

Welcome to the 2016 Fall RAD Partner Meeting!

Sally Hamlin– U.S. EPA
Christine Gajewski– ICF
Gabrielle Jette– ICF

October 25, 2016



Agenda



- **RAD Updates**
 - 2015 RAD partner achievements
 - Recent RAD activities
 - What's new
- **Breakout Session I**
 - RAD benefits, marketing, and consumer outreach
- **Breakout Session II**
 - Increasing program growth and enhancing RAD partner benefits
- **Report Out**
 - Highlights of group discussions



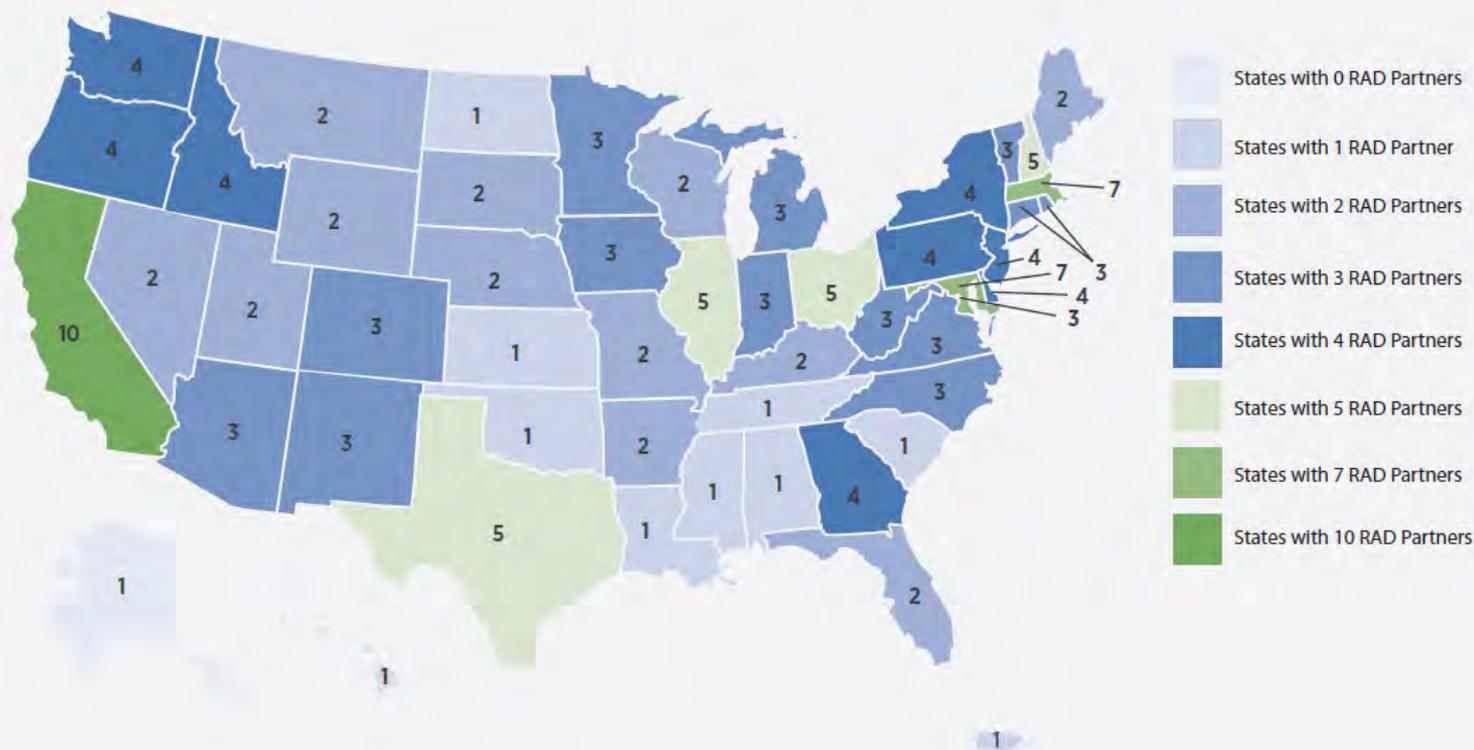
RAD Updates

2015 RAD Partner Achievements



- In 2015, RAD partners **achieved nationwide coverage** servicing 50 states plus the District of Columbia and Puerto Rico

