State of California
AIR RESOURCES BOARD

Resolution 09-1

January 22, 2009

Agenda Item No.: 09-1-2

WHEREAS, the California Global Warming Solutions Act of 2006 (Assembly Bill 32; Stats 2006, ch. 488), Health and Safety Code section 38500 et seq.), declares that global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California and creates a comprehensive multi-year program to reduce California's greenhouse gas (GHG) emissions to 1990 levels by 2020;

WHEREAS, AB 32 added section 38501 to the Health and Safety Code, which expresses the Legislature's intent that Air Resources Board (ARB or the Board) coordinate with State agencies and consult with the environmental justice community, industry sectors, business groups, academic institutions, environmental organizations, and other stakeholders in implementing AB 32; and design emissions reduction measures to meet the statewide emissions limits for greenhouse gases in a manner that minimizes costs and maximizes benefits for California's economy, and maximizes additional environmental and economic co-benefits for California, and complements the State's efforts to improve air quality;

WHEREAS, section 38505 of the Health and Safety Code defines greenhouse gases as including carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride;

WHEREAS, section 38510 of the Health and Safety Code designates the ARB as the State agency charged with monitoring and regulating sources of GHG emissions in order to reduce these emissions;

WHEREAS, in section 38550 of the Health and Safety Code the Legislature has directed ARB, after holding one or more public workshops, to determine what the statewide greenhouse gas emissions level was in 1990, and approve in a public hearing a statewide greenhouse gas emissions limit equivalent to that level to be achieved by 2020;

WHEREAS, section 38551 of the Health and Safety Code specifies that the statewide greenhouse gas emissions limit shall remain in effect unless otherwise amended or repealed, and that the limit shall continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020;

WHEREAS, section 38560 of the Health and Safety Code directs the Board to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions from sources or categories of

sources, subject to the criteria and schedules specified in Part 4 of Division 25.5 of the Health and Safety Code;

WHEREAS, section 38560.5 of the Health and Safety Code requires the Board to publish and make available a list of discrete early action GHG emission reduction measures (early action measures) by June 30, 2007;

WHEREAS, section 38560.5 of the Health and Safety Code directs the Board to adopt regulations to implement the early action measures identified on the list, and specifies that the regulations shall be enforceable no later than January 1, 2010;

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the Board to adopt standards, rules and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, on April 20, 2007, ARB staff released for public review a draft report entitled "Proposed Early Actions to Mitigate Climate Change in California" (draft report), which sets forth staff's proposed list of discrete early action measures;

WHEREAS, the draft report recommended that a measure to restrict the use of high global warming potential refrigerants for non-professional recharging of leaking automotive air conditioning systems [Do-It-Yourself Measure] be identified as an early action measure pursuant to section 38560.5 of the Health and Safety Code;

WHEREAS, staff estimated that the Do-It-Yourself Measure would reduce GHG emissions 0.26 million metric tons of carbon dioxide equivalents annually by 2020 relative to projected levels;

WHEREAS, after a public hearing on June 21, 2007, the Board approved Resolution 07-25, which approved the Do-It-Yourself Measure as an early action measure and directed staff to develop it into a regulation;

WHEREAS, in 2007 and 2008 ARB staff conducted two public workshops, and participated in over three stakeholder meetings in order to include the public and affected stakeholders in the regulatory development process;

WHEREAS, non-professionals (i.e., do-it-yourselfers) presently recharge their motor vehicle air conditioning (MVAC) systems by purchasing and using hydrofluorocarbon (HFC)-134a refrigerant in small containers that hold between 2 ounces and 2 pounds of refrigerant by weight;

WHEREAS, HFC-134a is a HFC that is and has been the predominant refrigerant used in MVAC systems manufactured since 1995;

WHEREAS, HFC-134a is a potent GHG that has a global warming impact 1,300 times greater than carbon dioxide (CO_2);

WHEREAS, approximately 1.4 million consumers in California purchase two million small containers of automotive refrigerant each year in California, which release an estimated 810,000 metric tons of carbon dioxide equivalent GHGs into the atmosphere each year as a result of Do-It-Yourself (DIY) practices;

