

**Comment 1 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Jeli

Last Name: Gavric

Email Address: [jelij@car.org](mailto:jelij@car.org)

Affiliation: CA Association of REALTORS

Subject: REALTOR Comments on Building Decarbonization

Comment:

Please see our attached formal comments letter. Thank you.

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/1-sp22-buildings-ws-WzhVMgd0Ag4Ebght.pdf>

Original File Name: CAR Letter to CARB Re Electrification for 12-13-21 hearing.pdf

Date and Time Comment Was Submitted: 2021-12-13 09:41:23

No Duplicates.

## **Comment 2 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Michael

Last Name: Brady

Email Address: mjbrady@acm.org

Affiliation: none - general public comment

Subject: A personal observation

Comment:

In principle, what you're talking about makes sense. HOWEVER, retrofit is problematic. It's not free - far from it - and available incentives are limited. Forcing it without help is tantamount to ordering buildings demolished or sold, forcing people to move out of state (if not become homeless) because replacement affordable housing is simply not available. Arguably, if applied indiscriminately, some people might want to address it as a taking. Anyway:

As an example, I have a (lower, for my area) middle income, but high enough that practically none of the existing retrofit incentive programs apply. I have a newer (but still 25 years old) tract home. I'm unusual in my neighborhood in that I'm an owner/occupant (original owner); most are rentals. I have a newer a/c-gas heat system that has a 95%+ efficient heater, and a small solar panel installation. But those absorbed a large chunk of my savings; and at my age (70+) and semi-fixed income (pensions and social security) large loans are difficult to arrange. So some real-world considerations:

\* cooking - the gas range still works, and the useless over-range microwave/exhaust fan has been replaced with a real hood (that works); replacing with an induction range would require rewiring the house at large expense, since it would require a new electrical panel and interior wiring opening up walls; the high cost of the new range itself is far exceeded by the required electrical upgrades. Small incentives are available for the range itself; none are available for the other work. The only way replacing the range makes sense is if (when?) a complete kitchen remodel is done - which isn't going to happen any time soon.

\* water heat - the gas heater is probably 1/3 into its useful life, but like the range replacing it with electric would require another new panel (had to be done for the solar work several years ago already) and interior wiring. Similar issue with small incentives for the heater (which is more than double the cost of the gas heater, with the gas heater being the highest-efficiency model available that doesn't require an electric hookup), but none for the building modifications which cost far more.

\* HVAC - this is the one place where electrification may be supportable, when the existing system requires major work or replacement, \_IF\_ a heat pump can operate on the same capacity circuit as the existing central a/c. The heat pump, of course, needs to be capable of cost-effectively handling winter temps in

the low 20s.

\* EV - I have one, purchased used because a new one, incentives or otherwise, were simply far too expensive. Like many people, I can't afford or justify (for my normal usage) spending \$40-50K on a car. I got no incentive for the car, since ALL incentive programs are only for new. Adding a Level 2 charger cost more than \$3K because of local code requirements related to a new 240V circuit. Again, there were few incentives: a small one from SMUD that covered about 1/2 the cost of the EVSE itself at Amazon, and a now-discontinued federal tax credit. But they made only a small difference in the net cost. Frankly, we as a society need to do better to get EVs into the hands of people who can't afford new cars, and to get charging retrofits into older, smaller houses that are typically rentals or owned by middle-class or lower income occupants.

\* Other building upgrades - I'm lucky: the house was built recently enough to have \*some\* insulation and decent windows. But doing the standard approach (force full energy code upgrade when other work is done) is tantamount to requiring demolition - total gut and rebuild. \$500K work on a house worth \$500K doesn't make sense.

\* Solar+storage - this is a great idea, but has been used by SMUD to stop installation of rooftop solar. Rooftop solar in the first place is expensive, but adding a battery more than doubles the cost. Incentives or otherwise, this makes a grid-connected system unjustifiable from a financial standpoint - essentially infinite payback period. Where are the incentive programs for adding storage to existing rooftop solar at an affordable price?

