



PV Development for Institutions Course Syllabus January 29 – March 25, 2018

Course Description

This 8-week online course will guide higher education teams through the fundamentals of institutional investing in solar PV systems. Based on the Midwest Renewable Energy Association's (MREA) experience with the U.S. Department of Energy-supported [Solar Endowment](#) project, the PV Development for Institutions course is designed to help your team determine the best solar investment option for your institution. Modules consist of weekly webinars, resources, activities, discussions, as well as office hours with instructors. Instructors include national solar experts and MREA staff with specific experience in moving campuses toward solar investment. As a participant, you will work through the course with representatives from other institutions pursuing solar project investments, providing a platform for networking and collaborative learning.

When you enroll in this course, you also gain access to MREA's online, self-paced Basic Photovoltaics (PV 101) course. This 8-hour recommended prerequisite will teach your team of up to five participants the basics of PV systems including how they work, system types and components, applications and limitations of each, how to estimate loads and system size, and the basics of site assessments.

Course Objectives

Upon completion of this course, participants will be able to:

- Describe the institutional structure and decision-making hierarchy relevant to a PV project on campus
- Identify relevant business relationships between departments, offices, location, utilities, solar development companies, project investors, regulators, governmental authorities, and other stakeholders
- Enact a team engagement strategy and identify a point of contact for participants
- Describe rules and regulations governing internal procurement and investment strategies
- Classify federal, state, and local jurisdictional permitting, inspection requirements, and fees
- Define utility relationships, rules, and procedures for investing in various campus solar options
- Understand campus energy consumption history and current consumption including demand charges
- Retrieve information on existing energy generation mix and energy assets
- Prioritize campus sites for installation based on solar resource, technical and nontechnical factors influencing site selection, building and development considerations, and institutional values
- Differentiate between different types of PV investment models
- Choose an appropriate investment model based on internal rules, policies, and values
- Communicate the PV project development process and estimate a realistic development timeline
- Describe the purpose of RFPs, RFIs, and RFQs
- Summarize the competitive solicitation process
- Define your institution's rules and guidelines for obtaining bids on a large-scale PV project
- Evaluate PV investment types beyond on-site opportunities
- Complete a preliminary Campus PV Roadmap

Time Commitment

- 16 hours, defined as time spent listening to webinars and participating in office hours

Methods of Learning

- Teams will go through the course together and must designate a single point person to serve as the team's main contact. This person will be the only participant per institution to submit activity findings on behalf of the team.
- Pre-recorded weekly webinar
- Live weekly office hours
- Online tools and calculators
- Templates, guides, and other resources

Prerequisites

Basic Photovoltaics (PV 101), or equivalent – recommended*

- January 2-28, 2018
- 8 hours of instruction time to be completed at the participant's own pace
- Access for up to 5 participants per team (must be the same participants as in the PV Development for Institutions course)

Instructors

- Nick Hylla, MREA Executive Director
- Eric Rehm, MREA Solar Finance Manager
- Adam Mehr, MREA Certificate Program Coordinator
- Jared Schoch, TurningPoint Energy Founder and Principal
- Brad Rutledge, Independent contractor - U.S. Department of Energy National Renewable Energy Laboratory (NREL)
- Shane Stennes, University of Minnesota Director of Sustainability

Course Schedule

1/29 – 2/4

Module 1: Course Introduction

Office Hour: Wednesday, January 31 at 1:00pm

- Overview of the PV Development for Institutions course

2/5 – 2/11

Module 2: PV Development Considerations

Office Hour: Thursday, February 8 at 4:00pm

- University governing process for procurement
- Utility agreements
- Permitting, planning, and zoning requirements and restrictions

2/12 – 2/18

Module 3: Energy Analysis

Office Hour: Wednesday, February 14 at 1:00pm

- Energy mix and load profiles
- Utility rate tariffs and rate design

- Energy analysis
- Tax credit and incentives

2/19 – 2/25

Module 4: PV Site Prioritization

Office Hour: Thursday, February 22 at 4:00pm

- Site assessments
- Siting considerations

2/26 – 3/4

Module 5: Project Financial Modeling

Office Hour: Thursday, March 1 at 8:00am

- PV pricing trends
- Evaluation tools
- Ownership and investment models

3/5 – 3/11

Module 6: Bid-Ready Solar Projects

Office Hour: Thursday, March 8 at 4:00pm

- PV project development steps
- Preparing for an RFP, RFI, or RFQ
- Common barriers

3/12 – 3/18

Module 7: Running a Competitive Solicitation

Office Hour: Thursday, March 15 at 1:00pm

- RFP process
- Institutional rules and guidelines
- Contractor selection

3/19 – 3/25

Module 8: PV Investment Strategies

Office Hour: TBD

- Defining opportunities for PV investment

Module 9: Project Development Assistance (Optional)

Office Hour: TBD

- Aggregate information into a Campus PV Development Roadmap
- Outline next steps

Exit Quiz and Evaluations