

# COST ESTIMATING METHODOLOGIES FOR SUBSTATIONS AND TRANSMISSION PROJECTS

July 12-13, 2017  
Hyatt Regency Mission Bay  
San Diego, CA



EUCI is authorized by IACET  
to offer 1.0 CEUs for the  
course

## OVERVIEW

---

Throughout North America, the need for new utility projects is projected to grow to improve electricity delivery, increase capacities, improve reliability, and meet new standards associated with incorporating renewable energy generation into the smart grid.

In order to effectively utilize allocated and dedicated funding, it is critical for utilities, developers, sub-contractors, project managers, and suppliers to fully understand efficient utility project cost estimation, as this new infrastructure has substantial costs and risks associated with each project. In fact, new overhead transmission lines can cost \$1 million or more per mile. The process of building transmission level projects often takes many years even in the most streamlined process.

In this course, attendees will recognize the critical components to consider in a transmission project estimate. Key components of the course include all factors that impact the final cost of building this infrastructure, including permitting and siting, materials and engineering, construction, and project management.

## LEARNING OUTCOMES

---

- Discuss utility project planning process and budget considerations utilizing industry samples of typical industry projects
- Discuss the environmental and siting processes and the impact on schedules and costs
- Analyze engineering, material cost, and construction considerations for transmission lines and substations
- Compare and contrast contracting methods to include design-bid-build vs. OE/EPC
- Identify strategies to mitigate risks across the spectrum of project types and sizes

## COURSE INSTRUCTORS

---



### Jay Turner

**EIT, PMP, Six Sigma Green Belt, LEED AP O+M  
Project Cost Manger, Southern California Edison**

Jay Turner has fifteen years of cost estimating, project management, root cause analysis, and process improvement experience in the utility, accounting, and consulting industries. He currently estimates construction costs and tracks project cost performance for transmission, substation, and generation projects for Southern California Edison. Jay has been certified as a Project Management Professional by the Project Management Institute and Six Sigma Green Belt by the Institute of Industrial Engineers. He is a M.B.A. and M.S. Systems Engineering Candidate at Loyola Marymount University and earned a Bachelor of Science in Engineering and Applied Science from the California Institute of Technology.



### Edward Weber

**Senior Transmission Planning Advisor/Project Manager, HDR Engineering Inc.**

Ed Weber is a senior electrical engineer with over 35 years of experience in power system analysis and planning throughout the US. He has extensive experience in power system reliability compliance, and system modeling; power flow and stability analysis; transmission tariff process and generator interconnections. Ed's experience includes over 30 years of management of large power projects requiring coordination of project planning, design, and environmental activities; coordination of consultant activities; coordination of regulatory and contractual activities; interfacing with the developers and transmission owners and operators; and preparation of technical reports. He has supervised a diverse staff of professional engineers and was responsible for all facets of power system planning and operational support across the country. Since coming to HDR Engineering, Ed has worked on several large transmission and generation projects along with conducting numerous planning and interconnection studies for a long list of clients.

# AGENDA

WEDNESDAY, JULY 12, 2017

**12:30 – 1:00 pm**

**Registration**

**1:00 – 5:00 pm**

**Course Timing**

## **Session I: Costs for Major Utility Projects: Substations, Overhead Transmission, and Underground Transmission**

Group discussion of major components, including materials and construction

Project Begins at the Substation

- Planning
- Site development
- Conduit & grounding plan
- Foundations
- Materials
- Substation bus
- Conductor/cables overhead

Transmission Lines

- Plan & profile
- Staking
- Foundations
- Structures
- Hardware

Underground Transmission Lines

- Plan & profile
- Duct bank
- Line splice and pull-through vault
- Line cable
- Line substation riser details

## **Session II: Permitting, Siting, and Right of Way Considerations and Costs**

- Overview of Environmental Siting process
- Potential impacts to project timelines and costs
- Urban vs Rural Considerations
- Construction Considerations
- Strategies to minimize schedule obstacles



***“I am from NYISO, a new Planning Engineer. I took on the responsibility of cost-estimation. I think I walked into the water without knowing the depth. This course gave me the life jacket to survive.”***

