

ENERGY STAR® CAC/Furnace Sunset Stakeholder Comment Response Matrix

Topic	Comment Summary	EPA Responses
Overall		
General	<p>18 stakeholders from the natural gas and fuel delivery industries object to the proposed sunset of gas furnaces. Several of these indicate that such a sunset may make sense in the coming years, but not now. 3 stakeholders believe it is premature to sunset air conditioners.</p> <p>On the other hand, 115 stakeholders support the EPA's proposed action. Of these, one also notes that delaying by several years would be better.</p>	Thank you for your comments; specific concerns are noted and addressed in the remainder of this document.
Timing of Proposal & Call to Respond to Comments	<p>3 stakeholders believe the proposal is on a very accelerated timeline. A smooth transition from traditional heating systems to heat pumps will take time to guarantee that energy-efficient heating solutions are available for all climates. As part of this transition, many steps must be taken before the commonly used and trusted equipment certifications change. For example, training contractors to appropriately identify, sell, and install these solutions into homes; and supporting the uptake of the technology into the market by providing incentives to customers to offset the increased cost of the solution compared with current standard alternatives. Adopting technologies can only happen when supply chains and contractors are ready, and the market has yet to reach that point. On the other hand, 2 stakeholders believe that the EPA's proposed timing of the sunsets are appropriate to provide sufficient time for the market to transition. 5 stakeholders also note that because furnaces and central air conditioners have long lifetimes (10-12 years or more), installing inefficient products today means they will emit extra carbon pollution for years.</p> <p>1 stakeholder notes that if DOE's pending proposed furnace standard goes into effect in 2029, it would leave a four-year period where many customers may pursue installations at the current 80% minimum efficiency standard.</p> <p>7 stakeholders suggest that the EPA consider further analysis of the market with consideration of the timing of any DOE mandated efficiency changes and the introduction of natural gas heat pumps to the market. They also note that the code mandates a lead time of 270 days, unless otherwise specified by the Agency or Department. Given that the EPA published this notice on May 18, 2023, with an effective date of December 31, 2023, the EPA has provided only 227 days. The EPA provides no information as to why they have decreased the lead time on a significant revision, and no justification as to why the circumstances may justify such a deviation. As a precedential matter, the effective date of any change should be suspended to be in compliance with the relevant statutes, absent any sufficient justification.</p>	<p>Please note that the time between the finalization of a sunset and the end of ENERGY STAR labeling is intended to allow the use of printed collateral material such as product catalogs until they are used up. The more immediate end of new certifications prevents manufacturers from investing in an administrative process that they will benefit from for only a short time.</p>
ENERGY STAR Guiding Principles	15 stakeholders assert that the furnace sunset proposal is inconsistent with EPA's ENERGY STAR Products Program Strategic Vision and Guiding Principles, which recognizes that ENERGY STAR specifications were designed "to treat fuel types separately, so that consumers may find the right products for the fuel type in their home, as most make product replacements without switching fuel	While the EPA now proposes a different approach for furnaces, sunsets of specifications which have limited usefulness are entirely consistent with program principles. In fact, sunsets help ensure the continued

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	<p>types” while 4 other stakeholders assert that switching from CACs to heat pumps would meet the ENERGY STAR guiding principles.</p> <p>8 stakeholders assert that the sunset proposal directly contradicts the purpose and mission of ENERGY STAR. ENERGY STAR states that the “label provides simple, credible, and unbiased information that consumers and businesses rely on to make well-informed decisions.” These stakeholders assert that the furnace proposal is biased in favor of purchasing electric furnaces and CACs, without offering evidence. A technology neutral strategy is consistent with promoting the responsible use of all energy sources, while recognizing the importance that energy efficiency and fuel diversity play in meeting future energy demands. On the other hand, 28 stakeholders believe that this proposal will provide consumers who choose to purchase best-in-class, maximally efficient appliances with the information they need to find the best options in the market.