

Sunday, February 23

Advanced Registration

3:00-5:00 Advanced Registration

Grand Foyer Exhibit Hall

3:00-5:00 Exhibitor Set Up

Grand Foyer Exhibit Hall

Monday, February 24

Day One: A Technical Immersion into Indoor Agriculture

8:00-9:00 Continental Breakfast

Sponsored by Efficiency Vermont and E4TheFuture

La Jolla Ballroom Salon E

8:00-5:00 Exhibitor Set Up

Grand Foyer Exhibit Hall

8:00-5:00 Registration

Grand Foyer Exhibit Hall

9:00-11:00 UL8800 Horticultural Lighting Safety Workshop

Learn About the Importance of Designing A Grow Facility Using Lighting Equipment That Is Safety Certified to UL 8800, the New Safety Standard for Horticultural Lighting Equipment and Systems.

Ed Joseph, Principal Engineer, Lighting Safety UL LLC

Irvine Room

11:15-12:15 Lighting Research Roundtable

What are the latest findings in our collective understanding of plant responses to light spectra? How can sunlight and electric lighting solutions be most optimally combined to produce the most efficient production? How do the newest electric light fixtures effectively mimic sunlight?

Moderated by Dr. Mark Lefsrud, McGill University

Dr. Dave Hawley, Fluence by OSRAM

Dr. Neall Digert, Solatube International

Sundarajan Mutialu, Azentive

La Jolla Ballroom –General Session

12:15-12:30 Box & Bolt!

Sponsored by UL and Evergreen Consulting Group

Grand Foyer Exhibit Hall

Lunch & Learn Road Trips

Tour 1: Outco cannabis cultivation facility

Tour 2: Solatube International demonstration facility

Sponsored by Solatube International

12:30 Buses Depart

La Jolla Marriott Lobby

1:00-2:30 Tours

3:15 Arrive at Hotel

3:30–5:15 Technical Advisory Council Summit

Join members of RII's Technical Advisory Councils (TACs) of leading cultivators, equipment manufacturers, utilities, architects, engineers and policy experts as they gather to leverage the multi-disciplinary TAC platform of ongoing collaboration to review best practices in various sectors of the cultivation market.

- Interact with the HVAC and Lighting Working Group members who recently published Best Practices Guides for Cannabis Cultivation & Controlled Environment Agriculture (CEA) on HVAC and LED Lighting.
- Hear about the findings of RII's first Utility Needs Assessment Survey on CEA and learn of the Utility Working Group's key deliverables for 2020 focused on research and knowledge-sharing for creating better programs to serve cultivators.
- Engage with the newly formed Data and Policy Working Groups as they lay out their 2020 work plans to drive resource efficient cultivation.

La Jolla Ballroom-General Session

5:30-7:00 Welcome Reception

Hosted by Resource Innovation Institute and D+R International

Grand Foyer Exhibit Hall

Tuesday, February 25

Day Two: From illicit to state-of-the-art: Indoor agriculture origins and future

8:00-9:00 Breakfast

Sponsored by Solatube International

La Jolla Ballroom Salon E

8:00-5:00 Registration

Grand Foyer Exhibit Hall

9:00-9:30 Perspectives on Indoor Agriculture: How drug policy led to illicit indoor production, and its effect on energy and society

Our provocative, don't-miss opening session features experienced cannabis leaders who will offer a fresh perspective on the roots of indoor agriculture and its role in cultivating a better future for our society and our natural environment.

Jesse Horton, CEO, LOWD; Founder, Minority Cannabis Business Association

Kristin Nevedal, International Cannabis Farmers Association

Lindsay Robinson, California Cannabis Industry Association

La Jolla Ballroom – General Session

9:30-9:45 Welcome & purpose of our gathering

Derek Smith, Resource Innovation Institute

La Jolla Ballroom – General Session

10:00-10:45 Insights on what the latest data are telling us about energy, carbon and water impacts

Join leading researchers and engineers who are studying the energy, and water consumption of today's range of cannabis cultivation methods and how outdoor to greenhouse to indoor approaches differ in their impact. Learn how these numbers vary from the industry's illicit market past, how climate zones affect energy and water needs, the new technologies that are driving efficiencies, and how cannabis facilities' performance compare to those growing other crops.