OK, off my soapbox. Just, please, consider the implications on existing building owners when talking about forced retrofits.

Attachment:

Original File Name:

Date and Time Comment Was Submitted: 2021-12-13 10:38:11

No Duplicates.

## **Comment 3 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Michael  
Last Name: Malinowski  
Email Address: [mfm@appliedarts.net](mailto:mfm@appliedarts.net)  
Affiliation: American Institute Architects California

Subject: Support for CARB's Decarbonization Efforts

Comment:

To: Dana Papke Waters  
California Air Resources Board  
December 13th 2021 Workshop on Building Decarbonization  
From: American Institute of Architects California (AIA CA)

The 11,000 architect and design professional members of AIACA design California's new and existing buildings. We agree with the framework CARB outlined for decarbonization progress which includes

Energy Conservation, Electrification, Renewables and Equity and Inclusion

Importance of Embodied Carbon

To move forward, it is important to include in our code framework embodied carbon considerations as they are critical to achieve decarbonization objectives within a time frame consistent with the urgency for climate action that has been well documented.

(<https://www.weforum.org/agenda/2021/08/ipcc-report-on-climate-change/>).

Studies show that even the most highly efficient new buildings can take from 10 to 80 years to recoup in operational savings the embodied carbon emissions associated with their construction

([https://living-future.org/wp-content/uploads/2016/11/The\\_Greenest\\_Building.pdf](https://living-future.org/wp-content/uploads/2016/11/The_Greenest_Building.pdf))

AIA CA in our own discussions about how to get Carbon integrated into the code have tentatively identified a few key considerations summarized as follows:

1. Start with straightforward big buildings. The topic is both vast and complex, and the timeline, budgets and professional bandwidth to consider embodied carbon is more likely to be found when new buildings above some area threshold are being designed. The numerical threshold could be 50,000 sq. ft as one example, open to discussion. Large new buildings of fairly simple occupancy types would likely be the easiest place to get started, and they would have potential of significant impact.

2. Focus on a small number of key materials. This could range from just concrete; or include a few more high carbon intensity and high use materials for which there is a large infrastructure in place in terms of production, analysis, and sales volume.

3. Use simple non-proprietary performance-based metrics. An example of this might be the 20% carbon reduction basis of existing low carbon concrete. The tools to show compliance should be openly available, and accommodate flexibility so that best practices can evolve and the marketplace can function efficiently to match supply with increasing demand.

We support and encourage launching the topic of embodied carbon for inclusion in CalGreen in the upcoming midcycle code update process, and plan to continue working with key stakeholder agencies including for example CBSC, CEC, DSA, HCD and CARB on this topic in the upcoming months. While the challenge of taking this complex and multidimensional topic and putting it into useable and actionable code framework is daunting, we believe CalGreen is a logical place for these kinds of measures, and note that there are precedents that can help guide progress forward in the near term. Action in the next code cycle is imperative.

#### CalGreen Leadership

We also recognize that there is a need to have broader conversations about the potential for reimaging leadership for CalGreen itself. Since it's foundation in 2008 as a groundbreaking and forward-looking new approach to integrating environmental considerations into our building code framework, CalGreen has not been able to keep up with the fast pace of change and urgent timeline for decarbonization and climate action that face us today.

We believe it is time to launch conversations on how the leadership of CalGreen might be adjusted so that it can once again serve as a forward-looking beacon and roadmap for positive change. The innovative CalGreen tier system can become a means of 'predicting the future', if it can be more directly aligned with our aspirations. The fact that 50+ California jurisdictions that have not found the current framework helpful for them to meet their reach code needs is stark evidence that CalGreen is not serving us as well as it should.

#### Support for Retrofit and Repurpose Existing Buildings for Housing and other pressing needs

Finally, AIA CA believes there is a need for greater support in our California building code for retrofit and repurpose of our vast existing building stock. In particular we see a tremendous unrealized potential in urban areas for repurposed obsolete commercial infrastructure as new innovative urban housing; this was recently well documented by two studies from the Terner Center for Housing Innovation.

