

CABEC

California Association of Building Energy Consultants



CONFERENCE
March 17th - 19th





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Member of the Year

Important Reminders



CABEC will give over 30 hours of CEA CEU Credit for all three days of the conference.

CABEC 2022 "**Energy Pivot: Decarbonizing Buildings**" conference certificate of attendance and CEU credits will be emailed to all conference attendees for your convenience and proof of participation.

Recycle your name badge by leaving it at the registration table when you leave.



TEMECULA, CALIFORNIA
CABEC 2022 ENERGY PIVOT
“Decarbonizing Buildings”

Welcome



Linda Pierce

CABEC Executive Director

Welcome CABEC Members, Industry Leaders, Partners and Friends to the CABEC 2022 “Energy Pivot: Decarbonizing Buildings” Conference in beautiful Temecula, CA. We are so glad to have you with us!

As we are all coming away from a very stressful time in the world, I would like to share some of the areas that I am so thankful for. I am so thankful for you, our members and our Energy Industry Community! Even though we have not been together at conference in person for over 3 years, I feel even closer to you. I feel like I understand more of what our members need and what they want. I also believe that we have never been closer to our Utility Partners, the Codes & Standards Team, our Sponsors or the Vendors in the Industry. I

believe this came from our need to shift and reconnect with the industry when

everything else shut down. CABEC Connect was born through this action to make up for our inability to be together, which in turn brought us “together” almost every Monday afternoon. This pivot in our behavior happened when we needed to connect the most and it has grown so that we learn more about new products and technology in our industry, we go over specific projects, we work on mentorship and we socialize more with each other than ever before.

I am grateful to the wonderful group of people that are our CABEC Board of Directors. They all work with me in bringing all of our volunteers together to make up the committees that run the CABEC State Association. Without them, none of us would be here.

Our industry has been very busy over the last couple years and it does not look like it will be slowing down anytime soon. This is why the CABEC Advocacy Committee is consistently busy looking at what is happening with the Energy Code now and what will happen over the next code cycle or two. Because we are so busy, there is a lot of need to help train up the next generation of Energy Consultants. Our CABEC Mentorship Program is here to help direct prospective consultants and get them ready to work on their Certified Energy Analyst (CEA) Certification. Through our Training & Education Committee, we bring education to CABEC Members that will keep them up to speed with the changes of the CA Energy Code and the technology around it. All of these programs are

brought to you to ensure that CABEC Members remain at the cutting edge of our industry.

We have a full agenda during this three-day conference, so please take a few minutes to read through this program and use the WHOVA App to interact with attendees, speakers and vendors. This is the first conference that we will be recording all of the session in our live conference so that you can review them later so that you will not miss any of the sessions that are included in this 30+ CEA CEU Conference. And once you have participated or watch a recorded session, make sure to use the Q&A Section to ask your questions.

Thank you for attending our conference and bringing your expertise to our energy community. Make sure to let these speakers know how much you appreciate their work and their knowledge.

As always, I would like to send out a special thank you to all of the CABEC Conference Planning Committee members, Jason and Susan for all of the endless volunteer hours that it took to get this conference scheduled and put together. An even bigger thank you goes out to Ruby Rose and Rafael Yopez for keeping us all on check and making this the best conference ever!

Throughout this weekend, I ask that you engage, reach out and meet new people, connect with old friends, stay positive, keep us proactive and help us shape the future of CABEC.

Blessings to all of you and have a wonderful conference!

Welcome



Brian Selby

CABEC Board President

Welcome to the 2022 CABEC "Energy Pivot: Decarbonizing Buildings" Conference! I'm really looking forward to seeing everyone in attendance this year. Since this year's conference coincides with the implementation of the 2022 Energy Code, I believe it's only fitting that we focus on decarbonizing buildings, and I'm looking forward to all of the excellent training sessions and conversations over the next three days. There are several more chances to network with fellow energy consultants, as well as our vendors and affiliate members, during the conference. I hope everyone has a great time at the conference, whether you're presenting, learning, showcasing your goods, or simply want to hang out with fellow energy nerds!



Ruby Rose Yopez

CABEC Conference Chair

Welcome, Welcome, WELCOME!

I can't express the gratitude and excitement I have to be with you all, in person, for this Conference. These past two years of navigating a pandemic and everything that came alongside it, tested our resilience. But we are all here, stronger, wiser and better.

It is such an honor to lead an amazing team that has put together an alluring agenda led by industry leaders sharing tools, resources and insight to guide clients and teams in successful compliance with the California Building Energy Standards.

The state is aggressively moving towards carbon neutrality and I am excited to share a space with you all,

promoting the different technologies, modeling practices and design measures that lead the industry to meeting the states Clean Energy goals.

