July 6, 2021

Environmental Protection Agency
EPA Docket Center
Air & Radiation Docket
Mail Code 28221T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Docket ID No. EPA-HQ-OAR-2021-0044

Dear Sir/Madam:

These comments are submitted on behalf of Bluon, Inc. with respect to regulations proposed by EPA to implement the American Innovation and Manufacturing Act ("AIM Act"), as enacted on December 27, 2020. 86 Fed. Reg. 27150 (May 19, 2021). The primary purpose of the proposed regulations is to establish a program to allocate rights to produce and consume hydrofluorocarbons (HFCs) in furtherance of the HFC phase down schedule in the AIM Act. Bluon has a strong interest in the framework for allocating these rights, as its business requires access to HFCs.

Bluon was created out of the recognition that, as the supply of R-22 dwindles, building owners with HVAC systems that run on R-22 will require replacement refrigerants as replacing equipment is not tenable for most building owners. Bluon developed and commercialized an alternative refrigerant, R-458A, that can be used in these systems after a retrofit process. R-22 has a global warming potential (GWP) of 1,810, and the most common replacement systems have much higher GWPs. R-458A has a GWP of 1,650, which is the lowest GWP replacement refrigerant for R-22 in the EPA category of Residential and Light Commercial Air Conditioning and Heat Pumps. Bluon's retrofit process focuses on eliminating leaks and R-458A's lower operating pressures make leaks less likely. Because R-458A allows the equipment to operate more efficiently, moreover, conversion to R-458A reduces electricity consumption, the biggest overall contributor to total greenhouse gas (GHG) emissions.[1] Between leak prevention and reduction of energy consumption, the total impact of retrofitting R-22 units with R-458A is quite significant in terms of GHG reduction.

I. Establishment of Allowances

EPA proposes to establish an allowance allocation and trading program to phase down the production and consumption of the listed HFCs. These allowances serve as authorizations for the production or consumption of regulated substances. No person may produce or consume a quantity of regulated substances in the United States without a corresponding quantity of allowances. In order to calculate production and consumption baselines, EPA will determine the annual production and consumption of the listed HFCs in the years 2011, 2012, and 2013.

EPA plans to issue allowances for 2022 according to the framework and procedure established through this rulemaking by October 1, 2021, and is considering issuing allowances for 2023 in the final rule as well. EPA is proposing to issue allowances to companies that produced or imported HFCs in 2017, 2018, and/or 2019, and were still active in 2020 (unless EPA agrees that the company merits

[1] Electricity generation accounts for 25% of all GHG emissions – and 40% of that electricity is used by HVAC-R. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks. This means that electricity consumption relating to HVAC-R is responsible for 10% of total GHG emissions – a whopping *656 million metric tons* of CO_2 equivalents.

individualized determination based on comments received through the rulemaking process). Bluon's consumption of HFCs supports such an individualized determination in this case, where any formula based on 2017-2019 consumption will be inadequate to meet the surging demand for R-458A manifest in 2021 to date:

Year	Amount of HFC (MT)	R-458A GWP (EVe)	MT CO2e	
2017	10.8862	1649.9550	17,961.77	
2018	39.1904	1649.9550	64,662.36	
2019	39.1904	1649.9550	64,662.36	
2020	19.5952	1649.9550	32,331.18	
2021*	408.2331	1649.9550	673,566.30	*Projected*
2022	462.6642	1649.9550	763,375.14	*Projected*
2023	544.3108	1649.9550	898,088.40	*Projected*

*For 2021 data, 304 MT of total 408.233 MT projected is already imported or in production

As the foregoing table illustrates, Bluon's demand for its proprietary product R-458A and the corresponding HFCs that create it, is now growing exponentially. It is important that EPA grant sufficient consumption allowances to meet that demand, important not just to Bluon but to its customers which have developed environmental sustainability programs around the continued availability of R-458A to meet their requirements.

For example, Cortland – a global multifamily real estate firm – has partnered with Bluon to implement a portfolio wide retrofit program to its community of 30,000+ HVAC units. In light of the partnership, Cortland recently applied for the Institute of Real Estate Management (IREM) Innovator Award for 2021, which recognizes a real estate management company for advanced initiatives making an impact on the real estate management profession. In its application (enclosed for reference), Cortland noted the importance of Bluon's R-458A to its sustainability goals, stating that: "for each resident (depending upon local kWh cost, local climate and resident's usage), each retrofit unit directly results in a reduction to our overall carbon footprint of 2 - 5 MT of CO2 per unit per year - equating to a approx. 80,000 – 100,000 MT of CO2 per year creating a huge win for our sustainability goals and the environment as a whole."

