



Reducing Pollution Associated with Aircraft Deicing Activities

VOLUNTARY POLLUTION REDUCTION PROGRAM QUESTIONS AND ANSWERS

1. What is the Voluntary Pollution Reduction Program?

The Voluntary Program is an industry effort designed to proactively reinforce and build on the aviation industry's long record of success in reducing discharges of related to the use of aircraft deicing fluid ("ADF"). The Voluntary Program creates a framework for the industry to build on that success and document its continuing progress.

2. Who Leads Implementation of the Voluntary Program?

The Voluntary Program was created by and will be implemented through the industry's major trade associations: the Airports Council International – North America, Airlines for America, the Regional Airline Association, and the American Association of Airport Executives. The commitments made in the program are undertaken by the Associations to focus industry leadership in an effort to ensure continued future progress. The commitments apply to the Associations, not their members. At the same time, the Associations will actively engage their membership, seeking their insights and guidance as the Program is developed and implemented.

3. What Are the Core Elements and Major Milestones?

The Voluntary Program will produce the following benefits:

- Outreach to the aviation industry to facilitate information exchange about pollution reduction technologies;
- Encourage the development, testing and deployment of commercially reasonable pollution reduction technologies;
- Identifying and characterizing the environmental benefits of pollution reduction technologies;
- An inventory of pollution reduction technologies adopted;
- Development of a quantitative pollution reduction goal; and
- Reporting to EPA and to the public, including a final report comparing the benefits of pollution reduction technologies adopted nationwide with the quantitative pollution reduction goal.



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The schedule of activities during the 5-year term of the Voluntary Program is as follows:

September 30, 2012	Establish and Initiate Voluntary Program
November 30, 2012	Initial Report (establishing list of air
September 30, 2014	Phase I Report
September 30, 2017	End Voluntary Program
November 30, 2017	Phase II Report

4. What is the Quantitative Pollution Reduction Goal?

The Goal has yet to be defined in quantitative terms. In fact, establishing a quantitative this goal is one of the keys to focusing leadership and itself will represent a major step in ensuring continued future progress. The quantitative goal does/will have several defining features:

The Quantitative Goal is National:

As EPA concluded in its recently-published *Effluent Limitation Guidelines for the Airport Deicing Category*, a nationally-standardized approach to pollution reduction the use of ADF is neither appropriate nor feasible. The Voluntary Program is thus designed to encourage and to quantify pollution reduction benefits nationwide, recognizing that the contributions of individual sites will necessarily vary according to their site-specific circumstances. The Quantitative Goal does/will not establish standards, targets or benchmarks for any individual airport, airline or other entity involved in aircraft deicing activity.

The Quantitative Goal Does/Will Reflect the Adoption of Pollution Reduction

Technologies: The Voluntary Program focuses on the facilitation and development of pollution reduction technologies. Because application of ADF is essential to ensure flight safety, mandated by FAA regulation and dictated by inherently variable and unpredictable weather conditions, it is not possible to limit or constraint on the use of ADF. By focusing on the adoption and deployment of pollution reduction technologies, industry leverages the best available means of continuing progress in reducing pollution related to deicing activities.

The Quantitative Goal Will be Expressed in Terms of Reduction in Oxygen Demand

Resulting from the Adoption of Technologies: As explained below, oxygen demand is a measure of the impact of ADF on water quality. Because this is the primary environmental impact associated with use of ADF, reduced oxygen demand is the most appropriate measure for this environmental program.



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5. How Will Progress Towards the Quantitative Goal Be Measured?

Progress will be measured in terms of technology adoption by industry in 2017 relative to 2005 and the concomitant reduction in oxygen demand. Progress will thus be measured not in terms of absolute reduction in fluid usage or discharges associated with fluid usage (as is appropriate as fluid use is dictated by flight safety and variable weather conditions), but rather in terms of reductions relative to discharges that, absent the adoption of pollution reduction technologies since 2005, would have otherwise occurred.

6. How Will Progress Towards the Quantitative Goal Be Reported?

In keeping with the nature of the national goal, the Associations will report progress towards the goal on a national basis. No single airport, airline or other entity will be the subject of reporting – rather, progress will be reported in an aggregated format reflecting the collective efforts to adopt pollution reduction technologies across the nation as a whole.

