Solar Education and Technical Assistance Opportunities

Illinois Green Economy Network Annual Conference
April 11, 2019
Who is the MREA?

- **Mission** we are a 501(c)(3) nonprofit dedicated to promoting renewable energy, energy efficiency, and sustainable living through education and demonstration
- **Host** the Annual Energy Fair in Custer, Wisconsin
- **Offices** located in Custer and Milwaukee, Wisconsin and Minneapolis, Minnesota

Source:
Celebrating 30 Years in Custer, WI - June 21 – 23, 2019

Keynote speakers and entertainment

Educational workshops and exhibitors

Source: www.theenergyfair.org
Solar Toolkit
• Assist municipal governments in preparing for local solar opportunities

Technical Assistance
• Consulting service along the solar development pathway

Solar Training
• Training for veterans, emerging and current solar professionals

Solar Group Buy Programs
• Community supported way to lower solar cost via educational events and group aggregated purchasing

Source: www.growsolar.org
Solar training academy
• Solar technical training that builds a broad skillset and prepares students for NABCEP certification

Customized training
• Training designed for businesses, institutions, and groups seeking to learn about renewable energy

Endorsement programs
• Designed to prepare new employees for success in the solar field

Training for veterans
• Accredited and approved GI Bill education benefits for veterans

Source: www.midwestrenew.org/training/
Why go solar?

• **Issue visibility** is increasing interest from college leadership

• **Investment models** exist that meet requirements for nearly all colleges

• Student participation and strong **programmatic values** can help advance consideration of PV investments

• A **road mapping** process can define best investment options and reduce costs/risks

Source:
What are some solar benefits

Reduce Energy Consumption
• Lower on campus energy consumption

Return on investment and improved operational cashflow
• Produce positive return on investment over time
• Lower monthly utility bills and improve operational cashflow

Hedge against future energy cost increases
• Create an economic hedge on future operational expenses

Reduce carbon footprint
• College climate action commitments or sustainability goals

Source:
midwest renewable energy association
MREA Offerings

• **PV Development for Institutions Program**
  • PV Deployment and Investment Roadmap
  • Instructor facilitated learning format
  • 12-week online & on-demand course

• **Technical Assistance Services – Fee for Service**
  • PV Project Planning
  • Solar PV Site Assessment Report
  • Solar PV Economic Feasibility Analysis
  • Solar PV Development Assistance
  • Solar PV Evaluation Assistance
  • PV System Inspection and Report
PV Development for Institutions Program

Purpose

• Guide participating IGEN community colleges through fundamentals of institutional investment in solar PV systems
• Apply tools, templates, case studies, and lessons learned from recent experiences of other colleges
• Help narrow the options to identify the best investment solutions for your campus
• To learn more go to: http://www.solarendowment.org

Source:
PV Development for Institutions Program

Outcomes

• Learn how to create effective teams and engage key decision-makers
• Define legal and regulatory considerations
• Address how to conduct energy analysis and perform site assessments
• Gain familiarity with economic modeling tools used to simulate finance investments
• Learn about procurement strategies to deliver results

Source:
PV Development for Institutions
Course Module Format

- Module 1 - Program Introduction
- Module 2 - PV Development Considerations
- Module 3 – PV Investment Strategies
- Module 4 – Energy Analysis
- Module 5 – PV Site Prioritization
- Module 6 – Project Financial Modeling
- Module 7 – Bid-Ready Solar Projects
- Module 8 – Running a Competitive Solicitation

Source:
Module 1
Program Introduction

- Brief course overview and curriculum
- Access to introductory solar PV course
- Introduce solar PV development roadmap concepts
- Importance of key-decision makers
- Review stakeholder engagement priorities
- Share notable campus case studies

Source:
Module 2
PV Development Considerations

- What does solar PV deployment look like
- Identify key objectives, goals, and concerns
- Addressing high-level legal and regulatory issues
- Review common investment options
- Opportunities and constraints of ability to act
- Governance and utility procedures
- Financing considerations for tax-exempt entities