Most importantly, granting sufficient allowances to Bluon is critical to achieving the primary objective of the AIM Act and Title VI of the Clean Air Act: to reduce the impact of GHG emissions on the public health and welfare of current and future generations. *See* 86 Fed. Reg. at 27156. Retrofitting existing HVAC equipment to use R-458A (i) replaces refrigerants with higher GWPs, and (ii) allows the equipment to operate on average some 15% more efficiently, thus reducing electricity consumption, the biggest overall contributor to total GHG emissions. The climate benefits of the proposed rule, already large, can be substantially increased if the energy efficiency improvements (and corresponding reductions in CO_2 emissions from electricity generation) from substitution of R-458A for R-22 are properly taken into account.

II. New Entrant Pool

In addition to Bluon's need for an individualized determination for an allocation, EPA should recognize the need for a mechanism to allow new entrants to enter the market, especially those companies operating in the post-2016 period up to and including the present. To serve this need, a percentage of the total allocation should be set aside for new entrants. In order to make effective use of this allocation and

to mitigate against short-term opportunistic behaviors, EPA should put in place measures to ensure that new entrants are legitimate economic operators that can safely handle HFCs and provide the required levels of environmental product stewardship. If not used within a reasonable time, any unused new entrant allocation should be returned to the pool for redistribution among other qualified new entrants.

Respectfully submitted,

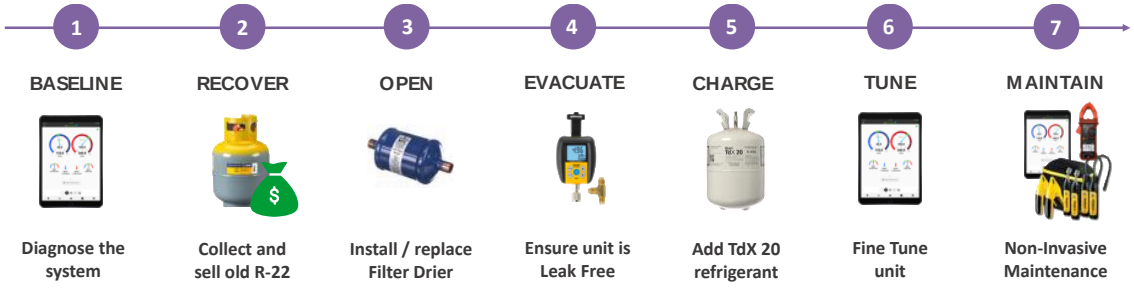
Peter F. Capuciati, CEO

Enclosure: Cortland 2021 IREM Innovator Award Application

IREM Innovator Award

What's a new, original, creative, or advanced innovation that your company has developed? Tell us your story! Things you may want to include:

1. **What unique product, program, or initiative was developed?**
    - In our constant quest to improve our resident experience, associate experience and help protect our environment and investors, Cortland partnered with Bluon and MeasureQuick to develop and implement a portfolio wide retrofit program for our community HVAC units. The retrofit program uses a regimented process to replace R-22 with Bluon's proprietary refrigerant TDX20 while ensuring the unit is leak free and optimally tuned after the process. This process results in the typical HVAC unit gaining substantial performance, energy efficiency and a reduction in overall GHG emissions.



2. **In what way was this distinguishing or unique? How does this make your company stand out?**
    - With R-22 now officially phased out due to its negative environmental impact, the vast majority of real estate companies replace their HVAC units with new equipment designed to run on R-410A (a different, higher pressure refrigerant). They do this for two primary reasons:
        1. The units are 10+ years old and are assumed to be inefficient, poor performing and near their end of their useful life
        2. R-22 has become difficult to source and extremely expensive to procure and use
    - Cortland will now be able to save approximately 30,000 HVAC units, across the company, by retrofitting them with Bluon's TdX 20 [R-458A] proprietary refrigerant (instead of replacing the unit) to extend their useful life, increase their performance and increase their energy efficiency.
    - This will save our investors around **$95.7MM** and extend the life of these systems by 5++ years due to lower operating pressures, lower amp draw, lower compressor head temperatures, proper evacuation and a robust follow up PM program.
    - Along with estimated, annual electricity cost savings of **$200-$600 per unit per year**, for each resident (depending upon local kWh cost, local climate and resident's usage), each retrofit unit directly results in a reduction to our overall carbon footprint of 2 - 5 MT of CO_2 per unit per year - equating to a approx. **80,000 – 100,000 MT of CO_2 per year** creating a huge win for our sustainability goals and the environment as a whole.
    - After the Bluon retrofit our HVAC units perform far better and as a result will suffer less catastrophic failures, allowing our service associates to better enjoy their afterhours time with fewer maintenance callouts as well as resulting in our residents enjoying more uninterrupted comfort during the hot summer months.

