Center for Energy Efficiency & Sustainability
800-A Beaty Street
Davidson, NC 28036
Tel (980) 228-1532
Helen.walter-terrinoni@tranetechnologies.com

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Christian Wisniewski, Stratospheric
Protection Division, Office of Atmospheric Protection
Mail Code 6205A
Environmental Protection Agency
1200 Pennsylvania Ave. NW, Washington, DC 20460
wisniewski.christian@epa.gov.

(Submitted via Docket 2020 EPA–HQ–OAR–2022–0606)

Re: Trane Technologies Comments on Phasedown of Hydrofluorocarbons: Management of Certain Hydrofluorocarbons and Substitutes Under Subsection (h) of the American Innovation and Manufacturing Act of 2020 EPA–HQ–OAR–2022–0606; FRL–10105–01– OAR

Dear Mr. Wisniewski

We appreciate the opportunity to provide the following comments on the Phasedown of Hydrofluorocarbons:: Management of Certain Hydrofluorocarbons and Substitutes Under Subsection (h) of the American Innovation and Manufacturing Act of 2020 EPA–HQ–OAR–2022–0606; FRL–10105–01– OAR.

Trane Technologies (Trane) is a climate company with well-known brands such as Trane and Thermo King, which are global leaders in stationary and transport air conditioning and refrigeration products, as well as industrial process refrigeration with respect to life sciences. Trane Technologies is well known for its global leadership in transitioning away from today's high global warming potential (GWP) refrigerants. Trane began transitioning its global high-performance chiller portfolio in 2015 and Thermo King began transitioning its EU transport refrigeration products in 2014, long before regulations began taking shape. Trane Technologies is committed to reducing emissions by one gigaton (1 billion metric tonnes) CO2eq between 2020 and 2030.

We applaud the Agency for their tireless and fast-paced efforts to implement the American Innovation and Manufacturing (AIM) Act, including **§**(h) Management of Regulated Substances. We look forward to working with the Agency and supporting improvements in refrigerant management for the "purposes of maximizing reclaiming and minimizing the release of a regulated substance from equipment and ensuring the safety of technicians and consumers, as noted in the legislative text.

Trane Technologies notes that many of the comments requested by EPA for this rulemaking would best include significant input from regulated stakeholders that have not historically participated in meetings and comments related to hydrofluorocarbon (HFC) regulations. We also

point out that there has been limited interaction between stakeholders and regulators as a casualty of the pandemic, and it is important to rebuild these educational pathways and to provide the must fulsome context for this complex topic.

For example, EPA asks about technician certification programs. Best outcomes would incorporate feedback from a broad array of distributors, contractors, and technicians after sharing general best practices EPA may consider for implementation, such as the Australian virtual training and licensing program and requirements limiting the sale of refrigerants to only licensed technicians. Separately, leak management programs for heating and cooling of buildings should be informed by building owners as well as energy services companies. This may require broader outreach than is typically done by the Agency to ensure the best input and outcomes. Regional workshops might provide a forum for this engagement.

Environmental Justice

Trane Technologies agrees with EPA's assessment of Environmental Justice except that we would note that the inclusion of policies "ensuring the safety of technicians and consumers" will improve safety for all end-users. Also, we have flagged areas for consideration of low- and medium-income families and small businesses in our comments for EPA's consideration. We appreciate EPA's consideration of this important topic.

Resource Conservation and Recovery Act Changes

The Agency notes that this rulemaking **"**…*proposes provisions to support implementation of, compliance with, and enforcement of requirements under subsection (h) of the AIM Act. Additionally, EPA is proposing alternative Resource Conservation and Recovery Act (RCRA) standards for certain spent ignitable refrigerants being recycled for reuse, as that term is proposed to be used under RCRA. These proposed standards would involve regulatory changes to 40 CFR parts 261–271 and not be part of the regulations under subsection (h)(1) of the AIM Act***"**

Trane Technologies thanks the Agency for addressing this issue. Updates for new refrigerants and blends in the RCRA standards as a critical step to ensure proper recovery, reuse, and disposal of regulated substances at end of life. We look forward to the finalization of this modification.