The future of the built environment lies in our hands. As CEA's, trusted energy consultants and industry experts, we must enhance our competencies with building science and Title 24 Part 6 Energy Code, to cohesively influence energy efficient buildings with low carbon footprints.

I hope you all benefit from the provided educational workshops and take full advantage of the opportunity to network and collaborate with each other sharing project stories and experiences.

Stay Safe and enjoy the CABEC 2022 Conference!

P.S.: "Be Energy Smart!"

Keynote Speakers

TEMECULA, CALIFORNIA
CABEC 2022 ENERGY PIVOT
"Decarbonizing Buildings"



Matt Rahn

Mayor, City of Temecula

Dr. Matt Rahn has over twenty years' experience in higher education and university research, and as a wildfire, public health, land use, energy, and policy professional. He received his Bachelor's and Master's degrees from the University of Nevada Reno, his Ph.D. from UC Davis, and his law degree from the University of San Diego. Throughout his career he has tackled some of the most fundamental issues facing our region, including public safety, wildfires, transportation, renewable energy, agriculture, housing, homelessness, mental/behavioral health, community resilience, agriculture, water quality, water management, habitat conservation, and open space. Matt has a unique background that brings a valuable perspective and insight to the City of Temecula.

Matt began working in the City of Temecula in early 2000, ultimately engaging in some of the largest most consequential projects in our region. Over the past twenty years, Matt was able to witness the amazing transformation and growth of the City. He fell in love with the City of Temecula... not just because of the beauty of the region, but the passion, dedication, and pride that our residents have.

In 2005, he began representing San Diego State University in alliance with the City of Temecula, in the long seven-year battle over the Liberty Quarry. He has also worked on projects that have vastly improved our local infrastructure, decreased traffic, increased our regional energy independence, improved our air quality, improved law enforcement and fire protection, increased community resilience, improved our local economy, advanced public health and wellbeing, and enriched our overall quality of life.

Key issues for Councilman Rahn include public safety, economic growth and recovery, local jobs and businesses, transportation/traffic, parks and recreation, and our overall quality of life. He firmly believes that our City's ability to attract, grow, and keep vibrant businesses is essential to

our future. This can be accomplished by ensuring a "business-friendly" environment and a high quality of life that is attractive to both businesses and employees. It is important to continue the City's legacy of a safe and healthy community, by pursuing responsible and thoughtful growth opportunities that continue to make Temecula a premier California City.

As a representative on the Temecula City Council, he works tirelessly to ensure that Temecula preserves and carefully plans its future, providing the guidance that continues to make our City great. In just his first eight years, Matt has led the charge on developing a Senior Master Plan for our City, led a successful investment of over \$100 million in the I-15 corridor, developed higher education facilities and new opportunities to the community, facilitated regional communication and cooperation on energy, air quality, and water issues, and developed community-based programs to improve public safety.

Matt Rahn strongly believes that a good council member must be a great public servant: fair, transparent, and accessible. Matt is always available to discuss any questions, concerns, ideas, or opportunities.

Keynote Speakers



Olivia Walker

Buildings and Energy Technical Strategist, American Cities Climate Challenge

Olivia Walker focuses on tackling equitable building decarbonization in U.S. cities, collaborating with local governments and a network of partner organizations to support cities working to draft, pass, and implement building energy efficiency and decarbonization policies and programs. Her work is concentrated in the American West, specifically the cities of Denver, Honolulu, Portland, San Jose, San Diego, and Seattle on their ambitious work to reduce carbon emissions from the built environment. Walker holds a bachelor of science in geology and geophysics with a focus in energy and environmental geoscience from Yale University. She is based in NRDC's Santa Monica office.



Will Vicent

Building Standards Manager, California Energy Commission

Will is a proud member of the California Energy Commission, where he leads the Building Standards Office. Will is the friendliest and least knowledgeable member of an all-star team who are responsible for maintaining and updating California's nation-leading Energy Code, its companion energy compliance software, and outreach & education programs. He has dedicated his career to reimagining our built environment into one that is more inspired, more ecologically intelligent, and more equitably distributed. In 2011, he founded a small building science consulting firm called Between Built & Natural Environments to help clients identify, evaluate and install cost-effective sustainable building solutions. Throughout his career he has worked collaboratively with nationally recog-