- To date, Cortland has retrofit approx. 3,000 of its HVAC units with the Bluon retrofit program, and thus far, we have seen notably better results than initially expected - with energy savings well beyond 25% and performance gains well beyond 25%.

3. **What problem did your innovative product, program, or initiative solve?**

   - We were able to solve three fundamental problems for the company:
     1. Removing phased-out, environmentally detrimental R-22 from our HVAC units
     2. Extending the life of existing HVAC units and not replacing them
     3. Mimizing the carbon footprint associated with our HVAC units
   - We were able to save and continue to use systems designed to operate with the now phased-out R-22 refrigerant and retrofit 10+ year old systems to perform well above the capacity and efficiency that they were originally rated to perform at. In effect, we are able to take 10-30 year old units, retrofit them with Bluon's TDX 20 and end up with HVAC units that operate better than new, more efficient rated HVAC units. Saving millions of dollars while reducing our carbon footprint by 10's of thousands of metric tons of CO_2
   - All other R-22 replacement solutions cause the reverse effect, resulting in HVAC units operating LESS efficiently with LESS performance.
   - The combination of Bluon's unique replacement refrigerant (TDX 20® or R-458A) and the regimented retrofit program focused on proper evacuation, resulting leak free units and high-performance tuning results in units operating far better than new.
   - Cortland will no longer have ANY R-22 refrigerant on any of our communities.

4. **Why were existing solutions or processes not enough to fix the problem?**

   - Although there are several replacement refrigerants on the market that are sold as "Drop in" replacements for R-22, none of them perform nearly as good as R-22, particularly when under higher ambient temperatures as so many of our properties experience.
   - Bluon TDX20 on the other hand actually outperforms R-22 in operating capacity while operating at lower head pressures therefore relieving the stress on dated systems and helping to avoid coil and line set leaks. It has also elevated dated, 10 SEER units that were operating well below a 10 SEER to 12+ SEER after the retrofit process. Please see attached Case studies from four (4) of our DFW market communities.
   - The Bluon product is fully compatible with R-22 and the legacy mineral oil contained within these units. The retrofit simply requires a filter dryer replacement and vacuum to 700 microns to recommission a system.
   - We have enhanced the retrofit process with a pro-active air filter replacement, capacitor replacement and contactor replacement along with a full condenser/evaporator coil clean to complete the system re-commission.

   Instead of utilizing traditional analog gauges and hoses that can contaminate a system and result in refrigerant loss to the atmosphere, Cortland and Bluon purchased state of the art HVAC diagnostic equipment and built training for every Community in our portfolio as described below.

   - The baselining and recommission process involves using Fieldpiece brand blue ooth probes coupled with the MeasureQuick Diagnostic App that Cortland Facilities helped develop for multi-housing technician use.
   - The App uses information collected through the Bluetooth probes to expertly diagnose, direct our technicians in repairing and in the case of this retrofit project, dial in the unit being

retrofit to better than factory rated performance through accurate refrigerant charges, motor speeds and air flow tests for optimal temperature splits.

5. Innovative solutions can be related to technology, products, customer service, talent/leadership development, education, marketing, sustainability, community outreach, and more.

    - The retrofit program is extremely powerful due to its cost effectiveness in providing large value to Cortland, our residents and the environment

        1. Cortland saves Millions by avoiding purchasing and installing 30,000 new HVAC units
        2. Cortland save Millions more by reducing the annual maintenance expense associated with servicing the existing units
        3. Residents save $100's per year with more efficient HVAC units
        4. Residents stay far more comfortable with HVAC units that perform much better
        5. Cortland and Residents reduce their carbon footprint in a dramatic fashion. Each unit retrofit with Bluon's TDX 20 creates the same or more environmental benefit as purchasing an electric vehicle.

You can provide any supporting information here. Either upload a combined PDF file or insert additional information in the field below. I have attached two case studies from our communities to back up everything above.