Setting the Table for More Reclaim Supply and Demand

EPA notes that they "*provided information on the movement of HFCs used as refrigerants in the supply chain as they relate to reclamation in the draft report accompanying the NODA published on October 17, 2022 (87 FR 62843), and the Agency provides additional information in the updated report in the docket for this proposed rule. In comments submitted for the NODA and in public stakeholder meetings that the*

Agency hosted,[1] EPA received feedback noting that one key challenge to increasing reclamation is ensuring that HFCs are recovered and transferred to reclaimers."

Unfortunately, it seems likely that not only is recovered refrigerant not reaching reclaimers but also there are many anecdotal stories that even with R-22 pricing as high as $50 per pound that recovery is simply not taking place. There also seem to be stockpiles not turned in to reclaimers, perhaps because of historic fees for destruction of off specification material. Is there insufficient demand at current prices? Is it clear that there need not be fees to transfer refrigerant for reclamation?

EPA may wish to interview contractors to better understand the challenges they face with recovery and price points to incentivize purchasing reclaimed refrigerant. The price of R-22 is publicly cited from $50[2] to $200[3] per pound. Despite these relatively high prices, reclaim rates have never been above 5000 tonnes per year for R-22, even with a complete ban on newly produced R-22 for servicing, according to EPA's Summary of Refrigerant Reclamation[4]. There are clearly stockpiles of R-22, and with no shortage of supply, reclaim demand is reduced.

We have heard steadily that it takes too long to recover refrigerant, especially R-410A. This could be because of using the recovery equipment for R-22 instead of R-410A. EPA may want to consider using some of its funding for small contractors serving low- and medium – income communities to apply for grants or to outright purchase the correct recovery equipment, if they find this to be the case.

These would all be excellent topics to discuss with contractors at in-person, regional stakeholder meetings or forums. The proposal to incorporate container tracking could also be discussed in this venue, as well as other impediments and solutions.

To lay the groundwork to shift from very little reclamation, EPA may wish to consider collecting information on the total amount of refrigerant recovered compared to the total amount purchased by various entities as well as the percentage of the total amount purchased that is used for installation of new equipment compared to the total amount used to top up leaks.

EPA may wish to interview the California Air Resources Board (CARB) and original equipment manufacturers (OEMs) as to the successes and challenges associated the CARB R4 program to learn from the largest experiment of its kind in the United States, which appears to have resulted in an increase in R-410A reclaim by as much as approximately 500 tonnes from 2021 to 2022, according to

[1] Comments submitted to response of NODA published on October 17, 2022 (87 FR 62843), can be found in the docket for this action. Additionally, EPA heard feedback from participants in the public meetings it hosted on November 9, 2022, and March 16, 2023, as well as solicited feedback through a webinar for the EPA GreenChill Partnership program on April 12, 2023.

[2] Angie's List, Today's Homeowner, kjj

[3] Environment Masters website https://environmentmasters.com/understanding-the-increase-in-r22-prices/

[4] EPA's Summary of Refrigerant Reclamation https://www.epa.gov/section608/summary-refrigerant-reclamation-trends

EPA's Summary of Refrigerant Reclamation[5]. It should be noted that CARB allowed for an alternate compliance pathway of "Early Action" to transition to a low GWP refrigerant prior to 2025, which means that not all OEMs are required to participate, which may be reflected in the slight increase in reclaimed refrigerant reported to EPA.

Separately, contractors seem to de-select reclaimed refrigerants. Are contractors choosing newly produced refrigerant because of the quality differential? Are they concerned about questions from customers about quality? The AHRI 700 standard is different from the 99.99% purity and blending precision of new refrigerants generally supplied to the market, as noted in the example below. Perhaps EPA should consider upgrading the required specification to better match the current supply of newly produced[6] refrigerant.

