EUCI CONFERENCE

INTEGRATED RESOURCE PLANNING (IRP) SUMMIT

April 16 – 17, 2018
Embassy Suites
Portland Washington Square
Portland, OR

PRE-CONFERENCE WORKSHOP

Planning for Accelerating Renewable Energy Conditions

MONDAY, APRIL 16, 2018

POST-CONFERENCE WORKSHOP

Strengths and Shortcomings of Different Resource Adequacy Metrics

WEDNESDAY, APRIL 18, 2018

"This is a perfect forum to share, learn and take home a better/ broader understanding of the issues facing our industry."

Director, Energy Supply Planning, Northwestern Energy

AUTHORIZED IACET PROVIDER

EUCI is authorized by IACET to offer 1.0 CEUs for the conference, 0.3 CEUs for the pre-conference workshop, and 0.7 CEUs for the post-conference workshop.

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OVERVIEW

Traditional utility integrated resource planning (IRP) analysis and communication were dominated by:

- Central station firm generation sited at specific locations
- Fueled mainly by gas, coal, oil, and nuclear
- With one-way transmission and distribution systems
- And well-established reliability and high capacity factors

Contemporary resource planning, however, is undergoing a full throttle, wholesale transformation. It is being:

- Challenged by increases in variable large-scale renewable generation and distributed energy resources (DERs), with their fair-weather reliability and low capacity factors, fueled by sources that cannot be controlled
- Tested by analytical modeling tools that often do not fully encompass the requirements necessary to develop sound resource plan generation portfolios
- Complicated by still-nascent battery energy storage systems, grid modernization considerations, and two-way transmission and distribution upgrades
- Influenced by load-eroding drivers such as energy efficiency, demand response (DR), smart grid, smart cities, and customer choice
- Strained by legislative mandates requiring environmental, technological, and policy compliance that don't account for their complexity and implications
- Dogged by well-meaning — often, single interest — intervenors not subject to the same standard prudency and regulatory oversight required of utilities
- Swamped by the need for increased transparency and simple, clear public communication

This program, designed *by* integrated resource planners *for* integrated resource planners, will tackle several pressing, current resource planning issues. It will incorporate case studies that provide a solid survey of "best practices" thinking and methodologies. Leading utility, power resource planning professionals and related industry experts will address the key elements associated with these emerging operational issues, environmental mandates, variable energy resources, regulatory policies, and uncertainty factors that now dominate IRP planning requirements.

LEARNING OUTCOMES

Attendees will gain practical skills and insights on how to:

- Develop resource plans that incorporate the full palette of supply and demand options
- Identify how IRP planners can analyze, model and incorporate storage in IRPs
- Determine the value of portfolio flexibility for resource planning and market operations
- Explore how resource planning can help utilities and competitive power businesses in a transforming utility business model environment
- Identify how to properly account for all variables when analyzing, modeling and planning portfolio decisions
- Review lessons learned to understand the range of different approaches across North America with regard to fully integrating distributed resources into utility planning
- Consider the broader range of inputs that future resource decisions should incorporate to achieve a more holistic system-wide valuation and planning approach
- Explore alternative methods of planning for determining appropriate resource adequacy, reliability and reserve margin modeling in an IRP
- Assess the portfolio effects of renewable energy resources

WHO SHOULD ATTEND

Those involved with:

- Integrated resource planning
- Resource adequacy planning
- Strategic and long-range planning
- Forecasting and analysis
- Energy efficiency planning
- Demand response planning
- Generation and load planning
- Transmission planning
- Reliability planning
- Intra-hour operations analysis and modeling
- Renewable energy planning
- Environmental and GHG planning
- State regulatory and commission staff
- Carbon/emissions management teams
- Carbon/emissions market consultants and advisors
- Environmental compliance groups
- Regulatory affairs
- Asset management
- Financial analysis

> ***"Conference had solid content with engaging speakers discussing timely issues. Good opportunity to discover a common set of shared concerns from other planning groups, and to get some fresh ideas about how to tackle these challenging issues."***
>
> Senior Manager – Capacity Planning, TVA

