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**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking  
Regarding Building Decarbonization.

Rulemaking 19-01-011

**ASSIGNED COMMISSIONER'S RULING  
REGARDING PERMISSIBLE REFRIGERANTS  
FOR THE BUILDING INITIATIVE FOR LOW-EMISSIONS  
DEVELOPMENT PROGRAM AND THE TECHNOLOGY  
AND EQUIPMENT FOR CLEAN HEATING INITIATIVE  
AND NEW FUNDING FROM ASSEMBLY BILL 179**

This Ruling modifies the deadline adopted in Decision (D.) 20-03-027 in Phase I of this proceeding (the Phase I decision), for permissible refrigerants used in appliances of building projects incentivized by the Building Initiative for Low-Emissions Development (BUILD) Program and the Technology and Equipment for Clean Heating (TECH) Initiative, from January 1, 2023 to January 1, 2025. In addition, this Ruling seeks parties' comments, by no later than October 17, 2022, on how the California Public Utilities Commission (Commission) should use the additional funding allocated from California's Fiscal Year (FY) 2022-2023 General Fund revenues for the TECH Initiative and whether any changes should be made to its implementation or design.

**1. Background**

Pursuant to the statutory mandate established by Senate Bill (SB) 1477 (Stern, 2018),<sup>1</sup> the Commission adopted the Phase I decision, which established the BUILD Program and the TECH Initiative. The Phase I decision authorized

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<sup>1</sup> See [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201720180SB1477](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB1477).

\$200 million over a four-year period for the two programs (\$80 million for the BUILD Program and \$120 million for the TECH Initiative) and set a January 1, 2023 deadline for both the BUILD Program and the TECH Initiative to only provide incentives for appliances that use refrigerants with a Global Warming Potential (GWP) of 750 or below.

### **1.1. Modified Deadline for Compliance of Permissible Refrigerants Requirement**

The Phase I decision stated that “fulfilling SB 1477’s mandate to move beyond existing industry practices requires a transition away from the refrigerants in common use today and toward lower GWP alternatives, which appropriately constitute a technology that is in an early stage of market development.”<sup>2</sup> The Phase I decision explained that GWP “measures the strength of a [greenhouse gas] as compared to [carbon dioxide]”<sup>3</sup> and that “(o)ne of the most commonly used refrigerants, R-410a, has a GWP of 2,088 over the course of 100 years, which means that it has 2,088 times the impact of an equivalent amount of CO<sub>2</sub> over the same time period.”<sup>4</sup>

The Phase I decision defined “low-GWP” as refrigerants with a GWP less than 150 and “high-GWP” as refrigerants with a GWP in excess of 750. Ordering Paragraph (OP) 37 of the Phase I decision requires that:

(R)efrigerants used in the appliances of building projects incentivized by the BUILD Program or by the TECH Initiative shall not exceed a 750 Global Warming Potential (GWP) threshold by January 1, 2023, unless otherwise modified or determined alternatively by the Assigned Commissioner to this proceeding. Additionally, in a later phase of this proceeding, or in a successor proceeding, the Commission

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<sup>2</sup> The Phase I decision, Section 3.4.3 at 47.

<sup>3</sup> CO<sub>2</sub>.

<sup>4</sup> The Phase I decision at 46.

shall consider whether to maintain or modify – for either the pilot programs or a potential permanent program – the date after which incentives for appliances using high-GWP refrigerants would be prohibited, or what an appropriate GWP limit might be.

For the reasons discussed below, this Ruling modifies the January 1, 2023 deadline as set out in OP 37 of the Phase 1 decision to January 1, 2025.

### **1.2. Misalignment with the California Air Resources Board’s (CARB’s) Current Deadline**

The current January 1, 2023 deadline for permissible refrigerants no longer aligns with CARB’s deadline for phasing out high-GWP refrigerants used in residential space conditioning equipment.

The Phase I decision referred to other state agency policies in defining GWP thresholds for refrigerants. It stated, “Section 100.1 of the California Energy Code defines a “low-GWP” refrigerant as a refrigerant with a GWP less than 150, which this decision adopts for the purpose of providing “kicker incentive” eligibility. We define “high-GWP” refrigerants as refrigerants with a GWP above 750, consistent with CARB’s recent regulatory proposal for new stationary air conditioning systems starting January 1, 2023.”<sup>5</sup>

Since the issuance of the Phase I decision, CARB changed the originally proposed January 1, 2023 deadline to January 1, 2025.<sup>6</sup> In the near-term, manufacturers of residential space conditioning equipment are expected to respond to updated U.S. Department of Energy (DOE) appliance standards that

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<sup>5</sup> See [https://ww2.arb.ca.gov/sites/default/files/2019-08/AC%20Hand-Out%20%28Final%208-01-19%29\\_2.pdf](https://ww2.arb.ca.gov/sites/default/files/2019-08/AC%20Hand-Out%20%28Final%208-01-19%29_2.pdf).

<sup>6</sup> See <https://ww2.arb.ca.gov/rulemaking/2020/hfc2020>.

require a new test procedure<sup>7</sup> and more stringent minimum efficiency levels, which will take effect on January 1, 2023.<sup>8</sup> At this stage, manufacturers may primarily focus on meeting the DOE's regulatory deadline. Following implementation of the new DOE standards on January 1, 2023, we anticipate that manufacturers will turn their attention to the CARB regulation of the GWP of 750 refrigerant that they will need to meet by January 1, 2025.<sup>9</sup> Therefore, manufacturers are unlikely to be able to focus on accelerating their efforts at meeting a GWP of 750 limit until after January 1, 2023. A voluntary incentive program like the BUILD Program or the TECH Initiative in California is unlikely to change the market trend.