	Reporting Units	AHRI 700 R-410A	Actual Newly Produced Refrigerant Example
CHARACTERISTICS:			
Refrigerant Components	N/A	R-32/125	R-32/125
Nominal Composition	% by weight	50.0/50.0	50.0/50.0
Allowable Composition	% by weight	48.5-50.5/ 49.5-51.5	50.1% / 49.9%
Total Purity Allowed Total Purity Reported			99.70% 100%
VAPOR PHASE CONTAMINANTS:			
Air and Other Noncondensables, Maximum	% by volume @ 25.0ºC	1.5	0.26%
LIQUID PHASE CONTAMINANTS:			
Water, Maximum	ppm by weight	10	
All Other Volatile Impurities, Maximum	% by weight	0.5	
High Boiling Residue, Maximum	% by volume or % by weight	0.01	0.0004

Table 1: Comparison of AHRI 700 Specification for Reclaimed Refrigerant and Newly Produced, Purchased Refrigerant.

[5] EPA's Summary of Refrigerant Reclamation https://www.epa.gov/section608/summary-refrigerant-reclamation-trends

[6] Newly produced refrigerant is commonly referred to as "virgin" refrigerant

Reclaimed refrigerants and fire suppressants play a critical role in the non-obsolescence, especially of long-lived, equipment. EPA notes that "…*as the phasedown of the production and consumption of HFCs as required by the AIM Act progresses, reclaimed HFCs will play a key role in the amount of available HFCs for equipment that will continue to use HFCs (e.g., for servicing).*"

EPA also notes that "*Reclaimed HFCs will also be important in avoiding potential economic disruption that could be associated with the scarcity of virgin HFCs as well as avoid stranding existing equipment that will need to be serviced using HFCs.*"

Reclaimed refrigerant has played a crucial role in maintaining chillers for decades, starting with chlorofluorocarbons (CFCs). Also, reclaimed R-22 played a critical role in the gaps of supply after EPA, in compliance with the Montreal Protocol, accelerated HCFC phase-out schedule, banned R-22 for new equipment when there were brief periods of concerns about shortages for servicing.

Reclaimed refrigerant will also likely play a key role in this transition at some point in the future. However, supply is far more plentiful than anticipated in 2021. There seems to have been significant stockpiling, some, hopefully small, amount of illegal imports, and significant growth in the import of refrigerant in imported products containing HFCs (IPC), with the value of imported air conditioning systems from Mexico increasing by approximately by 50% from 2020 to 2022.[7] The allowance for Mexican refrigerant in IPC extends to R-410A containing condensing units which may currently be imported with no limit other than a label for service only under the Technology Transition rule.

EPA could increase demand for reclaimed refrigerant by addressing this issue under the AIM Act Technology Transitions and incorporating IPC into the quota and allocation system. Without these changes, it is unlikely that a transition away from R-410A will occur fully in the United States until 2034 when both countries are impacted by their phase-down schedules or that there will be any significant demand for reclaimed refrigerant because of this legal allowance of IPC.

EPA may also wish to examine the patent landscape related to refrigerant reclaim.

Trane Technologies supports the requirement that reclaimed refrigerant be from confirmed domestic sources.

"AHRI and the Alliance urge that the definition should start with the principle that only refrigerant recovered from equipment in the United States that is then reclaimed can be considered reclaimed refrigerant."

Trane Technologies is concerned that imported recovered refrigerant could be newly produced refrigerant relabeled as "reclaimed" if it were from countries with excess production or consumption capability beyond domestic needs under the Kigali amendment, as appears will be the case in Mexico and Canada. Alternately, in countries that do not have sufficient consumption available, more profitable exports of recovered refrigerant to the United States

[7]According to Trading Economics, United States Imports from Mexico of Air Conditioning Machines, imported Mexican AC exports to US have increased by 50% since AIM was enacted.

could starve needs for servicing, especially for small counties with little or no manufacturing, which would create an equitable access issue.

Separately, Trane Technologies is also concerned that setting an allowance (e.g., 15%) inclusion of newly produced refrigerant to be incorporated and called "reclaimed" refrigerant is not a credible structure and will result in greenwashing claims. Only recovered refrigerant should be considered reclaimed. Perhaps a label or QR code to a website could disclose the amount of bona fide recovered refrigerant that has been reclaimed and sold to a customer.

In addition, setting such a limit for newly produced refrigerant could thwart the goal to maximize reclaim and narrow uses away from clever solutions like a "service gas" with an increasing percentage of reclaimed refrigerant as more reclaimed refrigerant becomes available over time.

