



An Islanded Grid Resource Center Event

Organized by

Renewable Energy Alaska Project (REAP)

*in
association
with*

U.S. Department of Energy WINDEXchange

**Alaska Energy Authority
Alaska Center for Energy & Power
Island Institute
Distributed Wind Energy Association**

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| <div>ISLANDED GRID WIND POWER CONFERENCE AGENDA</div> <div>ALASKA PACIFIC UNIVERSITY • 4101 UNIVERSITY DRIVE • ANCHORAGE, ALASKA WEDNESDAY MARCH 4, 2015</div> | | |
| 12:30pm | REGISTRATION OPENS (GRANT HALL) | |
| AFTERNOON TRAINING SESSIONS | | |
| 1:00-2:00pm | <div>Lecture Hall Carr-Gottstein Building</div> | <div>Seminar Room Carr-Gottstein Building</div> |
| | <div>Electrical Concepts for Non- Engineers Rich Wies, University of Alaska Fairbanks</div> | <div>HOMER Modeling Peter Lilienthal, HOMER Energy</div> |
| 2:00-3:15pm | <div>Wind Diesel 101 Rich Stromberg, Alaska Energy Authority</div> | |
| 3:30-5:00pm | <div>Wind Diesel 201 Rich Stromberg, Alaska Energy Authority</div> | |
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THURSDAY • MARCH 5, 2015

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| 7:30am | REGISTRATION OPENS (GRANT HALL) | |
| 8:00-8:15am | WELCOME | |
| PLENARY #1 8:15-9:45am E.R. Brown Auditorium, Grant Hall | THE STATE OF ISLANDED GRIDS TODAY Moderator: Chris Rose, Renewable Energy Alaska Project | |
| | | Peter Asmus, Principal Research Analyst, Navigant Energy San Francisco, California |
| | | Ian Baring-Gould, National Renewable Energy Laboratory Golden, Colorado |
| | | Ted Peck, President, Tian Shan Renewable Energy Honolulu, Hawaii |
| | | Paula McGarrigle, Managing Director, SOLAS Energy Consulting Inc. Calgary, Canada |
| 9:45-10:15am | BREAK | |
| PLENARY #2 10:15-11:45am E.R. Brown Auditorium, Grant Hall | WIND DIESEL IN ALASKA Moderator: Peter Crimp, Crimp Energy Consulting | |
| | | Steve Gilbert, Energy Projects Development Manager, Alaska Village Electric Cooperative Anchorage, Alaska |
| | | Brad Reeve, CEO, Kotzebue Electric Association Kotzebue, Alaska |
| | | Jan Tierson, Manager, TDX Power Anchorage, Alaska |
| | | Darron Scott, President/CEO, Kodiak Electric Association Kodiak, Alaska |
| 11:45-1:15pm | LUNCH (ATWOOD CENTER DINING HALL, 2 ND FLOOR) | |
| PLENARY #3 1:15-2:45pm E.R. Brown Auditorium, Grant Hall | THE HUMAN FACTOR Moderator: Steve Gilbert, Alaska Village Electric Cooperative | |
| | | Roderick Phillip, Vice-President, Chaninik Wind Group Kongiganak, Alaska |
| | | Karen Johnson, Program Manager, Denali Commission Anchorage, Alaska |
| | | Greg Cashen, Deputy Commissioner, Alaska Department of Labor Juneau, Alaska |
| | | Mike Black, Program Development Director, Alaska Native Tribal Health Consortium (ANTHC) Anchorage, Alaska |
| 2:45-3:15pm | BREAK | |
| PLENARY #4 3:15-4:45pm E.R. Brown Auditorium, Grant Hall | BREAKING THE HIGH CONTRIBUTION CEILING Moderator: Ian Baring-Gould, National Renewable Energy Laboratory | |
| | | Rich Stromberg, Wind Program Manager, Alaska Energy Authority Anchorage, Alaska |
| | | Kord Christianson, President, TDX Power Anchorage, Alaska |
| | | Phil Maker, ACEP Affiliated Research Faculty/Sr. Control Systems Engineer, Remote Operations, PowerWater Corp. Darwin, Australia |
| 4:45-7:00pm | RECEPTION - SPONSORED BY INNOVUS Carr-Gottstein Building | |