Map of RAD Partners and Affiliates



2015 RAD Partner Achievements



- In 2015, RAD also **welcomed three new partners**—one utility, one independent appliance retailer, and the Program’s very first state partner



Delaware Health and Social Services

2015 RAD Partner Achievements



In 2015, RAD partners processed **810,200** units, including:



725,467 Refrigerators



3,250 Dehumidifiers



73,656 Stand-Alone Freezers



7,817 Air Conditioning Units

As a result, partners achieved the following impacts:

- **2.8 million MTCO₂eq of GHG emissions avoided:**
 - Equal to the annual emissions from the electricity use of 415,000 homes
- **143 ODP-weighted MT of ODS emissions avoided:**
 - Protecting the Earth's ozone layer, the environment, and human health
- **2.2 billion kWh saved**
 - \$307 million in consumer savings

Recent RAD Activities



- Webinars

- Non-Energy Benefits of RAD (held on June 2, 2016)
- Becoming RAD (held on August 31, 2016)



- Program Documents

- The Benefits of EPA's RAD Program
- Sears Case Study

The Benefits of EPA's Responsible Appliance Disposal (RAD) Program

Background

It is estimated that more than 11 million refrigerators/freezers, 6 million window air conditioning units, and 1 million dehumidifiers are disposed of annually in the United States. To reduce the harmful impacts these appliances have on the environment when they are taken out of service, federal law requires that all refrigerant is recovered prior to dismantling or disposal and that universal waste (e.g., mercury, used oil, and polychlorinated biphenyls (PCBs)) is properly managed and stored. Federal law, however, does not require the recovery of appliance foam blowing agents, which contribute to ozone depletion and climate change if released into the atmosphere. To encourage the proper handling of appliance foam, as well as compliance with federal law regarding safe appliance disposal, the U.S. Environmental Protection Agency (EPA) launched the Responsible Appliance Disposal (RAD) Program—a voluntary partnership that has achieved significant environmental benefits since its inception in 2006.

What are the concerns over appliance disposal today?

The reuse of old, inefficient units leads to increases in energy consumption, energy costs, and greenhouse gas (GHG) emissions. At the time of disposal, many refrigerated appliances are collected through pick-up programs offered by municipalities or retailers (when a new unit is purchased and delivered). Municipalities and retailers typically subcontract the disposal of appliances to third parties, who often refurbish and resell an estimated 25% of these units. Old, inefficient appliances that are put back on the electricity grid continue to operate, consuming excessive amounts of electricity. The industry often refers to such reuse as "recycling." While it can be environmentally beneficial to reuse some second-hand appliances, extending the lifetime of old units can take an undue toll on our energy grid, resulting in higher energy costs for consumers and environmental and health impacts for all.

Asbestos "recycling" is a term and loosely is the industry that can mean many things—the reuse of pieces of an old unit, or the placement of the unit's valuable metals on the recycling market, while the remaining disposable components are landfilled and other hazardous components are released into the environment. "Recycling" is not synonymous with good environmental practices.

Only the most valuable metals get recycled, while other valuable goods get landfilled. Units that are not fit for resale are typically sent to scrap metal companies, where valuable metals are salvaged for sale on the recycling market. But plastics, glass, and other durable materials are typically shredded and landfilled. The industry often refers to this practice as "appliance recycling."

VISION INTO REALITY: LAUNCH

Sears began as a combined effort appliance haulers and utilities. By sites that offer rebates on the removal of appliances from the electricity grid as E-Side Management (ESM) programs using electricity use through energy conservation. Sears has been able to make recycling program cost-neutral. Sears ability lead-away programs on the West partnership with JACO Environmental Sacramento Municipal Utility District and two retail locations and one

Background

In 2007, one of the nation's leading home appliance retailers—Sears, Roebuck and Co. (Sears)—became the first nationwide retailer to partner with the U.S. Environmental Protection Agency (EPA) as part of the Responsible Appliance Disposal (RAD) Program. At 60 retail locations and 38 distribution Holdings (the parent company led the opportunity to make a large-scale impact by becoming a RAD program partner with the ability to use of their registered appliances, the promotion of energy-efficient products, and the RAD program vision.

