

# Smart Grid Workforce Training and Education

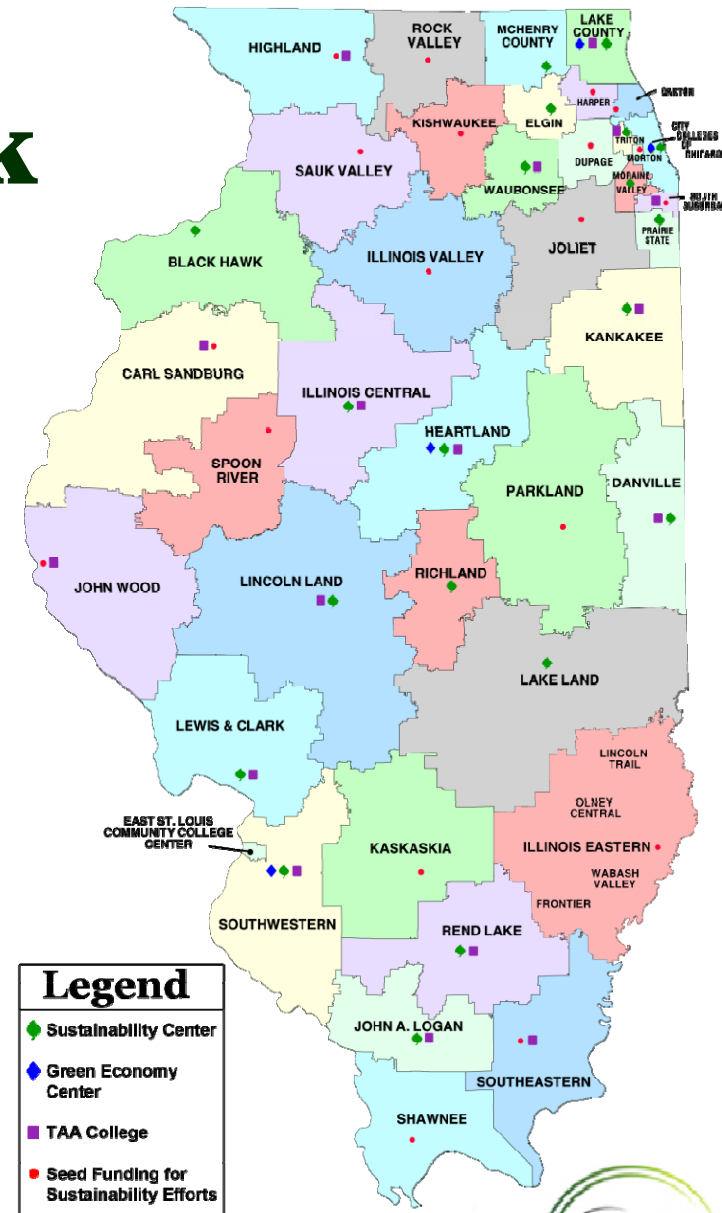
**Julie Elzanati**

**Executive Director**

**Illinois Green Economy Network**

# Illinois Green Economy Network

- President-led consortium of all 48 Illinois community colleges.
- Provides platform for collaboration to identify, establish, share best practices, and promote sustainability initiatives.
- IGEN builds cooperative efforts among community college faculty, staff and students and our community partners to catalyze sustainability implementation and green economic growth throughout the state.



# IGEN Vision and Strategic Goals

To position the Illinois Community College System as a global leader in transforming education and the economy for a sustainable future.

## Green Careers

Identify, develop and expand quality green job/career training for students and workers, effectively informed by community and employer partnerships (balance demand/supply)

## Green Curriculum

Provide assistance and training to Illinois community college faculty to integrate sustainability and green economy content into most disciplines and in general education programs

## Green Communities

Serve as regional and sector partners for mobilizing community and employer engagement, fostering community education, and supporting action for environmental sustainability

## Green Campuses

Make sustainability a guiding principle for all institutional practices, promote successful initiatives that reduce energy use and the environmental impact at campuses, and enable colleges to serve as sustainable demonstration sites for teaching and

