

SOLAR PROJECT DEVELOPMENT ON LANDFILLS/BROWNFIELDS/UTILITY COAL COMBUSTION RESIDUAL SITES

December 2 – 3, 2019
Renaissance Philadelphia Airport Hotel
Philadelphia, PA

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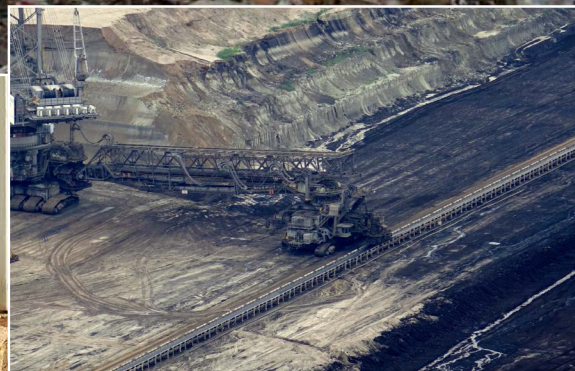
“This is the most focused and practical conference about landfills and development I have ever attended!”

Chief Commercial Officer,
Hanergy America

POST-CONFERENCE WORKSHOP

Financing Strategies for Solar Projects on Landfills and Brownfields

TUESDAY, DECEMBER 3, 2019



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EUCI is authorized by IACET to offer 1.1 CEUs for the conference and 0.4 CEUs for the workshop

OVERVIEW

With solar power moving into the mainstream of energy resources, the aggressive search for suitable greenfield sites has prompted savvy investors, project developers, suppliers and power organizations to consider sites with less conventional development characteristics.

Ironically, these blemished sites areas often turn out to be attractive siting options for solar projects. Business is flourishing. Renewable energy policies, coupled with multiple tax and related financial incentives, contribute to the development appeal of these types of sites. Yet, there are special considerations unique to closed landfill and brownfield sites as compared with greenfield locations.

This symposium will examine the significant aspects of developing solar energy on landfills, brownfields and utility coal combustion residual sites. It will consider utility interconnection, engineering, permitting, environmental and regulatory, legal, risk and financing issues. Developers, regulatory officials, investors and legal specialists with expertise in this very special arena will conduct the program, using case studies and examples from successful projects.

LEARNING OUTCOMES

Attendees will gain practical and technical skills that allow them to:

- Analyze PV technical and economic factors unique to landfills and brownfields
- Design solar projects suitable for development on these areas
- Assess the environmental engineering aspects of siting
- Identify interconnection considerations and constraints
- Evaluate the risk issues connected to these projects
- Identify aspects of development and financing specific to landfill and brownfield projects
- Evaluate the technical and practical considerations municipalities and other government agencies must consider when initiating these projects



“The EUCI conference on Solar Projects on Brownfield sites gave a detailed overview of issues and opportunities associated with these Developments!!”

EPC Project Mgr,
Consumers Energy



“Great expert speakers who were honest and well spoken. Will definitely recommend future EUCI conferences to colleagues and others.”

Director of DG, Geronimo Energy



“Well structured and well-rounded topics to cover conference theme. Excellent choice of presenters.”

Project Director, SCS Engineers

REGISTER TODAY! CALL 303-770-8800 OR VISIT WWW.EUCI.COM

AGENDA

MONDAY, DECEMBER 2, 2019

7:30 – 8:00 am Registration and Continental Breakfast

8:00 – 8:15 am Welcome and Introductions

8:15 – 9:00 am EPA Landfill, Brownfield and Solar Program Support

This session will detail the U.S. Environmental Protection Agency’s (EPA) ongoing initiative to encourage and facilitate renewable energy development on current and formerly contaminated lands, landfills and mine sites when such development is aligned with the community’s vision for the site. The RE-Powering America’s Land Initiative identifies the renewable energy potential of tracked EPA and state sites and provides useful resources for communities, developers, state and local governments and other interested stakeholders. The focus in this session will be on opportunities for future development, with supplemental information on the program’s efforts to date and observed trends.

