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December 22, 2023

VIA ELECTRONIC MAIL AND U.S. MAIL

Docket No. EPA-HQ-OAR-2021-0643

Mr. Michael S. Regan, Administrator
Mail Code 1101A
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
Regan.Michael@epa.gov

Re: SEMI's Petition for Reconsideration of EPA's "Phasedown of Hydrofluorocarbons: Restrictions on the Use of Certain Hydrofluorocarbons under the American Innovation and Manufacturing Act of 2020; Final Rule," 88 Fed. Reg. 73098 (Oct. 24, 2023)

Dear Administrator Regan:

Enclosed please find Semiconductor Equipment and Materials International's Petition for Reconsideration of EPA's final rule titled "Phasedown of Hydrofluorocarbons: Restrictions on the Use of Certain Hydrofluorocarbons under the American Innovation and Manufacturing Act of 2020," 88 Fed. Reg. 73098 (Oct. 24, 2023). A copy of this petition has also been electronically submitted to the Office of Air and Radiation Docket Center for filing in Docket No. EPA-HQ-OAR-2021-0643.

Please contact us with any questions you may have.

Sincerely,

A handwritten signature in black ink, appearing to read "K. Russell LaMotte".

K. Russell LaMotte

Enclosure

cc: Joseph Goffman, Principal Deputy Assistant Administrator, Office of Air and Radiation
Cindy Newberg, Director, Stratospheric Protection Division

Austin, TX Baltimore, MD Boston, MA
New York, NY San Francisco, CA Seattle, WA Washington, DC

**BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

In the Matter of the Final Rule:)	
)	
Phasedown of Hydrofluorocarbons:)	Docket No. EPA-HQ-OAR-2021-0643
Restrictions on the Use of Certain)	
Hydrofluorocarbons under the American)	
Innovation and Manufacturing Act of 2020)	

PETITION FOR RECONSIDERATION

Pursuant to 42 U.S.C. § 7675(k)(1)(C) of the American Innovation and Manufacturing Act of 2020 (“AIM Act”), which incorporates section 307(d)(7)(B) of the Clean Air Act, 42 U.S.C. § 7607(d)(7)(B) (“CAA”), Semiconductor Equipment and Materials International (“SEMI”) hereby petitions the Administrator of the United States Environmental Protection Agency (“EPA”) to reconsider portions of the “Phasedown of Hydrofluorocarbons: Restrictions on the Use of Certain Hydrofluorocarbons under the American Innovation and Manufacturing Act of 2020; Final Rule” (“Final Rule”), published in the Federal Register at 88 Fed. Reg. 73098 (Oct. 24, 2023). As set forth in detail below, SEMI respectfully requests that EPA:

- Publish a notice suspending application of the rule to the semiconductor manufacturing and related equipment industry and issue a stay of the rule with respect to our industry pursuant to its authority under CAA section 307(d)(7)(B);
- Reopen the Final Rule's Regulatory Impact Analysis with respect to semiconductor production;
- Either exempt the semiconductor industry from the Final Rule or make changes in the requirements that reflect the results of a revised Regulatory Impact Analysis, including:
 - Extend compliance dates in section 84.54(a)(10)(iii) and (iv) (i.e., chillers for industrial process refrigeration), section 84.54(a)(12) (industrial process refrigeration products other than chillers), section 84.54(c)(5) and (10) (installation prohibitions), as they apply to the semiconductor industry; and
 - Allow a company, including its affiliates, to move and install existing chillers and non-chiller industrial process refrigeration products across their existing or already planned facilities, regardless of when they first went into service, if compliant at time of first installation.