# Driving Green Economic Development in Illinois

IGEN's cooperative approach leverages the power of a sustainability network with the deep community connections of individual colleges and the innovative strength of businesses and industry to:

- *Expand deployment of clean energy technologies*
- *Increase employment opportunities*
- *Foster community engagement*
- *Improve human and environmental health*





# NETWORK

IGEN colleges share lessons learned and best practices around sustainability and energy projects through open communication, ongoing cooperation and innovative partnerships



Community Partners for  
**Sustainability**  
Coordinated by the College of Lake County Sustainability Center

**galvincenter**  
for electricity innovation  
at ILLINOIS INSTITUTE OF TECHNOLOGY

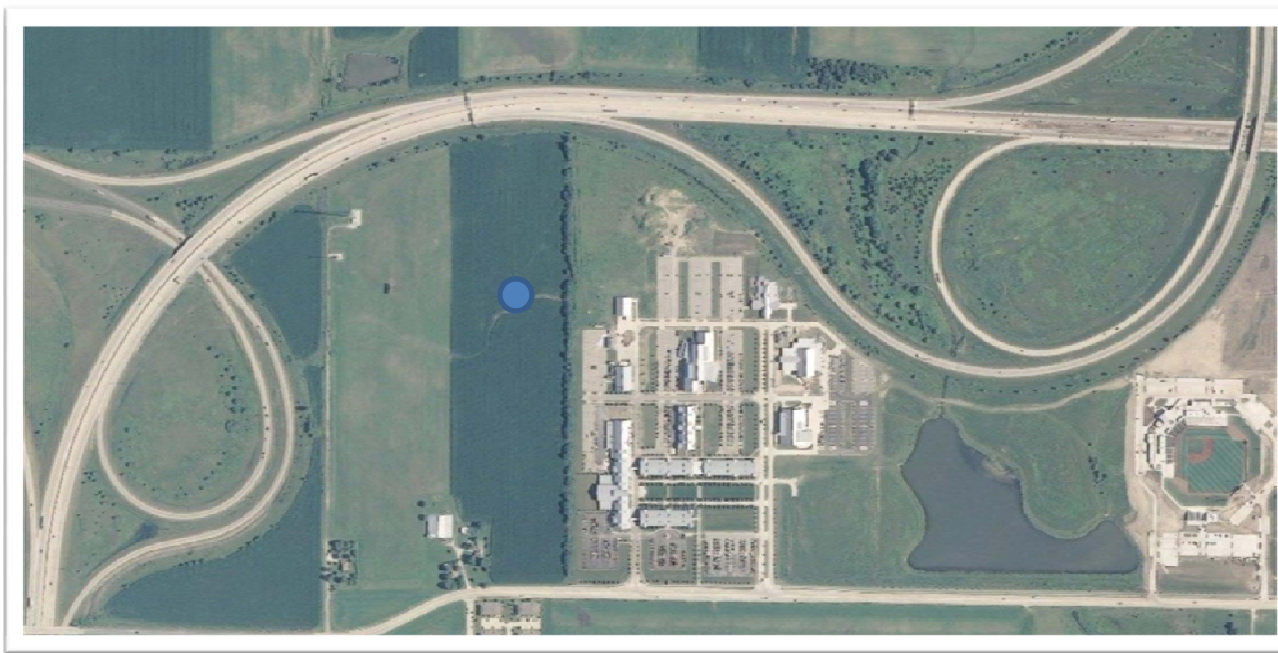
**IGEN**  
Illinois Green Economy Network  
A Community College Partnership

**IEEE  
PES**  
Power & Energy Society®

# Heartland Community College

June 2012

1.65 MW Wind Turbine – Vestas 8.2



# Lake Land College

## ➤ Goals:

- ✓ Entire campus can be taken off grid
- ✓ Grid positive

## ➤ How?

- ✓ Campus diesel
- ✓ Geothermal
- ✓ Currently 4 kW PV
- ✓ Installing 40kW PV
- ✓ One 10 kW turbine
- ✓ Two 100 kW turbines