Lora Strine, Coordinator – RE-Powering America’s Land Initiative, U.S. Environmental Protection Agency (EPA)

9:00 – 10:00 am Resources and Tools for Landfill/Brownfield Development

Successful solar development on landfill and brownfield sites requires that many process hurdles be overcome. This segment will review the state and federal resources and tools, as well as non-tax/non-financial incentives, available to both private and public project developers as they navigate through the process. It will also survey resources and tools available for identifying high potential compromised lands such as landfills and brownfields, as well as opportunities and pitfalls for solar development on these sites. Among those discussed will be:

- PV Watts
- Solar Advisor Model (SAM)
- Jobs and Economic Development Impact model (JEDI)
- EPA’s mapping tool and its related database
- EPA’s Solar Decision Tree

Gail Mosey, Project Lead/Senior Energy Research Analyst – Strategy Policy & Implementation, National Renewable Energy Laboratory (NREL)



“EUCI developed a strong program of industry practitioners – well worthwhile.”

Executive Vice President,
groSolar



“EUCI events provide a good forum for great industry dialogue based on commercial applications of solar landfill development.”

Director of Development,
Lendlease Energy Development



“The conference participants proved to be knowledgeable and provocative practitioners active in various segments of the solar project development process. This was a most worthwhile gathering.”

Managing Principal, Brightfields, LLC

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AGENDA

MONDAY, DECEMBER 2, 2019 (CONTINUED)

10:00 – 10:20 am Networking Break

10:20 am – 12:00 pm Due Diligence for Landfill and Brownfield Projects

Project Determination: Setting the Compass Heading

- Classifications of Landfill/Brownfield project types
- Intent
- Ownership
- Asset attributes
- CapEx
- Characteristics of financeable (vs non-financeable) projects

Pulling the Team and Information Together

- Assigning roles
- Developing and disseminating timely information
- Interrelation of issues and impact of early-stage questions and answers on later stages of project
- Impacts upon RFP responses
- Issues that impact sale
- Issues that impact financing

Rich Cogen, Partner, Nixon Peabody LLP

12:00 – 1:15 pm Group Luncheon

1:15 – 2:15 pm How Landfill/Brownfield Project Design Differs from Greenfield Solar Project Design

- Prospecting for opportunities
- Responding to RFPs
- Relationship to local, state and regional policy initiatives
- Project development teaming and collaborations
 - o EPC
 - o Finance and tax
 - o Legal

Eric McLean, Director – Operations, ACE Solar



“The seminar provided deep market insight and networking opportunities with developers, EPCs, and government stakeholders.”

Business Development
Manager, ENERPARC Inc.



“EUCI’s focused conferences afford those actively participating or looking to participate in solar/energy development the tools necessary to streamline processes and conduct business in the most efficient manner possible. I love EUCI’s focused conferences!”

Senior Vice President, Seminole Financial Services

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AGENDA

MONDAY, DECEMBER 2, 2019 (CONTINUED)

2:15 – 3:30 pm

Site Preparation and Environmental Remediation Considerations

As the numbers of brownfields and landfills multiply as solar project host sites, the engineering, environmental science and preparation practices particular to these contaminated properties advance as well. The choice of remediation methods, site engineering practices and applications, racking systems and foundations all can have profound effect on the risk mitigation and finance-ability of a project. This segment, conducted by site remediation specialists, will examine the critical knowledge needed by those interested in developing solar projects on these sites including:

- Site assessment, remediation and prep
 - Reviewing site closure documents
 - Evaluating topography, settlement and venting conditions
 - Identifying the brownfield and contamination
 - Determining any level of remediation needed
 - Permitting and risk management
- Special landfill considerations
 - Landfill characteristics discussion
 - Cap depth, wastewater and outgassing consideration
 - Accommodating landfills with active gas collection systems
- Foundation and racking systems' selection
 - Identifying the appropriate systems for the site
 - Construction techniques for landfills
 - Maintenance considerations
- Corrosion mitigation
 - Long-term effect on PV panels and balance of system
- Construction best practices
 - Equipment selection
 - Field conditions verification
 - Staging
 - Weather variability
- Risk and insurance

Kevin Magayah, Manager, The Conti Group

3:30 – 3:45 pm

Afternoon Break

3:45 – 5:00 pm

Permitting and Regulatory Variables When Planning and Executing Solar Projects on Landfills

Permitting a solar project is a laborious process that typically involves obtaining approvals from an array of local, state and federal agencies with jurisdiction and oversight responsibilities for: solid waste, environmental standards, public utility commissions, land use, etc. In some respects, even the local utility can be considered part of this important category. The session will analyze the process on both the state and local level, and address the following topics:

- Storm water runoff
- Gas control
- Integrity of the cap
- Modifications to the existing gas system
- Planning and zoning
- Post-closure use permits
- Environmental compliance
- Issuing "comfort" letters
- Liability
- Soil contamination, if relevant

Brett Pingree, Director – Development, Soltage

5:00 pm

Adjourn for Day

AGENDA

TUESDAY, DECEMBER 3, 2019

7:30 – 8:00 am

Continental Breakfast

8:00 – 9:00 am

Procurement and Working with Utilities to Address Interconnection and System Access Challenges

Upon the completion of the permitting and financing processes, utilities and developers alike must address the interconnection issues unique to PV development on landfills and brownfields. This session will explore differing design structures and interconnection strategies to consider when designing these projects. It will cover the following topics:

- PV overview
- Interconnection permits
- Interconnection considerations specific to landfills
- Interconnection with local utility
- State-specific considerations

Lyle Rawlings, President and CEO, Advanced Solar

Todd Hranicka, Director – Solar Energy, Public Service Gas and Electric (PSEG) invited

9:00 – 10:00 am

Project Development Expense Assumptions

- Due diligence
- Equipment selection
- Construction
- Commissioning
- Operation

Paul Curran, Managing Director, BQ Energy LLC

Michael Rauch, Financial Analyst, BQ Energy LLC

10:00 – 10:20 am

Morning Break

10:20 – 10:40 am

Superfund Site Complexities

Building a solar project on a superfund site often is accompanied with additional challenges. The monitoring can be more complex than a closed landfill and there can often be multiple parties involved outside of the current owner of the land. EPA adds another level of complexity and must have access which can cause additional considerations to design. This case study will review a recently completed project in Concord, MA which highlights some of these issues.

Andrew J. Bernstein, Managing Partner, Kearsarge Energy LP

James Duffy, Partner, Nixon Peabody LLP



10:40 – 11:00 am

BlueWave Solar

BlueWave Solar has leased a 14-plus acre parcel from the city of Beverley Mass to install and operate a 4.9 megawatt DC solar project on a former Beverly landfill. The city has signed a PPA as an off-taker for about half the power, with the balance of the power available as a community solar component that will allow about 500 Beverly households to offset their own personal electricity costs while participating in a green energy project. The lease term is 20 years with a five-year renewal term by mutual agreement. The project is expected to generate some \$2.7 million in lease revenue and PILOT (payment in lieu of taxes) payments of \$1.225 million over that same term. Additionally, the city anticipates its electricity cost savings will be between approximately \$930,000 and \$1,023,000. BlueWave will review the deal structure and what its place in the company's portfolio.