I. THE PETITIONERS

SEMI is a not-for-profit trade association that represents the leading companies engaged in the semiconductor manufacturing and related equipment (“SMRE”) industry. SEMI represents more than 400 member companies in the United States reflecting the full range of the U.S. semiconductor industry, including design automation and semiconductor IP suppliers, device manufacturers, semiconductor and related equipment manufacturers, materials producers, and subcomponent suppliers. SEMI member companies are the foundation of the \$2 trillion electronics industry, and this vital supply chain supports 350,000 high-skill and high-wage jobs across the United States. These member companies rely on the use of industrial process refrigeration (“IPR”) equipment that is subject to the Final Rule.

SEMI’s members will be directly affected by the Final Rule’s restrictions on the specialized chillers and non-chiller IPR equipment that are required in the highly sophisticated semiconductor manufacturing process. Additionally, SEMI members’ critical SMRE operations are at risk of business disruptions due to production stoppage and supply chain disruptions because of the Final Rule.

II. BACKGROUND

Hydrofluorocarbon (“HFC”)-based industrial process refrigerants are used in many SMRE processes to provide the necessary thermal control for manufacturing and fabrication. Redesign and replacement of any component in SMRE, including chillers and other refrigeration equipment, is a complex and costly endeavor. To the extent that the Final Rule would in practice require SMRE suppliers to replace chillers or other non-chiller IPR equipment in their existing facilities or designs for new facilities, doing so will entail significant risks of business disruptions and production downtime, as well as significant implementation costs. Many of those economic impacts could be avoided with extensions to the compliance timetable and other narrowly tailored adjustments for the unique and specialized uses of this equipment in the semiconductor sector.¹

The targeted changes that we seek will have virtually no meaningful impact on HFC emissions, while avoiding the risk of interruption in chip production and supply, as well as direct and indirect costs to our sector and downstream users of semiconductors throughout the economy that could exceed hundreds of millions of dollars. The magnitude of those impacts will depend on a number of uncertainties, which together indicate that additional review of the rule’s requirements with respect to our sector is warranted. Some of those uncertainties include:

- Upstream supply chain readiness to meet commercial demands and performance specifications.
- Adequate technical data on the performance of low-GWP IPR equipment.
- Technical risks for integrated chiller performance with fab & assembly equipment.

¹ The objections raised in this petition were either impracticable to raise during the comment period or arose after the period for public comment and are of central relevance to the Final Rule. *See CAA 307(d)(7)(B).*

- Technical risks for in-process refrigeration equipment changes.
- Impacts to fab layouts and ventilation requirements.
- Impacts to servicing of existing IPR equipment with no domestic repair available.
- Challenges replacing a failed legacy IPR if form, fit, and function requires broader updates to surrounding equipment and facilities.

A chief concern is the challenge involved with the long development lifecycle in the SMRE industry, including capital investments, reconstruction costs, and in some cases new green field construction when the tool design and production facilities are changed. SEMI members must find equivalent-performing alternatives and complete a full evaluation and qualification of that equipment within the larger semiconductor production system. The uncertainties surrounding the global supply chain for specialized IPR equipment and chillers that are incorporated into highly sophisticated complex tools used in semiconductor production further complicate this planning horizon. Most notably, we are uncertain whether specialized suppliers for our sector will be capable of meeting the demands created by the Final Rule in the existing timetable. For example, it may not be possible to source and stockpile in-country sufficient quantities of replacement legacy IPR equipment and chillers necessary to keep in service existing processing tools installed in existing production facilities.

With the entire U.S. semiconductor industry needing to transition to comply with the Final Rule at the same time, any disruptions in the supply chain could result in massive costs and disruptions to both semiconductor manufacturers and the \$2 trillion electronics industry as a whole. Some SEMI members are uncertain if they would be able to implement low-GWP alternatives at all and are concerned that they would have to shutter their fabrication facilities. The deeply disproportionate costs of the Final Rule compared to its environmental benefits with respect to the impact of the control measures on our sector have only become evident with the issuance of the Final Rule.

III. GROUNDS FOR RECONSIDERATION

Pursuant to Section 307(d)(7)(B) of the CAA, as incorporated into the AIM Act, SEMI submits this petition and respectfully requests EPA to reconsider the compliance timelines and certain other narrowly tailored provisions of the Final Rule insofar as they apply to the semiconductor sector.