</p> <p>1 stakeholder notes that ENERGY STAR’s proposal does not meet the requirements of its enabling statutory considerations listed in the Energy Policy Act of 2005, which ENERGY STAR cites as its authorizing statutory basis. The Energy Policy Act of 2005 presumes ENERGY STAR has conducted analysis and public disclosure to justify its proposals to establish and revise program criteria for products it covers. Such requirements for analysis and disclosure supporting ENERGY STAR Program coverage extends to sunsetting of products from the Program and “duties” of the Program as discussed under Section 131, (“Duties”) of the 2005 Energy Policy Act.</p>	<p>relevance and effectiveness of the ENERGY STAR program.</p>
Supporting Analysis	<p>13 stakeholders note that the EPA did not provide any evidence or data in support of the proposal. The information released in the notice does not provide any analysis or support for the proposal for stakeholders to comment meaningfully, nor does the proposal contain sufficient information to permit the EPA to issue a reasoned decision on this matter.</p> <p>2 stakeholders note that instead of any in-depth consideration of the likely impact of such a proposal on markets around the country, the rationale for the proposal appeared to be anchored in the promise of what the Inflation Reduction Act incentives will do to advance electric heat pumps and input from a select group of stakeholders.</p> <p>1 stakeholder believes the EPA should have an obligation to conduct independent analysis before releasing a proposal like this that can have dramatic effect on customers, contractors, manufacturers, and utilities. The EPA’s determinations should be based on evidence, and this requires the EPA to support its conclusions with evidence that “a reasonable mind might accept as adequate to support a conclusion.” Where the EPA relies on assumptions it must provide a sufficient explanation of those assumptions and why they were selected to allow stakeholders and courts to determine whether those inputs and assumptions are supported by the evidence.</p>	<p>ENERGY STAR is a voluntary program designed to help consumers identify products that save energy, save money and help protect the environment. It does not affect the market as far as the options available to consumers or the cost of those options. In proposing to sunset, the EPA presented the rationale in terms of the consumer and environmental value of associating the ENERGY STAR label with furnaces and central air conditioning. The goal of the comment process is to expose the full range of relevant considerations.</p>

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	<p>2 stakeholders emphasize that the impact of the proposal on the reliability and resilience of the energy system must be fully examined. The EPA should consider the performance of electric end-use equipment on the coldest and hottest days of the year. Concerning the infrastructure requirements of the proposal, the EPA should thoroughly examine any future impact on electric generation, transmission, or distribution infrastructure requirements. The EPA should determine if electric system planning adequately anticipates the peak requirements based on design-day and better understand if there will be a shift from summer to winter peak due to the fact that the EPA is only including electric heating in the ENERGY STAR program.</p>	
<p>Impacts on Utility Incentive Programs & the value of the ENERGY STAR brand</p>	<p>7 stakeholders note the ENERGY STAR label for furnaces and CACs has been effective, and no stakeholders expressed disagreement with this point.</p> <p>16 stakeholders assert that by no longer allowing natural gas appliances and CACs to participate in the ENERGY STAR program, the EPA may negatively affect state approved utility energy efficiency programs that aid customers in obtaining efficient appliances. Customers may no longer be able to participate and receive benefits from programs that require ENERGY STAR-certified appliances even though states have approved such programs, and the programs reduce a customer's energy consumption. However, 4 stakeholders share that many utilities already tie their incentive programs to Consortium of Energy Efficiency tiers, and these programs could continue where necessary, while most consumers would still benefit from a clear signal that heat pumps are the efficient choice. 1 stakeholder asserts that utilities referring to other sources will diminish the value of the ENERGY STAR brand, and 7 note that the value of the brand may diminish if consumers are unable to find cost-effective labeled equipment.