Eric Graber-Lopez, President, BlueWave Solar



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AGENDA

TUESDAY, DECEMBER 3, 2019 (CONTINUED)

11:00 – 11:45 am

Technology and Policy Forecast Panel Discussion

Content matter experts will engage in a roundtable discussion that project developers, utilities, investors, integrators, EPC providers and others will find instructive and insightful re: how emerging solar-related technology and policy measures will influence landfill and/or brownfield project development, such as:

- Declining costs
- Bi-facial modules
- Trump's tariff
- Solar/storage combo
- Racking/tracking
- ITC drawdown

Moderator: Rich Cogen, Partner, Nixon Peabody LLP

Eric McLean, Principal, ACE Solar

Michael Rauch, Financial Analyst, BQ Energy

Brett Pingree, Director – Development, Soltage

11:45 am

Symposium Adjourns



“The EUCI program offers an invaluable, intimate forum for imparting experiences with colleagues.”

Managing Principal,
Brightfields Development



“Conference is a ‘must-attend’ for stakeholders in this niche market space.”

Assistant Vice President – Renewable Director,
Arcadis U.S. Inc.



“Great conference! Relevant topics and well-prepared speakers.”

Renewable Development Lead Senior,
Georgia Power Co.



“Focused conference and an intimate setting.”

Senior Advisor, Brightfields Development

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POST-CONFERENCE WORKSHOP

Financing Strategies for Solar Projects on Landfills and Brownfields

TUESDAY, DECEMBER 3, 2019

OVERVIEW

As with development of any renewable energy project, one of the biggest challenges in executing a solar project on landfills and brownfields is financing. Financing options differ according to the building site. Just as the interconnection, construction and permitting process differs from traditional solar projects, financial institutions often seek a different approach from municipalities, private owners, utilities and developers.

This workshop will assess the variety of landfills and brownfields financing options available and determine effective strategies for raising funds for these projects. It will analyze the fine details of financing these solar projects and highlight the contrast of landfill and brownfield projects to projects developed on green fields. Case studies of successfully financed projects of varying structures will be compared and discussed. Finally, this workshop will break down the detailed financial models associated with each of the case studies.

LEARNING OUTCOMES

Attendees will gain practical and technical skills that will allow them to:

- Review the fundamental mechanics and process of financing renewable energy, especially solar, projects
- Analyze the special financing challenges associated with solar landfill/brownfield projects
- Differentiate the financing process of a landfill or brownfield project from a greenfield project
- Discuss different financing structures for solar landfill/brownfield projects
- Determine the financing structure most effective for a particular type project



“The conference was well organized and informative and brought together a varied and knowledgeable group of presenters and attendees.”

Associate, Phillips Lytle

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WORKSHOP AGENDA

TUESDAY, DECEMBER 3, 2019

12:30 – 1:00 pm

Registration

1:00 – 1:15 pm

Welcome and Introductions

1:15 – 2:00 pm

I. Financing Overview of Landfill-Specific Solar Projects

As the process and regulation on landfill and brownfields projects are executed differently than on a more traditional solar project, so too is the financing. This session will give an overview of the different financing structures available and outline what financial institutions seek in order to support development.

- Key features
- Key players
- Business interests and focus of key principals
 - o Sponsor
 - o Lender
 - o Cash equity
 - o Tax equity
- Financial considerations based on power off-taker
 - o Power Purchase Agreements (PPA)
 - o Self-supply vs export to grid

This session will also take a detailed look at the terms and provisions that differentiate the financing process of a solar project built on a landfill or brownfield from a standard solar farm. It will explain the nuances related to the following topics:

- Power Purchase Agreements (PPAs)
- Ground Leases
- Project pro forma
- Debt / Equity
 - o Term sheet
 - o Definitive documentation
- Project financing vs back leverage

2:00 – 3:00 pm

II. The Financial Driver: Tax Incentives

- Basic financial structure
 - o Stages
 - o Operating revenues and expenses
 - o Federal Investment tax credit
 - Criteria
 - Construction and in-service timing
 - Vesting and recapture provisions
- Monetizing the ITC
 - o Entity selection
 - o Revenue Procedure 2007-65
 - o Interests
 - Owner
 - Investor
 - o Exceptions
 - IRS Chief Counsel's Memorandum 201524024