EPA did not include the North American Industry Classification System (“NAICS”) code for the semiconductor manufacturing industry in its list of potentially affected entities. 87 Fed. Reg. 76738, 76742-43 (Dec. 15, 2022). And, given the sophisticated nature of semiconductor manufacturing, the public comment period was too brief to allow SEMI’s members to adequately calculate and comment on the costs and impacts of the proposed rule. Although SEMI requested an extension of time to submit comments on the rule, and when that extension was denied, expressed its concerns in public comments, it was impracticable to fully raise its objections to the potential impacts of the proposed rule given EPA’s lack of adequate notice.

The AIM Act requires that EPA consider the costs of any “technology transition” regulatory provisions it promulgates. *See* 42 USC § 7675(i)(4)(c)(“the Administrator shall, to the extent practicable, factor in – [...] overall economic costs and environmental impacts, as compared to historical trends”); 7675(i)(5)(A)(“Administrator shall [...] evaluate substitutes for regulated substances in a sector or subsector, taking into account technological achievability, commercial demands, safety, overall economic costs and environmental impacts, and other relevant factors”). SEMI submitted comments to EPA regarding EPA’s failure to account for costs to the semiconductor industry in the proposed rule. Despite SEMI’s comment, neither the Final Rule nor its supporting Regulatory Impact Assessment (“RIA”) describe the significant impacts that the rule would have on the semiconductor industry. In EPA’s response to SEMI’s comment, in fact, EPA admits that the Agency only analyzed the costs and benefits to the IPR subsector as a whole, and not to the semiconductor industry, stating that the Agency “analyzed the costs and benefits to the subsector at large and did not dissect it into the many industries that possibly use equipment within the subsector.”

Implicit in EPA’s economic cost analyses is the assumption that the semiconductor industry and other industries that use IPR equipment have similar equipment requirements and timelines for adaptation. Indeed, EPA expressly stated in the preamble to the Final Rule that EPA assumed that the use of IPR in semiconductor product is similar to its use in frozen food production:

EPA understands the semiconductor manufacturing equipment to fit within the IPR subsector, typically utilizing chillers, often built into other non-refrigerant containing equipment, to cool processes necessary to produce semiconductor chips and other electronics. As such, we do not view such equipment differently from other IPR systems, which likewise could conceivably integrate a chiller into other equipment (e.g., a chiller integrated with a conveyor belt intended to move food needing freezing along its production process).

88 Fed. Reg. 73,098 at 73,119. This assumption is manifestly inaccurate. Given the immense differences in how the semiconductor industry uses IPR equipment from other subsectors it was categorized with, and the short window for our sector to evaluate the impacts of the proposed rule, it is clear that a reassessment of this fundamental assumption is warranted.

Semiconductor production, and IPR equipment used to support production equipment, is fundamentally different than other industries in the “IPR sector.” Semiconductor manufacturing involves some of the most complex equipment ever designed and built, with production tolerances and specifications that are vastly more precise and unforgiving than other IPR uses such as food production. SEMI members’ supply chains for this specialized equipment – including for the IPR chillers and other products used in semiconductor production – are also extraordinarily complex. Any disruptions in the supply of IPR equipment used in semiconductor manufacturing would create vast uncertainty on the impacts to the semiconductor industry as a whole.

