

Excerpts from:

**EXPANDED LIST OF EARLY ACTION
MEASURES TO REDUCE GREENHOUSE
GAS EMISSIONS IN CALIFORNIA
RECOMMENDED FOR BOARD
CONSIDERATION**

OCTOBER 2007

BACKGROUND (Pg. 3)

The California Global Warming Solutions Act of 2006 (AB 32) creates a comprehensive, multi-year program to reduce GHG emissions in California, with the overall goal of restoring emissions to 1990 levels by the year 2020

CONCLUSIONS / RECOMMENDATIONS (Pg. 19)

At its June 2007 hearing, the Board asked staff to conduct additional analyses of stakeholder suggestions for early actions. Staff has completed this task as well as the further evaluation of additional potential early action measures, and recommends that the list of early action measures be expanded to 44. Nine of these strategies meet the AB 32 definition of discrete early action measures, which is three times the number of original discrete early action measures previously approved by the Board. **The ARB recognizes that California must act quickly and decisively now to begin the long road to mitigating the most serious impacts of global warming, and is committed to pursuing the full list of 44 early actions.**

GLOSSARY OF TERMS AND ACRONYMS (Pg. 20)

GHG – greenhouse gas or gases; defined in AB 32 as including carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride; also known as “the Kyoto six”

GWP – global warming potential; the relative warming of a greenhouse gas over a specified time period as compared to carbon dioxide which has a GWP defined as 1. The Kyoto Protocol uses a time period of 100 years.

HFCs – hydrofluorocarbons; a class of compounds whose molecules consist of carbon, hydrogen, and fluorine atoms typically used as a refrigerant in air conditioning systems and as aerosol propellants

HFCs are potent GHGs. (Pg. B-6)

Staff Analysis of Proposed Early Action for Climate Change Mitigation in California

(Pg. C-74 through C-76)

1. Early Actions Strategy Name and Proponent

SUMMARY # C20

ID NUMBER: *ARB 2-10*

TITLE: *ALTERNATIVE SUPPRESSANTS IN FIRE PROTECTION SYSTEMS*

PROPONENT: *STAKEHOLDER SUGGESTION*

2. Staff Recommendation

...Staff recommends developing a proposal for the use of lower GWP substances in fire protection systems to the extent that safe, technically feasible, and cost-effective alternatives are available. These systems, called total flooding systems, are typically used to protect large computer data management areas in commercial buildings, clean room manufacturing facilities, telecommunications equipment, museums and archives. If further evaluation supports the use of this measure as a early action, the proposal will be considered by the Board by December 2011.

One possible approach (for illustrative purposes only): By 2012, require that all new total flooding fire suppressant systems use fire suppressants with a GWP below a specified threshold. The analysis may also explore requiring, providing the options are technologically feasible and cost-effective, that existing total flooding fire suppressant systems enhance inspections of or replace systems using substances with a GWP above a specified threshold, which may or may not be different than the abovementioned threshold.

3. Early Action Description

Use lower global warming potential (GWP) gases in new fire protection systems to the extent that safe, technically feasible, and cost-effective alternatives are available.

4. Potential Emission Reductions

...There are several Halon alternatives being used in fire suppression systems. The US

EPA estimates that HFC 227ea covers approximately 16 percent of the total new flooding fire protection systems with HFC 23 (<1%), inert gas (10%) and not-in-kind alternatives (NIK) such as powdered aerosols, water sprinklers and mist systems making up the remainder of the market (74%) (US EPA, 2006). Although these Halon alternatives are not ozone depleters, HFC 227ea and HFC 23 do have significant global warming potentials (GWP) of 2990 for HFC 227ea and 11700 for HFC 23 (IPCC, 1996).

6. Technical Feasibility

There are a number of low GWP alternatives to Halons and HFCs for use in total flooding fire suppression systems, however, they need to be analyzed for effectiveness, space constraints, safety concerns, and other issues. Not every alternative will work in every situation and technical feasibility will vary based on space needs, human exposure potential for asphyxiates, and other constraints.

7. Additional Considerations

Some factors that need to be considered as part of the evaluation include whether the alternatives are as effective, do the alternatives have increased toxicity, are there any multi-media environmental impacts and whether the strategy would this apply to only new installations or would existing installations need to be retrofitted?