WHEREAS, most small containers of automotive refrigerant are presently not equipped with self-sealing valves, puncturing containers to recharge a MVAC system results in an estimated 33 percent of the stored refrigerant being released into the atmosphere;

WHEREAS, staff is therefore proposing the adoption of a proposed regulation to reduce emissions associated with Do-It-Yourself recharging of MVAC systems; the proposed regulation would establish a certification program requiring manufacturers to equip small containers of automotive refrigerant with self-sealing valves and to demonstrate compliance with a specified container leak rate;

WHEREAS, the proposed regulation would also establish a container deposit and return program to recover and recycle the can heel (refrigerant remaining in used containers). Consumers would pay a $10 deposit at the time of purchase, and would reclaim the deposit by returning a used container to the retailers within 90 days of purchase, retailers with assistance from manufacturers would transfer the used cans back to manufacturers, and manufacturers would recover and reclaim the refrigerant remaining in the containers;

WHEREAS, Manufacturers are presently recovering refrigerant from dented containers using existing container-filling equipment;

WHEREAS, the proposed container deposit and return program would establish an initial target recycle rate of 90 percent that increases to 95 percent in 2012; staff would determine the recycle rate from records submitted by manufacturers, retailers, and distributors, and the Executive Officer could revise the container deposit fee if the recycle rate falls below the targeted rate;

WHEREAS, the proposed regulation would also establish container labeling and consumer education requirements to promote consumer education of proper MVAC system charging practices, and to inform consumers of the environmental consequences of misuse of refrigerant and of the container deposit and return program;

WHEREAS, the proposed container labeling and consumer education requirements would help DIYers reduce refrigerant losses that currently result from improper servicing techniques;

WHEREAS, the proposed regulation would adopt new Article 4, Subarticle 5, Title 17 California Code of Regulations, sections 95360 to 95370, as set forth in Attachment A hereto;

WHEREAS, the Board routinely adopts certification and test procedures in tandem with regulations to alert parties of the manner in which ARB will determine compliance with technical requirements;

WHEREAS, staff proposes that the Board therefore adopt the proposed new certification and test procedures, "Certification Procedures for Small Containers of Automotive Refrigerant," Test Procedure 503, "Test Procedure for Leaks from Small Containers of Automotive Refrigerant", and Balance Protocol (BP–A1) "Balance Protocol for Gravimetric Determination of Sample Weights using a Precision Balance," as set forth in Attachments B, C, and D hereto;

WHEREAS, ARB staff prepared a staff report entitled "Initial Statement of Reasons (ISOR) for Proposed Rulemaking, Adoption of the Proposed Regulation for Small Containers of Automotive Refrigerant" which presents the rationale for the proposed regulation;

WHEREAS, the Initial Statement of Reasons and proposed regulatory language were made available to the public for at least 45 days prior to the public hearing to consider the proposed regulation;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project that may have significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available to reduce or eliminate such impacts;

WHEREAS, the Board has considered the effects of the proposed regulation on the economy of the State and the potential for adverse economic impacts on California business enterprises and individuals;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of Chapter 3.5 (commencing with section 11340), Part 1, Division 3, Title 2 of the Government Code;

WHEREAS, in consideration of the information in the public record, including the Initial Statement of Reasons, written comments, and testimony provided at the hearing, the Board finds that:

The proposed regulations meet the requirements specified in section 38560.5 of the Health and Safety Code;

Approximately 1.4 million Californians annually recharge their own MVAC systems and annually purchase approximately two million small containers (less than 2 pounds by weight) of HFC-134a each year in California; these activities generate an estimated 810,000 metric tons of carbon dioxide equivalent GHG emissions each year as a result of DIY practices;

Individuals conducting recharging may not properly identify or repair repairable leaks because they lack the training and/or equipment possessed by MVAC technicians, and may also unintentionally release more refrigerant than if the recharges were performed by trained and certified MVAC technicians at a licensed auto repair facility;

HFC-134a is a hydrofluorocarbon that is, and has been, the predominant refrigerant used in MVAC systems manufactured since 1995;