Benefits

The RAD Program is a partnership that is critical to protect the ozone layer, cut greenhouse gas (GHG) emissions, and benefit communities. The RAD Program recognizes partners that commit to collecting and disposing of old refrigerated appliances using the best environmental practices available and going above and beyond what is required by federal law.

The RAD Program invites retailers, manufacturers, local governments, universities, and other leading organizations to become partners. The RAD Program also invites states to become RAD affiliates to promote the program to potential partners and increase environmental benefits for their states and communities.

Background

In 2007, one of the nation's leading home appliance retailers—Sears, Roebuck and Co. (Sears)—became the first nationwide retailer to partner with the U.S. Environmental Protection Agency (EPA) as part of the Responsible Appliance Disposal (RAD) Program. At 60 retail locations and 38 distribution Holdings (the parent company led the opportunity to make a large-scale impact by becoming a RAD program partner with the ability to use of their registered appliances, the promotion of energy-efficient products, and the RAD program vision.

Benefits

The RAD Program is a partnership that is critical to protect the ozone layer, cut greenhouse gas (GHG) emissions, and benefit communities. The RAD Program recognizes partners that commit to collecting and disposing of old refrigerated appliances using the best environmental practices available and going above and beyond what is required by federal law.

The RAD Program invites retailers, manufacturers, local governments, universities, and other leading organizations to become partners. The RAD Program also invites states to become RAD affiliates to promote the program to potential partners and increase environmental benefits for their states and communities.

Background

In 2007, one of the nation's leading home appliance retailers—Sears, Roebuck and Co. (Sears)—became the first nationwide retailer to partner with the U.S. Environmental Protection Agency (EPA) as part of the Responsible Appliance Disposal (RAD) Program. At 60 retail locations and 38 distribution Holdings (the parent company led the opportunity to make a large-scale impact by becoming a RAD program partner with the ability to use of their registered appliances, the promotion of energy-efficient products, and the RAD program vision.

Benefits

The RAD Program is a partnership that is critical to protect the ozone layer, cut greenhouse gas (GHG) emissions, and benefit communities. The RAD Program recognizes partners that commit to collecting and disposing of old refrigerated appliances using the best environmental practices available and going above and beyond what is required by federal law.

The RAD Program invites retailers, manufacturers, local governments, universities, and other leading organizations to become partners. The RAD Program also invites states to become RAD affiliates to promote the program to potential partners and increase environmental benefits for their states and communities.

Background

In 2007, one of the nation's leading home appliance retailers—Sears, Roebuck and Co. (Sears)—became the first nationwide retailer to partner with the U.S. Environmental Protection Agency (EPA) as part of the Responsible Appliance Disposal (RAD) Program. At 60 retail locations and 38 distribution Holdings (the parent company led the opportunity to make a large-scale impact by becoming a RAD program partner with the ability to use of their registered appliances, the promotion of energy-efficient products, and the RAD program vision.

Benefits

The RAD Program is a partnership that is critical to protect the ozone layer, cut greenhouse gas (GHG) emissions, and benefit communities. The RAD Program recognizes partners that commit to collecting and disposing of old refrigerated appliances using the best environmental practices available and going above and beyond what is required by federal law.

The RAD Program invites retailers, manufacturers, local governments, universities, and other leading organizations to become partners. The RAD Program also invites states to become RAD affiliates to promote the program to potential partners and increase environmental benefits for their states and communities.

- Program Growth

- Developing partner recruiting toolkit
- Exploring options for new partner categories

Coming Soon!



- 2015 RAD Annual Report
- Case study on DHSS
- New RAD website (preview below)

Responsible Appliance Disposal (RAD)

RAD partners have prevented 1.1 billion pounds of metals, plastic, and glass from going to landfills. That's just one of the many ways RAD is protecting our environment.

RAD is a voluntary partnership program that works with utilities, retailers, manufacturers, states, affiliates, and others to dispose of old refrigerated appliances using the best environmental practices available—going beyond federal requirements to protect Earth's climate and ozone layer.

About | **Partners** | **Spotlight**

[About the RAD Program](#) | [Partners & Affiliates](#) | [For Consumers](#) | [Become a Partner](#)

Spotlight: Sears: A RAD Partner from the Start
In 2007, one of the nation's leading home appliance retailers—Sears—became the first retailer to partner with RAD.