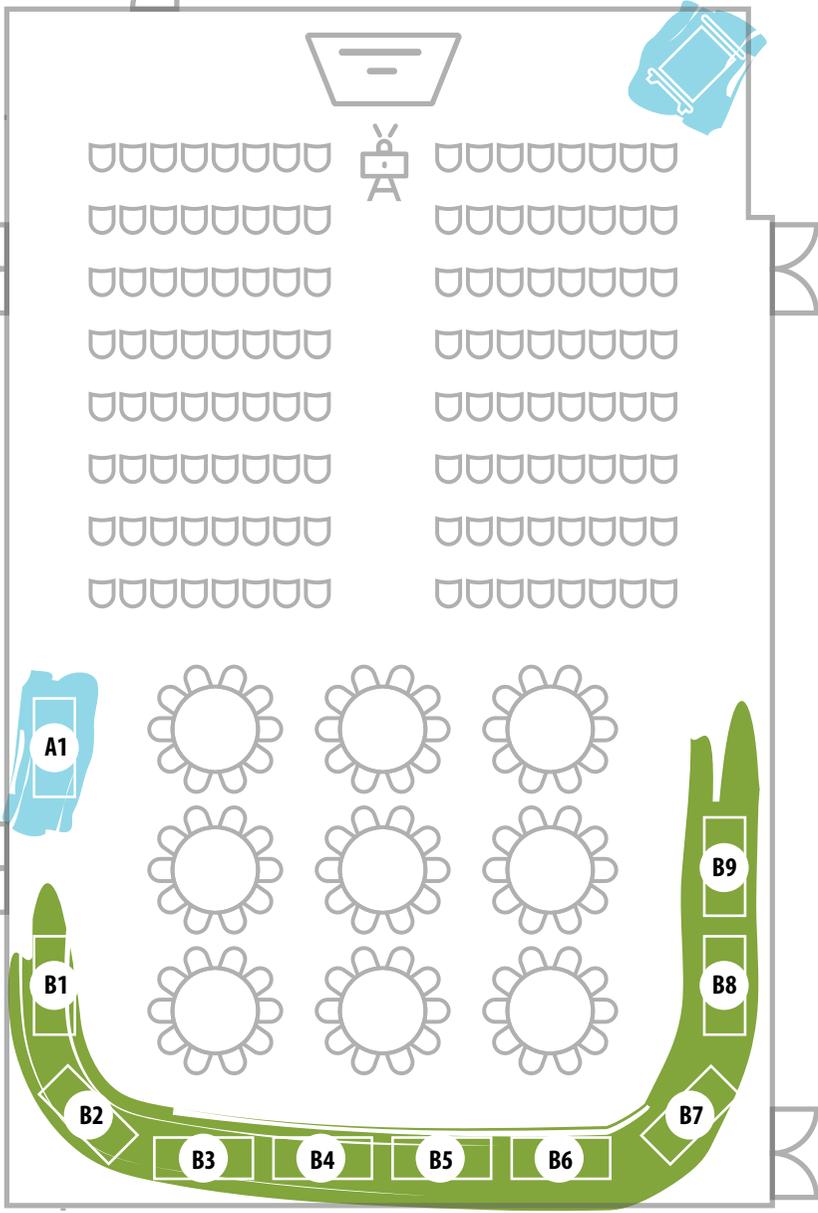
nized design firms, builders, developers, research entities and investor-owned utilities – and has been instrumental in bringing to life verified zero carbon buildings in both the residential and commercial building sectors. Will has accepted invitations to speak on topics in building science at Greenbuild, ASHRAE, AEE, CABEC, IBPSA, the White House and many universities.



Exhibitor Map

CABEC 2022 ENERGY PIVOT
"Decarbonizing Buildings"

- C1** **ROCKWOOL**
- C2** **SUNPOWER**
- C3** **MITSUBISHI ELECTRIC**
Cooling and Heating Solutions
- C4** **OWENS CORNING**
- C5** **CABEC**
- C6** **Conference Registration**
- C7** **FUJITSU**
- C8** **KNAUF INSULATION**
FOR THE WORLD WE LIVE IN
- C9** **JM**
Johns Manville
- C10** **Rheem**
- C11** **BASF**
We create chemistry
- C12** **AutoHot**



- A1** **EnergyCodeAce**
Comply With The
- B1** **ENERGY-SMART HOMES**
- B2** **3C REN**
- B3** **CODED ENERGY**
- B4** **SMALL PLANET SUPPLY**
Building the World of High Performance
- B5** **MAX**
- B6** **CalSolar Inc**
- B7** **QuietCool**
ADVANCED WHOLE HOUSE FANS
- B8** **Pacific Systems Group**
- B9** **CALIFORNIA ENERGY REGISTRY**
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Sponsorship Color Guide

- Main Hall Partner**
- Partners/Sponsors**
- Exhibitors**



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Title 24, Part 6 and Title 20