Moderated by Gretchen Schimelpfenig, Resource Innovation Institute

Bryan Jungers, E Source

Nick Collins, Energy & Resource Solutions

Ted Grantham, Berkeley Cannabis Research Center

La Jolla Ballroom – General Session

11:00-11:45 Globalization, consolidation, segmentation: The cannabis industry in five years: From hemp to THC, where the market is heading, how production might shift, and potential resulting energy and carbon emissions implications

A conversation between Andrea Sparr-Jaswa, Cannabis Business Times, and Beau Whitney, New Frontier Data

La Jolla Ballroom-General Session

12:00-12:45 Lunch

Sponsored by [Fluence by OSRAM](#)

La Jolla Ballroom Salon E

1:00-1:30 Keynote: The Massachusetts model - Comm. Kay Doyle, Massachusetts Cannabis Control Commission

Hear about the decision-making process that led to the world's first comprehensive law focused on managing energy use in indoor grow environments directly from Commissioner Kay Doyle, the Cannabis Control Commission's regulatory lead. She will provide an overview of the rules, an update on their rollout plans, and a projection of their impact on the Massachusetts market.

Introduced by Leora Radetsky, DesignLights Consortium

La Jolla Ballroom-General Session

1:45-3:00 Shaping a policy roadmap for low-carbon indoor agriculture: Siting, standards, incentives, renewables & more

States have a variety of energy and climate objectives, which may not be compatible with the economic and social interests driving indoor cultivation of cannabis and other crops. Some topics for our panel discussion include:

- How should states set requirements for managing energy use and carbon emissions in controlled agricultural environments to ensure a common policy direction?
- How can we assess initial steps taken by jurisdictions in regulated cannabis markets?
- Given the nascent state of our collective understanding of how to optimize efficient cultivation, how should we develop a flexible policy framework that can be developed as our learning evolves?

Moderated by Jen Hensley, Sierra Club
Brian Anderson, Anderson Porter Design
Derek Smith, Resource Innovation Institute
Michael Wheeler, Flow Kana
Molly Graham, Midwest Energy Efficiency Alliance

La Jolla Ballroom- General Session

3:15-4:15 The Dank Dirt: Lessons from early regulated markets

Local jurisdiction determines the “time, place, and manner” of cannabis cultivation operations. Permitting, zoning and other decisions have significant energy and carbon emissions impacts and ramifications on local communities. Join public and private sector leaders as they speak from their experience across a range of issues, from strategies for controlling odors and ensuring air quality to code requirements to tax concepts for offsetting carbon emissions.

Moderated by Lindsay Robinson, California Cannabis Industry Association
Gary Corlett, Southern California Edison
Jesse Peters, Mantis Growth
Kaitlin Urso, Colorado Dept. of Public Health & Environment

La Jolla Ballroom- General Session

4:30-5:15 Concurrent Breakout sessions:

Growers, meet utilities. Utilities, meet growers.

Be part of an open dialogue between utilities and their new customer class, as the panel offers their observations on opportunities for improvement, and their opinions on the future of the utility-grower relationship in the CEA market.

Moderated by Bob Gunn, Seinergy
Andrew Alfred, LivWell Enlightened Health
Fran Boucher, National Grid
Ian Burnside, PG&E (Invited)
Jesse Horton, LOWD
Paul Sellew, Little Leaf Farms

Newport Room

Best practices on cultivating with LED lighting

Join an expert discussion about emerging best practices on cultivating with LED lighting, with guidance on a range of issues. Hear how to adequately measure photosynthetic photon flux density (PPFD), how to achieve good lighting uniformity, and how to optimize energy efficiency and plant growth. Learn from our panel of speakers who contributed to RII's peer-reviewed Best Practices Guide: LED Lighting for Cannabis Cultivation & Controlled Environment Agriculture.