About the RAD Program

- What is RAD?
- What are the concerns over appliance disposal today?
- How do RAD partners help?
- What are the benefits?

What is RAD?
The U.S. Environmental Protection Agency's (EPA) Responsible Appliance Disposal (RAD) program is a partnership launched in October 2006 to protect the ozone layer, cut greenhouse gas (GHG) emissions, and benefit communities. The RAD program recognizes partners that commit to collecting and disposing of old refrigerated appliances using the best environmental practices available and going beyond what is required by federal law.

What are the concerns over appliance disposal today?

- Insulating foam blowing agents are released to the environment, contributing to stratospheric ozone depletion and climate change.
- Refrigerant and other harmful substances may be released to the environment, against federal requirements.
- Only the most valuable metals get recycled, while other durable goods get landfilled.

Units that are not fit for resale are typically sent to scrap metal companies, where valuable metals are salvaged for sale on the recycling market. However, plastics, glass, and other durable materials are typically discarded and landfilled. The industry often refers to this practice as "appliance recycling."

How do RAD partners help?
Partners in EPA's RAD Program commit to collecting used refrigerated appliances and implementing best practices for the recycling/disposal of these units that go beyond federal law. This means:

- Recovering appliance foam
- Complying with laws on the recovery of refrigerant, used oil, mercury, and PCBs
- Promoting recycling of all durable goods
- Promoting the permanent retirement of old, inefficient appliances to save energy

RAD partners also commit to annual reporting to track the environmental impacts of their efforts. A list of partner responsibilities can be found on the [Partner Roles & Responsibilities](#) page.

What are the benefits?

For Consumers

Related Topics: Responsible Appliance Disposal (RAD)

- Why should I care about responsible appliance disposal?
- How can I recycle my appliance the RAD way?
- How much does it cost to dispose of my old appliance?
- Related Pages

Why should I care about responsible appliance disposal?
That old fridge or freezer is taking up space in your garage or basement. Replacing it could save you up to \$50 a year in energy costs. Plus, there are significant benefits for the environment and your community if you get rid of that old appliance—the RAD way. Specifically, the proper disposal of an old fridge or freezer will:

- Reduce your household energy consumption, which will save you money and prevent greenhouse gas emissions (GHGs)
- Avoid the release of ozone depleting substances (ODS) and GHGs, which contribute to ozone depletion and climate change
- Save landfill space and energy by recycling—rather than landfilling—the metals, plastics, and glass contained in your appliance
- Avoid the release of used oil, which can cause damage to the liver, brain, immune system, and reproductive system
- Avoid the release of mercury, which can lead to impairment of neurological development and other problems associated with the human nervous system
- Avoid the release of polychlorinated biphenyls (PCBs), which can have carcinogenic and non-carcinogenic health effects

Learn more about the benefits of RAD on the [Program Benefits](#) and [Program Results](#) pages.

How can I recycle my appliance the RAD way?
Use the [Find RAD Partner Programs](#) page to find a RAD partner program near you. Most RAD partner programs will pick up your old refrigerated appliances (such as a fridge, freezer, window air-conditioning unit, and dehumidifier) directly from your home. In some cases, they might even offer a financial incentive such as a reward or rebate for turning in your old units. These appliances will then be sent to a recycling facility capable of properly handling the environmentally harmful substances contained in the units, using the best environmental practices and technologies available.

Find RAD Partner Programs in Your State

The links below will take you to websites external to the EPA domain. The following link just the state link.

Search all columns:

Please select a name: Ohio State Partner Type

Program Name	State	Partner Type
AEF Ohio	OH	Utility
Appliance Store	GA, MI, OH, TX	Retailer
Dayton Power and Light (DPL)	OH	Utility
Great Lakes Cooperative	ALL	Retailer
Western Energy Delivery	IL, OH	Utility

Showing 1 to 5 of 5 entries (filtered from 55 total entries)

Benefits Achieved by RAD

6.5 MILLION refrigerated appliances recycled the RAD way

30.2 MILLION metric tons of GHG emissions avoided

1,645 TONS of ODS emissions avoided

912 MILLION POUNDS METALS prevented from going to landfills

143 MILLION POUNDS PLASTIC prevented from going to landfills

22 MILLION POUNDS GLASS prevented from going to landfills

To learn more, visit the [Program Benefits](#) page or view our most recent [Annual Report](#).