The uncertainties in implementation cost impacts, in combination with the low greenhouse gas (“GHG”) emissions of the semiconductor industry (described in more detail below), would almost certainly change the calculations in a proper RIA and its cost-benefit

analysis if they had been taken into account. As SEMI was unable to present more detailed comments on the potential costs and impacts of EPA's Final Rule during the public comment period, and now that it has become clear that EPA significantly underestimated those impacts, SEMI seeks EPA's reconsideration of the Final Rule on the issues set out below.²

IV. ISSUES MERITING RECONSIDERATION

A. EPA should publish a notice suspending application of the rule to the semiconductor industry and reopen the Final Rule's Regulatory Impact Analysis

As noted above, the Final Rule could significantly affect production capacities and capabilities of semiconductor chips in existing semiconductor facilities, already planned semiconductor facilities, and future builds, but the RIA for the Final Rule did not take these impacts into consideration. SEMI's members do not yet have planned adjustments in site layout and permitting to enable low-GWP refrigerants. Multiple options are under assessment, but for some applications no solution has yet been identified. And, for options that *have* been identified, they have not been tested or qualified on the applicable semiconductor manufacturing processes – a process that could take as long as 3 or 4 years in order for the chiller manufacturer to qualify the chiller with applicable electrical product safety and other standards, then qualify the chiller with the manufacturer of the SMRE tool into which the chiller will be incorporated, and then finally to qualify the modified tool with the end user (the device manufacturer). The timeline for qualifications of products that contain novel or relatively untested next-generation refrigerants (as opposed to legacy refrigerants with a long history of success) adds further uncertainty and risk. Anticipated impacts include possible updates to IPR racks and floor layouts to accommodate dimensional differences, possible addition of ventilation and leak detection equipment, and possible electric changes due to increased power consumption. The full implications of the necessary adjustments to transitioning to low-GWP equipment have not yet been evaluated.

One primary concern is the significant uncertainty associated with the absence of existing low-GWP chiller and non-chiller refrigeration technology for our applications that is both (a) compliant with the GWP mandates that will take effect in 2026 and 2028 and (b) compatible with the existing and in-flight tool and production facility envelopes. Our primary concern is the risk of facility and production line downtime associated with these new requirements, which could arise if, for example, it is not possible to source sufficient legacy equipment for replacement purposes and there is a need to install new equipment that conforms with the new GWP limits but does not function as a drop-in replacement for our installed base of production equipment or already planned in-flight facilities.

Furthermore, if smoke and fire containment is necessary to support installation of the equipment due to use of low-GWP flammable refrigerants, there will be substantial redesign and construction requirements, with concomitant downtime and lost production, in addition to various additional costs that will vary depending on installation. The lack of drop-in replacements, and the challenges associated with stockpiling legacy chillers and non-chiller

²SEMI submits this initial petition today and reserves the right to supplement with additional material.

refrigeration equipment at sufficient volumes, could therefore lead to business disruptions at currently operating facilities, which could in turn affect the domestic chip supply chain.

Reconfiguration of semiconductor facilities to accommodate chillers and non-chiller refrigeration equipment that use low-GWP refrigerants will require additional testing to ensure compliance with applicable safety standards and also to SEMI and individual chip manufacturer performance standards. Assessments and certification at the chiller and IPR equipment level will be required. This assessment could in turn affect *facility-level* safety requirements (such as ventilation and fire life safety controls) and certifications, which in turn could require new tool configurations. There are numerous other additional systemic adjustments that will likely be required to accommodate chillers and non-chiller refrigeration equipment that use low-GWP refrigerants, such as layout changes due to increased IPR chiller and other IPR equipment's volume and footprint increase.

Additional expected costs and impacts to the semiconductor industry could include:

- Low-GWP chillers may have a shorter lifetime due to higher operating pressures;
- Potentially higher energy costs (and costs for increasing electrical capacity at facilities) associated with the operation of equipment with low-GWP refrigerants, the impact of which will vary depending on equipment and refrigerants used;
- Higher operating costs associated with extensive storage and warehousing for replacement legacy IPR equipment, which must be imported and purchased or installed before the relevant compliance dates;
- Additional transportation and logistics costs and longer construction timelines associated with restrictions on transport by air of IPR equipment that is charged with flammable refrigerants, which would either slow down the supply of equipment or require costly refrigerant evacuation and then recharge procedures after transportation.
- Facilities that are already planned but not yet permitted and will begin operations after 2026 that may need to be entirely redesigned because these facilities are designed specifically for existing chiller and non-chiller refrigeration equipment types, which may not be capable of accommodating the low-GWP alternatives due, e.g., to size constraints (for pressurizing natural refrigerants) or EHS and code requirements (for flammable refrigerants);