Bluon HVAC Retrofit Program

The Bluon Retrofit Program was designed specifically for residential community owners to reduce capital costs and reduce ongoing maintenance costs. This is accomplished by retrofitting existing HVAC units with TDX 20. Key benefits include:

- Removal of phased-out R-22 refrigerant
- 10% - 20% of the cost of replacing equipment
- Increased longevity via tight, leak free, and tuned units
- Significant reduction in ongoing maintenance
- Meaningful reduction in unit electricity expense
- Dramatic GHG emissions reduction with documentation
- Comprehensive support before, during and after project completion
- Mitigated EPA regulatory + risk exposure

TdX 20 (R-458A) Retrofit Process:

Project Logistics:

Bluon plans & manages all project details, including:

1. ***Market Analysis & Projections:*** Bluon works with ownership to analyze markets and provides estimated costs, timelines, electricity savings & GHG reductions.
2. ***Staffing:*** Bluon partners with BG Staffing to recruit teams of 15-20 certified HVAC technicians managed by Bluon. Teams can retrofit approx. 40-60 units per day, per team.
3. ***Planning:*** Bluon analyzes units, works with local community managers and in-house technicians, and coordinates logistics including needed parts & materials.
4. ***Execution:*** Bluon trains technicians & manages all logistics through completion.
5. ***Reporting:*** Throughout the project, Bluon provides data on the post-retrofit efficiency and capacity of the units using state of the art measureQuick software.

Community Case Study: Cortland Prairie Creek (Initial Report)

Location: Cortland Prairie Creek
Property Information: 3560 Alma Rd, Richardson, TX 75080
Equipment Specs: Data for approx. 185 initial units | 1.5 – 3.0 Ton Split Systems | ~20-25 yrs. old

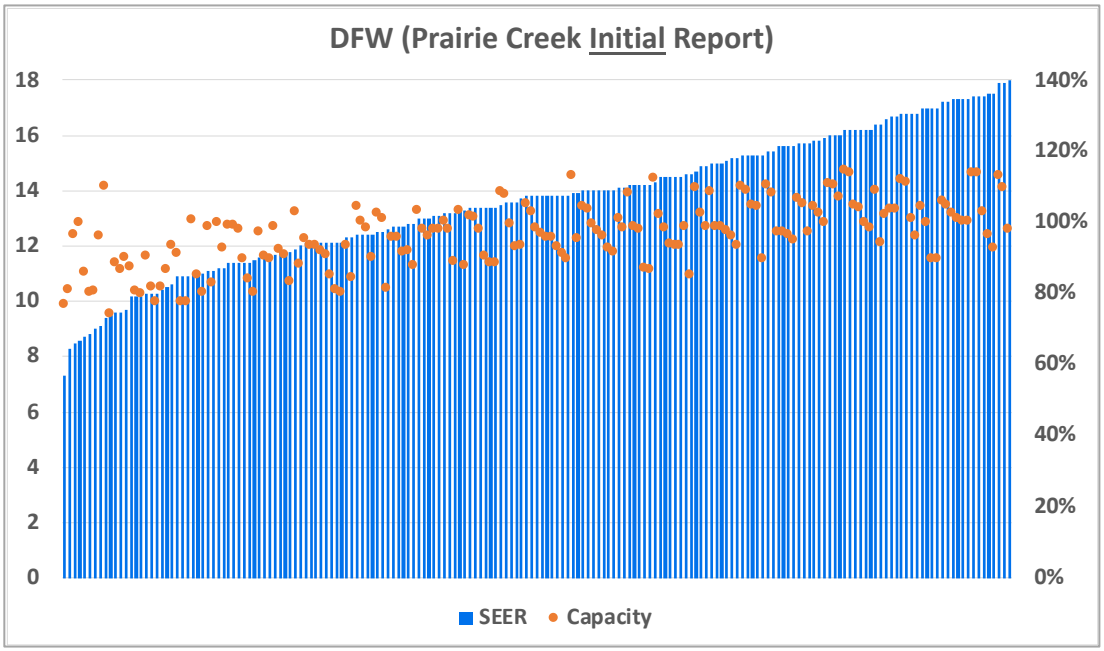
These units were performing below their rated efficiency, which is very typical for most units regardless of age. Many of these units were installed incorrectly, maintained poorly and had various challenges resulting in a high degree of required, ongoing maintenance. The Bluon Retrofit Process solved many of these underlying issues, upgraded the refrigerant to TdX 20 and left the units tuned, tight and leak free. As a result, Bluon was able to substantially increase both the efficiency and capacity of the units as well as substantially reduce GHG emissions. See key results below:

	Avg. SEER (First 185 Units)	*Avg. CAPACITY (First 185 Units)*
Before Program	9.7	70%
After Program	13.6	96%

Performance gains at this community were atypical due to unit age. Typical gains are ~20%.

