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| <b>Docket Number:</b>   | 19-BSTD-03   |
| <b>Project Title:</b>   | 2022 Energy Code Pre-Rulemaking  |
| <b>TN #:</b>            | 230916   |
| <b>Document Title:</b>  | Neil Bulger Comments - Comments on 2022 Energy Code Compliance Metrics - Red Car Analytics |
| <b>Description:</b>     | N/A  |
| <b>Filer:</b>           | System   |
| <b>Organization:</b>    | Neil Bulger  |
| <b>Submitter Role:</b>  | Public   |
| <b>Submission Date:</b> | 11/30/2019 1:29:42 PM  |
| <b>Docketed Date:</b>   | 12/2/2019  |

*Comment Received From: Neil Bulger*  
*Submitted On: 11/30/2019*  
*Docket Number: 19-BSTD-03*

**Comments on 2022 Energy Code Compliance Metrics - Red Car Analytics**

attached is our formal comments for docket 19-BSTD-03.

*Additional submitted attachment is included below.*



# Comments on 2022 Energy Code Compliance Metrics

To: California Energy Commission, docket@energy.ca.gov  
From: Neil Bulger, PE, Red Car Analytics  
Docket Number #19-BSTD-03  
Date: 11/30/2019

Subject: Red Car Analytics - Comments on 2022 Energy Code Compliance Metrics

Red Car Analytics appreciates the opportunity to comment on the California Energy Commission (CEC)'s Building Energy Standards Life Cycle Costing, Metrics, and Weather Files. As practicing energy efficiency consultants who focus on decarbonizing buildings, we understand the importance of these decisions for creating a foundation for policy enhancements and overall improvement in buildings.

From the workshop on October 17<sup>th</sup> we have concerns that many items were only presented as technical options with very little expressed regarding the intended direction and outcome for the 2022 standards, particularly for non-residential buildings. We recommend considering the following four items in the development and selection of metrics and a process as it relates to non-residential buildings:

1. Apply a two-step energy design rating approach to assess energy and grid impacts across residential and non-residential buildings.
2. Adopting a fuel dependent baseline for non-residential buildings for 2022.
3. Adopt the 'Policy Compliant' gas forecast scenario for 2022 metric development.
4. Biogas growth estimates should be updated to be more realistic.

## **Item 1: Apply a two-step energy design rating approach to assess energy and grid impacts across residential and non-residential buildings.**

The current proposed two-step energy design rating approach (TDV and source energy) was not fully stated to be the intended solution in non-residential buildings for Title 24 2022. It is our recommendation that the two metric approach be utilized for non-residential buildings as well as residential buildings in 2022, with buildings being required to achieve a TDV metric and Source energy metric. Where additional technologies are required beyond energy efficiency, such as on-site energy generation or storage, it is recommended these be evaluated by the source energy metric and require a building without any form of energy generation or storage first meet a measure of energy efficiency with TDV.

## **Item 2: Adopting a fuel dependent baseline for non-residential buildings for 2022.**

The CEC should establish a fuel dependent definition for non-residential (commercial) buildings to serve as the point of comparison for energy efficiency and cost. The lack of this change would hold back the construction industry and may lead to the following three items at a minimum:

First, statewide enhancements to codes and standards require cost effectiveness be included and a fuel independent baseline will create a lower priority effort for all-electric solutions due to the first cost comparison to a gas heating baseline. While an efficiency metric such as TDV could be enhanced

to compensate for differences in operational costs and how buildings are evaluated for compliance, the result of a fuel independent baseline today will continue to prevent codes and standards enhancement research efforts to focus on solutions able to be compared with the first costs of a natural gas heating system, which is currently lower as market supply switch to electric technologies and wider adoption.

Second, in areas of the state where all-electric criteria are required or incentivized locally, energy codes will become increasingly less relevant which can create market confusion and many ultimately require more effort by the CEC to make code interpretations and translations of how to best comply when constructing an all-electric building. The current method of using a fuel independent definition in which all buildings are assumed to be constructed with natural gas distorts the connections of statewide building codes and active construction best practices. The short term complexity and effort of creating this dual fuel baseline today will become a much larger problem tomorrow if not addressed now.

Third, energy codes should eventually have a single fuel baseline which is all-electric to truly decarbonize buildings by 2025 or 2028. Any step towards defining this for 2022 for commercial buildings will only make this later change easier as the hurdles of creating the first set of definitions will have gone through one cycle of code enhancements.

### **Item 3: Adopt the Policy Compliant gas forecast scenario for 2022 metric development.**

The CEC should adopt the Policy Compliant gas forecast scenario as it represents a more informed forecast of both CEC's own studies and CPUC approved gas rate increases. The argument to use the Mid-IEPR based on 'the outcomes being nearly similar' is not a valid excuse to select this option. The lack of inclusion in the Mid-IEPR of an approved rate increase from the CPUC makes this choice not valid.

### **Item 4: Biogas growth estimates to be more realistic.**

The current estimate of biogas is too aggressive and not a realistic scenario as it was presented at the October 17<sup>th</sup> workshop. As was noted by others who provided comments, currently, the 2022 Energy Code assumes that by 2030, 10% of natural gas demand will be supplied by biogas; this is unrealistic given that biogas currently only fulfills less than 1% of the state's demand. The 10% estimate fails to acknowledge the extremely high price of bio- and synthetic gas and California has no policy in place to achieve 10% biogas supply by 2030.

In projects we have consulted on, biogas is treated as a carbon offset and something a site takes credit for when it is generated and used elsewhere. While the overall gas consumption may result in similar productions and consumptions today when a few buildings partake in this method the approach will not scale to achieve 10% market penetration by 2030.

Therefore, the TDV should be updated to reflect a more realistic, lower supply of bio- and synthetic gas.