



DAIKIN U.S. CORPORATION

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April 28, 2014

Dr. Steve Cliff
Assistant Division Chief
California Air Resources Board
Stationary Sources Division
P.O. Box 2815
Sacramento, CA 95812

BY ELECTRONIC TRANSMISSION

RE: Comments to ARB Scoping Plan Update

Dear Dr. Cliff:

Daikin U.S. Corporation is pleased to submit these comments to the draft AB 32 Scoping Plan Update of the California Air Resources Board. Daikin U.S. Corporation (Daikin) is a subsidiary of Daikin Industries, Ltd., the world's largest air conditioning equipment manufacturer.

Energy Efficient Cooling and Heating

Daikin is committed to delivering technologies, products and solutions that optimize energy efficiency and reduce greenhouse gas emissions. We pioneered the use of inverter systems in our industry. Inverter technology enables the variable and minute control of room temperature, and by Daikin's estimates, can reduce annual power consumption by approximately 30% compared to non-inverter models. Daikin is also a leader in developing space and hot water heaters using energy-efficient heat pump technology. This technology, which is also used for air conditioning, involves drawing heat from the air and transferring it for use in cooling and heating. Compared to space or water heating methods that burn fossil fuels directly, heat pumps produce significantly fewer carbon emissions. Daikin also incorporates variable refrigerant volume (VRV) technology in many of its products. Among other benefits, VRV technology allows for customized temperature zoning, another feature that can dramatically improve the applied energy efficiency of air conditioning and heating.

Daikin will continue to work with the ARB and its sister agencies to ensure the accelerated adoption of these and other technologies that will help the state meet its AB 32 goals. We are confident that our technologies and products can play a critical role to helping California meet not only its energy efficiency, GHG reduction and green building targets, but also the state's increasing needs for demand response.

Low-GWP Refrigerants

In addition to manufacturing highly energy efficient air conditioning and heating equipment, Daikin is also a manufacturer of refrigerants, and in particular, HFC32 (“R-32”). We have explained the potential environmental and climate change benefits of R-32 in filings with the U.S. EPA in connection with the EPA’s pending review of a Significant New Alternatives Policy (SNAP) petition for R-32. In summary, R-32 yields substantial climate benefits as a refrigerant in air conditioning and heat pump applications. As noted in Daikin’s petition, R-32 has one-third of the global warming potential (GWP) of R-22 (an HCFC that it will replace), and R-32 systems perform with 70% of the charge volume required for systems that use R-410A (a widely used, high-GWP HFC). R-32 energy performance is 2-3% better than that of R-22 and R-410A. Due to its much lower GWP, its reduced charge size compared to the refrigerants it will replace, and its high energy efficiency, R-32 reduces CO₂-equivalent emissions by up to 75% in its applications. Because of these characteristics, the use of R-32 as a refrigerant will result in a substantial reduction of direct and indirect greenhouse gas emissions related to air conditioners and heat pumps.

We also note that R-32 will help California and the United States in its efforts to phase-down higher-GWP hydrofluorocarbons (HFCs). We support the Scoping Plan’s objective to “work with the U.S. EPA to establish national standards in alignment with the European Union (EU) proposed F-gas phasedown of HFC production”. We also agree with staff’s observation in the Scoping Plan that low-GWP substitutes for ozone-depleting substances and HFCs are becoming “increasingly feasible and cost-effective.” Finally, we also support staff’s observation that “it will be vital that low-GWP compounds will be used for commercial refrigeration and air conditioning and residential appliances and air conditioning. We believe R-32 is an effective lower-GWP alternative that will help California achieve these goals.

We look forward to working closely with ARB leadership and staff on these issues as you continue the efforts outlined in the Scoping Plan Update, including the development of a Short-Lived Climate Pollutant strategy for California.

Thank you for the opportunity to provide these initial comments.

Sincerely,



Yasuhisa Kumada
President
Daikin U.S. Corporation