### **1.3. Lack of a Clear Pathway for Lower GWP Refrigerants in the California Mechanical Code**

Perhaps more consequentially, the California Mechanical Code (Title 24, Part 4), which adopts the Uniform Mechanical Code (UMC), has not cleared a pathway for use of mildly flammable A2L refrigerants,<sup>10</sup> which are the most likely lower GWP refrigerant successors and are currently allowed in other states.<sup>11</sup> For example, manufacturer Daikin has indicated that its next generation

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<sup>7</sup> The new test procedure will most noticeably shift the market to new efficiency metrics: Seasonal Energy Efficiency Rating (SEER) will move to SEER2, Energy Efficiency Rating (EER) to EER2, and Heating Seasonal Performance Factor (HSPF) to HSPF2.

<sup>8</sup> See [https://www1.eere.energy.gov/buildings/appliance\\_standards/standards.aspx?productid=48&action=viewlive](https://www1.eere.energy.gov/buildings/appliance_standards/standards.aspx?productid=48&action=viewlive).

<sup>9</sup> See <https://ww2.arb.ca.gov/rulemaking/2020/hfc2020>.

<sup>10</sup> A2L refrigerants are considered "lower-toxicity" but "lower flammable" under American Society of Heating and Refrigeration and Air Conditioning Engineers Standard 34 (2019).

<sup>11</sup> While not allowed under the UMC, the International Mechanical Code/International Building Code/International Fire Code have cleared a pathway for use of A2L refrigerants. See <https://www.iccsafe.org/building-safety-journal/bsj-technical/code-changes-on-a2l-refrigerants/>.

refrigerant will be R-32 (a GWP of 675), an A2L refrigerant,<sup>12</sup> and both Carrier<sup>13</sup> and Johnson Controls<sup>14</sup> have announced their plans to use the A2L refrigerant R-454B (a GWP of 466).

Since the California Mechanical Code cannot currently accommodate many of these lower GWP products, the outcome of maintaining the current January 1, 2023 deadline for refrigerant transition may simply be that there would be very limited eligible equipment for the BUILD Program or TECH Initiative to incentivize until such changes are made in the UMC. CARB recognizes the UMC-related issue and has indicated that if codes and standards are not updated for California, CARB has a variance process that allows for an extension of the effective date pertaining to the mandate of lower GWP refrigerants.<sup>15</sup>

In conclusion, for the reasons discussed above, I have determined that the refrigerant market has not sufficiently transformed to the point where it is appropriate to require that buildings drawing on the BUILD Program or the TECH Initiative incentives must not use high-GWP appliances. Therefore, consistent with the CARB's revised deadline, this Ruling modifies the January 1, 2023 deadline by which high-GWP appliances are no longer eligible under the BUILD Program or TECH Initiative to January 1, 2025. Consistent with OP 37 of the Phase I decision, the assigned Commissioner to this proceeding may

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<sup>12</sup> Daikin R-32 announcement. See <https://www.daikinapplied.com/news/news/R-32>.

<sup>13</sup> Carrier R-454B announcement. See [https://www.carrier.com/residential/en/us/news/news-article/carrier\\_introduces\\_puron\\_advance\\_the\\_next\\_generation\\_refrigerant.html](https://www.carrier.com/residential/en/us/news/news-article/carrier_introduces_puron_advance_the_next_generation_refrigerant.html).

<sup>14</sup> JCI R-454B announcement. See <https://www.johnsoncontrols.com/media-center/news/press-releases/2021/05/27/johnson-controls-commits-to-r454b-as-future-environmentally-sustainable-refrigerant-solution-in-nort>.

<sup>15</sup> See <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2020/hfc2020/fsorrevised.pdf>.

continue to modify date after which incentives for appliances using high-GWP refrigerants would be prohibited, as appropriate.

## **2. New Funding for the TECH Initiative**

On September 6, 2022, Governor Newsom approved Assembly Bill 179 (Ting, 2022), which allocated an additional \$50 million from California's General Fund revenues for new TECH Initiative funding from the FY 2022-2023 budget:

Of the funds appropriated in this item, \$50,000,000 shall be used by the Public Utilities Commission to expand the program created pursuant to Section 922 of the Public Utilities Code to benefit all California residents, regardless of whether they reside within the territory of a Public Utilities Commission jurisdictional gas corporation. The funds shall be available for encumbrance or expenditure by the Public Utilities Commission until June 30, 2025 and shall be available for liquidation until June 30, 2027.<sup>16</sup>

To make best use of this new funding, parties may comment on how the Commission should use the additional funding allocated from California's FY 2022-2023 General Fund revenues for the TECH Initiative and whether any changes should be made to the implementation or design of the TECH Initiative. If parties choose to comment, comments should be filed and served by no later than October 17, 2022.

**IT IS RULED** that:

1. Refrigerants used in the appliances of building projects incentivized by the Building Initiative for Low-Emissions Development Program or by the Technology and Equipment for Clean Heating Initiative shall not exceed a 750 Global Warming Potential threshold by January 1, 2025, unless otherwise

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<sup>16</sup> See [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=202120220AB179](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB179).

modified or determined alternatively by the assigned Commissioner to this proceeding.

2. Parties may comment on how the California Public Utilities Commission should use the additional funding allocated from California's Fiscal Year 2022-2023 General Fund revenues for the Technology and Equipment for Clean Heating (TECH) Initiative and whether any changes should be made to the implementation or design of the TECH Initiative by no later than October 17, 2022.

Dated September 26, 2022, at San Francisco, California.

/s/ CLIFFORD RECHTSCHAFFEN  
Clifford Rechtschaffen  
Assigned Commissioner