



Requirements for the Phase Down of Hydrofluorocarbons

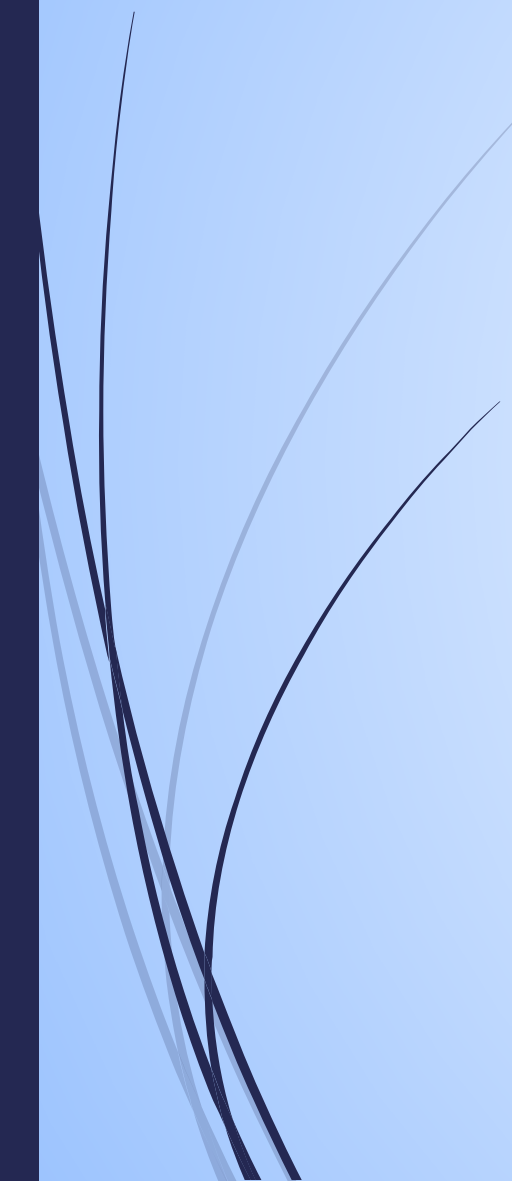
7 DE Admin Code 1151 – Review Committee Meeting

DNREC – DAQ

October 8, 2019



Review Committee Goal

- ▶ To help the Department craft/tailor the regulation (*7 DE Admin. Code 1151 Requirements for the Phase Down of Hydrofluorocarbons*) to be representative of Delaware's economic, social and environmental considerations.
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Agenda

- ❖ **Introductions**
- ❖ **Division of Coastal Climate and Energy Presentation on the *Cool Switch Program***
- ❖ **Review the Draft Regulation Language**
 - **Overview of the Changes since last Review Committee Meeting**
 - **Open Discussion**
 - **Regulatory Timeline Overview**



Cool Switch - Low Impact Refrigerant Program

October 8, 2019

Why? Refrigerants and Environmental Impact

The goal of the Cool Switch program is to incentivize the use of refrigerants with lower Global Warming Potential (GWP) impacts.

- ▶ Refrigerant systems use manufactured chemicals designed to efficiently move heat
- ▶ Some of these chemicals were banned by international treaty (1987 Montreal Protocol) because they damage the ozone layer
- ▶ Some of the new, replacement chemicals have high GWP impacts

