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*Comment Received From: Dan Suyeyasu
Submitted On: 1/10/2025
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**Request for Extension & Comments of CodeCycle-org on
Compliance Assessment**

Additional submitted attachment is included below.

January 10, 2025

Dear Commissioner McAllister,

The California Energy Commission (CEC) held a workshop on December 18, 2024 to describe the State's initiatives to improve compliance with Title 24, Part 6. At the workshop, the CEC also provided an initial assessment of how much Title 24 noncompliance is costing Californians each year. CodeCycle.org is a nonprofit software firm focused on making building efficiency standards easier to enforce for building departments and easier to comply with for the construction industry. We submit these initial comments in the hope that they might steer the CEC towards a more robust actions and decision-making structures to address California's energy code implementation challenges.

Request for CEC to Docket Relevant Documents and to Extend Comment Period

The notice establishing the December 18 workshop stated that a "detailed agenda" would be posted before the meeting. But the "detailed agenda" was never posted. The notice for the December 18 meeting also stated that "Documents and presentations for this meeting will be available at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-BSTD-05>", but no documents or presentations from the workshop have been posted.

Immediate Request: CodeCycle.org requests that the workshop agenda, presentation, and recording be posted to the docket, and after the posting, that the CEC extend the comment period for four more weeks to allow for more properly considered public comment.

Initial Comments of CodeCycle.org

CodeCycle.org would like to make the following comments at this time, while planning to submit additional comments after the meeting materials are docketed by the CEC:

Clarifying and Correcting the "CA Cost of Noncompliance" Analysis

In March of 2022, CodeCycle.org asked Chair Hochschild if the CEC could show its analysis as to why the CEC thought that reports of Title 24 compliance problems were in some manner overexaggerated. Leading up to that request, CodeCycle.org had asked CEC staff why the CEC was not taking Title 24 compliance challenges more seriously. CEC staff explained to me that PG&E had presented studies to Commissioner McAllister showing that many of the perceived compliance problems with Title 24 were actually comparatively small. Staff explained that Commissioner McAllister believed the research that PG&E had presented. That research

apparently showed a good state of Title 24 Part 6 compliance within wide swaths of the construction market.

It was CodeCycle.org's perspective that the research being cited by PG&E was likely erroneous in critical ways, but this was impossible to properly review because the CEC was not making public its analysis on the state of Title 24 code compliance.

Inaction Generally does not Require a Public Review:

The dynamic described above highlights a broader problem that could be costing Californians billions of dollars per year: if an agency wants to take action, the agency has to publicly present and defend the rationale for the action. But if an agency has decided upon a path of inaction, even when action would be better for the public, the agency need not show its work.

As the Lead Commissioner seemed reluctant to share the analysis that he was using to deprioritize compliance efforts, I made a request to the Chair to have the CEC make a public assessment of what Title 24 noncompliance was costing Californians. With a public assessment, there could be proper vetting. The Chair thought this was a reasonable request that could help resolve significant differences of opinion on what level of focus was needed at the CEC to improve Title 24 outcomes.

The Chair made the commitment in March of 2022, but progress on the evaluation over the last 3 years has been quite slow. At nearly every turn, the CEC has argued that the imperative to adopt and deploy new code measures is more important.

At a December 2022 business meeting, the Chair noted the different perspectives he was hearing on the scale of California's Title 24 compliance challenges, and the Chair asked Commissioner McAllister about progress being made with the requested noncompliance analysis. Commissioner McAllister responded:

"I would say to the extent there are problems, there are definitely problems in existing buildings and sort of retrofits of largely HVAC, that gets all the attention, I think that's justified . . . **so that retrofit market is a place where these upgrades over digitization, giving more rigor to the compliance process while making it more streamlined and less costly is going to help solve that . . . On the new construction I would actually say that compliance is pretty darn good and certainly in the nonresidential it's very good.** I don't think we have a whole lot of evidence that the new construction code, certainly in developments that the major builders are doing, like production builds. **I think we're quite confident that compliance is high . . .**

It's really about making sure we have good data. . . . We've asked the registries to give us the data . . . But the tools that we'll be building will just keep the Energy Commission with a window at all times to how the marketplace is evolving, and just have a constant, always up to date database of the actual equipment going into actual buildings getting actual permits."
Commissioner McAllister, December 2022 CEC Business Meeting

In summary: Commissioner McAllister stated that he is confident that compliance is quite good for new construction and therefore, if new digital systems are needed, they are probably only

needed for the “retrofit market.” Commissioner McAllister may have also been arguing that the requested Cost of Noncompliance analysis was not needed because he was so “confident” in the excellent state of compliance for new construction. That perspective likely has much to do with the slow pace of the analysis.