<https://ternercenter.berkeley.edu/blog/two-new-papers-explore-the-potential-of-commercial-to-residential-conversions/>

Retrofit and repurpose of existing buildings can be win win win: addressing California urgent need for more housing, while at the same time addressing climate action, urban revitalization, equity and inclusion, and embodied carbon reduction. Design professionals are hampered in pursuing these opportunities by the large gap between the California Existing Building Code and the innovations that already exist in the International Existing Building Code. We encourage the support of CARB and other state agency stakeholders as we move forward with the AIA CA petition launched in the last code cycle to amend the CEBC to mirror the full compliance path framework of the IEBC.

Respectfully Submitted  
Michael F. Malinowski FAIA  
Code and Regulatory Consultant      AIA California  
mfm@appliedarts.net

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/4-sp22-buildings-ws-VDVdMgNjVGQFYIQL.pdf>

Original File Name: AIACA CARB Hearing Comments 2021 12 13.pdf

Date and Time Comment Was Submitted: 2021-12-13 11:29:54

No Duplicates.

## **Comment 4 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Robin

Last Name: Bolser

Email Address: [robinbolser@msn.com](mailto:robinbolser@msn.com)

Affiliation: business owner

Subject: Desire for "One Stop Shopping" guide for resources

Comment:

As a middle class commercial building owner (one very old one) and owner of a residential rental property, I have limited capacity to invest in energy upgrades for my buildings but a very great motivation to do so. I would love a comprehensive guide that maximizes the strategies and current resources (rebates, equipment recommendations, etc). We hear about legislation on the federal level "for green infrastructure" but I am left wondering where to look on the ground level for such projects...

Attachment:

Original File Name:

Date and Time Comment Was Submitted: 2021-12-13 11:50:39

No Duplicates.

**Comment 5 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

This comment was posted then deleted because it was unrelated to the Workshop item or it was a duplicate.

**Comment 6 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Robin

Last Name: Bolser

Email Address: [robinbolser@msn.com](mailto:robinbolser@msn.com)

Affiliation: Great Basin Bakery

Subject: How to fast track training of new contractors for building electrification?

Comment:

I am in mid-career and would be interested in learning the trade of building electrification and other green building practices. However, I do not have four years to gain the necessary experience to become a licensed contractor. Are there any training programs, existing or coming down the pipeline, for fast-tracking of workforce development given an overall labor shortage in this country?

Attachment:

Original File Name:

Date and Time Comment Was Submitted: 2021-12-13 13:52:12

No Duplicates.

**Comment 7 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Michael

Last Name: Parr

Email Address: cmacintosh@ajw-inc.com

Affiliation: ULCSA

Subject: ULCSA Comments on Scoping Plan Update - Building Decarbonization Workshop

Comment:

Please see attached for our comments.

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/8-sp22-buildings-ws-WmhTZ1RlVTcANgcw.pdf>

Original File Name: 220107 ULCSA SP Building Decarbonization Comments Final.pdf

Date and Time Comment Was Submitted: 2022-01-07 12:08:23

No Duplicates.

**Comment 8 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Ben

Last Name: Granholm

Email Address: [ben@westernpga.org](mailto:ben@westernpga.org)

Affiliation: Western Propane Gas Association

Subject: WPGA Comments RE 12/13 Scoping Plan Workshop

Comment:

See Attached.

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/9-sp22-buildings-ws-AXZUII0UmBQCVQ3.pdf>

Original File Name: WPGA Comments RE 2022 Scoping Plan Building Decarbonization Workshop.pdf

Date and Time Comment Was Submitted: 2022-01-07 12:14:32

No Duplicates.

**Comment 9 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Fariya

Last Name: Ali

Email Address: fariya.ali@pge.com

Affiliation: Pacific Gas & Electric

Subject: PG&E Comments on Dec. 2021 Building Decarb SPU Workshop

Comment:

See attached.