Units	*Est. GHG Emission Reduction*[i]
~185	~740 MT CO_2

Unit Performance - Post Bluon Retrofit Program



Each blue line below represents the SEER rating of specific retrofit units and the orange dot represents the corresponding, normalized capacity of that same unit.

[i] GHG reduction is approx. 4 MT per unit based on local climate, performance, and the typical kWh consumption of the size and type of units. Typical GHG emission reductions should be expected to be in line with 2-4 MTs per unit.

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Community Case Study: Preserve at Arbor Hills

Location: Preserve at Arbor Hills | Cortland
Property Information: 7001 W Parker Rd, Plano, TX 75093
Equipment Specs: Approx. 290 units | 1.5 – 3.0 Ton Split Systems | ~20-25 yrs. old

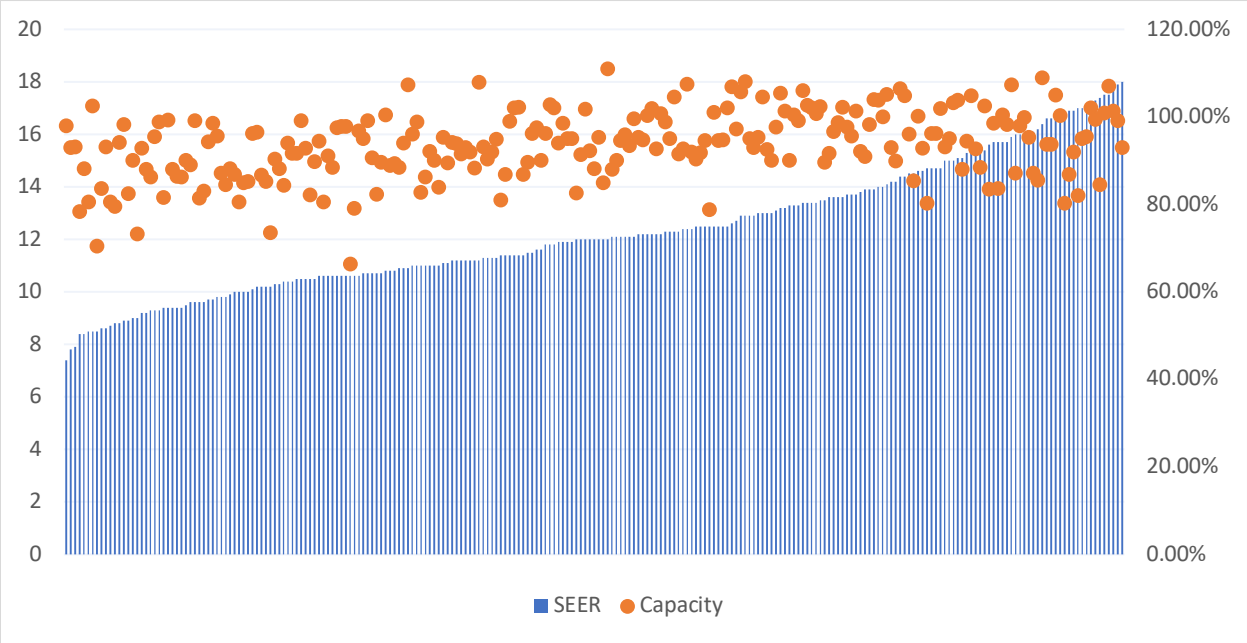
These units were performing far below their rated efficiency, which is very typical for most units regardless of age. Many of these units were installed incorrectly, maintained poorly and had various challenges resulting in a high degree of required, ongoing maintenance. The Bluon Retrofit Process solved many of these underlying issues, upgraded the refrigerant to TdX 20 and left the units tuned, tight and leak free. As a result, Bluon was able to substantially increase both the efficiency and capacity of the units as well as substantially reduce GHG emissions. See key results below:

	Avg. SEER	***Avg. CAPACITY***
Before Program	7.9	71%
After Program	12.3	93%

Performance gains at this community were atypical due to unit age. Typical gains are ~20%.

Units	***Est. GHG Emission Reduction[i]***
~290	~1,160 MT CO_2

Unit Performance - <u>Post</u> Bluon Retrofit Program



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