AIM Act Subsection (h) and Reclaimed Refrigerant

There are mechanisms within the Agency's authority that could increase the reclaiming of regulated substances that the Agency may wish to consider beyond those in subsection (h) in a future rulemaking, after consultation workshops with impacted stakeholders to ensure a clear understanding of the impacts and perhaps better constructs. More detail around some of these alternatives is noted above in the text titled **Setting the Table for More Reclaim Supply and Demand.**

Subsection (h) of the AIM Act directs the Administration to promulgate regulations as follows:
"For purposes of maximizing reclaiming and minimizing the release of a regulated substance from equipment and ensuring the safety of technicians and consumers, Administrator shall promulgate regulations to control, where appropriate, any practice, process, or activity regarding the servicing, repair, disposal, or installation of equipment …"

EPA has stated that *"the Administrator shall promulgate regulations to control, where appropriate, any practice, process, or activity regarding the servicing, repair, disposal, or installation of equipment for certain purposes identified in the statutory text, which include maximizing the reclamation of regulated substances. More specifically, subsection (h)(1) gives EPA authority to promulgate regulations to control, where appropriate, any practice, process, or activity related to the servicing, repair, disposal, or installation of equipment that involves HFCs or their substitutes, or the reclaiming of HFCs or their substitutes used as a refrigerant."* The Agency goes on to say that *"With respect to reclamation, EPA interprets subsection (h) as including authority for EPA to establish regulations to control such practices, processes, or activities that are intended to increase reclamation of HFCs, as well as substitutes for HFCs that are used as refrigerants."*

The Agency is proposing to expand beyond the scope of the statutory authority to focus regulations that ***"maximize reclaiming and minimizing the release of a regulated substance from equipment and ensuring the safety of technicians and consumers",*** on the ***"servicing, repair, disposal, or installation of equipment."*** Instead, EPA states that "*Such regulations could include those that are designed to increase market demand for reclaimed HFCs with a goal of increasing the amount of HFCs that are reclaimed, which would further serve the purpose of maximizing the reclamation of regulated substances."*

Regulations that increase market demand or mandate reclaimed refrigerant as an "initial charge", especially for factory-filled equipment, as proposed by the Agency, are not included in the listed authority of the Agency to "…control, where appropriate, any practice, process, or activity regarding the servicing, repair, disposal, or installation of equipment…" under section (h).

However, there are additional constructs EPA could consider in a future rulemaking that would increase the potential demand for reclaimed refrigerant as noted above.

Trane Technologies is committed to working with the Agency and other stakeholders to test and implement solutions to maximize refrigerant recovery and its proper disposition, including reuse of reclaimed refrigerant.

Minimizing Releases of HFCs.

EPA is requesting comment on all aspects of titled Analysis of the Economic Impact and Benefits of the Proposed Rule and in in section VI. of this proposal. EPA is requesting comment on all aspects of this proposal. In particular, EPA is seeking comment on the use of a GWP cutoff to apply the proposed leak repair requirements to equipment containing an HFC or a substitute for an HFC as a refrigerant, used neat or in blends. EPA also seeks comment on using a GWP above 53 as the cutoff, including, for example, comments on whether EPA should consider a lower GWP cutoff.

Trane Technologies highlights that Section (h) (1) of the AIM Act calls for the Administration to ensure "the safety of technicians and consumers" and suggests that EPA may wish to consider chemical characteristics, such as toxicity and flammability, charge size, and whether a system is in direct or indirect contact with building occupants in its determination around applicability, rather than solely limiting mandates based on global warming potential (GWP)

EPA is seeking comment on the scope of the leak management provisions. Including charge size limits.

Before considering setting the charge-size threshold for automatic leak detection (ALD), perhaps the Agency would like to consider mandates based on annual leak rates. For example, if an owner operator has equipment designed to contain more than 250 lbs that has leaked more than 20% for 2 years, ALD is required to be installed within 6 months. This would target problematic systems and avoid unnecessary added cost for non-leaky systems. Alternately, EPA could use 100 lbs per refrigerant circuit.