"This conference was very relevant. I will come again. Thanks." - Director of Research & Energy Technologies, Vectren

"EUCI does a superb job of keeping a streamlined conference experience with rich content – will be attending more conference in the future." - Sr. Analyst, Scott Madden

"We often find ourselves hearing and reading material that only confirms our exacting views. EUCI brings together the experience and emerging approaches of industry leaders from around the world. Much of the value of these presentations stems from discovering what we did not know." - Division Director, NW Power and Conservation Council

"Excellent agenda, and list of speakers. Right on target with issues I'm dealing with right now." - Manager of Resource Planning, Puget Sound Energy

"A great overview from a wide cross-section of industry experts." - Energy Resource Analyst, EWEB

"The IRP conference was well executed, and I learned a lot about the IRP process and how structural changes in the markets are shaping ways IRP's are developed." - Director of Business Development, Ascend Analytics

"Well organized with relevant topics. Learned some new perspectives and approaches to resource planning." – Director, Black & Veatch

AGENDA

MONDAY, APRIL 16, 2018

12:30 – 1:00 pm **Registration**

1:00 – 1:15 pm **Welcome and Overview**

1:15 – 2:00 pm **An IRP Transformation: What Utilities Said About Staying Abreast of the IRP Process**
Integrated resource planning, a pillar of the utility business model, is undergoing a wholesale transformation. The planning process is being tested on many fronts, increasingly out of direct control of the utility. Could this transformation also be undermining the very foundation of the traditional utility business model? A recent study, conducted by Solari Communication through interviews with two dozen investor-owned, public, and coop utilities over the past year, validates these possible consequences. This session, in an initial public release, unveils the results of that study. It chronicles which aspects of integrated resource planning are transitioning, aspects that are expanding in scope, and aspects that are emerging in importance; how utilities are responding to the emerging analytical and structural limitations and challenges; and, how IRP can inform management on an enterprise-wide business model.
Rich Maggiani, President, Solari Communication

2:00 – 3:30 pm **Establishing Tool and Planning Input Assumptions for Future Resource and Technology Selection**
- Validating and vetting planning and modeling assumptions with regard to current technology performance and future capacity contributions
- Developing rules and tools for evaluating technical, commercial and developability of future resource options
- Determining the commercial tipping conditions that will enable the eventual adoption of emerging technologies
- Commercial readiness index
- Other considerations
- Running sensitivity analyses
- Methodologies to choose between supply and demand side resources
- Dashboard and information dissemination

Dave O'Connor, Grid Edge Solution Lead – Smart Integrated Infrastructure, Black & Veatch
James Gall, IRP Manager, Avista Corp
Noha Abdel-Karim, PhD., Manager – Reliability Assessment, North American Electric Reliability Corporation (NERC)

3:30 – 3:50 pm **Afternoon Break**

3:50 – 4:45 pm **Resource Planning that Accounts for Increasingly Volatile Weather Dynamics**
As renewable energy assumes a greater presence in a utility's supply stack, the influence of weather conditions on system capacity elevates in significant and often unpredictable ways. This segment will:
- Assess the impact of weather variability on flexible resource requirements
- Evaluate the portfolio effects of weather on capacity contributions of wind and solar projects
- Translate the effects of weather variability into planning metrics

Gary Dorris, President, Ascend Analytics

AGENDA

MONDAY, APRIL 16, 2018 (CONTINUED)

4:45 – 5:30 pm **An Even More I(ntegrated)RP: Procurement and Management Linked to Resource Planning**

Now that many utilities generally build fewer of their own resources — but, rather, acquire them through long-term contracts — IRPs are no longer just about planning. This segment will examine how some utilities are adapting to this new reality.