</p> <p>2 stakeholders feel that eliminating high-efficiency gas furnaces from ENERGY STAR specifications conflicts with the congressional intent of the Inflation Reduction Act. Meanwhile, 28 stakeholders share that the shift to greater heat pump adoption, which has already begun and is incentivized through the Inflation Reduction Act, will bring economic, health, and climate benefits to millions of Americans, while creating new, high-paying domestic jobs in manufacturing, installation, and associated supply chains.</p> <p>5 stakeholders agree that the EPA's proposal to sunset the ENERGY STAR certification for furnaces and CACs will shift voluntary programs, such as utility energy efficiency programs, to more aggressively incentivize and support market adoption of heat pumps by 2030. These stakeholders emphasize that this will help to prepare the market for state policies that will spur demand for zero-emission space heating equipment, including policies that could require that, starting in 2030 or soon after, space and water heating equipment installed must have zero NOx emissions. The stakeholders expect heat pump tax credits provided through the Inflation Reduction Acts to equalize the playing field in the amount of rebate required to incentivize heat pumps versus CACs.</p>	<p>Instead of sunseting, the EPA is proposing to update the ENERGY STAR furnace specification, which will allow furnaces to remain eligible for incentive programs that specify ENERGY STAR certification.</p> <p>For CAC, the EPA anticipates that incentivizing ENERGY STAR certified heat pumps will be an attractive alternative in most instances.</p>

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Consumer Choice	<p>15 stakeholders note that ENERGY STAR labels enable fuel choice, and continuing to apply the ENERGY STAR label to fuel-fired furnaces would still allow consumers the opportunity to compare across fuel types on a reasonable basis of operating costs while factoring in the true energy cost and emissions of various appliances. Hybrid heating solutions at the customer level are a perfect example of the type of solution that may be better for the customer and for the full system. On the other hand, 62 stakeholders note that replacing CACs with heat pumps adds consumer choice. In a hybrid installation, the heat pump can provide resilience in case of furnace failure and flexibility in case of rising fuel prices. Shifting central air conditioners to heat pumps can take advantage of a low-barrier path to emissions and cost reductions that can run in parallel to fossil fuel heating replacements.</p> <p>28 stakeholders note that even with the proposed sunset, furnaces and CACs will still be widely available on the market.</p>	<p>Sunsetting furnaces would not limit consumer choice, as the same products would continue to be available to the market. Updating the furnace specification, rather than sunset, will allow them to remain eligible for state rebates under the Inflation Reduction Act. The EPA agrees that many consumers, particularly in cold climates, will find a dual fuel system to be the most environmentally responsible and economic system in the immediate term. The EPA intends to work with stakeholders in 2024 to develop ENERGY STAR recognition of dual fuel HVAC systems.</p>
Furnaces (Space Heating)		
Sunset vs Update to Increase Efficiency	<p>62 stakeholders claim that replacing residential furnaces with electric heat pumps significantly reduces lifetime climate emissions in every U.S. region, even after accounting for upstream emissions from electricity generation. They also point out that electric appliances' emissions impact decreases as the grid decarbonizes — while fossil-fuel appliances lock in greenhouse gas emissions for two or more decades. NRDC shared a study published in the Energy Policy journal by researchers at U.C. Davis that found that a typical U.S. home can cut its heating-related climate pollution by 45-72% by swapping out a gas-fired furnace for an efficient, all-electric heat pump. Additionally, 6 stakeholders believe the proposed sunset will send a clear market signal that heat pumps should be considered the energy-efficient choice for space heating and cooling. They note that since ENERGY STAR is a voluntary program, it is the appropriate place to lead the market shift towards high-efficiency space heating and cooling. This signal from a trusted authority will spur innovation in the industry toward even greater efficiencies and lower costs for heat pumps.</p> <p>On the other hand, 3 stakeholders assert that high-efficiency natural gas appliances are often the most cost-effective and emit the lowest emissions. An AGA study noted that from 2015 to 2021, the market for ENERGY STAR gas appliances increased significantly, with shipments of ENERGY STAR furnaces growing by 123% during this period, and a market share increase from 26% to 41%. These stakeholders believe that there is still room for efficiency advancements for natural gas appliances. Two commentators who supported the furnace sunset proposal indicated that if the EPA is unable to sunset, a revision is overdue particularly in light of DOE action, and that hundreds of furnaces are available with 97 AFUE or higher.