# Lake Land College

## ➤ Existing Curriculum

- ✓ Home automation
- ✓ PV
- ✓ Wind

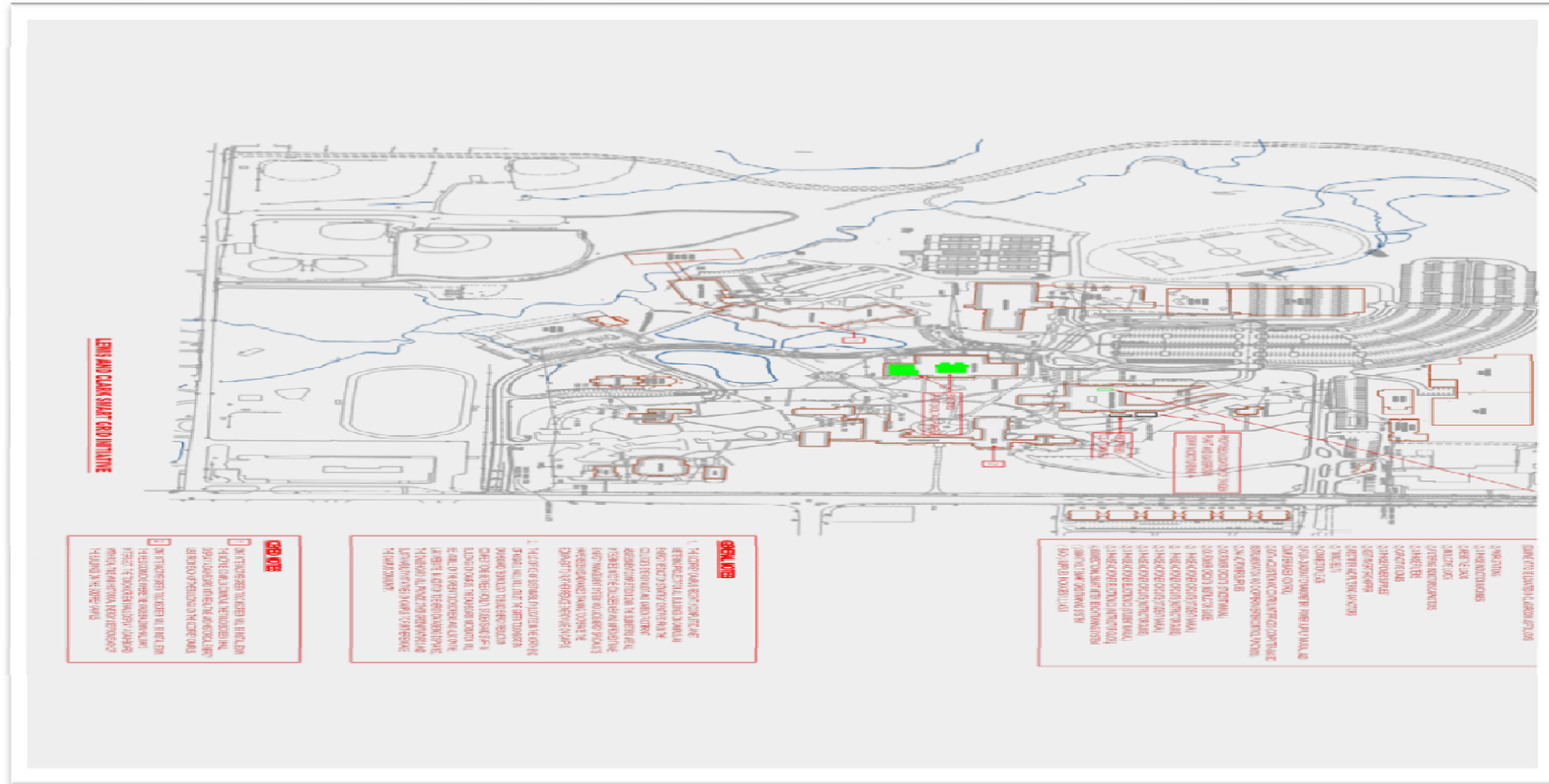
## ➤ Planned Curriculum

- ✓ Building automation
- ✓ Smart Grid





# Smart Grid Campus at Lewis & Clark



# Illinois Green Career Pathways Consortium



- **\$19.4M FY12-FY14 Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant from the US Department of Labor**
  - IGEN is one of 32 grantees nationwide
  - 17 colleges in IGEN consortium
  - Create and deliver more than 30 online-hybrid green job degree or certificate programs
  - Collaboration with business and industry partners, universities and the Illinois Community College Board