HFC-134a is a potent GHG that has a global warming impact 1,300 times greater than carbon dioxide (CO_2);

Most small containers of automotive refrigerant are presently not equipped with self-sealing valves, so when small containers are punctured to recharge a MVAC system, an estimated 33 percent of the stored refrigerant is released to the atmosphere;

The proposed regulation will help reduce GHG emissions generated from current Do-It-Yourself practices by establishing requirements on the sale, use, and disposal of small containers of automotive refrigerants with a global warming potential greater than 150;

Because most small containers of automotive refrigerant contain less than two pounds of refrigerant, the proposed regulation only applies to small containers containing between two ounces and two pounds of refrigerant by weight;

The proposed regulation would establish a certification program that would require manufacturers to equip small containers of automotive refrigerant with self-sealing valves and demonstrate compliance with a 3 gram per year leak rate; these requirements would help reduce losses occurring during Do-It-Yourself recharging and would help to capture any can heel after recharging a MVAC system. Technology is currently available to meet this requirement. Self-sealing valves are available from several manufacturers and are routinely used on consumer products, and valves are available that meet the 3 grams per year leakage requirement;

The proposed regulation would also establish a container deposit and return program to recover and recycle the can heel from used containers. Consumers would pay a $10 deposit at the time of purchase, and would receive a refund if they return the used container to the retailer within 90 days of purchase to receive a full refund of the deposit;

The proposed regulation establishes an initial target recycle rate of 90 percent that increases to 95 percent beginning January 2012. Staff would determine the recycle rate from manufacturer submitted records, and the proposed regulation would allow the Executive Officer to revise the deposit fee if the container return rate falls below the targeted rate;

The proposed regulation would also establish container labeling and consumer education requirements to promote consumer education of proper MVAC system charging practices, and to inform consumers of the environmental consequences of misuse of refrigerant, and of the container deposit and return program. These

requirements would help users reduce refrigerant losses that result from improper servicing techniques;

The proposed regulation would also establish recordkeeping requirements to enable staff to determine the effectiveness of the regulation and to monitor and ensure compliance with the regulation's requirements;

The proposed regulation would prohibit the disposal or destruction of a small container of automotive refrigerant that is not performed in accordance with the procedures specified in the regulation. Manufacturers or their designated recovery facilities would be required to evacuate small containers of automotive refrigerant to less than atmospheric pressure, unless the containers were previously breached. All other persons would have to return small containers of refrigerant that contain any quantity of refrigerant to the retailer, the manufacturer, or the manufacturer's designated recovery facility for future refrigerant recovery;

Manufacturers are currently investigating alternative refrigerants to HFC-134a that have lower global warming potentials (GWP) and superior energy efficiencies than HFC-134a, and the proposed regulation would therefore exempt refrigerants having GWPs less than 150. This exemption is consistent with a European Union Directive that will phase-in automotive refrigerants with GWPs less than 150 in new vehicles. With all other factors being equal, substituting a refrigerant with a GWP of 150 for HFC-134a would result in an 88 percent reduction in carbon dioxide-equivalent emissions;

The proposed regulation would only apply to non-ozone depleting refrigerants because federal law currently restricts the sale of any ozone-depleting refrigerants for use in motor vehicle air-conditioning systems, and that are in containers with less than 20 pounds of refrigerant, solely to only technicians that have been trained and certified pursuant to an EPA-approved training course;

The economic and fiscal impacts of the proposed regulation have been analyzed as required by California law, and the conclusions and supporting documentation for this analysis are set forth in the Initial Statement of Reasons and the Technical Support Document, as supplemented by Staff's presentation at the public hearing for this item;

WHEREAS, the Board further finds that:

Adoption of the proposed regulation is estimated to reduce 260,000 metric tons of carbon dioxide equivalent GHG emissions annually in California, at a cost of about $11 per metric ton of carbon dioxide equivalent reduced;

The proposed regulation would increase the retail unit cost of a small container of refrigerant by about $1; because the average retail price of a small container is

approximately $10, the estimated price increase represents a ten percent increase over current prices;