- Trending — the growing role of procurement
- Examples from California, Colorado and other states
- Common pitfalls and best practices
- Case study — lessons learned

Adam Borison, Vice President, Nathan Associates

5:30 – 6:30 pm **Networking Reception**

TUESDAY, APRIL 17, 2018

7:45 – 8:15 am **Continental Breakfast**

8:15 – 9:15 am **De-carbonization Pathway Studies**

An increasingly important element in the preparation of an IRP is the long-range plan's carbon footprint characteristics or, perhaps more appropriately, its prescription for deep carbon reduction of the system. This segment will review the components that a de-carbonization study should encompass:

- How are utilities planning for state and local carbon goals?
- How is customer adoption of low carbon technologies being treated in IRPs (electric vehicles, distributed PV, heat pumps, etc)
- How new technologies like electric vehicles, heat pumps, and distributed PV might impact future demand and generation infrastructure needs
- Threshold targets by GHG requirements and date attainment
- Strategies to achieve necessary reduction(s)
- Key inputs
- Cost-benefit analyses and trade-offs
  - Utility-based
  - Customer-based
- Correlation with existing IRP and related utility planning assumptions
  - How does this affect the capacity contributions of gas power?
  - What is the relationship to electric and gas transmission systems?
- Externalities that may complicate attainment
- Stakeholder engagement

Elaine Hart, Principal Resource Planning Analyst, Portland General Electric
Jenifer Hedrick, Senior Project Manager – Integrated Resource Planning, Southern California Edison (SCE)
Scott Martin, Director – Resource & New Business Strategy, Sacramento Municipal Utility District

9:15 – 10:30 am **How Best to Model Battery Storage and Its Multiple Value Streams into IRP**

- IRP methodology review and supplements to represent energy storage
- Energy storage use cases
- Case studies
- Considering "stacked" services
- Assigning value to system benefits

James Gall, IRP Manager, Avista Corp
Glen Snider, Director – Resource Planning and Analytics Carolinas, Duke Energy

AGENDA

TUESDAY, APRIL 17, 2018 (CONTINUED)

10:30 – 10:50 am **Morning Break**

10:50 am – 12:15 pm **Reconciling/Integrating T&D and Resource Planning with DERs**

- Identifying the requirements
- Demand for multiple and more granular load forecasts
- Conservation potential assessments
- Divergent planning process interfaces

Thomas (Lynn) Allen, Managing Director, Black & Veatch
Noha Abdel-Karim, PhD., Manager – Reliability Assessment, North American Electric Reliability Corporation (NERC)
Maty Sauter, Project Manager – Strategy Integration, Portland General Electric

12:15 – 1:30 pm **Group Luncheon**

1:30 – 3:00 pm **Impact of More Aggressive RPS Mandates**

- How does a utility increase its portfolio?
- What are the risks that need to be evaluated?
- Depressed power prices and related financial impacts on existing, baseload resources
  - Out-of-the-money units
  - Stranded assets
  - Upside-down PURPA contracts
- Declining load
- Managing stability of rates
- Reliability issues
- Where does hydro belong in the renewable resources mix?
- Relationship to expansion plan modeling
- Migration of resources between regions and the long-term system impact
- Physical challenges to grid operations
- Resource availability non-coincident with peak load

Tomas Morrissey, Senior Policy Analyst, Pacific Northwest Utilities Conference Committee (PNUCC)
Glen Snider, Director – Resource Planning and Analytics Carolinas, Duke Energy
Mikael Backman, Regional Director – Energy Solutions, Wartsila North America
Yuri Fishman, Director – Strategy and Planning, PSEG Long Island

> ***"Well organized and well-run conference with a good cross-section of presenters representing their approaches on how to develop a thorough and defendable IRP."***
>
> Supervisor – Strategic Transmission Analysis, Madison Gas & Electric

> ***"The program included many high quality presenters addressing the pressing issues of the day for utility planners."***
>
> Director of Integrated Resource Planning, AEP

AGENDA

TUESDAY, APRIL 17, 2018 (CONTINUED)