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**HOME
ENERGY
SAVINGS**



Thursday



March 17, 2022	<i>Energy Code Ace Hall</i>	<i>SAGE 1 & 2 Hall</i>	<i>SAGE 3 & 4 Hall</i>
7:00 AM – 9:00 AM		<i>Breakfast</i>	
9:00 AM – 9:55 AM	Opening Remarks and Keynote <i>Mayor Matt Rahn</i>		 Exam Testing! 8 AM 'till Noon
10:00 AM – 11:00 AM	Energy Consultants Qualifying Builders for 45L tax credit with CHEERS <i>Robert Johnson, Bruce Edgar</i>	Boost Efficiency, Resiliency & Affordability with Spray Foam <i>Chris Rosemond</i>	
11:15 AM – 12:15 PM	Third Party Certifications Panel <i>Sharon Block, Bronwyn Barry, Steve Baden</i>	California Direct Data Capture (CDCC) coming to your project! <i>Joe Medosch</i>	
12:00 PM – 12:55 PM		<i>Lunch</i>	
1:00 PM – 2:00 PM	About the California RESNET Home Energy Rating Program <i>Russ King, Steve Baden</i>	How to Model Single Family All-Electric <i>Nick Brown</i>	
2:15 PM – 3:15 PM	CBECC-Res Under the Hood Version 2.0 <i>Lucas Morton</i>	The Unique Challenges for Builders and Architects with the 2019 Energy Code to Obtain Code Compliance in Solar Photovoltaics. <i>Addison Marks</i>	Setting and meeting Decarbonization Pathways for Individual Buildings & Real Estate <i>Tony Liou</i>
3:30 PM – 5:00 PM	Multifamily Workshop <i>Gina Rodda</i>	NonResidential Programs Panel Programs and Certifications <i>Nic Dunfee, David Cantanese, Van Do, Jeff Glover</i>	
6:30 PM – 7:30 PM	<i>Exhibitor Happy Hour Reception</i>		
7:30 PM – 9:00 PM	<i>Glow Ball Golf Social</i>		

Tracks
Color
Guide

Decarbonization
HERS

Technology
Programs & Certifications

Business Development
Energy Code



Fri-yay

March 18, 2022	<i>Energy Code Ace Hall</i>	<i>SAGE 1 & 2 Hall</i>	<i>SAGE 3 & 4 Hall</i>
7:00 AM – 9:00 AM	<i>Breakfast</i>		
9:00 AM – 9:55 AM	Opening Remarks and Keynote <i>Olivia Walker NRDC</i>		
10:00 AM – 11:00 AM	Fuel Switching at No Cost (or for Profit!) - A Step by Step for how to get this done <i>Tim Kohut</i>	Introduction to Residential HVAC Systems <i>Russ King</i>	Scaling Excellence: Transforming Clients into High Efficiency, Low Emissions Ninjas <i>Bronwyn Barry</i>
11:15 AM – 12:15 PM	Reach Code Panel <i>Alea German, Misti Bruceri, Danuta Drozdowicz, Mayra Vega</i>	What's New for 2022 - Single Family <i>Brian Selby</i>	Cost Contained High Performance in Affordable Housing <i>Glen Follan, Tim Kohut</i>
12:00 PM – 12:55 PM	<i>Lunch</i>		
1:00 PM – 2:00 PM	Electrofit Technicalities: Equipment, Modeling and Cost Effectiveness <i>Alea German, Avani Goyal</i>	Whats New for 2022 - NonResidential <i>Ben Lalor</i>	Setting the Stage for Success: CEA Insights for Successful HERS Rating <i>Glen Folland, Chris Halamandaris</i>
2:15 PM – 3:15 PM	Live Code & Coffee Episode: Modeling a New All-Electric ADU <i>Brian Selby, Chandra Apperson</i>	Transformation of Multifamily and Commercial Hot Water Heating is underway! <i>Evan Green, Lois Gordon</i>	Operational Economics - A Step Beyond Energy Analysis to Win your Clients Over <i>Tim Kohut</i>
3:30 PM – 5:00 PM	Residential Programs Panels <i>Nic Dunfee, Melissa Buckley, Daniel Cornejo & Luca Costa</i>		
6:00 PM – 7:00 PM	<i>Happy Hour</i>		
7:00 PM – 9:00 PM	<i>Banquet</i>		