If a partner program is not currently available in your area:

- Check with your state energy office or local electric utility. Local utilities and energy-efficiency organizations support a growing number of refrigerator and freezer recycling programs. Some programs offer cash to recycle your old fridge; others offer utility bill credits.
- Ask about municipal pick-up of appliances. Your local waste management division or department of public works may offer heavy trash pick-up and recycling programs for appliances. Contact them directly for information.
- Talk to your local scrap metal recycler. Thousands of local scrap metal recyclers can recycle old fridges and freezers. Ask your scrap metal recycler for assurance that your unit will be properly recycled. Learn more about the concerns over appliance disposal today to ensure responsible appliance disposal.

Appliances left curbside might be picked up by peddlers who may improperly vent refrigerant or otherwise dispose of the appliance in an unsafe manner.

What's New



- Final rule revising the Section 608 Refrigerant Management Regulations
 - Includes requirements for the safe disposal of refrigeration and air-conditioning equipment, including household appliances
 - To learn more, visit: www.epa.gov/section608

The EPA's Updated Refrigerant Management Requirements
What Appliance Disposal and Recycling Facilities Need to Know

What are the Section 608 regulations?
Section 608 of the Clean Air Act prohibits the knowing release of refrigerant during the maintenance, service, repair, or disposal of air-conditioning and refrigeration equipment. The EPA requires proper refrigerant management practices by appliance disposal facilities, owners and operators of refrigeration and air-conditioning systems, technicians, reclaimers, and others.

What's changing in these regulations?
In the fall of 2016, the EPA updated the existing requirements related to ozone-depleting substances (ODS), such as CFCs and HCFCs, and extended them to substitutes such as HFCs.¹ The updates include:

- More stringent requirements for repairing leaks in larger appliances;
- New recordkeeping for the disposal of appliances containing five to 50 pounds of refrigerant;
- New reporting requirement that kicks in when larger appliances leak 120% or more of their charge in a calendar year;
- Restricting the sale of HFC refrigerant to technicians certified under Sections 608 or 609 of the Clean Air Act; and
- Changes to improve readability and simplify compliance.

How will the new requirements affect appliance disposal and recycling facilities?
Starting **January 1, 2018**, appliance disposal and recycling facilities will need to comply with the revised provisions.² Changes to the existing regulations are outlined:

Appliance disposal and recycling facilities must:

- Before disposal of **small appliances** (i.e., refrigerators and window air conditioners):
 - Recover 80% or 90% of ODS or substitute refrigerant from the appliance using certified recovery and/or recycling equipment; or
 - Evaluate the appliance to 4 inches of mercury vacuums; or
 - Verify with a signed statement or contract that ODS or substitute refrigerant was previously recovered according to the safe disposal requirements.

¹ These regulations do not extend to substitutes that have been exempted from the existing prohibitions, such as ammonia.
² The fact sheet highlights select changes that may be of most interest to the community. Please see the regulations for the full changes/requirements.

EPA United States Environmental Protection Agency

Safe Disposal Procedures for Household Appliances that Use Refrigerants

Introduction
Appliances that are no longer held in use often drop off for disposal at solid waste landfills, metal recyclers, or similar facilities. Many of these appliances, such as window air conditioners, motor vehicle air conditioners, and refrigerators, rely on ozone-depleting refrigerants and their substitutes. As the owner or operator of a solid waste landfill or metal recycling facility, you need to comply with the U.S. Environmental Protection Agency's (EPA's) regulations for the removal of refrigerants before the disposal of any appliances.

Which Appliances You Need to Check Before Accepting for Disposal
Appliances with cooling elements, such as motor vehicle air conditioners, household refrigerators and freezers, window air conditioners, water coolers, vending machines, ice makers and dehumidifiers, are subject to EPA's safe disposal requirements.

What You Need to Do When You Accept these Appliances for Disposal
Under the federal regulations, you are responsible for making sure the refrigerant has been properly removed before an appliance is banded, shredded or dismantled, even by verifying its removal prior to arrival at your facility, or by removing it yourself.