Alternate mechanisms should be allowed in place of leak detection. Calibrating and maintaining multiple sensors will likely become very challenging. Testing may be needed to determine and address challenges to detection. EPA may want request data from some users of ALD in California or other locales to check the efficacy of the 100 ppm limit.

EPA also asked as to whether mobile air conditioning for trains, buses, and refrigerant transport as well as large commercial unitary systems, residential and light commercial locations.

EPA seeks information about activities (besides rule familiarization and applicability determinations) that owners or operators of refrigerant- containing appliances with a refrigerant charge size of between 15 and 50 pounds perceive that they would need to engage in prior to the effective date of the rule, the

length of time the commenter estimates the activity would take, and any available information that would substantiate that estimate. For example, EPA seeks comment on whether they would need to modify or initiate a contractual relationship with a servicing technician firm, the length of time that would take, and information to substantiate that estimate if available.

Based on Trane Technologies many-faceted touchpoints in the supply chain, including as an energy services provider and a leasing program, it is very likely that there will be a broad array of responses. Many large building owners or fleet owners may already have contractual agreements and regularly repair leaks. Some homeowners have annual equipment servicing contracts. However, many, especially smaller users may use on-call services. Additional requirements may create additional need for technicians in an industry already stressed for them. However, Trane Technologies again recommends more discussion with contractors, technicians and building and fleet owners to determine the need and availability of the service industry.

EPA is seeking comment on all aspects of its proposal related to leak rate calculations under subsection (h). EPA is particularly requesting comment on if there are any alternative leak rate calculations that could be conducted to identify whether a system is leaking above the applicable trigger leak rate. EPA is also requesting comment on calculating the amount of refrigerant lost, without having to add refrigerant, as a means of calculating the leak rate. For example, an owner or operator could evacuate all of the refrigerant from an appliance, weigh it, and compare it to the full charge of the appliance. Alternatively, EPA is aware that certain types of ALD systems can infer the amount of refrigerant that has leaked from an appliance based on operating characteristics (more detail in section IV.C.4. of this preamble) and EPA is seeking comment on the feasibility and technical accuracy of using the amount of refrigerant that such a system identifies as having been lost from the appliance in the leak rate calculation, as a means of identifying the leak rate.

EPA is proposing two methods for calculating the leak rate for an applicable appliance under subsection (h) in this action: the annualizing method and the rolling average method. These leak rate calculation methods are described in section IV.A.1. This approach of providing two different

Trane Technologies agrees with the leak calculation methodologies, including using Advance Leak Detection methods, purge levels or telematics to estimate losses. Trane Technologies recommends that equipment owners be allowed to determine that a specific methodology is best for their situation and change to another methodology if something changes making it more accessible or accurate. For example, an owner could install ALD even though they are not required to do so and switch to that method going forward. If EPA were concerned about selecting the method with the lowest number, they could require reporting by both methods for one year to ensure that they are reasonably close to one another or they could ask for justification as to why a new method were selected.

Finally, EPA may wish to consider incorporate a process in this rule to add leak estimate methods quickly in case new ones are developed over time as ALD becomes more refined.

EPA is seeking comment on all aspects of this proposal and in particular on the proposed applicable leak rates for appliances in the subsectors and applications noted in section IV.C.2.b. of this proposal. EPA is also seeking comment on its proposal to include an explicit presumption that a leak is presumed to be repaired if one of the listed conditions is met, such as there being no further addition of refrigerant to the equipment for 12 months after the repair. While a similar, though not identical, presumption is

included in similar regulations under section 608 of the CAA, EPA is also proposing to include a definition of ''repair'' to the regulatory provisions under subsection (h), which is not a defined term in the regulations under CAA section 608. EPA is particularly interested in comments on whether the presumption is necessary or helpful, if the proposed definition of ''repair'' is finalized.

Under this proposal, owners or operators would be required to identify and repair leaks within 30 days (or 120 days if an industrial process shutdown is required) of when refrigerant is added to an appliance that has exceeded the applicable leak rate.

EPA may wish to incorporate in the regulation a simple exception process to grant additional time and separately a process to temporarily or permanently lengthen this threshold if it finds that they are too many reasonable requests for more time e.g., due to technician availability, availability of components, supply chain disruptions, or another unforeseen circumstance.