| FRIDAY • MARCH 6, 2015 | | |
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| 7:30am | REGISTRATION OPENS (GRANT HALL) | |
| 8:00-8:15am | WELCOME | |
| Room locations | E.R. Brown Auditorium, Grant Hall | Lecture Hall, Carr-Gottstein Building |
| PANELS 1 & 2 8:15-9:45am | <i>ENERGY STORAGE</i> Moderator: Gwen Holdmann, Alaska Center for Energy & Power | <i>MARKET UPDATES</i> Moderator: Peter Asmus, Navigant Research |
| | RESEARCH UPDATES Lynn Trahey, Materials Scientist, Argonne National Laboratory Lemont, Illinois | (NEW ENGLAND): Suzanne MacDonald, Community Energy Director, Island Institute Rockland, Maine |
| | ULTRACAPACITORS Bill Thomson, Technology & Training Superintendent, AK Village Electric Cooperative Anchorage, Alaska | (PACIFIC): Scott Haase, Manager of U.S. Dept. of Interior Programs, National Renewable Energy Laboratory Golden, Colorado |
| | STORAGE CASE STUDY Dennis Meiners, Principal Operating Officer, Intelligent Energy Systems LLC Anchorage, Alaska | (INDONESIA): Brian Hirsch, Sr. Project Leader for Alaska, National Renewable Energy Laboratory Anchorage, Alaska |
| 9:45-10:15am | BREAK | |
| PANELS 3 & 4 10:15-11:45am | <i>DEMAND MANAGEMENT</i> Moderator: Marc Mueller-Stoffels, Alaska Center for Energy & Power | <i>GEARING UP FOR WIND</i> Moderator: John Lyons, TDX Power |
| | LOAD MANAGEMENT Reese Huhta, General Manager, Unalakleet Valley Electric Cooperative Unalakleet, Alaska | REGIONAL ENERGY PLANNING Jackie Qatalina Schaeffer, Project & Energy Specialist, WH Pacific Anchorage, Alaska |
| | REDUCING THE HIGH COST OF ALASKA'S RURAL WATER SYSTEMS Eric Hanssen, Rural Energy Program Manager, ANTHC Anchorage, Alaska | WIND PROJECT PERMITTING: A CASE STUDY Robin Reich, President, Solstice Alaska Consulting, Inc. Anchorage, Alaska |
| | THE KING ISLAND SMART GRID Tim Warren, Director, Saturn South Pty Sandy Bay, Tasmania | CONSTRUCTION LOGISTICS Jim St. George, STG Incorporated Anchorage, Alaska |
| 11:45-1:00pm | LUNCH (ATWOOD CENTER DINING HALL, 2 ND FLOOR) | |
| PANELS 5 & 6 1:00-2:30pm | <i>BUILDING ON THE MICROGRID MOVEMENT</i> Moderator: Brian Hirsch, National Renewable Energy Laboratory | <i>SUPPLY CHAIN SPEED DATING</i> Moderator: Stephanie Nowers, Islanded Grid Resource Center <i>An opportunity to hear from and talk with manufacturer representatives about how their products fit into islanded grid systems</i> XANT INNOVUS SUSTAINABLE POWER SYSTEMS VERGNET BEACON EWT NORTHERN POWER HALUS HATCH |
| | EMERGING GLOBAL TRENDS Peter Lilienthal, CEO, HOMER Energy Boulder, Colorado | |
| | DEVELOPMENTS IN OFF-GRID AND “NEAR GRID” ISOLATED SYSTEMS Dan Zimmerle, Sr. Researcher & Director, Electric Power System Laboratory Fort Collins, Colorado | |
| | IMPORTANCE OF ADVANCED MICROGRID CONTROL FUNCTIONALITY ON MICROGRID DESIGN Alex Rojas, Chief Microgrid Systems Architect, Siemens Minnetonka, Minnesota | |

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| 2:30-3:00pm | BREAK | |
| Room locations | E.R. Brown Auditorium, Grant Hall | Lecture Hall, Carr-Gottstein Building |
| PANELS 7 & 8 3:00-4:30pm | <i>DIESEL ISSUES IN WIND-DIESEL</i> Moderator: Brent Petrie, Petrie & Associates | <i>BUSINESS MODELS</i> Moderator: Givey Kochanowski, U.S. Dept. of Energy’s Office of Indian Energy |
| | POWERHOUSE OPTIONS Marc Mueller-Stoffels, Power Systems Integration Program Director, Alaska Center for Energy & Power Fairbanks, Alaska | PROJECT FINANCING Greg Price, Business Development Director, Pacific Northern Environmental Portland, Oregon |
| | DIESEL GENSET EFFICIENCY David Lockard, Rural Energy Group Lead Engineer, Alaska Energy Authority Anchorage, Alaska | IPPS AND P3S Ethan Berkowitz, Sr. Vice President, Strategies 360 Anchorage, Alaska |
| | ENGINE AND TIER ISSUES Steve Stassel, President, Gray Stassel Engineering Anchorage, Alaska | ACCELERATING INNOVATION D. Douglas Johnson, Business Development Director, Ocean Renewable Power Company (ORPC) Anchorage Alaska |
| 4:30-4:45pm E.R. Brown Auditorium, Grant Hall | HONORABLE BILL WALKER, GOVERNOR OF ALASKA | |
| PLENARY #5 4:45-5:45pm E.R. Brown Auditorium, Grant Hall | THE WAY FORWARD: COLLABORATIVE OPPORTUNITIES AND NEXT STEPS Moderator: Chris Rose, Renewable Energy Alaska Project Gwen Holdmann, Director, Alaska Center for Energy & Power Ian Baring-Gould, National Renewable Energy Laboratory Darron Scott, President/CEO, Kodiak Electric Association Peter Asmus, Principal Research Analyst, Navigant Energy | |
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SESSION DESCRIPTIONS