3:00 – 3:15 pm **Afternoon Break**

3:15 – 4:00 pm **Maximizing the Flexibility of DER within IRP**

For many utilities, incorporating distributed energy resources into IRP relies upon potential studies to develop "best" estimates of market penetration, available demand and energy from the resources under low, middle, and high case levels of incentives. Demand and energy savings estimates from such potential studies are inherently uncertain. Market penetration, available capacity and energy, and costs may all vary from predictions. Furthermore, the resulting forecasts ignore the fact that a utility may change its incentive strategy and program mix in response to the market reactions, and other resource uncertainties as programs are implemented over time. This presentation will describe an approach for incorporating DER options into the resource plan that considers both the uncertainty of DERs and the flexibility to modify DER acquisition over time. The presentation will cover the following topics:

1. Building DER resources with supply curves for use in a capacity expansion model
2. Assessing the impacts of DER uncertainty through sensitivity analysis
3. Choosing the best DSM strategy through stochastic analysis
4. Using decision analysis to modify DER strategies over time

Jane Colby, Principal, The Cadmus Group, LLC
Himanshu Pandey, Power Resources Manager, Burbank Water and Power

4:00 – 5:00 pm **Is There Still a Role for Coal and Gas in a Declining, Carbon-based Supply Stack?**

- The effects of increasing renewables' penetration on modeling coal and gas dispatch and planning
- Natural gas price risk associated with rapidly increasing LNG exports
- The effect of future markets' volatility on natural gas spot markets
- Impact of shortened time cycles on investment decisions
- Does coal have a future if carbon capture and storage/sequestration (CCS) matures?

Michael Schaal, Principal, Energy Ventures Analysis
Glen Snider, Director – Resource Planning and Analytics Carolinas, Duke Energy
Phillip Popoff, Manager – Integrated Resource Planning, Puget Sound Energy

5:00 pm **Conference Adjournment**

> ***"EUCI has once again brought together an excellent team of industry experts to deliver a very informative and wide-ranging look on the IRP planning process."***
>
> Head – Generation Special Projects, Jamaica Public Service Co

> ***"An excellent forum to hear about and discuss the current and key resource planning issues facing the utility world."***
>
> Director of Resource Planning, BC Hydro

PRE-CONFERENCE WORKSHOP

Planning for Accelerating Renewable Energy Conditions

MONDAY, APRIL 16, 2018

OVERVIEW

Renewable resources are on a rapid course to become the primary source of economic energy. Yet, their inherent intermittency introduces new risks and planning criteria. The implications of this inexorable rise of renewables creates new market dynamics that radically alter traditional planning notions. The long-preserved boundaries of base, intermediate and peaking resources to meet a smooth sinusoidal load curve has yielded to a saw-tooth net load that rapidly ranges from surpluses to deficits. The hallowed grounds of long-run equilibrium conditions of a CC or CT have become confounded with declining implied heat rate curves and extreme intermittency. This workshop will examine the market manifestation of increased renewables that creates planning conditions where matching the volatility of prices becomes as important as establishing the average price of energy, and requires consideration of the following elements:

- Quantifying the impact of increased renewables penetration on market price volatility
- Establishing new criteria for resource adequacy
- Weighing the marginal value of wind versus solar
- Determining the need and value of flexible generation
- Utilization and valuation of energy storage

LEARNING OUTCOMES

- Reviewing the effects of increasing renewable energy resources on present and future price formation through both supply and demand fundamentals and observed market dynamics
- Determining the impact of renewable resources on traditional and flexible capacity requirements
- Assessing the impact of technological advances of batteries, renewables, flexible loads, and EVs on present and future supply and demand fundamentals
- Assessing over-supply conditions, their price ramifications and how IRPs should reflect these structural changes

PRE-CONFERENCE WORKSHOP AGENDA

WEDNESDAY, APRIL 16, 2018

7:45 – 8:15 am **Registration and Continental Breakfast**

8:15 – 8:30 am **Overview and Introductions**

8:30 – 11:45 am **Workshop Timing**

- Supply and Demand Fundamentals
  - Genesis of the flexible resource shortage
  - Impact of renewables on market price volatility
  - Origins of day-ahead (DA) and real-time (RT) market price spreads, with implications for resource valuation

PRE-CONFERENCE WORKSHOP AGENDA

WEDNESDAY, APRIL 16, 2018 (CONTINUED)

