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To: Clerk of the Board
Air Resources Board
1001 I Street
Sacramento, California 95814

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COMMENTS ON WORKSHOP TO DISCUSS POSSIBLE REVISIONS TO THE CAP-AND-TRADE REGULATION

These comments are being submitted on behalf of Foam Supplies, Inc. and True Manufacturing in response to the California Air Resources Board (CARB) Staff's March 2, 2018, workshop to discuss possible revisions to the cap-and-trade regulation.

The comments focus on the Staff proposal for revisions to the regulatory text regarding "Direct Environmental Benefits in State" (DEBS) and the need for CARB to consider and approve additional protocols that will provide high-quality offsets that meet the DEBS criteria.

Comments on Staff Proposal

We support the Staff proposal with respect to DEBS. The criteria identified provide guidance without being overly prescriptive. Using the statutory language avoids making the guidance either too prescriptive or too lenient. Project proponents and verifiers should be able to identify and assess the topic and the specific information to address DEBS on a project-by-project basis.

We support this framing of the definition. In our view, "direct environmental benefits" should include, as the proposed definition would, 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.

There are many offsets which, even if not physically created in California, nevertheless have DEBS, such as the reduction in Short-Lived Climate Pollutants (SLCPs) being emitted in California. These will be the offset credits for which a general approach is needed.[1]

Request for CARB to Consider New Protocols

CARB currently has six approved offset protocols in the regulation. However, only four of these protocols have the ability to supply DEBS-qualified offsets because the rice cultivation and urban forestry protocols are not being used by project developers, and no ARBOC offsets have been

[1] *We also support the information and analysis offered by others, such as the American Carbon Registry, with respect to this issue.*

issued under either of them to date.[2] Therefore, we suggest that CARB needs to actively consider additional protocols for adoption.

Specifically, there are two American Carbon Registry (ACR) approved offset methodologies that we request CARB immediately consider for adoption: (1) Transition to Advanced Formulation Blowing Agents in Foam Manufacturing and Use, Version 2.0 (FBA Methodology); and (2) Greenhouse Gas Reductions from Advanced Refrigeration Systems, Version 2.0 (ARS Methodology). Both methodologies meet CARB guidance for eligible compliance protocols [3] and are able to meet the Staff's proposed requirements for creating DEBS offsets.[4]

The FBA Methodology [5] has just undergone the ACR Peer Review process and the ARS Methodology[6] has undergone public review and is currently in Peer Review. The former provides an incentive for manufacturers in 10 different end-use categories to switch to low-GWP blowing agents and the latter provides an incentive for refrigeration units not covered by planned CARB regulations to use a refrigerant which is at or below 4 GWP, a level less than 1 % of the GWP potential of the Significant New Alternatives Policy (SNAP)-approved refrigerants.

DEBS from New Methodologies

Both the FBA and the ARS Methodologies reduce HFCs from projects with emissions at three (3) stages of a product's lifetime. Each stage has the potential for reductions in California;

- *Manufacturing of the product* – GHG reductions from product manufacturing facilities located in California. There are many manufacturing locations in California which are candidates for projects to demonstrate GHG emission reductions. Comments filed in 2016 included maps to show the locations of potential manufacturing sites eligible for the FBA Methodology. [7] Many foam and refrigerant manufacturing facilities are located in disadvantaged communities for which projects from these methodologies can provide direct localized environmental and economic benefits.

- *In-state use of the products* – There are real and quantified local California-based GHG reductions that come from the use of products manufactured[8] under the FBA and ARS Methodologies.

- *End-of-life (EOL)* – GHG reductions from the disposal of the products in landfills or shredding facilities located in California. While these GHG reductions are real, they are not calculated as offsets in the methodologies and so are considered an "extra" environmental

[2] *See, https://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm*
[3] *Id. "CARB's Process for the Review and Approval of Compliance Offset Protocols"*
[4] *Dentons US LLP developed both methodologies with technical support from our clients.*
[5] *See https://americancarbonregistry.org/carbon-accounting/standards-methodologies/transition-advanced-formulation-blowing-agents-in-foam-manufacturing-use/*
[6] *Id. /advanced-refrigeration-systems/*
[7] *See our comments on the California Air Resources Board's Cap-and Trade Regulation Amendment's Workshop, Dated November 4, 2016, at pp 4-8. (hereafter 2016 Comments)*
[8] *Eligible product categories include industrial, commercial and residential refrigeration equipment, HVAC systems, spray foam for commercial and residential housing construction and other applications, XPS boardstock used in commercial and residential housing construction, and other applications, refrigerated transportation, fireproof garage doors and marine flotation/buoyancy.*

benefit. Moreover, because landfills are generally located near economically disadvantaged communities, the reductions provide localized environmental benefits.