WEDNESDAY

WIND-DIESEL 101

This session will cover the basics of Wind-Diesel power systems, including an overview of wind, diesel technology and combined power systems, and some examples of current power systems. This introductory level course provides a basic level of understanding that will enable individuals to take an active role in the Wind-Diesel Workshop.

WIND-DIESEL 201

This session will provide an understanding of the role and operating principle of all the major components of a wind-diesel system, including control systems, secondary loads and voltage and frequency regulation.

ELECTRICAL CONCEPTS FOR NON- ENGINEERS

This class will introduce the basics of electrical concepts and cover power generation, common electrical components, and equipment.

USING THE HOMER PRO MODELING SOFTWARE

This session will demonstrate how to use the new HOMER Pro modeling software to predict the technical and economic performance of Wind-Diesel Systems. The workshop will be a hands-on training that steps attendees through the creation of HOMER models, starting with a very simple model and then developing a more complicated wind-diesel system. Attendees will learn how to use HOMER's simulation, optimization, and sensitivity analysis capabilities for conceptual design and feasibility studies. They will learn how to use HOMER to identify the correct wind power capacity to install, and where appropriate how much electrical storage makes sense. They will also be able to explore the trade-off between combined heat and power from diesel and secondary thermal loads powered by excess wind power. This session will also focus on tradeoffs between operating reserves and diesel minimum loading. The results will be applicable across a wide range of system designs and locations. Attendees are strongly encouraged to have the software installed on their computers and HOMER Energy can extend a trial license for attendees.

THURSDAY

THE STATE OF ISLANDED GRIDS TODAY

The market for islanded grids and islanded grid technology is small but rapidly growing, from applications in remote communities and islands to microgrids for developed regions. This moderated discussion will cover the state of the technology and market and identify developing trends.

WIND DIESEL IN ALASKA

Alaska is a world leader in developing wind-diesel hybrid systems. This moderated discussion with utility operators offers an overview of the types of systems currently operating in Alaska and highlights the challenges and opportunities faced by these operators in the more than 25 Alaskan communities now being powered by wind.

THE HUMAN FACTOR

Limited human capacity and expertise to operate and maintain wind systems in remote communities is an identified barrier to successful wind operation. What are the needs, opportunities, and existing successful models for resolving these issues?

BREAKING THE HIGH CONTRIBUTION CEILING

Creating successful high contribution systems remains the goal for remote communities. This moderated discussion will look at what the remaining financial technical and human barriers are to developing these systems, and identify strategies for overcoming those barriers.

FRIDAY

ENERGY STORAGE

A look at energy storage strategies, including advanced batteries and flywheels.

MARKET UPDATES

Markets are driven by many factors including local need, available resources, policy, and incentives. This session will provide an update of islanded grid markets in various regions.

DIESEL ISSUES IN WIND-DIESEL

This session focuses on the diesel side of wind-diesel. In an integrated system the diesel gen-set offers great opportunity for improved performance. This expert panel will discuss the impacts that wind has on diesel and how they might be mitigated.

GEARING UP FOR WIND

Planning, permitting and logistics are all key ingredients for a successful wind project. This panel will examine various options and best practices in these areas.

BUILDING ON THE MICROGRID MOVEMENT

Significant time, money and other resources are pouring into microgrid development around the world. What can remote wind-diesel systems derive from this activity in the microgrid space?

SUPPLY CHAIN SPEED DATING

An opportunity to hear from and talk with a number of hardware manufacturers and representatives about how their products fit into islanded grid systems.

DEMAND MANAGEMENT

Controlling demand is a key strategy for reducing peak loads and maintaining system stability. This panel will explore the costs, benefits and options of various demand management strategies.

BUSINESS MODELS

This panel will explore the costs, benefits and options for financing wind power systems as well as lessons learned and new strategies for islands and islanded grids.

THE WAY FORWARD, COLLABORATIVE OPPORTUNITIES AND NEXT STEPS

This moderated discussion will look at conference take-aways and explore various opportunities for future collaboration among operators, technical experts, policy makers and others.

THANK YOU TO OUR ORGANIZERS AND SPONSORS!



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