SEMI commented on the proposed rule, suggesting that EPA consider many of these impacts. EPA responded to SEMI's comment by noting that the Final Rule exempted IPR equipment where operating temperatures are below -50 °C, with the implication that most of the sector's specialized uses would be addressed by this exemption. Although that exemption is critical, the majority of IPR equipment used in the semiconductor industry operates above that temperature. Therefore, EPA's exemption for IPR operating below -50 °C does not address the immense costs the Final Rule will impose on the semiconductor industry.

EPA also responded to SEMI's comments by granting a 1-year extension from the timeline in the proposed rule. But the basis for EPA's conclusion that a single year is sufficient to accommodate the range of transitions and uncertainties is unclear. Here, EPA's Final Rule would regulate the use of certain refrigerants used in the semiconductor manufacturing sector, but EPA has not considered the feasibility or costs of substitutions that might be required.

Although SEMI is unable to estimate with precision at this point the disruptive effects that the Final Rule will have on the semiconductor industry, it is clear that the impact will be significant. Moreover, given the essential role that semiconductors play throughout the value chain – including medical equipment, automotive, and electronics, as well as the monitoring and control devices that will be necessary for industrial process equipment to meet various GHG emission reduction objectives – those costs and business disruptions could cascade throughout the wider economy. For these reasons, we respectfully request that EPA publish a notice suspending the application of the rule to the semiconductor industry until the effects of the Final Rule are better understood, and initiate a new process to evaluate those impacts and reconsider the rule's application to our sector.

B. EPA should consider exempting the semiconductor industry from the Final Rule.

The Final Rule contains provisions that significantly impact the semiconductor industry with little or no concomitant environmental benefit. Given the vital importance of semiconductors to national security and various critical industries, EPA should consider excluding semiconductor-related operations from the Final Rule.

It is clear that Congress specifically sought to insulate the semiconductor industry from disruptive impacts in the AIM Act, as evidenced by its provision of mandatory HFC allocations for use in certain critical semiconductor manufacturing operations. *See* 42 USC § 7675(e)(4)(B)(iv)(I)(dd). The purpose of that special allocation was to mitigate any potential disruption to the U.S. economy from the interruption of chip manufacturing and chip supply, as well as to reinforce federal support for the massive investments in domestic chip production.

For the same reasons, while SEMI has not yet been able to comprehensively assess each of its potential operations that might be affected, EPA should also create a broad exemption from the Final Rule for the semiconductor industry that will cover all aspects of semiconductor production activities. Because of the significant impacts to the semiconductor industry, along with uncertainties in the global supply chain, the most straightforward approach would be for EPA to apply a general exemption from the Final Rule for equipment used in semiconductor production.

As the costs to the semiconductor industry will far outweigh the marginal environmental benefits, SEMI believes that IPR equipment used in the semiconductor industry should be exempt from the Final Rule. Even if we assume a worst-case scenario for the annual release of HFCs from IPR chillers used in semiconductor manufacturing, there are insignificant GHG from our sector. For example, if we assume 100,000 IPR chillers in operation each year for semiconductor production, with an average lifecycle of these IPR chillers of 10 years, then we can expect 10,000 IPR chillers retired each year. Although the charge from those chillers is likely recovered in many cases, we can assume for these purposes that the full charge will be