# Career Pathways Key Components

- **Online-Hybrid Delivery**
  - ✓ Department of Energy NTER System
  - ✓ Combining classroom, interactive online, hands-on, and industry partnerships
- **Adult Transition Service Centers**
  - ✓ Accelerating progress for low-skilled and other workers
- **Business/Industry Advisory Councils**
  - ✓ Bring 21<sup>st</sup> century skills into curriculum and provide hands-on, internships and employment opportunities
  - ✓ Build programs that meet industry needs, including developing career pathways
- **Embedded general education to enable accelerated completion**
  - ✓ Improve achievement rates
  - ✓ Reducing time to completion
- **Articulation Pathways**
  - ✓ Partner with universities to develop articulation to four-year institutions



# Why Smart Grid?

If Alexander Graham Bell were somehow transported to the 21st century, he would not recognize the components of modern telecommunications:

- cell phones
- texting
- cell towers
- PDAs, etc.

While Thomas Edison, one of the electric grid's key early architects, would be totally familiar with the grid as it stands now.

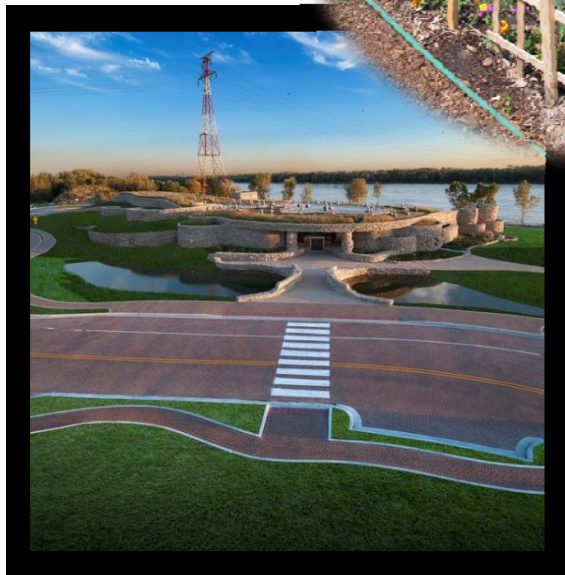
# Why is Smart Grid a Priority for Illinois Community Colleges?

- Illinois Smart Grid Legislation
  - Campuses as test/demonstration facilities for business scale application
- Illinois community colleges collectively spend over \$50M annually for electricity
  - Preventative action now to reduce overall energy usage will be less expensive than corrective action later
- RE and EV Interface
- Opportunities for training new and incumbent workers
  - Training on Smart Grid and not on the old system
- Opportunities for community education (residents/businesses)
  - Dashboard interface, smart appliances
- 48 campuses in Illinois educate over 1 million people annually

# IGEN Smart Grid Initiatives

- **DoL TAACCCT Grant**
  - ❖ Smart Grid Certificate
  - ❖ Smart Grid Classroom @ Lewis & Clark
- **IGEN Smart Grid Working Group**
- **Certificate and Degree Programs**
- **Community Education**
- **DCEO Renewable Energy Development Grant**
  - ❖ RE installations and smart grid training classrooms
    - Heartland
    - Illinois Central
    - John A Logan College
    - Kankakee
    - Lake Land
    - Richland
    - Southwestern Illinois

**IGEN**  
 Illinois Green Economy Network  
 A Community College Partnership



**IGEN is a collaborative multi-college sustainability initiative transforming how educational institutions, businesses, government and community organizations partner together to produce new pathways to green careers and drive green economic development.**

**galvincenter**  
 for electricity innovation  
 at ILLINOIS INSTITUTE OF TECHNOLOGY

**IEEE PES**  
 Power & Energy Society®

# Contact Information

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