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/10-sp22-buildings-ws-AnJXNIQwUFwEYQJt.pdf>

Original File Name: PGE Comments\_Dec 2021 SPU Building Decarb Workshop\_01-07-22.pdf

Date and Time Comment Was Submitted: 2022-01-07 16:37:12

No Duplicates.

**Comment 10 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Luis

Last Name: Amezcua

Email Address: luis@buildingdecarb.org

Affiliation:

Subject: Comments on CARB's 2022 Scoping Plan Update

Comment:

Hello,

Please find enclosed here a comment letter on behalf of RMI, SC, APEN, NRDC, and AEA with respect to CARB's 2022 Scoping Plan Update, specifically on the buildings section.

Should you have any questions, please do not hesitate to contact me via luis@buildingdecarb.org.

Thank you for the opportunity to comment.

Luis

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/11-sp22-buildings-ws-U2NTZF0DUDNQYQIW.pdf>

Original File Name: 01\_07\_2022 Final Scoping Plan NGO comment letter.pdf

Date and Time Comment Was Submitted: 2022-01-07 16:36:37

No Duplicates.

**Comment 11 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Muriel

Last Name: Strand

Email Address: ecoengr@comcast.net

Affiliation:

Subject: comments on building decarbonization

Comment:

please see attached.

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/13-sp22-buildings-ws-VTYBaAZqBDpWNQhm.pdf>

Original File Name: comments 2022 scoping bldg decarb.pdf

Date and Time Comment Was Submitted: 2022-01-12 10:52:55

No Duplicates.

**Comment 12 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Mark

Last Name: Lessans

Email Address: mark.lessans@jci.com

Affiliation: Johnson Controls

Subject: JCI Comments, 2022 Scoping Plan Update, 12/13/2021 Building Decarbonization Workshop

Comment:

Please see attached.

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/17-sp22-buildings-ws-UjhXMI6Ag4EYQZp.pdf>

Original File Name: JCI Comments CARB Scoping Plan Building Decarbonization Workshop 20220121.pdf

Date and Time Comment Was Submitted: 2022-01-21 07:39:28

No Duplicates.

**Comment 13 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Amy

Last Name: Dao

Email Address: [adao@baaqmd.gov](mailto:adao@baaqmd.gov)

Affiliation:

Subject: BAAQMD Comments re: Building Decarbonization Scoping Plan Update

Comment:

Please see the attached.

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/18-sp22-buildings-ws-BmRXMARKAyFSOQJm.pdf>

Original File Name: BAAQMD Comment Letter 2022 CARB Scoping Plan Update Building Decarbonization Workshop\_(4).pdf

Date and Time Comment Was Submitted: 2022-01-21 13:20:15

No Duplicates.

**Comment 14 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

This comment was posted then deleted because it was unrelated to the Workshop item or it was a duplicate.

**Comment 15 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

This comment was posted then deleted because it was unrelated to the Workshop item or it was a duplicate.

**Comment 16 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Tom

Last Name: Phillips

Email Address: [tjp835@gmail.com](mailto:tjp835@gmail.com)

Affiliation: Healthy Building Research

Subject: Nonenergy Benefits, Health, and Equity

Comment:

Attachment (slides) submitted separately

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/27-sp22-buildings-ws-BnUFYFA+UnEEa1A+.docx>

Original File Name: Scoping Plan Buildings 12-13 workshop 1-21-22 Healthy Building Research comments.docx

Date and Time Comment Was Submitted: 2022-01-22 00:02:33

No Duplicates.

**Comment 17 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Ignacio

Last Name: Fernandez

Email Address: ignacio.m.fernandez@sce.com

Affiliation: Southern California Edison

Subject: SCE comments on AB 32 2022 Scoping Plan Update Building Decarbonization Workshop

Comment:

Dear Sir/Madam,

Please find attached Southern California Edison's comments on AB 32 2022 Scoping Plan Update Building Decarbonization Workshop that took place on December 13, 2021.

