of space at its 109 N. Main St. location. Approximately one quarter of the re-purposed 304 Main will be used for the business and the rest will be leased, according to TAC President Kevin Holdemann. Energy-saving measures include the installation of an open loop geothermal heating and cooling system, new building insulation, as well as other energy conservation measures. Occupancy is expected for December 2016.

## Education and Outreach Award

**Elgin Sustainability Commission** is a nine-member citizen-based committee that represents the nine areas identified by the city's Sustainable City Master Plan, including alternative energy, economic development, green building technology, green infrastructure, healthy living and community education, recycling and waste management, transportation and mobility, urban design and water. The plan, begun in 2009 identified areas of sustainability in terms of energy, water, construction and building technology, economic viability, transportation, and sustainable living practices. From the Master plan came the Sustainable Action Plan, whereby citizen groups established achievable goals. This resulted in specific recommendations for implementation of strategies appropriate to Elgin's demographics, landscape, economy, geographical proximity to the urban corridor, implications of the Fox River, and the existing transportation hub and radiating arteries.

**McHenry County College (MCC)** is a leader in the community as it strives to reduce its carbon footprint through its Sustainability Center. The Center is focused on three interconnected areas, including Green Campus, Green Education

and Green Community. Campus Green initiatives include a 91 kW solar panel installation at MCC's Shah Center in McHenry, supplying about 50% of the power needed to run the center and reducing carbon output by 75 tons per year. The college teaches classes in Solar Energy and a partnership is in place with the Midwest Renewable Energy Association to provide non-credit classes for those pursuing solar skill sets. Other energy savings have resulted from the recycling of 641 tons of construction debris during the demolition of a campus building, updated lighting throughout the campus, and installation of seven water bottle filling stations on campus thereby diverting more than 31,000 water bottles from landfills. Campus recycling efforts have resulted in a more than 35% recycling rate.

**Illinois Green Economy Network (IGEN)**, a consortium of Illinois community colleges, serves all interested schools across the state by sharing resources, best practices and curricula. This approach leverages the power of an education network by providing a platform to expand clean energy technologies, to increase employment opportunities, to showcase new technologies, and to accelerate market competitiveness. Illinois Community Colleges are at the forefront in preparing students and workers for entry and advancement in green careers, including agriculture, manufacturing, construction, installation and maintenance as well as scientific and technical, administrative and service related that contribute to preserving or restoring environmental quality. These include efforts to reduce energy, material and/or water consumption through high efficiency; and to minimize or avoid waste and pollution.

## Intern Award

**Lukas Schroeder** is Freedom Field Intern of the Year. Lukas designed a Capstone Project that consisted of an air quality control system using wireless sensors and an energy efficient variable frequency drive (manufactured in Loves Park). He earned an RVC associate degree in Sustainable Energy Systems and served as the student electronics technician at Freedom Field Renewable Energy campus. Lukas is also working as an electronics technician at United Technologies Corporation, Aerospace supporting production and production development testing.

## Sustainability Award

**Abigail "Abby" Simon** served as President of the Students for Responsible Environmental Sustainability organization at Rock Valley College (RVC). SRES seeks to help achieve a more sustainable world, to protect the environment for its human and non-human inhabitants, to increase student awareness of the impact their decisions and actions have regarding the environment, and to engage them as stewards of this planet's resources. SRES holds events that are nature-based (hiking, camping, hunting, fishing, kayaking, canoeing, gardening) and conservation-based (habitat conservation, removal of invasive species, building birdhouses, and water quality). Abby also led the Water Monitoring and Logging project that is taking place in Spring Creek on the RVC campus. As a RVC graduate, Abby plans to be an environmentalist.

**Max LaBarbera** is another Rock Valley College student who has been very active in the Students Responsible for Environmental Sustainability organization. He has provided leadership in setting up programs and involving students in the many activities that the group undertakes on an annual basis. He, like Abby, is contributing to the sustainable, energy-saving culture that is growing at Rock Valley.

# Did You Know?

- US Energy Efficiency currently offsets 18% of all electrical consumption.
- This replaces the need for 313 power plants.
- Experts predict that with today's technologies, public policies, and financial return targets this could be 30%.
- Midwest States Energy Efficiency jobs total 313,000.
- Illinois is leading with 90,000 jobs and growing at 5.3% per year.
- 70% of these jobs are with businesses with less than 25 employees.
- Typical installed cost of Energy Efficiency projects are 2.8 Cents per Kilowatt Hour.