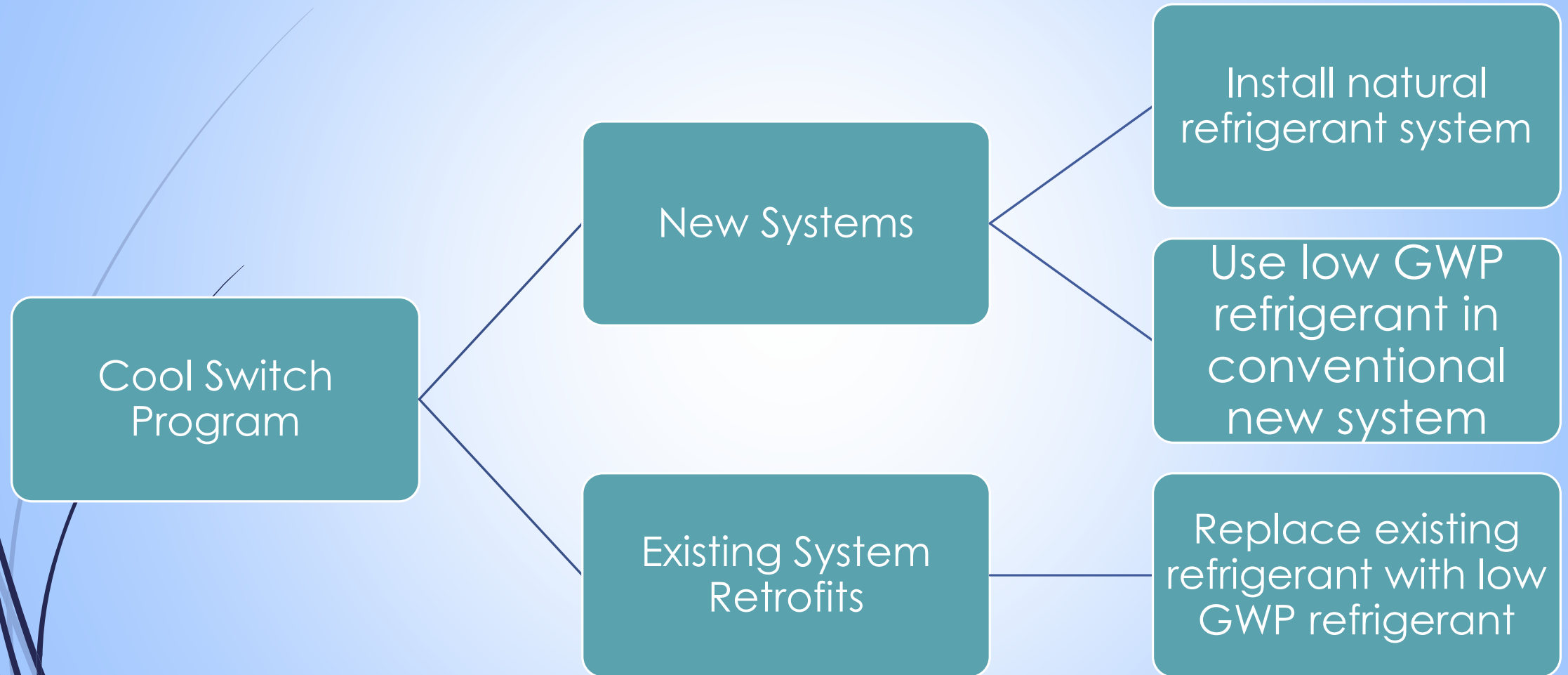


1 pound of R404A =
3922 GWP



1 pound of Ammonia
= 0 GWP

Program Pathways



Eligibility Requirements

- ▶ Cool Switch is available to non-residential consumers that use or will use **at least 50 lbs of refrigerant**
 - ▶ Usage could be one facility or multiple facilities in aggregate
- ▶ Installed refrigerants must have a **GWP less than 1,500**
 - ▶ Examples: R-449A, R-448A, Ammonia, and Carbon Dioxide

Application Process: Pre-Approval

- ▶ All grants require pre-approval prior to purchasing any services, equipment or refrigerants
- ▶ Participants will submit an application form to DNREC
 - ▶ Application asks for:
 - ▶ Contract/installer/vendor information
 - ▶ Baseline system specifications (retrofit)
 - ▶ Replacement/net system specifications
- ▶ Pre-installation site visit may be required

Program Incentive Limits

Incentives for all pathways will be paid at a rate of **\$25 per ton** of avoided CO₂-equivalent emissions

Retrofit System Limit

- Lesser of 50% of total project cost or \$100,000

New Systems Limits

- **Natural refrigerant systems:**
Lesser of 50% of total project cost or \$250,000
- **Conventional systems:**
Lesser of 25% of total project cost or \$100,000

Calculating Savings and Incentives

Details...

Formula 1. Avoided Emissions of CO₂-equivalent GHGs

$$tCO_2e = \text{Years of Operation} * [(GWP_B * Charge_B * Leakage_B) - (GWP_N * Charge_N * Leakage_N)]$$

$\underbrace{\hspace{10em}}_{\text{Years of Operation}} * \underbrace{[(GWP_B * Charge_B * Leakage_B) - (GWP_N * Charge_N * Leakage_N)]}_{\text{[Annual CO}_2\text{ equivalent from old system} - \text{Annual CO}_2\text{ equivalent from new system]}}$

Formula 2. Total Project Incentives

$$\text{Total Incentive (\$)} = \text{MIN} \left\{ \begin{array}{l} \text{Incentive Cap (\$)} \\ \text{Avoided Emissions (ton)} * \text{Marginal Incentive (\$/ton)} \end{array} \right.$$

Summary

$$\begin{array}{l} \text{Avoided} \\ \text{Emissions} \\ \times \\ \text{\$ per avoided} \\ \text{ton} \\ = \\ \text{Incentive} \\ \text{Payment} \end{array}$$

Post Installation: Final Review

- After project completion, participant submits itemized invoices for all install equipment and refrigerants
- DNREC conducts final review
- DNREC may require a post-installation site visit
- Once the project passes final review, the grant is disbursed

Next Steps

- ▶ Program guidelines and application forms will be completed and available on DNREC's website in October
- ▶ The official program launch date will be announced within the next 30 days
- ▶ For questions or additional information, contact:
 - ▶ Ed Synoski, Edward.Synoski@delaware.gov
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Questions?

Regulatory Timeline

- ▶ Start Action Notice approved August 15, 2019
- ▶ Review Committee Meetings – September 24, 2019 and October 8, 2019
 - ▶ Comments due by October 31st, 2019
- ▶ Public Workshop(s) – Week of December 9, 2019
- ▶ Initial Publication - March 1st Register
- ▶ Public Hearing on the Proposal – March 23-30, 2020





Thank you!

Discussion and Questions

Regulatory Development Process Website

<https://dnrec.alpha.delaware.gov/air/permitting/under-development/>

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