- Impact of Technological Change on Future Supply and Demand Fundamentals
  - Economics of batteries for regulation, ramping and load-shifting
  - Electric vehicles (EVs) as fixed and flexible load adoption and growth
  - Internet of Things (IoT) to aggregate flexible demand
- Determining Resource Adequacy in a High Renewable Portfolio
  - Understanding the effect of "firm" capacity contributions of renewables
  - How to translate simulation uncertainty into standard planning metrics
  - Assessing the impact of increased renewable penetration rates on flexible resource requirements
- Valuing Energy Storage Economics
  - Case studies in energy storages
  - Optimizing the sizing of energy storage projects for flexible and firm capacity needs
  - Valuation of energy storage for non-ISOs, EIM, and ISOs utility systems
- Assessing Over-supply Conditions and Their Price Ramifications
  - Potential and extent over the next decade of over-supply conditions
  - Impact of over-supply on market price dynamics
  - Implications for cost-of-service and value of generation

PRE-CONFERENCE WORKSHOP INSTRUCTORS

Dr. Gary Dorris

President, Ascend Analytics

Gary Dorris, Ph.D., President, Ascend Analytics has been a thought leader in energy modeling and risk analysis for 20 years. He has led the development of over a dozen resource plans and pioneered new techniques for risk based resource planning and portfolio selection. Dr. Dorris has developed new techniques in risk management that integrate uncertainty around both the physical and financial aspects of a utilities portfolio. His analytic innovations have extended toward the development of over a dozen software applications used by over 50 energy companies. In 2001, Dr. Dorris won distinguished recognition from the IPE for contributions to the field of energy risk management.

Dr. Allison Weis

Manager of Optimization Analytics, Ascend Analytics

Dr. Allison Weis leads development and customer decision analysis for optimization analytics of system planning and battery storage systems. She develops planning analytics for optimal resource selection in both inter-tied and isolated grids and has taken a lead role in system reliability planning. She managed development of battery and hydro optimizations for a range of customers facing different system constraints and goals. Dr. Weis brings her understanding of flexible grid resources from her work modeling the integration of wind and solar with batteries and electric vehicle charging at Tesla and in her PhD at Carnegie Mellon, both prior to joining Ascend.

POST-CONFERENCE WORKSHOP

Strengths and Shortcomings of Different Resource Adequacy Metrics

WEDNESDAY, APRIL 18, 2018

OVERVIEW

Electric utilities have commonly used loss-of-load expectation (LOLE) as a measure of power supply adequacy. Generally, resource expansion plans have been designed to limit the LOLE to not exceed one capacity shortfall day per ten-year period. However, this only captures one characteristic of adequacy – namely, frequency of shortfalls. A more complete adequacy assessment should also include measures for shortfall duration and magnitude because it may also be economically prudent to limit the size and length of potential shortfalls. The North American Electric Reliability Corporation (NERC) has proposed specific metrics to measure shortfall duration and magnitude, which along with a measure of frequency, would provide a more robust adequacy assessment.

This workshop will examine the work that NERC, IEEE, the Northwest Power and Conservation Council as well as other organizations are doing to come up with more precise ways of calculating resource adequacy, and how these may vary by region and other circumstances. It will also provide bases by which utilities and other balancing area organizations can best determine which measure best satisfies its system requirements and regulatory mandates.

LEARNING OUTCOMES

- Review the history of adequacy metrics
- Discuss the current work on adequacy metrics and the distinctions relative to traditional measures
- Evaluate how to translate probability metrics into tools that can be used for system expansion
- Determine how to account for capacity contributions of renewable and other non-thermal energy resources
- Examine how to incorporate economics in setting reserve margins
- Distinguish methods for dealing with balancing reserves

POST-CONFERENCE WORKSHOP AGENDA

WEDNESDAY, APRIL 18, 2018

7:45 – 8:15 am **Registration and Continental Breakfast**

8:15 am – 4:00 pm **Workshop Timing**

12:00 – 1:00 pm **Group Luncheon**

History of Adequacy Metrics
- Deterministic methods based on expected values and centralized, baseline generation schemes
- Advent and evolution of probabilistic methods to reflect uncertainties
- Emerging methodologies to reflect contemporary, more complex system requirements