Tracks
Color
Guide

Decarbonization

HERS

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Programs & Certifications

Business Development

Energy Code

Saturday



March 19, 2022	<i>Energy Code Ace Hall</i>	<i>SAGE 1 & 2 Hall</i>	<i>SAGE 3 & 4 Hall</i>
7:00 AM – 9:00 AM		<i>Breakfast</i>	
9:00 AM – 9:55 AM	Opening Remarks and Keynote <i>Will Vicent, CEC</i>		
10:00 AM – 11:00 AM	What's Left to Improve? Future Moves in Residential Decarbonization. <i>Bronwyn Barry</i>	All-Electric Hydronic and Combined Systems. From Optimal Design to Modeling Compliance. <i>Zach Liske, Jeff Landreth</i>	What Energy Consultants Need to Know about QII <i>Russ King</i>
11:15 AM – 12:15 PM	A Cx Agent's Point of View in a Decarbonizing Industry <i>Wayne Alldrege</i>	Connecting the Dots: Title 24 Report to the Insulation Contractor, & Beyond <i>Dwight Stone</i>	Maximizing Whole House Fan Benefits in 2019 Code <i>Andy Llorca</i>
12:00 PM – 12:55 PM		<i>Boxed Lunch</i>	

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Ductless
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At Small Planet Supply, we believe that constructing beautiful buildings and caring for the environment can be achieved simultaneously. Small Planet Supply stocks tapes, membranes, insulation materials and mechanical systems for your projects. With a warehouse located in Tumwater, Washington and an online store that's always open, we can make sure you have the products you need.

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Member of the Year



Rosemary Howley
2020 CABEC "Member of the Year" Recipient

Rosemary Howley became passionate about energy issues as environmental issues starting in 1979 and decided to see if she could make a career out of it. Fast-forward to 2021, and she celebrated 35 years working for Gabel Energy, currently as the Manager of Gabel Energy's Utilities and Education Division and as a Senior Energy Analyst. Rosemary was fortunate enough to be hired by Mike Gabel in 1986 and to still be working for Gina Rodda in 2021, both CABEC Hall of Fame recipients themselves. Working with Mike Gabel and others, Rosemary was part of the team that developed CABEC's first Certified Energy Analyst (CEA) exams, and she is also part of the team working on the CEA exams for the 2019 Energy Standards.

Rosemary has a long history with CABEC, becoming one of the organization's first members in 1986, and working as the CABEC Newsletter Editor from 1986 to 2002. She has served on the CABEC Board of Directors since 2011 and is currently Board Treasurer. Rosemary is a long-time member of CABEC's CEA committee, and she is dedicated to CABEC's mission to elevate the technical expertise and ethics of building energy consultants through

certification. Rosemary believes that CABEC CEAs are a crucial link between California's Building Energy Efficiency Standards as written and how those important environmental regulations are implemented in buildings throughout the state, helping achieve the energy savings and carbon reduction that are part of the solution to climate change.

Rosemary has a BA in Art History from Stanford University and a Master's degree in Architecture from UCLA specializing in architectural energy efficiency.



Nick Brown
2019 CABEC "Member of the Year" Recipient

Nick joined the industry by accident, after taking a Green Building class at Long Beach State in 2007 and deciding he liked energy modeling.

He benefited from the efforts of so many CABEC members, who taught energy code classes, administered the CEA exams, and helped with difficult modeling issues.

The collaborative spirit of CABEC members and our important shared mission

are what drew Nick into the Association and prompted him to volunteer his time to help the industry succeed.

He has now helped on the Conference Committee for the past 3 conferences and loves hearing exhibitors say "You energy consultants are very important people for us to reach with our products in California."

He was elected to the Board of CABEC in 2018 and sits on the Advocacy Committee, which works to grow the industry and CEAs.

He is flattered and grateful for the CABEC 2019 Member of the Year award and excited to see the future of energy consulting in California and elsewhere!

2021 CABEC "Member of the Year" Recipient



Nic Dunfee



Luke Morton



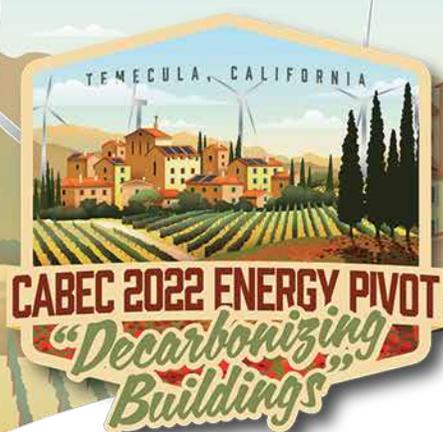
Brian Selby



Bob Storar



Ruby Rose Yopez



Thursday Sessions

Energy Consultants play a key role in CHEERS/ Title 24 Ecosystem

10:00 AM – 11:00 AM

Robert Johnson & Bruce Edgar

This session includes a review of how 45L tax credits can be accessed through the CHEERS registry plus a preview of how the 45L tax credit may be obtained in the future. Using CHEERS 45L Micropas Self Service to qualify MF Projects for the 45L Tax Credit. Live demonstration of how to use Micropas 45L software to qualify MF New Construction Projects for the 45L tax credit.