Best regards

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/28-sp22-buildings-ws-UiFRNFw4VFhSJ1cn.pdf>

Original File Name: SCE SPU 20211213 Building Decarb. comments (1).pdf

Date and Time Comment Was Submitted: 2022-01-24 11:24:22

No Duplicates.

**Comment 18 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

This comment was posted then deleted because it was unrelated to the Workshop item or it was a duplicate.

**Comment 19 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Colin

Last Name: Miller

Email Address: colin@ej.solutions

Affiliation:

Subject: Comments

Comment:

See attached.

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/30-sp22-buildings-ws-AGQAdFIwADwAawdq.zip>

Original File Name: drcomments.pdf.zip

Date and Time Comment Was Submitted: 2022-01-24 13:50:05

No Duplicates.

**Comment 20 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Evelyn

Last Name: Loya

Email Address: eloya@socalgas.com

Affiliation: SoCalGas Company

Subject: SoCalGas Comments on 2022 Scoping Plan Update - Building Decarbonization Workshop

Comment:

To Whom It May Concern:

Attached please find SoCalGas' comments on the 2022 Scoping Plan Update - Building Decarbonization Workshop. In advance, we thank you for your time and consideration.

Kindly,

Evelyn Loya

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/31-sp22-buildings-ws-VyRcNVU3VWcBa1M0.pdf>

Original File Name: SoCalGas Comments on Scoping Plan Building Decarbonization.pdf

Date and Time Comment Was Submitted: 2022-01-24 14:58:04

No Duplicates.

**Comment 21 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Helen

Last Name: Walter-Terrinoni

Email Address: hwalter-terrinoni@ahrinet.org

Affiliation: AHRI

Subject: AHRI 2022 Scoping plan Comment

Comment:

See attached.

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/32-sp22-buildings-ws-WzoGaFAjVG4KU1Mw.pdf>

Original File Name: AHRI Comments CARB 2022 Scoping Plan 1 21 22.pdf

Date and Time Comment Was Submitted: 2022-01-24 14:58:04

No Duplicates.

**Comment 22 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Robert  
Last Name: Spiegel  
Email Address: [rspiegel@cmta.net](mailto:rspiegel@cmta.net)  
Affiliation: CA Manufacturers and Technology Assoc.

Subject: CA Business - Industry Coalition Comments: Building Decarbonization  
Comment:

See attached.

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/33-sp22-buildings-ws-WjkBZlEPUGECCVMg.pdf>

Original File Name: CA Business-Industry Coalition - Building Decarbonization Comments (1.21.22).pdf

Date and Time Comment Was Submitted: 2022-01-25 09:19:19

No Duplicates.

**Comment 23 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Joshua  
Last Name: Greene  
Email Address: jcgreen@aosmith.com  
Affiliation: A.O. Smith Corporation

Subject: Smith Comments to Scoping Plan Workshop on Building Decarbonization  
Comment:

See attached.

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/34-sp22-buildings-ws-BjYCNVV6BGUBNgYo.pdf>

Original File Name: 01.21.2022 AOS Comments to CARB Workshop on Building Decarb FINAL.pdf

Date and Time Comment Was Submitted: 2022-01-25 09:19:19

No Duplicates.

**Comment 24 for 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) - 1st Workshop.**

First Name: Tom

Last Name: Phillips

Email Address: [tjp835@gmail.com](mailto:tjp835@gmail.com)

Affiliation: Healthy Building Research

Subject: Nonenergy Benefits, Health, and Equity

Comment:

Second document for comment. See attached.

Attachment: <https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/35-sp22-buildings-ws-AnICbANrWGdVPwBp.zip>

Original File Name: Phillips & Higbee LHHC 2022 1-13-22 reduced size.pdf.zip

Date and Time Comment Was Submitted: 2022-01-26 08:10:03

No Duplicates.

**There are no comments posted to 2022 Scoping Plan Update - Building Decarbonization Workshop (sp22-buildings-ws) that were presented during the Workshop at this time.**