released at end of life. (Virtually no leakage during the use phase generally occurs.) One of the highest GWP HFC refrigerants used by SEMI's members is R-404A, which has a GWP of 3,922. The maximum amount of HFCs that each IPR chiller is charged with is 30kg (however, most are charged with only 1-2kg of HFCs and all are charged under 30kg). With a GWP of 3,922, each IPR chiller in operation would hypothetically emit a total of 117.6 metric ton exchange value equivalent ("MTEVe") at the end of its 10-year lifecycle (30kg x 3,922), or 11.76 MTEVe per year. Assuming 10,000 chillers reach end of life each year and the full charge is emitted, the semiconductor industry as a whole would emit 117,600 MTEVe per year from refrigerant uses in chillers. This is assuming that each IPR chiller in operation is maximally charged with one of the highest GWP HFCs used in the SMRE industry, and that the full charge is released at end of life. In this hypothetical scenario using estimates where all of the IPR chillers are charged with 30kg of R-404A refrigerant, and all of this refrigerant is released at the end of the IPR chiller's 10-year lifecycle, there would still be de minimis GHG emissions by the semiconductor industry. According to EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021, HFCs accounted for a total release of 175,000,000 MTEVe in 2021.³ Even using a highly conservative estimate for GHG emissions by the industry at 117,600 MTEVe, the industry would account for only 0.067 percent of annual HFC GHG emissions in the United States. Those estimates are closely aligned with EPA's data, also in the EPA Inventory report, demonstrating that the semiconductor industry's total GHG emissions in 2021 constituted only 0.07 percent of total U.S. GHG emissions.

In response to the notice of proposed rulemaking, SEMI commented that the proposed rule should contain an exemption for the semiconductor industry due to the industry's importance to national security and the global economy. SEMI suggested that EPA provide an exemption for the semiconductor industry, and instead suggested that EPA should implement gas handling protocols and emission monitoring to prevent, detect, and contain unacceptable emissions of regulated substances.

In the preamble to the Final Rule, EPA set forth the Agency's interpretation that the AIM Act's exemption for retrofitted equipment does not apply to equipment manufactured after December 27, 2020. 42 U.S.C. § 7675(i)(7)(B)(ii); 88 Fed. Reg. at 73119. EPA's narrow response on this legal question sidesteps the fundamental nature of the request that the SEMI was making – a request to expand the scope of exempted equipment due to the long design and build timelines in our sector – and did not respond to the essential policy argument of SEMI comment. Nothing in the AIM Act prevents EPA from granting a general exemption for the semiconductor industry from the Agency's Final Rule, or from fashioning more tailored exemptions that reflect the insignificant HFC emissions that can be expected from our sector and the significant economic disruptions that could be avoided with essentially no incremental environmental impacts.

C. If no exemption is granted, EPA should at a minimum extend compliance dates as they apply to the semiconductor industry.

³ See ENV'T. PROTECTION AGENCY, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2021 2-5 (2023).

In the proposed rule, EPA proposed an initial compliance date for IPR equipment of January 1, 2025. 87 Fed. Reg. 76738, 76773 (Dec. 15, 2022). SEMI submitted a comment explaining the difficulties that the semiconductor industry would have with this compliance date.

In the Final Rule, EPA established compliances date of January 1, 2026, and January 1, 2028, for IPR chillers and IPR systems other than chillers, depending on the temperature rating of the equipment. 88 Fed. Reg. at 73142. However, these compliance timelines are still inadequate to allow sufficient time for the industry to ensure replacement IPR equipment can be fully integrated as components into the semiconductor manufacturing, operating, and service and maintenance processes. In order to facilitate the adoption of feasible alternatives to current IPR equipment without significant transition costs, EPA should extend the compliance timelines for all equipment used in the semiconductor industry.

As discussed above, drop-in replacement components for at least some high-performance IPR equipment used in semiconductor production applications are not available to use in new equipment production now and will likely not be available before the compliance period takes effect. Of components that do have replacements available, there is limited time to mitigate impacts of the HFC phasedown to the operations and businesses of SEMI's members. There are not safe, proven, adequate substitute IPR equipment available that can meet performance specifications with lower GWP refrigerants and that can serve as drop-in replacements for legacy uses. Because of the lack of availability of replacement IPR equipment, EPA should reconsider and extend its compliance dates for all regulated equipment used in the semiconductor industry.