Boost Efficiency, Resiliency & Affordability with Spray Foam

10:00 AM – 11:00 AM

Chris Rosemond

Learn how to use Spray Foam insulation for unvented attics and structural wall assemblies that save construction costs while creating more efficient, resilient, and comfortable homes.

Third Party Certifications Panel

11:15 AM – 12:15 PM

Sharon Block, Bronwyn Barry & Steve Baden

Third party certifications have an energy requirement that is typically directly tied to CA Title 24 Energy Code Compliance. Industry Experts will speak to Energy Requirements for LEED, Passive House and Energystar. They will also share updates in the

program requirements as well as modeling tips and tricks for meeting program compliance.

California Direct Data Capture (CDDC) coming to your project!

11:15 AM – 12:15 PM

Joe Medosch

The DOE has found that poor H/AC installations result in at least one fault in 70–90% of homes, then add duct leakage, this increases to 90–100%. Studies have demonstrated that two common faults, inadequate refrigerant charge and insufficient evaporator airflow, were present in 50–72% at varying stages in their lifecycle. This session will discuss and demonstrate how to capture these essential measurements.

About the California RESNET Home Energy Rating Program

1:00 PM – 2:00 PM

Russ King & Steve Baden

RESNET is the nationally recognized home energy rating system. Learn what opportunities there are for energy consultants and HERS raters in the brand new California RESNET program.

How to Model Single Family All-Electric

1:00 PM – 2:00 PM

Nick Brown

By now, CABEC members have heard the message from the California Energy Commission: all-electric buildings are the future and we need to

start specifying electric systems on as many of our projects as possible, as soon as possible. But what does all-electric do to the compliance margin of our projects? This session will use several real-world case studies to illustrate the compliance margin boost that we can get using all-electric designs on our projects. We'll also cover how to select electric heat pumps and heat pump water heaters in both CBECC-RES and Energy Pro using case studies of an ADU conversion, a single family addition, a new single family home, and a new multifamily building. Attendees will find that all-electric designs can significantly aid compliance on a wide range of project types.

Making Hot Water the Zero Carbon Way

1:00 PM – 2:00 PM

John Grose

Solar PV or Solar Thermal systems making hot water. How to we apply them to energy storage, domestic hot water, comfort heating? How to best integrate them with heat pump technologies?

CBECC-Res Under the Hood Version 2.0

2:15 PM – 3:15 PM

Lucas Morton

Have you ever felt like software is a black-box? Do you wish that you could use compliance software to model beyond compliance and perform real-world efficiency optimizations for your projects? Luke will open the box and explore some of its nuts and bolts of CBECC- batch runs, debugging, tracking down errors, or otherwise figuring out what the heck

Thursday Sessions



the software is doing with your model (!). Given the time we have, this will only be a brief introduction to inspire the audience to learn more with the goal of reducing your frustration, expanding your modeling toolset, and growing your business.

Setting & meeting Decarbonization Pathways for Individual Buildings & Real Estate

2:15 PM – 3:15 PM

Dana Weiss & Brady Mills

Session will provide a review of decarbonization pathways buildings and whole portfolios including how to modeling and plan to avoid stranded assets and meet net-zero carbon goals.

The Unique Challenges for Builders and Architects with the 2019 Energy Code to Obtain Code Compliance in Solar Photovoltaics.

2:15 PM – 3:15 PM

Addison Marks

“We’re all in this together” This session will review Solar parameter selection guidance, and provide an update on SunPower. Cover Builder messaging to help achieve solar compliance. Review CFI 1 versus CFI 2 – Who Cares?. Coordination with architects and civil engineers to develop “solar friendly” communities and Battery Storage updates

Multifamily Workshop

3:30 PM – 5:00 PM

Gina Rodda

This session will review the new subchapters of the 2022 Title 24 Part

6 Energy Standards created for multi-family occupancies (nontransient R-2, R-3, R-4 including dormitories, senior living facilities, and buildings with 3 or more dwelling units) which includes low-rise and high-rise multi-family buildings. In addition, we will discuss compliance modeling software and compliance documentation changes and options.