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WORKSHOP AGENDA

TUESDAY, DECEMBER 3, 2019 (CONTINUED)

2:00 – 3:00 pm

II. The Financial Driver: Tax Incentives (continued)

- Validity of a transaction's allocations of tax credits
 - o Historic Boardwalk Hall decision
 - o Revenue Procedure 2014-12
- Depreciation rules
- Cash flow
- Return to tax equity investor
- Other ITC-specific provisions relating to...
 - o Depreciation
 - o Additional transaction structures
 - o Alternative minimum tax (AMT)

3:00 – 3:15 pm

Afternoon Break

3:15 – 4:00 pm

III. Transaction Structures

- "Flip" Model
- Traditional Sale-Leaseback structure used for equipment leasing
- Lease Pass-Through (or inverted lease) structure
- 100% facility ownership
- Which structure is best?

4:00 – 5:00 pm

IV. Analyzing Detailed Financial Models

The final session of the workshop will expand upon the financial models discussed and provide a detailed explanation of the factors determining each financial model. It will allow attendees to compare the drivers for financing the case studies to the needs of their prospective projects.

5:00 pm

Workshop Adjourns

WORKSHOP INSTRUCTORS



Andrew J. Bernstein

Managing Partner, Kearsarge Energy LP

Andrew Bernstein is the CEO and founder of Kearsarge Energy, one of the largest solar developers in New England, has completed almost \$200 million in transactions in the last few years in solar projects, focusing most of its efforts in solar transactions ranging from \$5 to \$50 million in total cost. Mr. Bernstein has nearly 30 years of experience managing a broad range of organizations and divisions from large publicly traded corporations to early stage entrepreneurial enterprises with two successful exits. He has extensive experience in project finance and has consulted on energy development for various clients for more than 18 years. Andrew received his bachelor's degree (AB) from Brown University and an MBA from Harvard University. In addition to Kearsarge, he currently serves on several nonprofit boards.

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WORKSHOP INSTRUCTORS (CONTINUED)



Rich Cogen
Partner, Nixon Peabody LLC

Richard Cogen is partner at the law firm Nixon Peabody LLP. He represents project sponsors, investors and lenders with respect to the development, financing, permitting, acquisition and sale of energy, renewable energy and solid waste projects. He is the former chair of the firm's Energy and Environmental practice group and a member of the Firm's Policy Committee. In the past few years, his expertise has assisted clients in acquiring, constructing and financing more than a billion dollars' worth of solar energy projects and in developing large fossil fuel and wind electric generating facilities and electric transmission projects.



James Duffy
Partner, Nixon Peabody LLP

James F. Duffy is a partner in the Boston office of the national law firm, Nixon Peabody LLP. He serves as the Co-Chair of the firm's Renewable Energy Tax Credit Team and concentrates his practice on structuring and closing transactions involving federal income tax credits and other significant federal and state income tax incentives, including Production Tax Credits and Investment Tax Credits for renewable energy. His practice also covers New Markets Tax Credits. He has represented numerous developers, investors, syndicators and lenders in structuring and closing renewable energy and other transactions. He serves on the Board of Directors and is the Secretary of the Distributed Wind Energy Association (DWEA), as well as the Board of Directors of Windustry. He is a graduate of the University of Rhode Island, B.A. and The Harvard Law School, J.D.



Tony Grappone
Partner, Novogradac & Company LLP

Tony Grappone is a partner in the Boston, Mass. office of Novogradac & Company LLP, where he specializes in providing accounting, tax and consulting services to developers, syndicators and investors of projects that qualify for federal and state tax credits such as the low-income housing tax credit, historic rehabilitation tax credit, new markets tax credit and renewable energy tax credits. He serves as a technical editor of the firm's Renewable Energy Tax Credit Handbook. Prior to joining Novogradac & Company LLP, Mr. Grappone worked at Ernst & Young LLP specializing in partnership taxation within the affordable housing industry and servicing many of the nation's largest tax credit syndicators and investors. In addition, he served several leading venture capital firms as well as commercial real estate developers and investors.



