

October 27, 2017

Greg Mayeur
Manager, Offsets Program Implementation
California Air Resources Board
1001 I St
PO Box 2815
Sacramento, California 95812
Via online submission

RE: Comments by Honeywell International Inc. on Potential New Offset Protocol in the Context of Next Steps for the Post-2020 Cap-and-Trade Regulation

Dear Mr. Mayeur,

We appreciate the opportunity to submit these comments in response to the California Air Resources Board's (ARB) October 12, 2017 meeting that began a process to consider regulatory changes to the ARB Cap-and-Trade Program to implement Assembly Bill 398 and Board Resolution 17-21. We would like to comment on one particular issue—to express our strong support for the development of a new compliance offset protocol that would incentivize a near-term transition away from hydrofluorocarbons (HFCs) in foam blowing applications and thereby significantly reduce greenhouse gas emissions.

Honeywell International Inc. ("Honeywell") produces a low-global-warming potential (GWP) foam blowing agent, Solstice® Liquid Blowing Agent (HFO-1233zd(E)) (LBA), now available for use in applications that are eligible to generate offset credits under the American Carbon Registry (ACR) methodology titled, "Emission Reduction Measurement and Monitoring Methodology for the Transition to Advanced Formulation Blowing Agents in Foam Manufacturing and Use."¹ Honeywell also produces HFC-134a and HFC-245fa foam blowing agents, which are currently the most widely used blowing agents in the foam applications eligible to receive credit under ACR's methodology.

HFCs used as foam blowing agents are responsible for four percent of the total GHG emissions in California, but, as ARB noted in its Short-Lived Climate Pollutant (SLCP) Strategy, total annual HFC emissions are expected to increase 60% under a business-as-usual scenario by 2030. Reducing HFC emissions in the near term is particularly important because HFCs are short-lived in the atmosphere, meaning that they are significant contributors to global warming for a range approximating 10 to 15 years after they are released into the environment, as opposed to carbon dioxide, which lingers in the atmosphere, and contributes to its warming, for around 100

¹ The ACR methodology provides four foam applications that are eligible to receive offset credits: (1) XPS boardstock, (2) two-component rigid polyurethane spray foam, (3) rigid polyurethane injected foam (in certain limited end-uses), and (4) rigid polyurethane foam in residential refrigerators and freezers.

years after the gas is emitted. Consequently, reducing HFC emissions now can significantly contribute to mitigating global warming in the near future.

We strongly support ARB's consideration of a new offset protocol based on ACR's methodology. If ARB were to adopt a new protocol to credit the substitution of HFCs with low-GWP blowing agents, foam manufacturers would have a significant additional incentive to invest in low-GWP blowing agents.

ARB's Role. California is uniquely positioned to significantly accelerate the transition of high-GWP HFC foam blowing agents to low-GWP ones, such as Solstice® LBA. Adopting a new compliance offset protocol similar to the ACR low-GWP foam methodology could yield around 8 million offset credits and avoid nearly 24 million tonnes CO₂e emissions (reductions that would not generate credits) annually from projects in North America.

By our estimate, there are at least six facilities in California that manufacture HFC-containing polyurethane foams for spray and panel applications. With an incentive to convert to a low-GWP blowing agent, these facilities could generate up to 416,000 credits and avoid nearly 1.1 million tonnes of CO₂e emissions annually in California alone.

The opportunity to generate compliance offset credits for the substitution of HFCs with low-GWP blowing agents under a new offset protocol is particularly important given the uncertain future of the HFC phaseout requirements imposed by the EPA rules under its Significant New Alternatives Policy (SNAP) program, which remain under challenge in federal court.² With the fate of the federal mandates uncertain, an additional incentive is needed to maintain the transition away from HFC-based blowing agents, particularly where the alternatives, while offering equal or better performance, are more costly.

In the midst of this uncertainty, the potential to generate compliance offset credits for use in California's Cap-and-Trade Program would provide a substantial incentive for many foam manufacturers and users to invest in a near-term transition out of HFCs to low-GWP alternatives and would go a long way in making up for the momentum that EPA's SNAP rules would have sustained.

Additionality. ACR's methodology offers credit for greenhouse gas emissions reductions that go beyond business as usual. Low-GWP blowing agents continue to be the exception, not the norm, in the foam applications eligible to generate credits. For example, low-GWP blowing agents are used in fewer than 10-20% of polyurethane and XPS applications.

