Ms. Karen Raines
Director, Corporate Sustainability
Costco Wholesale Corporation
999 Lake Drive
Issaquah, WA 98027

September 4, 2014

Dear Ms. Raines:

It is our understanding that Costco has signed a consent decree with the Environmental Protection Agency to resolve allegations that Costco violated Section 608 of the Clean Air Act. As part of this Consent Decree, Costco has agreed to not only reduce leakage rates to 19.1 percent in three years, but also retrofit or replace at least 30 stores with non-ODS refrigerant in three years with a refrigerant with a global warming potential ("GWP') no greater than that of refrigerant R-407f. In addition, Costo has agreed to install a glycol secondary loop refrigeration system for all medium-temperature refrigeration at all one-story stores opened during the next three years. The Environmental Investigation Agency ("EIA") urges Costco to: 1) meet state-of-the-art leak rates of <10 percent, 2) install CO_2 transcritical systems, hydrocarbon micro-distributed systems or other similar low-GWP alternative system in all new stores as the energy efficiency gains from installing these systems are significant and will pay for the conversion in a short period of time; 3) upgrade and retrofit all existing systems currently using HCFC-22 and 4) join the members of the Consumer Goods Forum and pledge to "begin phasing out HFC refrigerants as of 2015 and replace them with non-HFC refrigerants (natural refrigerant alternatives) where these are legally allowed and available for new purchases of point-of-sale units and large refrigeration installations."[1]

Transcritical CO_2 systems have been shown to have 10-35 percent better energy efficiency than synthetic refrigerant-based systems in supermarket applications, and stores around the world have been installing these systems at an expedited rate.[2] For example, as of November 2013, the EU had 2,881 transcritical CO_2 installations[3], South Africa had 17,[4] Canada had 65 stores, [5] and by 2015 Japan is predicted to have around 600 transcritical CO_2 systems. In the United States, Whole foods and Delhaize have already installed CO_2 transcritical systems, and other chains have plans to open stores this year using CO_2.

In addition to CO_2 transcritical systems, EIA suggests that Costco consider hydrocarbon micro-distributed systems, like what H-E-B installed in 2013 in their 83,000 square foot store in Austin,

[1] Consumer Goods Forum (2010) available at http://sustainability.mycgforum.com/
[2] Shecco and Unido (2013).*Natural Solutions for Developing Countries.* Available: http://www.r744.com/web/assets/paper/file/1508_guide2013naturalsolutions.pdf. See p17. Last accessed Feb 2014
[3] Shecco (2013). *ATMOsphere Europe 2013-Natural Refrigerant trends and EU F Gas Regulation.* See p9. Available: http://www.r744.com/web/assets/paper/file/1521_338_6_CHASSEROT_SHECCO.pdf. Last accessed Feb 2014
[4] Shecco (2013). *Mainstreaming Natural Refrigerants- The Business Case for North America.* See p6. Available: http://www.r744.com/web/assets/paper/file/NatRef_Market_Trends_in_NA_and_Beyond.pdf. Last accessed Feb 2014; R744 (2013). *17 transcritical CO_2 stores already installed in South Africa.* Available: http://www.r744.com/news/view/4742. Last accessed March 2014
[5] Sobeys (2014). *CO_2- One Retailer's Experience*. See p4. Available: http://www.r744.com/web/assets/paper/file/1564_367_4_CROOKSTON_SOBEYS.pdf. Last accessed Feb 2014

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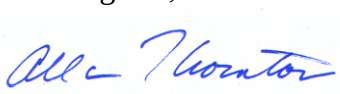
Texas. The store uses a Hussmann designed propane refrigeration system[6] that uses a high efficiency compressor, with the majority of units containing water cooled condensers and evaporators, allowing the charge size of the propane to remain under the mandated 150 grams.[7] H-E-B is predicting that the system will be 50 percent more energy efficient than one of its typical stores, however, current projections from its first year of operation document that the system is operating at a 79 percent improved efficiency.[8] If Costco realizes a similar savings it will rapidly pay for all of the conversions mandated under the Consent Decree.

For more information on these and other systems, we have included our most recent publications on available HFC free alternatives in the United States and a second report documenting commercial refrigeration systems from around the world with this letter

We hope Costco will become a leader in greening its refrigeration systems, by installing climate and ozone friendly systems in all new store builds and by retrofitting existing systems. HFC-free systems are commercially available now in the United States, and Costco should make ozone-free and low-GWP refrigeration systems and equipment mandatory in all of your stores. By making a pledge to beginning phasing out of HFCs in new stores builds as of 2015, Costco will remain competitive with the members of the Consumer Goods Forum.

Please let us know if you have any questions about the attached reports. I would welcome the opportunity to discuss this important matter with you in person or with your nominated representatives.

Kind Regards,



Allan Thornton
President, Environmental Investigation Agency

Attachments:

- *Time to Commit on HFCs: An EIA briefing to the Consumer Goods Forum Global Summit 2014*, http://eia-global.org/images/uploads/EIA_Consumer_Goods_Forum_Report.pdf
- *Putting the Freeze on HFCs: A global digest of available climate –friendly refrigeration and air-conditioning technologies*, http://eia-global.org/images/uploads/Putting_the_Freeze_on_HFCs_Final.pdf

[6] Hussman (2013). *Press Release- H-E-B opens new store with Hussmann Designed Propane Refrigeration System.* See pp1-2. Available: http://www.hussmann.com/en/Press%20Releases/Hussmann_H-E-B_Propane_072513.pdf. Last accessed Feb 2014
[7] Hydrocarbons 21.com (2013). *US first: Texas supermarket opts for R290 store refrigeration system*. Available: http://www.hydrocarbons21.com/articles/us_first_texas_supermarket_opts_for_r290_store_refrigeration_system. Last accessed Feb 2013
[8] AndNowUKnow.com (2013). *H-E-B opens sustainable Austin location.* Available: http://www.andnowuknow.com/headlines/h-e-b-opens-sustainable-austin-location/ericanderson. Last accessed March 2014

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