EPA proposes a leak validation exclusion for mothballed equipment. EPA may wish to consider a condition that the refrigerant must be removed to trigger the exception.

Refrigerant leaks generally occur due to catastrophic equipment damage, improper installation coupled with a failure to properly commission equipment by leak checking, pressure testing and now vacuum checking A2L equipment, vibration of equipment, or very small leaks from joints regardless of equipment type. It seems unreasonable to require different thresholds for leaks for different equipment types given that the causes are the same. However, given the legislative mandate for the Administration to regulate where appropriate the where appropriate, "any practice, process, or activity regarding the servicing, repair, disposal, or installation of equipment" "minimizing the release of a regulated substance from equipment and ensuring the safety of technicians and consumers" for both regulated substances and their substitutes. EPA may wish to set a lower threshold, such as 20%, for all equipment types. Equipment cools and heats with more efficacy and there are benefits to both direct and indirect emissions with sufficient refrigerant in equipment.

Again, given the safety focus of the legislation and the mandate to consider substitute, the Agency may wish to eliminate the GWP limit proposed. This will eliminate confusion for the field as well, ensuring consistent best maintenance practices are applied for all equipment.

As for verification requirements, all equipment should be properly commissioned after maintenance work, as required by UL 60335-2-40 and UL 60335-2-89, or another appropriate standard, by leak checking, pressure testing and now vacuum checking A2L equipment. Alternate methodologies exist for leak testing low-pressure chillers in the factory, using a purge for lo pressure systems.

A properly commissioned system should not require an additional verification step in later weeks or follow-up leak requirements. EPA may wish to cordon off this requirement to systems with very large charge sizes, perhaps above 500 lbs, to be consistent with other thresholds set in the rule. There are not enough technicians as is and follow-up on properly commissioned systems would be unnecessary. EPA should require reporting if a leak is repaired in a system and it has to be recharged again within 6 months. This requirement should be communicated to equipment owners. A pattern of recharging needed for leak repairs may indicate that a need for additional training on commissioning and leak repair practices.

The Agency's proposed reporting threshold to capture chronically leaking appliances should be 100% (to capture catastrophic leaks) plus the % allowed per equipment type plus 5% within a calendar year. This would allow for a repair early in the year followed by a catastrophic leak but no more. Alternately, EPA could use a lower number and add an exception for a single catastrophic leak.

Retrofit and retirement requirements should allow for some flexibility or support for low-and medium-income households and small businesses. It seems reasonable that a lower GWP option should be installed under this circumstance, again, with consideration for the above flexibility.

An exemption for recordkeeping and reporting should be made for residences and families and even landlords unless a threshold of several units are owned by a landlord. Otherwise, 3-year recordkeeping and reporting requirements seem reasonable. However, EPA should have some further discussion with equipment owners and operators to confirm unless the requirements will solely be placed on the contractor performing the work.

Before considering setting the charge-size threshold for ALD, perhaps the Agency would like to consider mandates based on annual leak rates. For example, if an owner operator has equipment designed to contain more than 250 lbs that has leaked more than 20% for 2 years, ALD is required to be installed within 6 months. This would target problematic systems and avoid unnecessary added cost for non-leaky systems. The 100 ppm threshold is a reasonable requirement for ALD in an area where a leak would be concentrated. If EPA is seeking for leak detection from flanges in a central location, a lower threshold may be needed. EPA may want request data from some users of ALD in California or other locales to check the efficacy of the 100 ppm limit. Are there systems where there was no ALD detection where leak rates were above 20%? If so, a lower threshold may be needed.

Deadlines for responding to ALD should allow for flexibility requests for unforeseen circumstances. The Agency will be inundated with nuisance reporting if they ask for reports every time an ALD triggers. The Agency should consider limiting alerts to above a CO2eq limit, if they proceed with any requirement.

If an ALD requirement is placed on systems charged with less than 50 lbs of refrigerant or those located in a home, EPA should consider allowing safety detectors to be used as a proxy for ALD, recognizing that specific leak data will not be collected and catastrophic leaks only will be detected.

EPA asked for comments on preemptive repairs using predictive data from ALD systems, which is as designed and a reasonable allowance.