Viability of Projects. Honeywell expects to receive about 50,000 credits from ACR for pilot projects undertaken this year for activity during 2014-2015 period. Based on current plans, we expect the development of additional projects under the methodology, by Honeywell and others, to yield more than a million credits for eligible low-GWP replacements during the 2015-2019 period.

² *Mexichem Fluor, Inc. v. EPA*, 866 F.3d 451 (D.C. Cir. 2017). The court is considering a petition for reconsideration *en banc* (before the full court) and the case could be appealed further if the petition is denied.

Early Action Credit. A new ARB offset protocol should recognize the investments made by early adopters, back to 2013, by allowing ACR credits generated under the existing methodology to be eligible for conversion into ARB compliance offset credits. As with other new offset protocols that have recognized early actors, doing so in this instance will reward companies that make investments in environmentally responsible actions and encourage others to do the same.

We believe that ARB should develop a new offset protocol for immediate use, as Honeywell and others will have offset credits to deliver to market immediately and well before 2021.

Defining “Direct Environmental Benefits.” In the post-2020 cap-and-trade program, Assembly Bill 398 limits the use of offset credits to 4% of an entity’s compliance obligation, no more than half of which can be sourced from projects that do not “provide direct environmental benefits in state.” During the October 12, 2017 workshop, ARB staff asked for comment on how this term should be defined. In our view, “direct environmental benefits” should include recognition of greenhouse gas emissions reductions resulting from project activity inside or outside the state, so long as the reductions (or avoided emissions) occur in California.

Transitions to low-GWP foam in California that meet the requirements of the ACR methodology would provide direct environmental benefits in California in a number of ways:

First, foam blown with low-GWP blowing agents such as Solstice® LBA produces foam with higher thermal performance in polyurethane foams, including spray and appliance foam, thereby reducing energy consumption, and any emissions associated with such energy consumption, where those products are used in California.

Second, Solstice® LBA has a lower toxicity risk profile than the HFC blowing agents it replaces. The Workplace Environmental Exposure Level Committee of the American Industrial Hygiene Association has established an exposure limit of 800 parts per million (ppm) for Solstice® LBA, which is more than twice the limit established for HFC-245fa exposure (300 ppm). Solstice® LBA thus reduces toxicity risk during handling, foam manufacturing, and wherever there is a risk for significant concentrations of blowing agent to accumulate.

Third, projects entirely located within California will yield direct greenhouse gas reductions in California, during the foam manufacturing process, use of the foam, and disposal. Project activity originating outside of California can also provide “direct environmental benefits” in California. Eligible foam products that are not manufactured in California but are subsequently sold and used in California will reduce greenhouse gas (HFC) emissions from the gradual degradation of the foam during use in California and upon disposal in California.

Only a minority of the greenhouse gas emissions reductions described above would be recognized as offset credits. The methodology credits reductions resulting from the replacement of HFC blowing agents with low-GWP blowing agents during the foam manufacturing process and during the first ten years of the life of the foam. It entirely excludes emissions from degradation after the first ten years of use and from disposal of the foam at the end of its life.

Therefore, the avoided emissions during use/degradation of the foam during its useful life after year ten and all of the emissions upon disposal would provide a net benefit to California's environment because these reductions are not credited by the ACR methodology. In other words, these emission reductions could not be monetized in the cap-and-trade system as offset credits. Instead, project activity would permanently lower greenhouse gas emissions in California.

Conclusion. We urge California to consider adopting a new compliance offset protocol similar to the ACR low-GWP foam methodology that recognizes ACR credits under the methodology issued prior to ARB's new protocol, starting in 2013. Such a protocol would accelerate the transition to low-GWP foam blowing agents now slowed by the uncertain future of the requirements under EPA's SNAP program. An ARB low-GWP foam offset protocol would offer a significant incentive for foam manufacturers and users to invest in a near-term transition out of HFCs to low-GWP alternatives and could yield approximately 24 million tonnes of CO₂e emissions reductions in North America, including 1.1 million tonnes of CO₂e reductions in California.

Sincerely,

A handwritten signature in dark ink that reads "Sanjeev Rastogi". The signature is written in a cursive, flowing style.

Sanjeev Rastogi
Business Director
Honeywell Fluorine Products