Source:
Module 3
PV Investment Strategies

• Direct ownership / asset acquisition
• Debt / bond financed
• Leasing options
• Third-party ownership structures
• Community solar garden subscriptions
• Revolving green funds (GRF)
• Endowment financed structures

Source:
Module 4
Energy Analysis

- Energy generation mix
- Load profile by end use
- Utility tariffs
- Rate designs
- PV system sizing
- Modeling tools

Source:
midwest renewable energy association
Module 5
PV Site Prioritization

- Summarize energy analysis
- Solar siting best practices
- Choosing the best available site
- Site assessment tools and best practices
- Integrating solar amongst other campus considerations
- Developing, permitting and interconnection

Module 6
Project Financial Modeling

• Confirm champions, enablers and stakeholders
• Reaffirm motivations and considerations
• Summarize important metrics
• Integrate energy analysis, site assessment and economic feasibility assumptions
• Address access to capital and investment constraints
• Model using the best of available options

Source:
Module 7
Bid-Ready Solar Projects

• Key decisions – what kind of solar to develop
• Agree to what will work and what won’t
• Define developer qualifications
• Decide what solar development process to pursue
• What colleges must do to get ready

Source:
Module 8
Running a Competitive Solicitation

• Steps in procurement process
• Before you go to marketplace
• Procurement tools
• Identify unique aspects of solar procurement and institutional requirements
• Putting RFP on street
• Evaluating Proposals
• Negotiating and awarding
• Post-award management

Source: Graphic Credit – Ameresco
Technical Assistance Services

PV Project Planning
• Assist in defining goals and objectives

Solar PV Site Assessment Report
• Preliminary or on-site site assessments

Solar PV Economic Feasibility Analysis
• Integrate energy consumption & site production potential

Solar PV Development Assistance
• Integrate goals, siting, production, and contractor criteria

Solar PV Evaluation Assistance
• Assist selection committee in analyzing contractor proposals

PV System Inspection and Report
• On-site inspection of developer installation

Source:
PV Project Plan

- Phone interview with principals on college team
- Purpose is to define goals and objectives
- Review existing team capacity
- Identify potential project sites
- Identify financing models open to consideration
- Review existing information
- Discuss known and foreseeable constraints
- Report summarizes findings to ensure mutual understanding has been achieved
Solar PV Site Assessment Report

Preliminary site site assessment
• Remote approach using web-based technologies
• Estimate useable roof or ground space
• Energy production estimates using reasonable assumptions

On-site assessment
• On-site measurements of roof or ground space
• Energy production based upon reasonable assumptions
• Evaluation of interconnection opportunities/constraints

Source:
Solar PV Economic Feasibility Analysis

• Integrate the following data to analyze economics
  • Energy consumption profile data
  • Site assessment report findings
  • Energy contracts
  • Available incentives
  • Reasonable solar development assumptions

• Model project economics
  • Direct ownership, debt financed, PPA, or lease options

• Report includes financial analysis and pro forma cashflows

Source:
Solar PV Development Assistance

- Advisory assistance in structuring RFP documentation for solicitation
- Assist in identifying potential developers and encouraging proposal responses
- Assisting with responses to developers questions during RFP Q&A process
- Colleges retain responsibility for final approvals

Source:
Solar PV RFP Evaluation Assistance

- Assist with verifying completeness of developer proposals
- Provide colleges with evaluation rubric
- Lead evaluation committee meetings & discussions
- MREA does not offer evaluation score nor offer developer selection recommendation

Source:
PV System Inspection and Report

- Two on-site inspections
  - During construction
  - Near project completion
- Compliance-based inspection of developers installation
  - State electrical code
  - Utility interconnection requirements
  - Checklist of terms of construction contract

Source:
Questions?

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