</p>	<p>The EPA agrees that there is a certain amount of additional efficiency that can be leveraged from current furnace technology. While the incremental consumer savings benefit associated with a 97% AFUE is small, the additional cost over the current ENERGY STAR level is minimal and the overall savings potential is large. Thus, the EPA has proposed raising the furnace requirements. If all gas furnaces sold in the US met this level, the savings would grow to over \$2 billion per year and prevent more than 17 billion pounds of annual greenhouse gas emissions.</p>
Backsliding	<p>2 stakeholders believe that removing the ENERGY STAR label could lead to a decrease in adopting higher-efficiency gas equipment, as consumers may opt for lower-efficiency options due to first-cost burdens.</p>	<p>The EPA proposes to maintain the ENERGY STAR furnace specification, with more stringent requirements that have minimal impact on cost over</p>

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	<p>7 stakeholders note that while consumers trust the EPA’s ENERGY STAR designation and look to it for guidance, ultimately, budget and consumer preference drive many consumer decisions. If cost-effective ENERGY STAR heating products are unavailable, consumers may be inclined to purchase a less energy efficient but more immediately affordable product, further undercutting the overall effectiveness of the program.</p>	<p>current ENERGY STAR requirements and align with eligibility requirements for federal income tax credits.</p>
Consumer Cost	<p>7 stakeholders emphasize that by excluding safe, affordable, high-efficiency gas furnaces from ENERGY STAR certification, the proposal would indirectly add to the substantial burdens already facing consumers, especially low- and middle-income households.</p> <p>Additionally, 5 stakeholders note that consumers rely on diverse heating fuels and technologies, depending on factors like geography, personal preference, and affordability. They claim that by excluding gas systems from the ENERGY STAR program, the proposal severely restricts consumer choice and ability to select the most suitable and efficient heating technology for their needs and, importantly, household budget. Even with tax credits and rebates, conversion costs and the resulting operational costs of electric heating systems are substantial and place these systems beyond the financial reach of many moderate to low-income consumers. The stakeholders are concerned that when affordability is an issue at the time of equipment replacement for low-income and disadvantaged households, these consumers will not have the benefit of the ENERGY STAR label when purchasing a non-heat pump product.</p> <p>63 stakeholders share that purchasers of heat pumps will be able to recover their investment in increased energy efficiency within a reasonable time period. They add that the Inflation Reduction Act contains funding to help reduce the purchase price of efficient products like heat pumps, meaning that it has never been more affordable to install one. Lastly, they point out that the incentives — including a \$2,000 (or greater, for ground-source heat pumps) tax credit and an income-qualified \$8,000 rebate for heat pump installations — will make efficient, electric appliances more accessible than ever before.</p>	<p>As a reminder, ENERGY STAR is a voluntary program. Removing the ENERGY STAR label from a product category would not remove any products from the market and does not in any way limit consumer choice. No matter what the EPA does, the full range of gas furnaces will continue to be offered for sale, at a range of price options.</p> <p>In addition to retaining the furnace specification at a higher AFUE level, the EPA looks forward to working with stakeholders to recognize dual fuel systems which can offer the efficiency and greenhouse reductions of heat pumps at a lower cost with the assurance of gas backup for particularly cold weather.</p>