The analysis of the Cost of Noncompliance presented at the December 18 workshop estimated the annual losses to Californians at \$624 million/yr for new construction alone (\$73m + \$85m + \$466m). As will be discussed further below, that estimate only looks at the Cost of Noncompliance for new measures adopted in the 2022 Standards, ignoring noncompliance with measures still in effect from the Title 24 2019, 2016, 2013, etc. This focus on a subset of the whole Standards ties to the data that is used as the starting point of the spreadsheet shared on December 18. The first column of that spreadsheet sets forth the projected first-year energy savings for Title 24 2022 as compared to Title 24 2019.

Many measures from those earlier Standards are still “on the books” and are still creating compliance issues in new construction. If we do a basic extrapolation just based on the additional page count in 2022, the fresh Title 24 2022 requirements represent roughly 1/3 of the overall requirements. If the other 2/3 of the Standards showed equal loss rates due to noncompliance, that would be an overall loss rate of $3 * \$624 \text{ million/yr}$, or \$1.9 billion/yr for new construction alone.

Core Recommendation: In the next version of the analysis, the CEC should assess the Cost of Noncompliance with the whole of the Standards that are in effect, not just the most recently adopted subset of the code.

Using the same extrapolation method for the whole of the Standards – including new construction, alterations, and process loads – results in an estimated annual cost to Californians of $3 * \$2.85 \text{ billion/yr} = \8.5 billion/yr . (There are likely more sophisticated ways to extrapolate from the additional measures added in 2022 to the whole of the regulatory requirements.)

Suggested Modifications to the Initial Cost of Noncompliance Analysis:


CodeCycle.org appreciates that the CEC has shared a publicly reviewable spreadsheet outlining the CEC’s initial analysis of the Cost of Noncompliance to Californians. We understand that the results are preliminary and will evolve as the CEC receives further input.

While we were able to trace the thinking presented by the CEC on December 18th because CodeCycle.org had participated in many prior conversations on the topic, we found some of the presented data to be a bit confusing. I have had at least one conversation since the workshop suggesting that I was not alone in being confused by the labeling used by the CEC on the analysis table.

The following comments do not cover the ways in which CodeCycle thinks the underlying analysis could be more accurate. The comments focus on ways in which the current table could be more precise in describing the CEC’s present methodology.

Given the long-running confusion on this topic, and the adverse public impacts that have been driven by technical confusion, using more detailed descriptions seems well worth the space required to insert larger labels.

Suggested Clarifications to CEC's "CA Cost of Noncompliance" Analysis



~~Uncertain~~ – **CA Cost of Noncompliance**

Building Sector	Site Energy Savings [GWh] ¹	Site Gas Savings [MTherms] ¹	Economic Benefits to CA [LSC\$] ²	Staff Estimated Compliance Rates [%]	Estimated Annual Cost of Noncompliance [LSC\$] ³	Estimated 30-Year Cost of Noncompliance [LSC\$] ⁴	
Newly Constructed	Single-Family	-48.54	5.27	\$970M	80-90%	\$2M	\$73M
	Multifamily	116.77	3.81	\$1,135M	80-90%	\$3M	\$85M
	Nonresidential	511.04	2.21	\$2,332M	40-80%	\$16M	\$466M
Alterations	Single-Family	91.22	0.81	\$611M	10-30%	\$8M	\$244M
	Multifamily	126.94	0.24	\$891M	10-30%	\$12M	\$357M
	Nonresidential	398.35	0.23	\$1,955M	10-30%	\$26M	\$782M
Covered Processes	369.36	1.82	\$4,218M	40-80%	\$28M	\$844M	
Totals	1,565.14	14.39	\$12,112M		\$95M	\$2,851M	

***Noncompliance estimates assumes 50% of savings are not realized due to either poor installation or inadequate documentation or processes.**

General: It would be helpful to add a contextual note at the top of the table that states: **“All Values Relate to 1 Year of Construction Across the Whole of California”**.