Given the foreseeable challenges with compliance with current timelines, SEMI is requesting that EPA reconsider applicability to the semiconductor industry of the compliance dates in:

- section 84.54(a)(10)(iii) and (iv) (i.e., chillers for IPR);
- section 84.54(a)(12) (IPR products other than chillers); and
- section 84.54(c)(5) and (10) (installation prohibitions).

We suggest an extension of these compliance deadlines, to be determined based on a revised assessment of the potential for production downtime and high implementation costs, and an evaluation of revised compliance timelines that mitigate those costs in a way that is more proportional to the environmental benefits associated with the implementation of this rule as applied to the SMRE sector. At a bare minimum, EPA should extend the timeline for the prohibitions on new "installations" to align with the 3-year sell-through provision for compliant equipment that is produced or imported before the more stringent GWP limits take effect.

D. EPA should allow export for repair and re-importation of chillers and non-chiller IPR equipment, regardless of when they first went into service, if compliant at time of first installation, and should likewise allow a company to relocate and install used legacy equipment (if compliant at the time of first installation) in different facilities, even if that equipment was not in the United States as of the end of 2020.

We estimate that semiconductor production facilities in the United States may use as many as 100,000 currently existing and specialized IPR chillers and non-chiller IPR products. With proper maintenance, this equipment has a typical lifespan of 10-15 years. A significant proportion of those products are manufactured outside the United States and imported. Likewise, many of the facilities that repair and maintain IPR equipment are located outside of the United States, leading to the export and re-import of this equipment for repairs.

The Final Rule exempts from regulations equipment in existence in the United States prior to December 27, 2020. 88 Fed. Reg. at 73209. The Final Rule also restricts the import of certain IPR chillers with a global warming potential of 700 or greater. *Id.* at 73207. This creates a situation where equipment that is currently in use, but that was not in the United States prior to December 27, 2020, cannot be exported for repairs and then re-imported into the country without complying with the requirements for new equipment. This prohibition would prevent many semiconductor production facilities from being able to adequately repair their IPR. Either facilities will need to replace their current IPR with low-GWP alternatives, or they will need to import and store many more IPR before the compliance date is effective. Both options are infeasible and unreasonably inefficient for many facilities.

SEMI appreciates that EPA appears to intend to allow for the import of certain used IPR for repairs. In this regard, we acknowledge and appreciate the EPA clarification in the FAQ published on the EPA website on December 21, 2023 that appears to provide further clarity on this point that the Final Rule should be interpreted in such a way as to allow for the re-importation of IPR, by clarifying the scope of the exemption for “products in the possession of a consumer for personal use” in 40 CFR 84.56(d)(2):

Can I re-import equipment such as self-contained chillers or heavy-duty vehicles that are sent overseas for use or repair? Yes. Privately-owned equipment (whether owned by an individual or a company) that is sent abroad can return to the United States and is not subject to the restrictions that apply to the import of used products. EPA’s restriction covers the activities of entities bringing shipments of used products into the country for subsequent sale or distribution.

We welcome this clarification from EPA, which (after further evaluation of the export for repair practices in our sector) may serve to resolve our primary concerns on this point without the need for further rulemaking action. We will consider further whether we believe that it is necessary for EPA to take further regulatory action on this issue to cover, for example, situations where such equipment at the time of its reimportation is being shipped by third parties whose identity may differ from the owner of the end-use facility. We appreciate that EPA appears to intend to exclude all such practices via the exemption already in the Final Rule.

For similar reasons, EPA should allow a company in the SMRE industry to remove and reinstall existing chillers and non-chiller industrial process refrigeration products across its existing or already planned facilities (and those of its affiliated entities), regardless of when they first went into service, if that equipment was compliant at time of first installation.