Energy Use	<p>3 stakeholders believe that switching away from natural gas space heating will increase overall energy use, citing an AGA study claiming that, considered on a full fuel cycle basis, ENERGY STAR heat pumps used substantially more energy than ENERGY STAR gas furnaces for space heating. On the other hand, 94 stakeholders note that CACs and heat pumps use the same technology and perform the same function (cooling). Heat pumps additionally perform heating, and once that heating energy is also counted and compared against the energy that would be used to heat in a home with a CAC, total annual energy consumption will be reduced. 23 stakeholders noted that heat pumps are three to four times more efficient than even high efficiency furnaces.</p>	<p>All of the cited studies indicating an increase in overall energy use address homes which are entirely heated by furnaces or entirely by heat pumps. For many homes that have furnaces, the actual most economical and lowest GHG impact system may be a dual fuel system. The EPA will continue to support consumers in considering which of these choices makes the most sense for their home and intends to work with stakeholders in 2024 to develop ENERGY STAR recognition of dual fuel HVAC systems.</p>

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Greenhouse gas emissions	<p>2 stakeholders share that advocates for the electrification of heating often paint it as a fossil-free heating source. However, unless the customer is covering their heating load with renewable energy, it is likely that the energy being used to power that equipment is primarily generated by fossil fuels. However, 4 stakeholders shared study results showing that in most of the country, switching to heat pumps for space heating now or in the next 5 years will reduce total GHG emission.</p> <p>4 other stakeholders note that GHG emissions reductions can be achieved by blending low- and zero-carbon gaseous fuels, like hydrogen and RNG, into the existing natural gas distribution system. There are no major changes to the system or equipment needed and it yields an immediate carbon reduction. The stakeholders believe this is the most efficient and rapid way to lower the carbon intensity of the residence.</p>	<p>While a substantial fraction of electricity is currently generated with fossil fuels, studies that consider emissions over the lifetime of HVAC equipment generally find heat pumps reduce emissions as part of a suite of policies that avoid the worst effects of climate change.</p>
Air Quality	<p>62 stakeholders share that electric heat pumps and other electric appliances emit no direct air pollution. Residential combustion appliances, on the other hand, are linked to poor indoor and outdoor air quality, which can worsen asthma symptoms and reduce lung function in children, particularly in the absence of ventilation. More efficient gas appliances may incrementally reduce this pollution, but they cannot eliminate the inherent health impacts of burning fossil fuels in our homes and buildings.</p>	<p>Thank you for your comment.</p>
Full Fuel Cycle Analysis	<p>9 stakeholders believe that the current government practice of rating appliances based on site emissions rather than source emissions inhibits the government's regulations from being fuel neutral, impairing effective consumer awareness regarding fuel choice. Since decarbonization is a central part of the agenda, it is time to comparatively sort through the issues of source-energy and the technology types that can ostensibly deliver the same end-benefits, but by very different means.</p> <p>1 stakeholder believes the EPA should adopt the Department of Energy's "Statement of Policy" calling for the use of "Full Fuel Cycles (FFC) measures of energy use and emissions." ENERGY STAR should be using FFC energy and associated emissions as the basis for analysis of its criteria development and in order to be consistent with the EPA's use of source energy (FFC energy less extraction loss). The FFC metric includes the energy consumed in extracting, processing, and transporting primary fuels (i.e., coal, natural gas, petroleum fuels), and thus presents a more complete picture of the impacts of energy conservation standards." The EPA has not committed to using or evaluating an FFC analysis of its emissions claims, which may make its claims at odds with conclusions reached by its partner, the DOE. The EPA should clarify this claim, as it is unsupported by the document and fails to account for the FFC analysis employed by the Department of Energy.</p>	<p>The ENERGY STAR program serves a different, complimentary purpose to energy conservation standards, serving as resource for consumers to guide them toward products that save them money on their energy bills. As such, the program focuses on site energy.</p>
Publication of Proposal	<p>1 stakeholder emphasizes that the EPA did not publicize the proposal to remove natural gas furnaces from the ENERGY STAR program. Stakeholders were not provided the benefit of a federal register notice publicizing the proposal. The stakeholder believes that the EPA should have widely publicized the proposed change to ensure robust stakeholder engagement. The stealth way the EPA announced this substantial change to the ENERGY STAR program and the lack of any accompanying support</p>	<p>The EPA follows a standard process documented in the ENERGY STAR Standard Operating Procedure (SOP) that the Agency uses for all ENERGY STAR specification actions including proposals related to new and revised specifications and sunsets. The EPA</p>