Both methodologies provide a framework for high quality offsets which have direct environmental benefit to California while also advancing the SLCP strategy and providing incentives for manufacturers to come forward with new technologies to reduce SLCP emissions, not just in California.

Transition to Advanced Formulation Blowing Agents in Foam Manufacturing and Use Methodology[9]

Certain industries use blowing agents (BAs) in the production of foam. These BAs contain chemicals that contribute to global warming by releasing greenhouse gases (GHGs) during manufacture, use, and EOL. Over the years, industry has begun a transition away from BAs that have high GWP and high ozone depleting potential (ODP) toward BAs with lower GWP and low or zero ODP. However, certain foam applications have low market adoption rates for low GWP BA and that is generally a result of technical and financial barriers limiting use of low GWP options in these applications.

The FBA Methodology was designed to reduce the widespread use and reliance on hyrdofluorocarbons (HFCs) in a variety of foam manufacturing end uses. It encourages the use of BAs that are not HFCs or hydrocarbons and have a GWP < 30 and an ODP < 0.01. This is far better than any existing or proposed SNAP requirements. Each of the following end-uses (listed in Table 7 of the methodology) has a very low rate of adoption of these low-GWP BAs in the manufacture and use of polyurethane foams. The following end-uses qualify to produce offsets under the FBA Methodology:

- HVAC systems
- Refrigerated transportation vehicles
- Industrial refrigeration systems
- Marine flotation equipment
- Retail food refrigeration systems
- Garage and entry doors
- Residential refrigerators and freezers
- XPS boardstock
- Spray foam

There are other foam applications which have very low adoption rates that can be evaluated and included in future versions of the methodology, thereby providing additional opportunity for projects that could provide DEBS.

[9] *Reference is to version 2.0 currently undergoing Peer Review by ACR.*

FBA Methodology Meets CARB's Criteria to Evaluate New Protocols

The FBA Methodology has gone through ACR's rigorous methodology approval process that is documented in the ACR Standard. The ACR Standard is aligned with CARB's protocol criteria and other relevant requirements associated with the generation of carbon offsets. The FBA Methodology meets all of the CARB criteria for evaluating new protocols.[10]

- Reductions must be from sources not included under the cap.
    - GHG emissions from the use of foam BAs are not included in the AB 32 cap.
- Reductions must be a direct reduction within a confined project boundary.
    - The FBA Methodology has a confined project boundary to include only those GHG reductions from foam manufacturing and use.
- Reductions must be permanent.
    - Use of a low-GWP BA in a foam product manufacturing cannot be reversed.
- Reductions must be real.
    - The FBA Methodology quantifies all sources, sinks, and reservoirs within a project boundary.
- Reductions must be verifiable and enforceable.
    - The FBA Methodology has clear monitoring and measurement requirements that can be audited by a third-party verifier and enforced by CARB.
    - 120,000 ERTs from two projects have already been verified and issued by ACR.
- Reductions must be additional - beyond any reduction required through regulation or action that would have otherwise occurred in a conservative business-as-usual scenario.
    - The FBA Methodology requires a regulatory surplus test to show that the reduction was not mandated by existing laws, regulations, statutes, legal rulings, or other regulatory requirements.
    - For a project to qualify for offsets under this FBA Methodology it must also be demonstrated that the foam category or application has a low market adoption rate for the BAs that are eligible for use by the methodology. A market adoption analysis that included a third-party market survey was completed for the methodology (see Table A-1 of methodology).[11]

[10] *See reference at note 2.*
[11] *Each of the foregoing statements are included in either the FBA method or related documentation. See reference at note 3.*

In addition to meeting the criteria for CARB protocols, the following benefits are available from the adoption of the FBA Methodology:

- Estimated over 400,000 tonnes of carbon-equivalent reductions from California-based manufacturing, with the co-benefit of meeting the EJAC requirements of providing local community benefits (most foam manufacturing occurs in industrialized neighborhoods).[12]
- Over 120,000 ERTs have been issued from just two projects with an estimated 500,000+ ERTs in-line from Foam Supplies, Inc.
- Other companies are also developing projects with large volumes of reductions. These companies may be interested and willing to work with CARB on developing the methodology for compliance purposes.
- Public comments to CARB state that approximately 6-9 million tonnes per year of reductions may be available from FBA Methodology projects.
- Spray foam use in new building construction has enormous DEBS offset potential and has the co-benefit for ARBs "Green Building Initiative."

Other WCI Jurisdictions

Other WCI and potential WCI jurisdictions can also use these methods. Washington state has already proposed the FBA Methodology as part of its air regulations,[13] though it has not yet adopted a market trading approach to such reductions. Manufacturers of XPS boardstock, commercial refrigeration, spray foam, residential refrigeration, and other end uses, are located in Quebec, Ontario and Oregon, to name but a few.