Moderated by Lauren Morlino, Efficiency Vermont
Casey Rivero, Fluence by OSRAM
Mike Zartarian, Zartarian Engineering
Neil Yorio, BIOS Lighting

Irvine Room

HVAC best practices for controlled environment agriculture

Join in an expert discussion about emerging best practices on optimizing energy efficiency and plant growth. Hear guidance on a range of issues, such as determining and achieving the right temperature set points and understanding vapor pressure differential and how to monitor it in your grow environments. Learn from our panel of speakers who contributed to RII's peer-reviewed Best Practices Guide: HVAC for Cannabis Cultivation & Controlled Environment Agriculture.

Moderated by Gretchen Schimelpfenig, Resource Innovation Institute
Keith Coursin, Desert Aire
Michael Leavitt, Root Engineers
Rob Battiston, InSpire Transpiration Solutions

Coronado Room

5:30-8:00 Networking Dinner

Hosted by Resource Innovation Institute and D+R International
La Jolla Courtyard

6:30-7:30 California Cannabis Energy Code Dialogue

Join members of the California Cannabis Industry Association and the Title 24 code proposal writers for the Codes & Standards Enhancement (CASE) Team, for an open conversation about the Title 24 energy code process, timeline and covered measures. Feedback on code proposals will be submitted to the California Energy Commission.

Coronado Room

7:30-12:00 Registration

Grand Foyer Exhibit Hall

7:30-8:30 Breakfast

Sponsored by [Desert Aire](#)

La Jolla Ballroom Salon E

8:30-9:10 Keynote: Our Agricultural Future: A Report on CEA Research - Dr. Mark Lefsrud, Dept. of Bioresource Engineering, McGill University

Dr. Lefsrud has applied his agricultural background to conduct laboratory research on improving the energy efficiency of greenhouses via LED lighting methods and renewable energy sources for heating and carbon dioxide production. He will provide an overview of his holistic approach for energy reduction in controlled environments, selection of species and cultivars for indoor cultivation, and how to determine the nutritional benefit of low-energy approaches.

Introduced by Darrin Drollinger, ASABE

La Jolla Ballroom-General Session

9:20-10:10 Farms of the Future 1: Urban business models, crops, grow environments

Urban agriculture is a broad term used to describe any form of agriculture in dense built environments. From vertical stacking in warehouses to green roofs and walls on and in commercial high-rises, the future of food offers a return to local sourcing and increasingly creative and efficient horticultural approaches. What business models are emerging, which crops are seeing the most success, how are energy and water resources being optimized, what are consumers demanding and where will human ingenuity and technology take us?

Moderated by Chris Higgins, UrbanAg News

Djavid Abraham, Agritecture

Grant Vandenbussche, Fifth Season

Sam Schatz, AeroFarms

La Jolla Ballroom-General Session

10:20-11:10 Farms of the Future 2: The evolution and role of greenhouses

Greenhouses offer opportunities to capture natural sunlight and augment it with supplemental electric light to lengthen growing seasons, offer additional growth cycles, and increase yields. Through dynamic controls, greenhouse operators can optimize environmental conditions across a range of simple and sophisticated structures featuring various materials and technologies. The role of greenhouses in our agriculture future is expanding; could this lead to an increasing use of controls strategies by leaders in the market?

Moderated by Janeen Wright, Greenhouse Grower
Erico Mattos, GLASE
Dave Nichols, App Harvest
Paul Sellew, Little Leaf Farms
Kale Harbick, US Dept. of Agriculture

La Jolla Ballroom-General Session

11:20-12:00 Precision and pace at scale: A technology roadmap for the future of agriculture

From automation to artificial intelligence, how will the technologies of the future improve the delivery, accuracy, and efficiency of systems that consume energy and water, and how are energy and water resources possible to optimize for plant health and growth? How much will the elegant wisdom of the past - with small-scale, locally-owned, regenerative farms that can mitigate carbon - inform our path forward? Gain insights from these leading producers and market influencers.