EPA is proposing to find that certain information would categorically not be eligible for confidential treatment.

Trane Technologies has no particular recommendation regarding the proposal to clarify the treatment of confidential information, generally, but recommends that EPA consider the scope, cost, and effort for the Agency to publish and maintain such information and consider allowing itself to alter its publications to annual or other if the burden of publication becomes too great to maintain.

However, with respect to recovered refrigerant for reclaiming, Trane Technologies believes it is paramount for program integrity to publish detailed data regarding the chain of custody of refrigerant to avoid false claims and illegal trade. As noted above, for this and other reasons, reclaimed refrigerant allowed to be resold in the United States should be sourced from refrigerant recovered within the United States only, with a credible paper trail throughout its return to service.

EPA requests advance comment on whether the Agency should establish requirements for RACHP technician training and/or certification to address servicing equipment using ASHRAE 2, 2L, and 3 refrigerants, and if so, potential approaches for doing so. EPA is particularly seeking advance comment on whether through a separate rulemaking, EPA should propose to establish training and/or certification requirements for technicians under subsection (h), and, if so, how such a training and/or certification program might be managed, and to what extent or for which types of HFCs and/or their substitutes such requirements should apply.

For purposes of ensuring the safety of technicians and consumers, subsection (h)(1) directs EPA to promulgate regulations to control, where appropriate, any practice, process, or activity regarding the servicing, repair, disposal, or installation of equipment that involves: a regulated substance, a substitute for a regulated substance, the reclaiming of a regulated substance used as a refrigerant, or the reclaiming of a substitute for a regulated substance used as a refrigerant (42 U.S.C. 7675(h)(1)). Subsection (h)(1) further provides that this includes requiring, where appropriate, that any such servicing, repair, disposal, or installation be performed by a trained technician meeting minimum standards, as determined by EPA.

Trane Technologies recognizes that the Agency is working to develop regulations "to control, where appropriate, any practice, process, or activity regarding the servicing, repair, disposal, or installation of equipment (including requiring, where appropriate, that any such servicing, repair, disposal, or installation be performed by a trained technician meeting minimum standards, as determined", as authorized under the AIM Act section (h).

Trane Technologies strongly recommends that EPA hold regional workshops to hear best practices with respect to technician training as well as to invite, even international experts, such as Refrigerants Australia, to share best practices in training and certification programs. The Australian virtual training and licensing program and requirements limiting the sale of refrigerants to only licensed technicians have been effective with no safety incidents related to regulated refrigerants (A2Ls) over many years. Australia also has best in class recovery rates. As the Agency is aware, regulated entities that participate in the rulemaking process will be more supportive of the outcomes. The ESCO group also has excellent programs that could be highlighted as potential options for training and certification.

EPA requested comment on the estimated savings and benefits of the proposed rule.

Trane Technologies did not carefully reproduce the estimated savings and benefits as would have been done if there had been more time for comments; however, we point out two key issues with the assumption used by EPA for their consideration.

"*Reducing HFC emissions due to fixing operators, as less new refrigerant would the proposed leak repair and ALD leaks earlier would also be anticipated need to be purchased to replace leaked system provisions would lead to savings to lead to savings for system owner/ refrigerant. In 2025, it is estimated that of approximately $13 million (2022$). Unlike the climate benefits, these savings would not be expected to decrease over time, as the cost of refrigerant would not decrease with the average GWP. "*

Trane Technologies noted that it is possible that the cost of refrigerant will decrease over time as it has in the past and as there is more extensive use of non-fluorinated alternatives.

As the largest provider of heating and cooling solutions and energy services globally, we have significant insight into our value chains and customers' use and servicing of their systems. We recover refrigerant through some contractual agreements and sell reclaimed refrigerant through our stores. We request an *ex parte* discussion with EPA to share some detail around trends and data that we see in our value chains that may spark some thoughts for the Agency on this important topic.

We appreciate the opportunity to provide these comments and would be eager to review our current reporting practices with the Department, if helpful. Please contact me with any questions.

Sincerely,
Helen Walter-Terrinoni
Helen Walter-Terrinoni
Director – Global Policy and Advocacy
Trane Technologies