Michael R. Kuhn
Senior Vice President & Team Leader – Commercial Lending, Cambridge Savings Bank

Michael Kuhn is Senior Vice President in Commercial Lending at Cambridge Savings Bank He has been with Cambridge Savings for almost 13 years. He previously worked for Rockland Trust Company as a senior credit analyst, and as assistant examiner at the Federal Reserve Bank of Philadelphia. He received a B.S. in Finance from Rowan University and an Associate's degree in Computer Science from Camden County College.

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INSTRUCTIONAL METHODS

This program will use PowerPoint presentations, case studies and group discussions.

REQUIREMENTS FOR SUCCESSFUL COMPLETION

Participants must sign in/out each day and be in attendance for a minimum of four hours to be eligible for any continuing education credit.

IACET CREDITS



EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, EUCI has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard.

EUCI is authorized by IACET to offer 1.1 CEUs for the conference and 0.4 CEUs for the workshop.

REGISTER 3, SEND THE 4TH FREE

Any organization wishing to send multiple attendees to this event may send 1 FREE for every 3 delegates registered. Please note that all registrations must be made at the same time to qualify.

EVENT LOCATION

A room block has been reserved at the **Renaissance Philadelphia Airport Hotel**, 500 Stevens Dr. Philadelphia, PA 19113, for the nights of December 1-2, 2019. Room rates are \$149 plus applicable tax. To reserve your room, please call **610-521-5900 ext. 600** or [visit the website](#). The cutoff date to receive the group rate is November 26, 2019 but as there are a limited number of rooms available at this rate, the room block may close sooner. ***Please make your reservations early.***

SPONSORSHIP OPPORTUNITIES

Do you want to drive new business through this event's powerful audience? Becoming a sponsor or exhibitor is an excellent opportunity to raise your profile before a manageably sized group of executives who make the key purchasing decisions for their businesses. There is a wide range of sponsorship opportunities available that can be customized to fit your budget and marketing objectives, including:

- Platinum, Gold, or VIP sponsor
- Reception host
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Please contact Stephen Coury at scoury@euci.com or 720-988-1228 for more information.

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REGISTRATION INFORMATION

EVENT LOCATION

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PLEASE REGISTER

**SOLAR PROJECT DEVELOPMENT ON LANDFILLS/BROWNFIELDS/
UTILITY COAL COMBUSTION RESIDUAL SITES CONFERENCE AND
POST-CONFERENCE WORKSHOP**

DECEMBER 2 – 3, 2019 : US \$1895
Early bird on or before November 15, 2019: US \$1695

**SOLAR DEVELOPMENT ON LANDFILLS AND BROWNFIELDS
CONFERENCE ONLY**

DECEMBER 2 – 3, 2019 : US \$1495
Early bird on or before November 15, 2019: US \$1295

POST CONFERENCE WORKSHOP ONLY

TUESDAY, DECEMBER 3, 2019: US \$595
Early bird on or before November 15, 2019: US \$495

ENERGIZE WEEKLY

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How did you hear about this event? (direct e-mail, colleague, speaker(s), etc.)

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OR Enclosed is a check for \$ _____ to cover _____ registrations.

Substitutions & Cancellations

Your registration may be transferred to a member of your organization up to 24 hours in advance of the event. Cancellations must be received on or before November 1, 2019 in order to be refunded and will be subject to a US \$195.00 processing fee per registrant. No refunds will be made after this date. Cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event. This credit will be good for six months from the cancellation date. In the event of non-attendance, all registration fees will be forfeited. In case of course cancellation, EUCI's liability is limited to refund of the event registration fee only. For more information regarding administrative policies, such as complaints and refunds, please contact our offices at 303-770-8800. EUCI reserves the right to alter this program without prior notice.