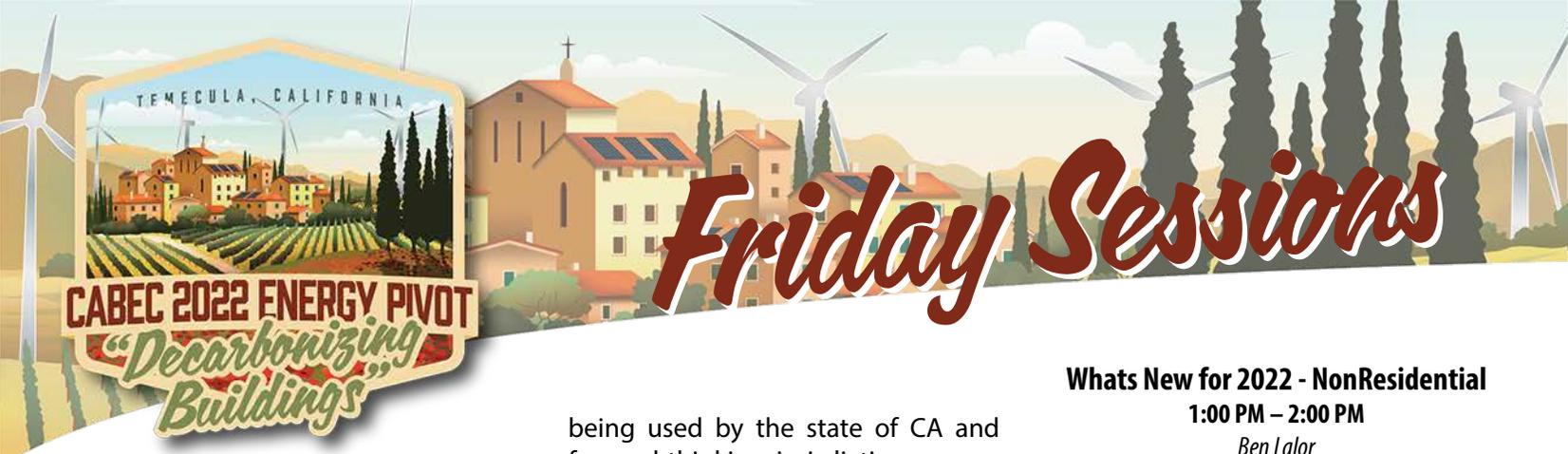
NonResidential Programs Panel Programs and Certifications

3:30 PM – 5:00 PM

Nic Dunfee, David Cantanese, Van Do & Jeff Glover

Improving energy efficiency for commercial new construction projects is a priority but paying for these upgrades requires careful planning and coordination. Join us to learn more about how you can maximize available statewide incentive programs for your commercial new construction clients that can help close funding gaps.

Notes...



Friday Sessions

Fuel Switching at No Cost (or for Profit!) -A Step by Step for how to get this done 10:00 AM – 11:00 AM

Tim Kohut

A step-by-step walk-through to fuel switching using affordable, multi-family housing as the case study.

Introduction to Residential HVAC Systems 10:00 AM – 11:00 AM

Russ King

This class covers the very basic concepts of residential HVAC systems. Based on the book, HVAC 1.0 - Introduction to Residential HVAC Systems. Intended for non-installer/contractor folks.

Scaling Excellence: Transforming Clients into High Efficiency, Low Emissions Ninjas 10:00 AM – 11:00 AM

Bronwyn Barry

How many of your clients exceed their compliance requirements by wide margins and make your job easy? This session will look at why compliance is hard, and how to turn clients into over achievers.

Reach Code Panel 11:15 AM – 12:15 PM

*Alea German, Misti Bruceri, Danuta Drozdowicz,
Mayra Vega & Ruby Rose Yezpe*

This session will discuss the various strategies that are

being used by the state of CA and forward-thinking jurisdictions across the state to drive decarbonization and the considerations of each. The 2019 code cycle saw many reach codes with a strong shift to electrification. Studying these for specific requirements & trends offers insights about likely developments in the incoming cycle.

What's New for 2022 - Single Family 11:15 AM – 12:15 PM

Brian Selby

We will review the updates to the single family requirements of the 2022 Title 24 Part 6 Energy Standards including envelope, mechanical, indoor air quality, electrical, photovoltaics, and battery ready.

Cost Contained High Performance in Affordable Housing 11:15 AM – 12:15 PM

Glen Follan & Tim Kohut

Learn the importance of CEAs in the development of sustainable, healthy, energy-efficient buildings and why high performance, LEED, and net zero buildings make sense for affordable housing projects.

Electrofit Technicalities: Equipment, Modeling and Cost Effectiveness 1:00 PM – 2:00 PM

Alea German & Avani Goyal

This session will discuss the intricacies of existing building electrification retrofit equipment, modeling, and cost effectiveness supporting policies for jurisdictions across California.