Consumers would be required to pay an additional $10 deposit for each small container of refrigerant, but could claim a full refund by returning the used container within 90 days to the place of purchase;

The adoption of the proposed regulation will not have any significant adverse environmental impacts and is projected to positively impact air quality by reducing emissions of greenhouse gases associated with Do-It-Yourself recharging of MVAC systems;

The reporting requirements of the proposed regulation that apply to businesses are necessary for the health, safety, and welfare of the people of the State;

The proposed amendments could result in the creation of a small number of jobs within the State;

The proposed amendments would not affect the ability of California businesses to compete with businesses in other states;

No alternative considered by the Board would be more effective in carrying out the purpose for which the regulations are proposed or would be as effective and less burdensome to affected private persons;

The proposed regulation would impact low-income households to a much lesser degree than the initially considered alternative of banning the sale of small containers of automotive refrigerant in California;

Approximately 15 percent of the users of small containers are considered low-income households based on household income reported for individuals in an industry sponsored study. A household is considered to be low-income if its annual income is less than twice the federal poverty level for a household of three;

Banning the sale of small cans of automotive refrigerant would greatly increase consumer costs of MVAC servicing, and individuals would no longer be able to recharge their MVAC system for $10 to $30 but would have to have their MVAC systems professionally serviced for hundreds of dollars. Low-income households would therefore be required to either forgo repairing their MVAC systems or have them professionally serviced at much higher costs. The "can ban" alternative would therefore create economic hardships on the low-income sector of the public, which would face the greatest difficulty with higher repair bills;

The proposed regulation fulfills the requirements applicable to discrete early action GHG emission reduction measures because it achieves the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions from its targeted source;

The proposed regulation is achievable using existing technology and manufacturing processes; and

The proposed regulation could serve as a model regulatory approach that other states may wish to adopt.

NOW THEREFORE, BE IT RESOLVED that the Board hereby approves the proposed adoption of Article 4, Subchapter 5, Title 17, California Code of Regulations sections 95360 through 95370, as set forth in Attachment A hereto, the incorporated Certification Procedures for Small Containers of Automotive Refrigerant, as set forth in Attachment B hereto, Test Procedure TP-503, Test Procedure for Leaks from Small Containers of Automotive Refrigerant, as set forth in Attachment C hereto, and Balance Protocol BP-A1, Balance Protocol for Gravimetric Determination of Sample Weight using a Precision Analytical Balance, as set forth in Attachment D hereto.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to adopt the proposed regulation as approved herein, after making the modified regulatory language, with such other conforming modifications and technical revisions as may be appropriate, available for public comment for a period of 15 days, as required by Government Code 11346.8, provided that the Executive Officer shall consider such written comments regarding the modifications as may be submitted during this period, shall make modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if he determines that this is warranted after reviewing the comments.

I hereby certify that the above is a true and correct copy of Resolution 09-1, as adopted by the Air Resources Board.

Monica Vejar

Monica Vejar, Clerk of the Board

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Resolution 09-1

January 22, 2009

Identification of Attachments to the Resolution

Attachment A: Amendments to Title 17, California Code of Regulations, sections 95360, 95361, 95362, 95363, 95364, 95365, 95366, 95367, 95368, 95369, and 95370.

Attachment B: Proposed Certification Procedures for Small Containers of Automotive Refrigerant.

Attachment C: TP-503 - Test Procedure for Leaks from Small Containers of Automotive Refrigerant.

Attachment D: BP-A1 - Balance Protocol for Gravimetric Determination of Sample Weight using a Precision Analytical Balance.

State of California
Environmental Protection Agency
AIR RESOURCES BOARD

Notice of Decision and Response to Significant Environmental Issues

Item:	Small Containers of Automotive Refrigerant
Approved By:	Resolution 09-1
Adopted by:	Executive Order R-09-007
Agenda Item:	09-1-2
Public Hearing Date:	January 22, 2009
Issuing Authority:	Air Resources Board
Comment:	No comments were received identifying any significant environmental issues pertaining to this item. The Staff Report identified no adverse environmental effects.
Response:	N/A
Certified:	Amy Whiting, Regulations Coordinator
Date:	June 11, 2009

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