Planning Engineer, NYISO

# AGENDA

THURSDAY, JULY 13, 2017

**8:00 – 8:30 am**      **Continental Breakfast**

**8:30 am – 4:30 pm**      **Course Timing**

**12:00 – 1:00 pm**      **Group Luncheon**

## **Session III: Utility Cost Estimation Process**

- Developing budget parameters and the project plan
- Utility estimate components
- Cost estimating best practices during the project life cycle
- Cost Reference development
- Risk Management
- Expected accuracy ranges
- Measuring performance
- Project cost estimate example

## **Session IV: Methods of Contracting**

- Identify common types of contracts and contract delivery methods and understand the risks and advantages and disadvantages associated with each:
- Fixed price/Lump sum
- Cost plus
- Time and material
- Traditional arrangement/Design-bid-build
- EPC arrangements and Risk management
- Open book EPC variations
- Impacts to construction process

## **Session V: Project Cost Estimate Case Study**

Class exercise to estimate major categories of project costs compared to actual costs on two real life projects.



*“Great course with knowledgeable instructors.”*

Business Development, Sterling Lumber



*“Great course for a general understanding of cost estimating.”*

Engineer-Cost Manager, PacifiCorp

## REQUIREMENTS FOR SUCCESSFUL COMPLETION OF PROGRAM

---

Participants must sign in/out each day and be in attendance for the entirety of the course to be eligible for continuing education credit.

## INSTRUCTIONAL METHODS

---

PowerPoint presentations, interactive group exercise, and group discussion will be used during this course.

## PROCEEDINGS

---

The proceedings of the course will be published, and one copy will be distributed to each registrant at the course.

## EVENT LOCATION

---

A room block has been reserved at the Hyatt Regency Mission Bay, Mission Bay Park, 1441 Quivira Rd, San Diego, CA 92109 for the nights of July 10-12, 2017. Room rates are US \$189 + \$15.00 Resort Fee plus applicable tax. Call **1-619-224-1234** or [click here](#) for reservations and mention the EUCI event to get the group rate. The cutoff date to receive the group rate is June 10, 2017 but as there are a limited number of rooms available at this rate, the room block may close sooner. ***Please make your reservations early.***

## 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 1.0 CEUs for the course.**

## REGISTER 3, SEND THE 4TH FREE

---

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

**REGISTRATION**  
*to register [CLICK HERE](#) or*

**Call: 201 871 0474**  
**fax: 253 663 7224**  
**email: [register@pmaconference.com](mailto:register@pmaconference.com)**  
**web: <http://pmaconference.com/>**  
**Mail: POB 2303 Falls Church Va 22042**

Please make checks payable to: "PMA"

## EVENT LOCATION

A room block has been reserved at the Hyatt Regency Mission Bay, Mission Bay Park, 1441 Quivira Rd, San Diego, CA 92109 for the nights of July 10-12, 2017. Room rates are US \$189 + \$15.00 Resort Fee plus applicable tax. Call **1-619-224-1234** or [click here](#) for reservations and mention the EUCL event to get the group rate. The cutoff date to receive the group rate is June 10, 2017 but as there are a limited number of rooms available at this rate, the room block may close sooner. **Please make your reservations early.**

## PLEASE REGISTER

- BOTH FUNDAMENTALS OF ELECTRICITY TRANSMISSION AND COST ESTIMATING METHODOLOGIES FOR SUBSTATIONS AND TRANSMISSION PROJECTS COURSES:**  
 JULY 11-13, 2017: US \$2395,  
 EARLY BIRD on or before JUNE 23, 2017: US \$2195
  
- COST ESTIMATING METHODOLOGIES FOR SUBSTATIONS AND TRANSMISSION PROJECTS COURSE ONLY:** JULY 12-13, 2017: US \$1395,  
 EARLY BIRD on or before JUNE 23, 2017: US \$1195

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

Print Name Job Title

Company

What name do you prefer on your name badge?

Address

City State/Province Zip/Postal Code Country

Phone Email

List any dietary or accessibility needs here

**CREDIT CARD INFORMATION**

Name on Card Billing Address

Account Number Billing City Billing State

Exp. Date Security Code (last 3 digits on the back of Visa and MC or 4 digits on front of AmEx) Billing Zip Code/Postal Code

**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 June 9, 2017 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 EUCL 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, EUCL'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 (201) 871-0474.