Whats New for 2022 - NonResidential 1:00 PM – 2:00 PM

Ben Lalor

We will review the updates to the nonresidential requirements of the 2022 Title 24 Part 6 Energy Standards including envelope, mechanical, electrical, photovoltaics, battery storage and solar ready.

Setting the Stage for Success: CEA Insights for Successful HERS Rating 1:00 PM – 2:00 PM

Glen Folland & Chris Halamandaris

CEAs can help prevent HERS failures before they happen. HERS Raters discuss common failures seen in the field and steps that can be taken to prevent them during design.

Live Code & Coffee Episode: Modeling a New All-Electric ADU 2:15 PM – 3:15 PM

Brian Selby & Chandra Apperson

This live one-hour Code & Coffee episode will focus on modeling a new residential all-electric ADU for compliance with California's 2019 Energy Code using EnergyPro 8 and CBECC-Res.

Transformation of Multifamily and Commercial Hot Water Heating is underway! 2:15 PM – 3:15 PM

Evan Green & Lois Gordon

This session dives into commercial heat pump water heating systems and guides learners through several virtual interactive tours of installations in commercial and multifamily buildings. Participants will examine

Friday Sessions



case studies that illustrate lessons learned for optimizing system functionality and energy efficiency. Different market delivery options will also be highlighted – from custom engineered systems to fully specified built-up systems to new fully-packaged, skid-mounted plug-and-play systems to be released in 2022.

Operational Economics - A Step Beyond Energy Analysis to Win your Clients Over
2:15 PM – 3:15 PM
Tim Kohut

It's not just about energy, it's also about money. What's most important for you? What about your client? This session will focus on the impact operational economics and energy analysis.

Residential Programs Panels
3:30 PM – 5:00 PM
Nic Dunfee, Melissa Buckley, Daniel Cornejo & Luca Costa

It's a Jungle Out There: Mapping out Incentive Opportunities for Residential Projects.

Incentives, Rebates, and Refunds - oh my! Currently, California has several new statewide incentive programs. Join us to learn more about how to map out and model success for your clients by helping them navigate through resources to and secure layering layer incentive opportunities for electrification in residential buildings.

Notes...



Glossary

ACCA - Air Conditioning Contractors of America (usually refers to duct design here)

ACH & ACH50 – Air changes per hour (at a pressure difference of 50 Pa)

ACM - Alternative Calculation Method

AFUE - Annual Fuel Utilization Efficiency (FAU rating)

AHU - Air Handling Unit

ASHRAE - American Society of Heating, Refrigeration, and Air Conditioning Engineers

C&S - Codes and Standards

CALBO - California Association of Building Officials

CalCERTS - HERS provider

CBECC - California Building Energy Code Compliance (state provided compliance software)

CEA - Certified Energy Analyst

CEPE - Certified Energy Plans Examiner

CFM - Cubic Feet per Minute

CHEERS - HERS Provider

CLTC - California Lighting Technology Center

CMU - Concrete Masonry Unit

COP - Coefficient of Performance

CPUC - California Public Utilities Commission

CRRC - Cool Roof Rating Council

CSG - Conservation Services Group

DHW - Domestic Hot Water

E+A - Existing plus Addition

EER - Energy Efficiency Rating

Envelope - The outside of the building: walls, floor, and ceiling including doors and windows.

ESMH - Energy Star for Manufactured Housing program

FAU - Forced Air Unit (heater)

FTC - Federal Tax Credit

HERS - Home Energy Rating System

HVAC&R - Heating, Ventilation, Air Conditioning, and Refrigeration

IAQ - Indoor Air Quality

IECC - International Energy Conservation Code

IEER - Integrated Energy Efficiency Rating

IES - Integrated Environmental Solutions

JA - Joint Appendix

LEED - Leadership in Energy and Environmental Design

LPD - Lighting Power Density

NFRC - National Fenestration Rating council

NSHP - New Solar Homes Program

NSG / NTG - No Solar Gains / No Thermal Gains

O.C. - On Center

Plant - Machinery used within a building, usually the hot water system

PV - Photo Voltaic (solar)

QA - Quality Assurance

R Value - Insulation resistance to heat transfer

RESNET - Federal home ratings and audits

SDG&E - San Diego Gas & Electric

SEER - Seasonal Energy Efficiency Rating

SEMPRA - Utilities holding company, based in San Diego

SHGC - Solar Heat Gain Coefficient (for windows)

SIPS - Structural Insulated Panel (wall type)

TCAC - Tax Credit Allocation Committee

TDV - Time Dependent Valuation of Energy

TRC - an engineering consulting company

U Factor - rate of heat transfer through a window

Acknowledgements



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