7. What Information will the Associations Rely Upon in Reporting Progress Towards the Goal?

The Associations expect to solicit and collect information regarding the deployment of pollution reduction technologies, both in the baseline year (2005) and the goal year (2017), from their members and other entities involved in aircraft deicing activities. The Associations will also solicit existing studies or other reports that evaluate the effectiveness technologies deployed. The Associations also expect to solicit information from technology providers regarding the efficacy of those technologies in reducing pollution. The Associations will not undertake independent studies, reports or other evaluations of technologies, specific airports or deicing operations, or sponsor or solicit such studies, reports or evaluations as a part of this Program. Because the Program focuses on and the Quantitative Goal will reflect the deployment of technologies, the Associations will not require or rely on data or studies regarding ADF usage or discharges.

8. What Airports, Airlines and Aircraft Deicing Operations Are Included in the Voluntary Program?

The participants in the Voluntary Program are the four signatory industry associations (ACI-NA, A4A, AA AE and RAA), not any individual airport, airline or other entity involved in aircraft deicing activities. As part of the Voluntary Program, the Associations will identify a list of airports at which approximately 80 percent of aircraft deicing activity takes place (collectively on a national basis). As explained above, none of these airports (or the airlines or entities engaged in deicing activities at the airports) will be subject to the quantitative goal or be subject to reporting. Rather, the



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Associations will engage the airports and entities involved in deicing activities at these airports to solicit information to document the deployment of pollution reduction technologies and establish progress towards the goal.

9. What Will the Voluntary Program Accomplish?

It is the expectation of the aviation industry that the Voluntary Program will facilitate, reflect and document its continued substantial progress in reducing pollutant discharges resulting from the deicing of aircraft at existing airports. While establishment of the Voluntary Program's quantitative pollution reduction goal will not occur until September 30, 2014, it is our expectation that this program will document meaningful and substantial improvements in performance, and our belief that those improvements will be comparable to if not greater than the improvements projected under the terms originally proposed by EPA for the control of these discharges.

10. What is aircraft deicing and how can it affect the environment?

Safety is the aviation industry's number one, non-negotiable imperative and consequently has worked hand in hand with the Federal Aviation Administration (FAA) to develop strict aircraft deicing programs which require the application of ADF in certain winter conditions. Apart from water, the principle ingredient of ADF is ethylene glycol or propylene glycol - these "freeze point depressants" ensure snow and ice do not accumulate on planes before takeoff.

Ethylene glycol is found in many commonly used products, including automobile antifreeze. Propylene glycol, the freeze point depressant usually found in ADF used in the US, is "Generally Recognized as Safe" by the Food & Drug Administration, allowing it to be used extensively in foods, cosmetics, and oral hygiene products. When glycol is released into water, it is a boon to many microorganisms, which literally feast on the substance. Unfortunately, as microorganisms feast on glycol they deplete oxygen levels in the water. This increased "oxygen demand" can adversely affect other larger organisms such as fish, or lead to algae blooms or other growth deemed "nuisances." Controlling release of glycol from deicing operations can therefore be important to protecting and maintaining the quality of sensitive water bodies. Responding to market demand for even more environmentally friendly products, ADF manufacturers are developing ADF that exert less oxygen demand (measured as "Biological Oxygen Demand" (BOD) or "Chemical Oxygen Demand" (COD)). Airlines and other market participants continue to support efforts to develop these fluids and bring them to market.

11. How Does the Voluntary Program Relate to the EPA's New "Effluent Limitations Guidelines and New Source Performance for the Airport Deicing Category"?



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While they address similar subject matter, the Voluntary Program and EPA's Deicing ELG are completely distinct from and unrelated to one another.

EPA's Deicing ELG was published in the *Federal Register* May 16, 2012 (77 Fed. Reg. 29168). After over a decade of studying the issue, EPA concluded that decisions about the measures that should be taken to address runoff related to aircraft deicing at existing airports must be made "on a site-specific basis because such determinations appropriately consider localized operational constraints (*e.g.*, traffic patterns), land availability, safety considerations, and potential impacts to flight schedules." New Source Performance Standards for control of such runoff will apply only to future "major greenfield airports" constructed in defined cold weather climates.

The Voluntary Program is an industry led program designed to proactively reinforce the aviation industry's long-standing voluntary efforts to reduce discharges associated with the use of aircraft deicers at existing airports. EPA has no role in development or implementation of the Voluntary Program.