Current Work on Adequacy Metrics
- IEEE
- NERC
- Regional variations and applications

POST-CONFERENCE WORKSHOP AGENDA

WEDNESDAY, APRIL 18, 2018 (CONTINUED)

How to Translate Probability Metrics into Tools that Can Be Used for System Expansion
- Methods and modeling techniques for developing system expansion plans
- Converting resource adequacy metric into planning reserve margin
- Other methods besides the planning reserve margin to incorporate resource adequacy into system expansion planning

How to Account for Capacity Contributions of Non-Thermal Energy Resources
- Wind
- Solar
- Non-hydro storage
- Hydro storage
- Demand response
- Imports

How to Incorporate Economics in Setting Reserve Margins
- What is the role of economics in decisions about electric power system adequacy?
- What is the economic criteria for adequacy? What are the key variables?
- How can the value of lost load (VOLL) be measured?
- How should economics be applied to real world problems of setting reserve margins or making resource investment decisions?

Dealing with Balancing Reserves
- Forecast errors and dependencies
- Reserve assessment and modeling — fixed vs dynamic simulation?
- What are the best resource candidates to carry balancing reserves?
- Shared resources across balancing areas and/or regions

POST-CONFERENCE WORKSHOP INSTRUCTORS

Dr. Noha Abdel-Karim

Manager – Reliability Assessment, North American Electric Reliability Corporation (NERC)

Noha Abdel-Karim is a manager of reliability assessment at NERC. She leads the probabilistic adequacy modeling and implementation at NERC and is in charge of the Probabilistic Assessment Working Group (PAWG). Dr. Abdel-Karim peer reviews technical publications in the area of power systems' operational risk and adequacy assessments with a primary focus on renewable integration, risk of nuclear and fossil fuel retirements and environmental regulations to power system reliability. Prior to joining NERC, she worked as a consultant at Pyramid Consulting International. There she implemented new operational strategies and identified cost-cutting measures at a fossil fuel plant to foster an environment of continuous improvement, providing a competitive advantage to the plant in its designated electricity market while at the same time ensuring compliance with safety and environmental regulations.

Dr. Abdel-Karim received her Doctor of Philosophy degree in 2012 from the Engineering & Public Policy Department at Carnegie Mellon University and holds a MSc and bachelor degrees in electrical engineering from the Arab Academy in Science and Technology and Maritime Transport from Egypt.

POST-CONFERENCE WORKSHOP INSTRUCTORS

John Fazio

Senior Systems Analyst, Northwest Power and Conservation Council

John Fazio has been a senior systems analyst for the Pacific Northwest Power and Conservation Council since 1984. His primary duty is to assist in the development of the Council's regional power plan. He is the co-chair of the Pacific Northwest Resource Adequacy Forum's technical committee. He is also a member of the IEEE Loss of Load Expectation working group, a subcommittee of the Risk, Reliability and Probabilistic Applications committee. His work focuses on assessing power supply adequacy, resource cost effectiveness and impacts of alternative hydroelectric operations. Hydroelectric analysis is an essential part of the development of the Council's fish and wildlife program. Before his tenure at the NW Council, Mr. Fazio worked for the Bonneville Power Administration from 1977 through 1984. He has taught physics at the University of Portland, University of Oregon and at Concordia College. He has occasionally worked on national and international projects related to hydroelectric operations.