Advanced Refrigeration Systems Methodology[14]

The ARS Methodology provides the quantification framework for the creation of carbon offset credits from the reductions in GHG emissions resulting from the use of low-GWP refrigerants such as hydrocarbons, ammonia, carbon dioxide, and hydrofluoroolefins (HFOs) in large commercial refrigeration and stand-alone commercial refrigeration units.

- Large Commercial Refrigeration - Equipment used to store and display chilled and frozen goods for commercial sale such as in supermarkets, convenience stores, bakeries, and restaurants. This equipment includes centralized supermarket systems and remote condensing units, but does not include stand-alone commercial refrigeration units.
- Stand-Alone Commercial Refrigeration - Refrigerators, freezers, reach-in coolers (either open or with doors), and refrigerated food processing and dispensing equipment where all refrigeration components are integrated, and, for the smallest types, the refrigeration circuit

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[12] *See April 10, 2017 letter from Honeywell with respect to 2017 Scoping Plan, at 4. Honeywell also estimates 7.8 million tonnes of credits could be generated annually in North America from XPS, panel, spray and appliance applications. See also 2016 Comments.*

[13] *http://www.ecy.wa.gov/programs/air/rules/docs/UnofficialRuleLanguageChapter 173442WAC.pdf; Washington Clean Air Rule, 173-442-160(8)(d).see https://ecology.wa.gov/Air-Climate/Climate-change/Tracking-reducing-carbon-pollution/Clean-Air-Rule*

[14] *Reference is to Version 2.0 that is currently undergoing Peer Review by ACR.*

is entirely brazed or welded. These systems are fully charged with refrigerant at the factory and typically require only an electricity supply to begin operation.

This methodology provides incentives for industry to go beyond current regulations and business-as-usual to adopt low-GWP refrigerant alternatives. Notably, this methodology can provide for even greater GHG reductions than estimated by CARB's SNAP proposal. Appendix B to the CARB SNAP proposal provides estimated emission reductions from adoption of the EPA SNAP 20 and 21 requirements for refrigerants. The largest reductions are projected to come from new equipment for commercial refrigeration, retail food refrigeration, and retrofits of R-22 and R-404 in supermarkets and grocery stores. The allowable refrigerants to be used in the future for those categories have an average GWP ranging from 601 to 1412. The ARS Methodology incentivizes the use of low-GWP refrigerants below a GWP of 4, well below CARB's SNAP estimates.

The ARS Methodology has gone through ACR's rigorous methodology approval process that is documented in the ACR Standard. The ACR Standard is aligned with CARB's protocol criteria and other relevant requirements associated with the generation of carbon offsets. The ARS Methodology meets all of the CARB criteria for evaluating new protocols.

- Reductions must be from sources not included under the cap.
    - GHG emissions from refrigerants in stand-alone and large commercial refrigeration are not included in the AB 32 cap.
- Reductions must be a direct reduction within a confined project boundary.
    - The ARS Methodology has a confined project boundary to include only those GHG reductions from manufacturing and use.
- Reductions must be permanent.
    - Use of a low-GWP refrigerant in a product cannot be reversed.
- Reductions must be real.
    - The ARS Methodology quantifies all sources, sinks, and reservoirs within a project boundary.
- Reductions must be verifiable and enforceable.
    - The ARS Methodology has clear monitoring and measurement requirements that can be audited by a third-party verifier and enforced by CARB.
- Reductions must be additional - beyond any reduction required through regulation or action that would have otherwise occurred in a conservative business-as-usual scenario.
    - The ARS Methodology requires a regulatory surplus test to show that the reduction was not mandated by existing laws, regulations, statutes, legal rulings, or other regulatory requirements.

For a project to qualify for offsets under the ARS Methodology, it must also be demonstrated that the refrigeration category or application has a low market adoption rate for low-GWP refrigerants.

A market adoption analysis that included information provided by EPA's GreenChill Partnership[15] and a third-party market survey were used to demonstrate market adoption rates (see Table 1 of methodology).

Other WCI Jurisdictions

Ontario is considering whether to adopt a version of the ARS Methodology.

Conclusion

In conclusion, we urge CARB to consider adopting new compliance offset protocols, and specifically the adoption of the FBA and ARS Methodologies. We also encourage CARB to consider allowing for "early action" offsets issued by the ACR methodologies to be included in a CARB protocol.

Respectfully,

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[15] *As of July 2015, the GreenChill Program has also awarded 82 United States stores with silver-level certification and 32 stores with gold-level certification, signifying those stores as having an annual storewide average emission rate below 15%, with an average HFC refrigerant charge per MBTU/hr. total evaporator heat load less than 1.75 lbs (silver level) or 1.25 lbs (gold level); www2.epa.gov/greenchill/greenchill-store-certification-awards. GreenChill Partners represent roughly 20% of United States food retailers; for this Methodology, the average leak rate for centralized commercial refrigeration systems in the United States is assumed to be 20%.*