- 1) Savings generally have a baseline and actions related to the baseline. The “Site Energy Savings” and “Site Gas Savings” are the savings that come from moving to Title 24 2022 from a baseline of Title 24 2019. The label for electric savings might be clarified to say: **“First-year Electricity Savings for Title 24 2022 Compared to Title 24 2019 [GWh]”**. A similar header should be used for gas savings.
- 2) This column appears to be a 30-year lifecycle analysis. As the CEC is now using the Long-term System Cost (LSC) metric for some 1-year analyses, the duration of the metric used in this column should be clarified. Perhaps: **“Net Present Value of T24-2022 with a Measure Lifecycle of 30-Years [LSC\$]”**
- 3) This column assesses a 1-yr lifecycle for efficiency measures, but it is not the actual “Annual Cost” to Californians since measures last much longer than 1 year. The “[LSC]” definition of units is also misleading, as LSC is a 30-year metric. A more precise heading might be: **“Cost of Noncompliance with T24-2022 if per-Building Impacts Lasted only 1 Year [1/30 of LSC\$]”**

- 4) The 30-Year column header can be read as estimating the cost over 30 years of construction. A more precise header might be: **“Cost of Noncompliance with T24-2022 with per-Building Impacts Lasting 30 Years [LSC\$]”**
- 5) The math is a bit hard to track moving to the Cost of Noncompliance columns. The CEC seems to have used the average of the high and low noncompliance estimates, which should be made transparent. It would be useful to add a column that is **“Average Estimated Noncompliance Rate [%]”**, calculated as $[=1 - AVERAGE(highEstimate, lowEstimate)]$.
- 6) The CEC is reducing the estimate of Cost of Noncompliance by an additional 50%, which seems tied to the explanatory note at the bottom. A column should be added with 50% in each cell and titled **“Reduction in Cost of Noncompliance because some Estimated Noncompliance is Procedural and Not Tied to Energy Impacts [%]”**, assuming that is what the 50% reduction represents. It might also be helpful if the CEC posted to the docket the underlying Excel file, so that interested parties can more readily trace the math.
- 7) The initial explanation of the embedded 50% reduction is challenging to understand. Can it be clarified? If the proposed header listed in item 6) is correct and clear, that language might be used in a modified way to clarify the explanatory note at the bottom. Or perhaps the note can be removed if the 50% column header is sufficiently clear.
- 8) As explained above, the first column of the calculation only relates to energy savings for Title 24 2022 as compared to Title 24 2019. As a consequence, the table only estimates the Cost of Noncompliance for new measures added in Title 24 2022. The bulk of noncompliance ties to measures adopted in 2019, 2016, 2013, and before. The title should read **“Cost of Noncompliance with Title 24 2022 Additional Measures”**, or something to that effect.
- 9) The word “Uncertain” should be removed. To the extent that there are reasonable upper and lower bounds for the inputs, bounds should be provided as is done for the compliance estimates. While CodeCycle.org would certainly acknowledge some uncertainty in the assessment of noncompliance impacts, there seems to be a systematic effort to create a fog around Title 24 compliance problems. That needs to stop. For instance, the CEC previously argued in conversations with CEA and CodeCycle.org that the only reasonable period of analysis for noncompliance impacts was a 1-year lifecycle. The CEC rationalized this radical departure from state and federal evaluation protocols by stating that there was uncertainty with the discount rate that would be needed for a 30-year estimate, and therefore a 1-year lifecycle was the only reasonable approach. But the discount rate the CEC was characterizing as uncertain was the same discount rate that the CEC developed for evaluating the long-term benefits of building efficiency measures. The CEC used *the exact same discount rates* without any hesitation in its 30-year cost-effectiveness analyses to justify the expansion of Title 24.

A column was added to the Cost of Noncompliance table that sets forth the “Economic Benefits to CA [LSC\$]” (with red annotation note “2”). That column is not a part of the calculation of the

Cost of Noncompliance, but it seems to be included for contextualization. This raises a few questions:

1. Should the estimate of “Economic Benefits to CA” be adjusted based on the estimated rate of noncompliance, since the estimated benefits in that column seem to assume 100% compliance? The values in the noted column should be reduced by the values shown in the final column. (The California Energy Alliance made a similar recommendation during the Title 24 2025 code adoption process.)
2. If the CEC believes it is reasonable to use both a 1-year lifecycle and 30-year lifecycle for the Cost of Noncompliance estimate, why is the CEC only using a 30-year lifecycle for estimating the benefits of new code measures? Shouldn't the CEC also be using a 1-year lifecycle analysis on new code measures, to represent that alternate perspective that is equally valid? (CodeCycle thinks a full lifecycle analysis is the only appropriate methodology for either new measure analysis or noncompliance analysis. It is critical that the CEC begin to put code development and compliance improvement on an equal footing, and the retention of the 1-year lifecycle analysis for noncompliance suggests that the CEC still has a long way to go.)

Conclusion:

Thank you for taking the time to consider these comments. We hope to submit further input once the CEC's December 18, 2024 workshop presentation is posted to the docket. As this workshop was an extension of the workshop held in March of 2022, we hope that the CEC can bring insights from the 2022 workshop to the fore as the CEC considers the best steps for California in making the Title 24 Building Energy Standards more effective.

Sincerely,



Dan Suyeyasu
Executive Director, CodeCycle.org