Dr. Tom Karier

Board Member – Washington, Northwest Power and Conservation Council

Tom Karier was first appointed to the Northwest Power and Conservation Council in 1998 and has served terms as the Council Chair and Chair of the Power Committee. He has also been a board member for the Northwest Energy Efficiency Alliance and co-chair of both the Northwest Energy Efficiency Leadership and the Northwest Wind Integration Forum. His term expires January 2019. Prior to working with the Council, Dr. Karier was an associate dean at Eastern Washington University from 1995 to 1998 and professor of economics before 1995. During this time, he also served as a Research Associate for the Jerome Levy Economics Institute in Annandale, New York. He is the author of three books, Intellectual Capital, (Cambridge University Press), Great Experiments in American Economic Policy (Praeger), Beyond Competition (M.E. Sharpe), a dozen journal articles, and many more reports and Op/Ed articles. He Karier earned a Ph.D. from the University of California, Berkeley with a major field in energy and natural resource economics. His bachelor's degree is in both physics and economics from the University of Illinois.

Phillip Popoff

Manager – Integrated Resource Planning, Puget Sound Energy

Phillip J. Popoff is manager of integrated resource planning for Puget Sound Energy (PSE). He has more than 20 years of experience in the energy industry. He is responsible for Puget Sound Energy's electric and natural gas utility IRPs, including supply-side and demand-side resource analysis. Additionally, he is currently Chairman of the PNUCC's (Pacific Northwest Utility Conference Committee) System Planning Committee and Chairman of the PNUCC/Northwest Gas Association's Gas-Electric Planning Task Force. Mr. Popoff has been with PSE for 18 years of his 20-plus years of experience in the energy industry. Prior to joining PSE, he spent three years at the Washington Utilities and Transportation Commission and two years at the Virginia State Corporation Commission. He has B.S. and M.S. degrees in economics from the University of Wyoming, where he focused his studies on both utility and environmental economics. In addition, he completed the Professional Certificate program in Strategic Decisions and Risk Management at Stanford University in 2011 and attended the Executive Management Program at the University of Washington 1999 - 2000.

INSTRUCTIONAL METHODS

PowerPoint presentations and case studies will be used in this program.

REQUIREMENTS FOR SUCCESSFUL COMPLETION

Participants must sign in/out each day and be in attendance for the entirety of the conference to be eligible for 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 1.0 CEUs for the conference, 0.3 CEUs for the pre-conference workshop, and 0.7 CEUs for the post-conference workshop.

EVENT LOCATION

A room block has been reserved at the Embassy Suites Portland Washington Square, 9000 SW Washington Square Road, Tigard, OR 97223, for the nights of April 15-19, 2018. Room rates are US $149 plus applicable tax. Call **1-503-644-4000** for reservations and mention the EUCI event to get the group rate. The cutoff date to receive the group rate is March 25, 2018 but as there are a limited number of rooms available at this rate, the room block may close sooner. ***Please make your reservations early.***

REGISTER 3, SEND THE 4TH FREE

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

Please make checks payable to: "PMA"

EVENT LOCATION

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PLEASE SELECT

- ◯ **SPECIAL BUNDLE PRICE: INTEGRATED RESOURCE PLANNING (IRP) SUMMIT** AND **BOTH WORKSHOPS:** APRIL 16 – 18, 2018: US $2695
  EARLY BIRD on or before MARCH 10, 2017: US $2495

INTEGRATED RESOURCE PLANNING (IRP) SUMMITAND **ONE WORKSHOP:**

- ◯ **PRE-CONFERENCE WORKSHOP**: WEDNESDAY, APRIL 16, 2018: US $1895
  EARLY BIRD on or before MARCH 30, 2018: US $1695
- ◯ **POST-CONFERENCE WORKSHOP**: WEDNESDAY, APRIL 18, 2018: US 2295
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- ◯ **INTEGRATED RESOURCE PLANNING (IRP) SUMMIT ONLY**
  APRIL 16 – 17, 2018: US $1495,
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- ◯ **PRE-CONFERENCE WORKSHOP ONLY**: WEDNESDAY, APRIL 16, 2018: US $595
  EARLY BIRD on or before MARCH 30, 2018: US $495
- ◯ **POST-CONFERENCE WORKSHOP ONLY**: WEDNESDAY, APRIL 18, 2018: US $995
  EARLY BIRD on or before MARCH 30, 2018: US $895

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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 March 16, 2018 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 conference 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 (201) 871-0474.