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	<p>raises due process concerns. For such a profound change to the program, the EPA provided stakeholders with a paltry 30-day comment period.</p>	<p>distributed the proposal to a list of more than 2,000 stakeholders while also posting it to the broadly available ENERGY STAR Partner Public Notices web page. The ENERGY STAR SOP provides for a 30-day comment period for proposals with more time allowable as needed. The EPA made accommodations for comment submittals beyond the deadline.</p>
Heat Pumps Technology Readiness	<p>12 stakeholders believe that ENERGY STAR certification should allow alternative energy solutions, such as hybrid heating (including efficient furnaces with ASHP), thermally driven gas heat pumps, or continuation of highly efficient furnaces, to maintain optionality for achieving net-zero cost-effectively. Dual-fuel, or hybrid heat pumps, offer a lower-carbon heating solution that may prove similar or greater benefits. The stakeholders believe that the EPA must respect consumer choice and consider each household's specific needs and circumstances, especially the implications across climate zones. 2 stakeholders note that while heat pump technology has improved over the past several years, there is no consensus on either definition or testing methodology for cold climates.</p> <p>86 stakeholders note that heat pumps can perform effectively even in cold climates (-13°F and below), and they offer benefits over traditional gas furnaces and central air conditioners including two-in-one heating and cooling, precise temperature control and stability, and lower maintenance costs. Several studies have shown that full electrification (e.g., swapping a residential furnace for a heat pump) can result in net present savings and, in many cases, reduced operating costs.</p> <p>4 stakeholders note that by pushing the market in this direction, the EPA is helping to propel the industry towards development of test methods and standards for heat pumps. Further test method improvements can more fully capture the benefits of variable-speed heat pumps, further increasing the benefits.</p>	<p>The EPA agrees that some households will prefer not to switch to fully electric heat now, and that it is important to provide guidance for this. In addition, we intend to work with stakeholders in 2024 to develop ENERGY STAR recognition of dual fuel systems that have both a furnace and a heat pump.</p>
CACs (Space Cooling)		
CAC Sunset	<p>3 stakeholders believe it is premature to sunset air conditioners, noting that many consumers will continue to purchase air conditioners, particularly in cooling-only climates, and without the influence of the ENERGY STAR may purchase less efficient units.</p> <p>115 stakeholders support the proposal to sunset air conditioners, noting that heat pumps can perform the same cooling function while also saving energy and preventing emissions by heating. These stakeholders point out that the Inflation Reduction Act incentives cover the cost difference between air conditioners and heat pumps. One commentator that supports the AC sunset proposal asserts that delaying by several years would be better.</p>	<p>The EPA notes that an extremely limited number of US households operate without some form of heating and to the extent homeowners wish to purchase central air conditioners, they will continue to be able to distinguish energy saving models based on the EnergyGuide label. The delay proposed for the CAC sunset gives more time for the HVAC industry and utility incentive programs in cooling-only climates to prepare for the change.</p>

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Backsliding	2 stakeholders assert that because CACs still dominate the residential cooling market, encouraging higher efficiency products in the ENERGY STAR program would help to prevent backsliding to lower cost, less efficient CACs.	The EPA anticipates a market shift towards heat pumps as a replacement for CACs given they provide additional functionality at little extra cost. In the meantime, the purchase of efficient CACs will continue to be incentivized by federal tax credits, which are not tied to ENERGY STAR certification.
Consumer Cost	5 stakeholders note that while heat pumps cost more up-front than comparable CAC's, Inflation Reduction Act tax credits and forthcoming rebates should help defray that cost. They assert that continuing to make the electrical grid cleaner and decarbonizing buildings must happen in tandem.	Thank you for your comment.