Verification of Refrigerant Removal Prior to Arrival at Landfill
As the owner or operator of a solid waste landfill or metal recycling facility, you must obtain a written and signed statement, from the owner or operator of the facility, verifying that the refrigerant has been properly removed from all appliances (including motor vehicle air conditioners) prior to delivery to your facility.

What should I do if a truck delivers a load of one or more appliances that have any refrigerant in them for the appliances or appliance owners or operators to remove the refrigerant as required by the regulations, or if you're using EPA's new sections?
If you're using EPA's new sections, you must properly remove the refrigerant before it arrives at your facility. You must do so by recycling or dismantling the appliance at your facility. If you choose to remove the remaining refrigerant from an appliance at your facility, you must do so in accordance with EPA's rules. You must obtain and properly handle that has been removed from an appliance. The owner of refrigerant recovery equipment must be signed by the other responsible party to verify the safe disposal of the appliance.

What's New



- Recent SNAP determinations affecting household refrigerators
 - For a complete list of acceptable substitutes in household refrigerators and freezers, visit: <https://www.epa.gov/snap/acceptable-substitutes-household-refrigerators-and-freezers>

Recent SNAP Determinations that Impact New Household Refrigerators		
Compound(s)	SNAP Determination	Effective Date
Foam Blowing Agents		
HFC-134a, HFC- 245fa, HFC-365mfc and blends thereof	Unacceptable	1/1/2020
Formacel TI and Formacel Z-6	Unacceptable	1/1/2020
Methylal and HFO–1336mzz(Z)	Acceptable	10/21/2014
Solstice™ 1233zd(E)	Acceptable	8/10/2012
Refrigerants		
R-513A	Acceptable	7/16/2015
R-290 (propane)	Acceptable	5/11/2015
R-450A	Acceptable	10/21/2014
R-600a (isobutane)	Acceptable	2/21/2012
R-134a	Unacceptable	1/1/2021

What's New



- Foam destruction protocol
 - New methodology from the American Carbon Registry (ACR) to quantify GHG emission reductions associated with the destruction of high-GWP foam
 - Update to the 2014 CARB Compliance Offset Protocol for ODS Projects
 - Currently in the approval process
 - Public comment version available at:
<http://americancarbonregistry.org/carbon-accounting/standards-methodologies/destruction-of-ozone-depleting-substances-and-high-gwp-foam>

What's New



- HFC amendment under the Montreal Protocol
 - Kigali Amendment adopted on October 15, 2016
 - Phase down the use and production of HFCs
 - Expected to avoid up to a half-degree centigrade of warming by the end of the century



Photo Credit: Ministry of Natural Resources - Rwanda

Instructions for Breakout Sessions



- Two simultaneous roundtable discussions (~45 minutes)
 - Group I will focus on topics related to RAD benefits, marketing, and consumer outreach
 - Group II will focus on topics related to increasing program growth and enhancing RAD partner benefits
 - Opportunity to do a deep dive on topics that are important to partners
- Report out (~30 minutes)
 - Representative from each group presents key discussion points
 - Opportunity for others to weigh-in on all discussion topics

Breakout Session

Discussion Topics



- **Group I:**
 - Summary of RAD Benefits Document
 - Communicating the Non-Energy Benefits of RAD
 - Next Steps on Collaborative RAD Marketing
 - Customer/Consumer Outreach Support
- **Group II:**
 - Opportunities for Organic Program Growth
 - New Partner Categories
 - Partner Recruiting Toolkits
 - Enhancing Partner Benefits and Keeping Partners Engaged
 - Partner Recognition

Report Out



- Group I key discussion points
 - Summary of RAD Benefits Document
 - Communicating the Non-Energy Benefits of RAD
 - Next Steps on Collaborative RAD Marketing
 - Customer/Consumer Outreach Support
- Group II key discussion points
 - Opportunities for Organic Program Growth
 - New Partner Categories
 - Partner Recruiting Toolkits
 - Enhancing Partner Benefits and Keeping Partners Engaged
 - Partner Recognition

Thank you for participating!



Sally Hamlin

RAD Program Manager

+1 202-343-9711

hamlin.sally@epa.gov

www.epa.gov/rad



Reminder: Please fill out the feedback form!