Moderated by Lauren Morlino, Efficiency Vermont
Chris Higgins, UrbanAg News
Grant Vandebussche, Fifth Season
Matthew Gaboury, Calyx King & House of Cultivar

La Jolla Ballroom-General Session

12:00-12:45 Lunch

Sponsored by ERS

La Jolla Ballroom-Salon E

12:45-1:40 The Hort Report: State of the lighting market

where it's functioning and trending as we light the way toward the future LED lighting and control solutions are setting a course toward a more efficient future, however the market is still new and rapidly evolving. What can we learn from initial product types, market segments and utility programs? What's needed to align purchasing decisions and efficiency outcomes? Our market-based panel will share their thoughts on trends and pinch points seen in product application and development of program requirements.

Moderated by Leora Radetsky, DesignLights Consortium
Corinne Wilder, Fluence by OSRAM
John Wilson, Lighting Design Lab
Lauren Morlino, Efficiency Vermont

La Jolla Ballroom-General Session

1:45-2:30 Keynote: Finding common ground in the search for energy efficiency measures for indoor agriculture - Dr. Nadia Sabeh, Dr. Greenhouse

Dr. Sabeh is a leader in the field of energy efficiency in greenhouse and indoor design and operation. She will summarize her deep expertise in identifying energy-saving measures in cultivation environments to provide top recommendations for optimizing grow facilities in any location and climate. Dr. Sabeh will review energy-restricting actions taken by various local jurisdictions. She will point out where these actions are in conflict with crop productivity and quality, and will offer additional new energy efficiency measures to help find common ground.

Introduced by Thao Chau, California Energy Commission

La Jolla Ballroom-General Session

2:45-3:30 Concurrent Breakout Sessions

Best practices from utility program models

Hear about new and innovative energy efficiency program designs for controlled agricultural environments, how our panel of utility leaders address cost-effectiveness in this new market segment, how they interact with new government regulations, and how they plan to verify savings amidst the variety of cultivation settings and methods.

Moderated by Rosemary Jojic, D+R International
Joe Sullivan, Cultivate Energy Optimization
Doug Oppedal, Evergreen Consulting
Fran Boucher, National Grid
Gary Corlett, Southern California Edison

Coronado Room

Powering the future, renewing agricultural models: Solar, storage & microgrids

How are indoor cultivation facilities reducing their carbon footprints while increasing their energy independence? These market actors will share their perspectives on a range of issues, including how to size a renewable energy commitment to how to obtain carbon-neutral backup power. Hear their case studies on indoor cultivation facilities that are recapturing CO₂ from industrial facility neighbors, and join in the debate about the feasibility of a net zero energy indoor cultivation facility.

Moderated by Jen Amann, ACEEE
Travis Graham, Schneider Electric
Duncan Campbell, Scale Microgrid Solutions

Newport Room

3:45-4:30 The challenge forward: Adapting codes for buildings with plants, not humans

Join these experts in building energy codes for a robust conversation on how reputable codes and standards have been evolving and will continue to change to address the unique buildings containing indoor grow environments, which have yet to be officially recognized by international building code. Panelists will discuss a range of state, national and global energy codes, including the International Energy Conservation Code (IECC), California's Title 24 Requirements and several ASHRAE standards.

Moderated by Jen Amann, ACEEE
Alexi Miller, New Buildings Institute
Kyle Booth, Energy Solutions
Keith Coursin, Desert Aire

La Jolla Ballroom – General Session

4:35-4:45 Conference Wrap Up: Next Steps

John Morris, D+R International/Founding RII Board Member

La Jolla Ballroom-General Session

4:45 Adjourn